REDACTED VERSION

INTERIM REMOVAL REPORT

FOR

WEBSTER-GULF NUCLEAR INDUSTRIES, INC.
202 Medical Center Boulevard
WEBSTER, HARRIS COUNTY, TEXAS

Prepared for

U.S. Environmental Protection Agency Region 6
Linda Carter, Project Officer
1445 Ross Avenue
Dallas, Texas 75202

Contract No. 68-W-01-005
Technical Direction Document No. 06-01-10-0010
WESTON Work Order No. 12632.001.040.0205
NRC No. 583552
CERCLIS No. TX0000605420
FPN N/A
EPA OSC Greg Fife
START-2 PTL Chad A. Hall

Prepared by

Weston Solutions, Inc.
Robert Beck, P.E., Program Manager
70 N.E. Loop 410, Suite 460
San Antonio, TX 78216
(210) 308-4300

31 July 2003

90045066

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EXECUTIVE SUMMARY

On 17 October 2001, OSC Greg Fife of the Region 6 EPA Response and Prevention Branch (EPA-RPB) tasked START-2 to respond to Webster-Gulf Nuclear Industries, Inc (GNI), located at 202 Medical Center Boulevard, Webster, Harris County, Texas. The facility prepared radiation sources for the medical and oil field industries. In 1983, an inadvertent breach of a 3-curie americium-beryllium source prompted an extensive investigation and facility survey by the Texas Depart of Health's Bureau of Radiation Control (TDH-BRC). The facility ceased production in 1991 and continues to be in bankruptcy proceedings.

From 7 January 2001 through 9 May 2003, the EPA, the Superfund Technical Assessment and Response Team (START-2), the U.S. Army Corps of Engineers (USACE) with the Rapid Response contractor, through an Interagency Agreement with the EPA, completed cataloging and surveying of the facilities radioactive sources as well as the demolition and transportation of the sites three contaminated buildings. It was found that the original report, from the TDH-BRC, of 12 radioactive sources being on site was inaccurate; there were 272 identified and cataloged radioactive items found. (Attachment A). Additionally, the USACE rapid contractor Shaw Environmental Inc. (SHAW) transported radioactive debris and source materials to eight disposal facilities via 181 shipments as per data provided by SHAW to the EPA (Attachment B).

START-2 performed many tasks during the operational period of the project under the direction of the original Technical Direction Document (TDD) 06-01-10-0010 and subsequent TDD (Attachment C). The most recent activity was from June 2, 2003 thru June 13, 2003 where START-2 performed a post removal assessment of the site to determine the extent of any remaining radioactive soil contamination. Additional details of all START-2 activities will be published after the final removal has been completed in September of 2003.

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☐ The EPA Task Monitor did not provide final approval of this report prior to the completion date of the work assignment. Therefore, Weston Solutions, Inc. has submitted this report absent the Task Monitor's approval.

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1. INTRODUCTION

The Superfund Technical Assessment and Response Team (START-2) was tasked by the U.S. Environmental Protection Agency (EPA) Region 6 Response and Prevention Branch (RPB), under Contract Number 68-W-01-005 and Technical Direction Document (TDD) No. 06-01-10-0010 (Appendix C) to perform oversight, sampling, and site managerial tasks during the removal activities at the Gulf Nuclear Inc. (GNI) site. The GNI site is located in Harris County, Webster, Texas at 202 Medical Center Blvd. All appendices are provided as a separate portable document format (PDF) file. On January 7, 2001, START-2 initiated removal oversight activity at the GNI site. START-2 has prepared this Interim Removal Report to describe the technical scope of work that was completed.

The geographic center of the site is Latitude 29.54250° North and Longitude 95.12458° West, as determined using a hand-held global positioning system (GPS) receiver operated in autonomous mode. The reading was based on the North American Datum-83 (NAD-83) with an estimated circular error of +/- 15 meters.

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2. PURPOSE AND SCOPE

The purpose of the removal action was to identify and catalog all radioactive sources and items inside the facilities three buildings, determine the extent of the contamination, and properly transport and dispose of all debris generated on site.

The scope of work defined in the TDD includes documentation, sampling, and technical assistance. START-2 was specifically tasked to conduct air monitoring, to maintain a site logbook, to monitor containment and cleanup action, procure laboratory services, digitize photographic documentation, and to review site records and technical documents. Additionally, START-2 was tasked to coordinate with EPA's Office of Indoor Air and Radiation on Health and Safety and sampling strategies, the Federal On-scene Coordinator (FOSC) Greg Fife, and the U.S. Army Corps of Engineers (USACE) onsite representative.

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3. SITE BACKGROUND

The following is a brief description of the site location, background information, and site description.

The Webster facility was owned and operated by Gulf Nuclear Industries, which prepared radiation sources for the medical and oil field industries. In 1983, an inadvertent breach of a 3-curie americium-beryllium source prompted an extensive investigation and facility survey by the Texas Department of Health- Bureau of Radiation Control (TDH-BRC). Webster ceased production in 1991 and continues to be in bankruptcy proceedings. The EPA and USACE have completed a site survey of radiation contamination and building demolition activities and determined that site contamination is above normal background levels with alpha, beta, gamma, and neutron sources of radiation.

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4. ACTIONS TAKEN

The most recent activity was from 2 June 2003 thru 13 June 2003, where START-2 performed a post removal assessment of the site to determine the extent of any remaining radioactive soil contamination.

The Removal Assessment report included detailed use of surface and subsurface sampling, surface scanning with 3x3 sodium iodide radiation instruments, and the use of ground penetrating radar (GPR) to determine the extent of remaining contamination. The report will be used by the EPA to determine a final volumetric quantity of soil to be removed during the final removal action in September 2003. Additional details of all START-2 activities will be published after the final removal has been completed in September of 2003.

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5. APPENDICES

Appendix A Summary of Identified and Cataloged Radioactive Items

Appendix B Summary of Disposal Shipments Provided by Shaw Environmental Inc.

Appendix C Copy of Technical Direction Document No. 06-01-10-0010

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Source Logs – Color Versions
Disk 1 of 4
Webster-Gulf Nuclear
Latitude 29.54250 North, Longitude 95.12458 West
Webster, Harris County, Texas

September 2002

EPA Region 6, 6SF-RP
Linda Carter, Proj Off
1445 Ross Avenue
Dallas, Texas 75202
EPA OSC Greg Fife

Weston Solutions, Inc
R. Beck, P.E., Prog. Mgr
70 NE Loop 410, Ste 460
San Antonio, Texas 78216
START-2 FTL
Chad Hall

Contract No. 68-W-01-005
TDD No. 06-01-10-0010
DCN No. N/A
NRC No. N/A
FPN No. N/A
CERCLIS ID TX0000605420

MAY CONTAIN CONFIDENTIAL INFORMATION

Source Logs -- Color Versions
Disk 2 of 4
Webster-Gulf Nuclear
Latitude 29.54250 North, Longitude 95.12458 West
Webster, Harris County, Texas

September 2002

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MAY CONTAIN CONFIDENTIAL INFORMATION

Source Logs – Color Versions
Disk 3 of 4
Webster-Gulf Nuclear
Latitude 29.54250 North, Longitude 95.12458 West
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Source Logs – Color Versions
Disk 4 of 4
Webster-Gulf Nuclear
Latitude 29.54250 North, Longitude 95.12458 West
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September 2002

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Chad Hall

Contract No. 68-W-01-005
TDD No. 06-01-10-0010
DCN No. N/A
NRC No. N/A
FPN No. N/A
CERCLIS ID TX0000605420

MAY CONTAIN CONFIDENTIAL INFORMATION

USEcology
FS-TX-02-01
Source Log

Date 2-16-02

ITEMS

BKG	mR/hr
Contact	<0.1
12"	
36"	

Container #	I-1	I-2	I-3	I-4	
External on pig in mR/hr	N/A	N/A	N/A	N/A	
External on pig Neutron mR/hr	<1	<1	<1	<1	
Contact on pig mR/hr	2	8 mR	0.2	3 mR	
Beta on open pig mR/hr O/W	5	8	2	5	

Picture	✓	✓	✓	✓	

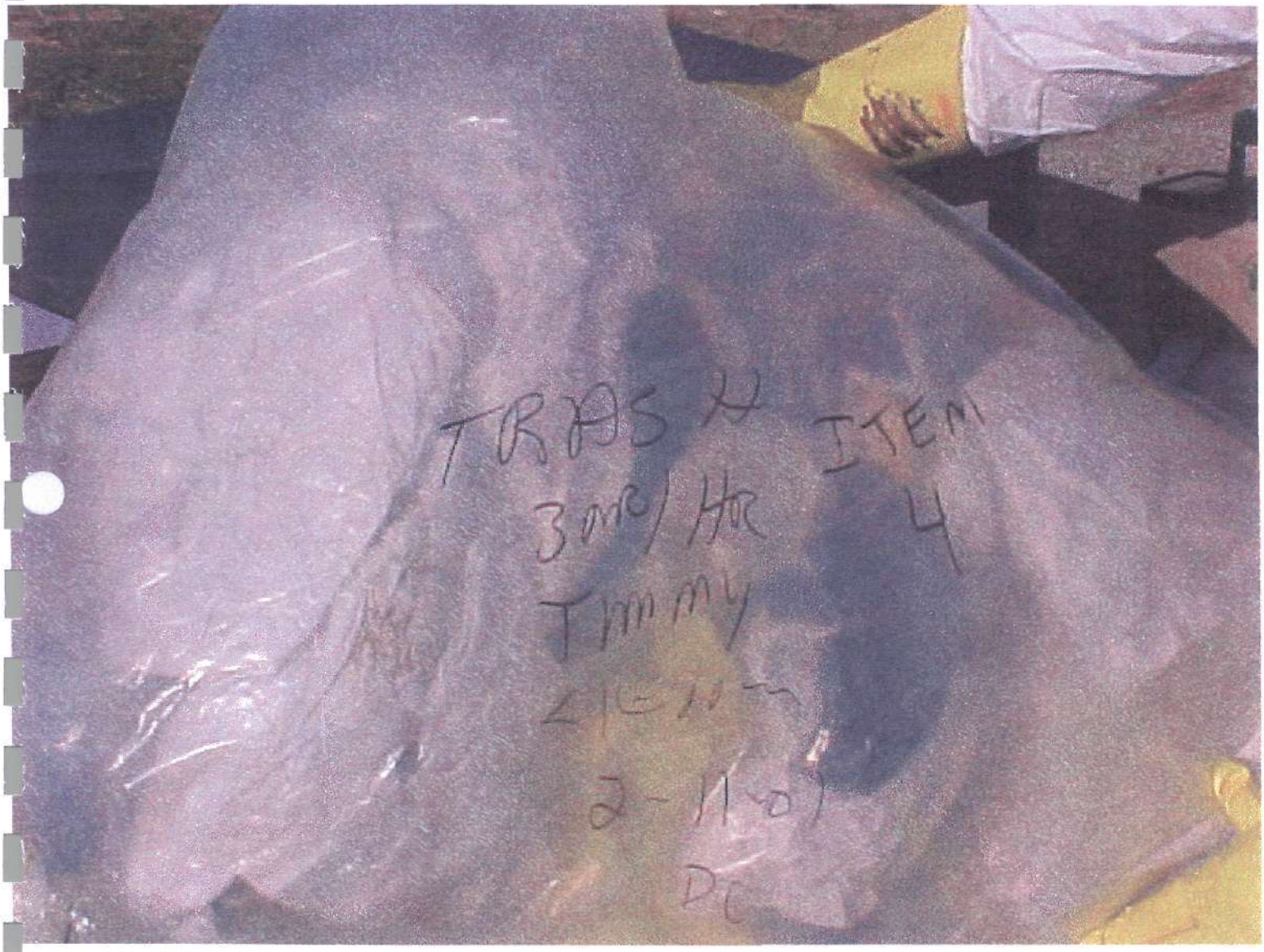
Table Readings

Source mR/hr @ Contact	0.6	1.6	0.1	.6	
Source mR/hr @ 12 inches	0.3	0.6	<.1	.4	
Source mR/hr @ 36 inches	0.1	0.2	<.1	.2	
Size of source in cc's	500	500	7000	500000	
Weight in grams	1000	400	12 lbs	7 lbs	

CPM Alpha	NA				
Direct Beta/Gamma					

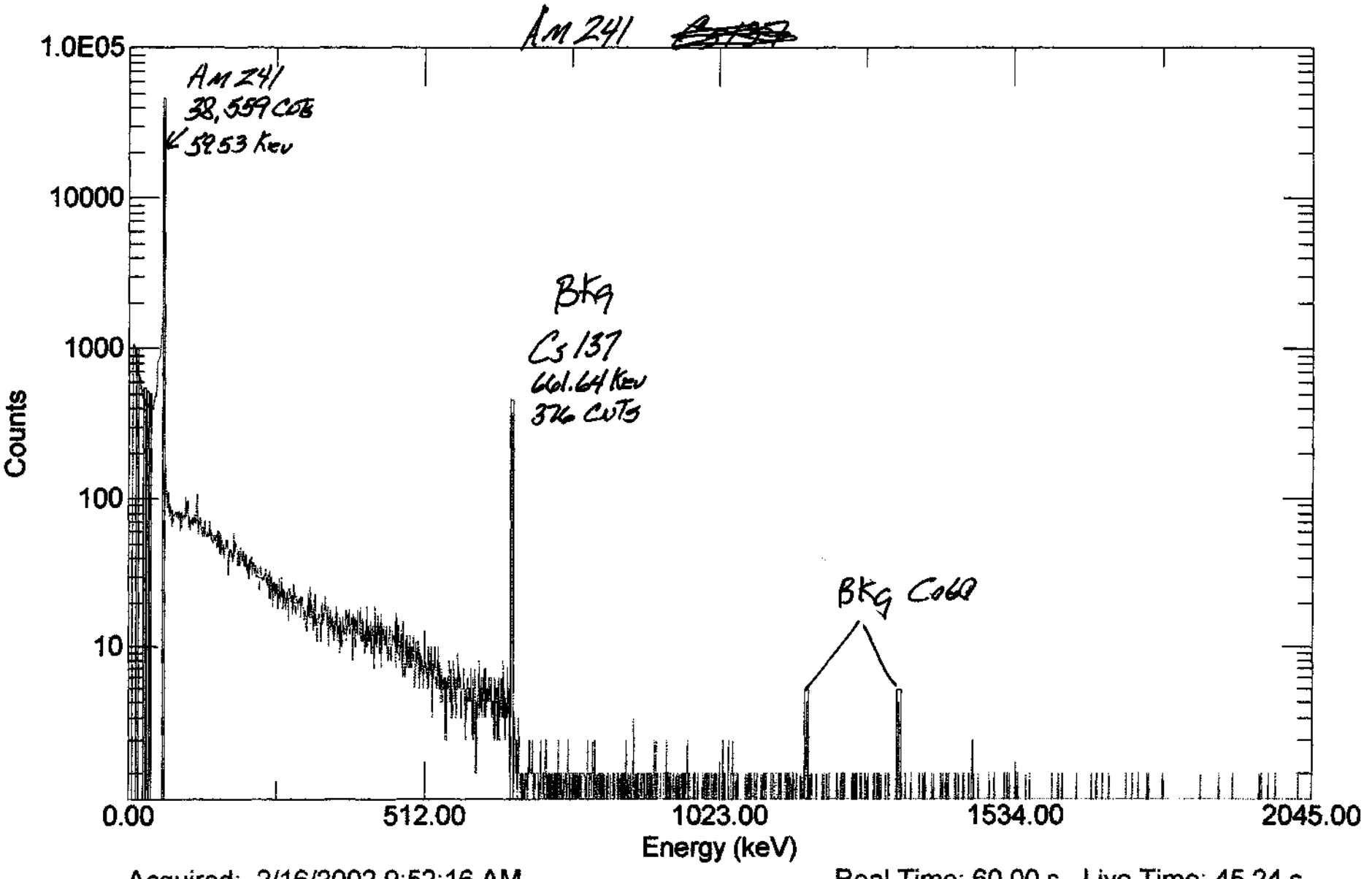
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha	NA				
Smear DPM per 100 cm^2 Beta					


TRASH
ITEM
4
Timmy
2-11-01
DC

006 ITEM4 2-16-2002 9.52.16 AM

ITEM4



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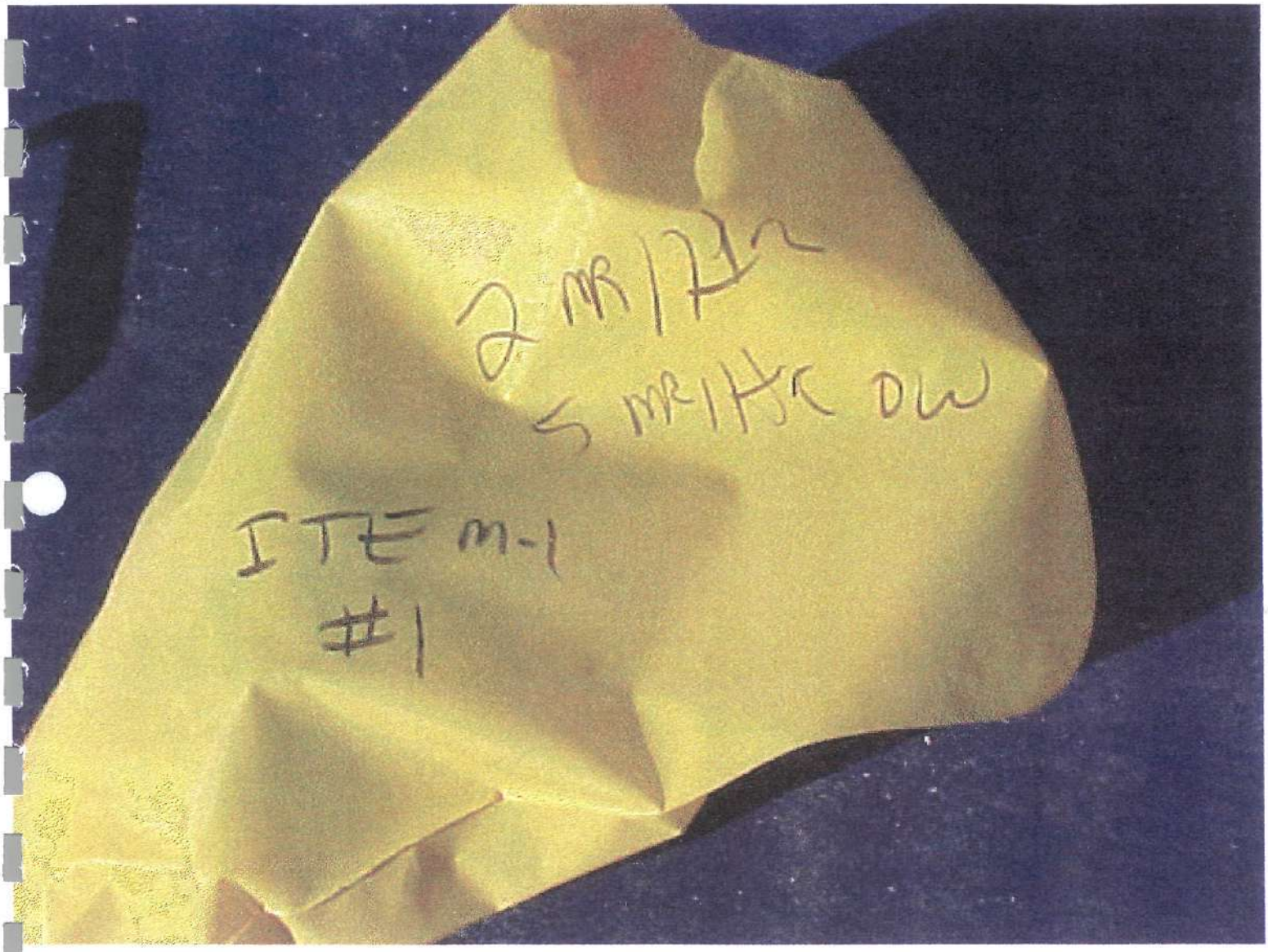
2 MR/HR
5 MR/HR DW
ITE M-1
#1

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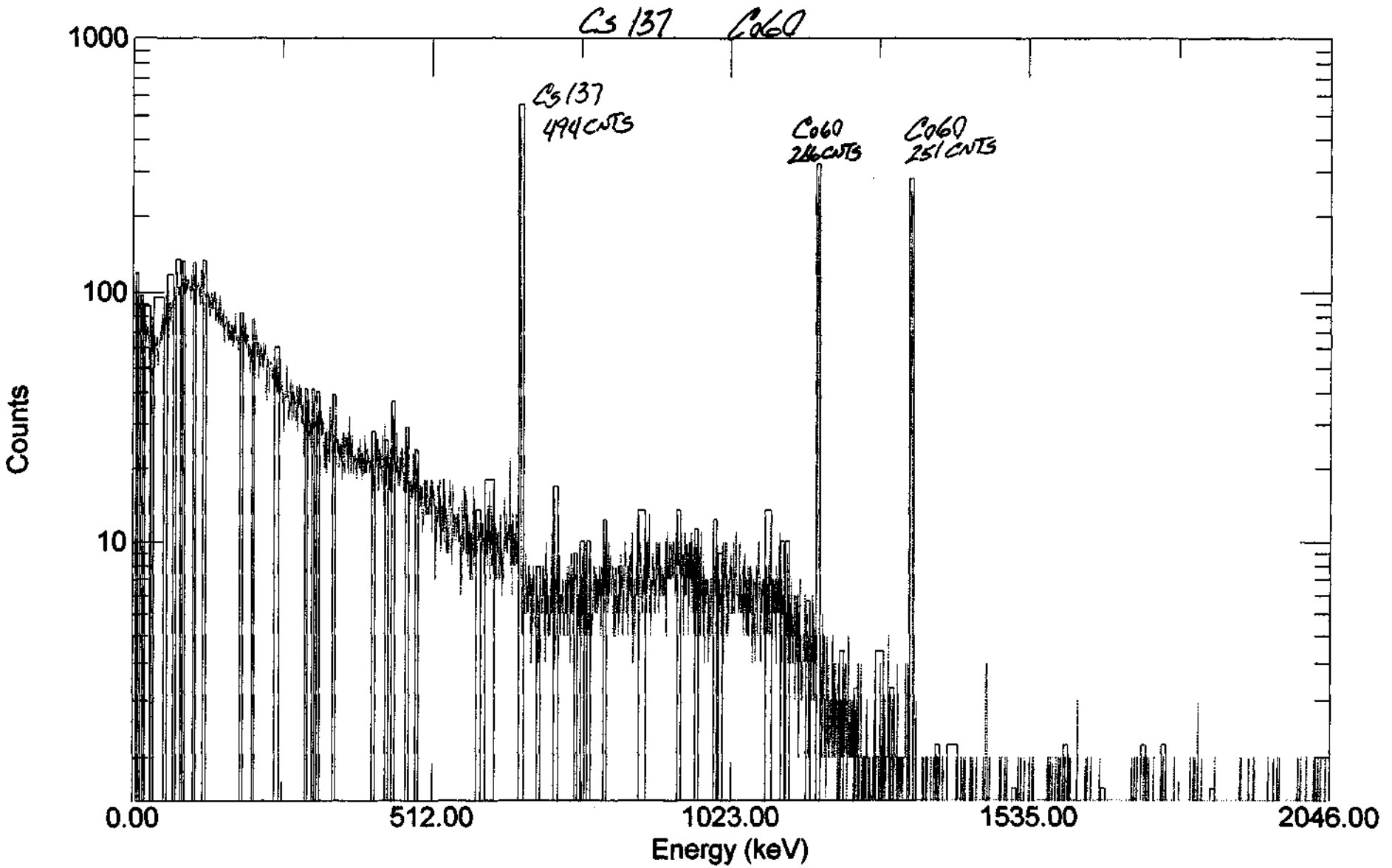
ITEM1



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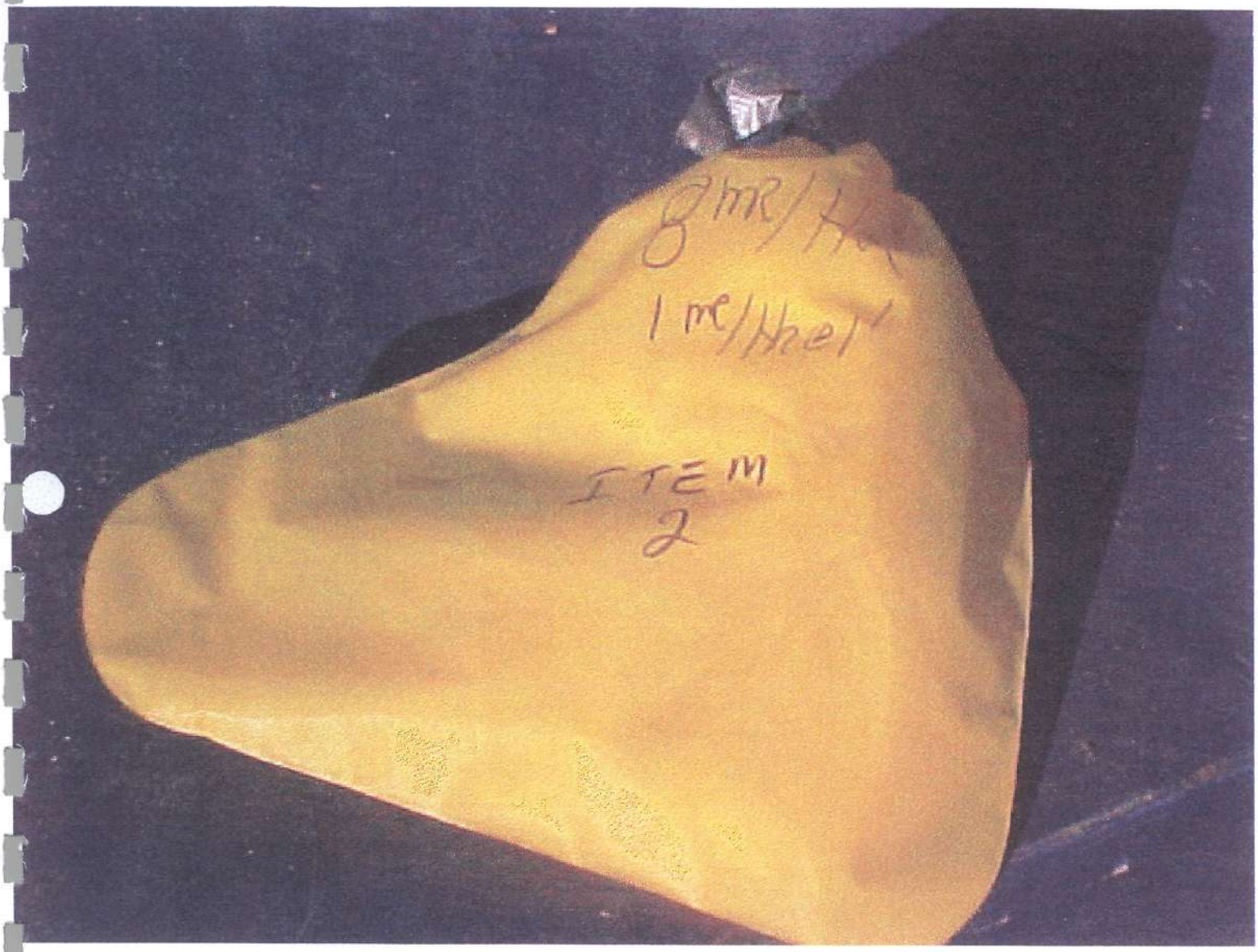
8mR/Hr
1mR/Hr
ITEM
2

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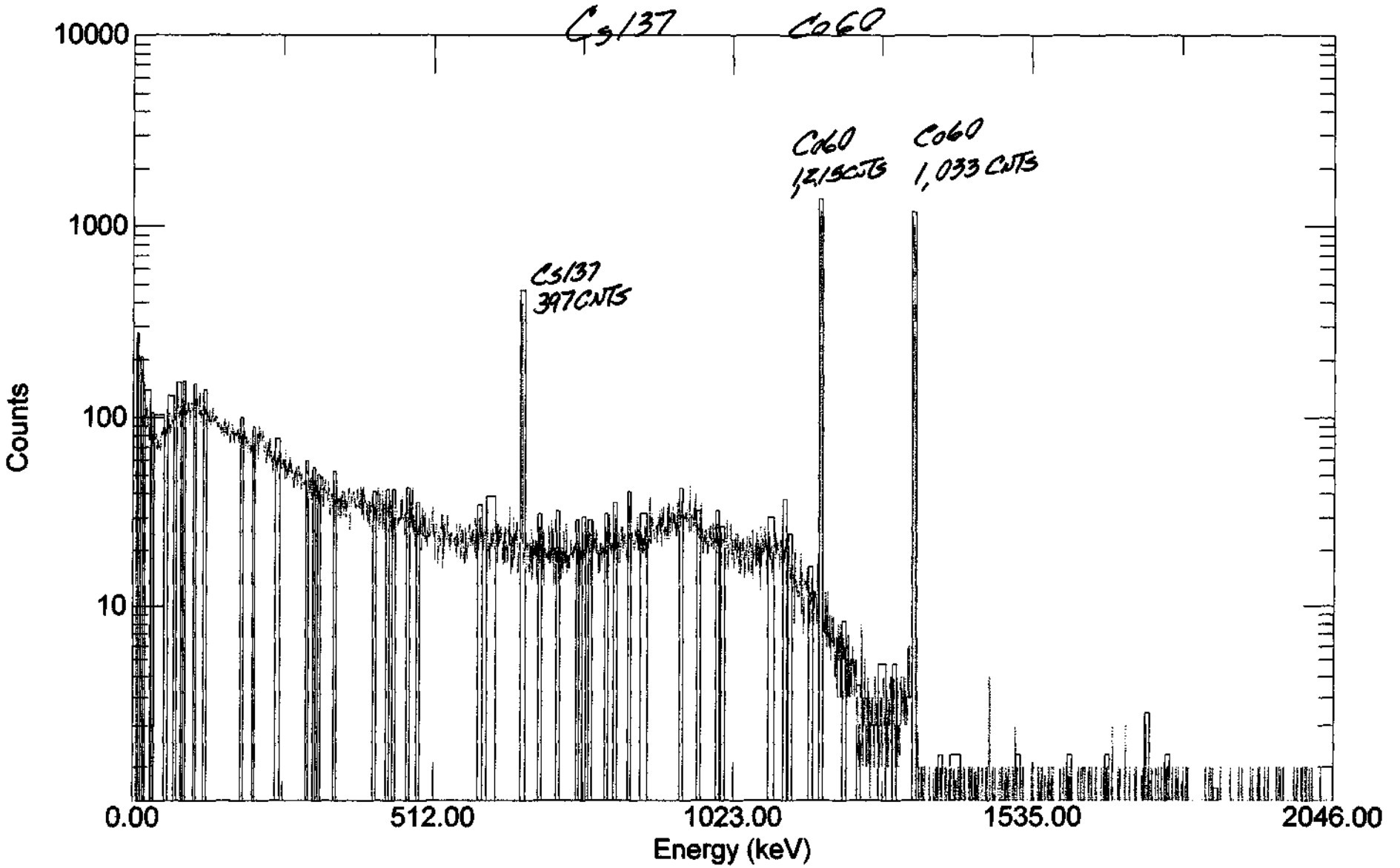
ITEM2



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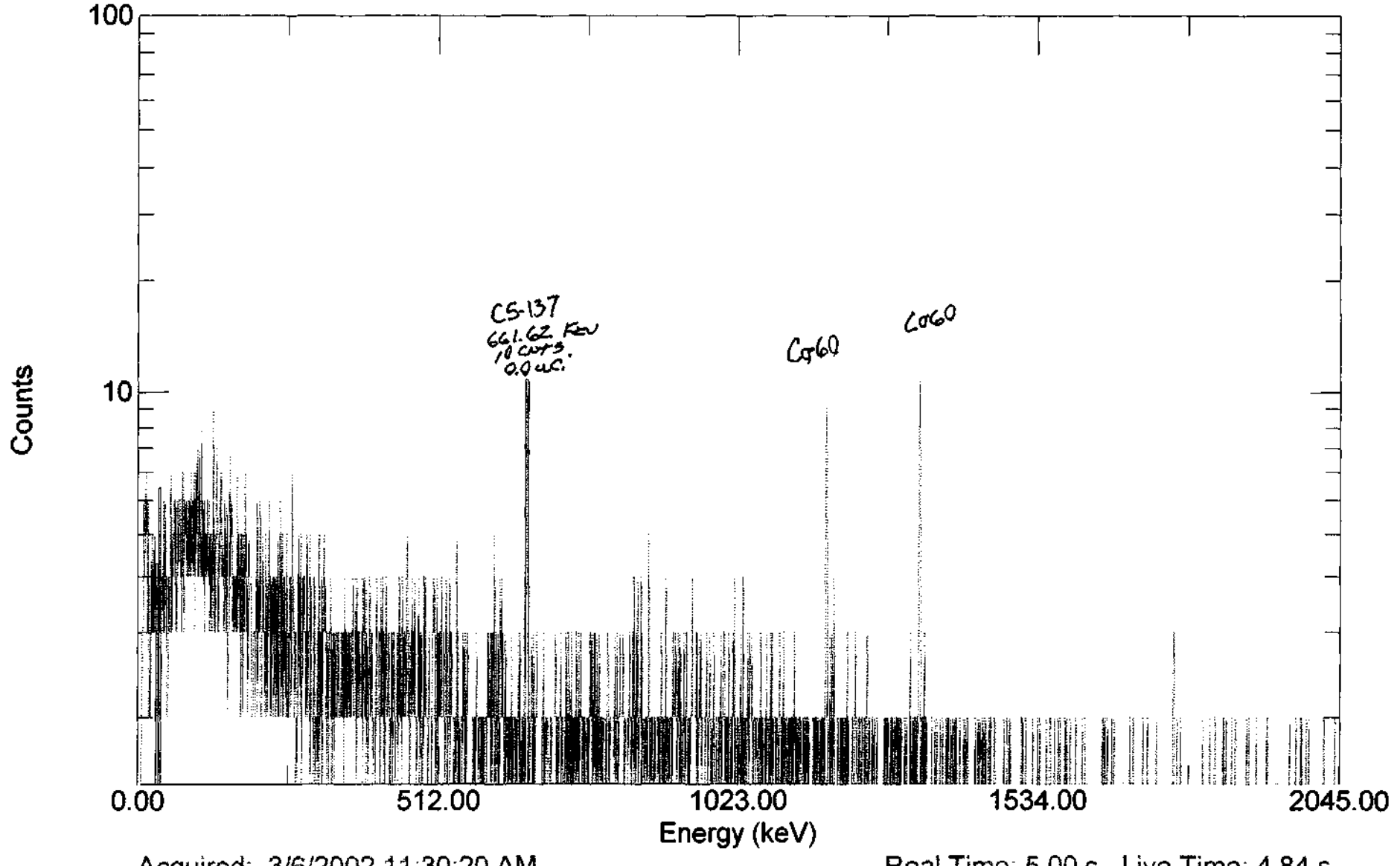
ITEM3



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USEcology
FS-TX-02-01
Source Log

Date 3-6-02

BKG	mR/hr
6"	
12"	
36"	

Container #	GNB-1-6	ITEM 5	ITEM 6	BRICK	MELTED SOURCE
External on pig in mR/hr	<1	2	<1	20	300
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	N/A	2	<1	1500	300
Beta on open pig mR/hr O/W		5	<1	1500	300

Picture	✓	✓	✓	✓	✓

~~Total Readings~~ READINGS

Source mR/hr @ 6 inchs	N/A			500	40
Source mR/hr @ 12 inches		N/A	N/A	300	25
Source mR/hr @ 36 inches				80	3
Size of source in cc's	1000	100	3CF	7000	3000
Weight in grams	50LBS	300	50lbs	60lbs	80lbs

CPM Alpha					
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
				Bagged	Bagged

ITEM
5

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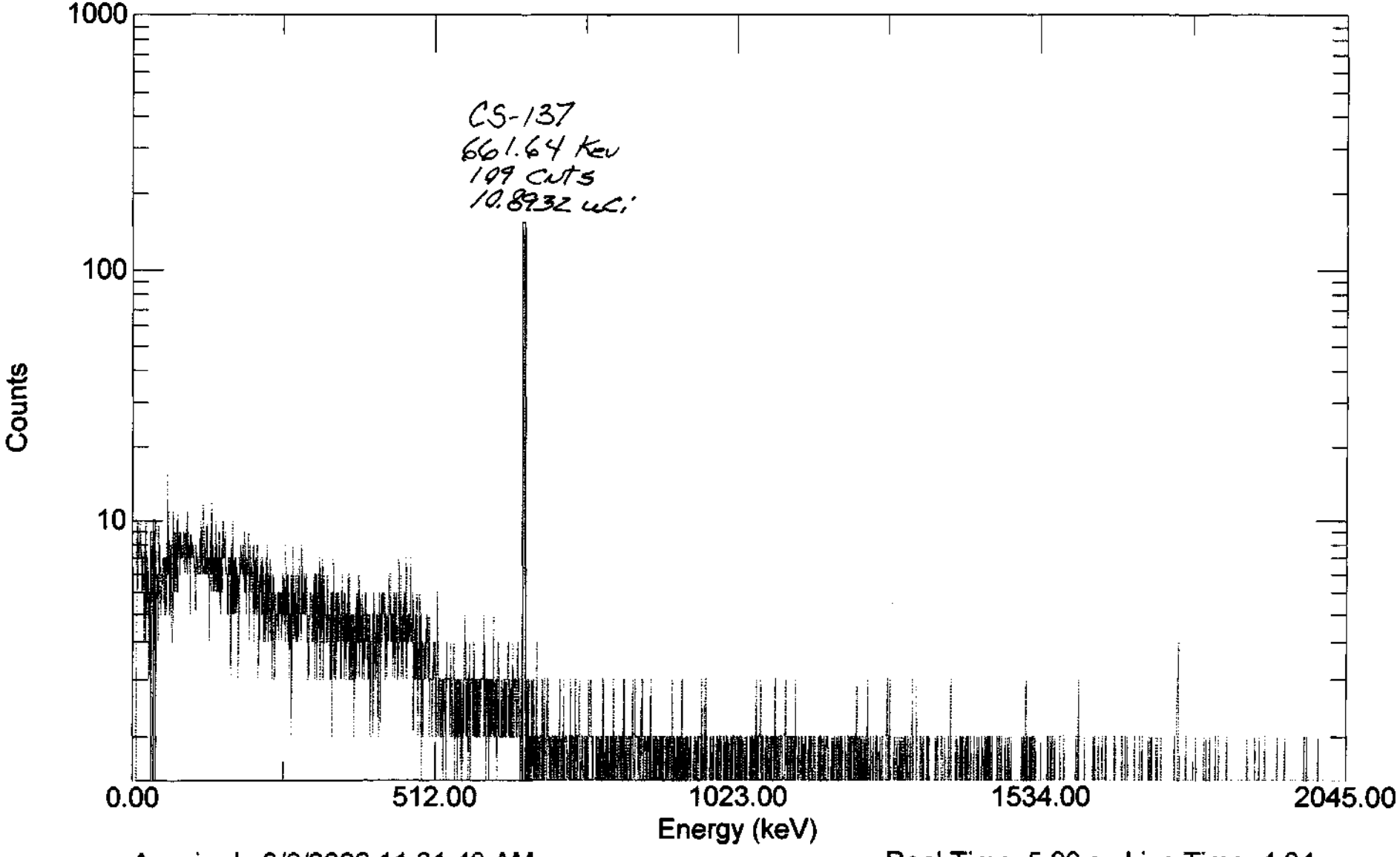
ITEM6



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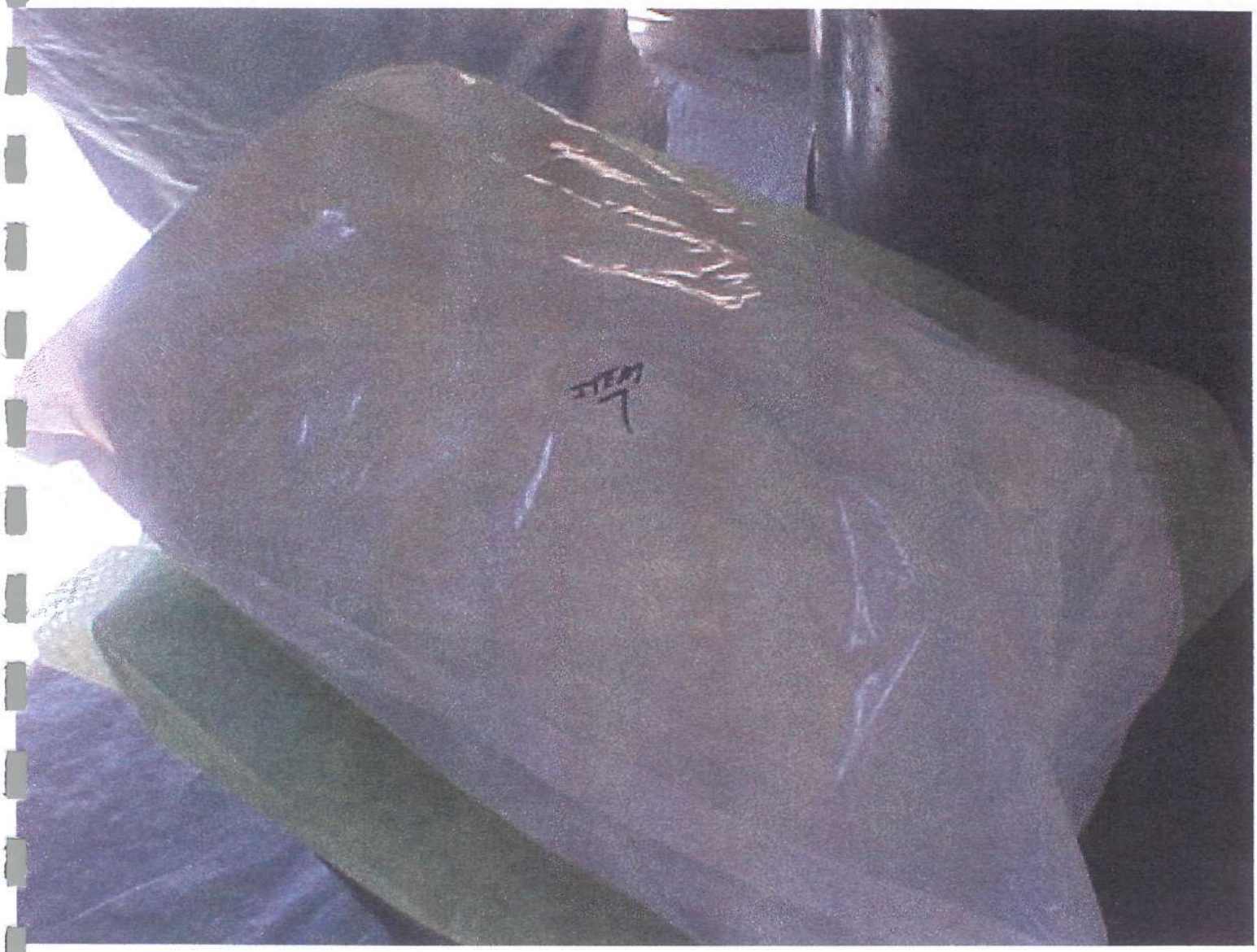
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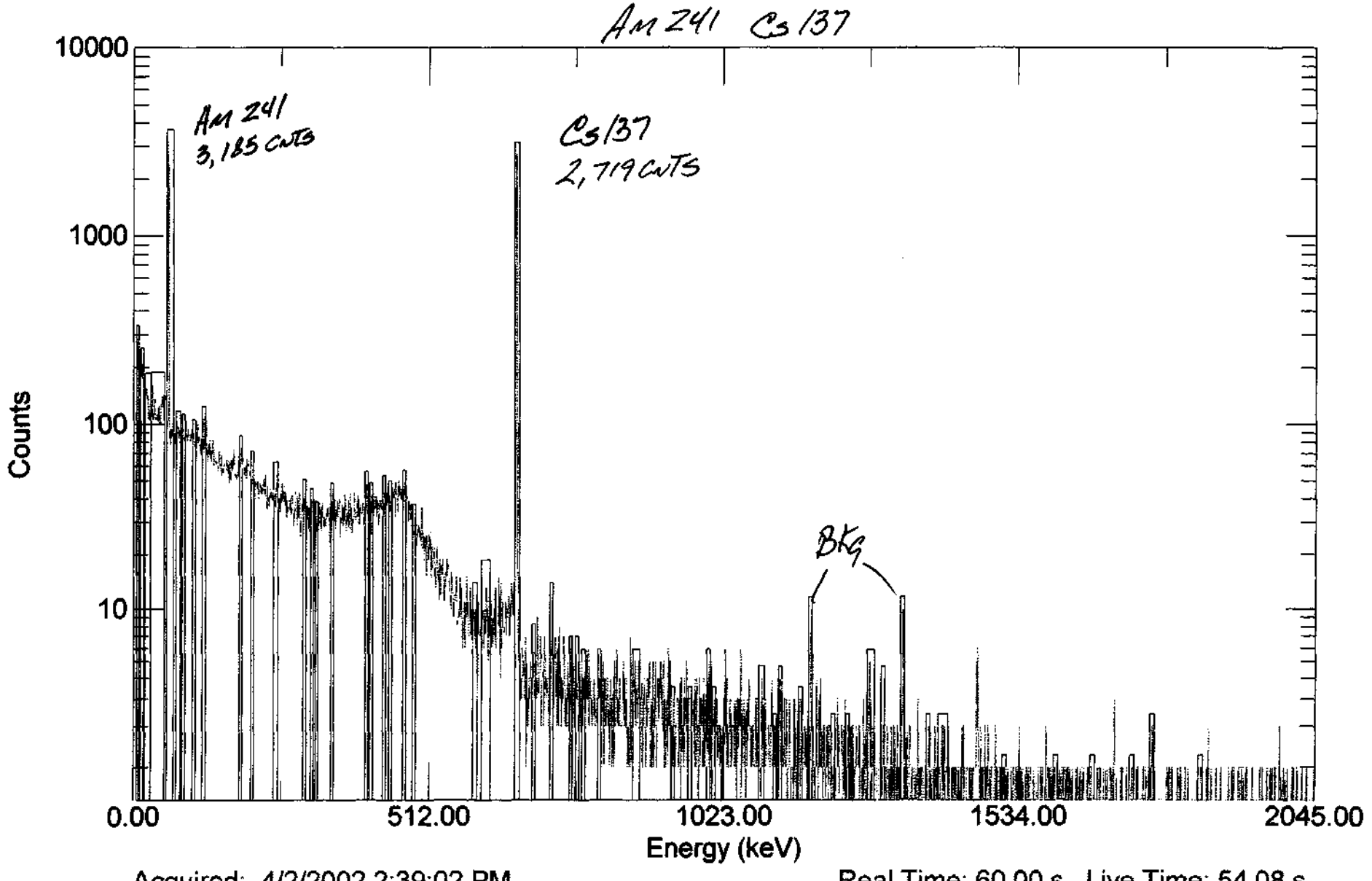
ITEM7-2



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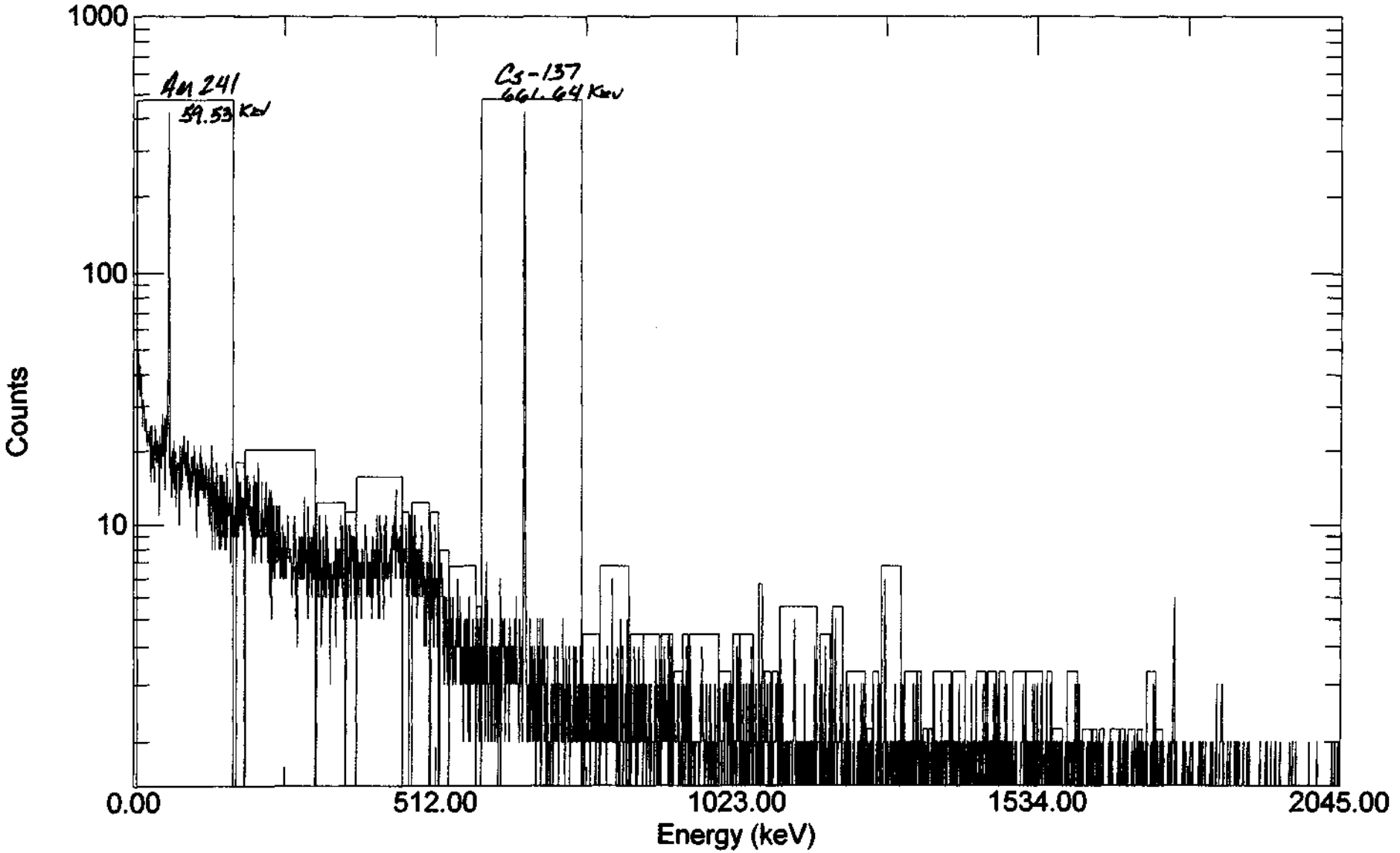
ITEM7



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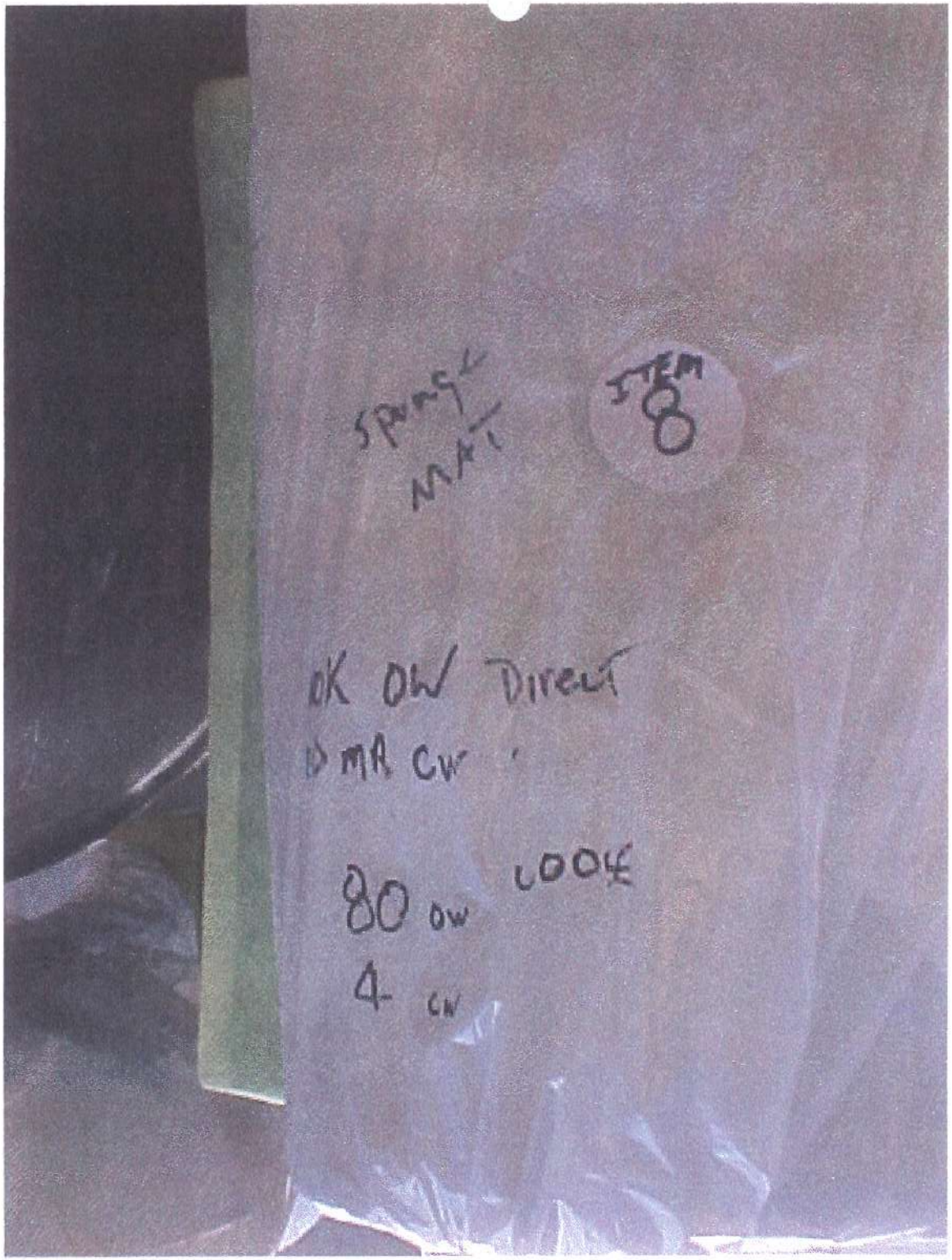
Sponge
MAT
ITEM
8
OK OW Direct
MR CW
80 OW
LOOSE
4 CW

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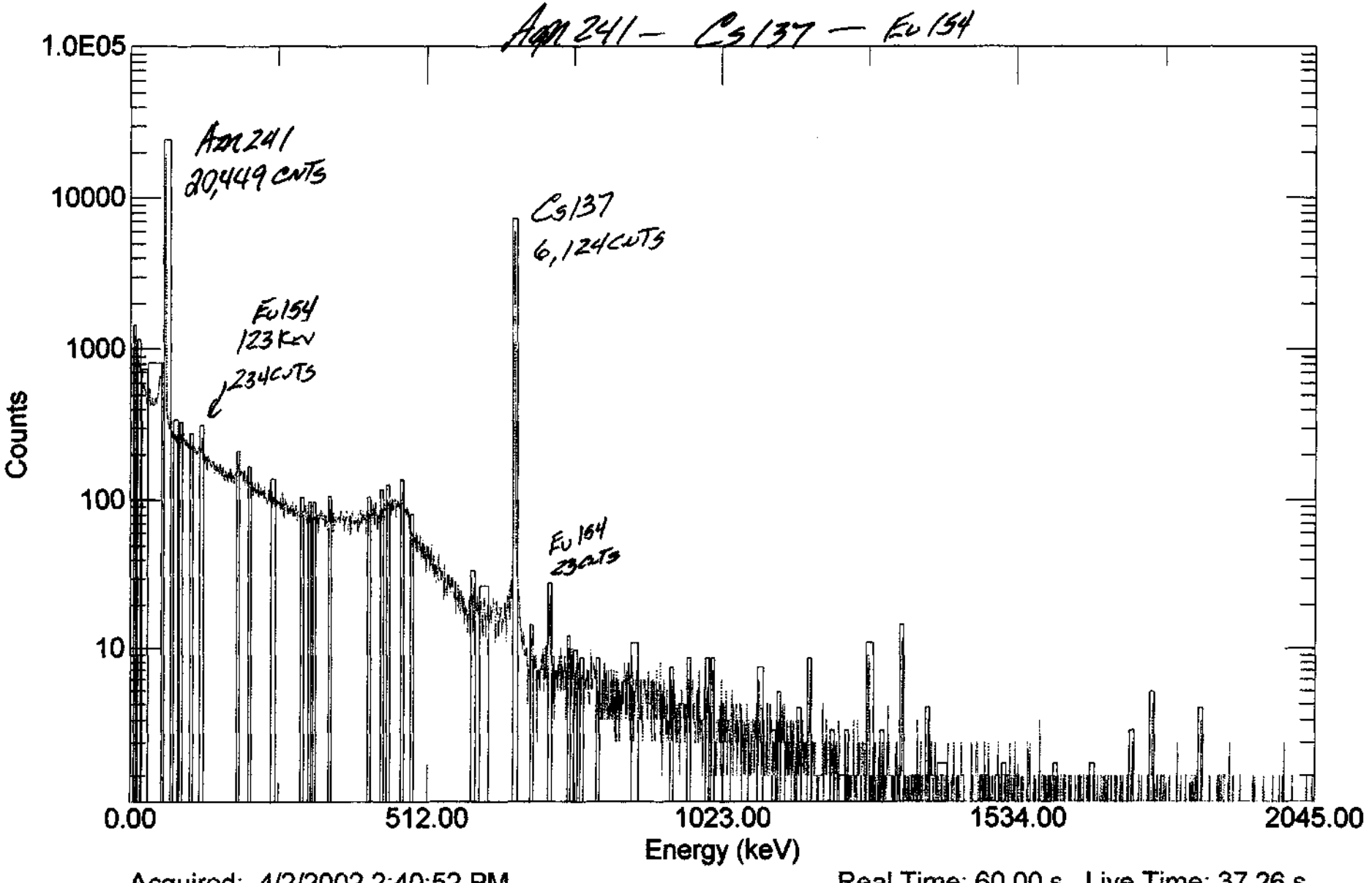
ITEM8.2



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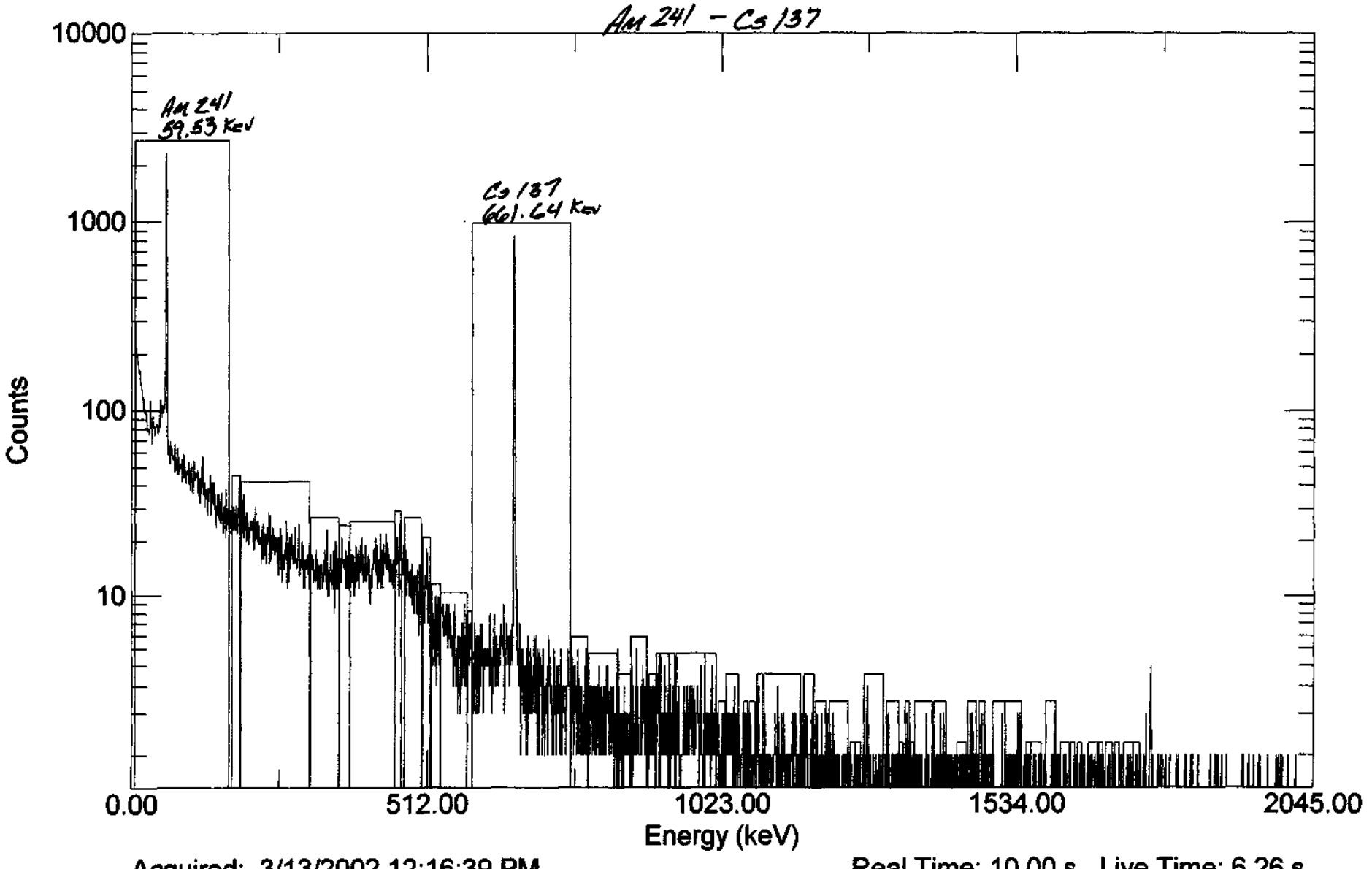

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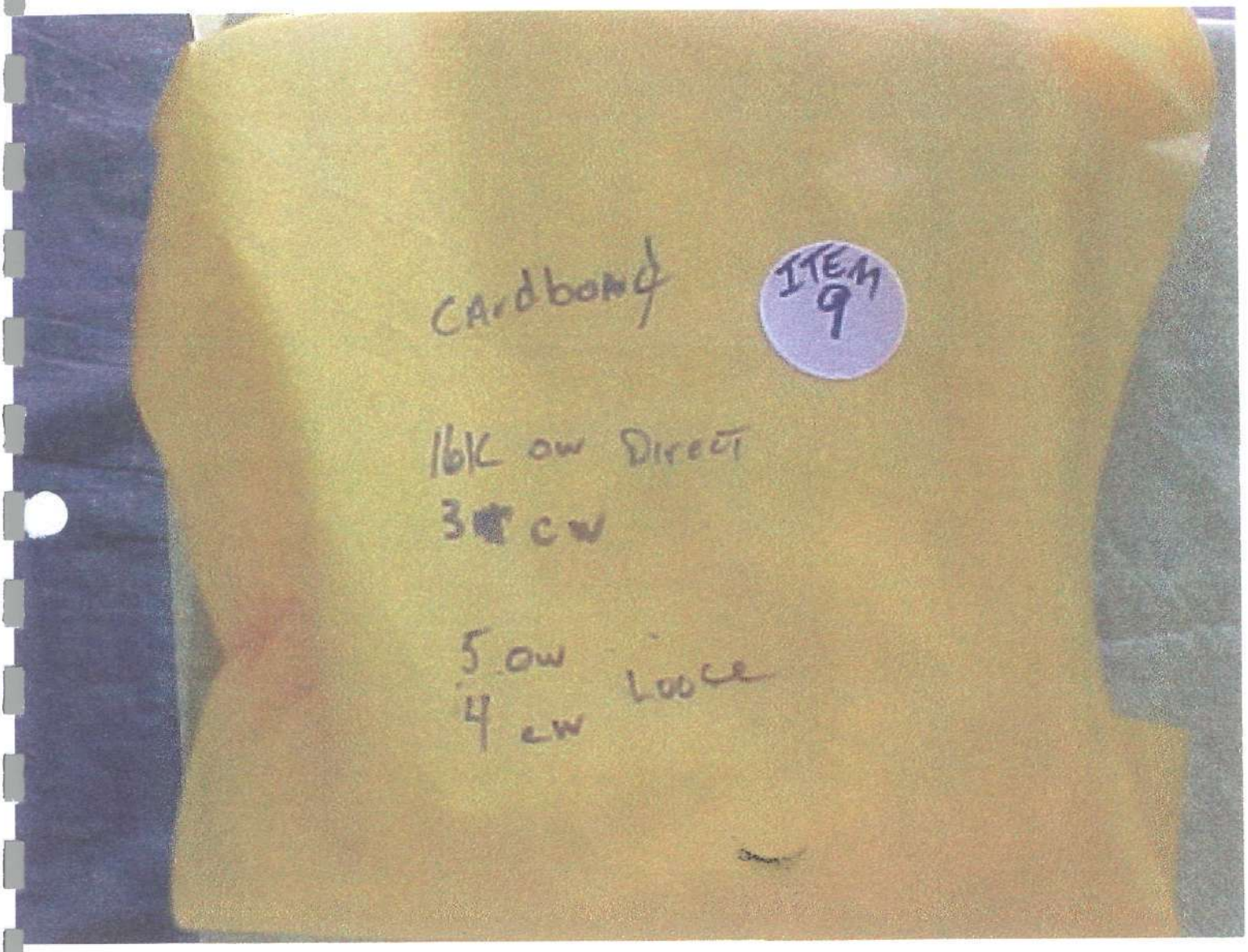
Cardboard
ITEM 9
16K ow Direct
3 cw
5 ow
4 cw
Loce

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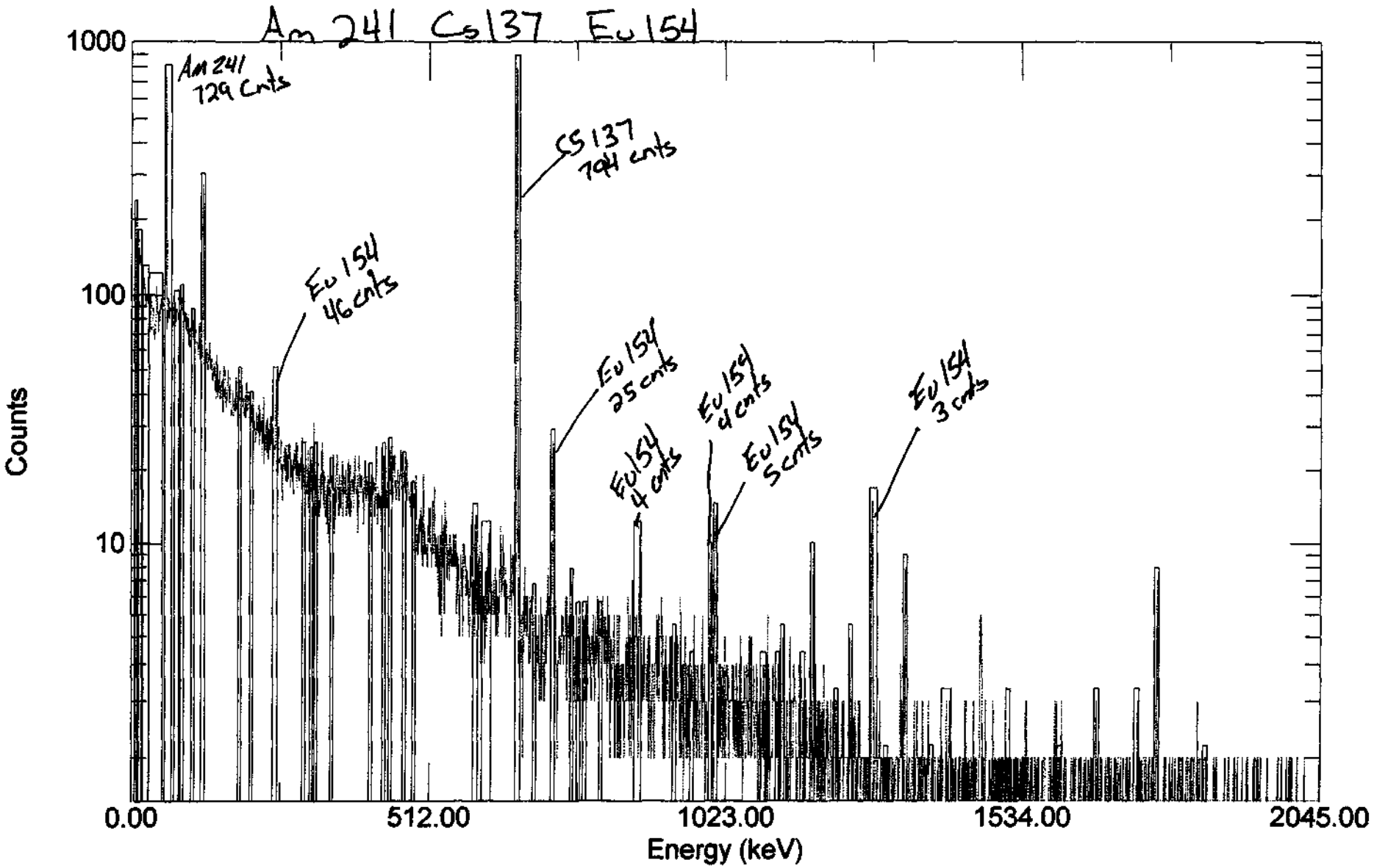
ITEM9-2



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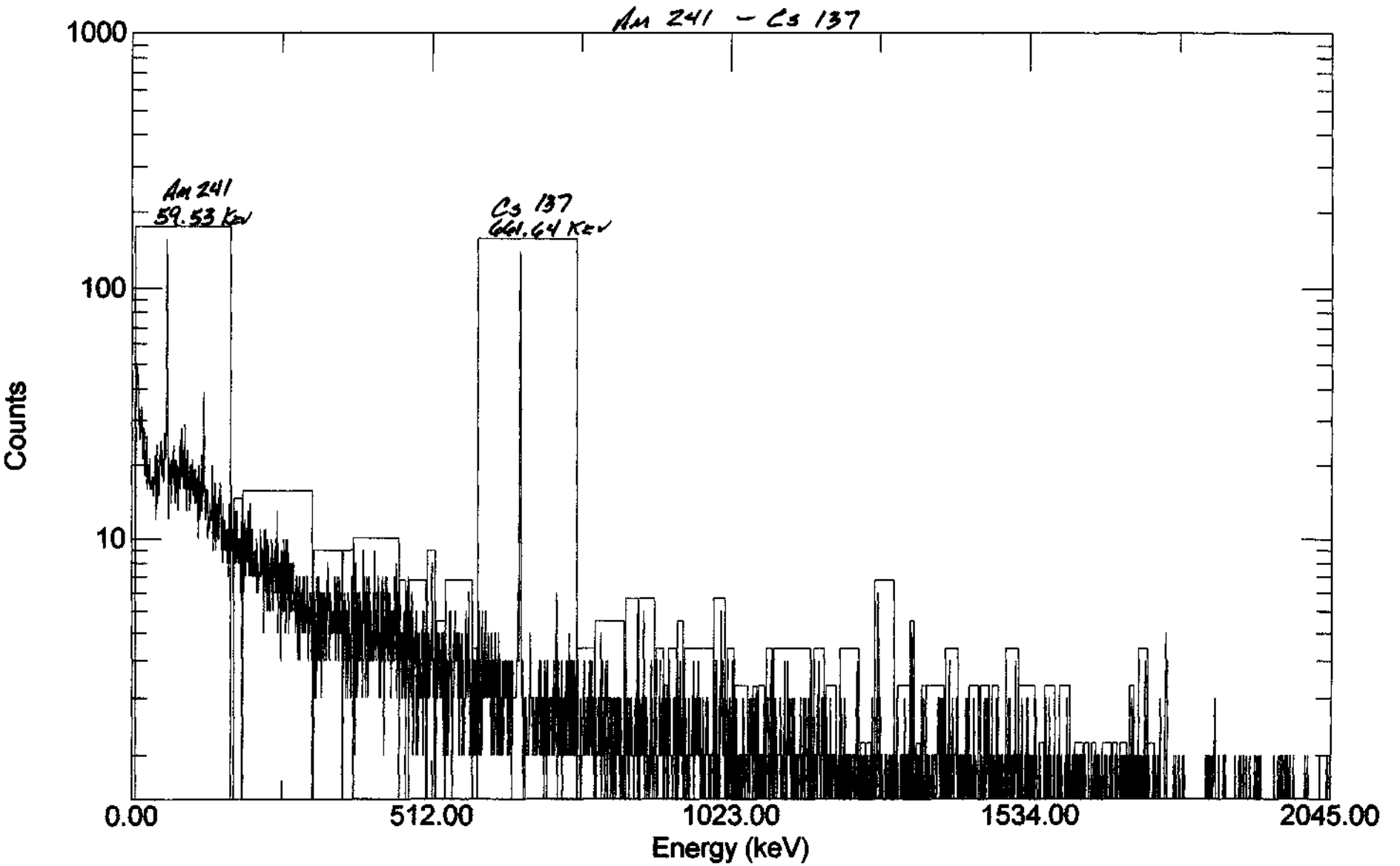
ITEM9



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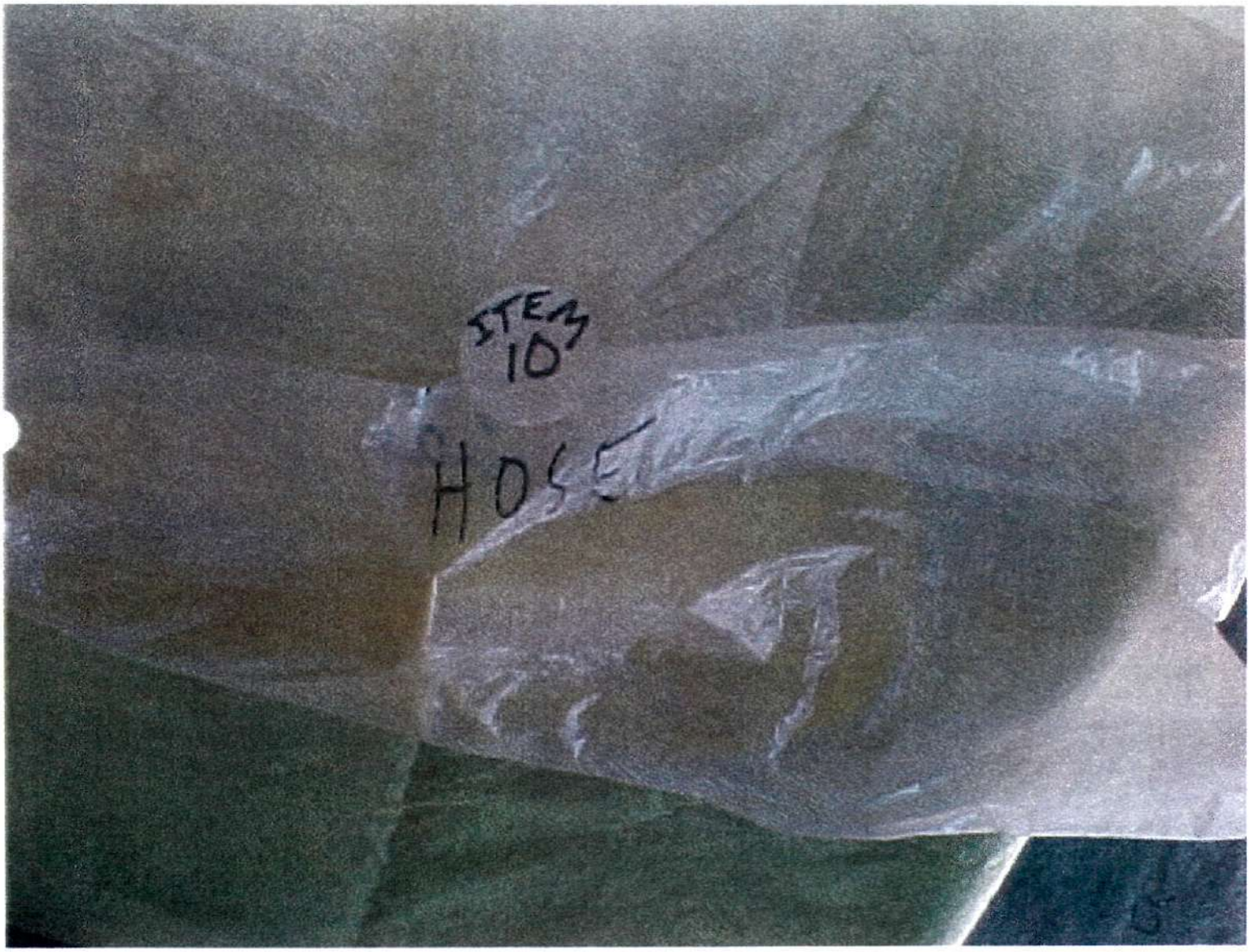
ITEM
10
HOSE

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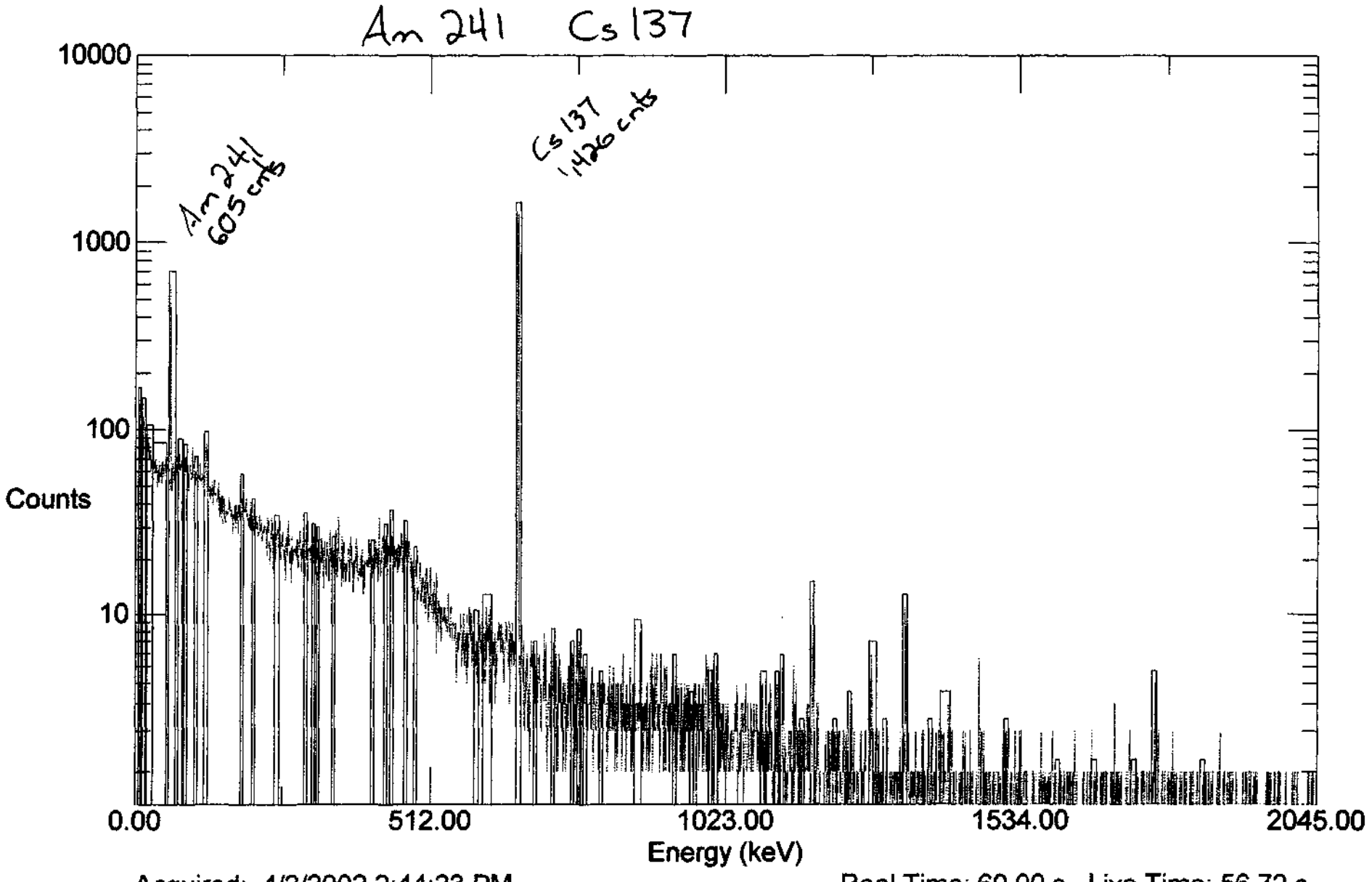
ITEM10-2



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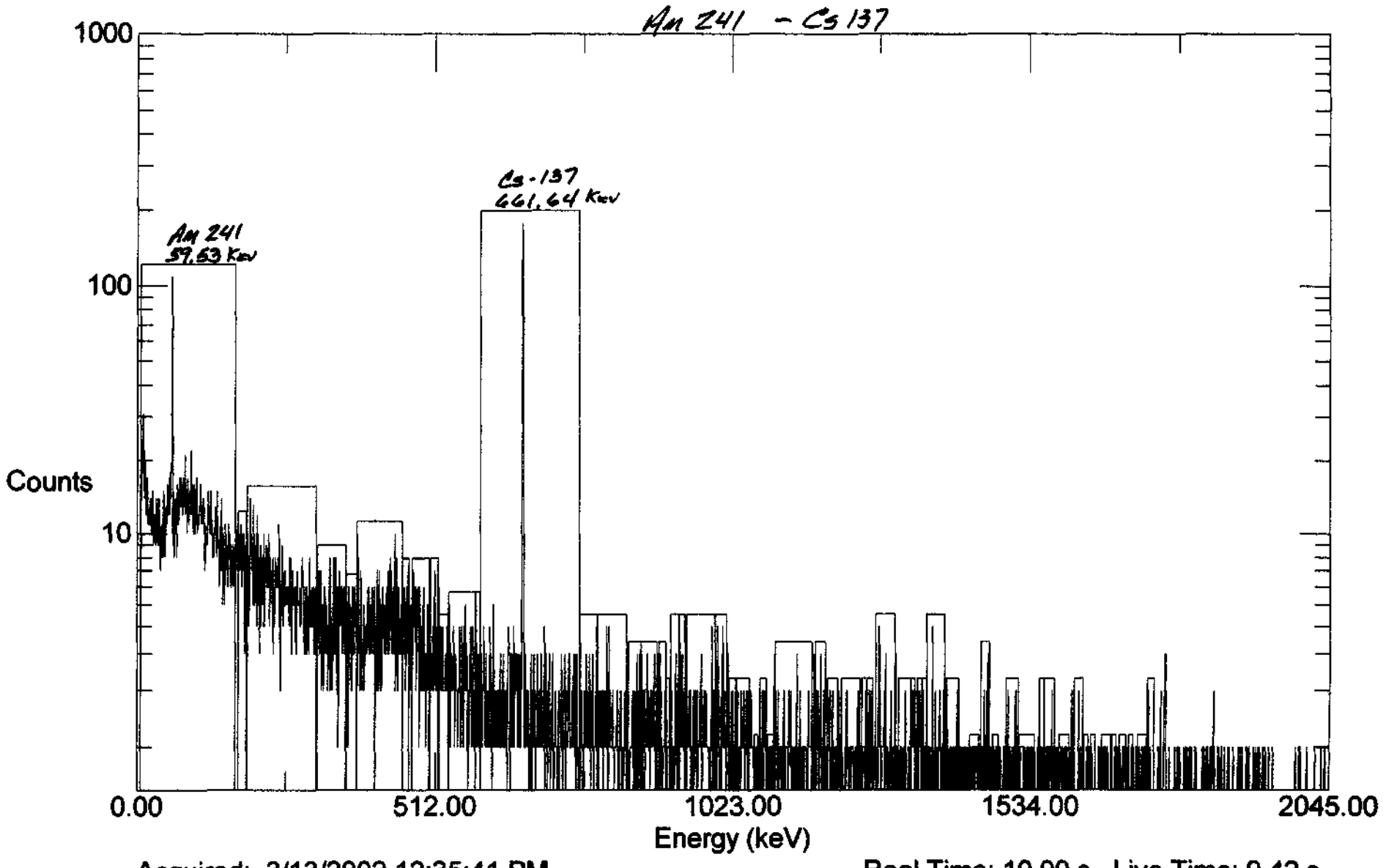

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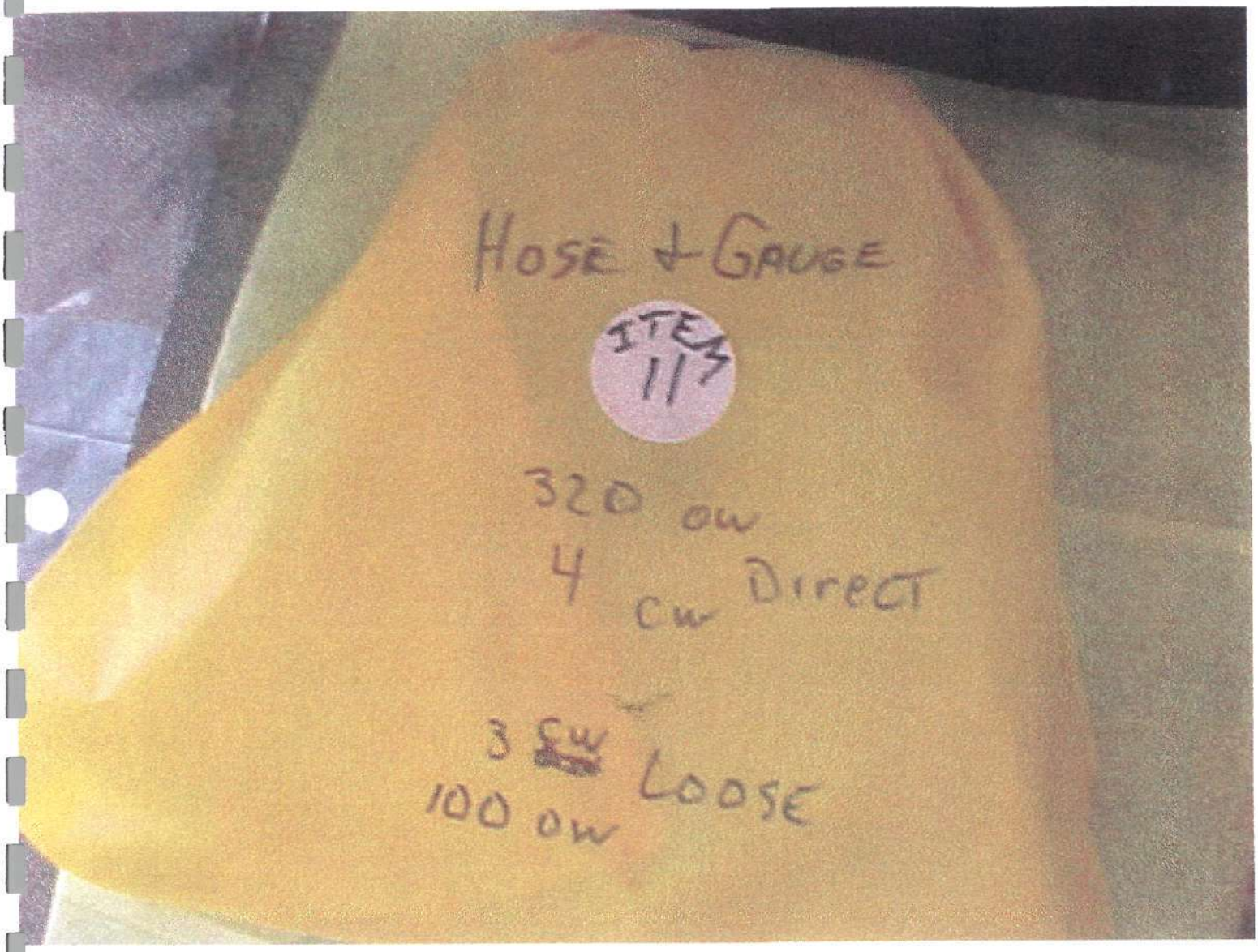
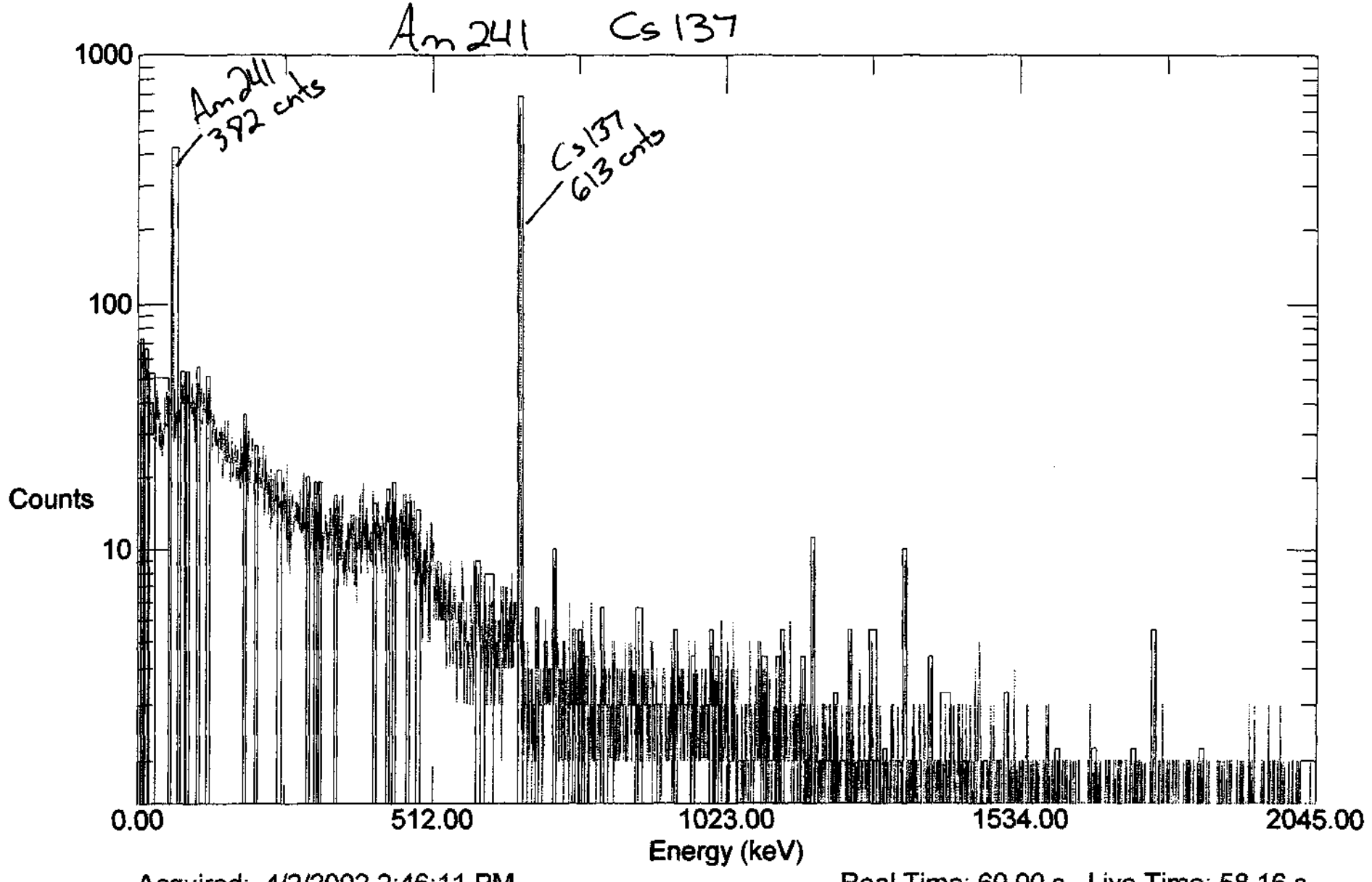

HOSE + GAUGE
ITEM 117
320 OW
4 CW DIRECT
3 CW LOOSE
100 OW

024 ITEM11.2 4-2-2002 2.46.12 PM

ITEM11-2



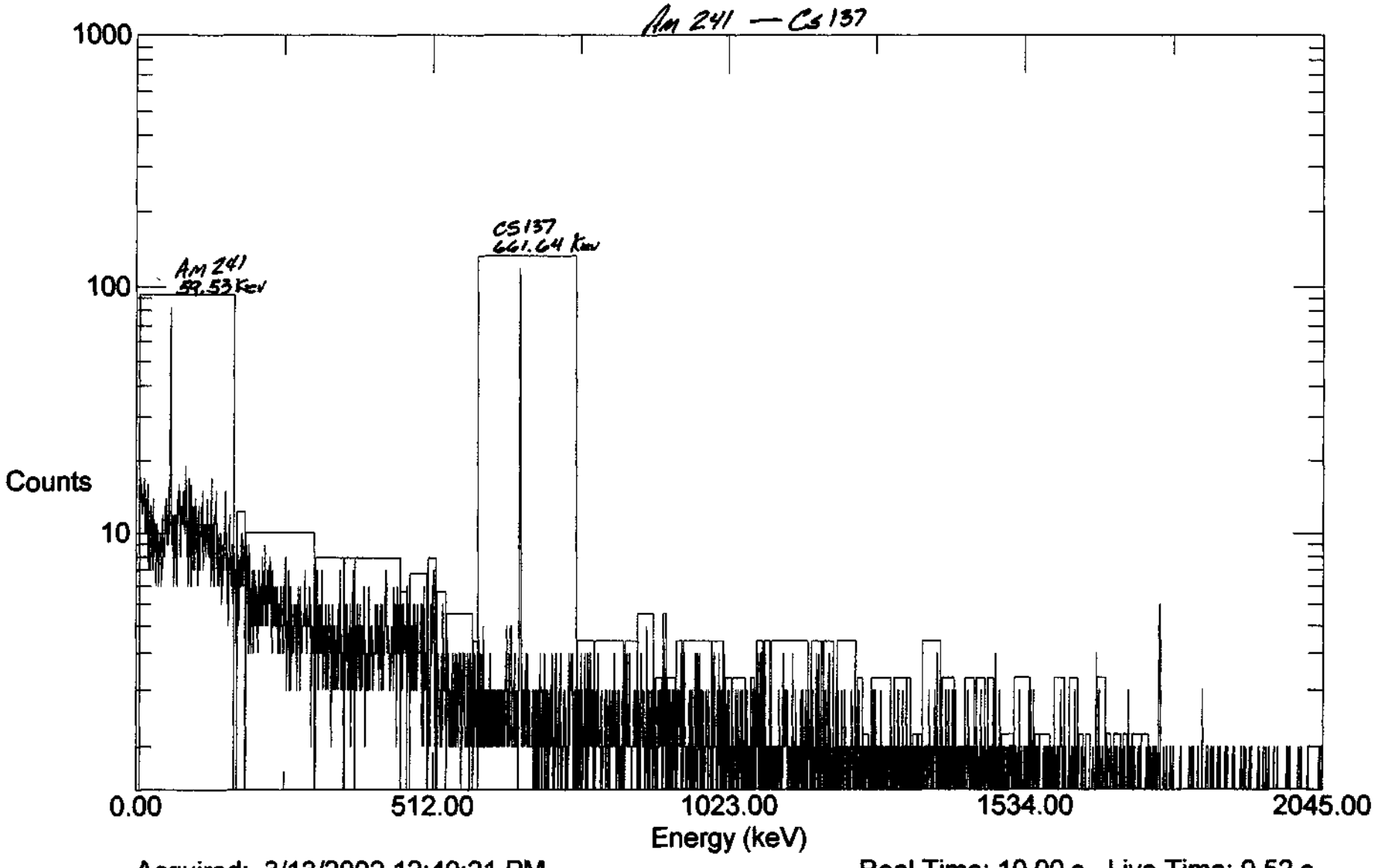
Acquired: 4/2/2002 2:46:11 PM Real Time: 60.00 s. Live Time: 58.16 s.

File: C:\User\GNIWEB~1\024 ITEM11.2 4-2-2002 2.46.12 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

017 ITEM11 3-13-2002 12.40.21 PM

ITEM11



Acquired: 3/13/2002 12:40:21 PM Real Time: 10.00 s. Live Time: 9.52 s.

File: C:\User\GNIWEB~1\017 ITEM11 3-13-2002 12.40.21 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-13-07

BKG	mR/hr
6"	<.2
12"	<.2
36"	0.3

	ITEM	ITEM	ITEM	ITEM	ITEM
Container #	12	13	14	15	16
External on pig in mR/hr	N/A	N/A	N/A	N/A	NA
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	20	1.5	2	5	0.2
Beta on open pig mR/hr O/W	2000	1000	300	2000	200

Picture	✓	✓	✓	✓	
	✓	✓	✓	✓	✓

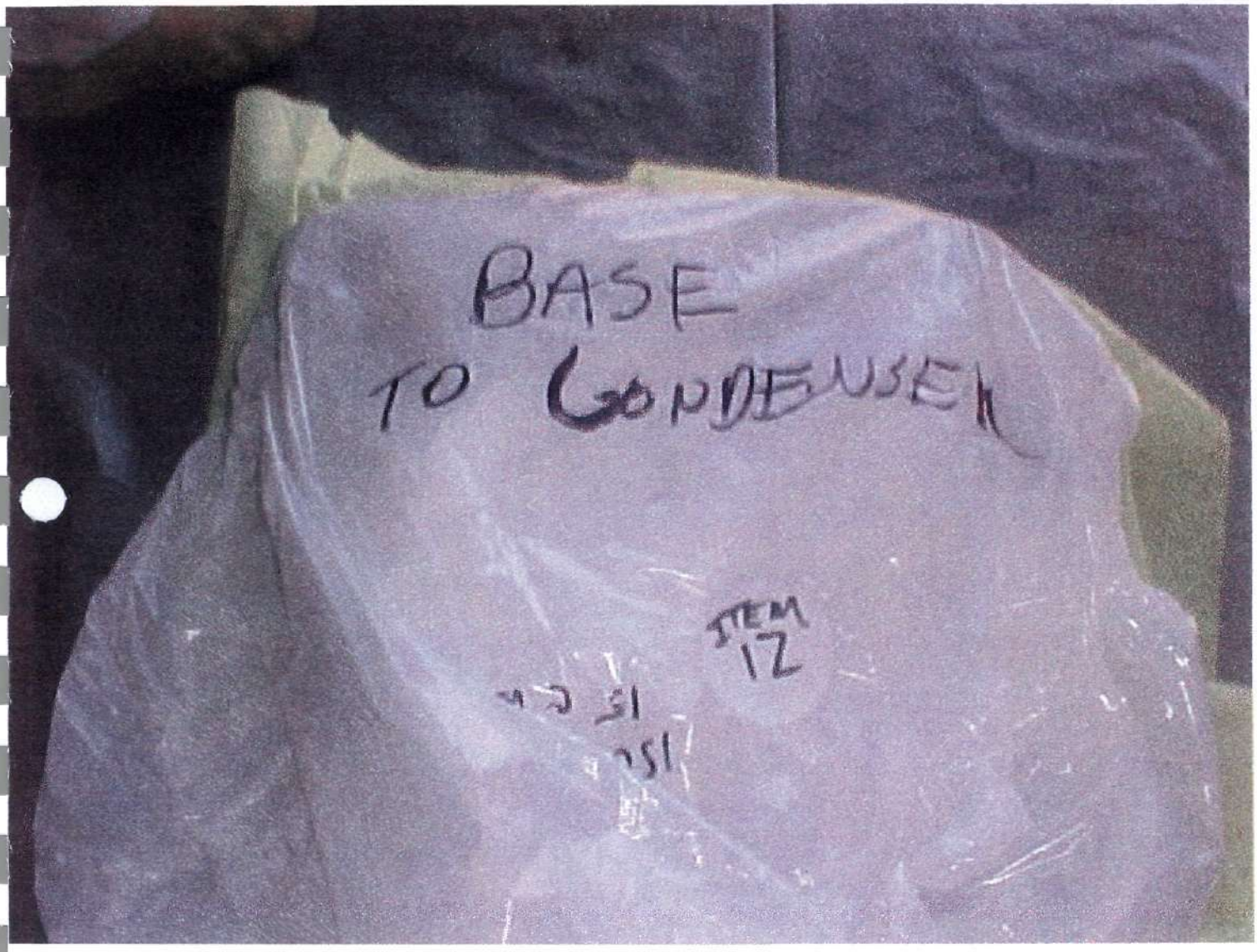
Table Readings

Source mR/hr @ 6 inchs	0.7	0.2	0.3	0.3	<.2
Source mR/hr @ 12 inches	0.5	~~0.4~~ <.0	0.2	~~0.4~~ 0.2	<.2
Source mR/hr @ 36 inches	0.2	<0.3	~~<~~0.2	<0.2	<.2
Size of source in cc's	2300.8	~~155.6~~	~~525.32~~	100	30
Weight in grams	4540	381.312	525.32 155cc	161.2	59

CPM Alpha					
Direct Beta/Gamma	2000 ow 20 cw	1000/1.5	300/2	2000/5	200/0.2

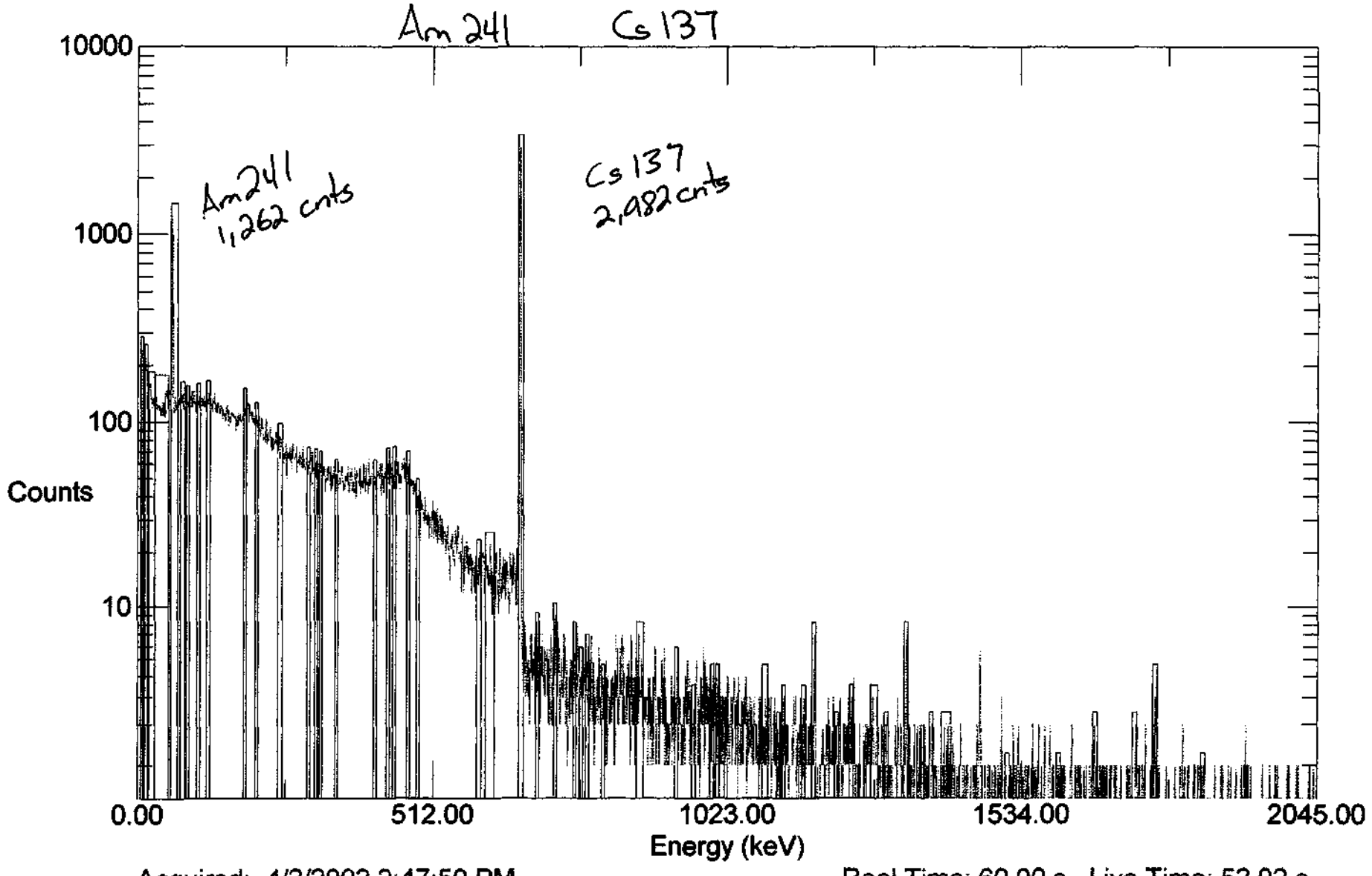
Info on source:	BASE TO GLASS CONDENSER	SCREW DRIVERS (2)	HAMMER & CHISEL	TONGS	NAILS (4)

Information on pig:	NO Pig	NO Pig	NO Pig	NO Pig	NO Pigs
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta	150/15 ow cw				
	BLDG #2 Rm 14				


BASE
TO CONDENSER
ITEM
12

025 ITEM12.2 4-2-2002 2.47.50 PM

ITEM12-2



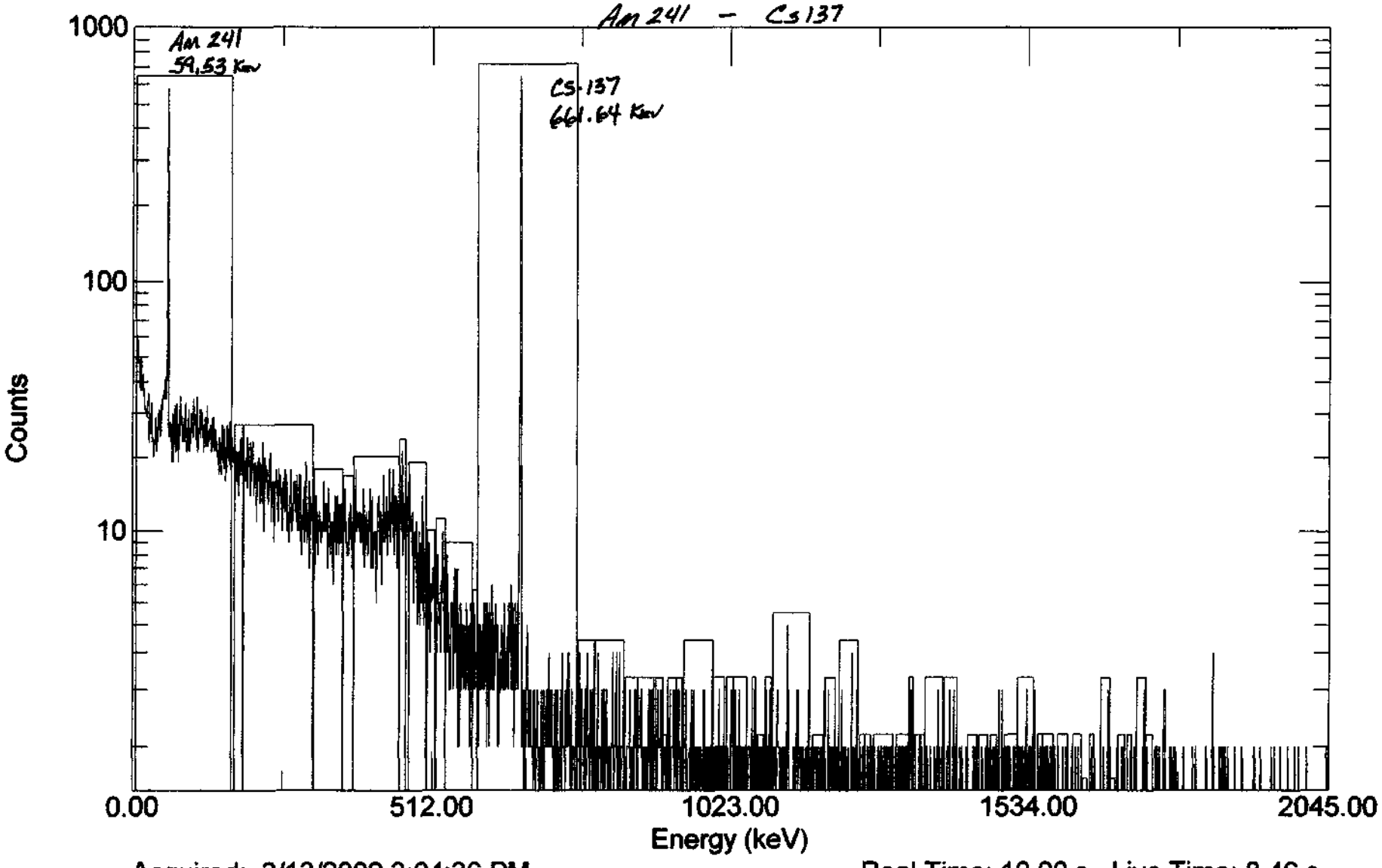
Acquired: 4/2/2002 2:47:50 PM Real Time: 60.00 s. Live Time: 52.02 s.

File: C:\User\GNIWEB~1\025 ITEM12.2 4-2-2002 2.47.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

018 ITEM12 3-13-2002 3.04.36 PM

ITEM12



Acquired: 3/13/2002 3:04:36 PM Real Time: 10.00 s. Live Time: 8.46 s.

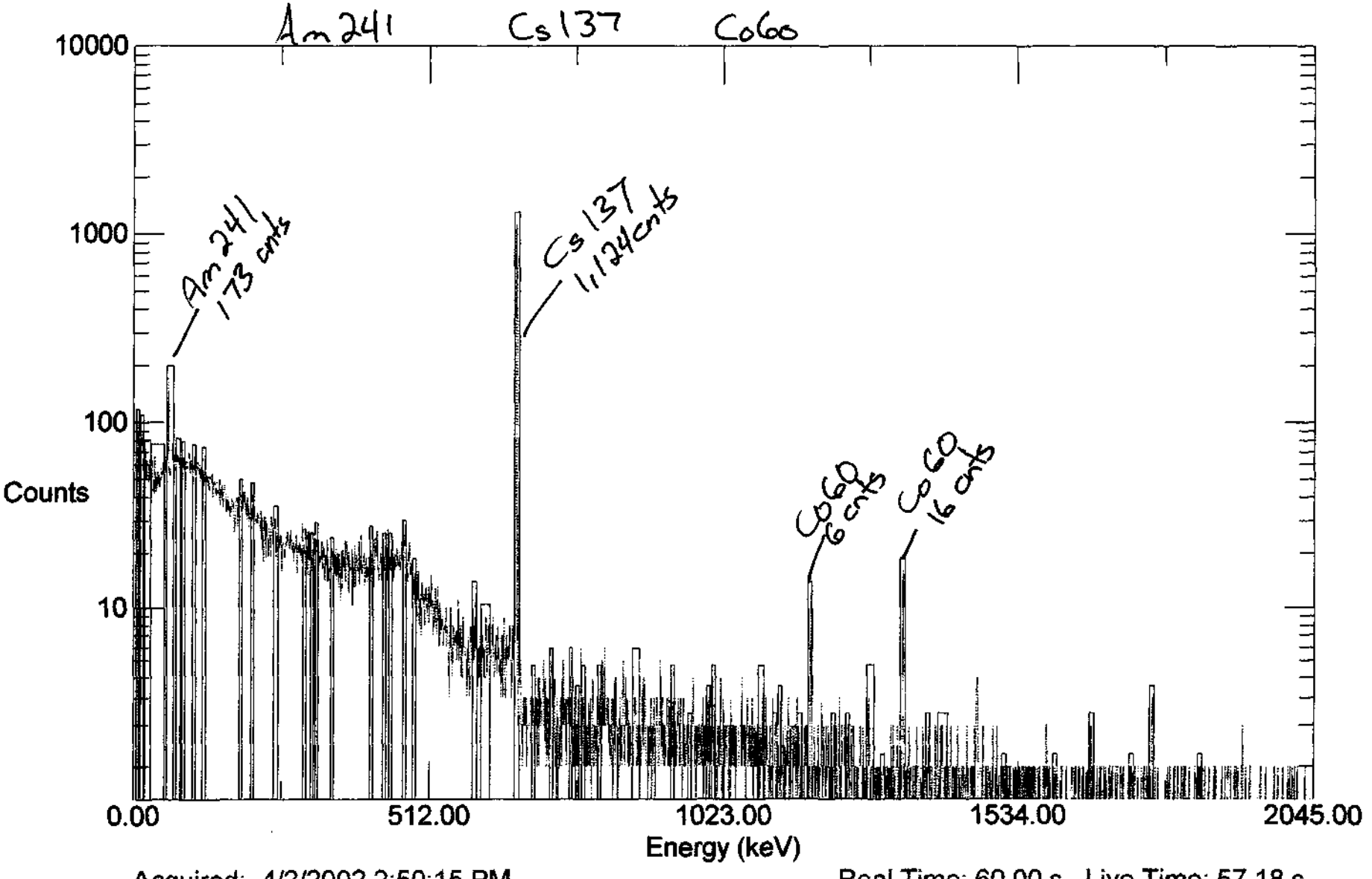
File: C:\User\GNIWEB~1\018 ITEM12 3-13-2002 3.04.36 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM
13

026 ITEM13.2 4-2-2002 2.50.14 PM

ITEM13-2



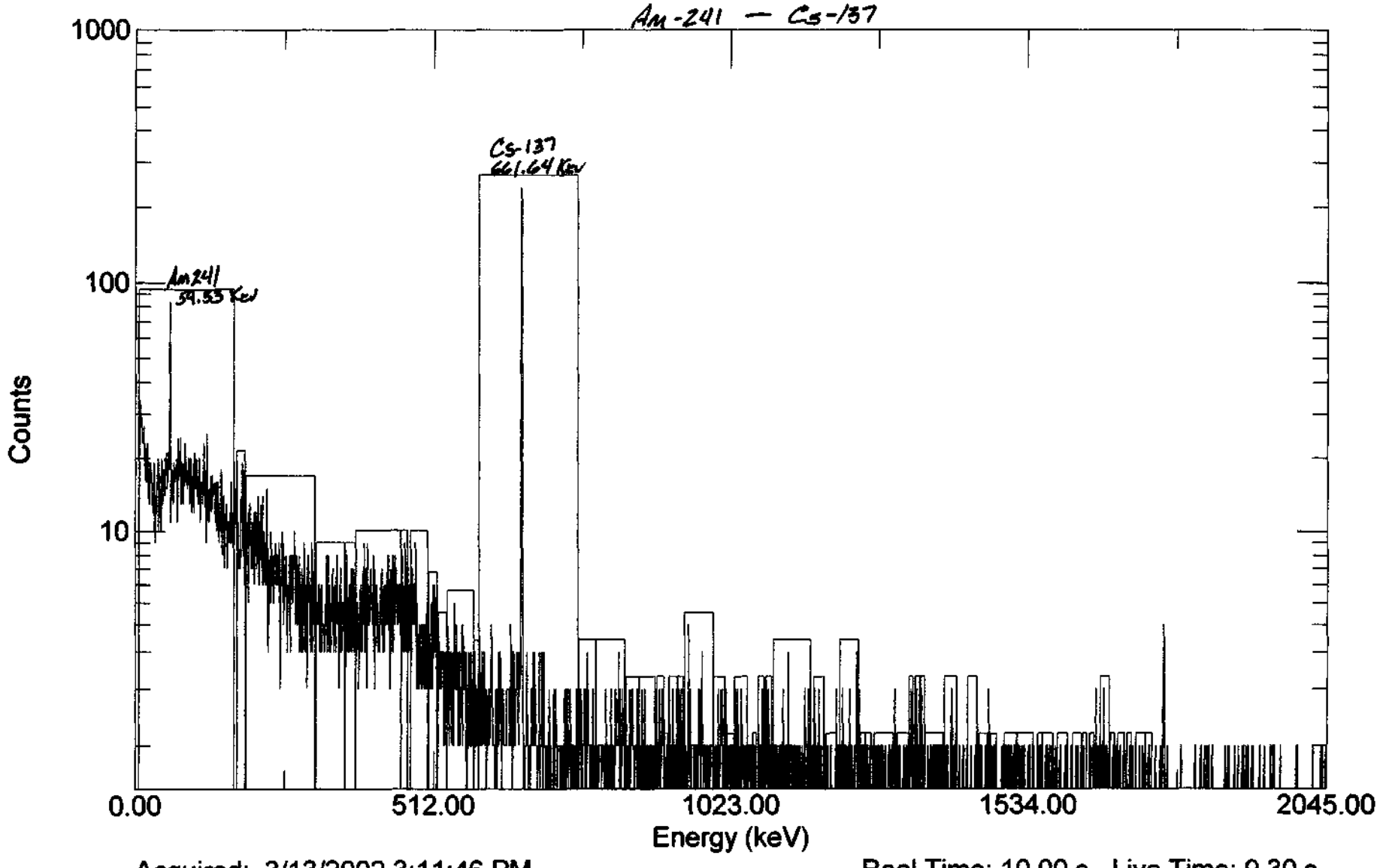
Acquired: 4/2/2002 2:50:15 PM Real Time: 60.00 s. Live Time: 57.18 s.

File: C:\User\GNIWEB~1\026 ITEM13.2 4-2-2002 2.50.14 PM.Spc Channels: 8192

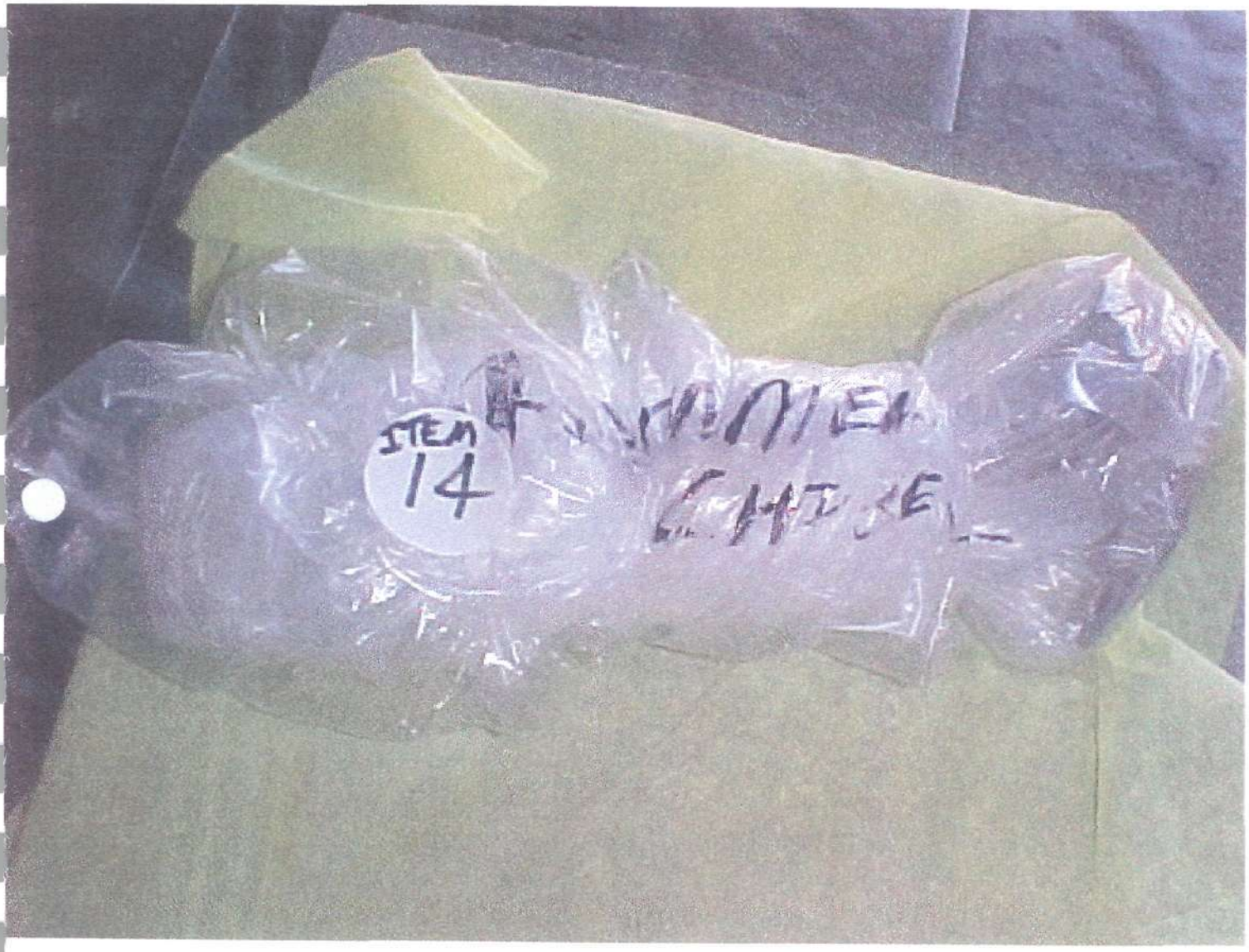
Detector: #1 digiDART USE 1b

019 ITEM13 3-.3-2002 3.11.46 PM

ITEM13

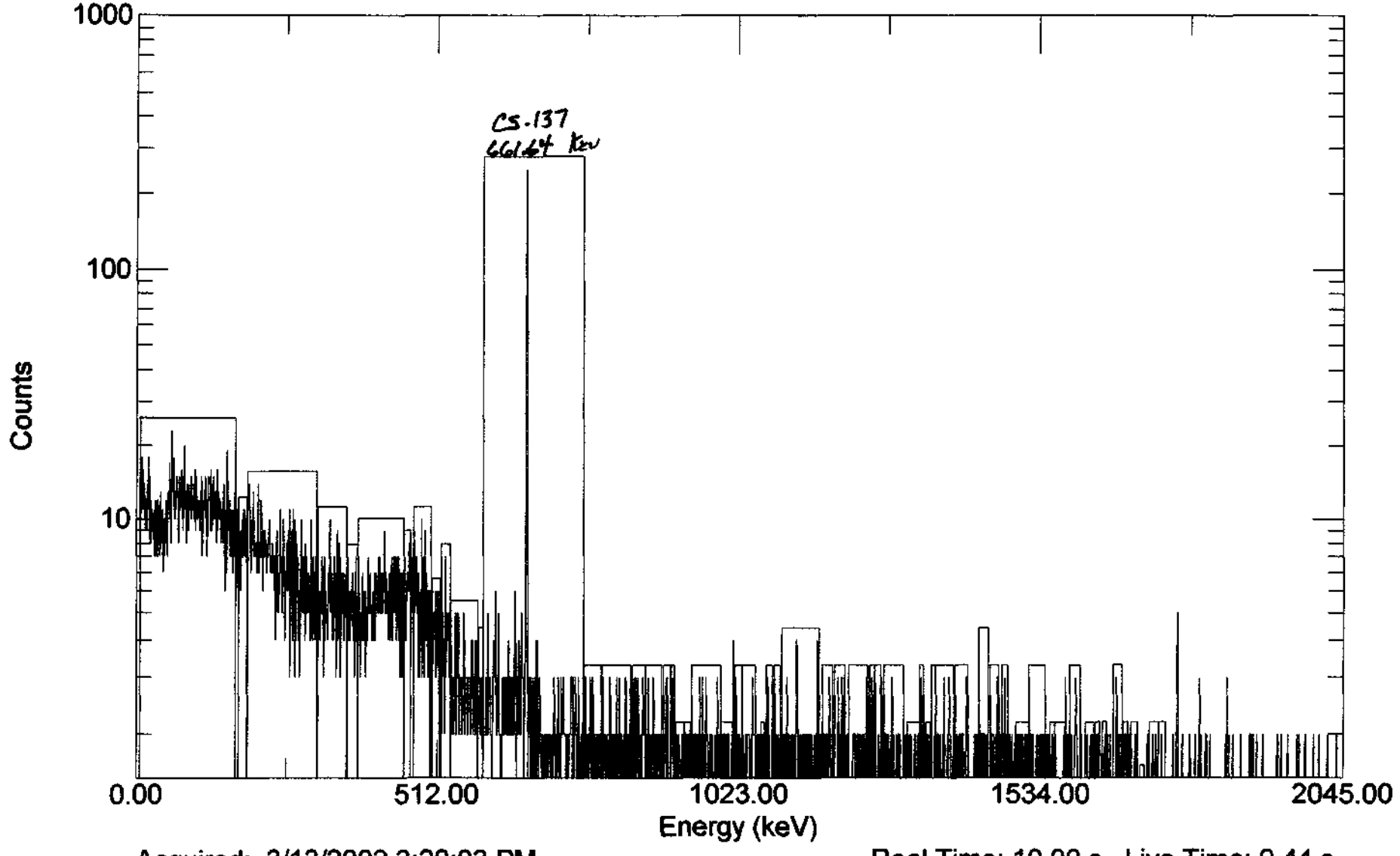


Acquired: 3/13/2002 3:11:46 PM Real Time: 10.00 s. Live Time: 9.30 s.
File: C:\User\GNIWEB~1\019 ITEM13 3-13-2002 3.11.46 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


ITEM
14

020 ITEM14 3-.,-2002 3.20.04 PM

ITEM14



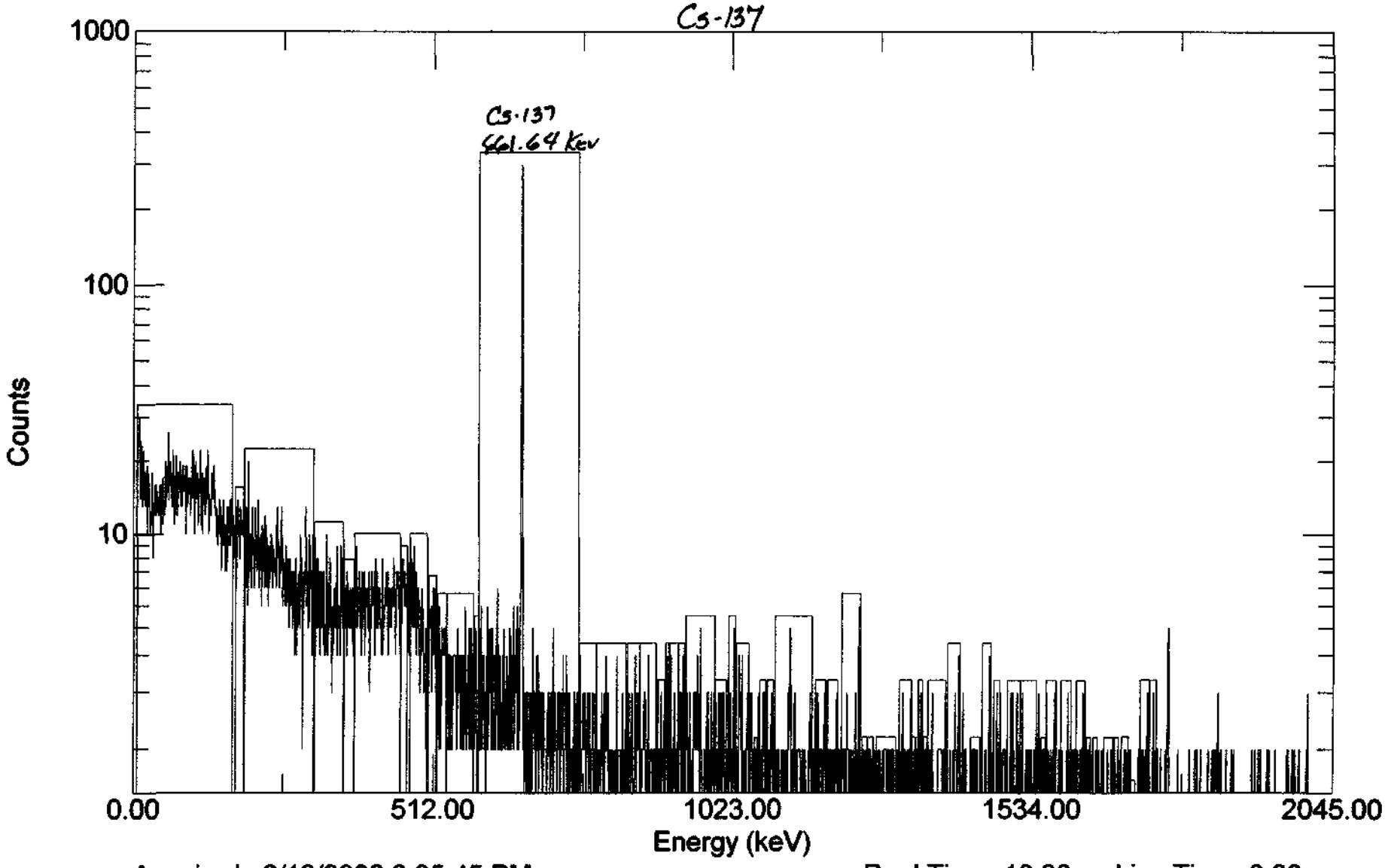
Acquired: 3/13/2002 3:20:03 PM Real Time: 10.00 s. Live Time: 9.44 s.
File: C:\User\GNIWEB~1\020 ITEM14 3-13-2002 3.20.04 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

TONGS

ITEM 15

021 ITEM15 3-13-2002 3.35.45 PM

ITEM15



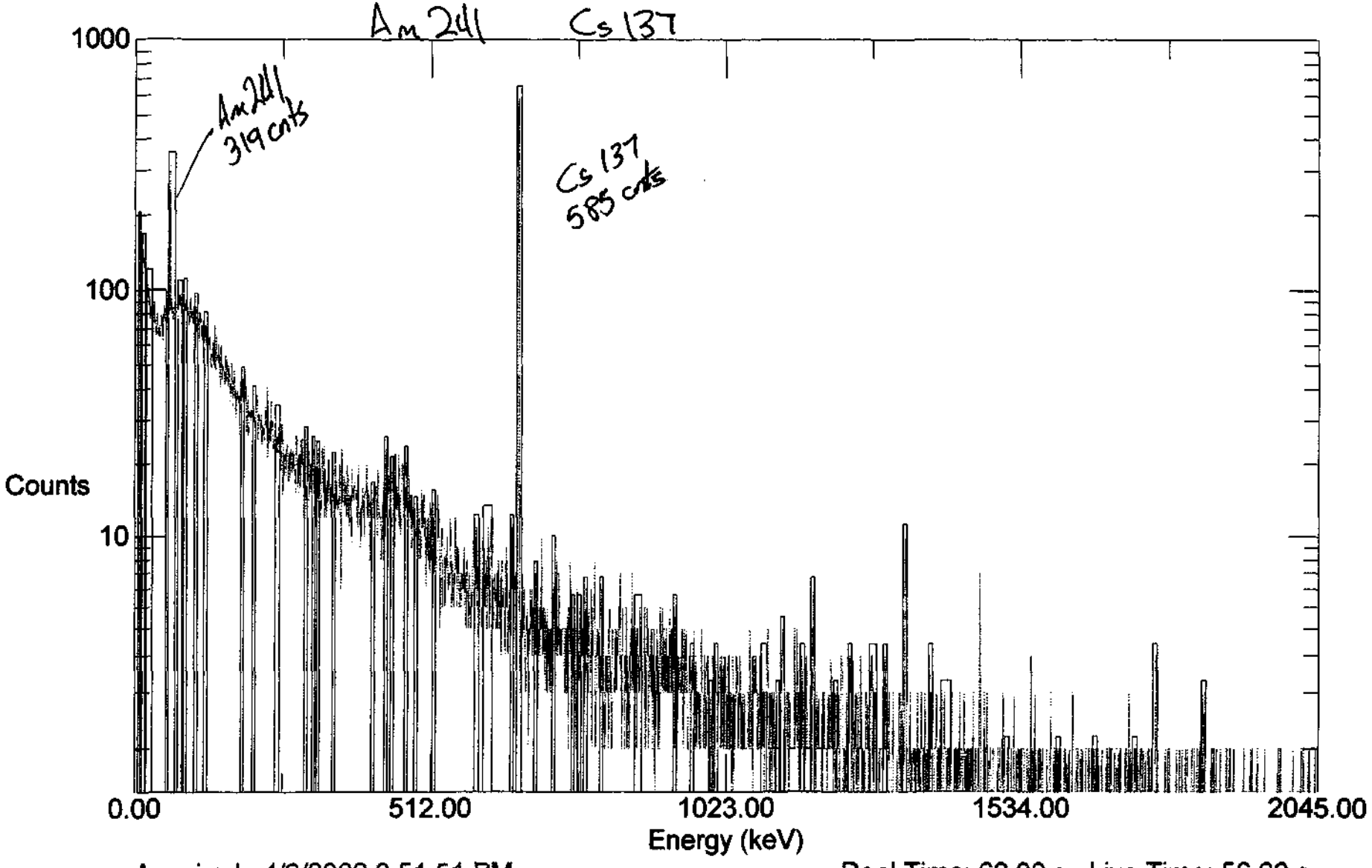
Acquired: 3/13/2002 3:35:45 PM Real Time: 10.00 s. Live Time: 9.28 s.
File: C:\User\GNIWEB~1\021 ITEM15 3-13-2002 3.35.45 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

NAILS

ITEM 16

027 ITEM16.2 4-2-2002 2.51.51 PM

ITEM16-2



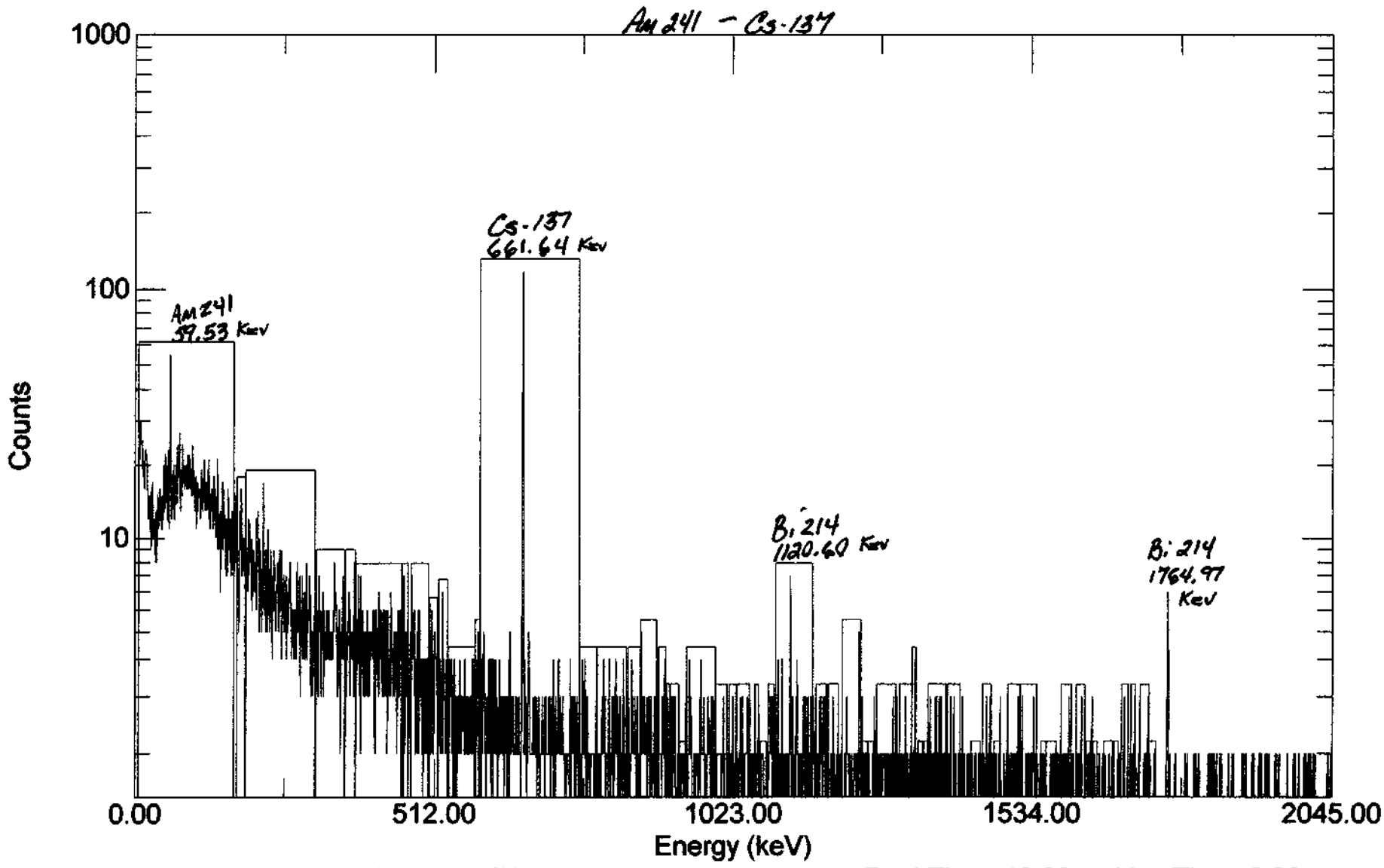
Acquired: 4/2/2002 2:51:51 PM Real Time: 60.00 s. Live Time: 56.60 s.

File: C:\User\GNIWEB~1\027 ITEM16.2 4-2-2002 2.51.51 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

022 ITEM16 3-13-2002 3.40.55 PM

ITEM16



Acquired: 3/13/2002 3:40:55 PM Real Time: 10.00 s. Live Time: 9.38 s.

File: C:\User\GNIWEB~1\022 ITEM16 3-13-2002 3.40.55 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-13-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	0.3

	Item	Item			
Container #	17	18			
External on pig in mR/hr	N/A	N/A			
External on pig Neutron mR/hr	<1	<1			
Contact open pig mR/hr	5	1			
Beta on open pig mR/hr O/W	70	5			

Picture	✓ ✓	✓ ✓			

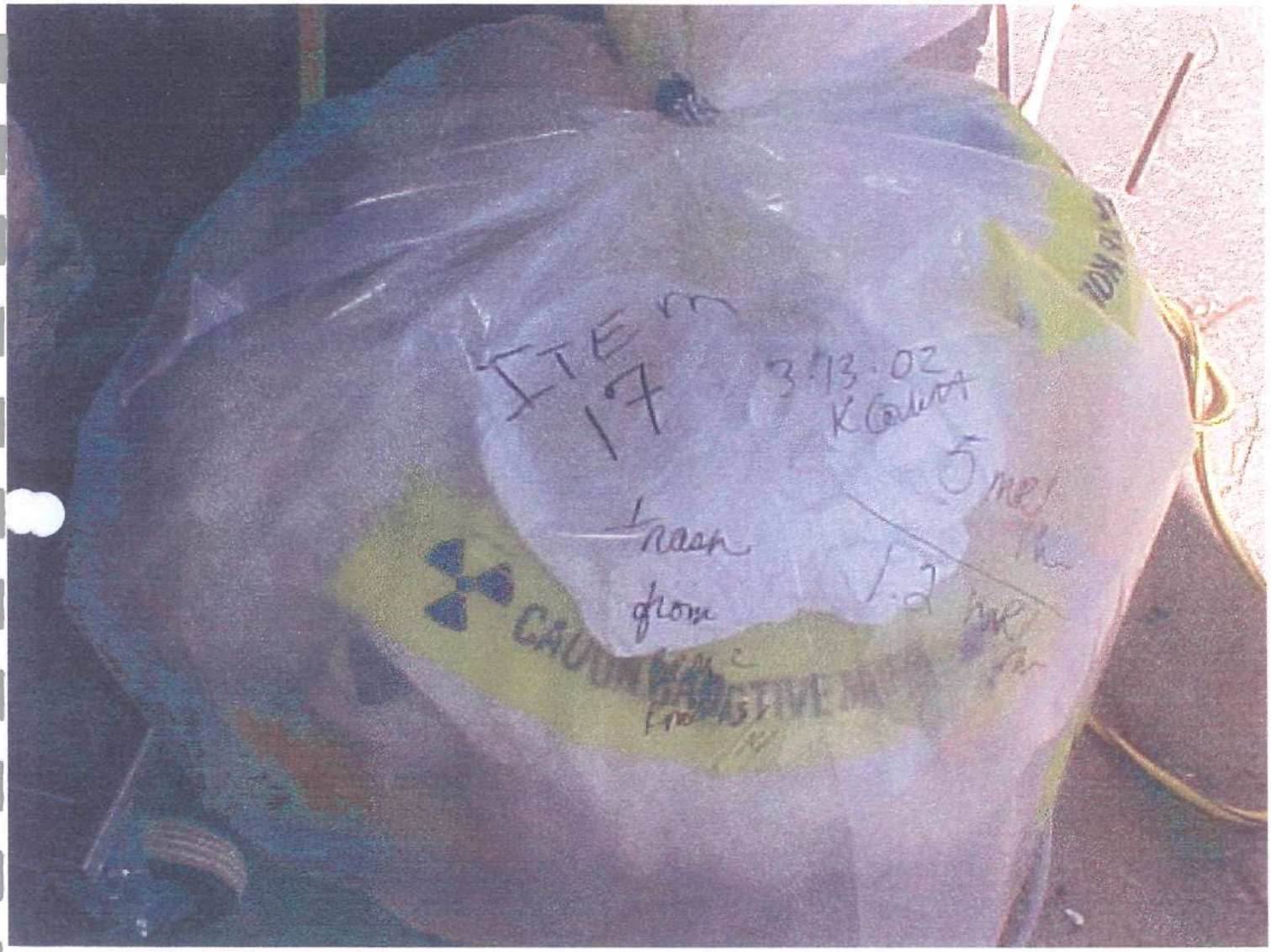
Table Readings

Source mR/hr @ 6 inchs	1.2 ~~0.4~~	0.3			
Source mR/hr @ 12 inches	0.4	0.2			
Source mR/hr @ 36 inches	0.2	0.2			
Size of source in cc's	~~826,000~~	39,000			
Weight in grams	10,160	31,780			

CPM Alpha					
Direct Beta/Gamma					

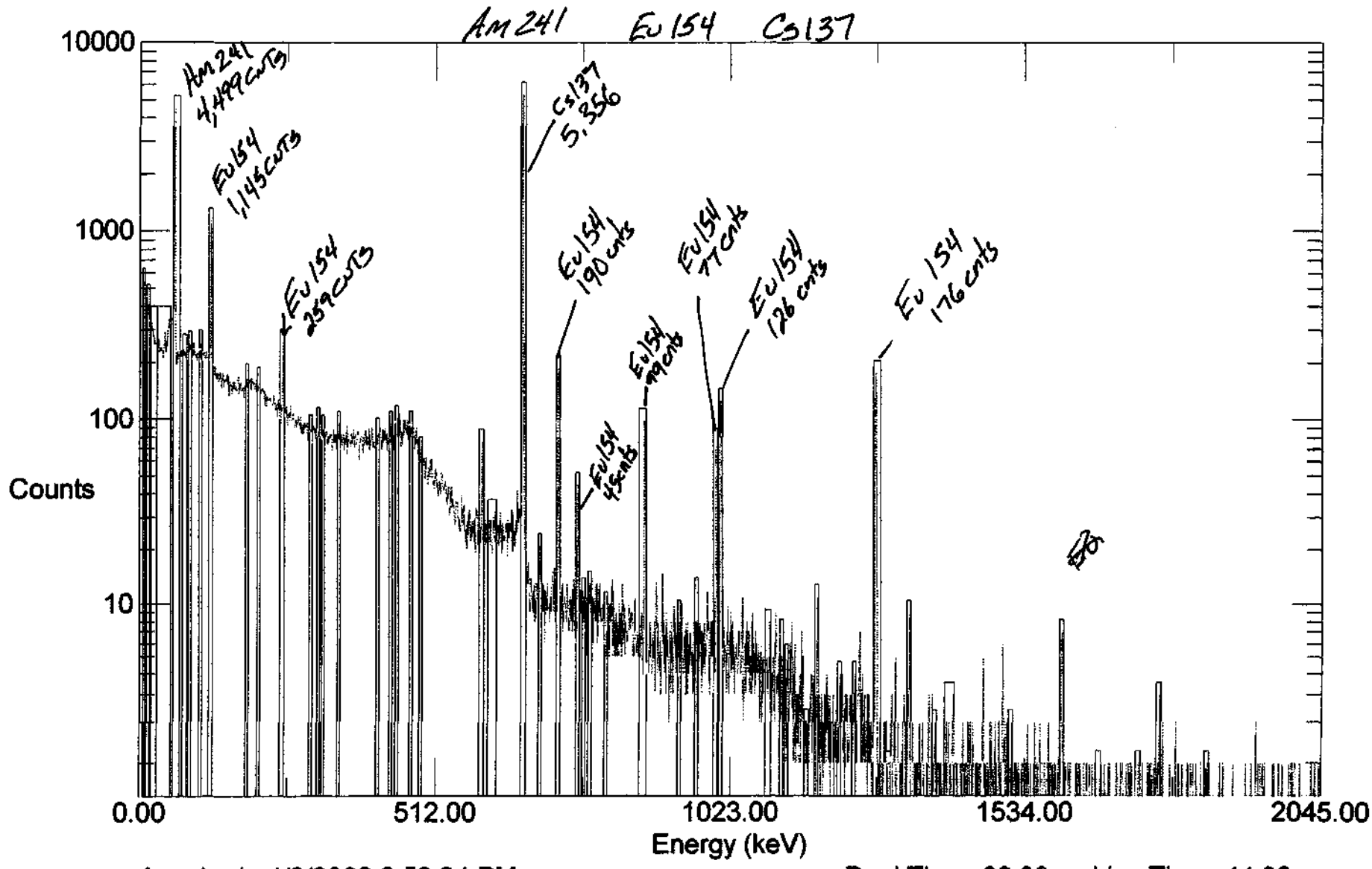
Info on source:	TRASH	TRASH			

Information on pig:	TRASH FROM #2 RM #14	BLDG #2 RM#14			
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					


ITEM
17
3.13.02
K Calvert
5 mrs
1 trash
from
1.2 mrs
CAUTION

028 ITEM17.2 4-2-2002 2.53.34 PM

ITEM17-2



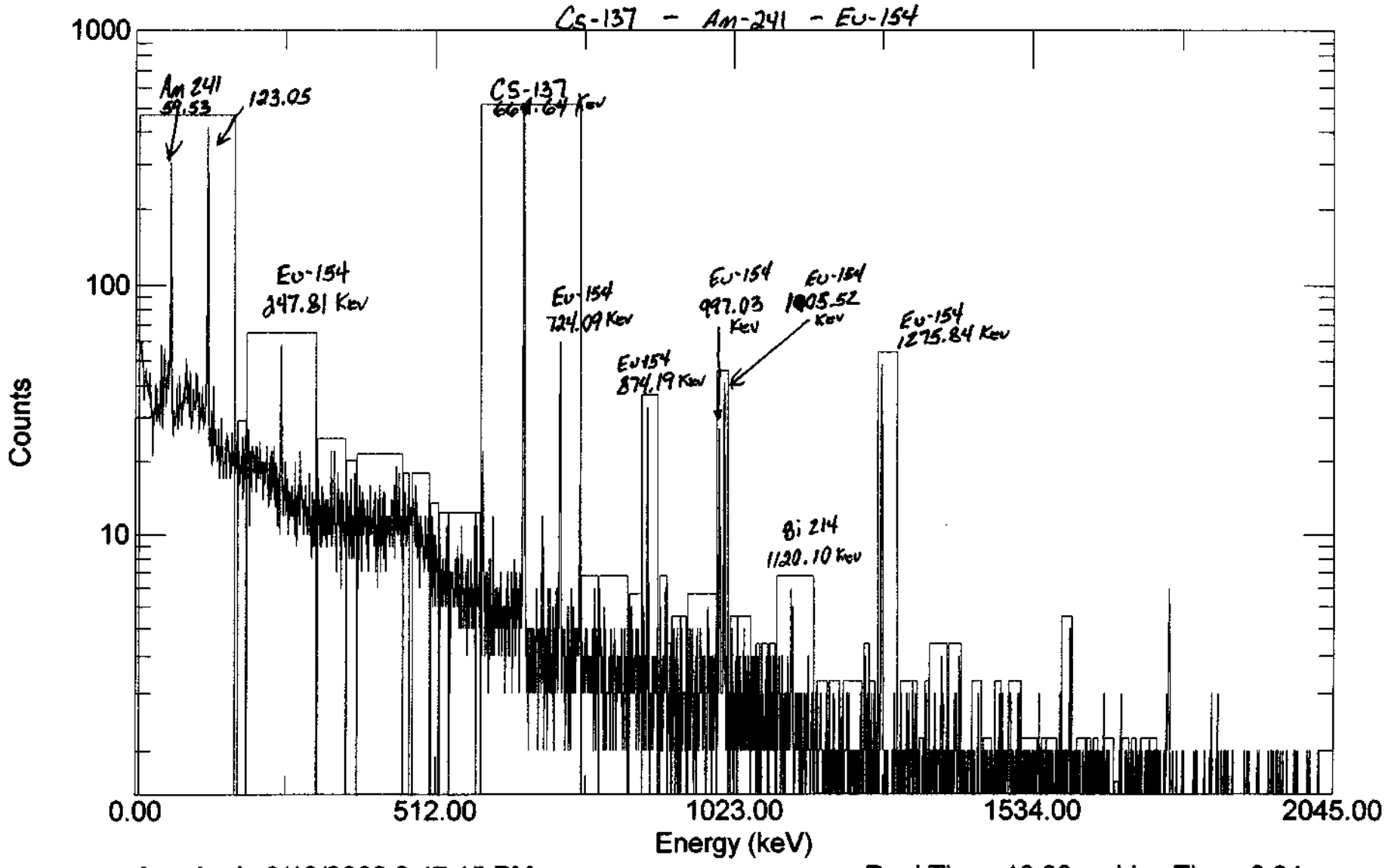
Acquired: 4/2/2002 2:53:34 PM Real Time: 60.00 s. Live Time: 44.38 s.

File: C:\User\GNIWEB~1\028 ITEM17.2 4-2-2002 2.53.34 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

023 ITEM17 3 .3-2002 3.47.15 PM

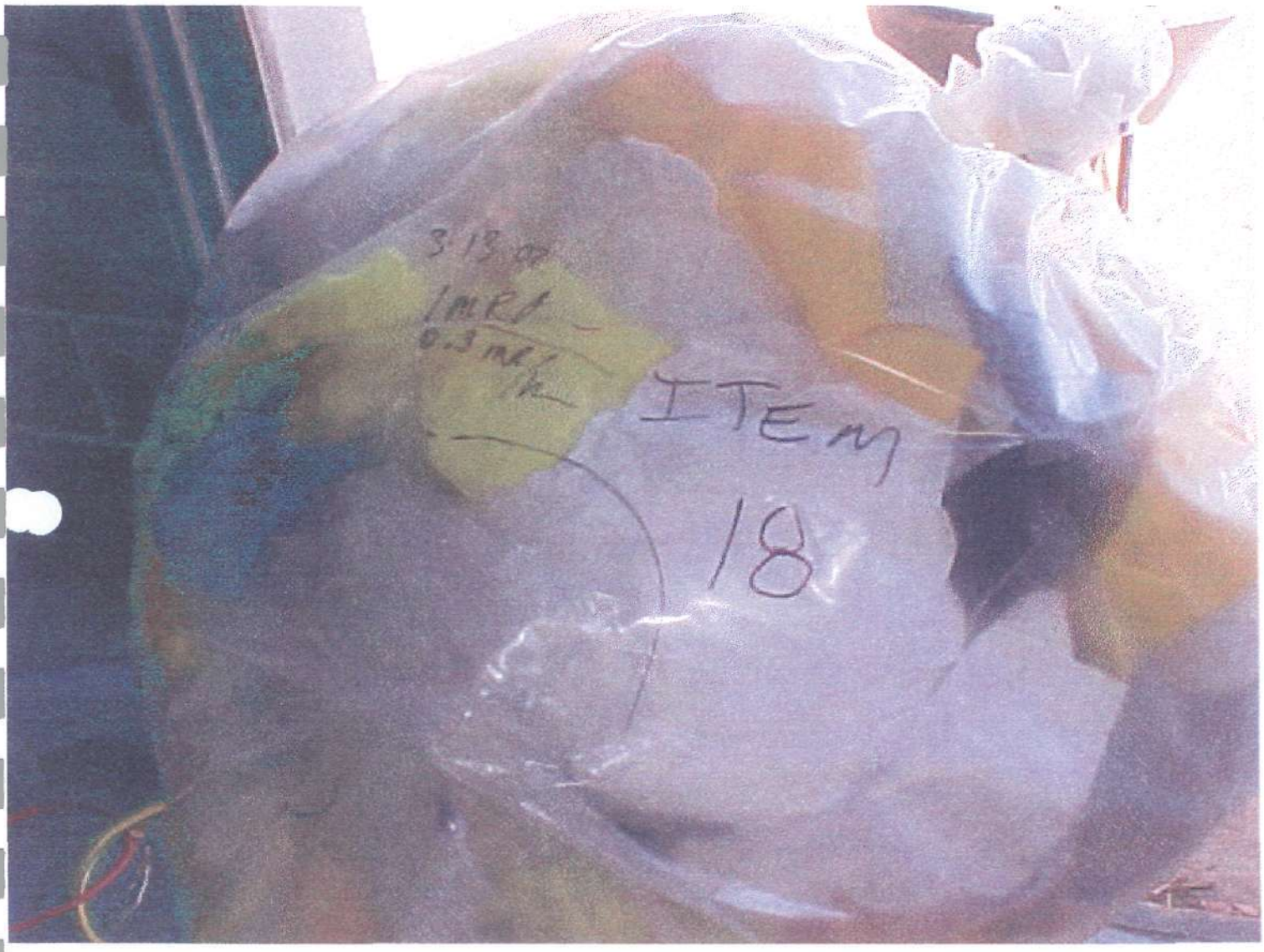
ITEM17



Acquired: 3/13/2002 3:47:15 PM Real Time: 10.00 s. Live Time: 8.04 s.

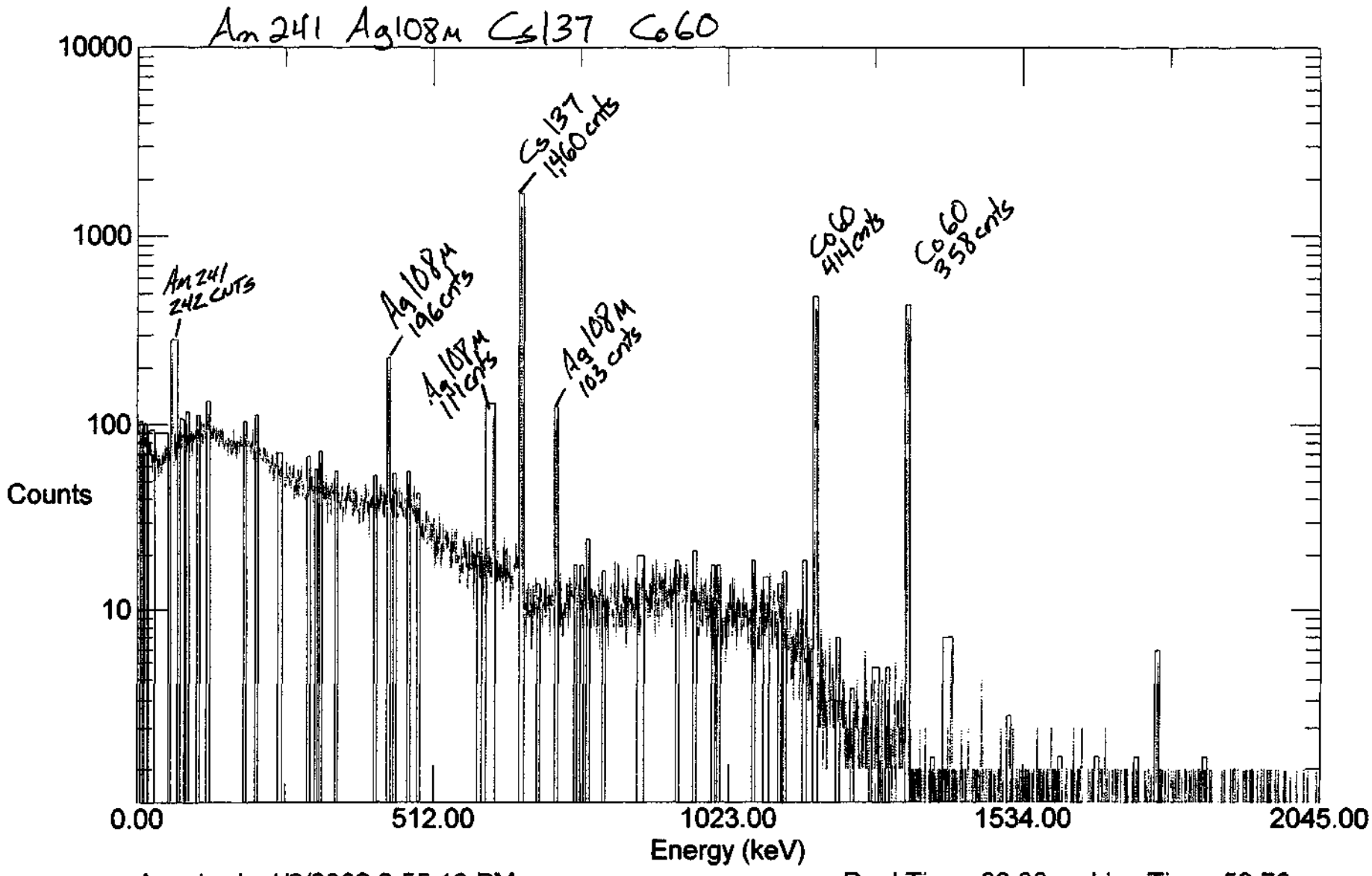
File: C:\User\GNIWEB~1\023 ITEM17 3-13-2002 3.47.15 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


3:13 pm
1 mR/h
0.3 mR/h
ITEM
18

029 ITEM18.2 4-2-2002 2.55.19 PM

ITEM18-2



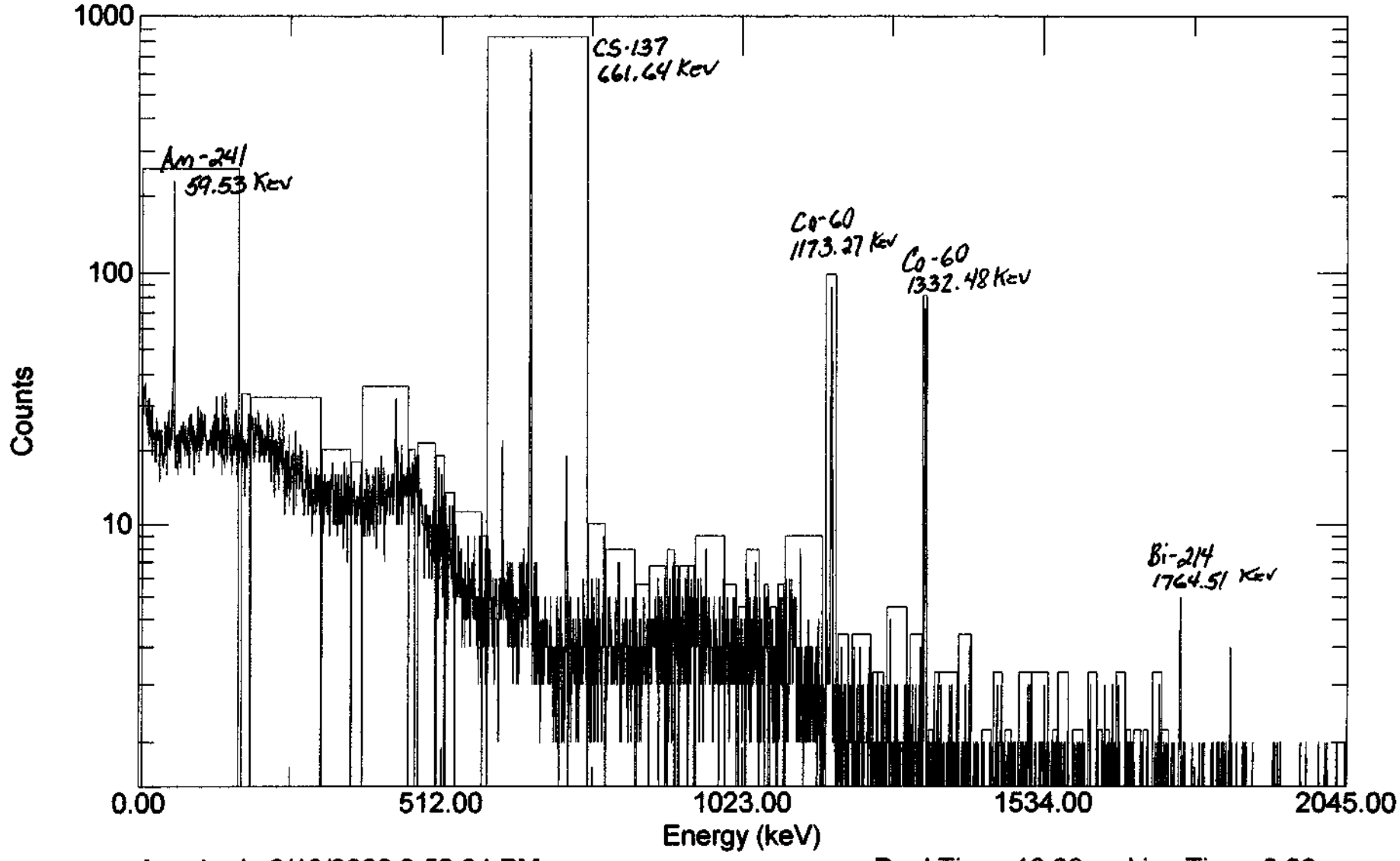
Acquired: 4/2/2002 2:55:19 PM Real Time: 60.00 s. Live Time: 53.76 s.

File: C:\User\GNIWEB~1\029 ITEM18.2 4-2-2002 2.55.19 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

024 ITEM18 3-13-2002 3.52.04 PM

ITEM18



Acquired: 3/13/2002 3:52:04 PM Real Time: 10.00 s. Live Time: 8.26 s.

File: C:\User\GNIWEB~1\024 ITEM18 3-13-2002 3.52.04 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3/22/02

BKG	mR/hr
6"	<.1
12"	<.2
36"	0.2

	ITEM	ITEM	ITEM	ITEM	
Container #	19	20	21	22	23
External on pig in mR/hr	50	100	~~1.5~~ 12	~~<.2~~ 1	1.5
External on pig Neutron mR/hr	<1	<1	<1	~~<1~~ <1	<1
Contact open pig mR/hr	2	10	2.5	~~<.2~~ 1	1
Beta on open pig mR/hr O/W	50	100	~~2.5~~ 12	1 ~~<.2~~	1.5
Picture	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	0.1	2	1mr	.2	.5
Source mR/hr @ 12 inches	<0.2	0.6	.5	<.2	.3
Source mR/hr @ 36 inches	<.2	0.2	~~.3~~ .2	.2 ~~<.2~~	.2
Size of source in cc's	33	12	4.5 CF	4CF	5cF
Weight in grams	22	10	37.5 lbs	25 lbs	20 lbs

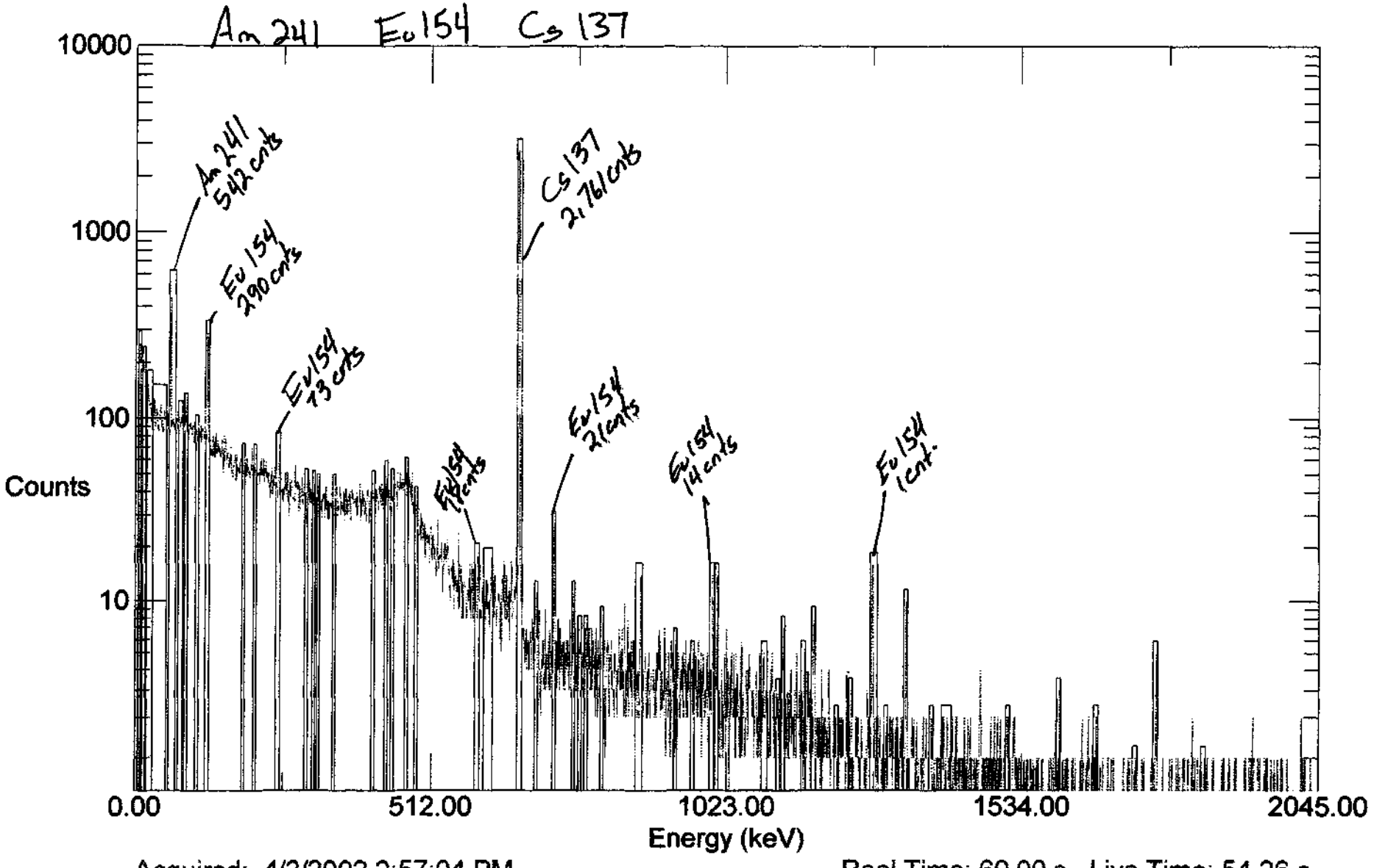
CPM Alpha	<25	51	N/A	N/A	N/A
Direct Beta/Gamma	350/ow 2/cw	50 ow 10 cw			
Info on source:	NONE	NONE	BAG OF TRASH	~~Am~~ BAG OF TRASH	Am 241 RM 3 BLDG 2 TRASH

Information on pig:	N/A	N/A	N/A	N/A	N/A
Smear DPM per 100 cm^2 Alpha	<250	<250	N/A	N/A	N/A
Smear DPM per 100 cm^2 Beta	50/ow <1 cw	3000			
	3 CAPS	Lid to SAKI looking things	BAG OF TRASH FROM ~~RM~~ BLDG 2	BLDG 2 RMS 13/14	BAG OF TRASH BLDG 2 RM 3

ITEM
19

030 ITEM19.. 2002 2.57.04 PM

ITEM19-2



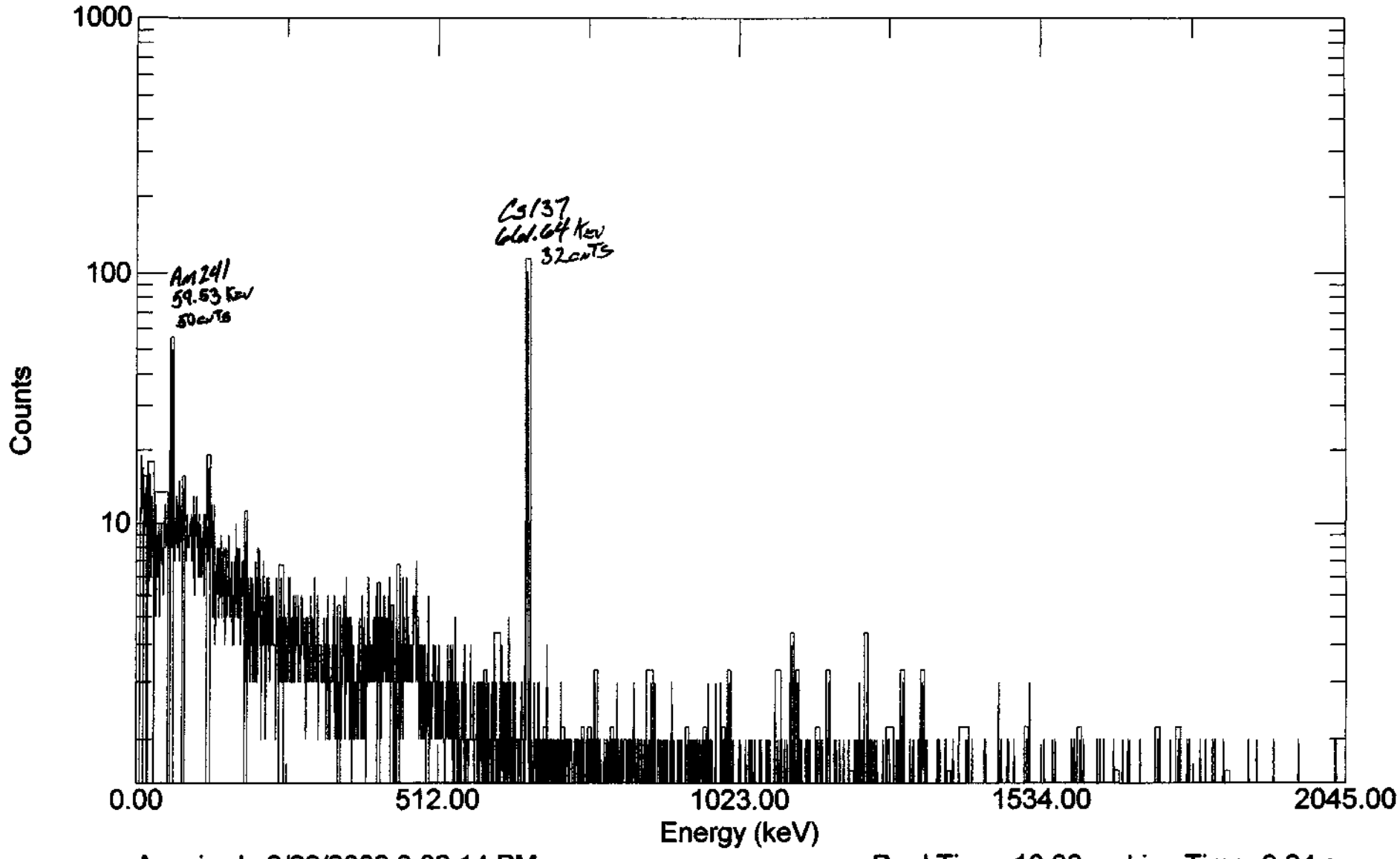
Acquired: 4/2/2002 2:57:04 PM Real Time: 60.00 s. Live Time: 54.26 s.

File: C:\User\GNIWEB~1\030 ITEM19.2 4-2-2002 2.57.04 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

016 ITEM19 3-22-2002 3.02.14 PM

ITEM19



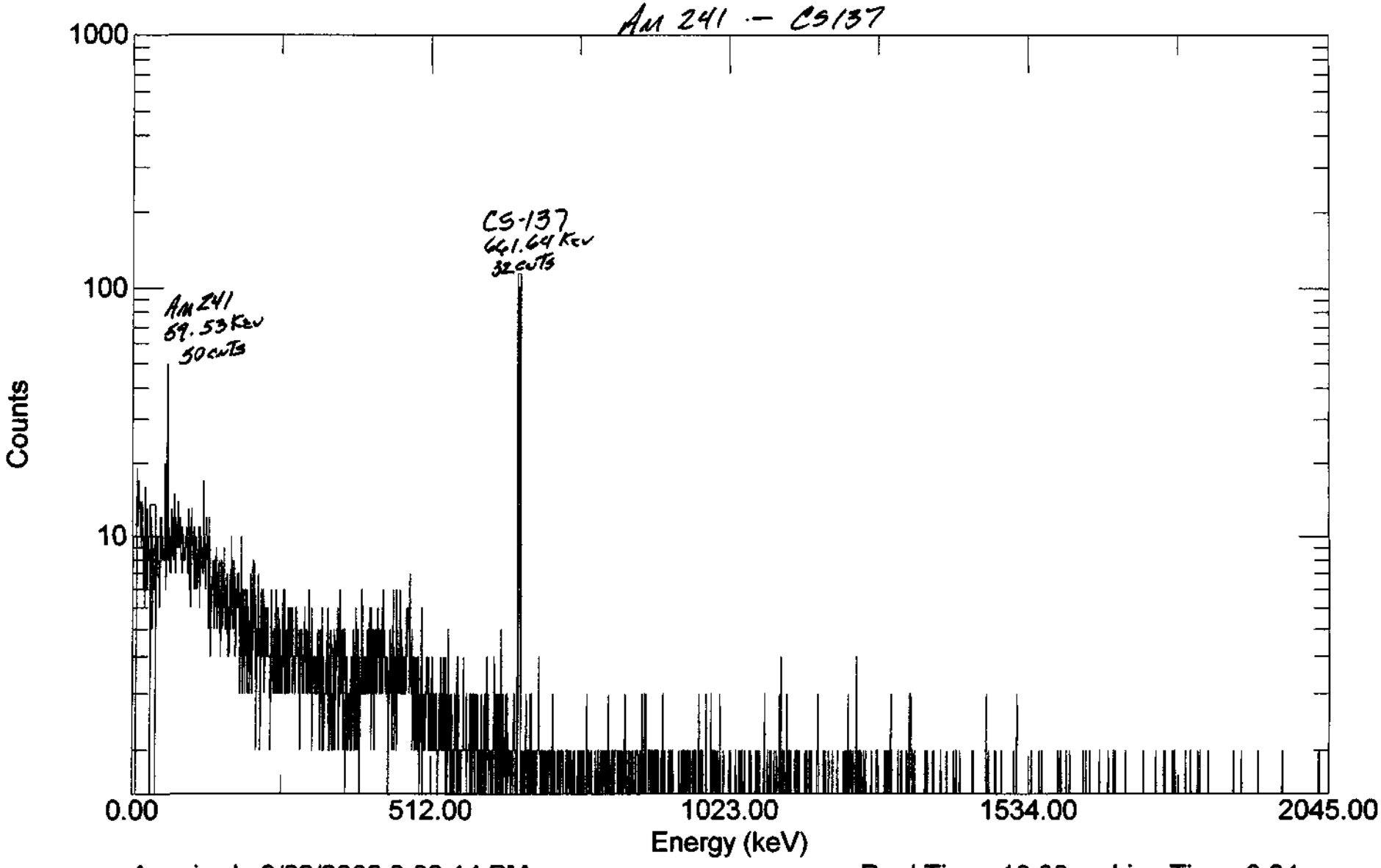
Acquired: 3/22/2002 3:02:14 PM Real Time: 10.00 s. Live Time: 9.64 s.

File: C:\User\GNIWEB~1\GNISOU~1\016 ITEM19 3-22-2002 3.02.14 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

016 ITEM19 3-22-2002 3.02.14 PM

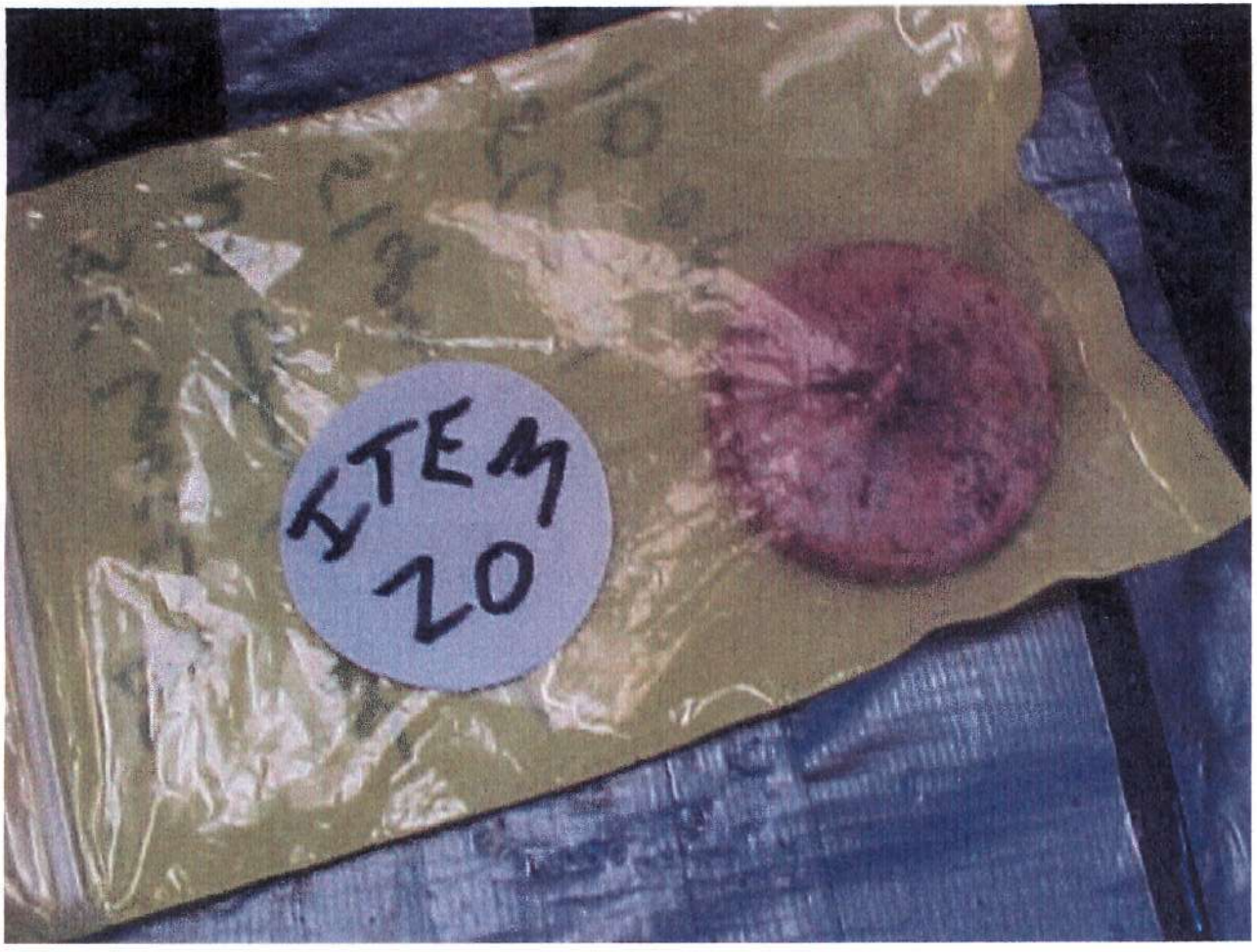
ITEM19



Acquired: 3/22/2002 3:02:14 PM Real Time: 10.00 s. Live Time: 9.64 s.

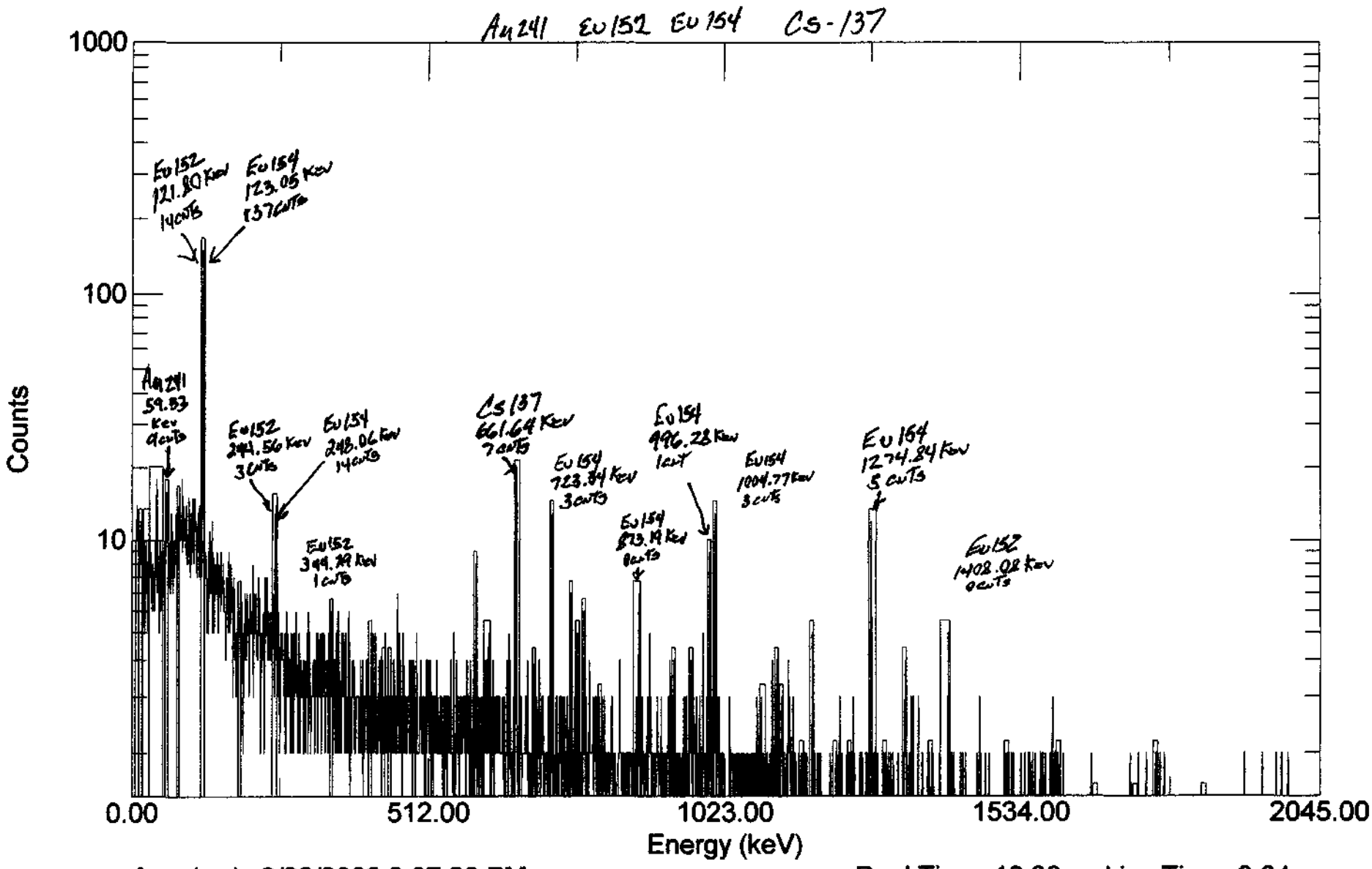
File: C:\User\GNIWEB~1\016 ITEM19 3-22-2002 3.02.14 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
20

017 ITEM20 3-22-2002 3.07.20 PM

ITEM20



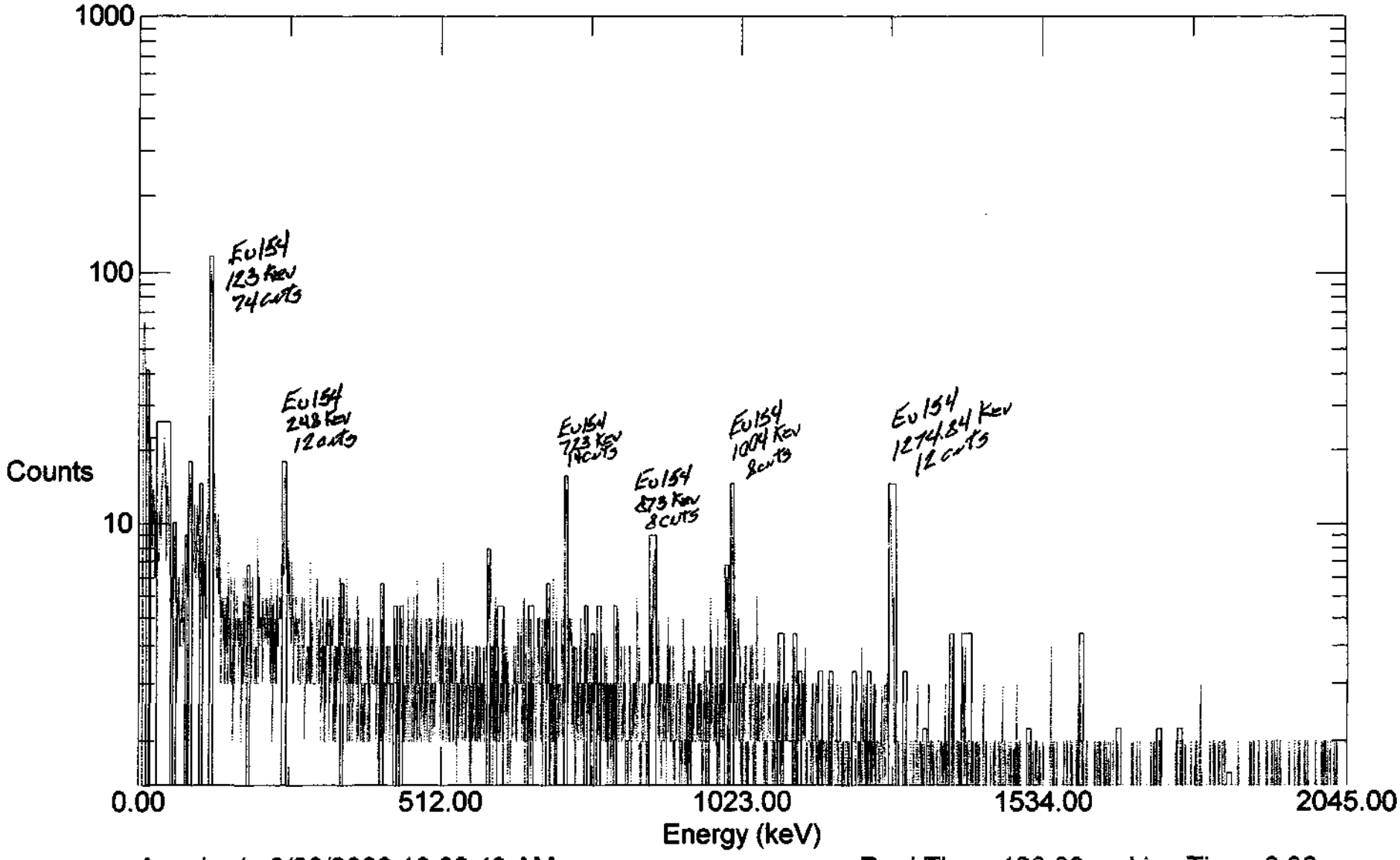
Acquired: 3/22/2002 3:07:20 PM Real Time: 10.00 s. Live Time: 9.64 s.

File: C:\User\GNIWEB~1\GNISOU~1\017 ITEM20 3-22-2002 3.07.20 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

010 ITEM20-2 3-26-2002 10.00.43 AM

ITEM20



Acquired: 3/26/2002 10:00:43 AM Real Time: 120.00 s. Live Time: 0.00 s.

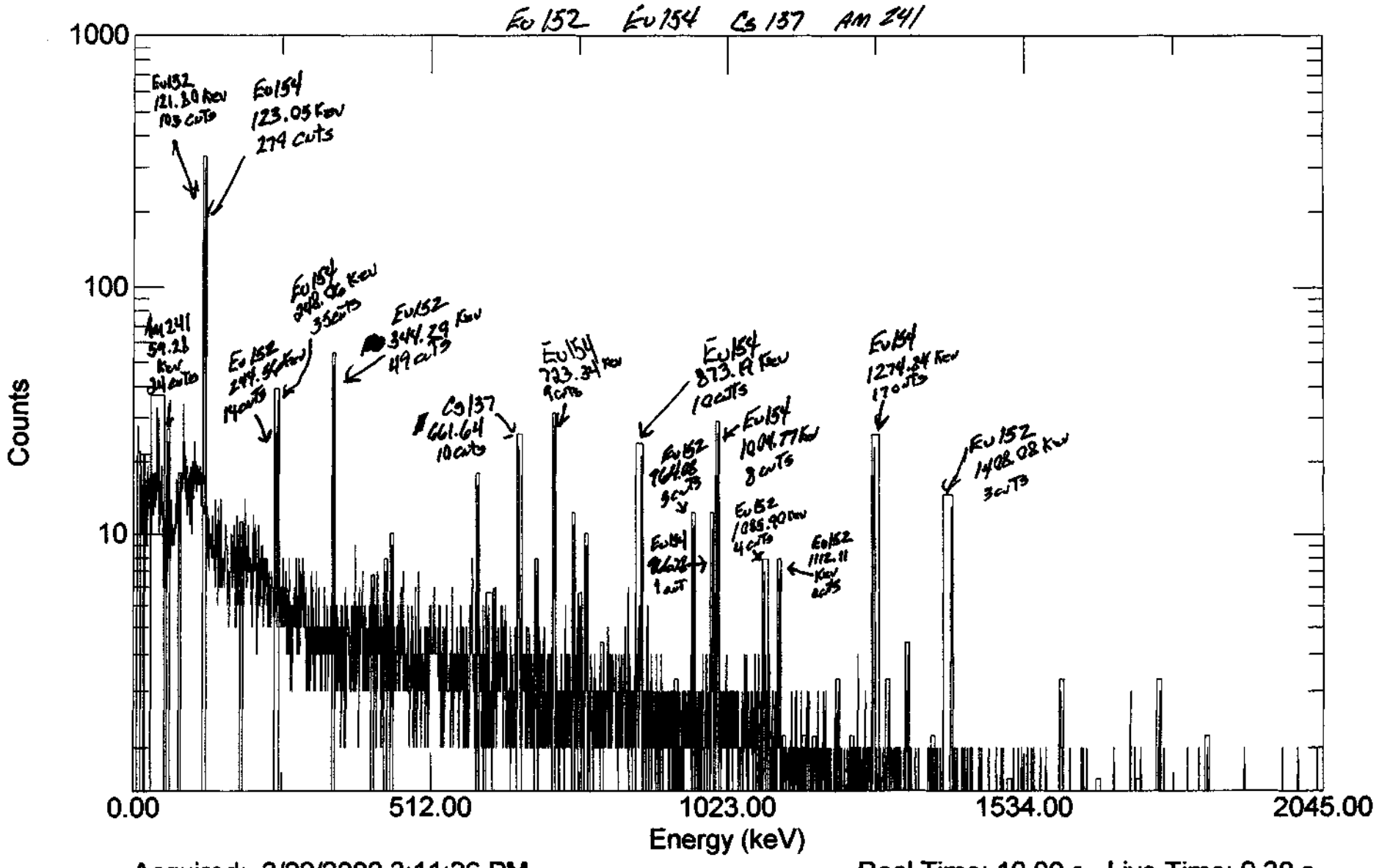
File: C:\User\GNIWEB~1\010 ITEM20-2 3-26-2002 10.00.43 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

MTE3
21

018 ITEM21 3-22-2002 3.11.26 PM

ITEM21



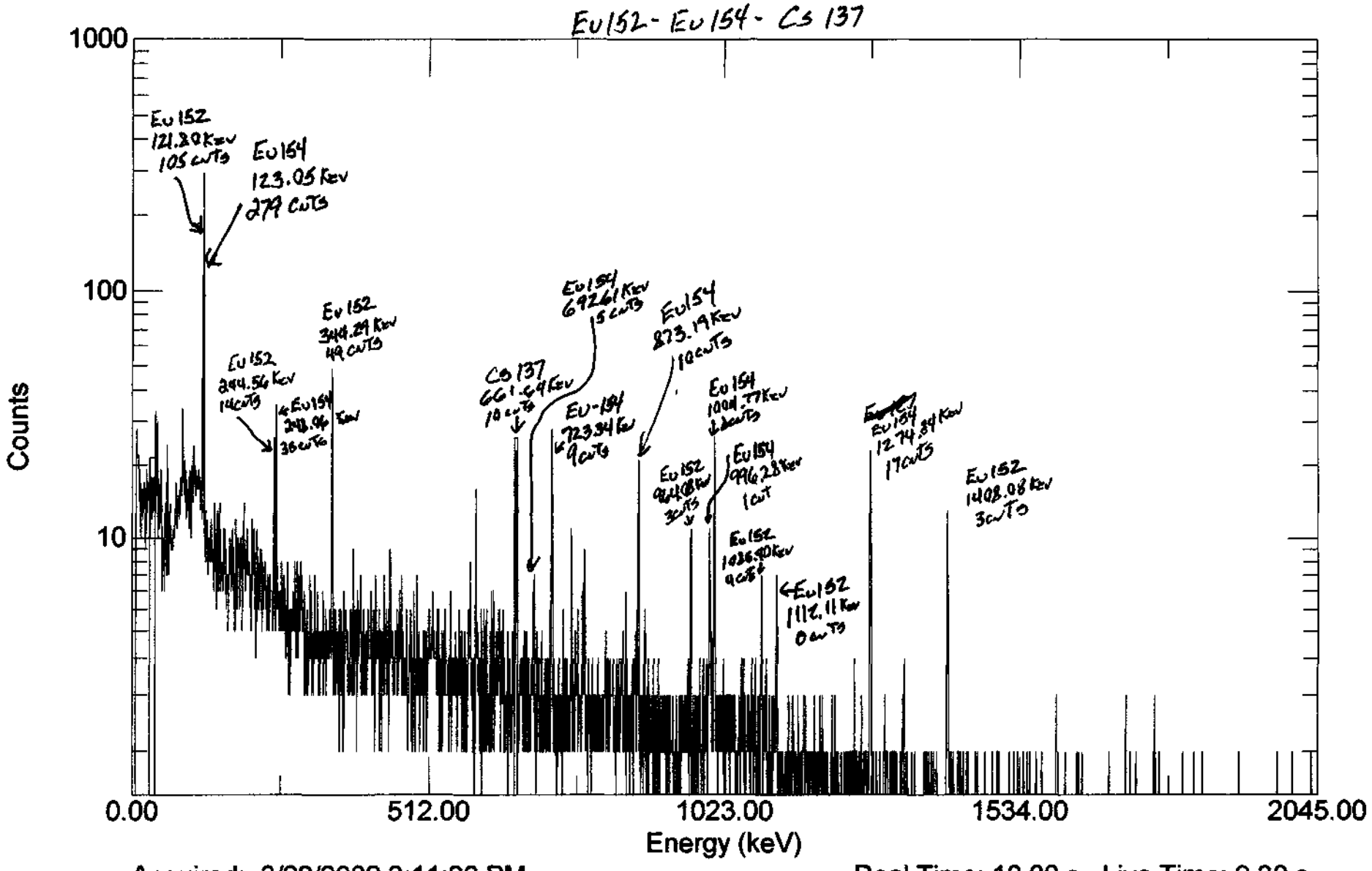
Acquired: 3/22/2002 3:11:26 PM Real Time: 10.00 s. Live Time: 9.30 s.

File: C:\User\GNIWEB~1\GNISOU~1\018 ITEM21 3-22-2002 3.11.26 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

018 ITEM21 3-22-2002 3.11.26 PM

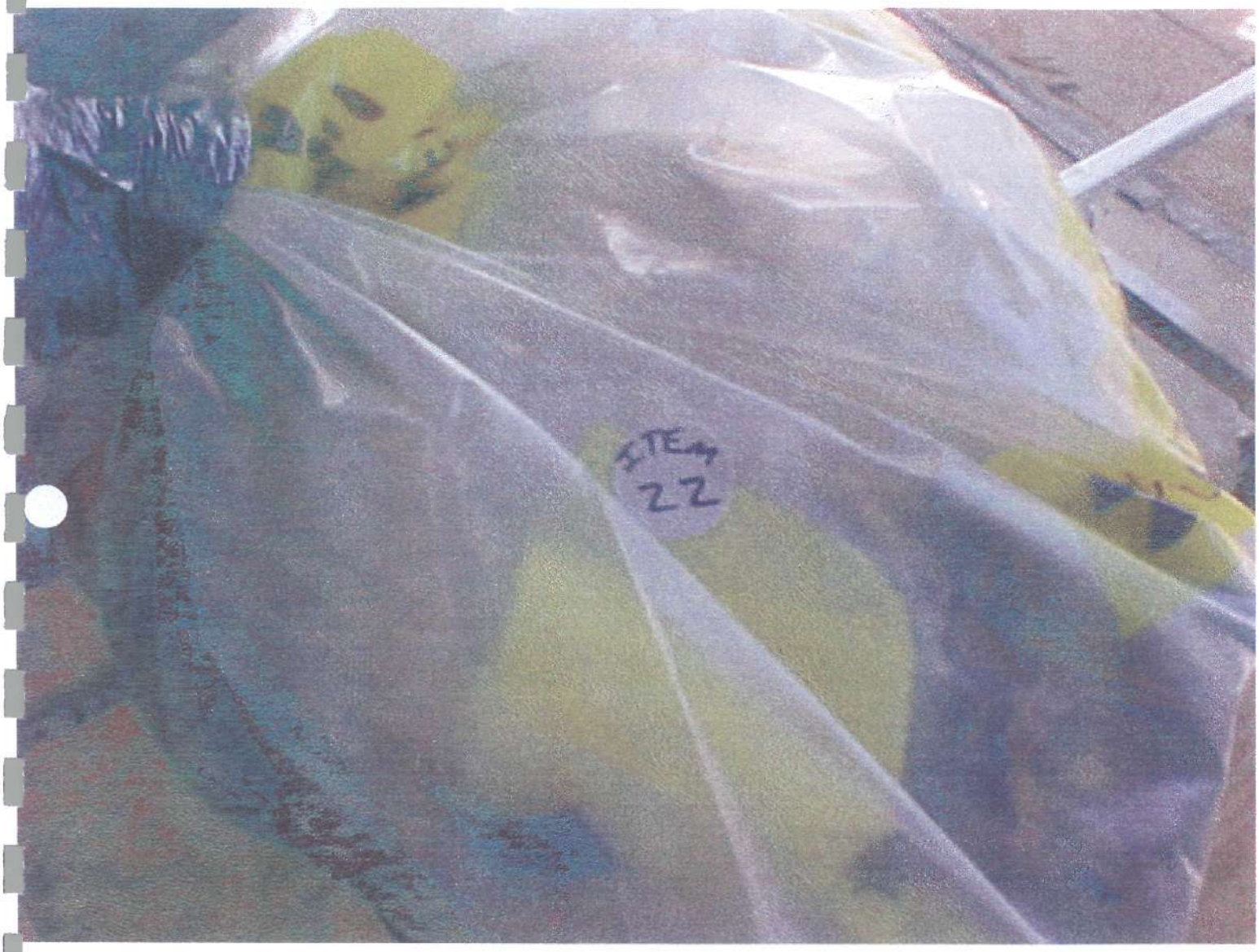
ITEM21



Acquired: 3/22/2002 3:11:26 PM Real Time: 10.00 s. Live Time: 9.30 s.

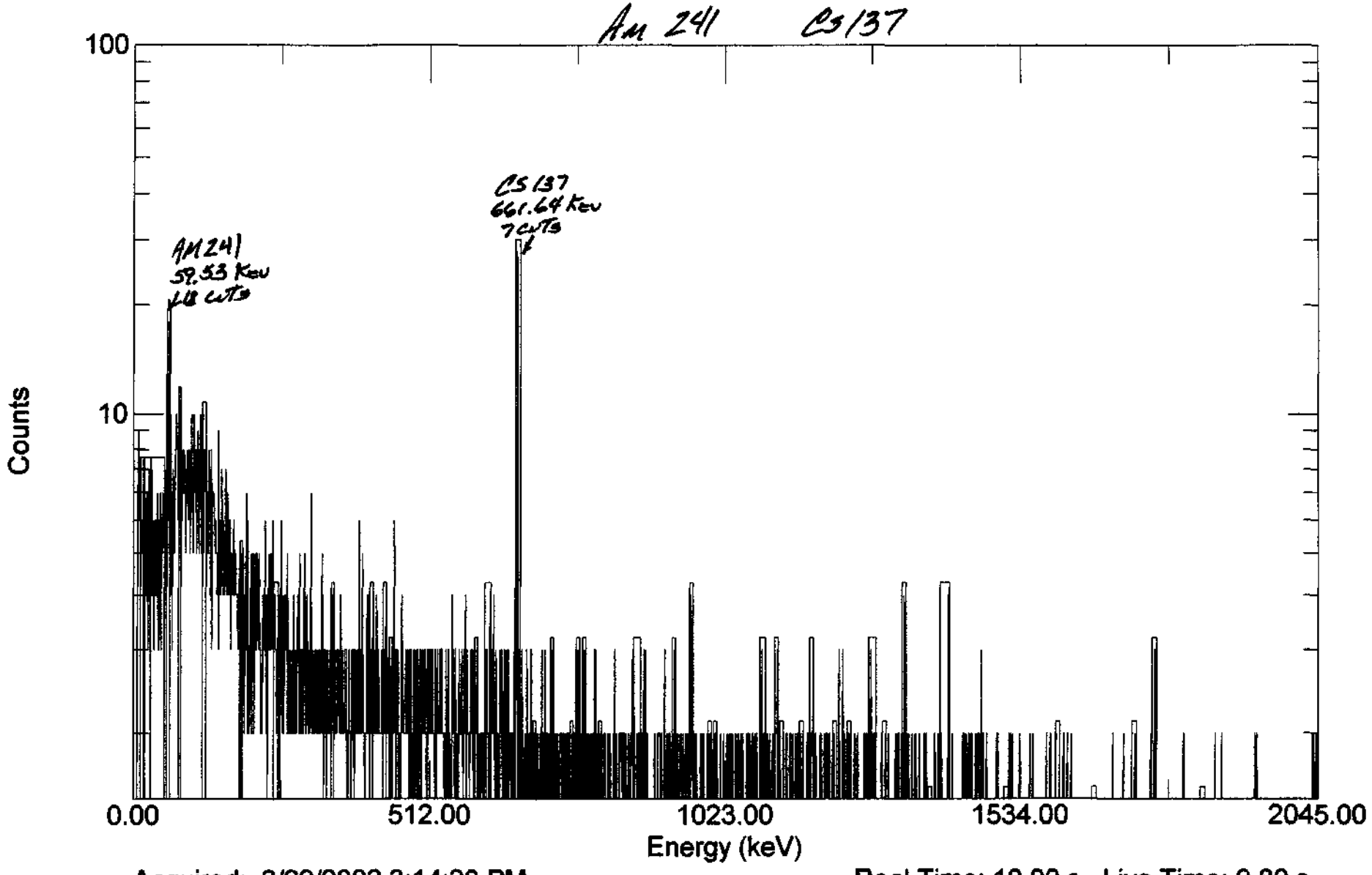
File: C:\User\GNIWEB~1\018 ITEM21 3-22-2002 3.11.26 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
22

019 ITEM22 3-22-2002 3.14.28 PM

ITEM22



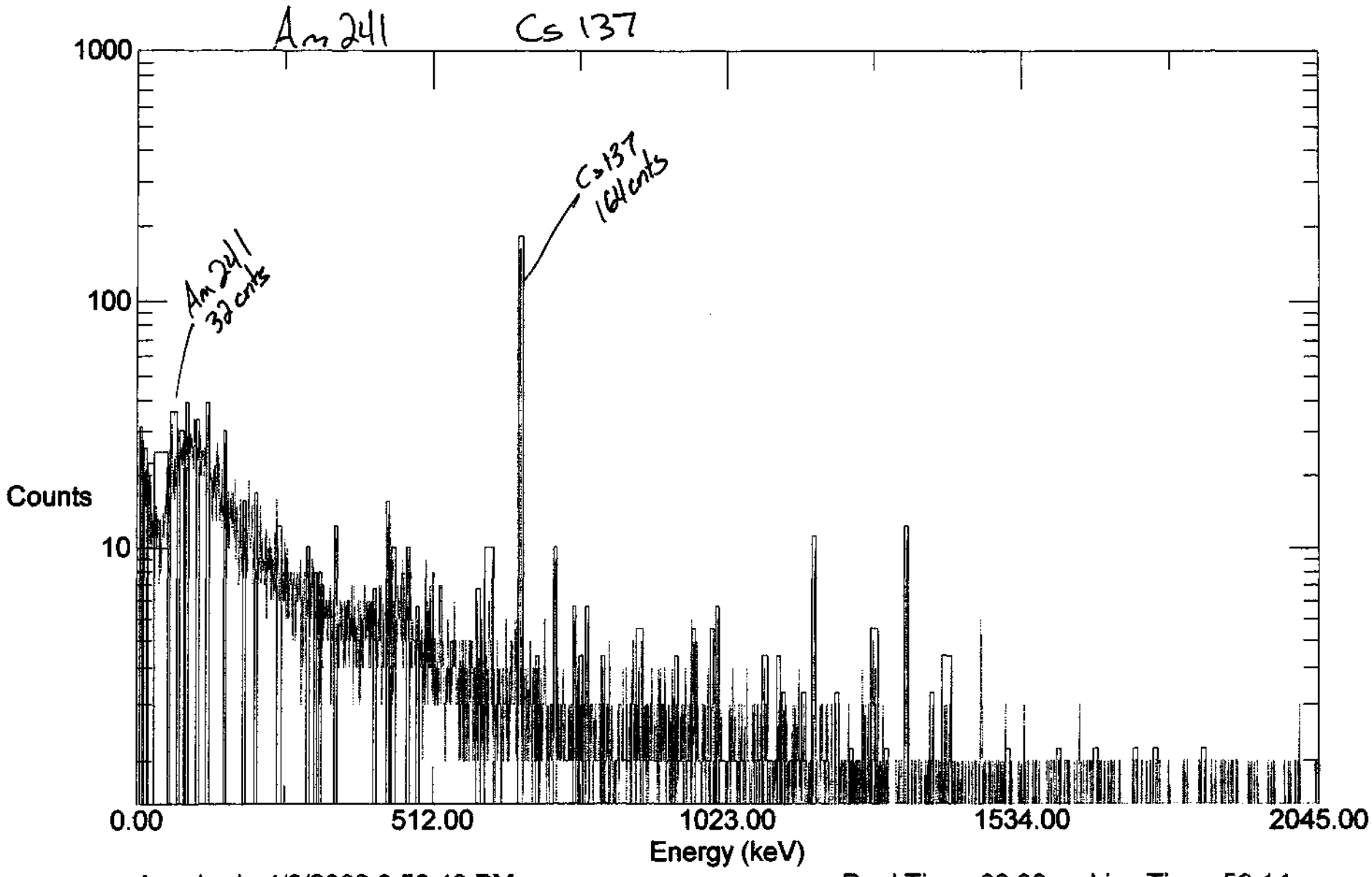
Acquired: 3/22/2002 3:14:28 PM Real Time: 10.00 s. Live Time: 9.80 s.

File: C:\User\GNIWEB~1\GNISOU~1\019 ITEM22 3-22-2002 3.14.28 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

031 ITEM22.2 4-2-2002 2.58.39 PM

ITEM22-2



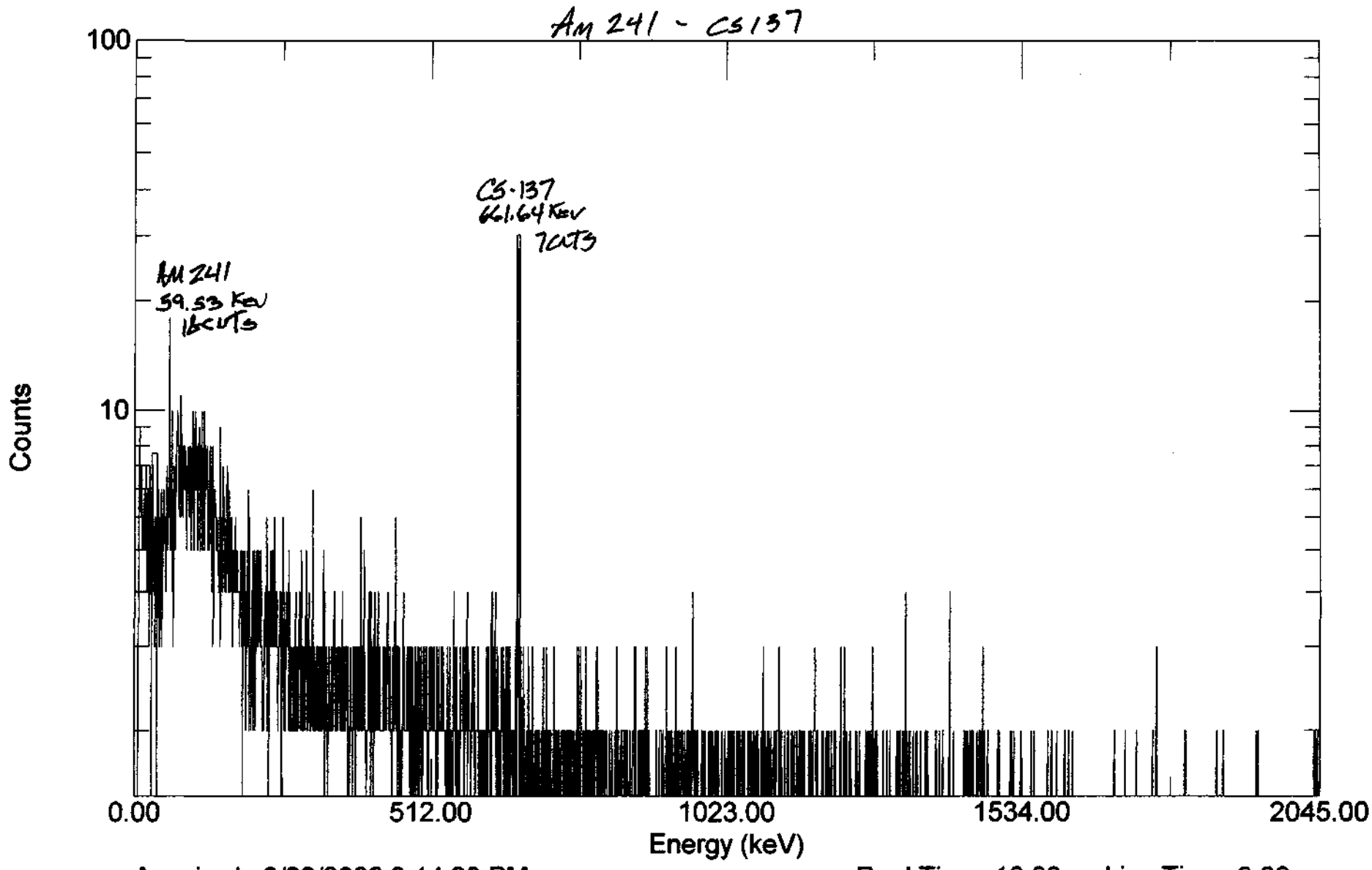
Acquired: 4/2/2002 2:58:40 PM Real Time: 60.00 s. Live Time: 59.14 s.

File: C:\User\GNIWEB~1\031 ITEM22.2 4-2-2002 2.58.39 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

019 ITEM22 3-22-2002 3.14.28 PM

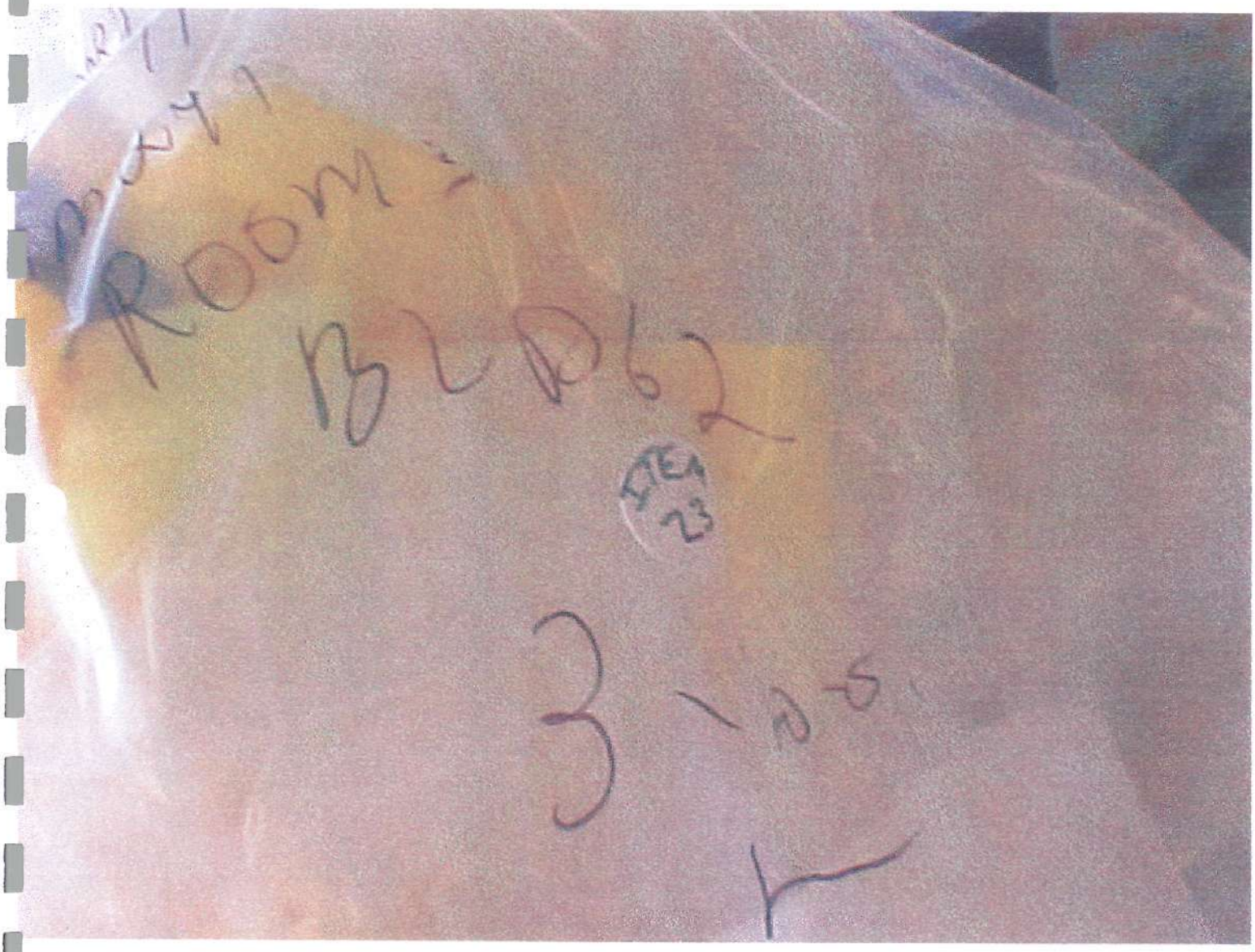
ITEM22



Acquired: 3/22/2002 3:14:28 PM Real Time: 10.00 s. Live Time: 9.80 s.

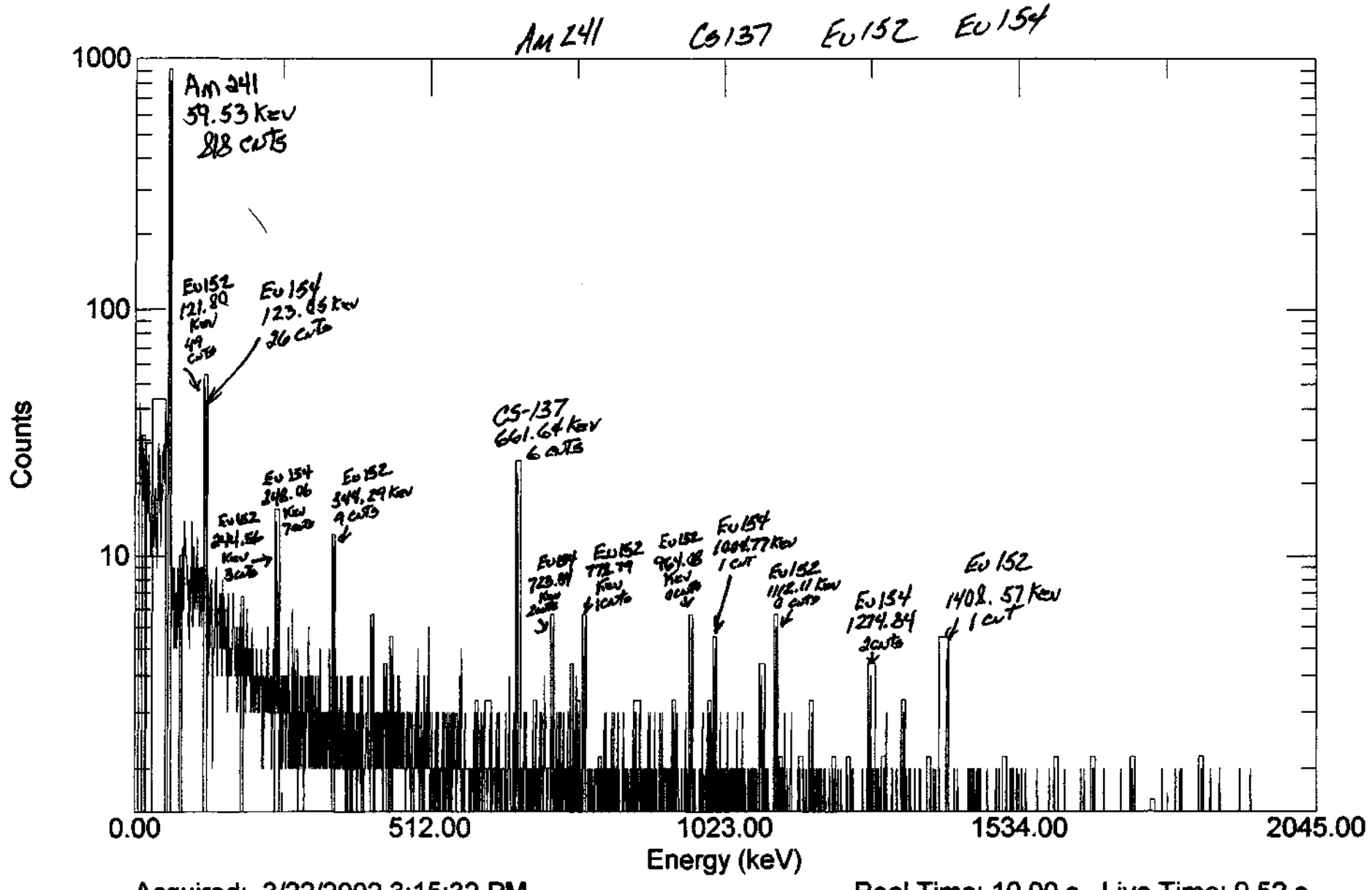
File: C:\User\GNIWEB~1\019 ITEM22 3-22-2002 3.14.28 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


Room:
B2D62
ITEM
23

020 ITEM23 3-22-2002 3.15.32 PM

ITEM23



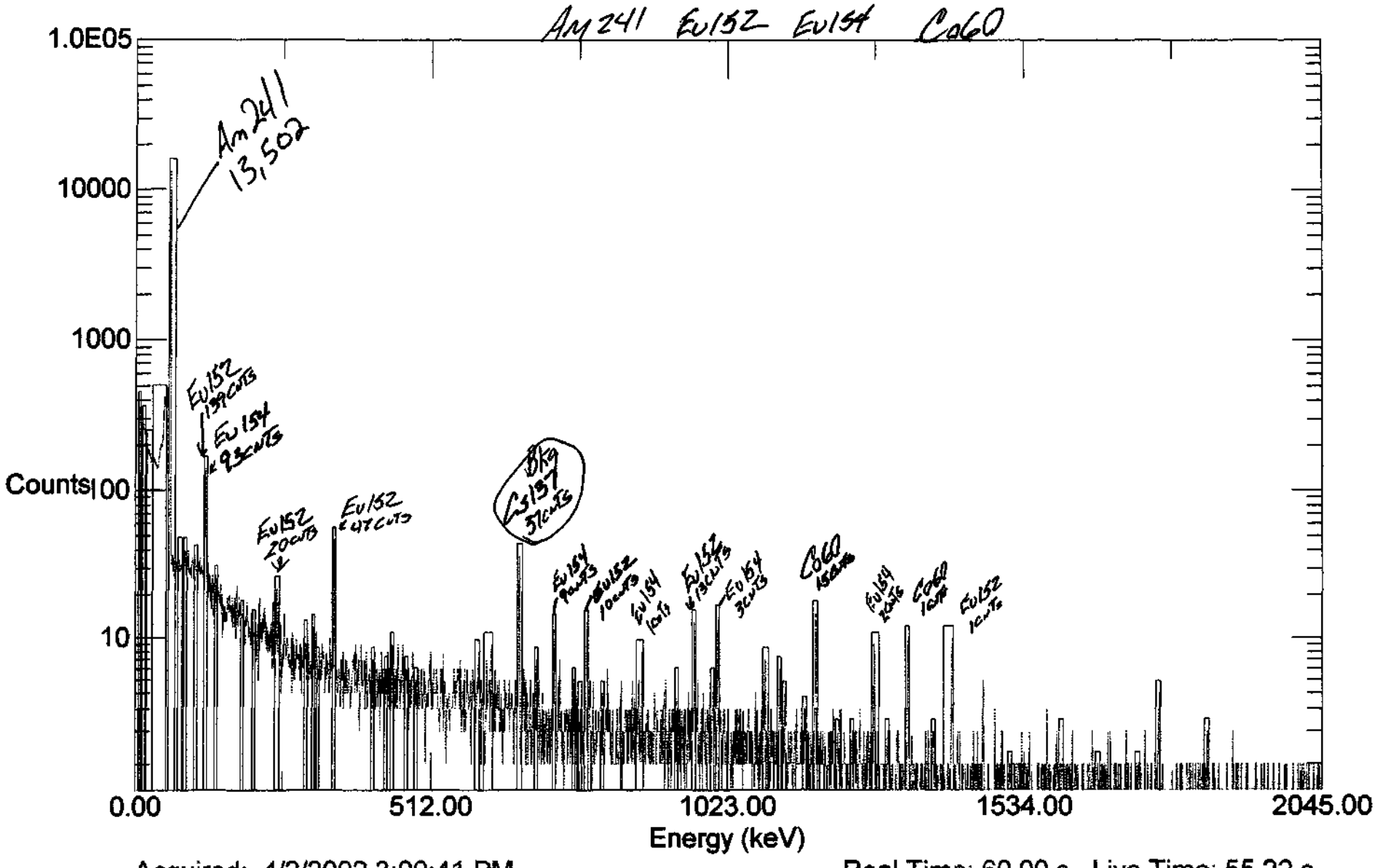
Acquired: 3/22/2002 3:15:32 PM Real Time: 10.00 s. Live Time: 9.52 s.

File: C:\User\GNIWEB~1\GNISOU~1\020 ITEM23 3-22-2002 3.15.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

032 ITEM23.2 -2-2002 3.00.41 PM

ITEM23-2



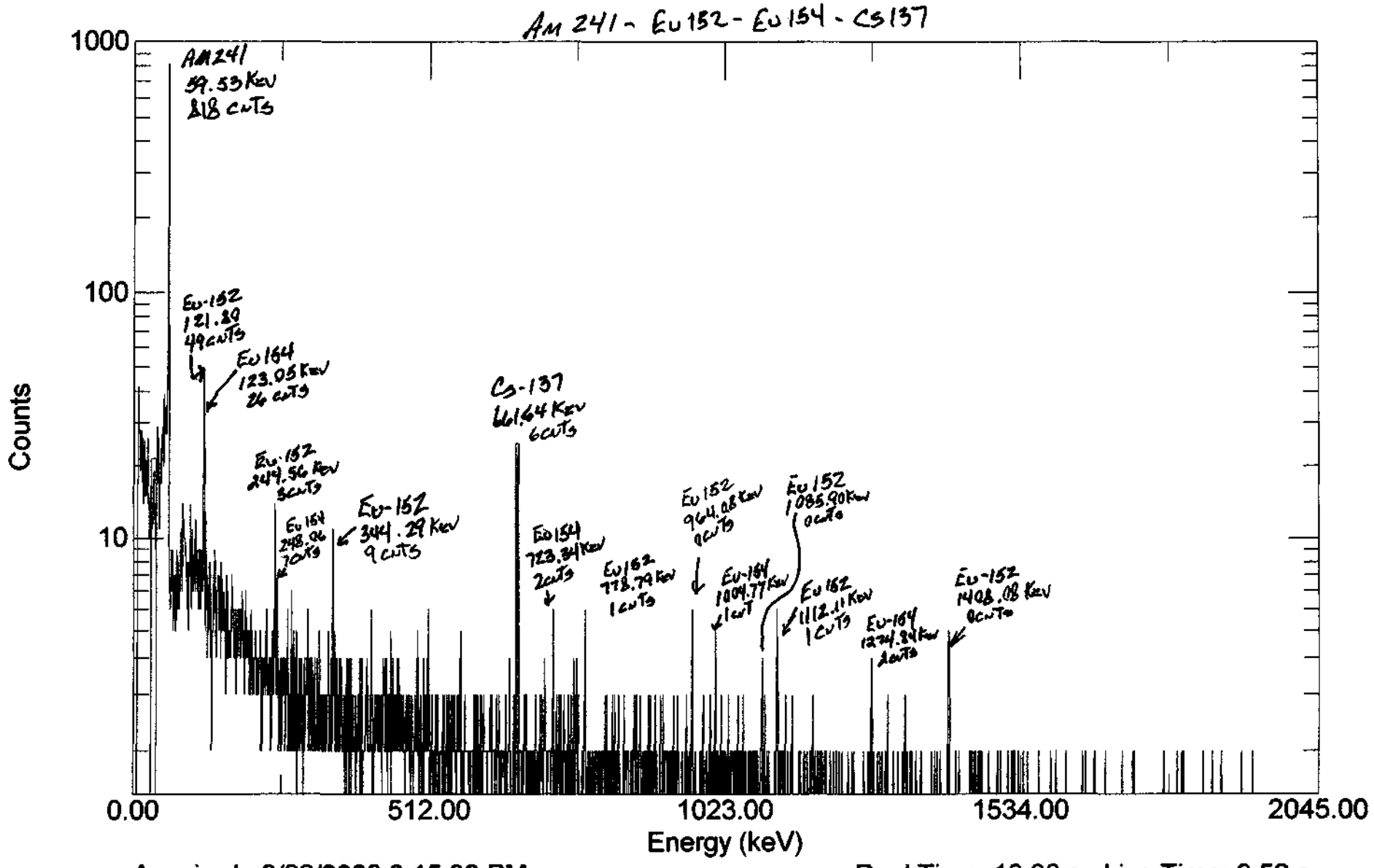
Acquired: 4/2/2002 3:00:41 PM Real Time: 60.00 s. Live Time: 55.22 s.

File: C:\User\GNIWEB~1\032 ITEM23.2 4-2-2002 3.00.41 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

020 ITEM23 3-22-2002 3.15.32 PM

ITEM23



Acquired: 3/22/2002 3:15:32 PM Real Time: 10.00 s. Live Time: 9.52 s.

File: C:\User\GNIWEB~1\020 ITEM23 3-22-2002 3.15.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-22-02

BKG	mR/hr
6"	<.1
12"	<.2
36"	0.2

Item →

Container #	24	25			
External on pig in mR/hr	<.2	<.2			
External on pig Neutron mR/hr	<1	<1			
Contact open pig mR/hr	<.2	<.2			
Beta on open pig mR/hr O/W	<.2	<.2			

Picture	✓	✓			
DC	✓	✓			

Table Readings

Source mR/hr @ 6 inchs	BKG	<.2			
Source mR/hr @ 12 inches	↓	<.2			
Source mR/hr @ 36 inches	↓	<.2			
Size of source in cc's	1.5 FT³	1.5 FT³			
Weight in grams	70 Lb.	40			

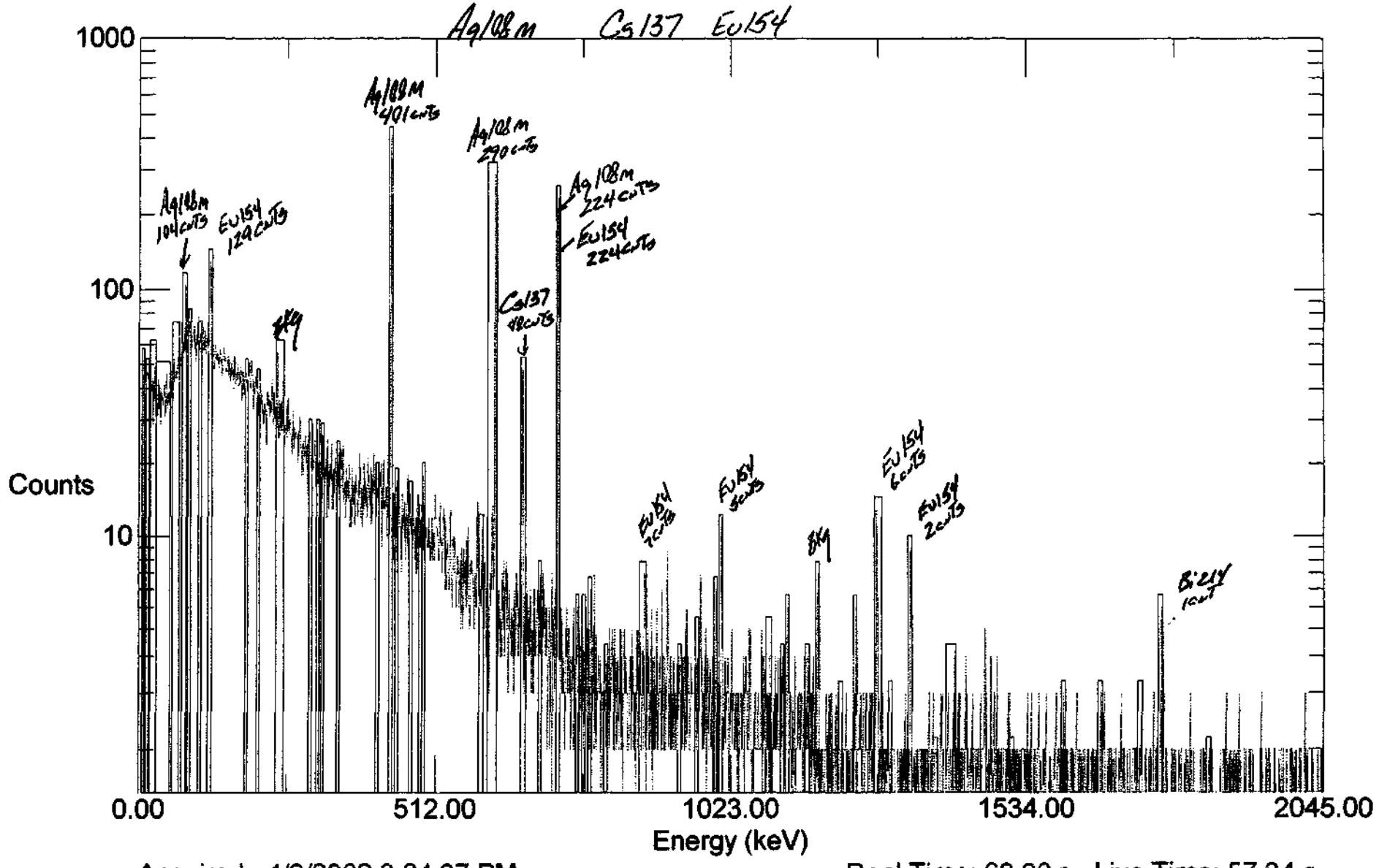
CPM Alpha	~~NA~~ <25	<25			
Direct Beta/Gamma	2000	1000			

Info on source:	Bucket of BLASTING GRIT	DRUM			

Information on pig:	N/A	N/A			
Smear DPM per 100 cm^2 Alpha	N/A				
Smear DPM per 100 cm^2 Beta					
	GULF NU 202 MED. CENTER BLVD. 77598 WEBSTER TX	Found IN Room #13 BLDG. #2			

033 ITEM24.2 . . 2-2002 3.04.36 PM

ITEM24-2



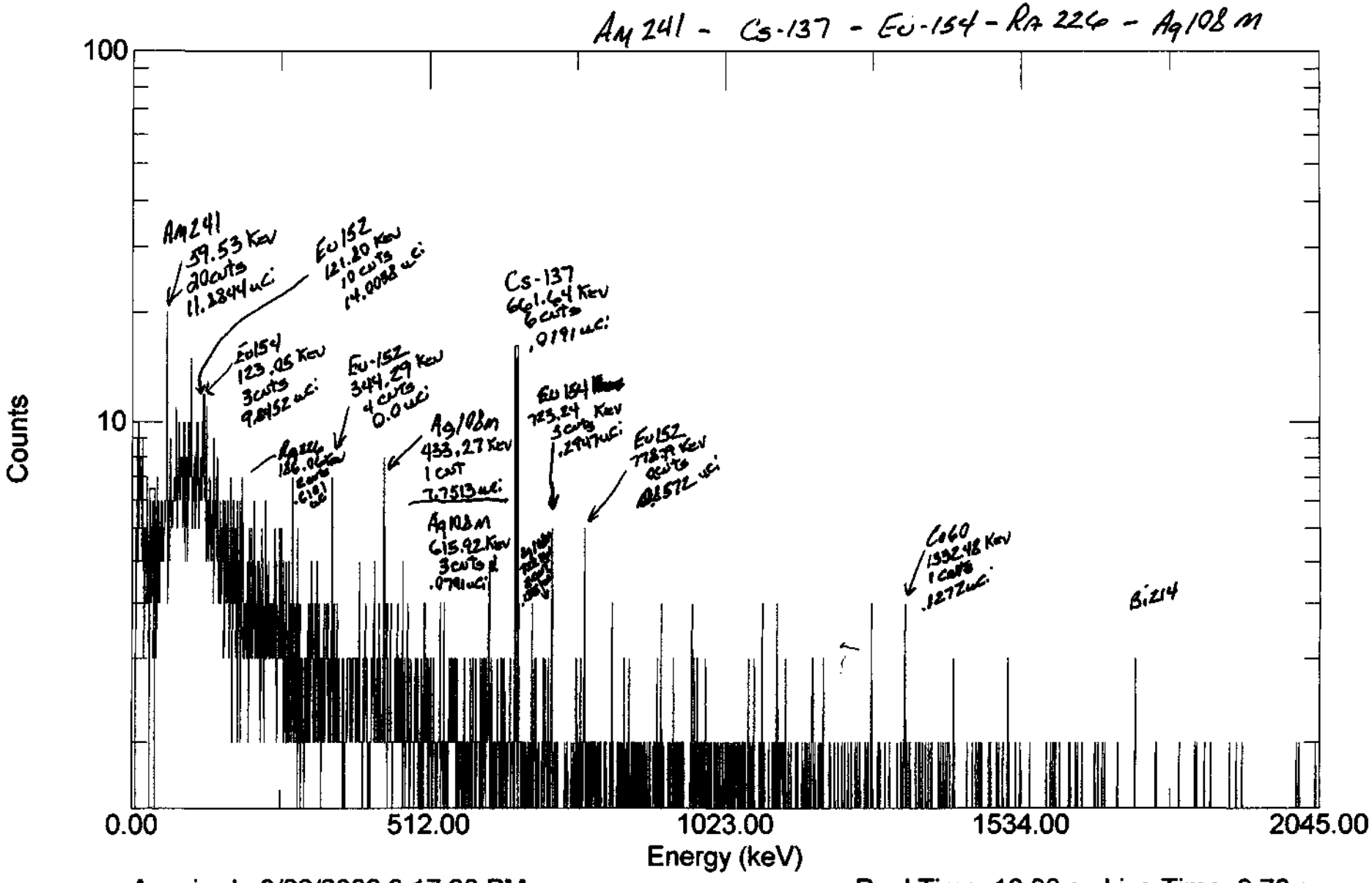
Acquired: 4/2/2002 3:04:37 PM Real Time: 60.00 s. Live Time: 57.34 s.

File: C:\User\GNIWEB~1\033 ITEM24.2 4-2-2002 3.04.36 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

021 ITEM24 3-22-2002 3.17.28 PM

ITEM24



Acquired: 3/22/2002 3:17:28 PM Real Time: 10.00 s. Live Time: 9.78 s.

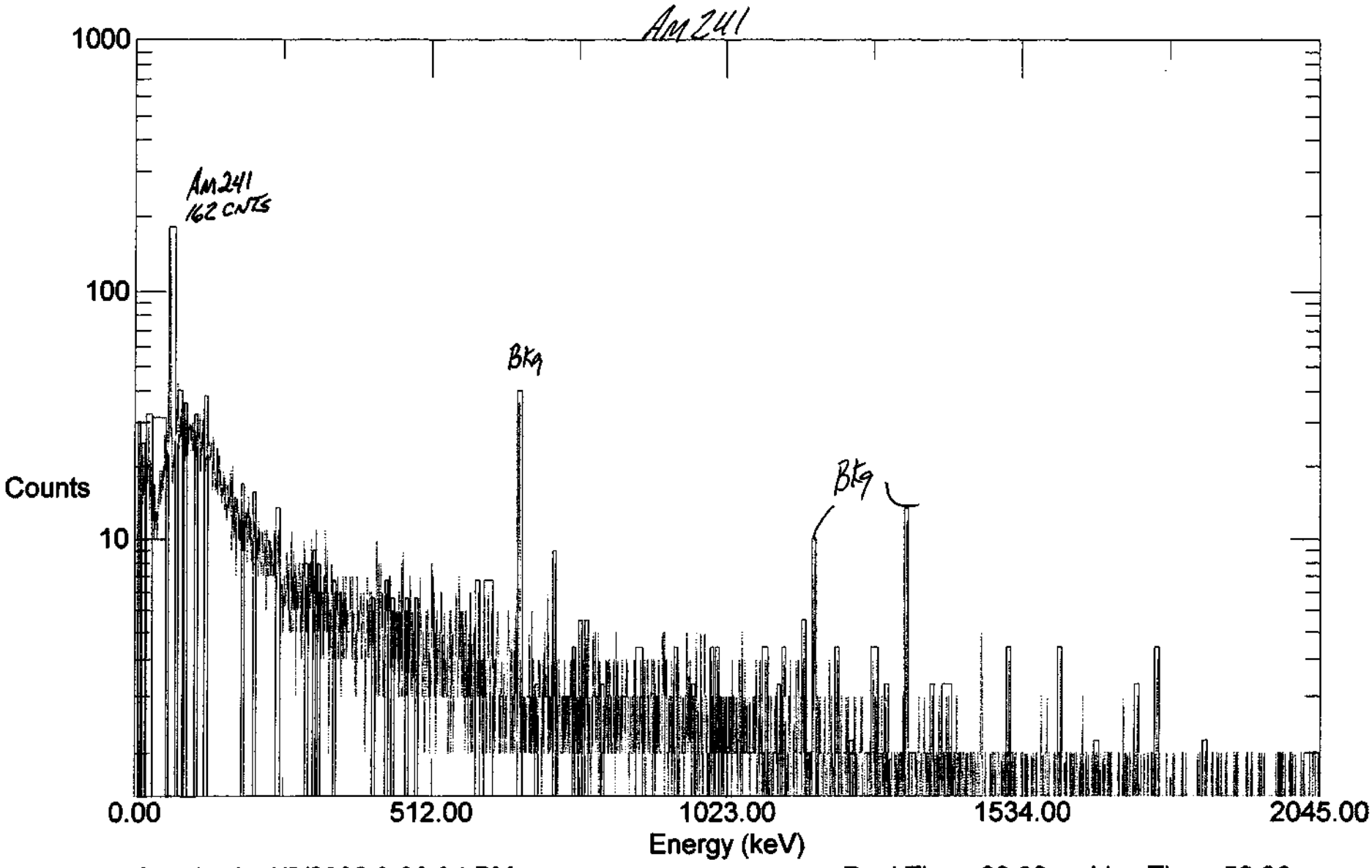
File: C:\User\GNIWEB~1\021 ITEM24 3-22-2002 3.17.28 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

CAUTION
RADIOACTIVE
MATERIALS
ITEM
25

034 ITEM25.2 . 2-2002 3.06.34 PM

ITEM25-2



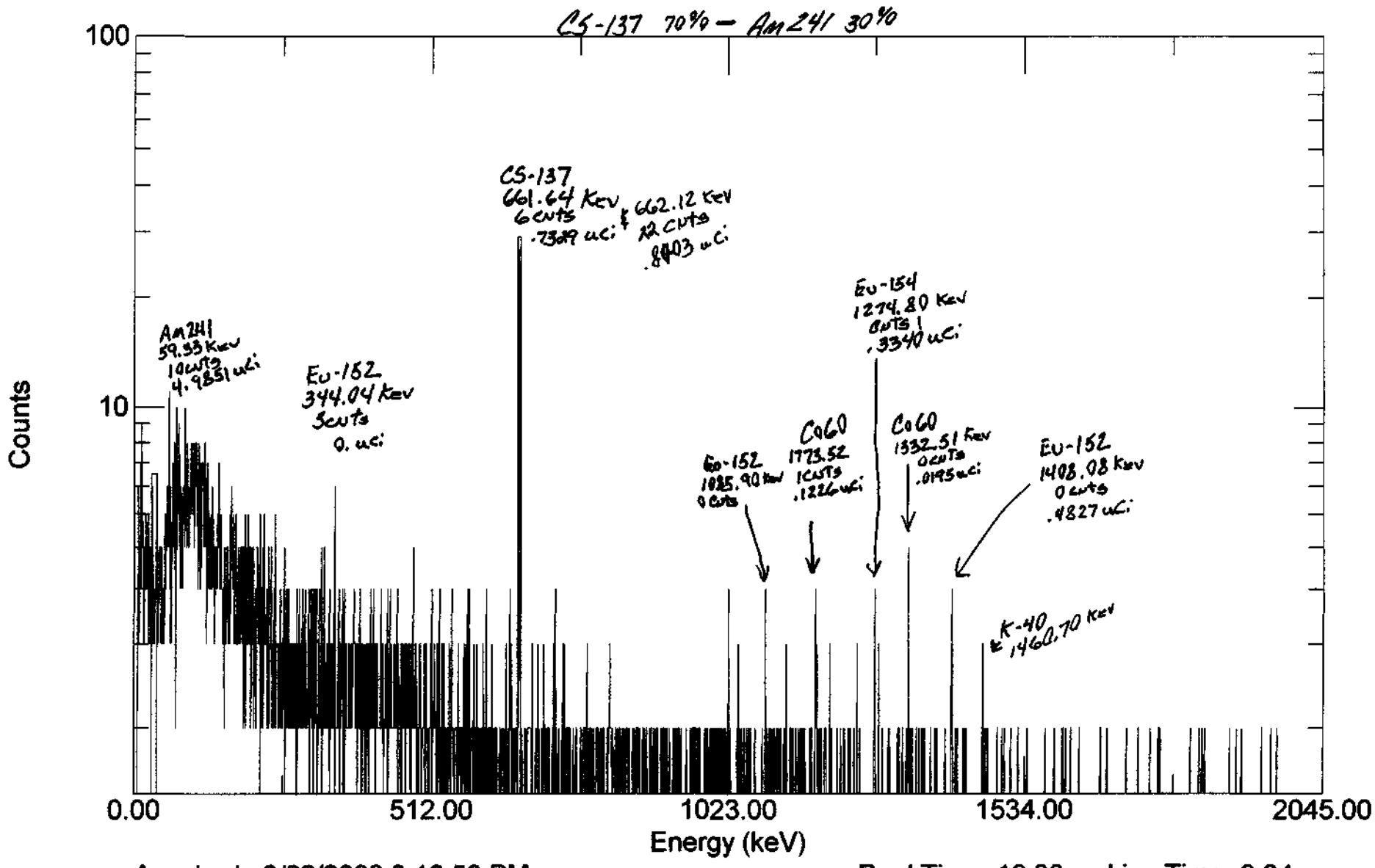
Acquired: 4/2/2002 3:06:34 PM Real Time: 60.00 s. Live Time: 59.08 s.

File: C:\User\GNIWEB~1\034 ITEM25.2 4-2-2002 3.06.34 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

022 ITEM25 3-22-2002 3.18.50 PM

ITEM25



Acquired: 3/22/2002 3:18:50 PM Real Time: 10.00 s. Live Time: 9.84 s.

File: C:\User\GNIWEB~1\022 ITEM25 3-22-2002 3.18.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-26-02

ITEM

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

Container #	26	27	28	29	30
[redacted]					
External [redacted] Neutron mR/hr	<1	<1	<1	<1	<1
Contact[redacted] mR/hr CW	3.5	17	62	9	5
Beta on [redacted]g mR/hr O/W	10	15	62	700	200

Picture	✓	✓	✓	✓	✓
Digest	✓	✓	✓	✓	✓

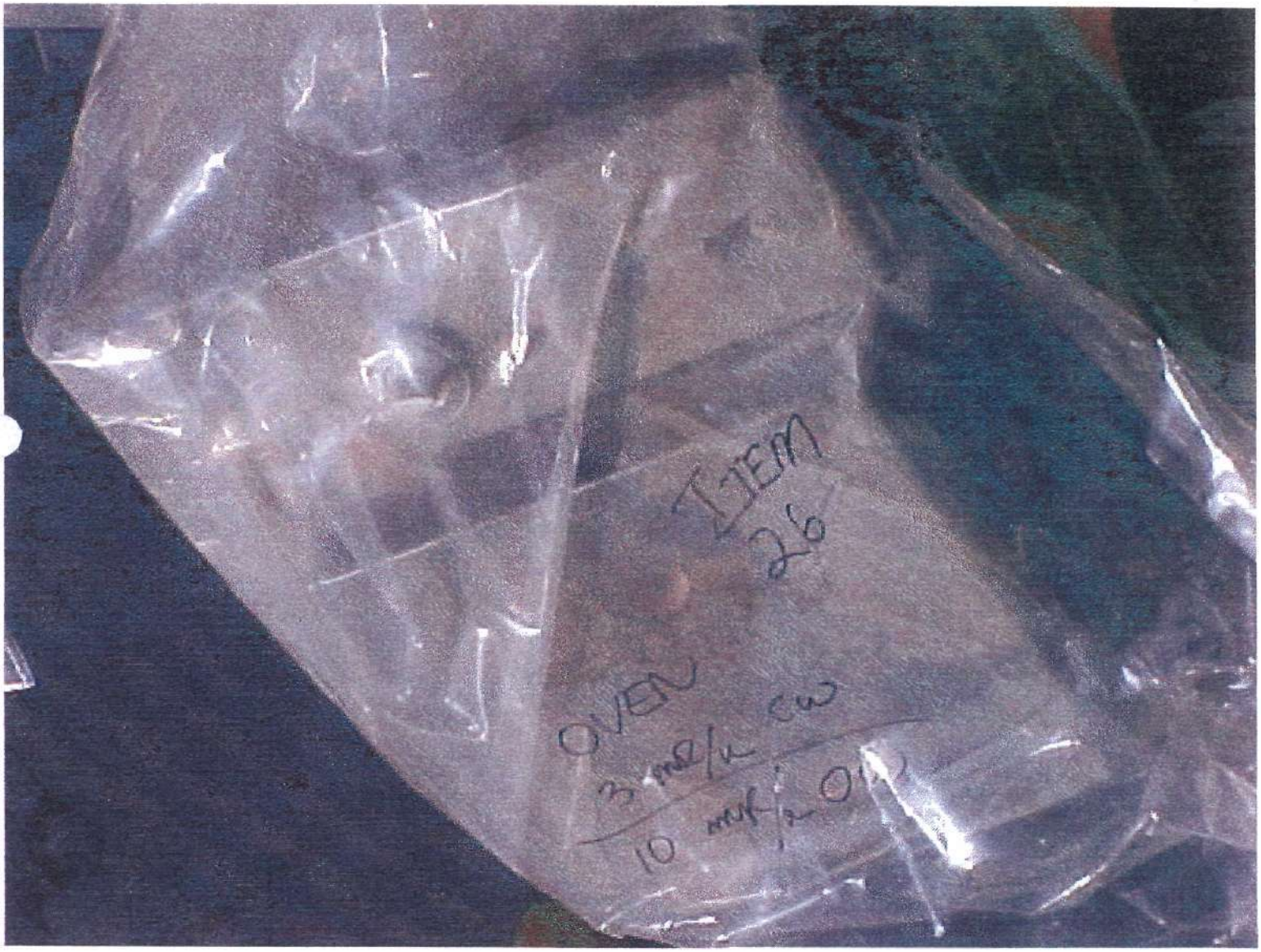
Table Readings

Source mR/hr @ 6 inchs	1	.2	20	.3	.5
Source mR/hr @ 12 inches	.5	<.2	12	<.2	.3
Source mR/hr @ 36 inches	<.2	<.2	1.5	<.2	<.2
Size of source in ~~cc's~~ CF	3 CF	5 CF	1.5 CF	.5 CF	.5 CF
Weight in ~~grams~~ lbs	25 lbs	50 lbs	30 lbs	1 lb	1 lb

CPM Alpha	N/A	N/A	N/A	N/A	N/A
Direct Beta/Gamma	N/A	N/A	N/A	N/A	N/A

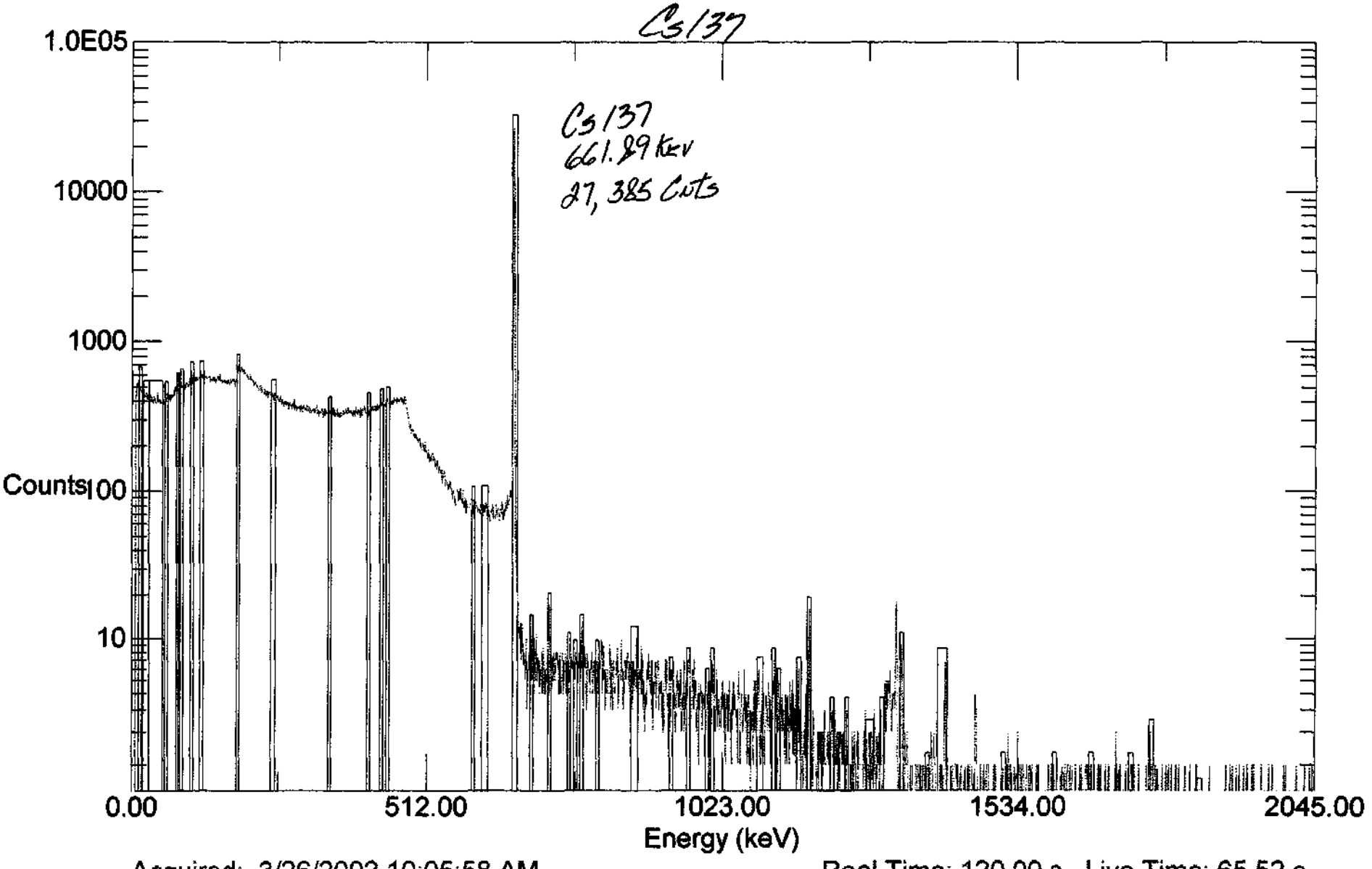
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	OVEN	CABINET	OVEN	piece of METAL	channel lock pliers


ITEM
26
OVEN
3 mg/L CW
10 mg/L OW

011 ITEM26 3-2[illegible]-2002 10.05.58 AM

ITEM26



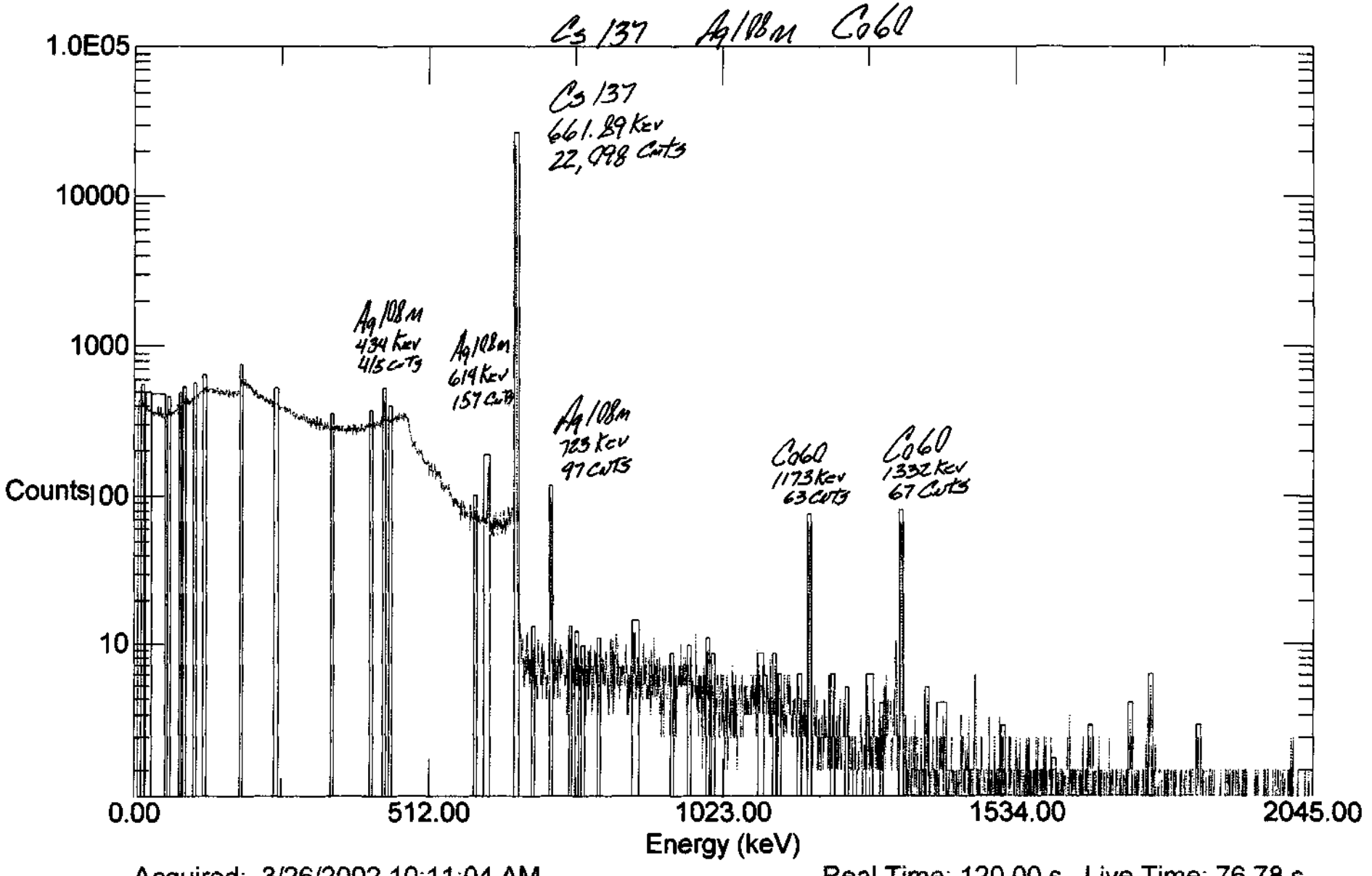
Acquired: 3/26/2002 10:05:58 AM Real Time: 120.00 s. Live Time: 65.52 s.

File: C:\User\GNIWEB~1\011 ITEM26 3-26-2002 10.05.58 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

012 ITEM27 3-26-2002 10.11.04 AM

ITEM27



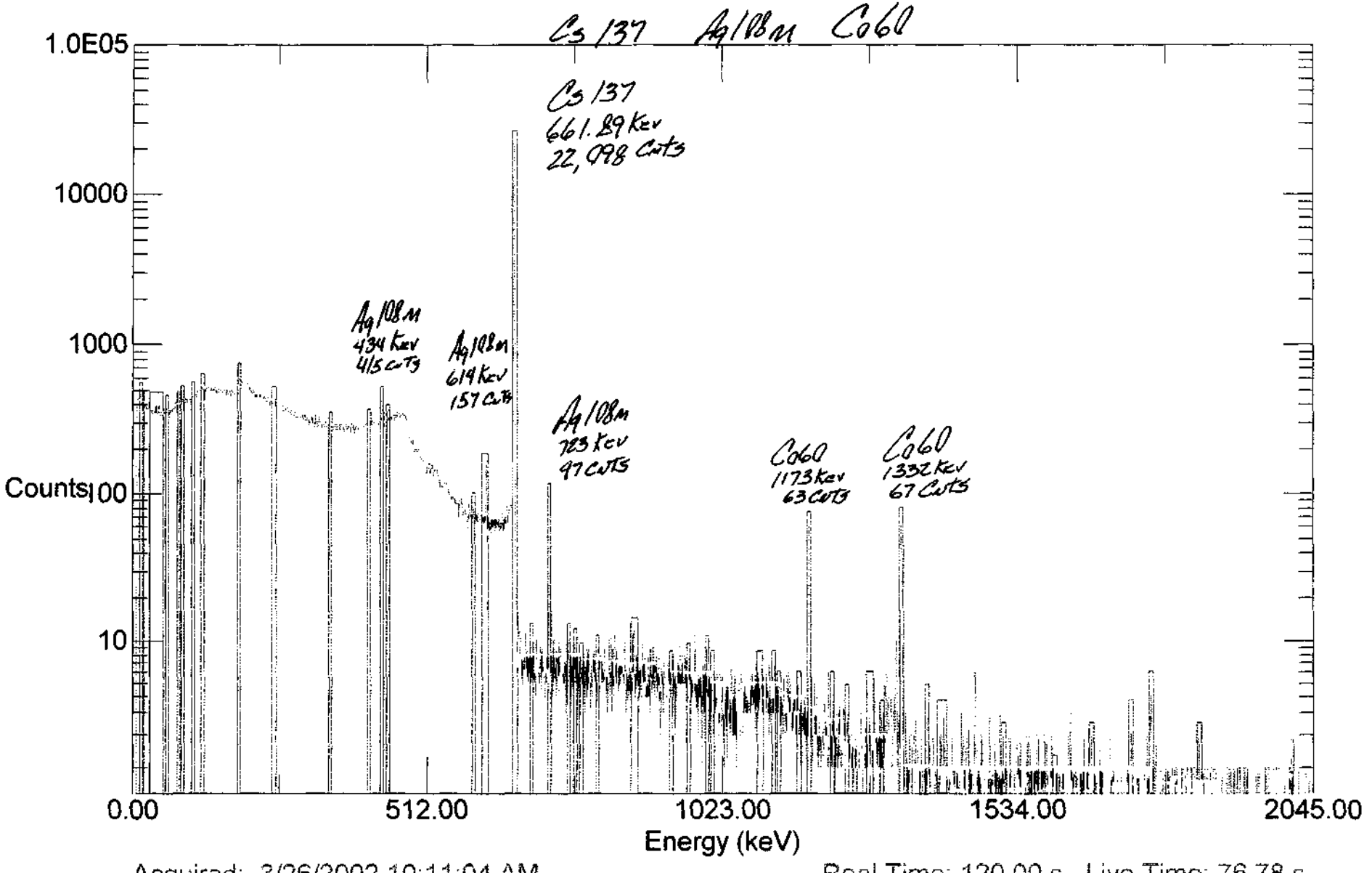
Acquired: 3/26/2002 10:11:04 AM Real Time: 120.00 s. Live Time: 76.78 s.

File: C:\User\GNIWEB~1\012 ITEM27 3-26-2002 10.11.04 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

012 ITEM27 3-26-2002 10.11.04 AM

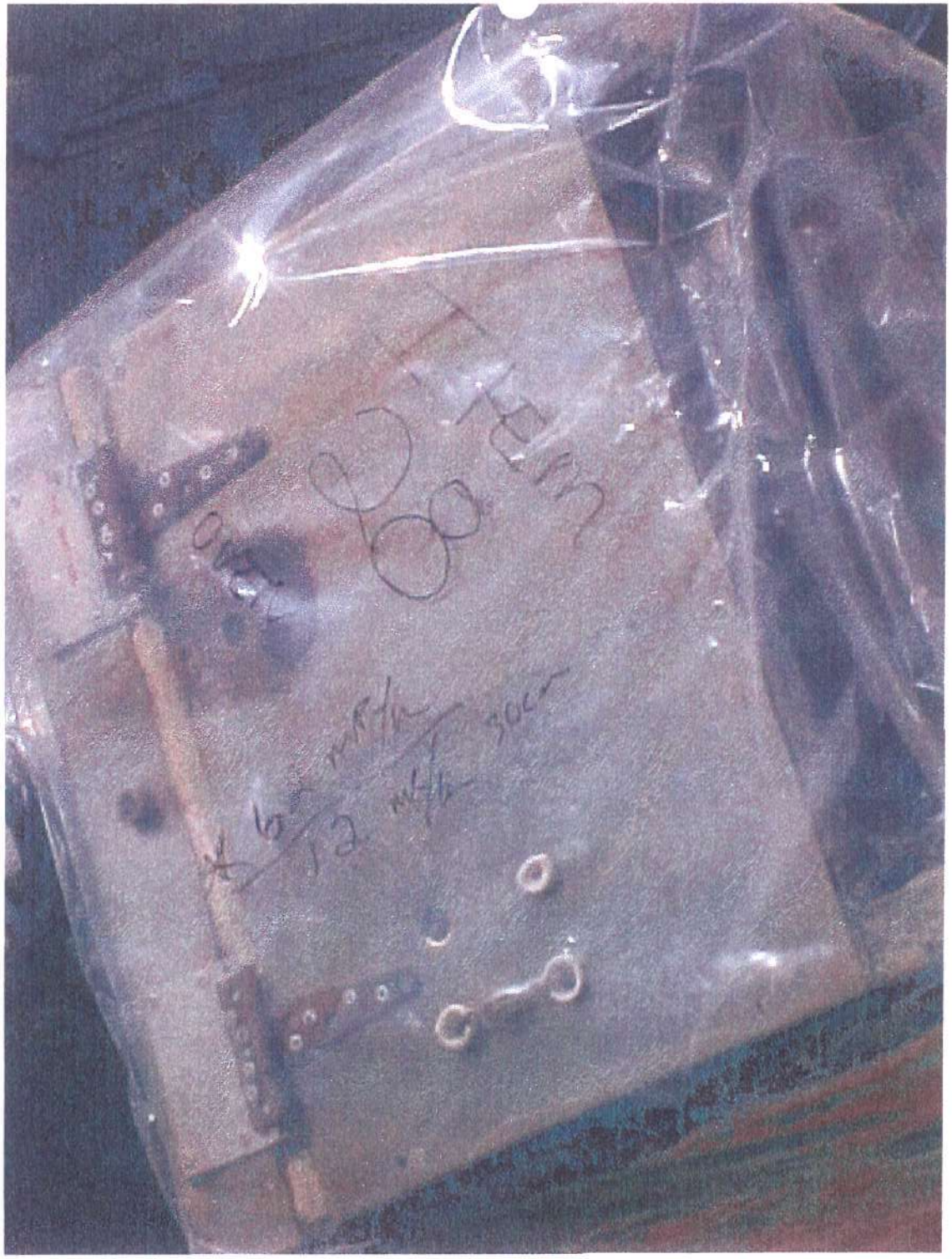
ITEM27



Acquired: 3/26/2002 10:11:04 AM Real Time: 120.00 s. Live Time: 76.78 s.

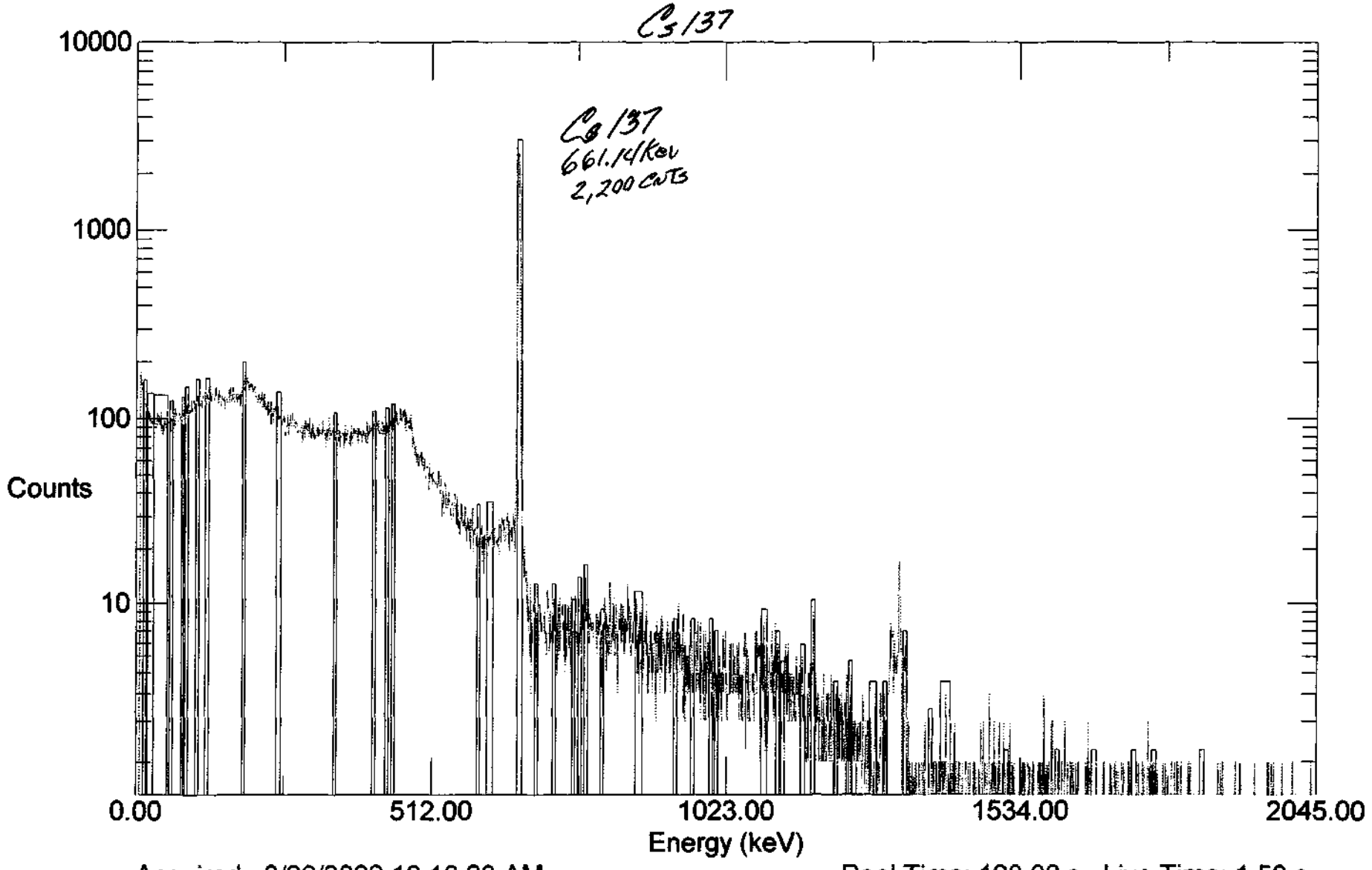
File: C:\User\GNIWEB~1\012 ITEM27 3-26-2002 10.11.04 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



013 ITEM28 3-26-2002 10.16.23 AM

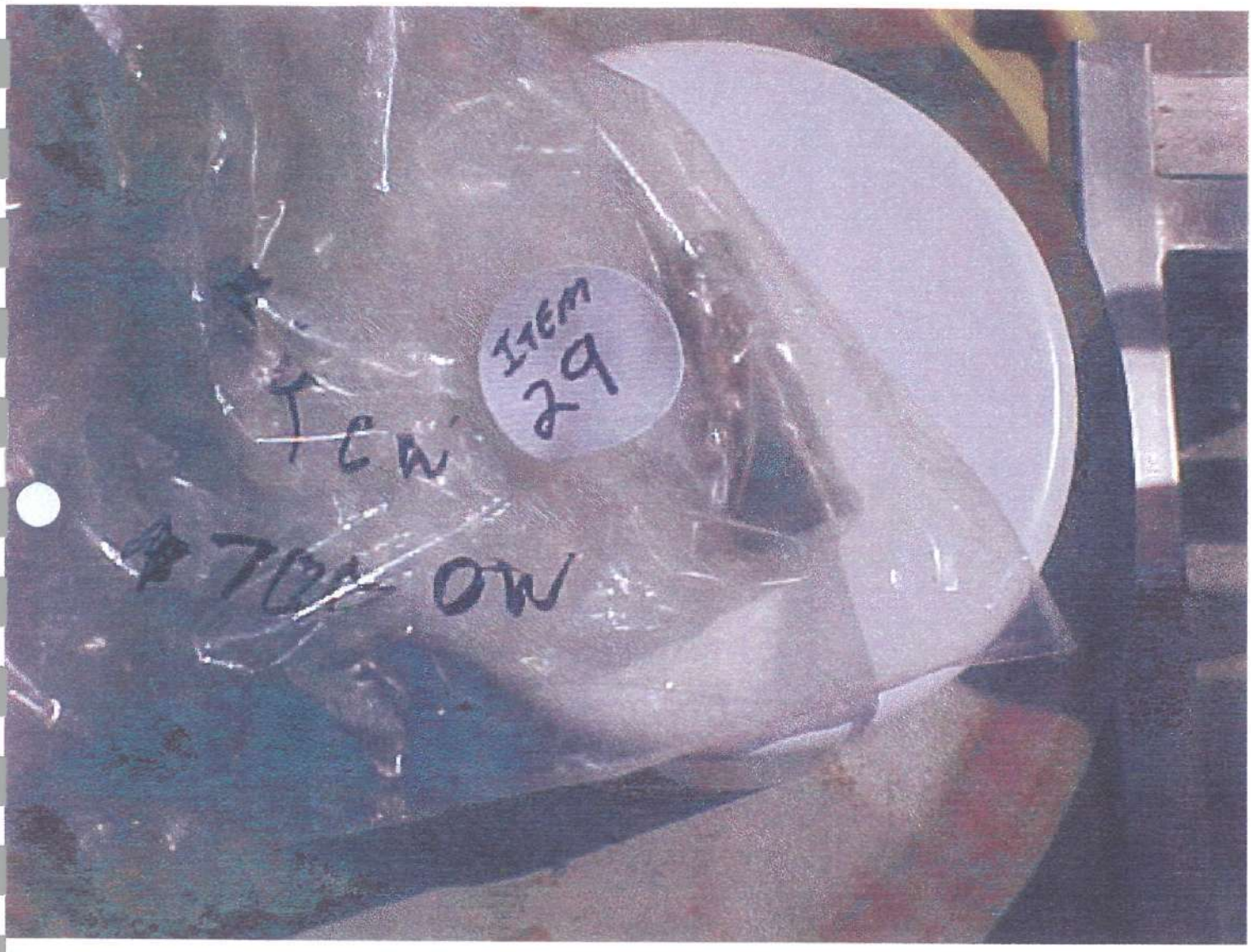
ITEM28



Acquired: 3/26/2002 10:16:23 AM Real Time: 120.00 s. Live Time: 1.50 s.

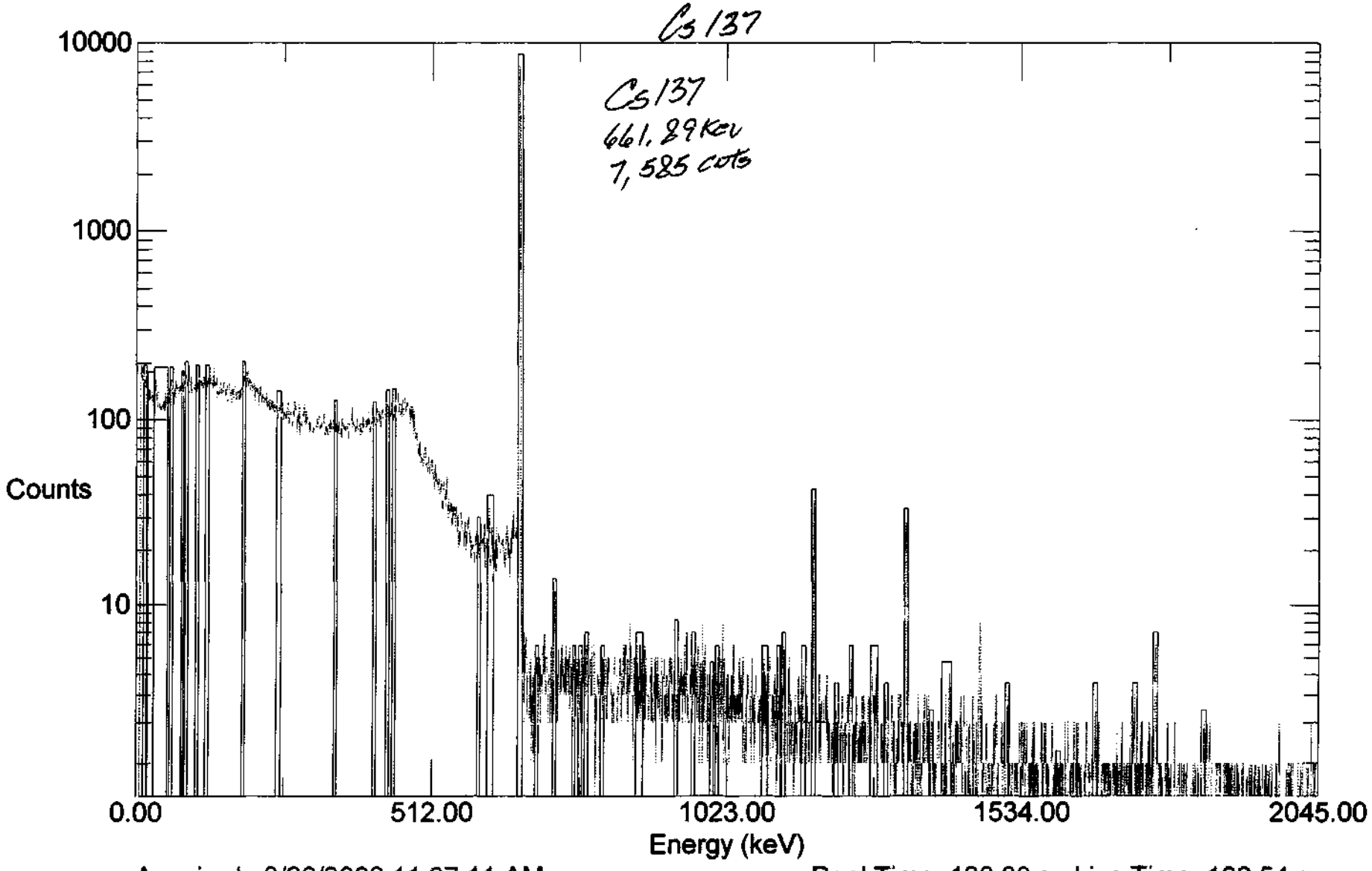
File: C:\User\GNIWEB~1\013 ITEM28 3-26-2002 10.16.23 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
29
CW
#7 OW

014 ITEM29 3-26-2002 11.07.10 AM

ITEM29



Acquired: 3/26/2002 11:07:11 AM Real Time: 120.00 s. Live Time: 108.54 s.

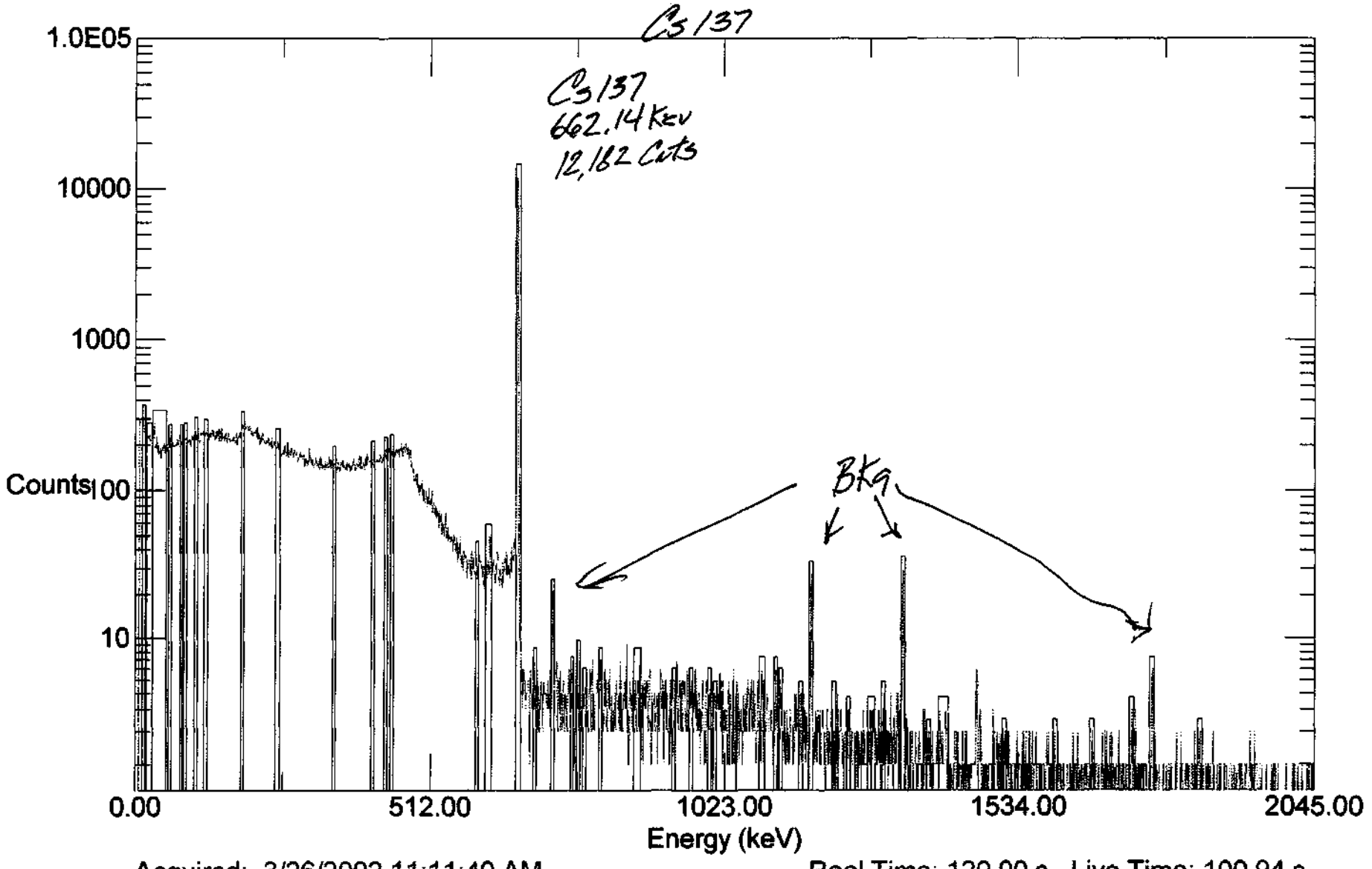
File: C:\User\GNIWEB~1\014 ITEM29 3-26-2002 11.07.10 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

30

015 ITEM30 3-26-2002 11.11.39 AM

ITEM30



Acquired: 3/26/2002 11:11:40 AM Real Time: 120.00 s. Live Time: 100.94 s.

File: C:\User\GNIWEB~1\015 ITEM30 3-26-2002 11.11.39 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 5-26-02

ITEMS

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

Container #	31	32	33	34	35
~~External on pig in mR/hr~~					
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr CW	3	5	1	<.2	1
Beta on open ~~pig~~ mR/hr O/W	90	80	1	.5	1.5

Picture	✓	✓	✓	✓	✓
Digi dart	✓	✓	✓	✓	✓

Table Readings

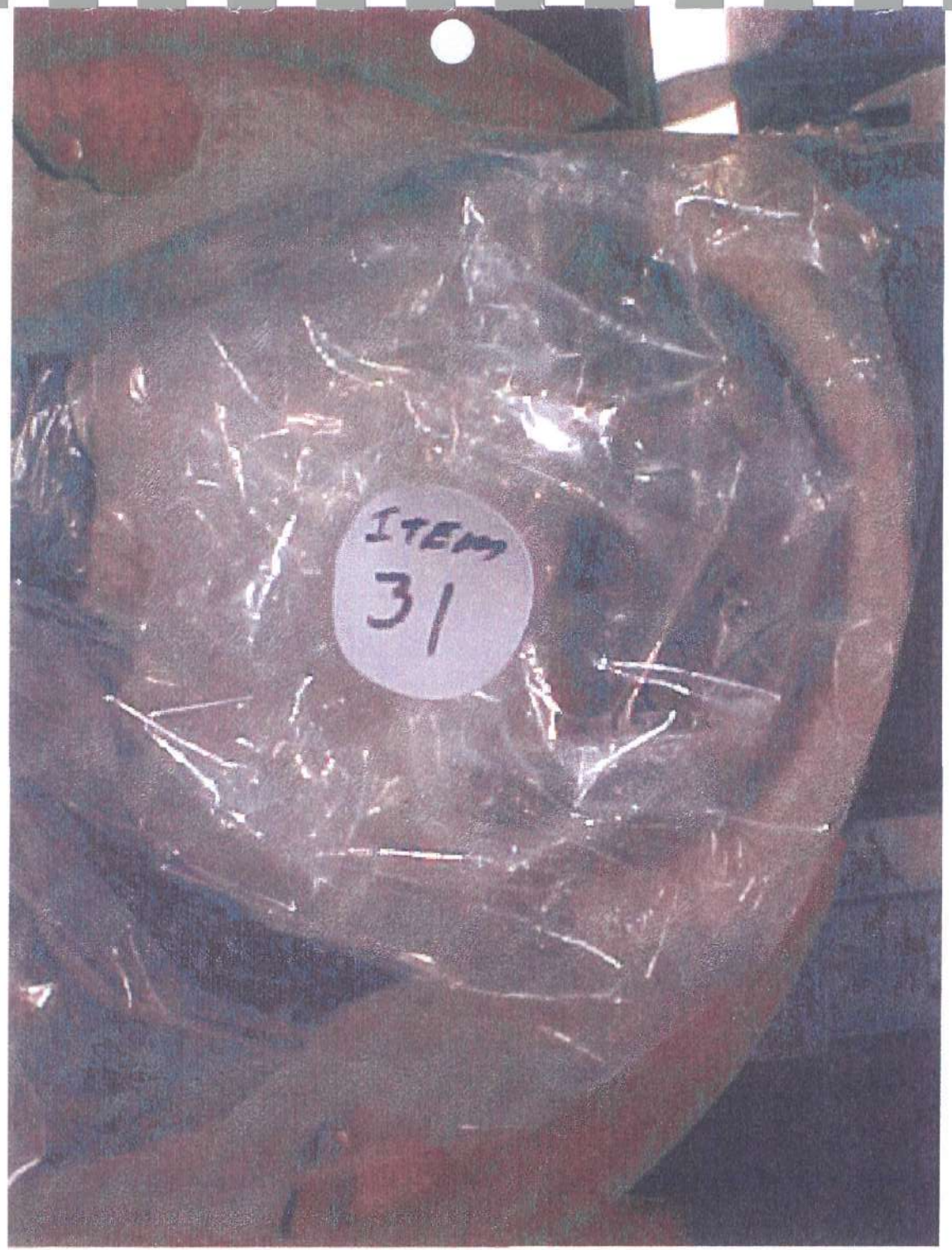
Source mR/hr @ 6 inchs	.5	.6	.5	<.2	.7
Source mR/hr @ 12 inches	.3	.5	.3	<.2	.5
Source mR/hr @ 36 inches	.2	.4	.2	<.2	.4
Size of source in cc's	150	150	2.5 cF	.75 cF	2 cF
Weight in grams	244	244	80 lbs	13.5 lbs	20 lbs

2.5 cF

CPM Alpha	N/A	N/A	N/A	N/A	N/A
Direct Beta/Gamma	N/A	N/A	N/A	N/A	N/A

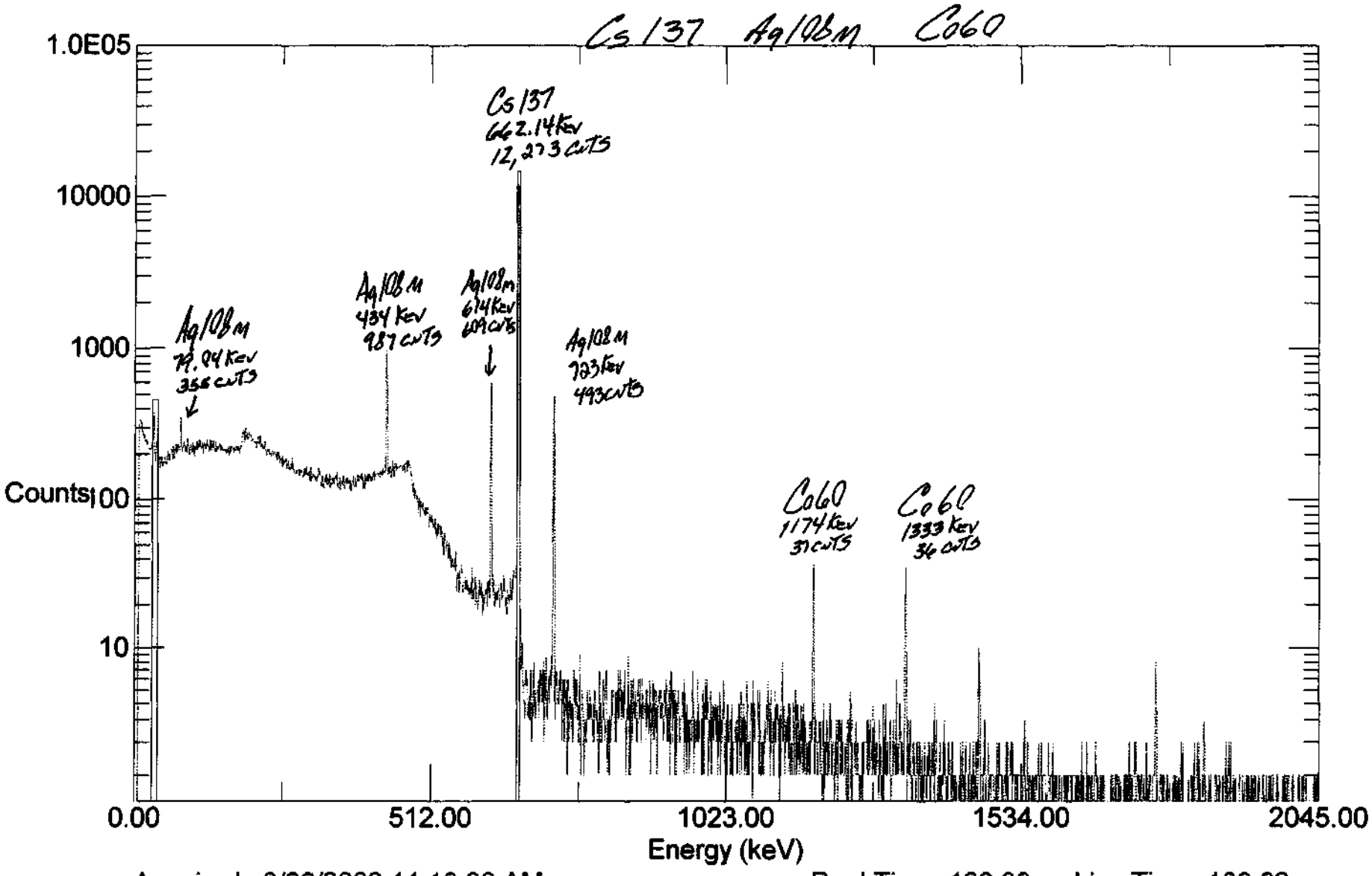
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	broken ceramic lid piece 1	broken ceramic lid piece 2	10 gal Drum of Debris	piece of steel	Bag of misc. Items cans, rags Tools


ITEM
31

016 ITEM31 3-26-2002 11.18.26 AM

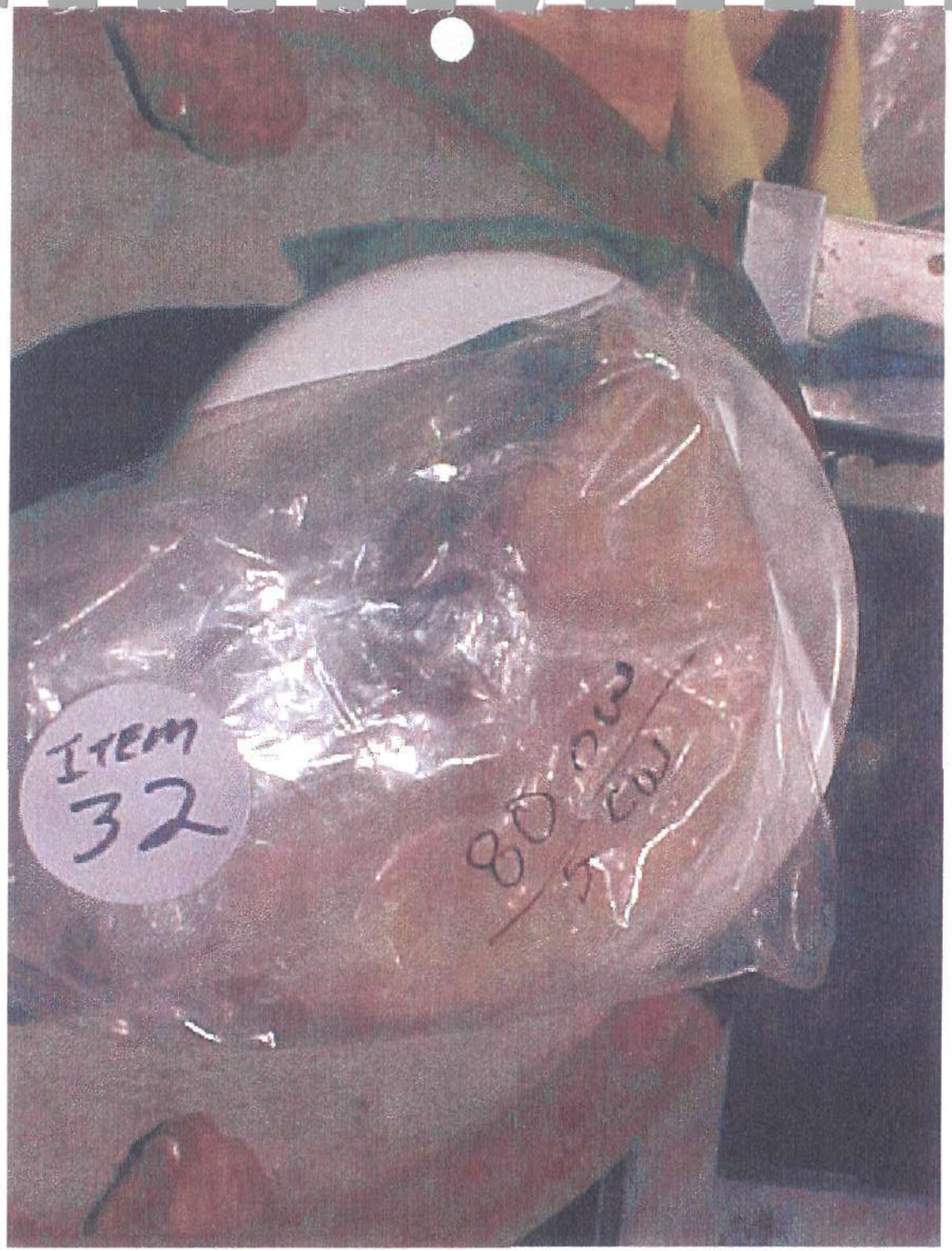
ITEM31



Acquired: 3/26/2002 11:18:26 AM Real Time: 120.00 s. Live Time: 100.92 s.

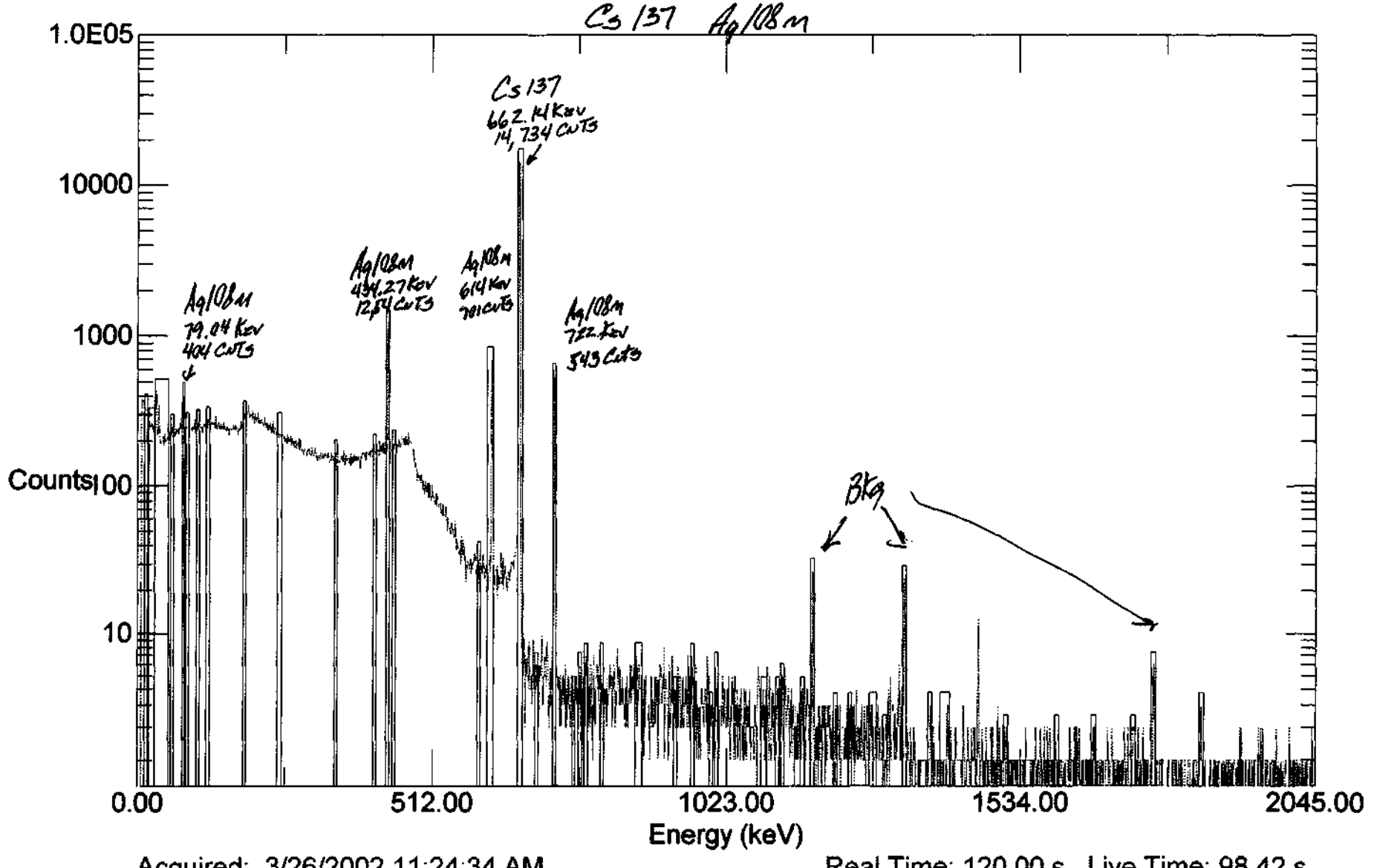
File: C:\User\GNIWEB~1\016 ITEM31 3-26-2002 11.18.26 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
32

017 ITEM32 3-26-2002 11.24.34 AM

ITEM32



Acquired: 3/26/2002 11:24:34 AM Real Time: 120.00 s. Live Time: 98.42 s.

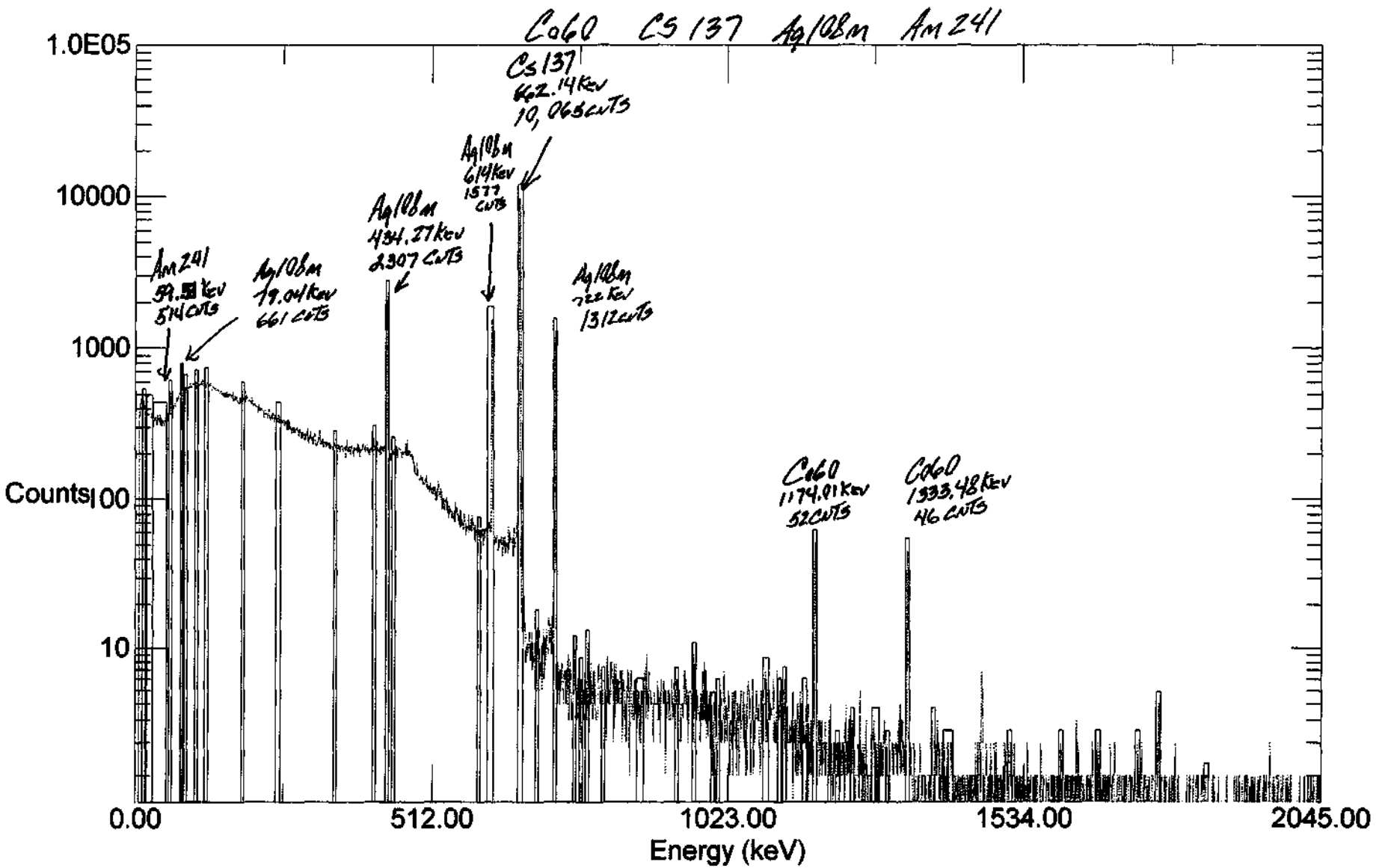
File: C:\User\GNIWEB~1\017 ITEM32 3-26-2002 11.24.34 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM
33
MISC ITEM

018 ITEM33 3-26-2002 11.32.30 AM

ITEM33



Acquired: 3/26/2002 11:32:31 AM Real Time: 120.00 s. Live Time: 84.94 s.

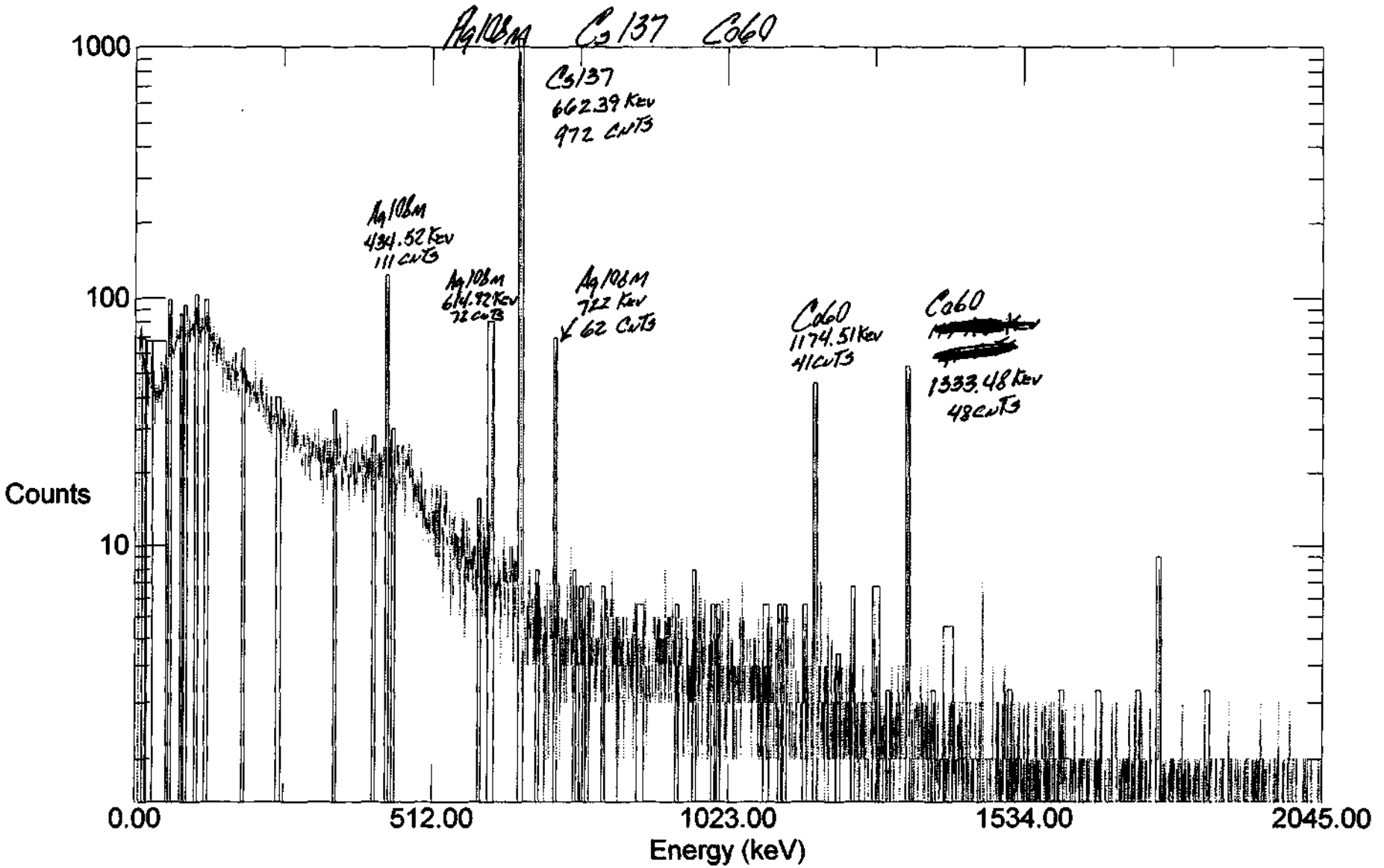
File: C:\User\GNIWEB~1\018 ITEM33 3-26-2002 11.32.30 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Item
34

019 ITEM34 3-26-2002 11.40.03 AM

ITEM34



Acquired: 3/26/2002 11:40:03 AM Real Time: 120.00 s. Live Time: 116.50 s.

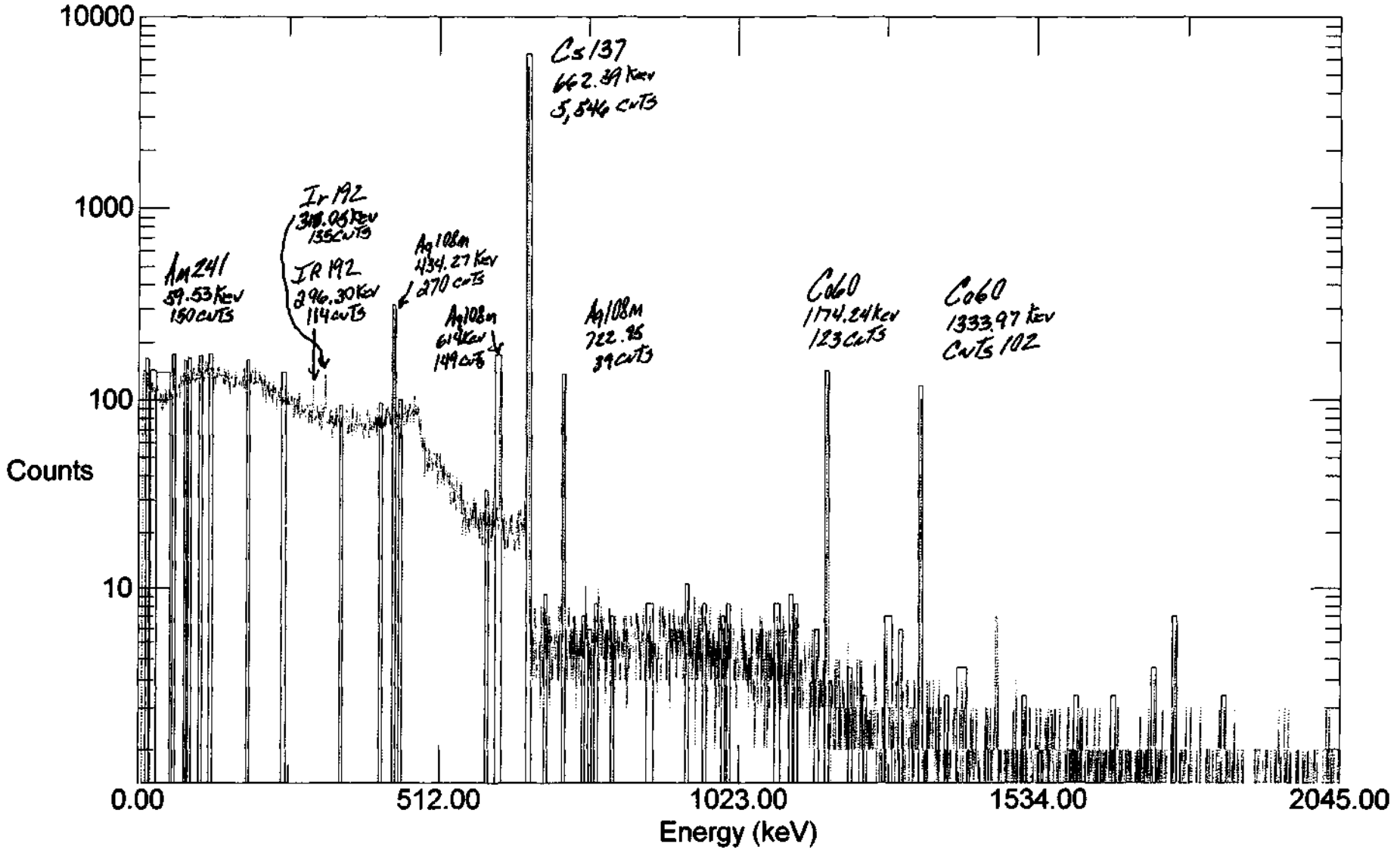
File: C:\User\GNIWEB~1\019 ITEM34 3-26-2002 11.40.03 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM
35

020 ITEM35 3-26-2002 11.46.45 AM

ITEM35



Acquired: 3/26/2002 11:46:44 AM Real Time: 120.00 s. Live Time: 110.26 s.

File: C:\User\GNIWEB~1\020 ITEM35 3-26-2002 11.46.45 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-26-02

ITEMS ROZO BKG 0.6

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

Container #	36	37	38	39	40
~~External on pig in mR/hr~~					
External ~~on pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact ~~on pig~~ mR/hr CW	4	5	1	1.5	6.8
Beta on ~~on pig~~ mR/hr O/W	4	5	2	2	10

Picture	✓	✓	✓	✓	✓
Digi dart	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inches	.8	.4	.9	.5	.6
Source mR/hr @ 12 inches	.6	.3	.8	.3	.4
Source mR/hr @ 36 inches	.2	.2	.7	.2	.2
Size of source in cc's	2cF	2cF	2cF	1.75cF	1.75cF
Weight in grams	20lbs	10lbs	12.5lbs	10lbs	15lbs

CPM Alpha	N/A	N/A	N/A	N/A	N/A
Direct Beta/Gamma	N/A	N/A	N/A	N/A	N/A

Info on source:					

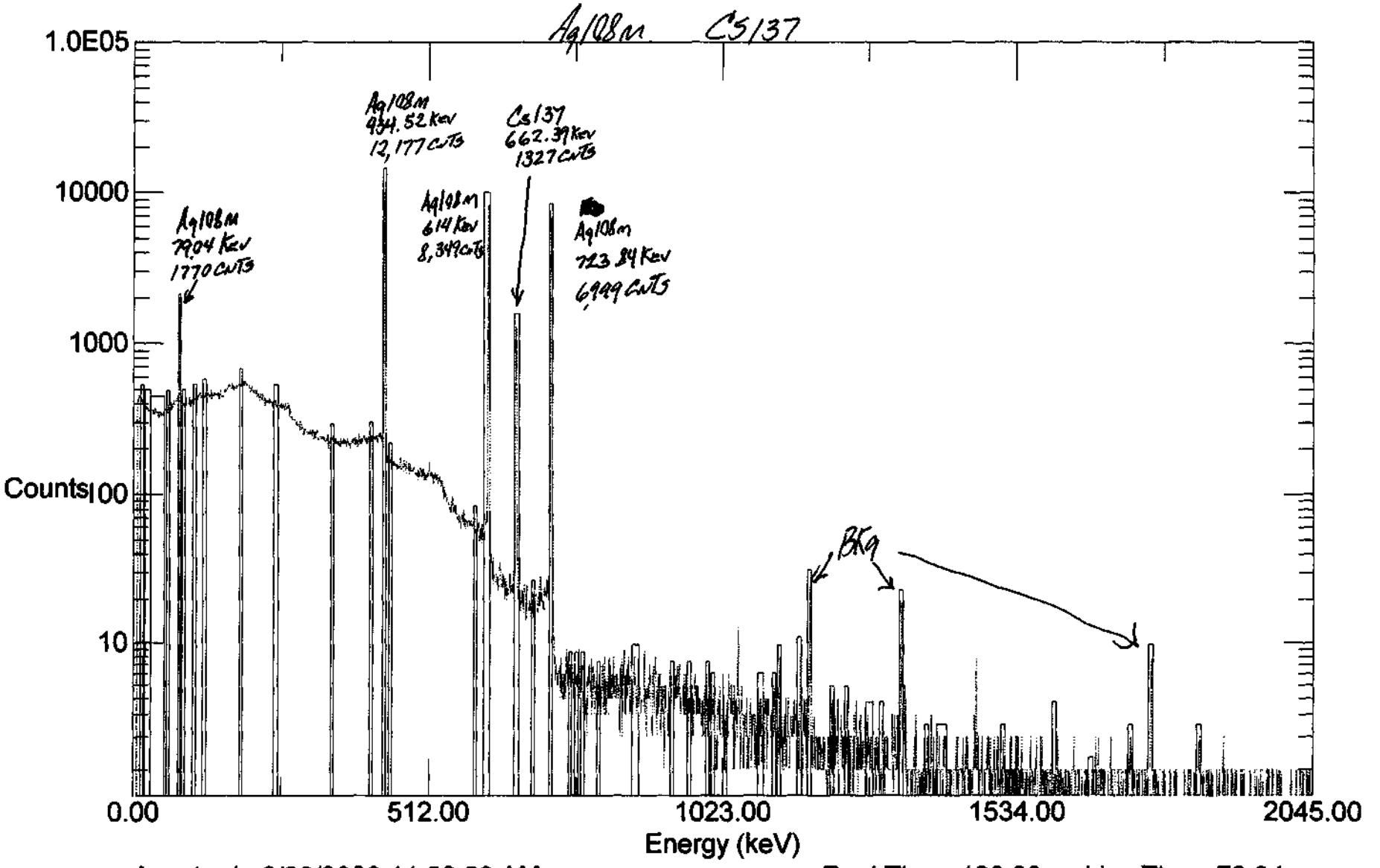
Information on pig:					
Smear DPM per 100 cm^2 Alpha	/ /	/ /	/ /	/ /	/ /
Smear DPM per 100 cm^2 Beta					
	Bag of Misc. Items Tools, hoses	Bag of Misc. ITEMS	Bag of Misc. ITEMS *	Bag of Misc. ITEMS	Bag of PPE & CANS

* ROZO Background .6

#4 MRA
36

021 ITEM36 3-26-2002 11.59.58 AM

ITEM36



Acquired: 3/26/2002 11:59:58 AM Real Time: 120.00 s. Live Time: 78.94 s.

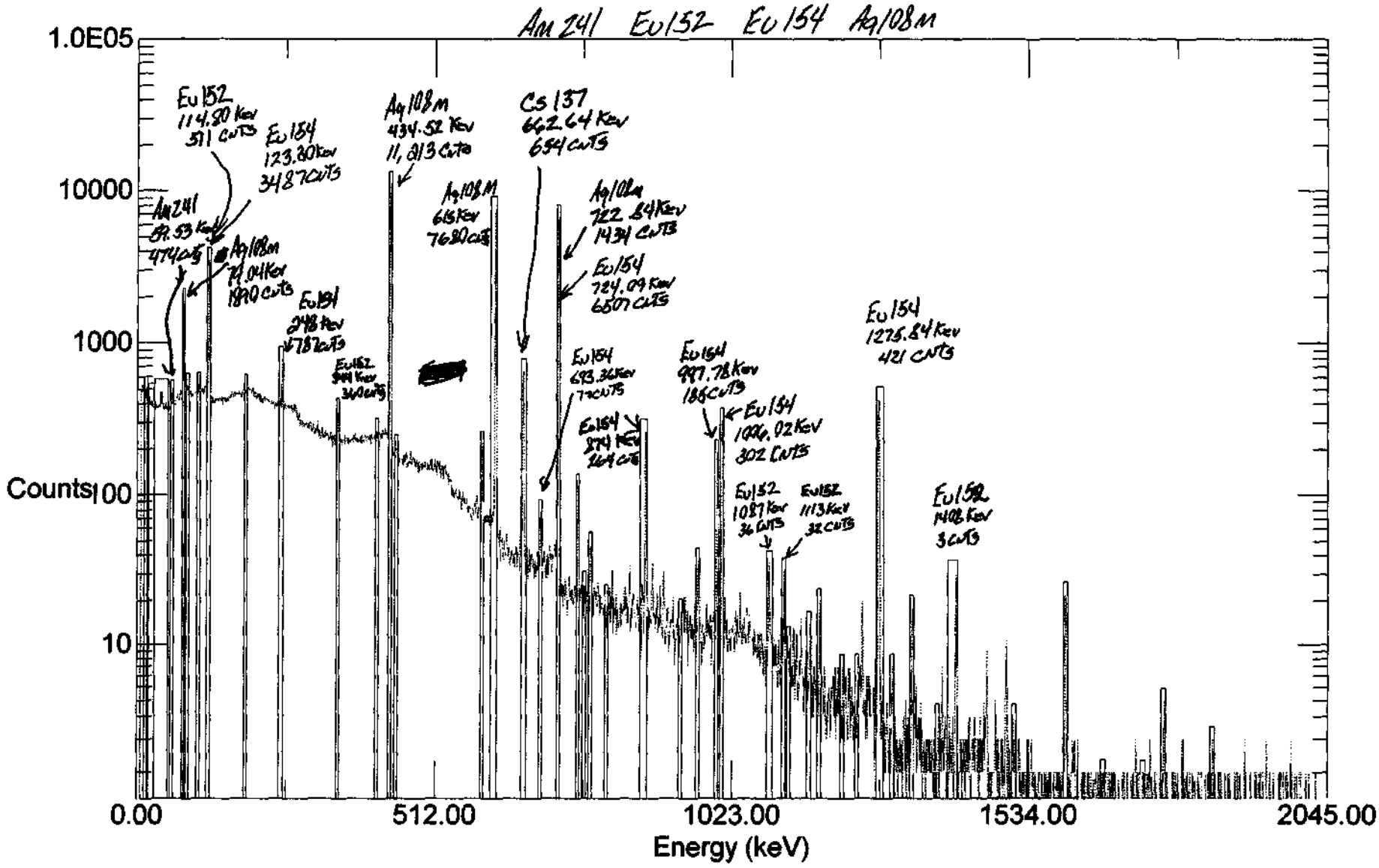
File: C:\User\GNIWEB~1\021 ITEM36 3-26-2002 11.59.58 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM
37
RADIOACTIVE MATE

022 ITEM37 3-26-2002 12.03.57 PM

ITEM37



Acquired: 3/26/2002 12:03:58 PM Real Time: 120.00 s. Live Time: 74.24 s.

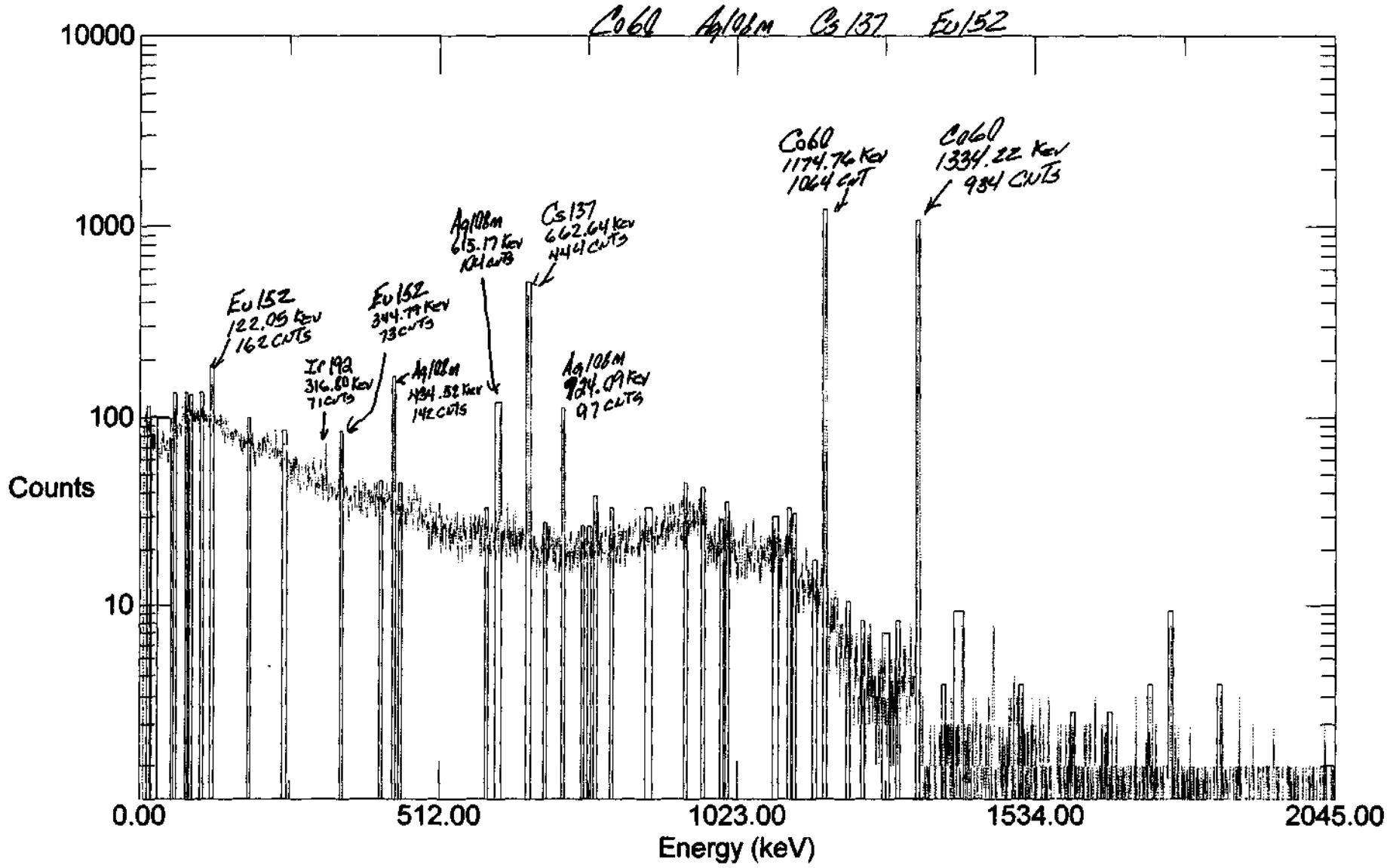
File: C:\User\GNIWEB~1\022 ITEM37 3-26-2002 12.03.57 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Igea
38

023 ITEM38 3-26-2002 12.07.13 PM

ITEM38



Acquired: 3/26/2002 12:07:12 PM Real Time: 120.00 s. Live Time: 112.36 s.

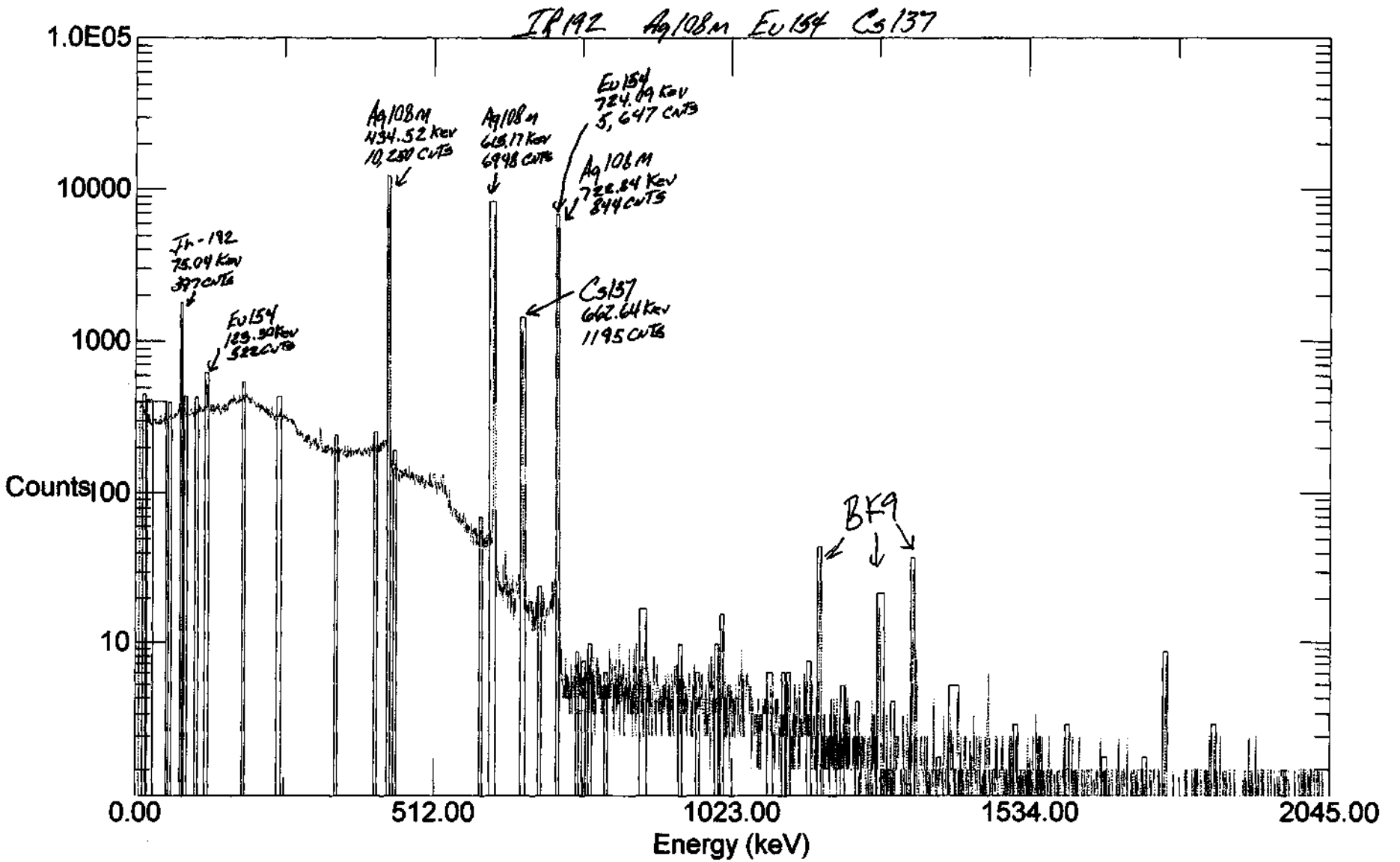
File: C:\User\GNIWEB~1\023 ITEM38 3-26-2002 12.07.13 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Exp
39

024 ITEM39 3-26-2002 12.14.10 PM

ITEM39



Acquired: 3/26/2002 12:14:11 PM Real Time: 120.00 s. Live Time: 88.90 s.

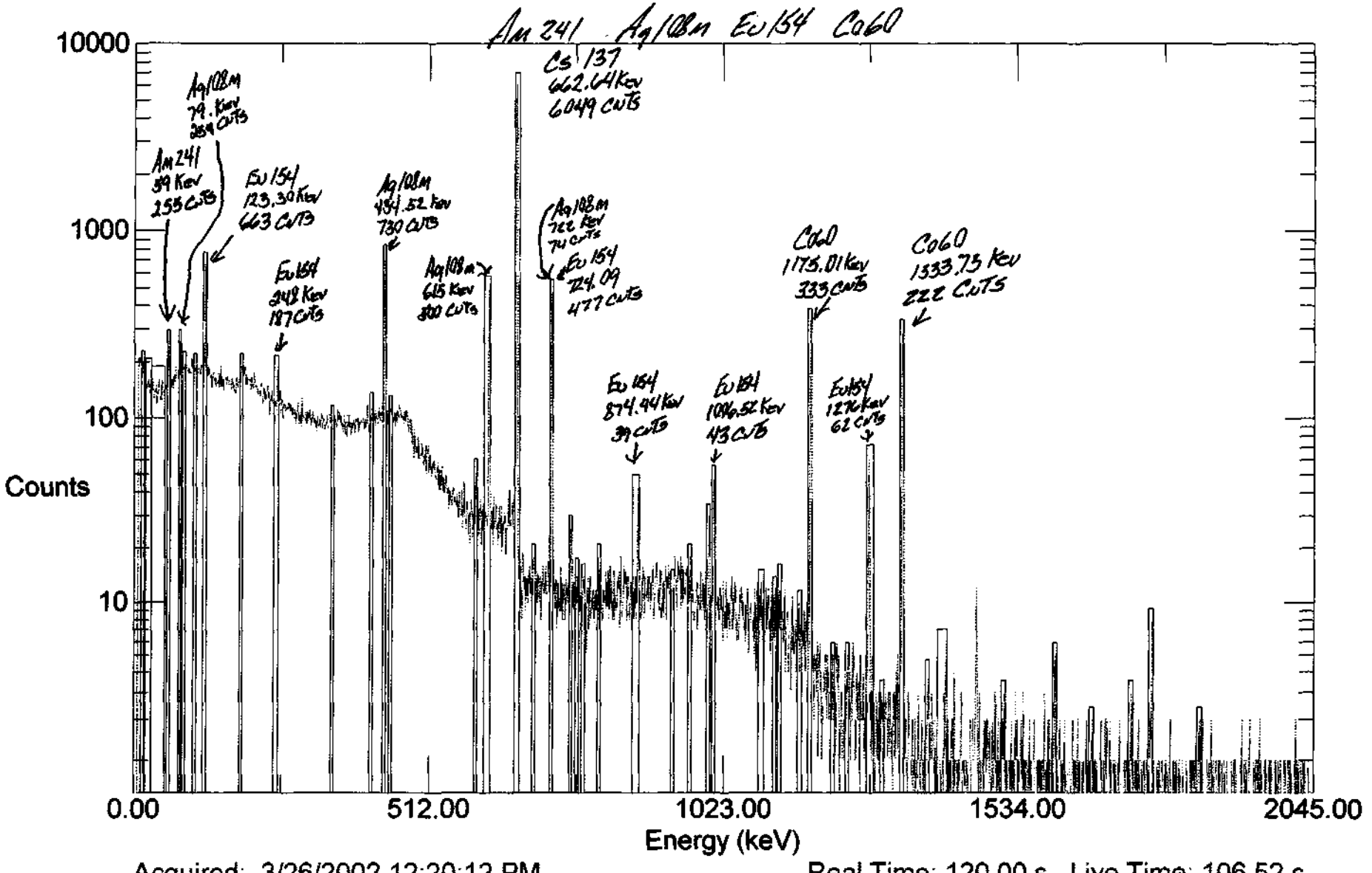
File: C:\User\GNIWEB~1\024 ITEM39 3-26-2002 12.14.10 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

40

025 ITEM40 3-26-2002 12.20.11 PM

ITEM40



Acquired: 3/26/2002 12:20:12 PM Real Time: 120.00 s. Live Time: 106.52 s.

File: C:\User\GNIWEB~1\025 ITEM40 3-26-2002 12.20.11 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-26-02

ITEMS

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

Container #	41	42	43	44	45
~~External pig in mR/hr~~					
External ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact ~~pig~~ mR/hr CW	.2	.4	.5	.8	2
Beta on ~~pig~~ mR/hr O/W	N/A	N/A	N/A	N/A	N/A

Picture	✓	✓	✓	✓	✓
Digi Cam	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	.3	.2	<.1	.3	.5
Source mR/hr @ 12 inches	.2	.1	<.1	.2	.3
Source mR/hr @ 36 inches	<.1	<.1	<.1	<.2	.1
Size of source in cc's	1.75 cF	1.75 cF	1 cF	1.75 cF	1 cF
Weight in grams	10 lbs	10 lbs	10 lbs	12 lbs	3 lbs

CPM Alpha	N/A	N/A	N/A	N/A	N/A
Direct Beta/Gamma	N/A	N/A	N/A	N/A	N/A

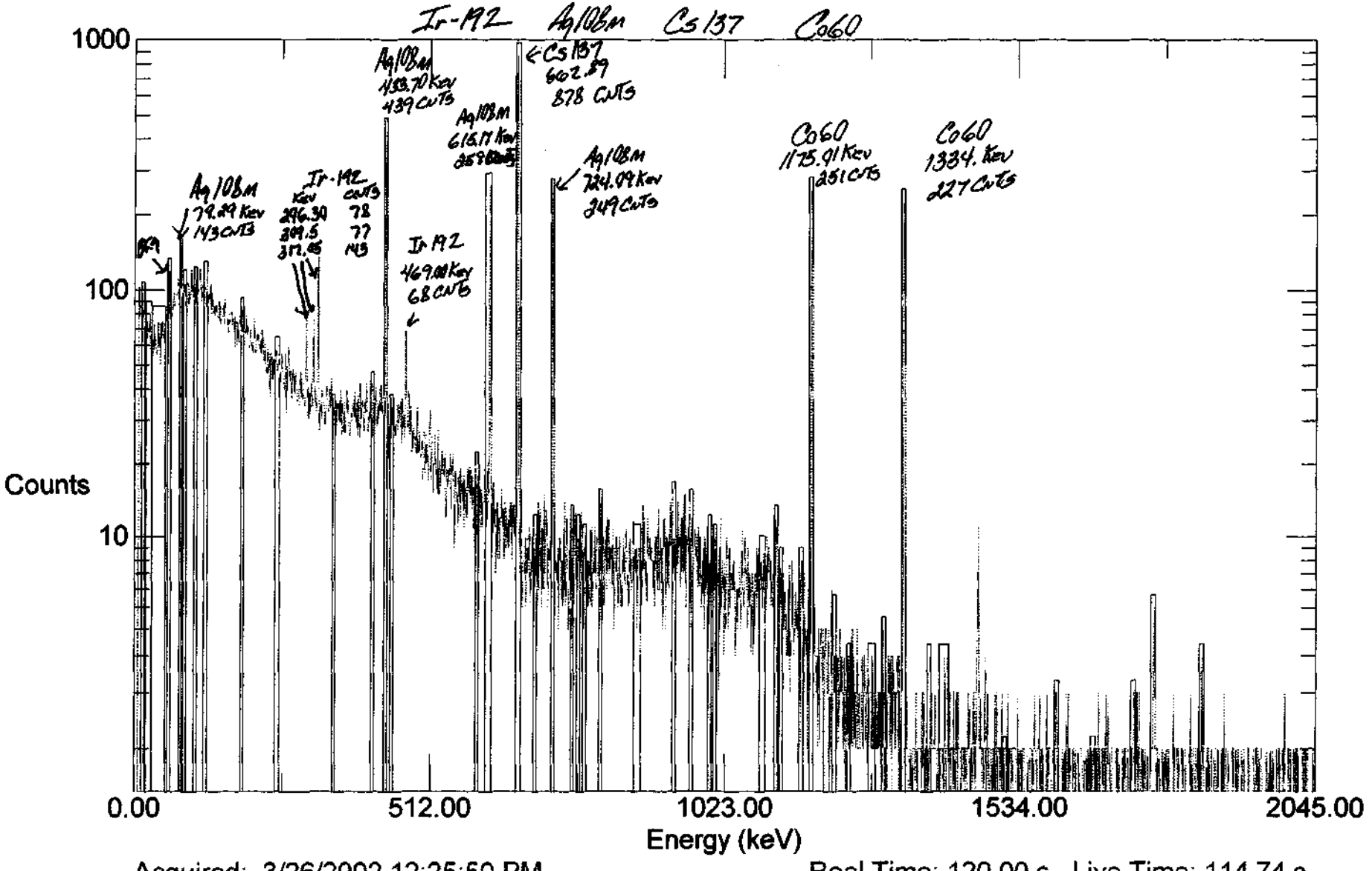
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	Misc. Bag of ITEMS	Misc. bag of ITEMS	Misc. bag of ITEMS	Misc. bag of ITEMS	Misc. bag of ITEMS

41

026 ITEM41 3-26-2002 12.25.50 PM

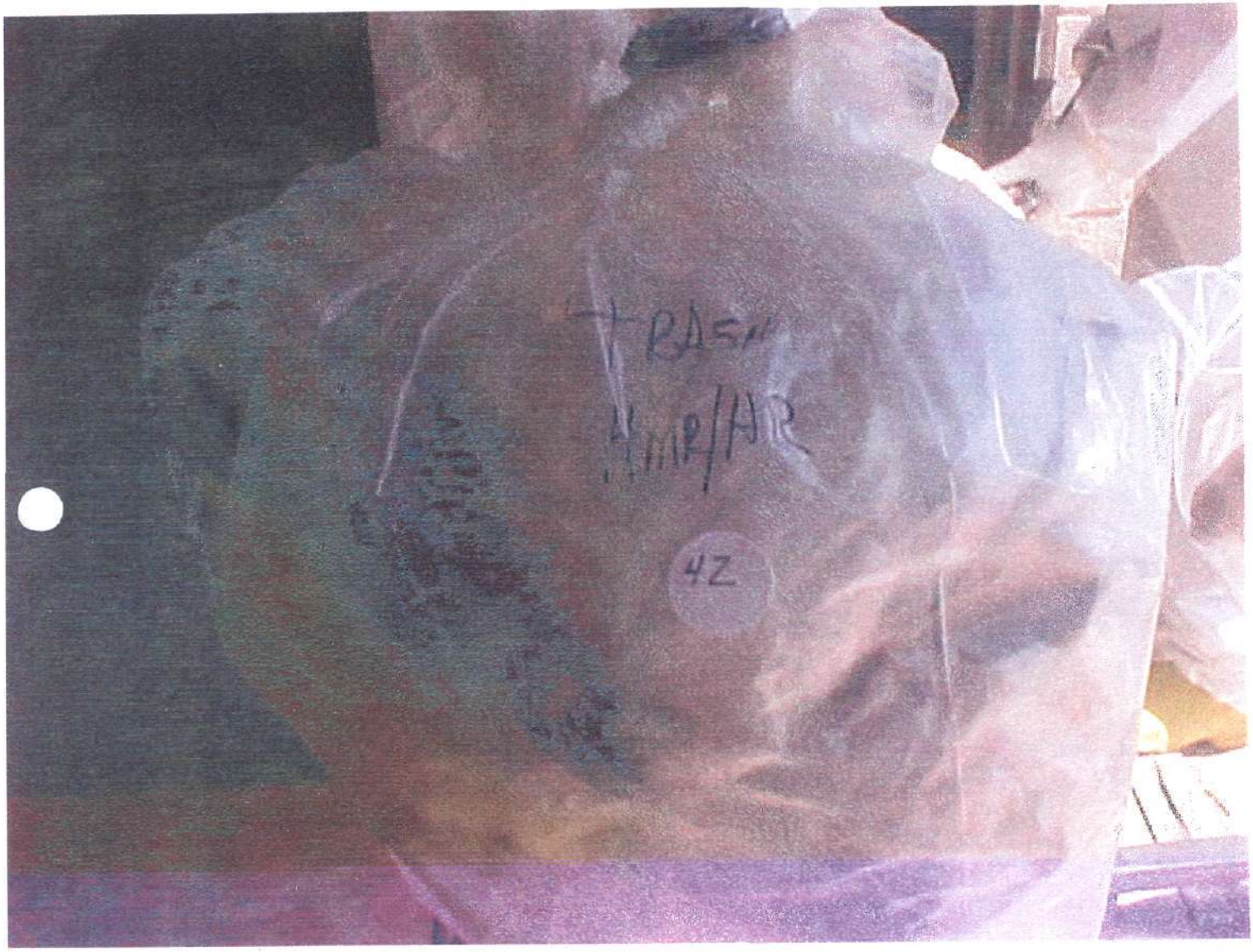
ITEM41



Acquired: 3/26/2002 12:25:50 PM Real Time: 120.00 s. Live Time: 114.74 s.

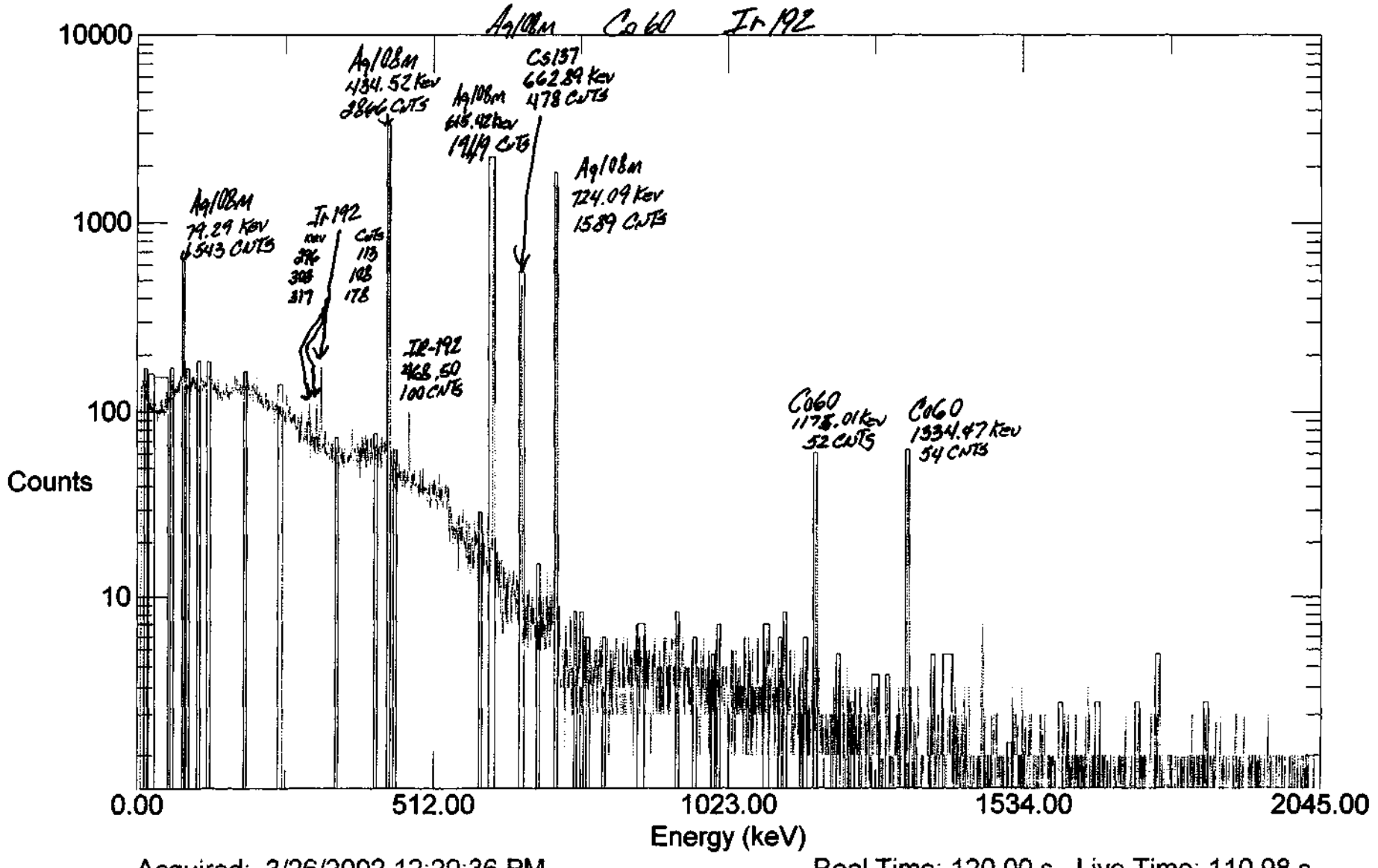
File: C:\User\GNIWEB~1\026 ITEM41 3-26-2002 12.25.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


TRASH
4MR/HR
42

027 ITEM42 3-26-2002 12.29.35 PM

ITEM42



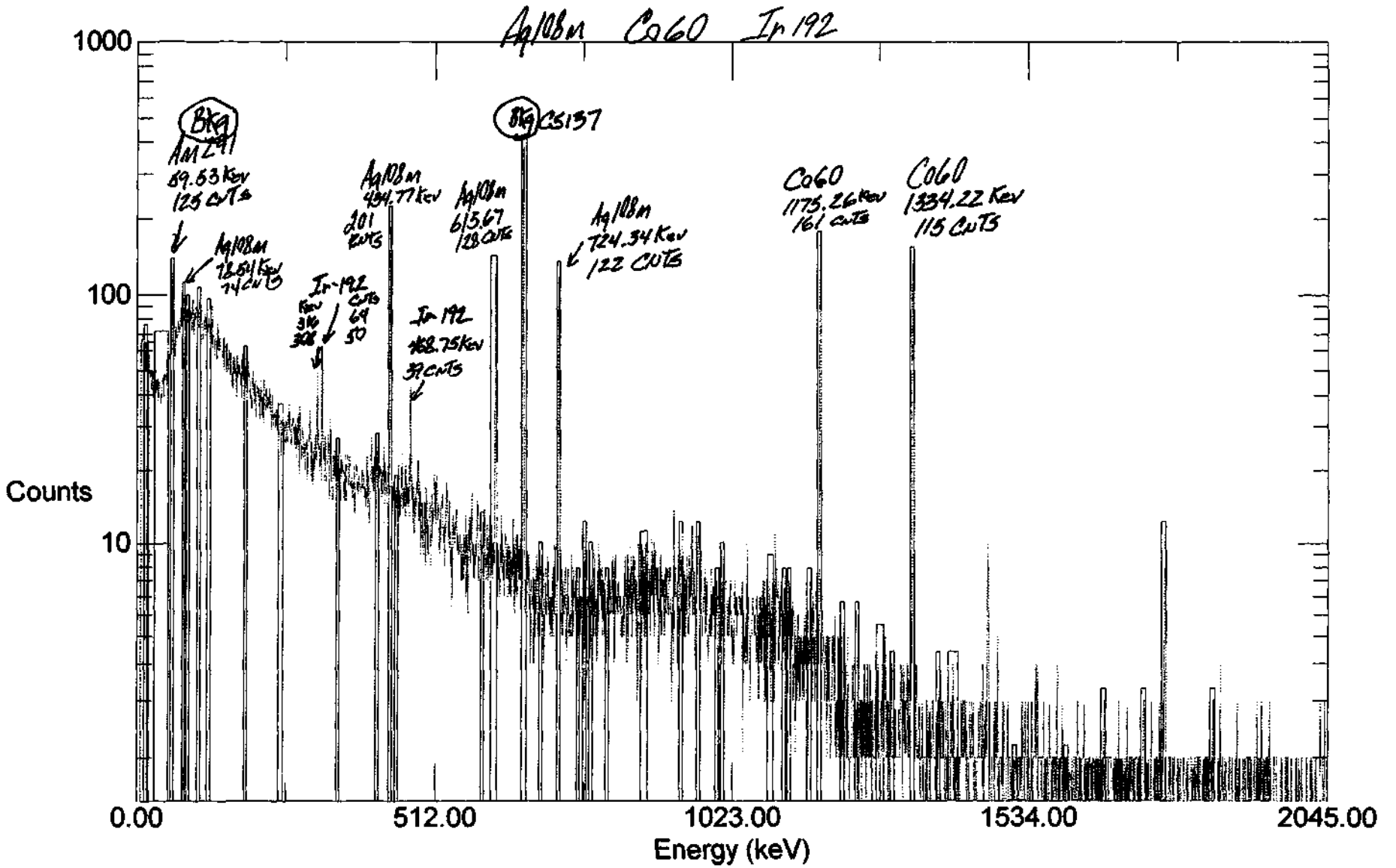
Acquired: 3/26/2002 12:29:36 PM Real Time: 120.00 s. Live Time: 110.98 s.

File: C:\User\GNIWEB~1\027 ITEM42 3-26-2002 12.29.35 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

028 ITEM43 3-26-2002 12.34.55 PM

ITEM43



Acquired: 3/26/2002 12:34:55 PM Real Time: 120.00 s. Live Time: 116.24 s.

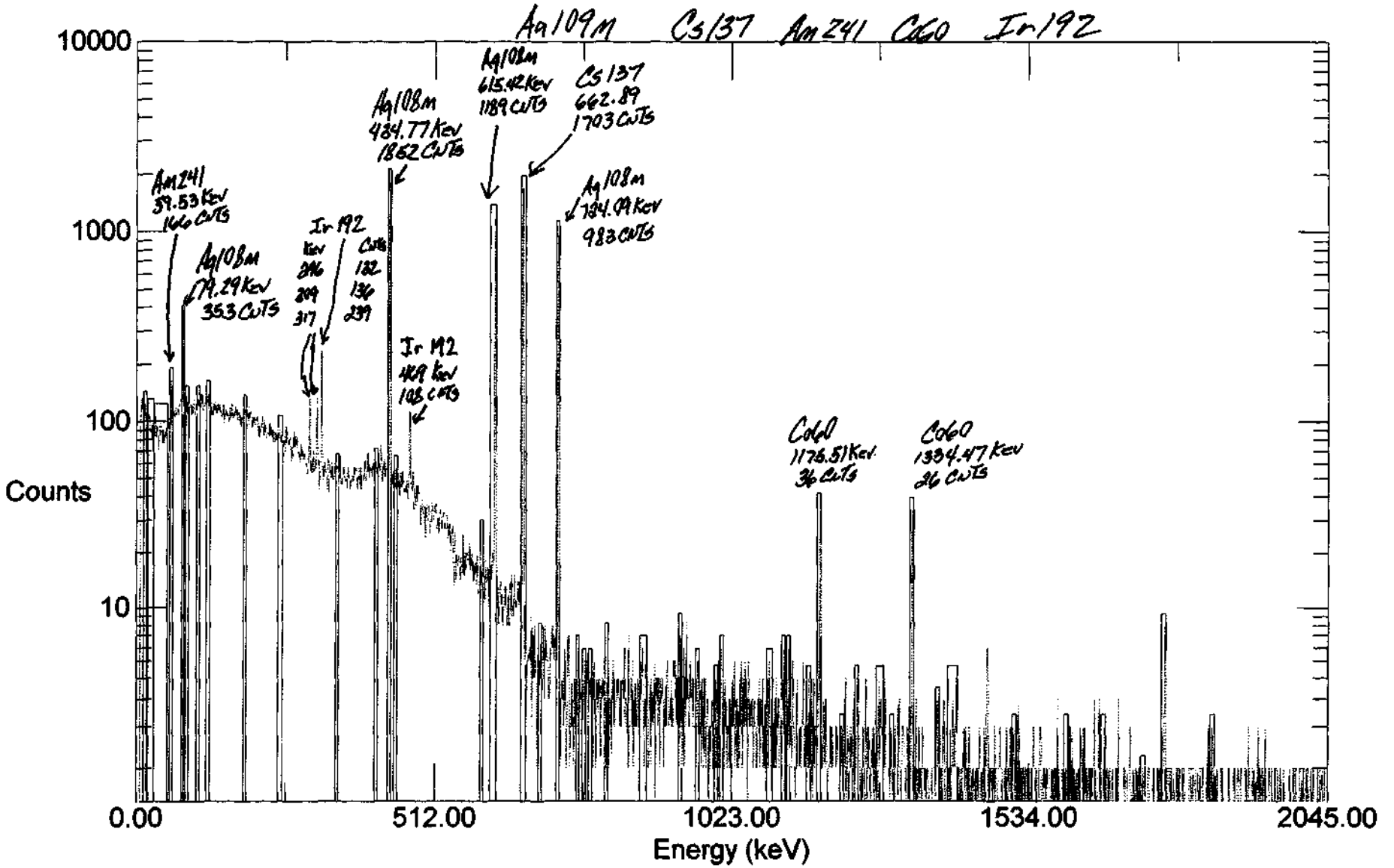
File: C:\User\GNIWEB~1\028 ITEM43 3-26-2002 12.34.55 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM
44

029 ITEM44 3-26-2002 12.38.03 PM

ITEM44



Acquired: 3/26/2002 12:38:03 PM Real Time: 120.00 s. Live Time: 112.14 s.

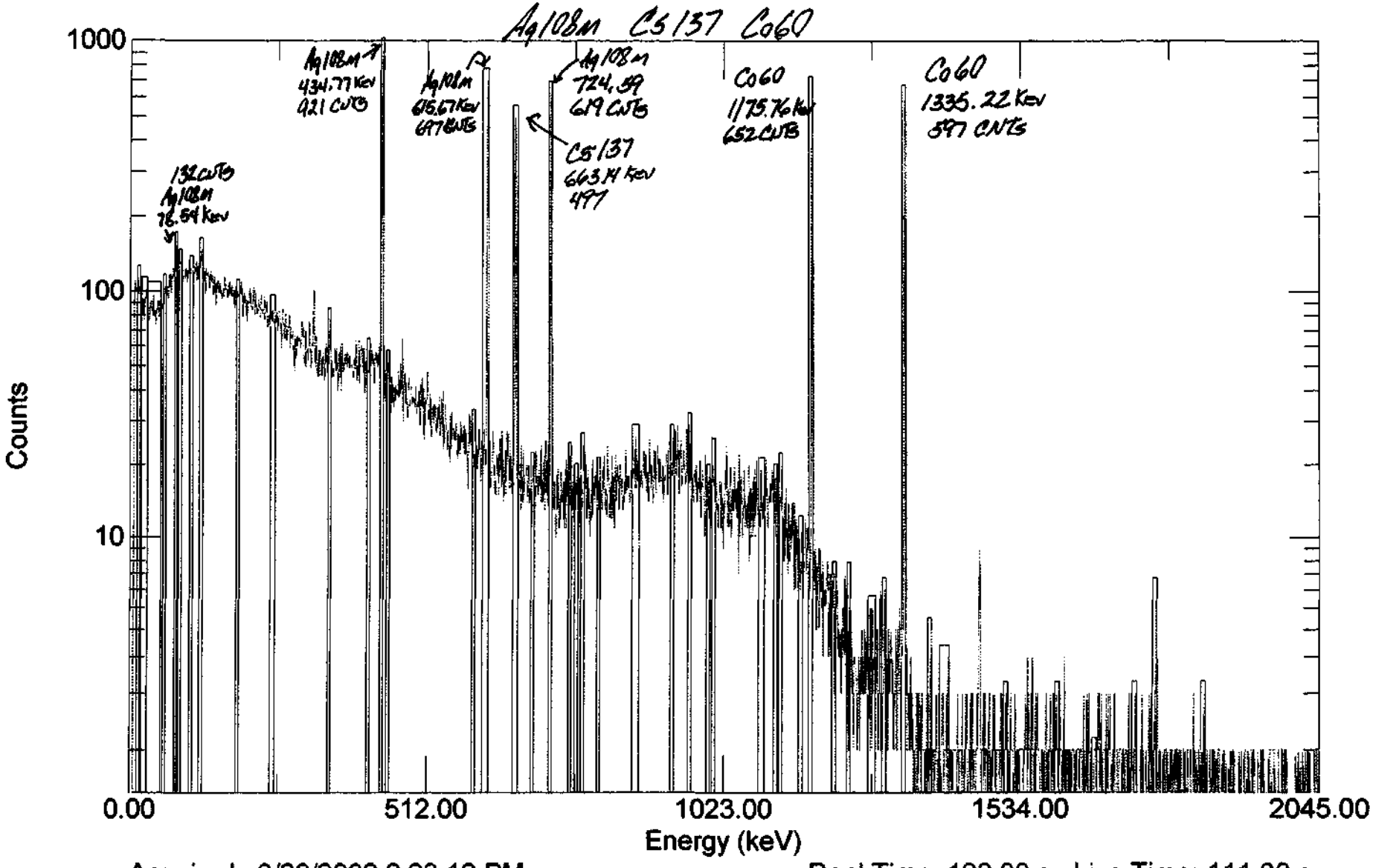
File: C:\User\GNIWEB~1\029 ITEM44 3-26-2002 12.38.03 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

45

030 ITEM45 3-26-2002 2.23.11 PM

ITEM45



Acquired: 3/26/2002 2:23:12 PM Real Time: 120.00 s. Live Time: 111.80 s.

File: C:\User\GNIWEB~1\030 ITEM45 3-26-2002 2.23.11 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-26-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

ITEMS

Container #	46	47	48	49	50
~~External on pig~~ in mR/hr					
External ~~on pig~~ Neutron mR/hr	<1	<1	<1	<1	
Contact ~~open pig~~ mR/hr CW	.8	1.3	6	<.2	700
Beta on ~~open pig~~ mR/hr O/W	N/A	2.1	13	<.2	5

Picture					
0.91	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	0.3	1	.9	<.2	30
Source mR/hr @ 12 inches	0.2	.7	.6	<.2	11
Source mR/hr @ 36 inches	0.1	.3	.3	<.2	1.7
Size of source in cc's	1.5cF	1.5cF	2cF	2cF	80cc
Weight in grams	5 lbs	10 lbs	15 lbs	15 lbs	100 grams

CPM Alpha	N/A	N/A	N/A	N/A	N/A
Direct Beta/Gamma	N/A	N/A	N/A	N/A	N/A

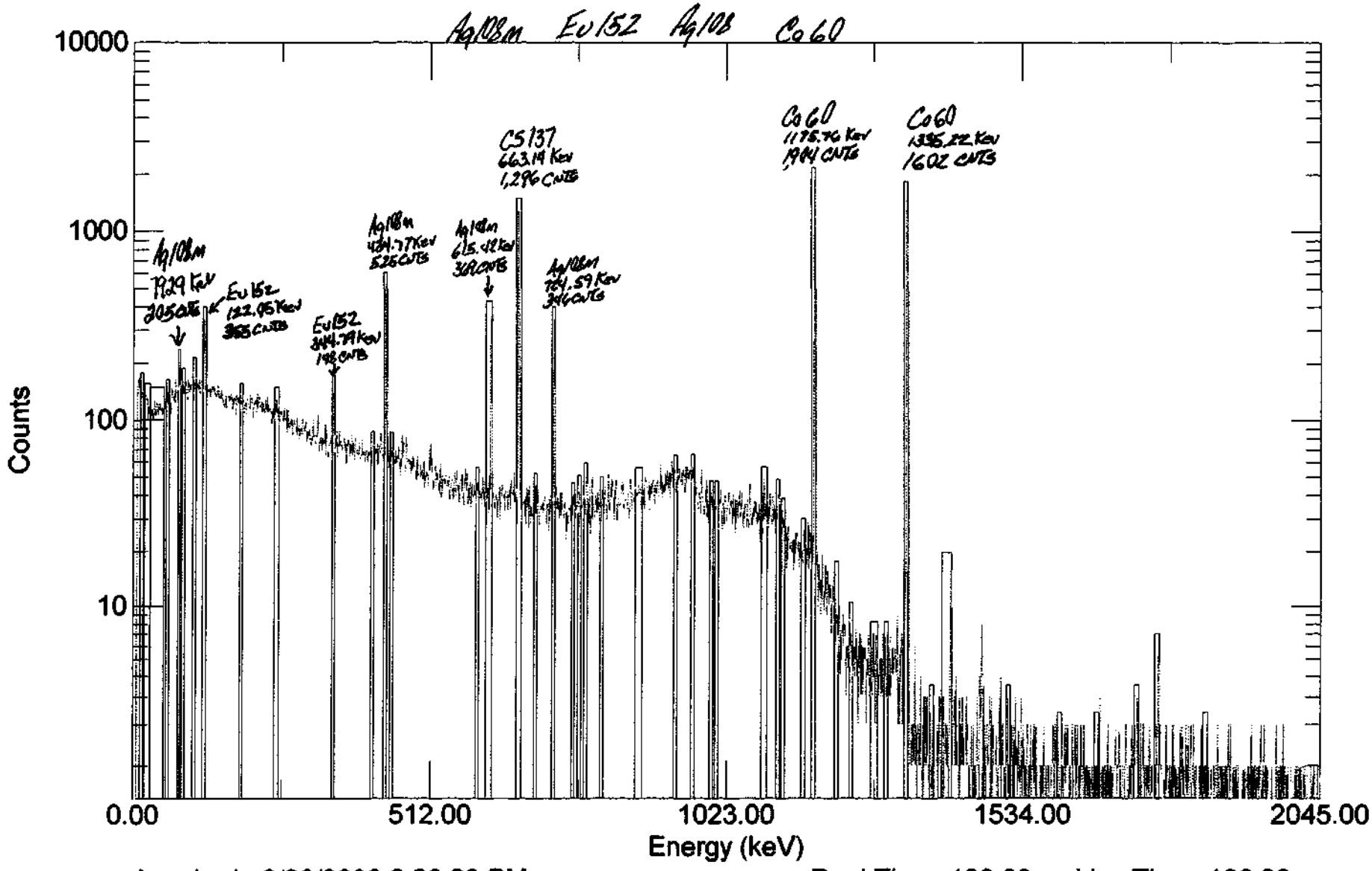
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	misc. bag of ITEMS	misc. bag of ITEMS	misc. bag of ITEMS	misc. bag of ITEMS	Brick gunite 500 ow @ 30cm

46
WASH

031 ITEM46 3-26-2002 2.26.28 PM

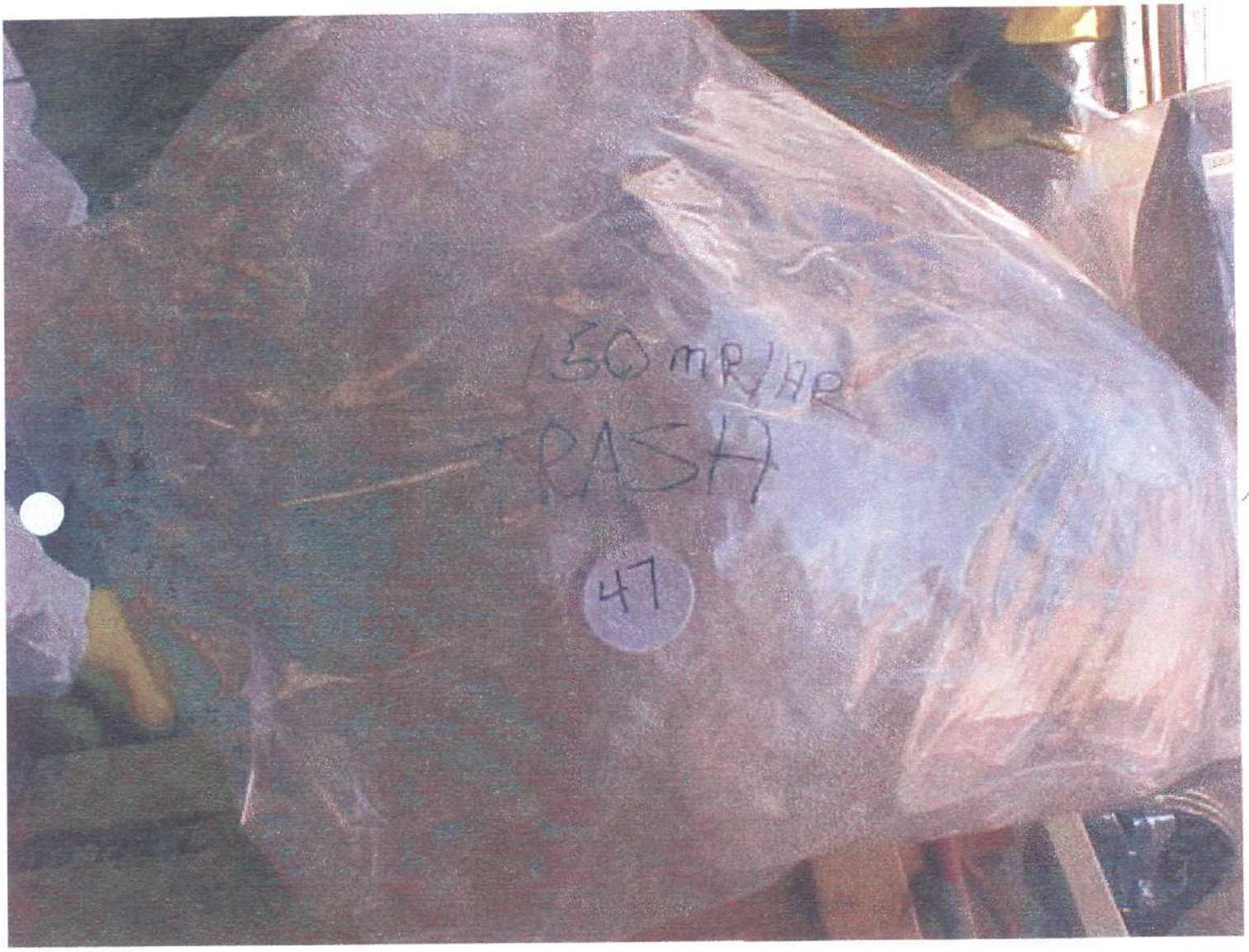
ITEM46



Acquired: 3/26/2002 2:26:29 PM Real Time: 120.00 s. Live Time: 106.20 s.

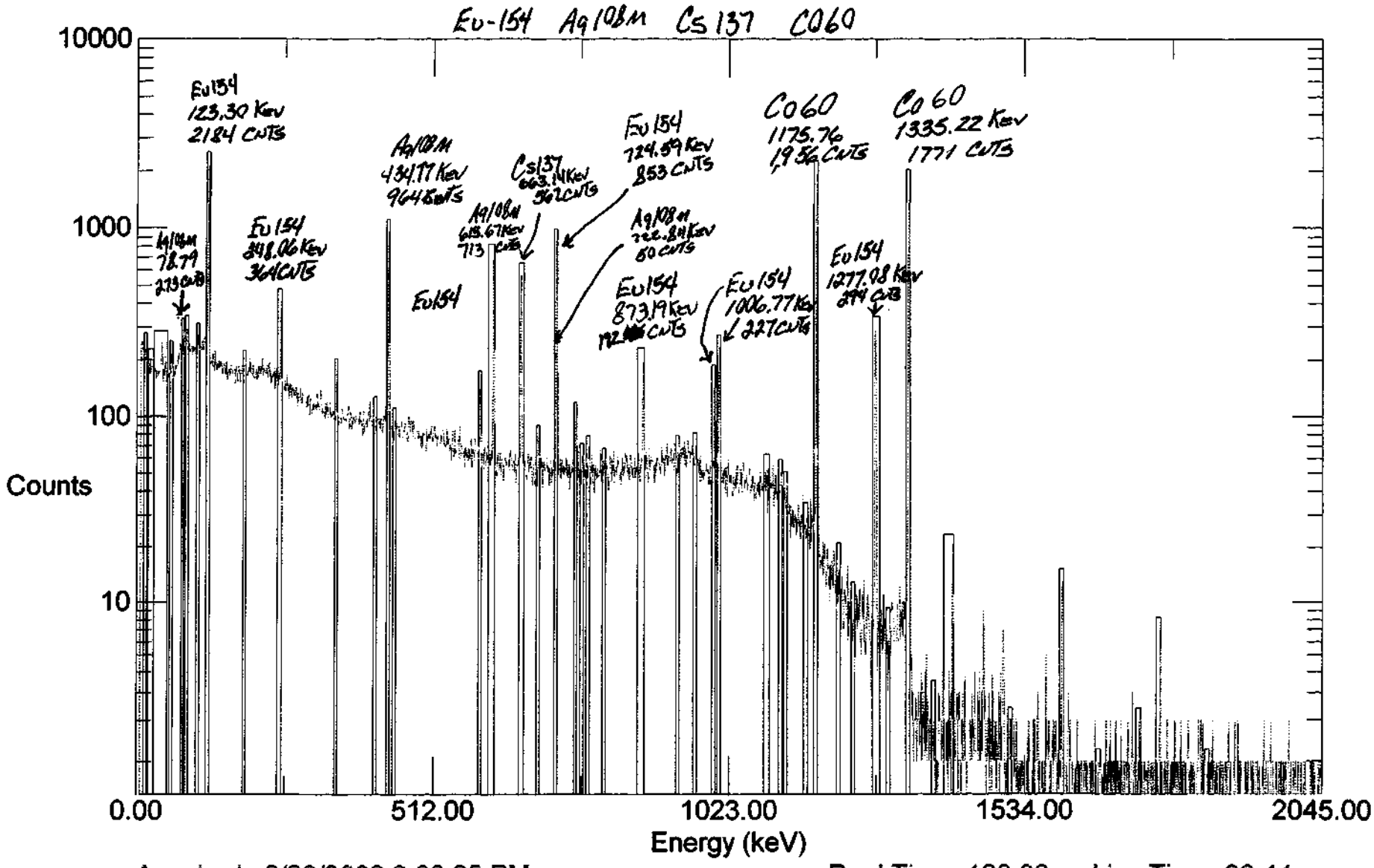
File: C:\User\GNIWEB~1\031 ITEM46 3-26-2002 2.26.28 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


150 mR/HR
RASH
47

033 ITEM47-2 3-26-2002 3.02.24 PM

ITEM47-2



Acquired: 3/26/2002 3:02:25 PM Real Time: 120.00 s. Live Time: 99.44 s.

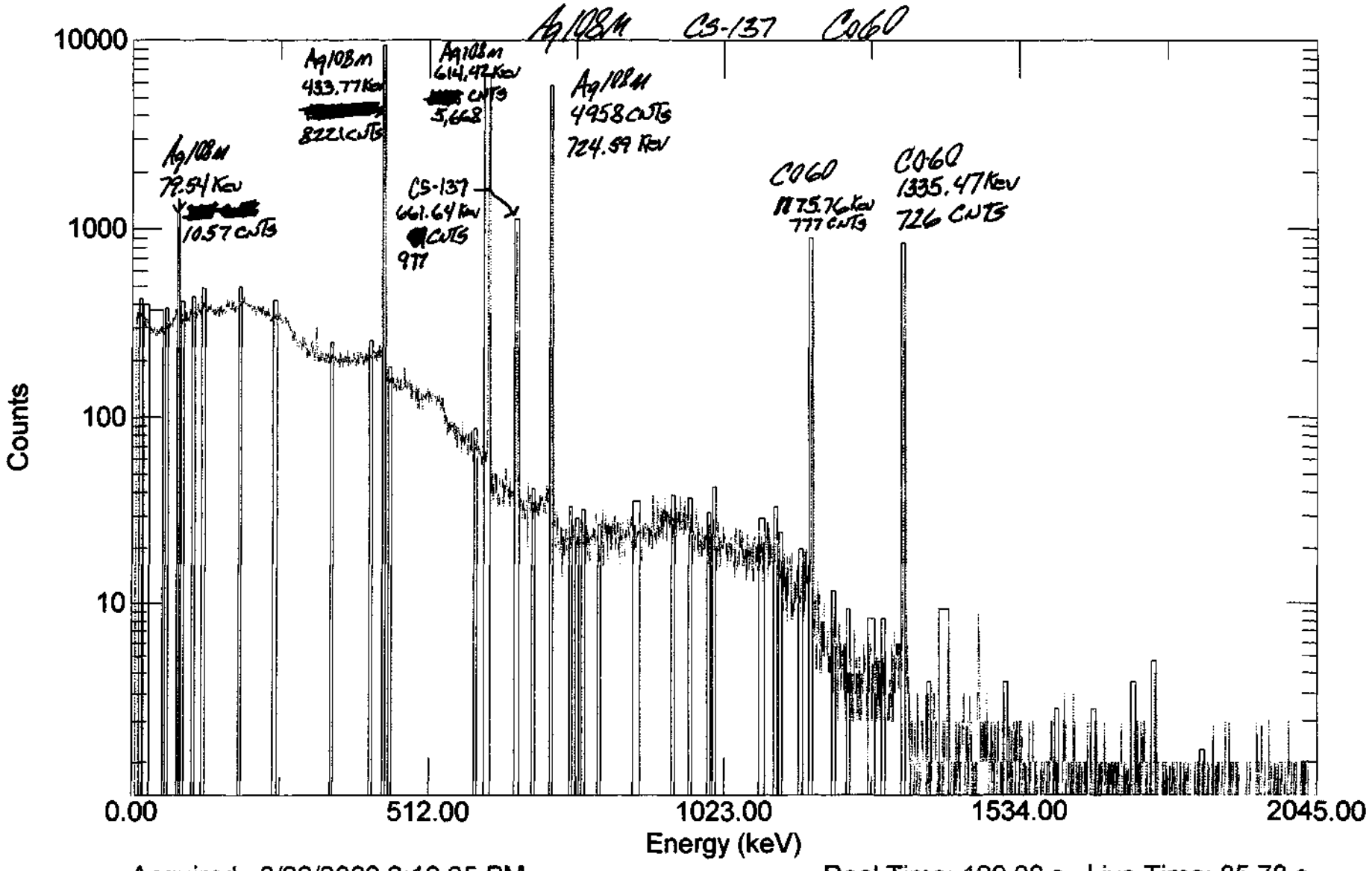
File: C:\User\GNIWEB~1\033 ITEM47-2 3-26-2002 3.02.24 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

48

034 ITEM48 3-26-2002 3.10.35 PM

ITEM48



Acquired: 3/26/2002 3:10:35 PM Real Time: 120.00 s. Live Time: 85.78 s.

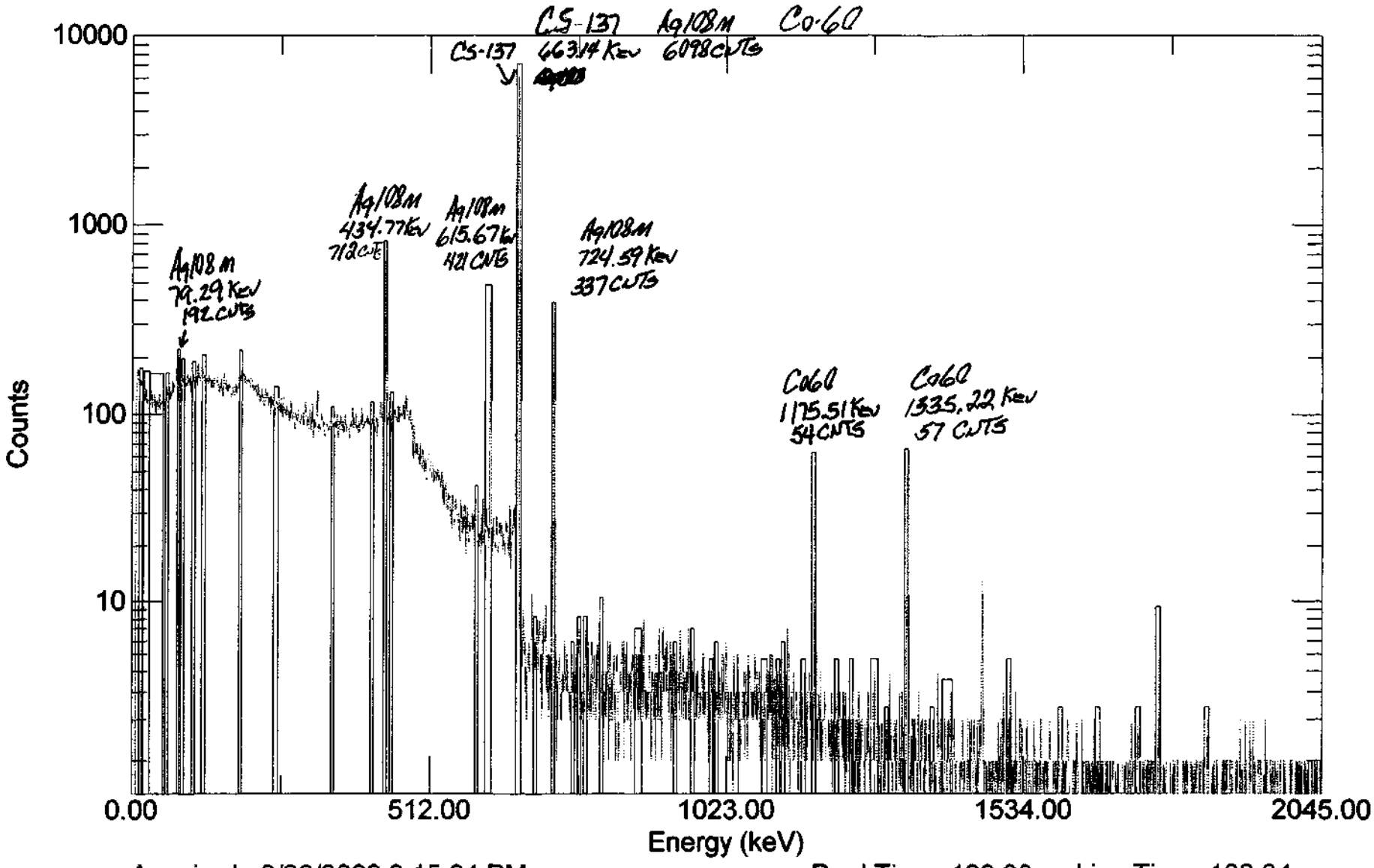
File: C:\User\GNIWEB~1\034 ITEM48 3-26-2002 3.10.35 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

49

035 ITEM49 3-26-2002 3.15.05 PM

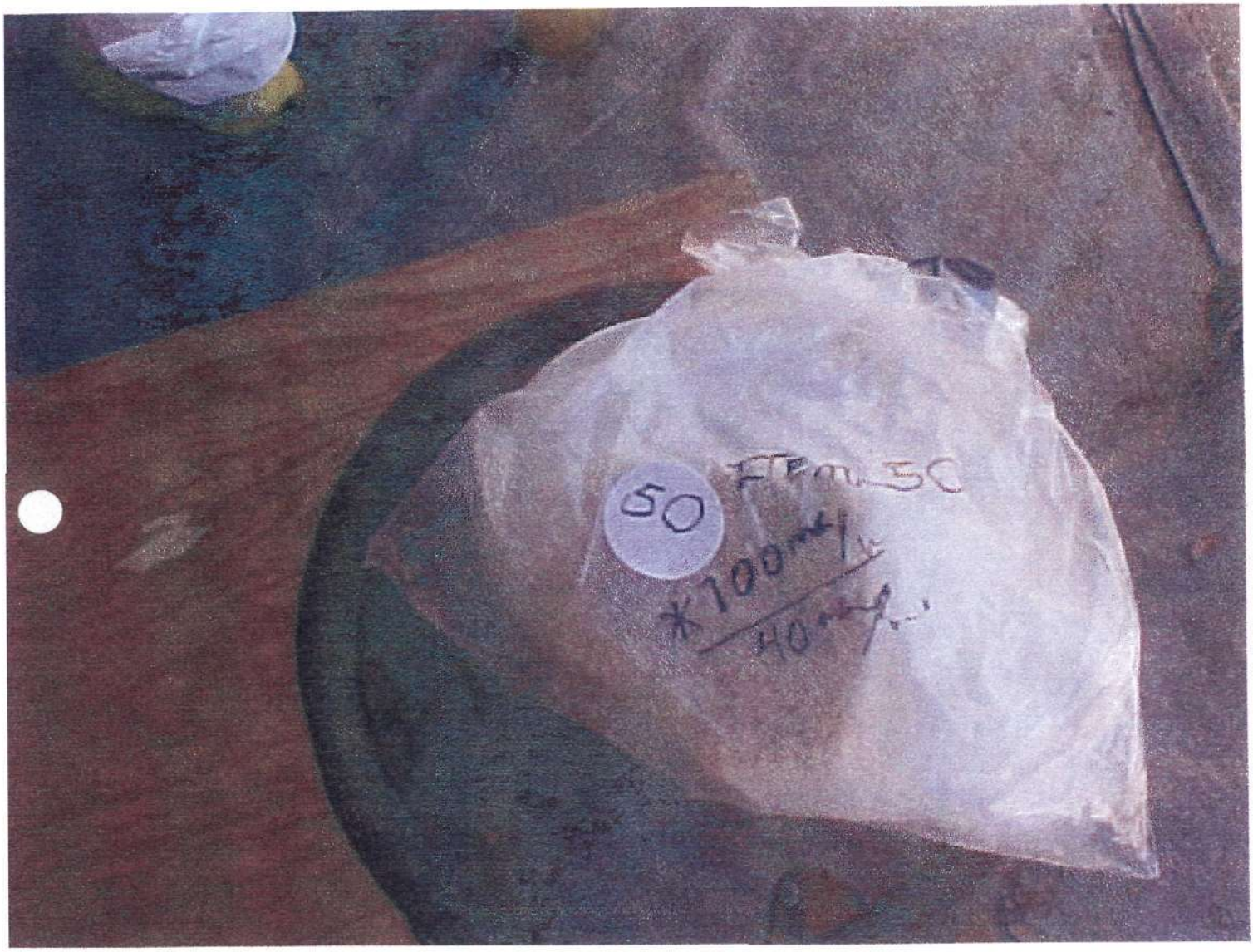
ITEM49



Acquired: 3/26/2002 3:15:04 PM Real Time: 120.00 s. Live Time: 108.84 s.

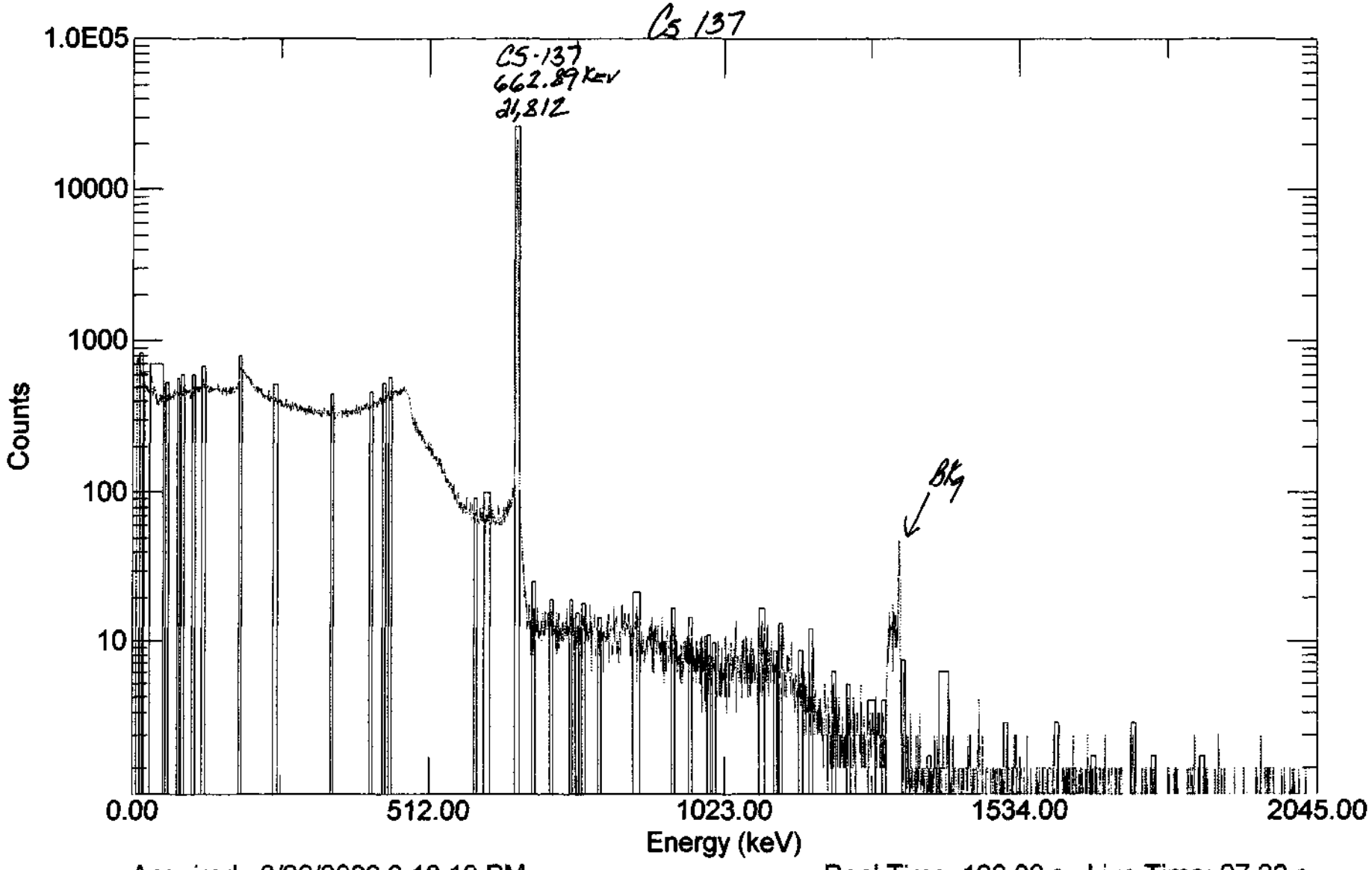
File: C:\User\GNIWEB~1\035 ITEM49 3-26-2002 3.15.05 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


50

036 ITEM50 3-26-2002 3.18.19 PM

ITEM50



Acquired: 3/26/2002 3:18:19 PM Real Time: 120.00 s. Live Time: 27.22 s.

File: C:\User\GNIWEB~1\036 ITEM50 3-26-2002 3.18.19 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-26-02

ITEMS

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

Container #	51	52	~~53~~	~~54~~	~~55~~
~~External on pig in mR/hr~~					
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr CW	10	1			
Beta on open pig mR/hr O/W	10	1			
Picture					

Table Readings

Source mR/hr @ 6 inchs	.5	.3			
Source mR/hr @ 12 inches	.25	.2			
Source mR/hr @ 36 inches	1	.1			
Size of source in cc's	1.5 cF	3cF			
Weight in grams	20 lbs	105 lbs			

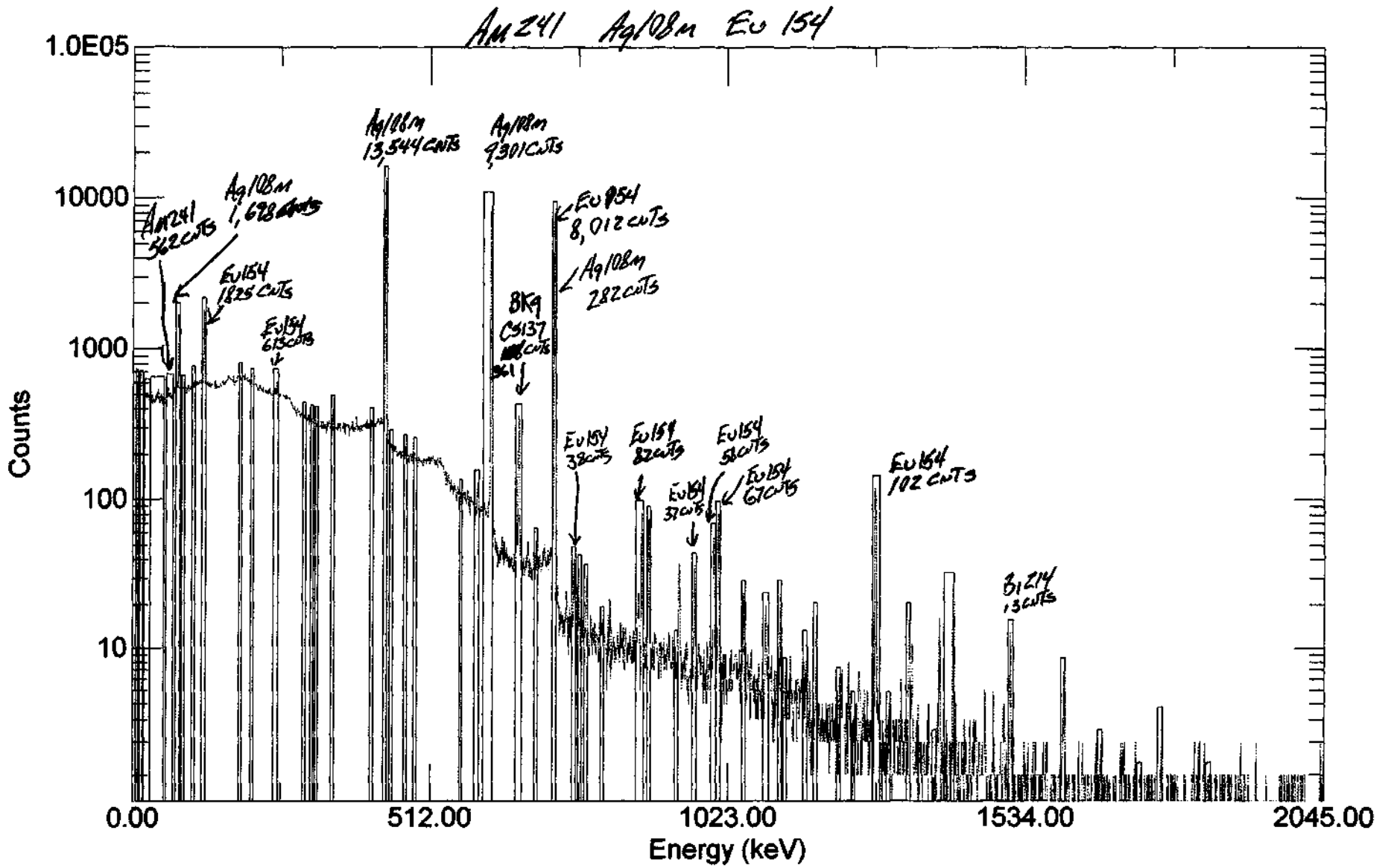
CPM Alpha	N/A	N/A	N/A	N/A	N/A
Direct Beta/Gamma	N/A	N/A	N/A	N/A	N/A

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	misc. bag of ITEMS	legal VALUUM			

037 ITEM51 3-26-2002 3.26.07 PM

ITEM51



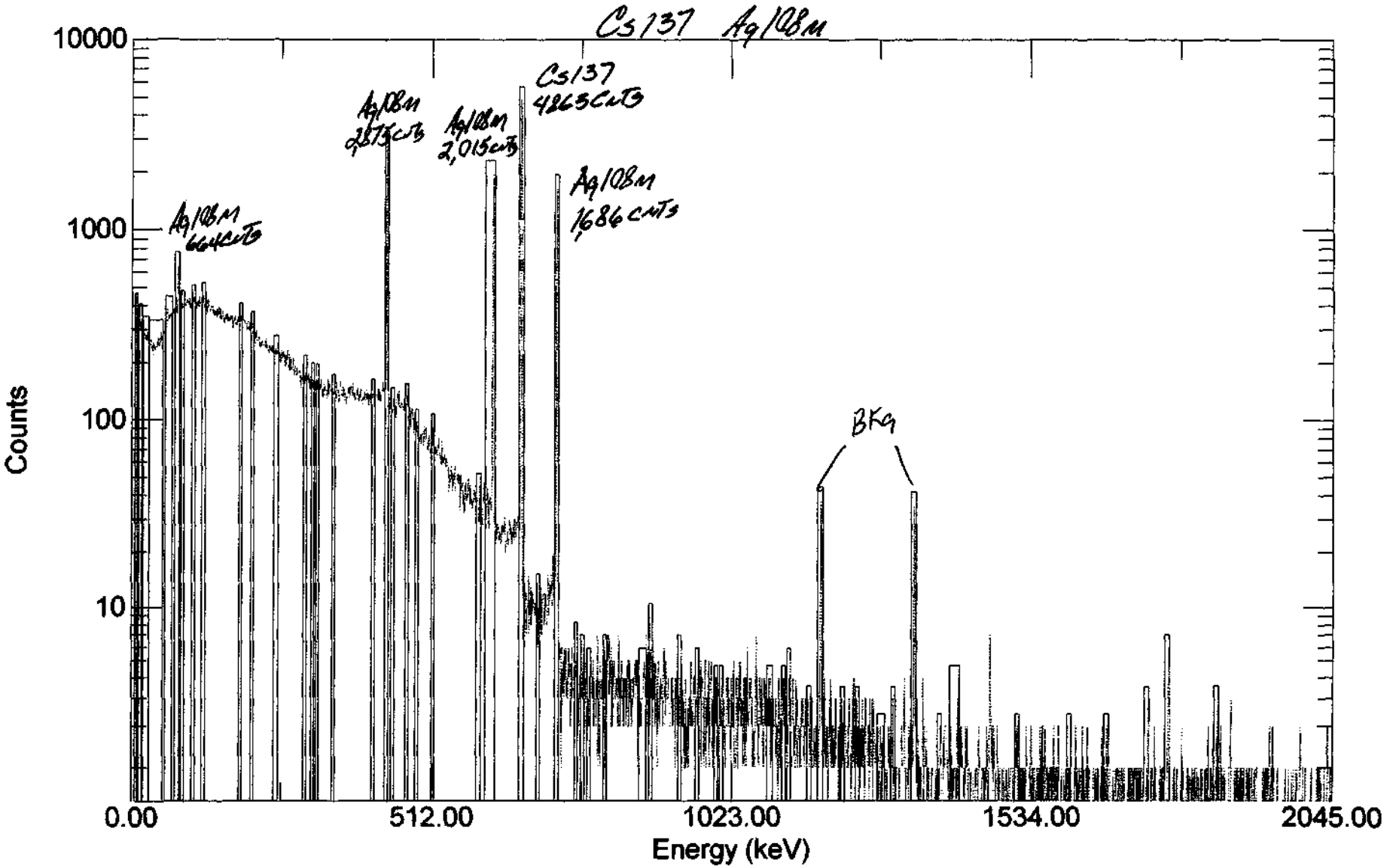
Acquired: 3/26/2002 3:26:07 PM Real Time: 120.00 s. Live Time: 57.56 s.

File: C:\User\GNIWEB~1\GNISOU~1\037 ITEM51 3-26-2002 3.26.07 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

038 ITEM52 3-26-2002 3.29.06 PM

ITEM52



Acquired: 3/26/2002 3:29:06 PM Real Time: 120.00 s. Live Time: 96.94 s.

File: C:\User\GNIWEB~1\GNISOU~1\038 ITEM52 3-26-2002 3.29.06 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-1-02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

ITEMS

Container #	53	54	55	56	57
External on ~~pig~~ in mR/hr	15 mR	15	2	2	2
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr	~ 15	15	2	2	2
Beta on open ~~pig~~ mR/hr O/W	30	400	5	4	10

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

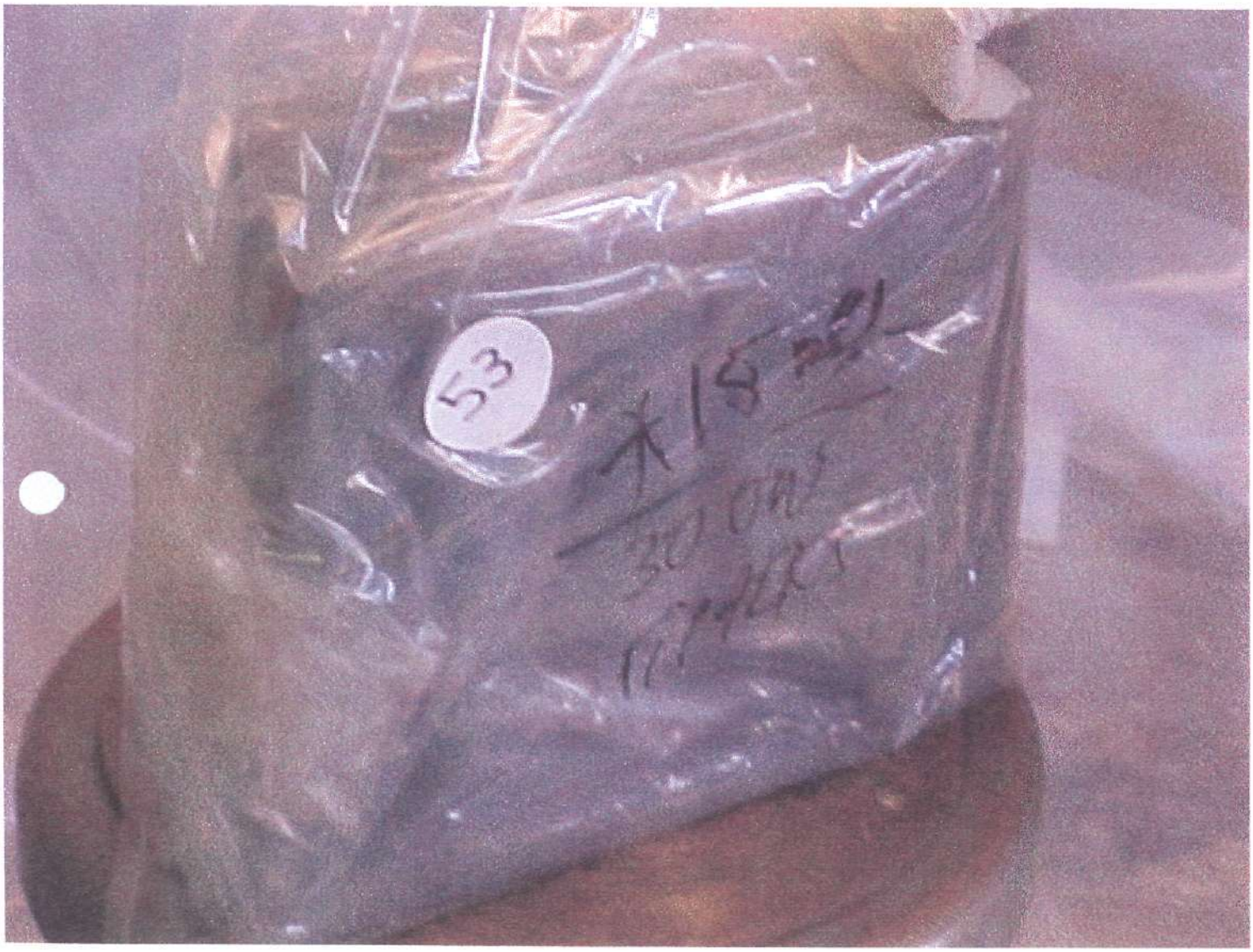
Table Readings

Source mR/hr @ 6 inchs	4	3	0.2	0.2	0.2
Source mR/hr @ 12 inches	1.5	1.5	0.2	0.2	<.2
Source mR/hr @ 36 inches	0.5	0.5	0.2	<.2	<.2
Size of source in cc's	1/3 FT^3	0.25 ft^3	1 ft^3	1 FT^3	1000
Weight in grams	3 Lbs	2 Lb	2.5 Lb	4 Lb.	252

CPM Alpha	N/A	N/A	→	→	→
Direct Beta/Gamma	300w/15				

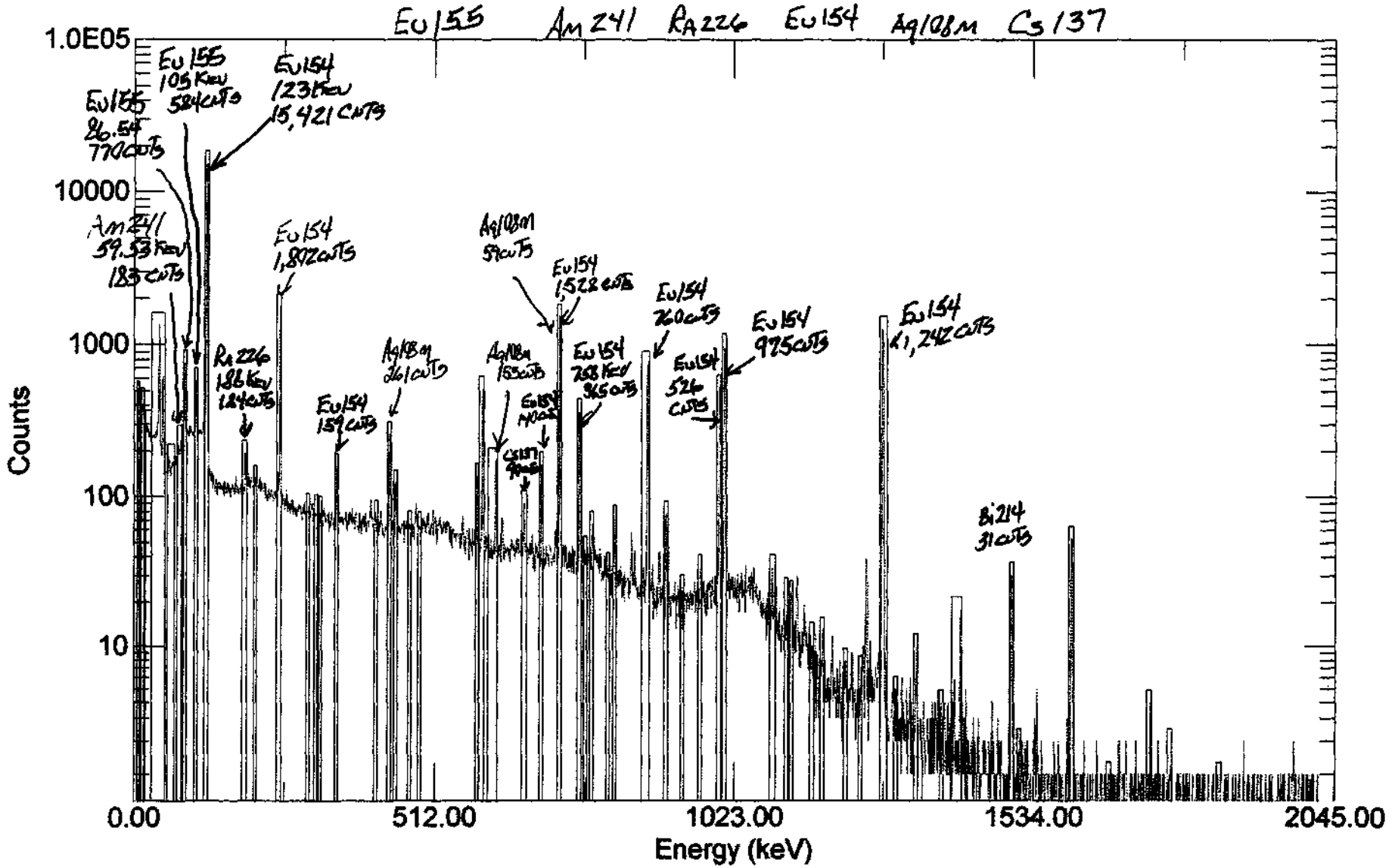
Info on ~~source~~: ITEM	Filters FROM I/S BDG.2RM1	ELEC. DEVICE (HEATER)	PLASTIC BEAKERS BROKE GLASS TRASH	ROPE ELEC.CW. PLASTIC TRASH	TRASH PLASTIC

Information on ~~pig~~: NO PIGS	FROM ←	BLDG. 2	Rm 1	→	→
Smear DPM per 100 cm^2 Alpha	~~5~~ 1200	→	→	→	→
Smear DPM per 100 cm^2 Beta	600K dpm	→	→	→	→


53

003 ITEM53 4-1-2002 3.00.54 PM

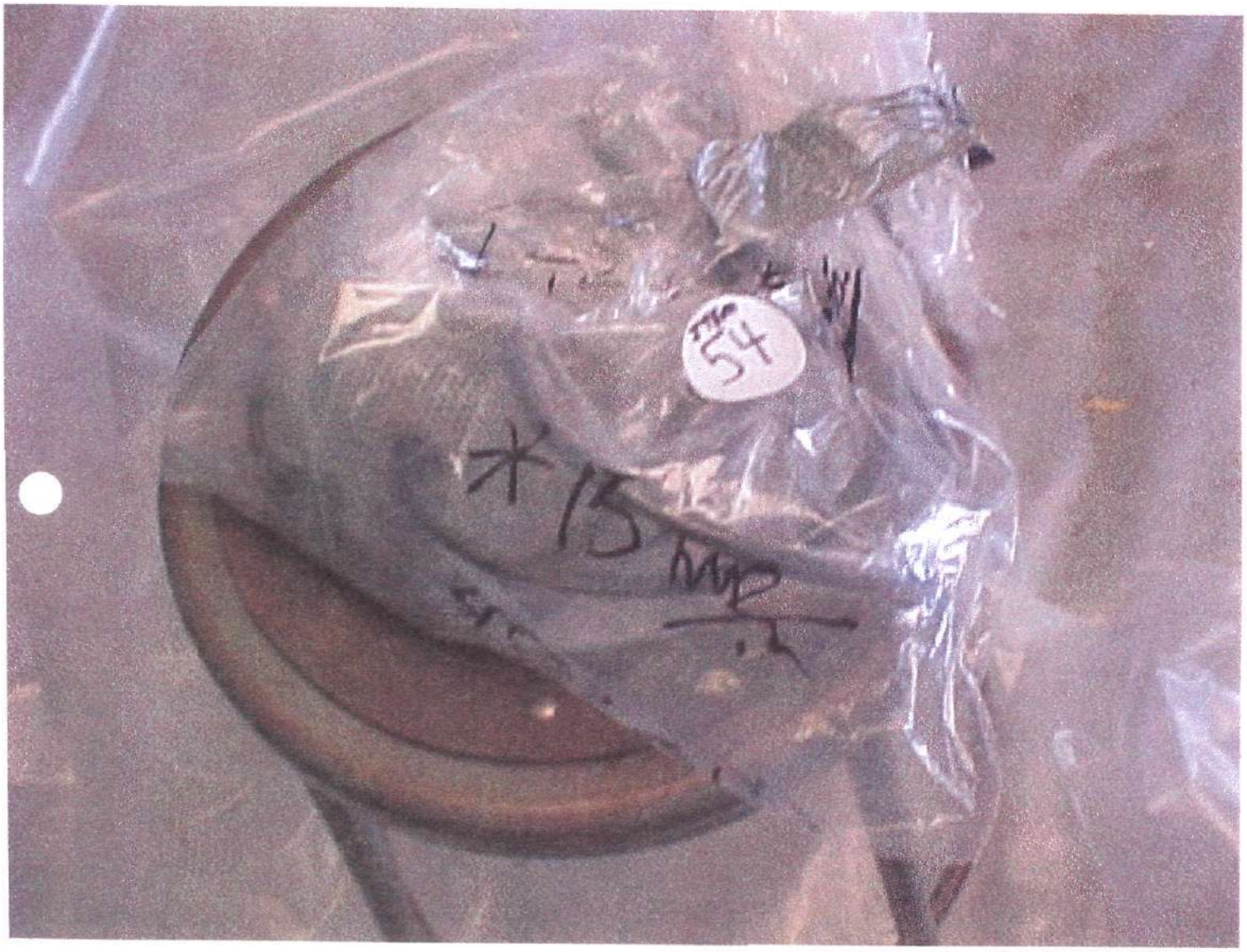
ITEM53



Acquired: 4/1/2002 3:00:54 PM Real Time: 60.00 s. Live Time: 37.40 s.

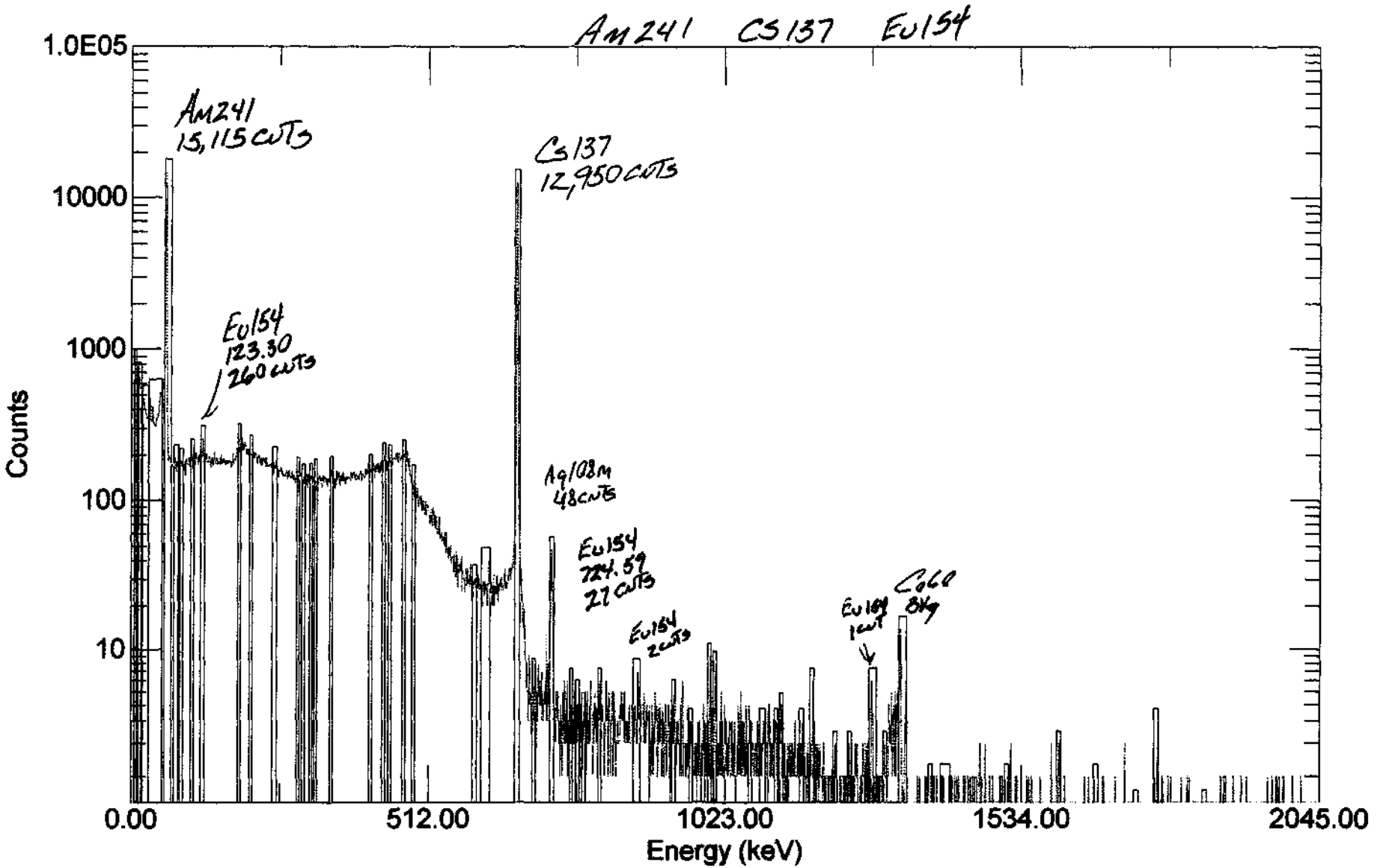
File: C:\User\GNIWEB~1\003 ITEM53 4-1-2002 3.00.54 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


54
*15 MP

004 ITEM54 4-1-2002 3.05.13 PM

ITEM54



Acquired: 4/1/2002 3:05:14 PM Real Time: 60.00 s. Live Time: 27.60 s.

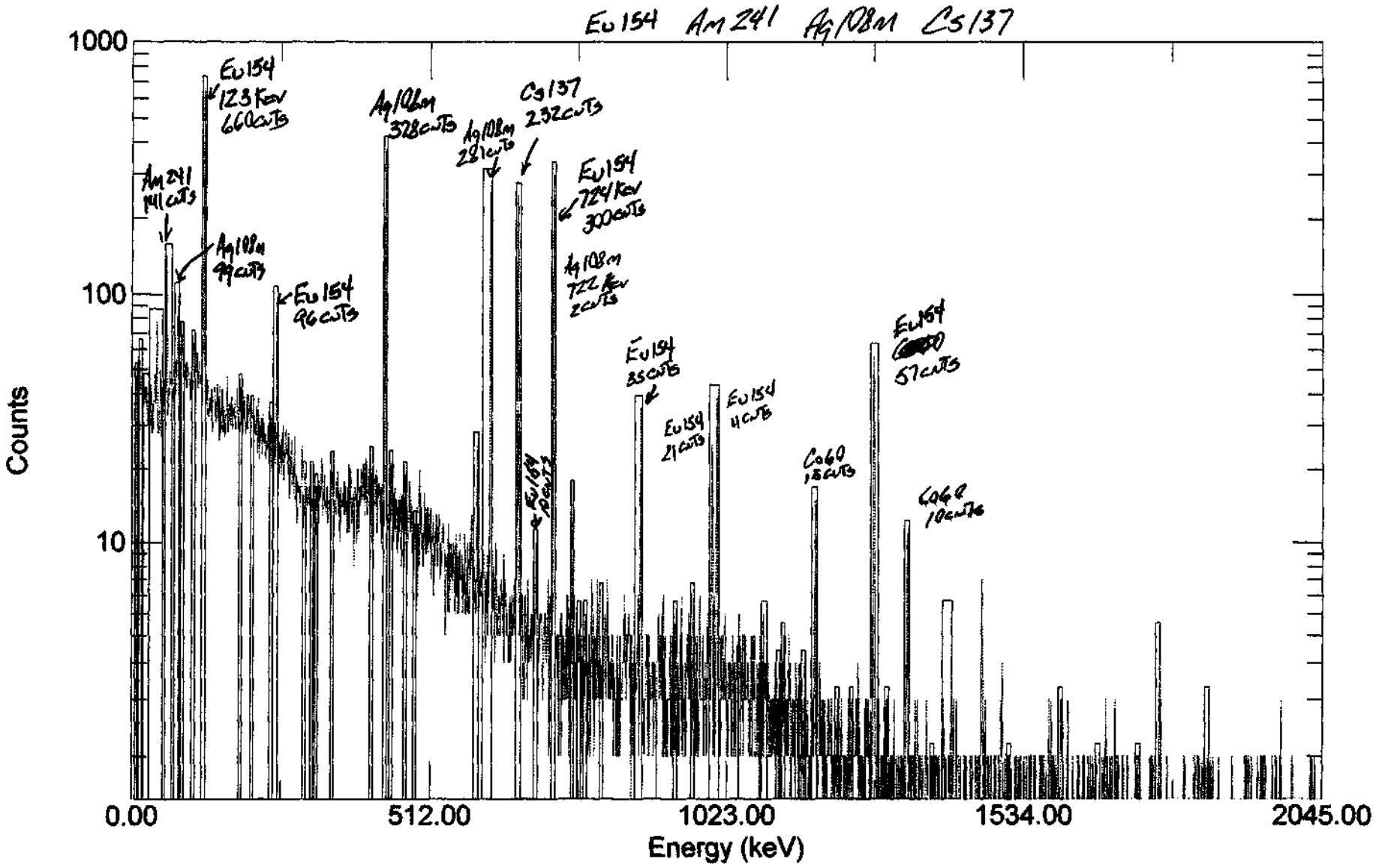
File: C:\User\GNIWEB~1\004 ITEM54 4-1-2002 3.05.13 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

55

005 ITEM55 4-1-2002 3.11.02 PM

ITEM55



Acquired: 4/1/2002 3:11:02 PM Real Time: 60.00 s. Live Time: 57.46 s.

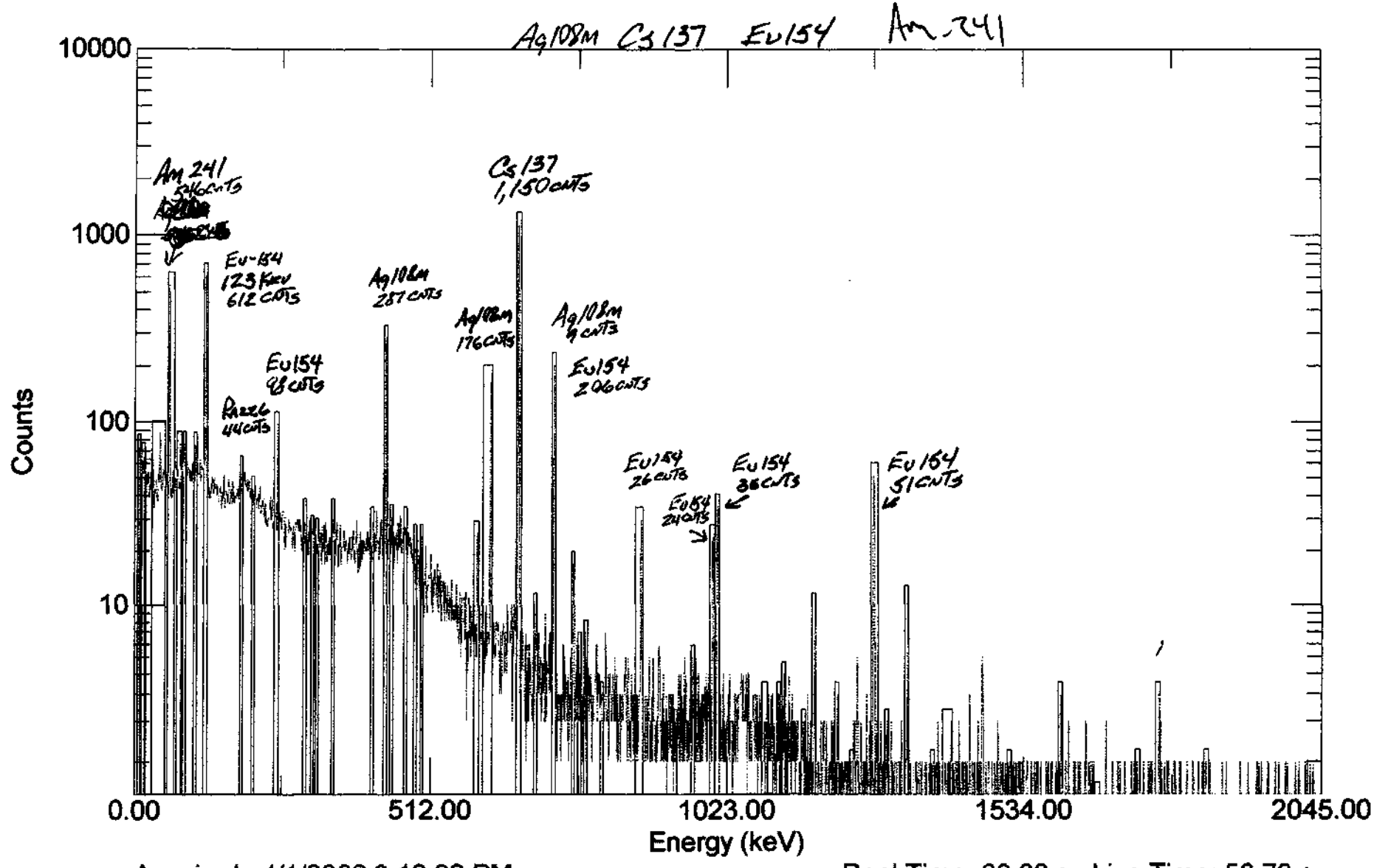
File: C:\User\GNIWEB~1\005 ITEM55 4-1-2002 3.11.02 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

56

006 ITEM56 4-1-2002 3.13.32 PM

ITEM56



Acquired: 4/1/2002 3:13:32 PM Real Time: 60.00 s. Live Time: 56.70 s.

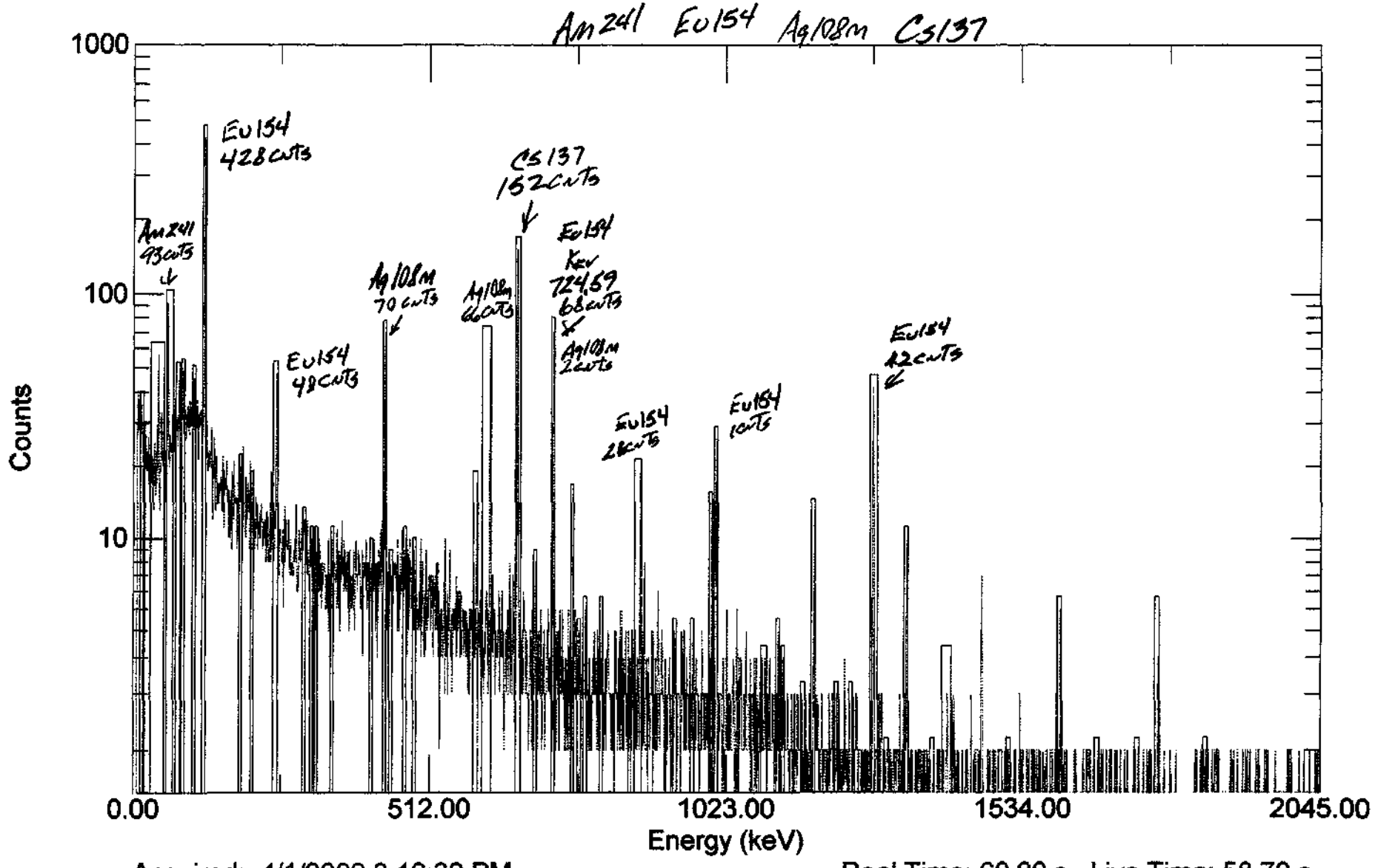
File: C:\User\GNIWEB~1\006 ITEM56 4-1-2002 3.13.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

57

007 ITEM57 4-1-2002 3.16.32 PM

ITEM57



Acquired: 4/1/2002 3:16:32 PM Real Time: 60.00 s. Live Time: 58.70 s.

File: C:\User\GNIWEB~1\007 ITEM57 4-1-2002 3.16.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4·1·02

BKG	mR/hr
6"	00.2
12"	00.2
36"	00.2

ITEMS

Container #	58	59	60	61	62
External on ~~pig~~ in mR/hr	20	10	30	3	2
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr	20	10	30	3	2
Beta on open ~~pig~~ mR/hr O/W	200		200	3	3

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	0.5	1	5	0.5	0.2
Source mR/hr @ 12 inches	0.3	0.7	2	0.2	0.2
Source mR/hr @ 36 inches	0.2	0.2	0.5	0.2	0.2
Size of source in cc's	1000	0.25 FT³	1 FT³	500	85
Weight in grams	2 Lb.	1 Lb	15 Lb	~~4~~ 1.5 Lb	100 g

CPM Alpha	N/A →				
Direct Beta/Gamma					

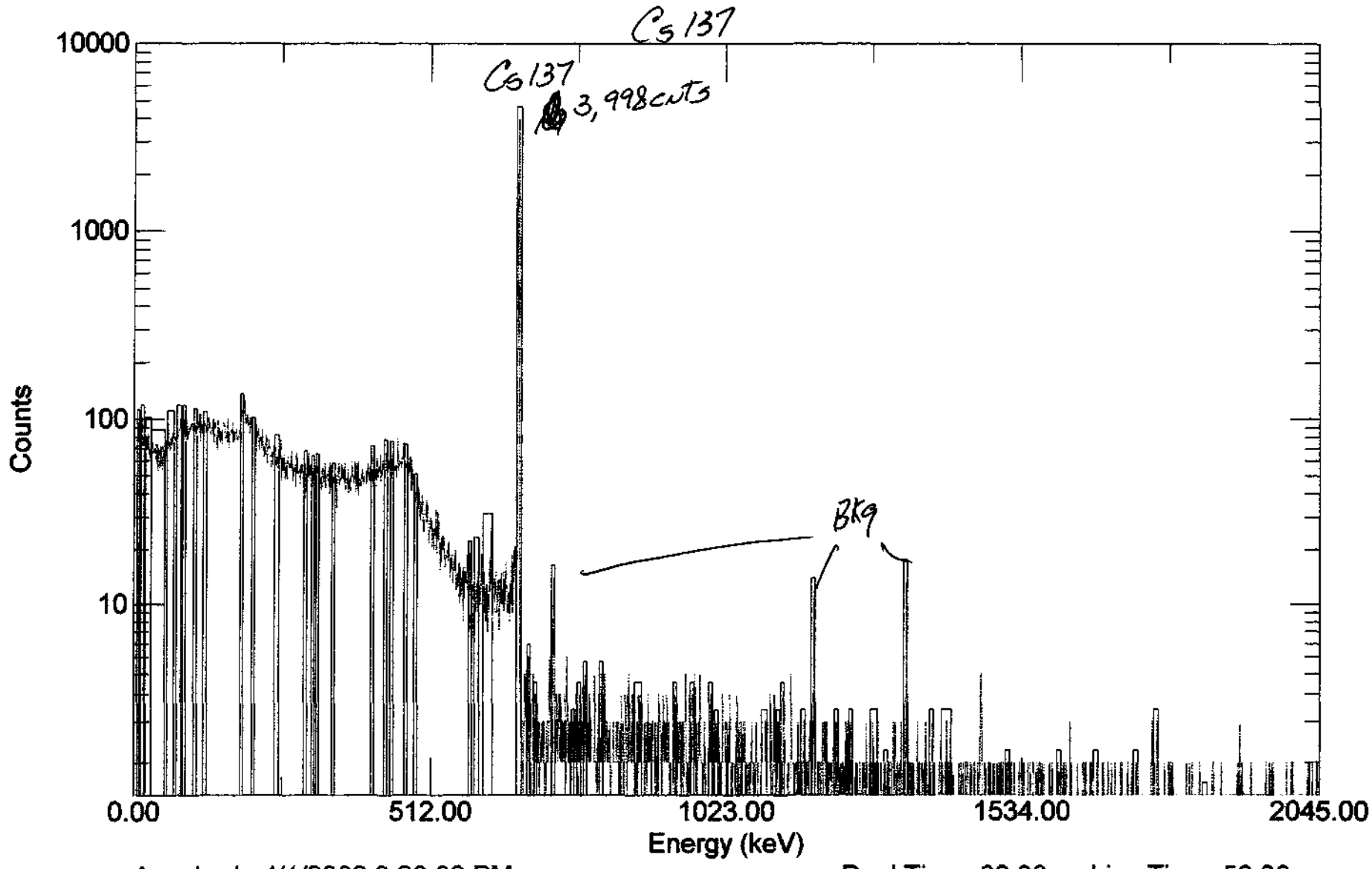
Info on source:	TRASH METAL PLASTIC PORCELIN DEBRIS	TRASH PAPER	HEATER	CAN OF SAND	HOSES (2)

Information on ~~pig~~: NO Pigs	← BLDG 2 RM 1 →				
Smear DPM per 100 cm^2 Alpha	1200 →				
Smear DPM per 100 cm^2 Beta	500K →				

58
LOOSE B

008 ITEM58 4-1-2002 3.20.02 PM

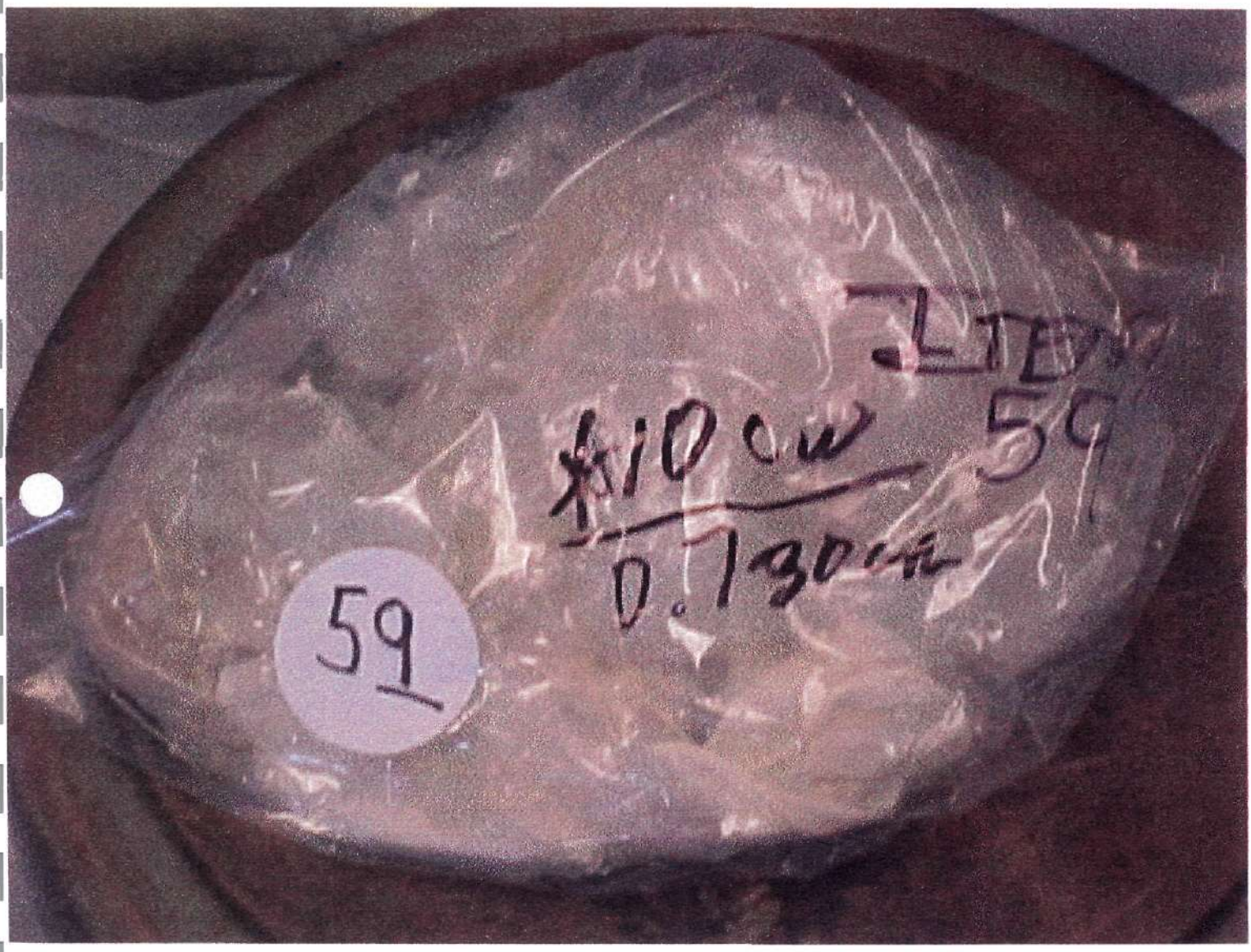
ITEM58



Acquired: 4/1/2002 3:20:02 PM Real Time: 60.00 s. Live Time: 53.88 s.

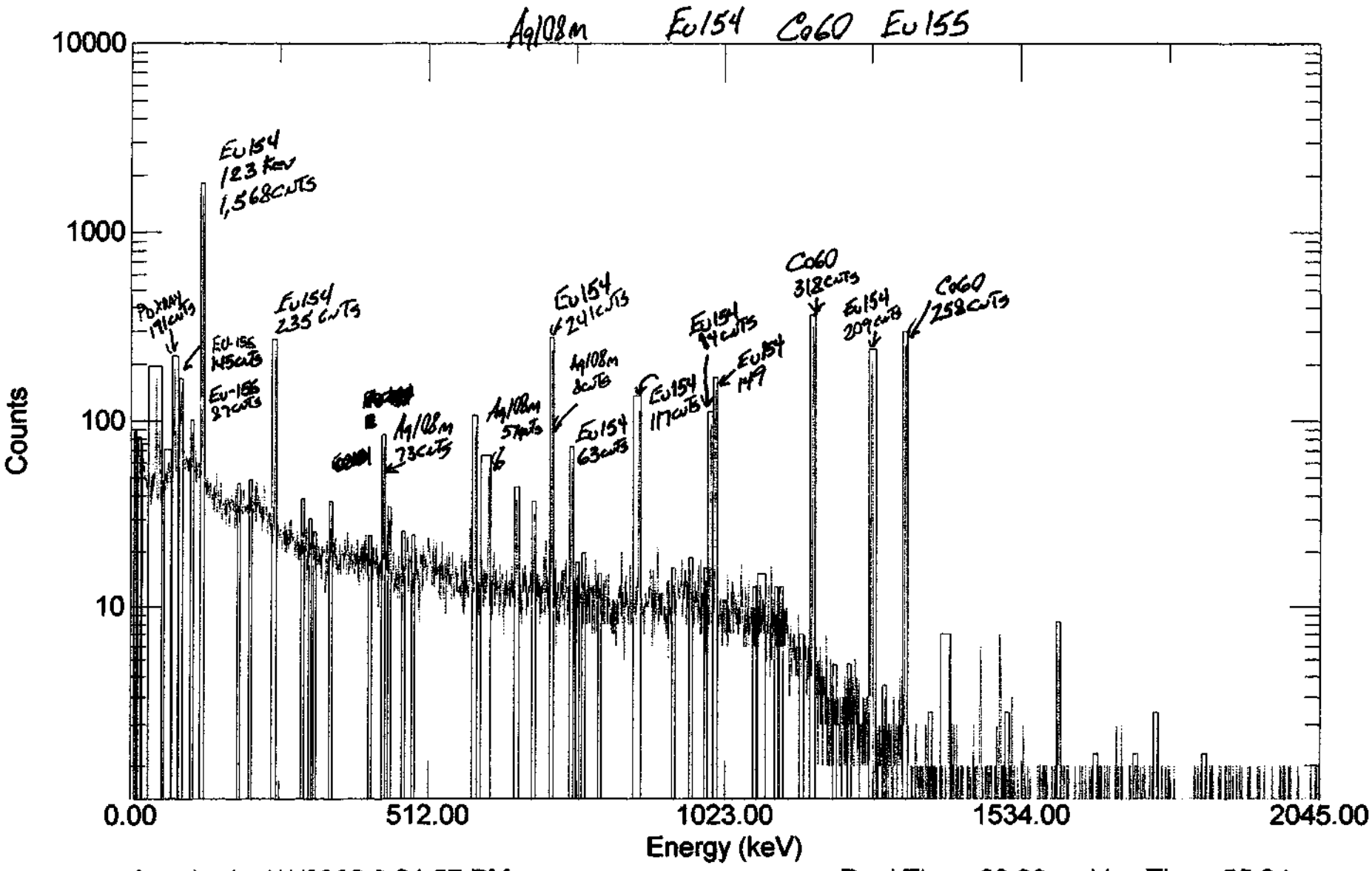
File: C:\User\GNIWEB~1\008 ITEM58 4-1-2002 3.20.02 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


59
59

009 ITEM59 4-1-2002 3.21.58 PM

ITEM59



Acquired: 4/1/2002 3:21:57 PM Real Time: 60.00 s. Live Time: 55.84 s.

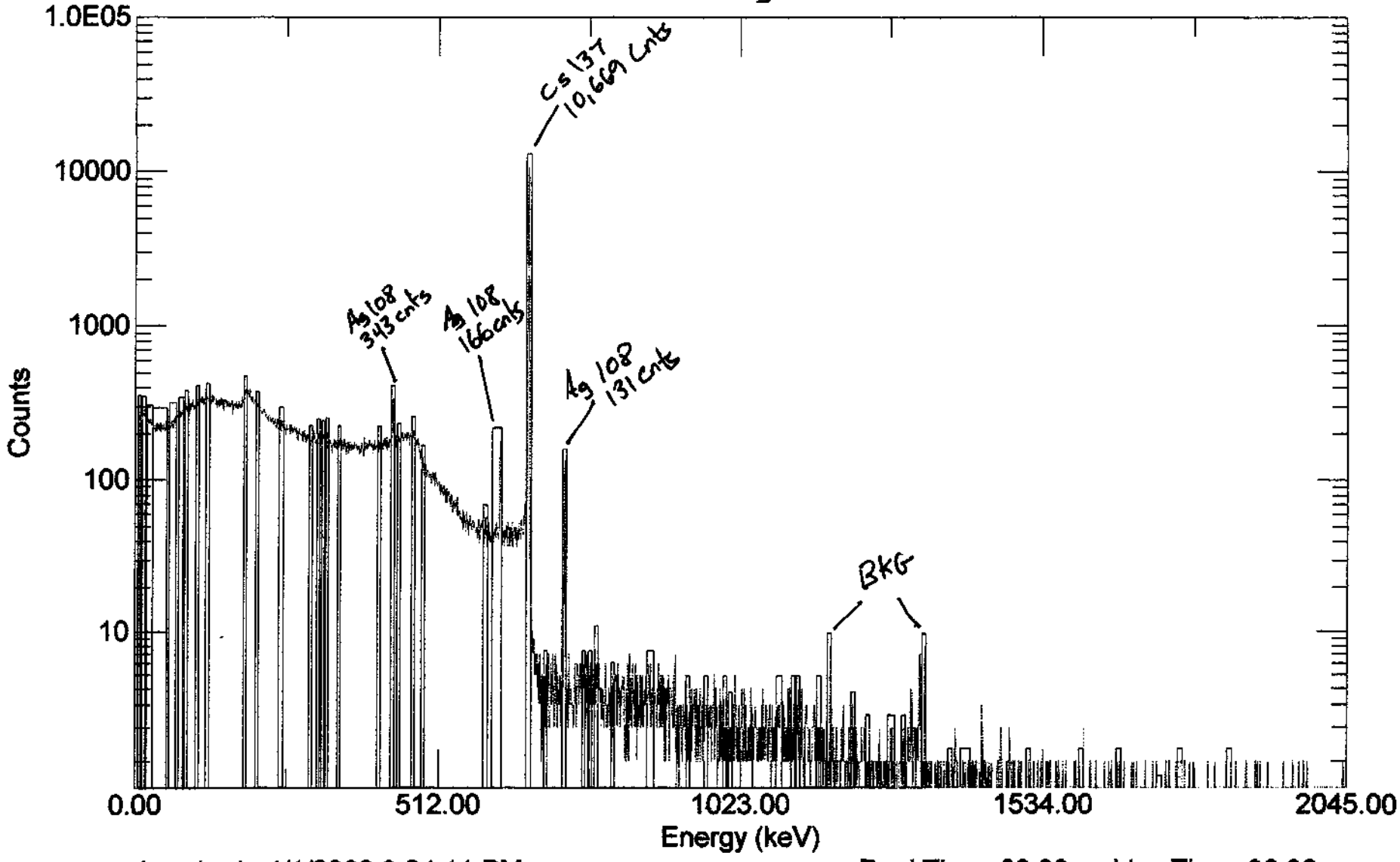
File: C:\User\GNIWEB~1\009 ITEM59 4-1-2002 3.21.58 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

010 ITEM60 4-1-2002 3.24.12 PM

ITEM60

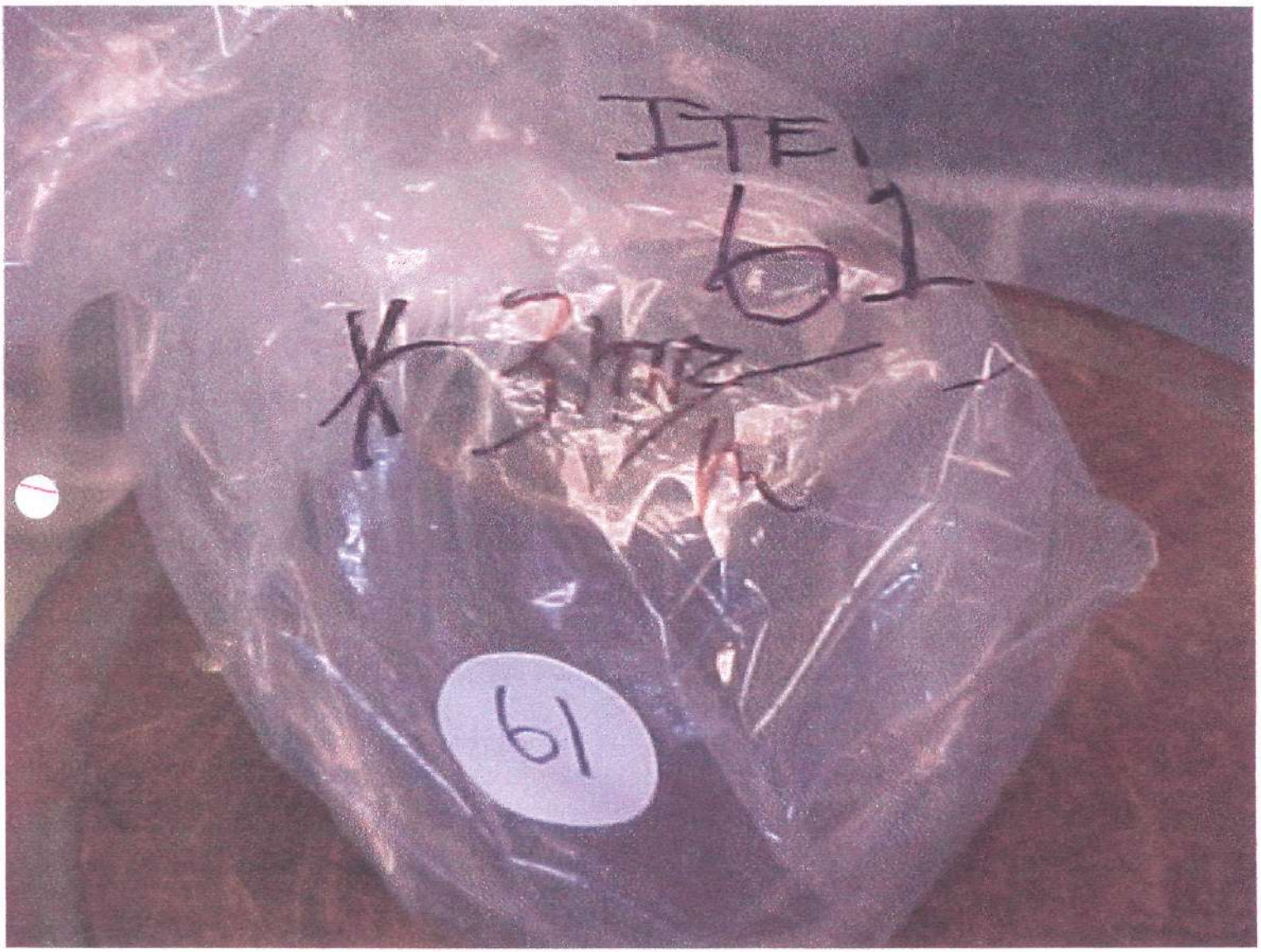
Cs 137 Ag 108m



Acquired: 4/1/2002 3:24:11 PM Real Time: 60.00 s. Live Time: 30.32 s.

File: C:\User\GNIWEB~1\010 ITEM60 4-1-2002 3.24.12 PM.Spc Channels: 8192

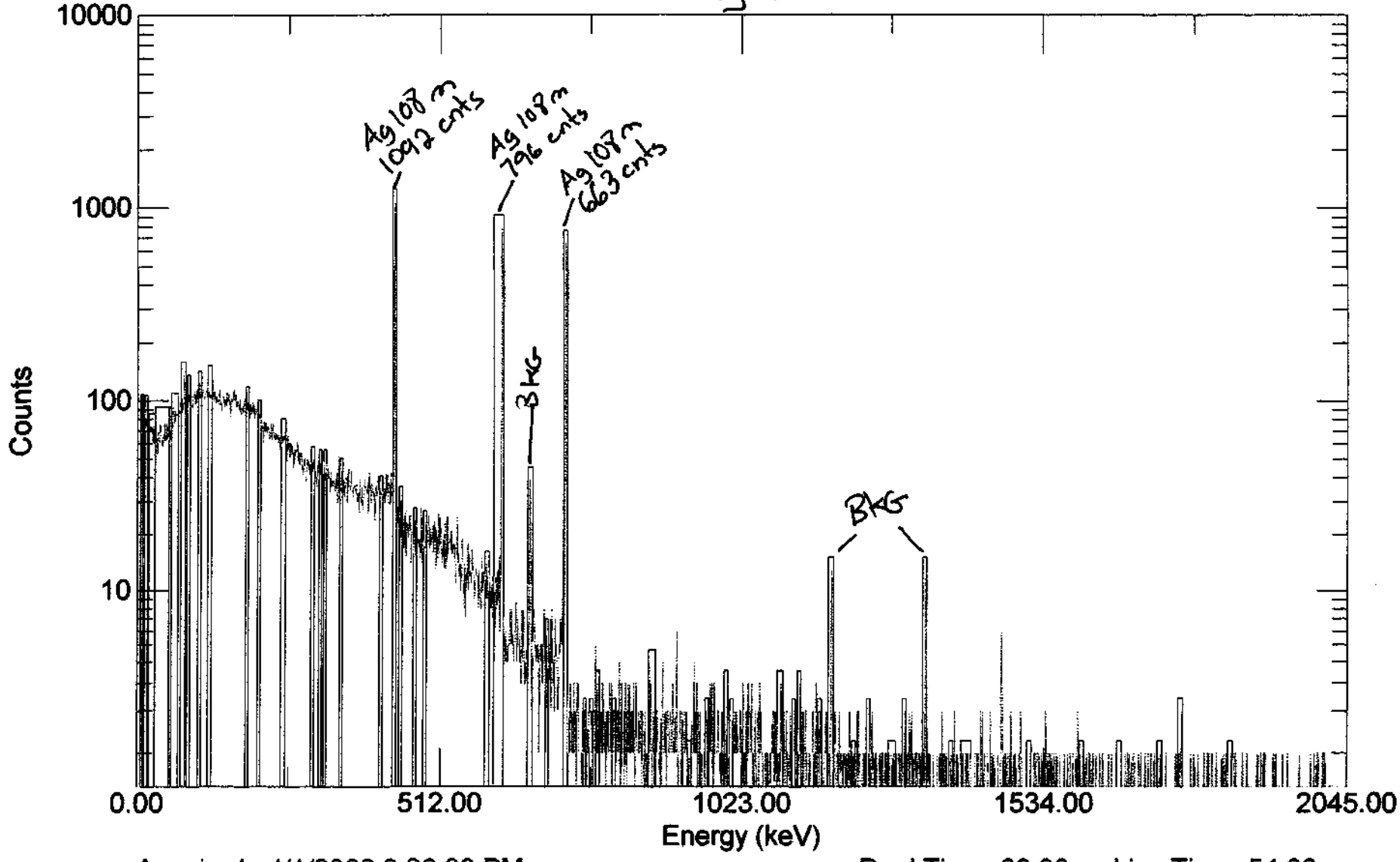
Detector: #1 digiDART USE 1b


ITE
61
61

011 ITEM61 4-1-2002 3.26.09 PM

ITEM61

Ag 108 m



Acquired: 4/1/2002 3:26:08 PM Real Time: 60.00 s. Live Time: 54.82 s.

File: C:\User\GNIWEB~1\011 ITEM61 4-1-2002 3.26.09 PM.Spc Channels: 8192

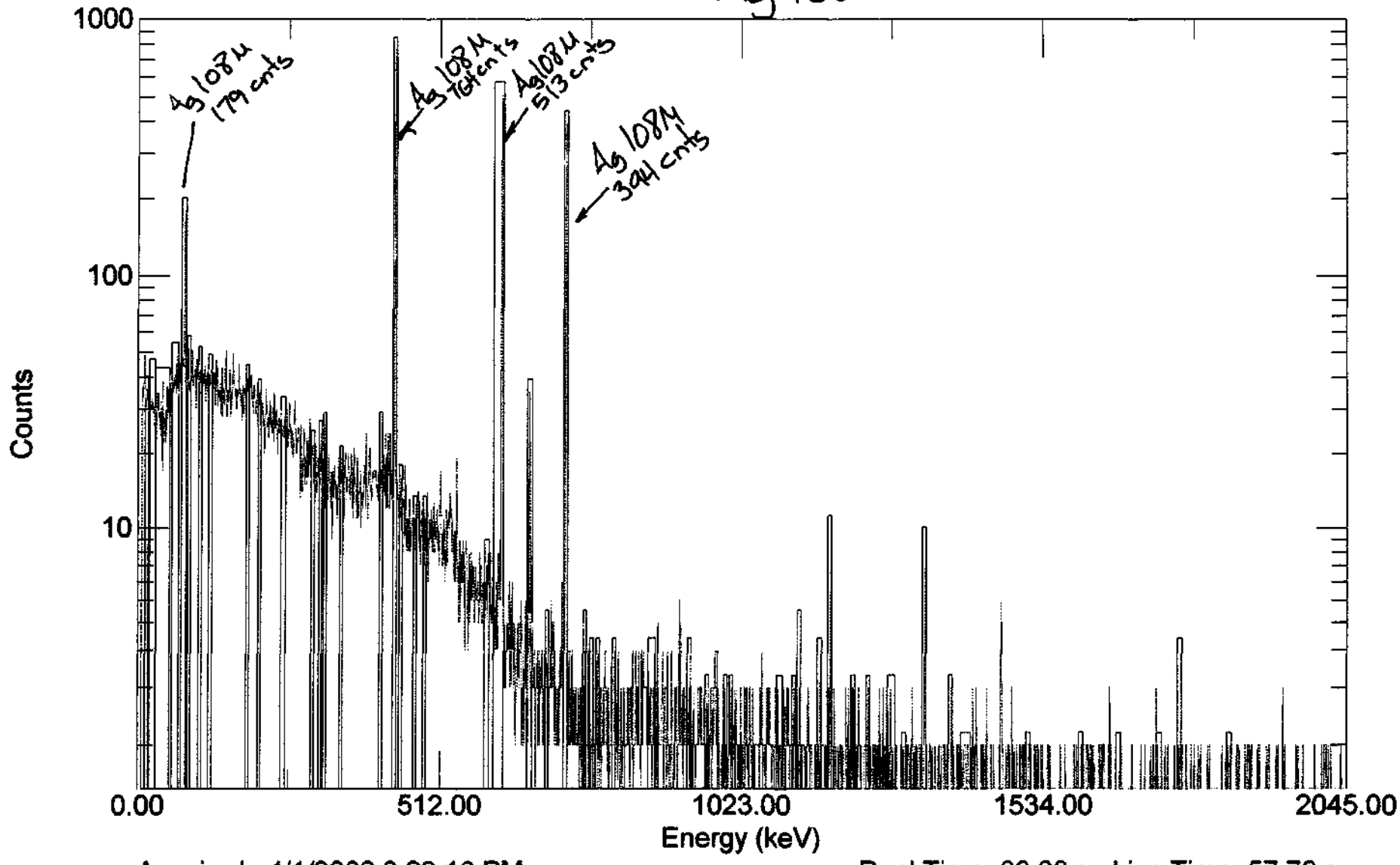
Detector: #1 digiDART USE 1b

62

012 ITEM62 4-1-2002 3.28.16 PM

ITEM62

Ag 108 M



Acquired: 4/1/2002 3:28:16 PM Real Time: 60.00 s. Live Time: 57.78 s.

File: C:\User\GNIWEB~1\012 ITEM62 4-1-2002 3.28.16 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4·1·02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

ITEMS

Container #	63	64	65	66	67
External on pig in mR/hr	2	1	~~28~~ 17	1	1.~~8~~
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	2	1	~~25~~ 17	1	1
Beta on open pig mR/hr O/W	4	1.3	~~25~~ 17	1	1.5

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	0.2	0.2	0.2	0.2	0.4
Source mR/hr @ 12 inches	0.2	0.2	0.2	↓	0.3
Source mR/hr @ 36 inches	0.2	0.2	0.2	↓	0.2
Size of source in cc's cm^3	0.75 cc	40 cc	1200 cm^3	1.8 ~~cm~~ FT3	2 FT^3
Weight in grams	4 Lbs	~~½ Lb~~ 172 g.	103.32 g	7 Lb.	32 Lb

CPM Alpha					
Direct Beta/Gamma					

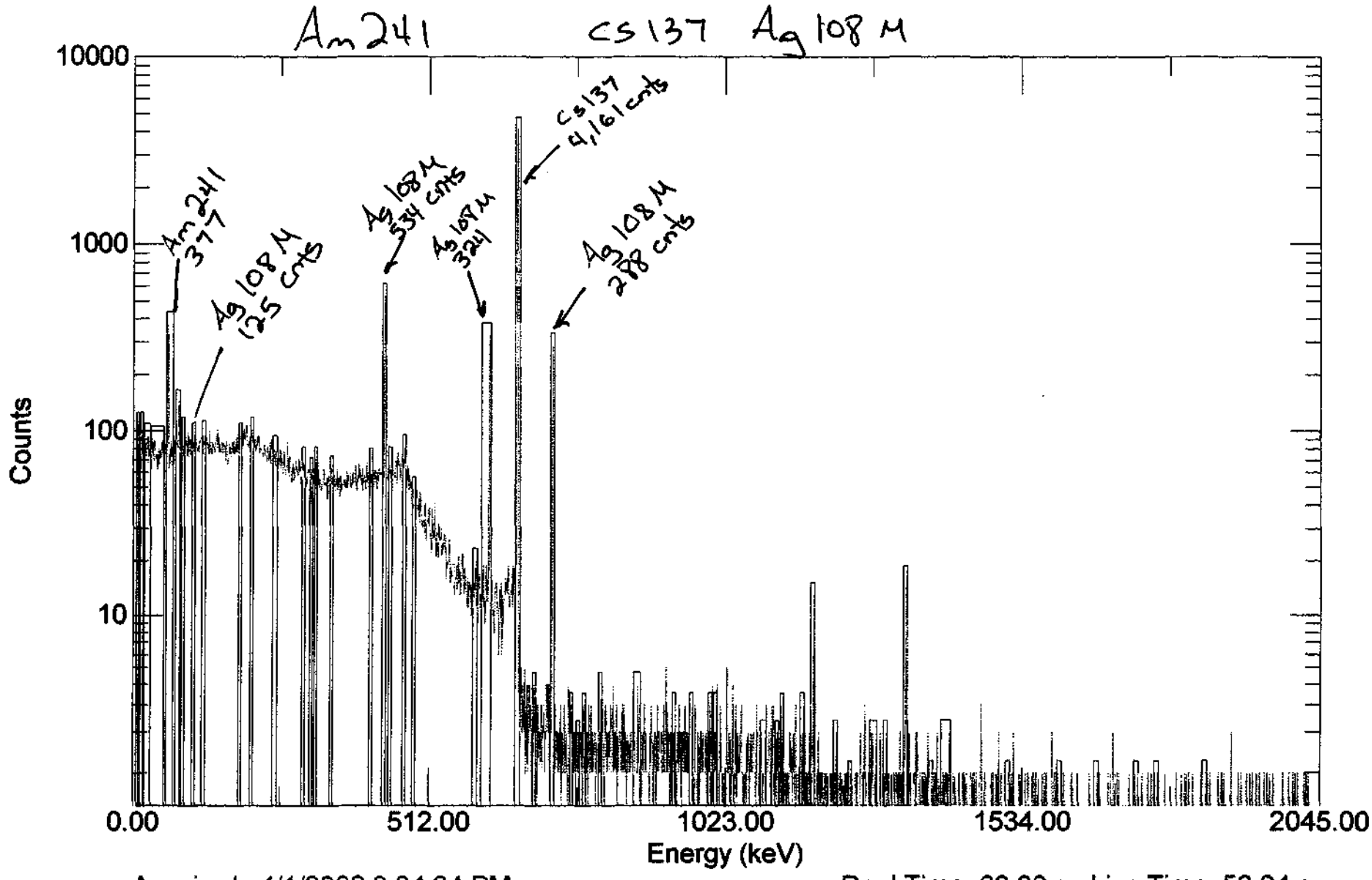
Info on source:	BAG OF TRASH	DOOR KNOB	(2) METAL CONTANERS	CANS BAG OF	BAG OF TRASH

Information on pig:					
NO PIGS	← BLDG 2 Rm 1 →				
Smear DPM per 100 cm^2 Alpha	1200 →				
Smear DPM per 100 cm^2 Beta	500 K →				

b3

014 ITEM63 4-1-2002 3.34.34 PM

ITEM63



Acquired: 4/1/2002 3:34:34 PM Real Time: 60.00 s. Live Time: 53.24 s.

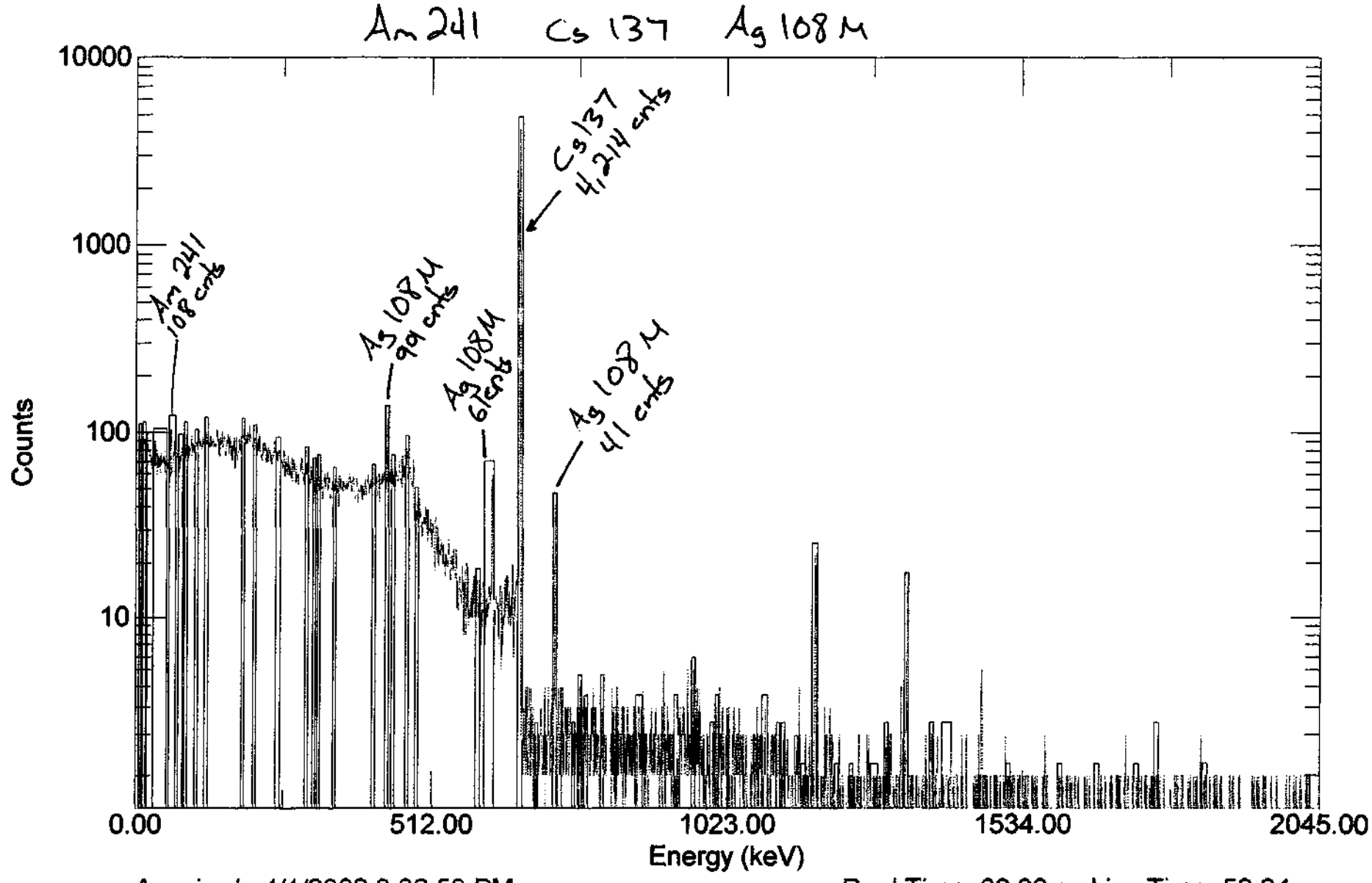
File: C:\User\GNIWEB~1\014 ITEM63 4-1-2002 3.34.34 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM #
64

013 ITEM64 4-1-2002 3.32.53 PM

ITEM64



Acquired: 4/1/2002 3:32:53 PM Real Time: 60.00 s. Live Time: 53.64 s.

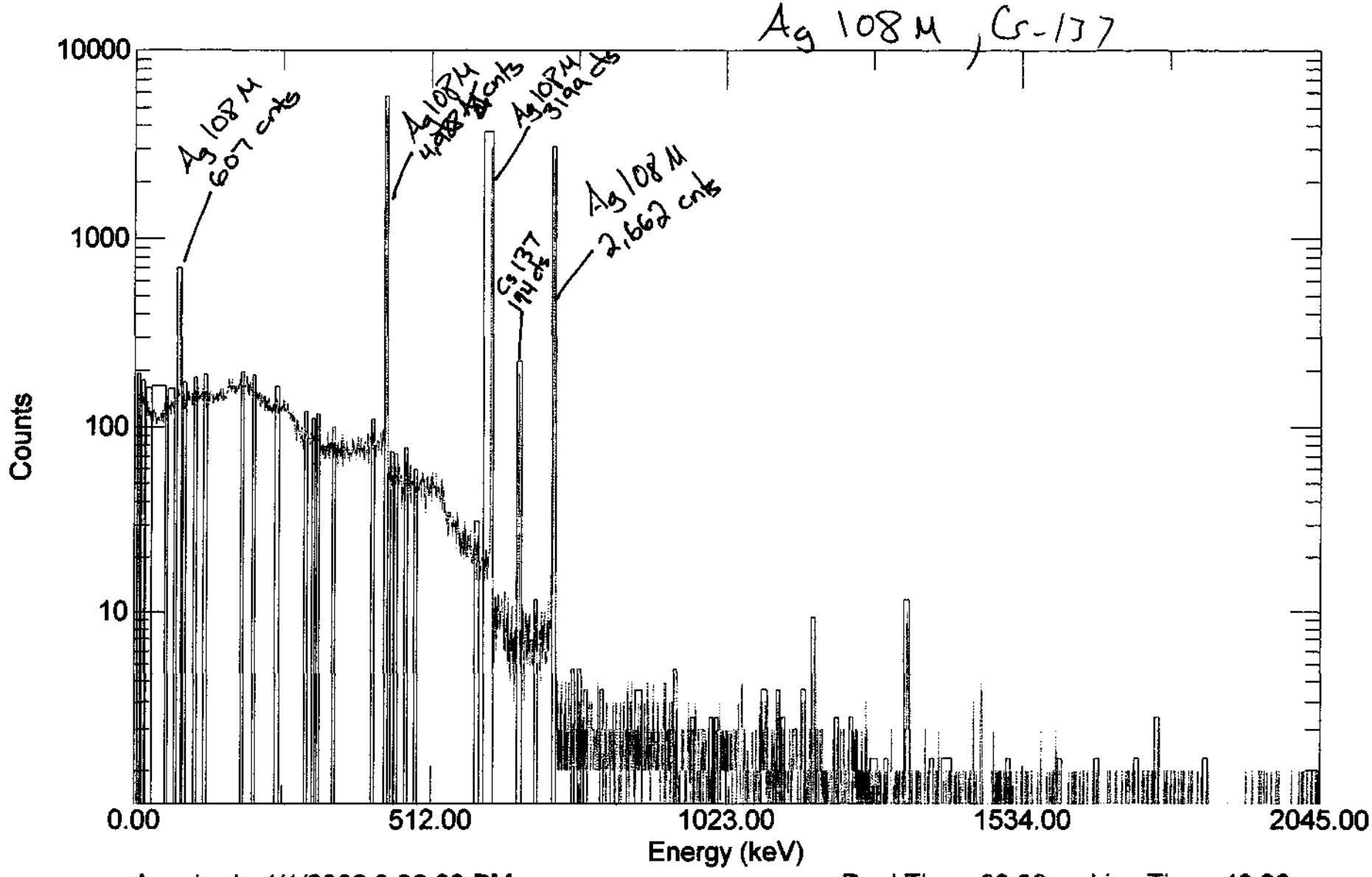
File: C:\User\GNIWEB~1\013 ITEM64 4-1-2002 3.32.53 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

65

015 ITEM65 4-1 2002 3.36.09 PM

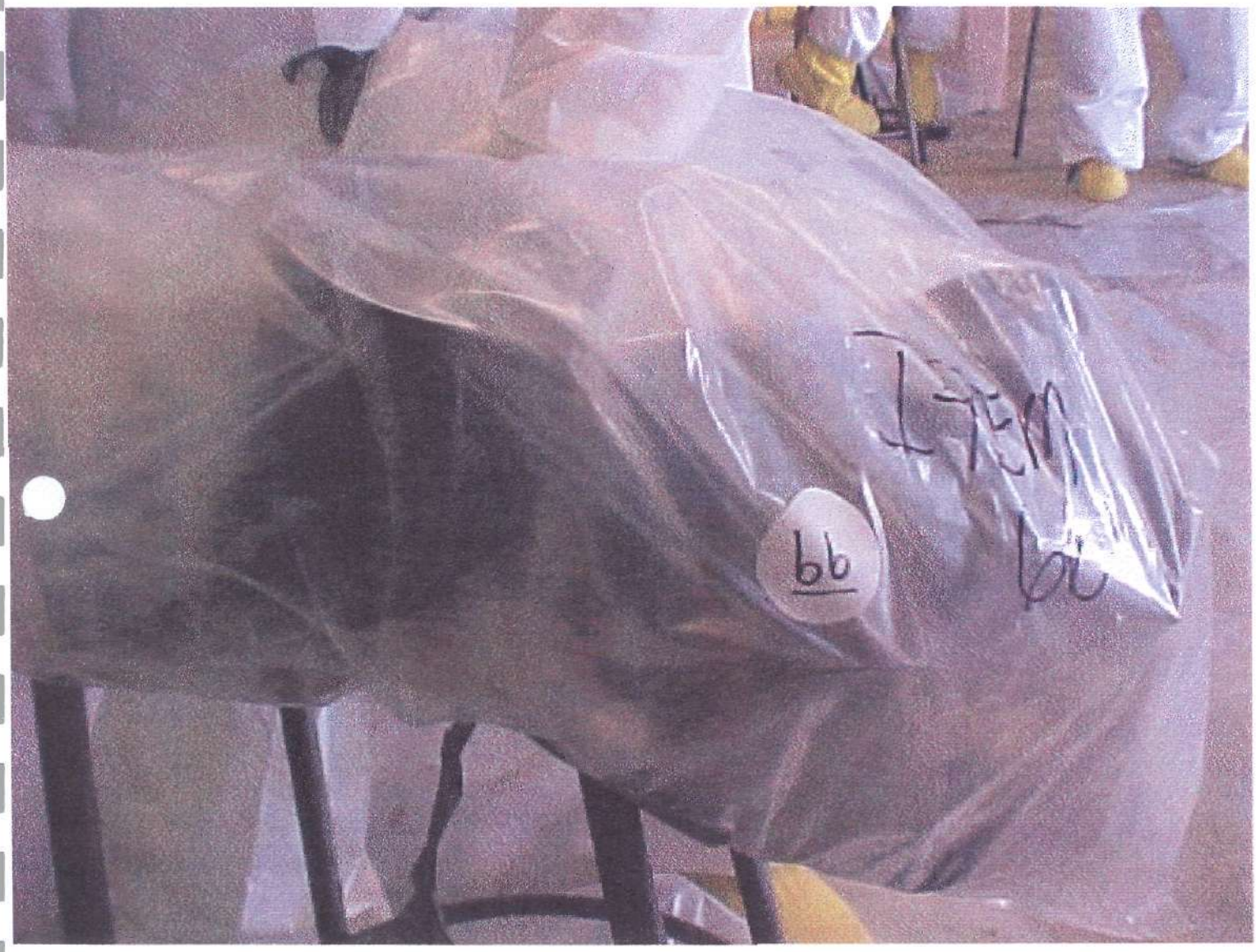
ITEM65



Acquired: 4/1/2002 3:36:09 PM Real Time: 60.00 s. Live Time: 48.28 s.

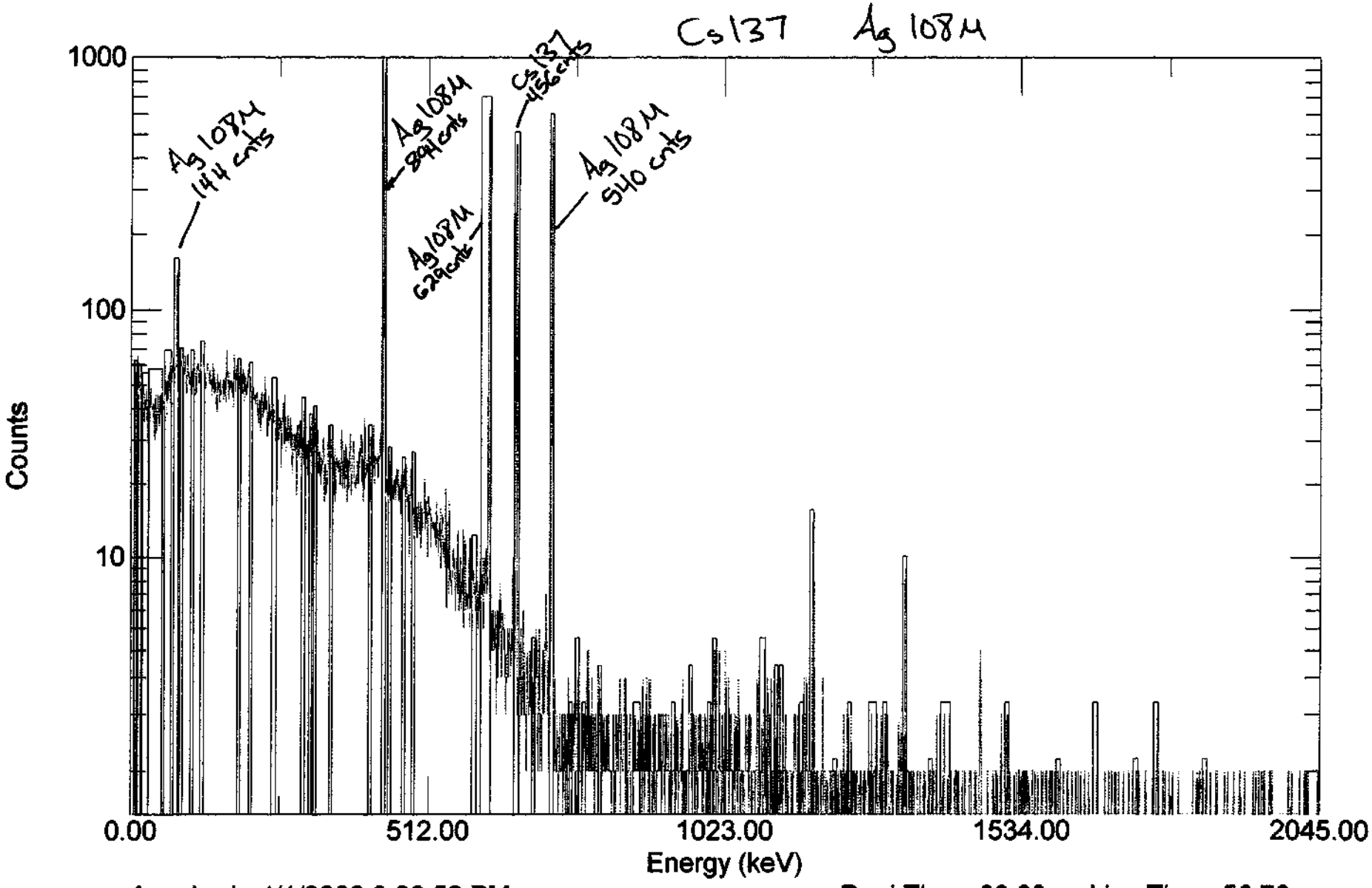
File: C:\User\GNIWEB~1\015 ITEM65 4-1-2002 3.36.09 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


bb
I-75M
bb

016 ITEM66 4-. 2002 3.38.52 PM

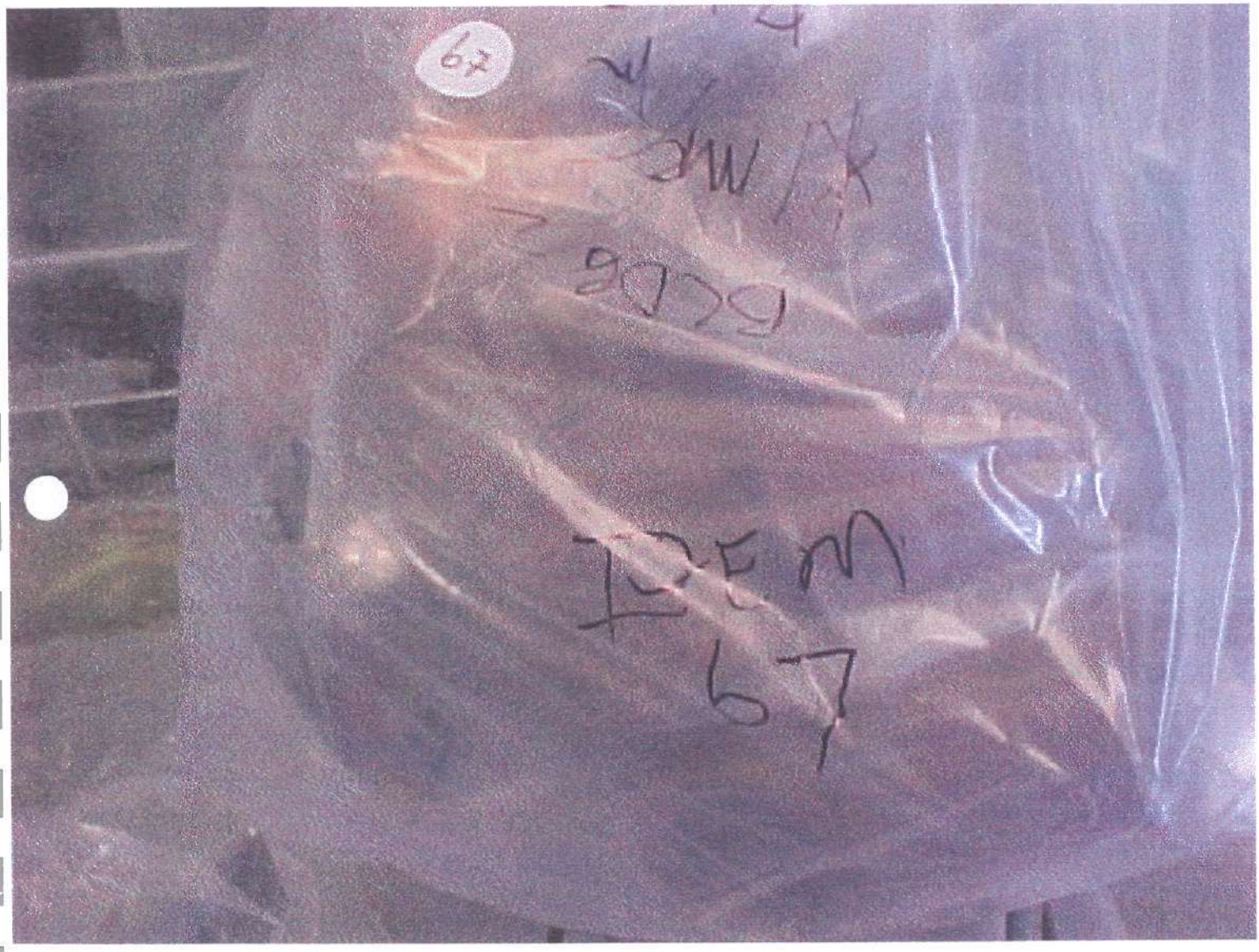
ITEM66



Acquired: 4/1/2002 3:38:52 PM Real Time: 60.00 s. Live Time: 56.70 s.

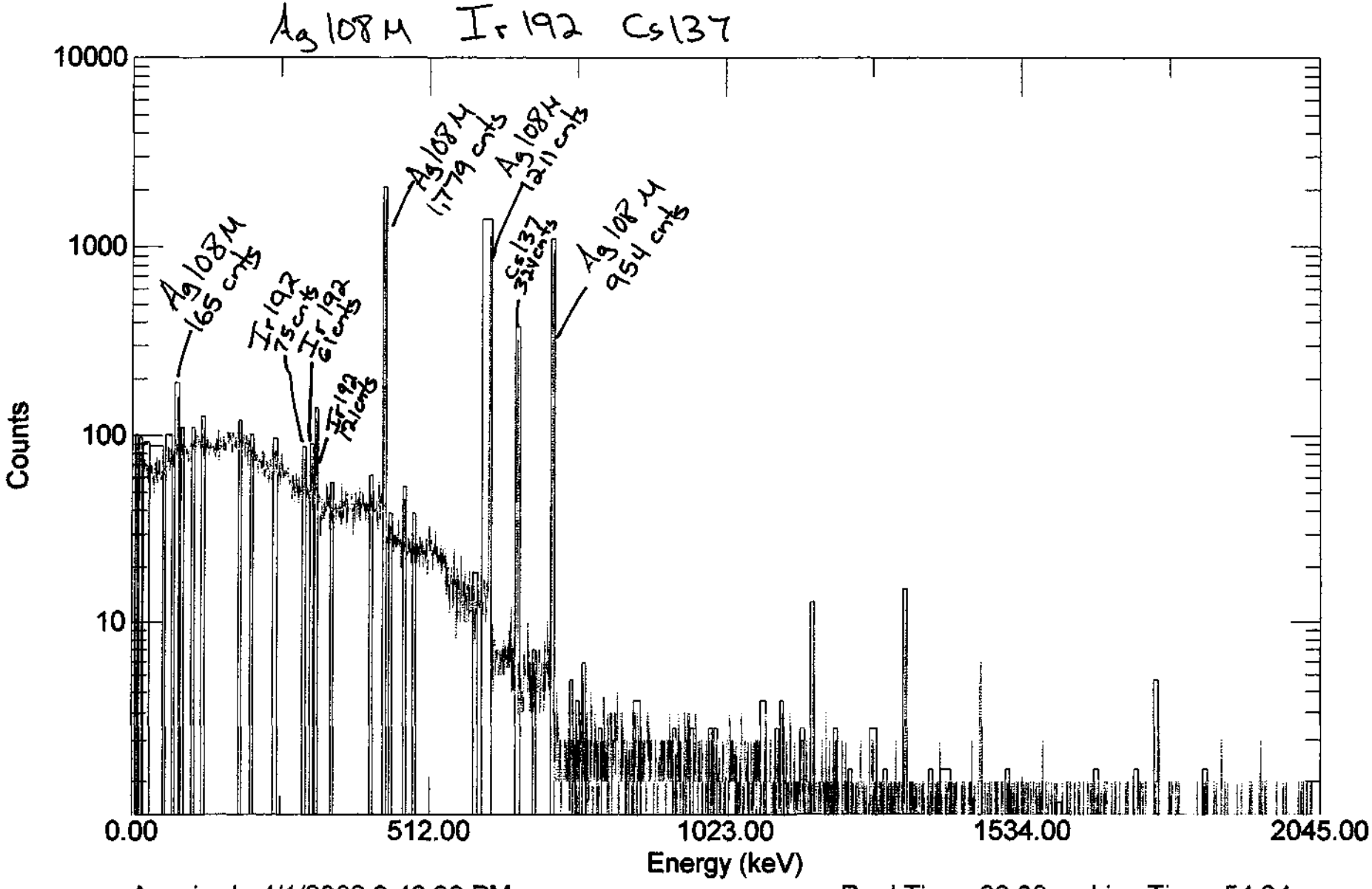
File: C:\User\GNIWEB~1\016 ITEM66 4-1-2002 3.38.52 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


67
ITEM
67

018 ITEM67 4-1-2002 3.48.39 PM

ITEM67



Acquired: 4/1/2002 3:48:39 PM Real Time: 60.00 s. Live Time: 54.34 s.

File: C:\User\GNIWEB~1\018 ITEM67 4-1-2002 3.48.39 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4·1·02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

ITEMS

Container #	68	69	70	~~71~~	~~72~~
External on pig in mR/hr	0.2	1	2		
External on pig Neutron mR/hr	<1	<1	<1	~~<1~~	~~<1~~
Contact open pig mR/hr	0.2	1	2		
Beta on open pig mR/hr O/W	~~0.2~~ 0.2	2	10		

Picture	✓	✓	✓		
DIGET	✓	✓	✓		

Table Readings

Source mR/hr @ 6 inchs	0.2	0.2	0.8		
Source mR/hr @ 12 inches	↓	↓	0.4		
Source mR/hr @ 36 inches	↓	↓	0.2		
Size of source in cc's	2 FT³	3 FT³	2 FT³		
Weight in grams	~~15 LBS~~ 15 LBS	80 Lb	~~[illegible]~~ DAM ~~[illegible]~~ HEAVY		

CPM Alpha	N/A		30 LBS		
Direct Beta/Gamma					

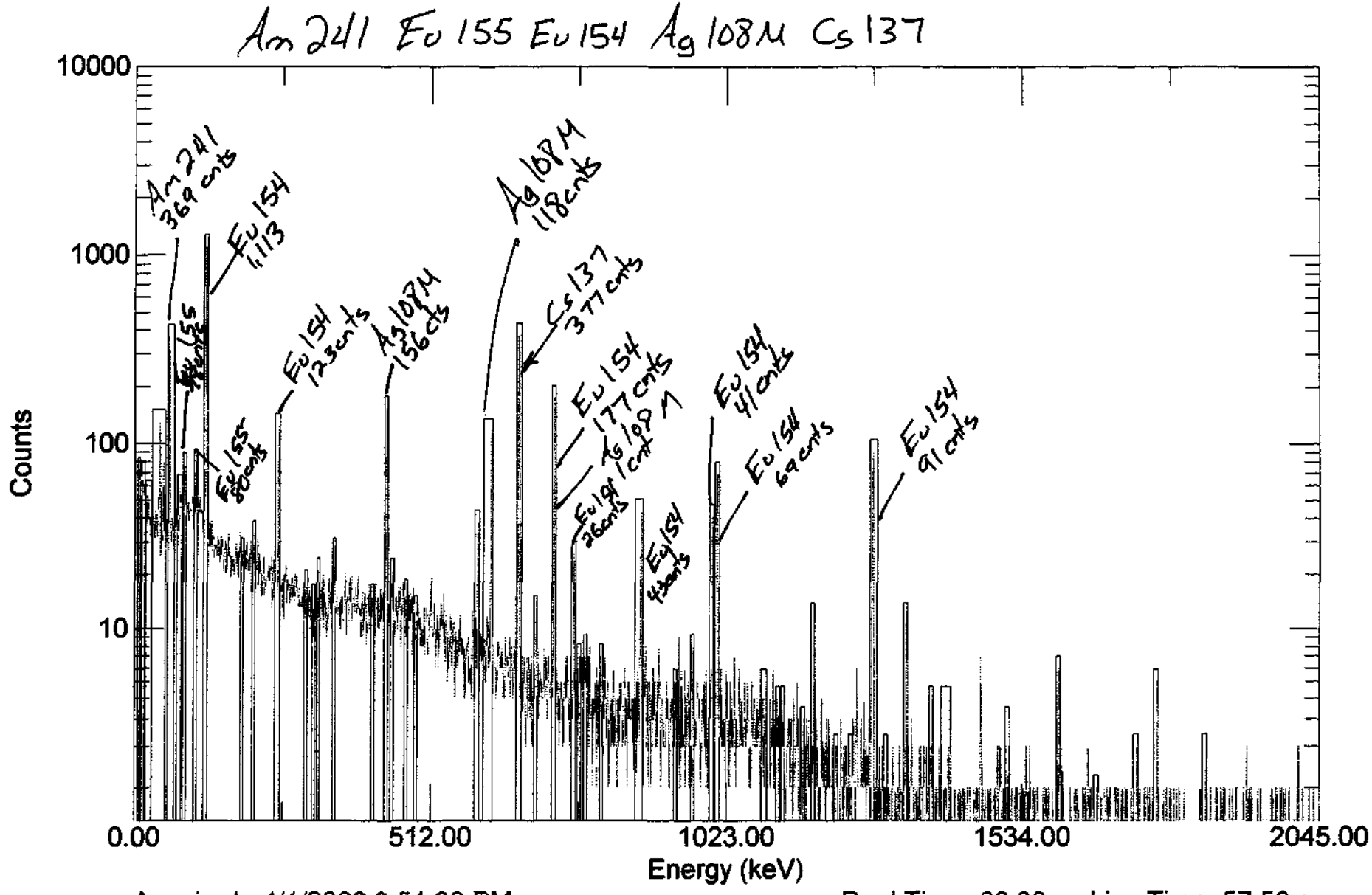
Info on source:	TRASH P.C's α	~~[illegible]~~ ~~CONVEYOR~~ CONVEYOR	WELD LEADS	~~30 GAL. OF SAND~~	

Information on pig:	Bldg 2		Rm 1		
Smear DPM per 100 cm^2 Alpha	1200				
Smear DPM per 100 cm^2 Beta	500 K				
			50 Lb.		

ITEM
68

019 ITEM68 4-1-2002 3.51.39 PM

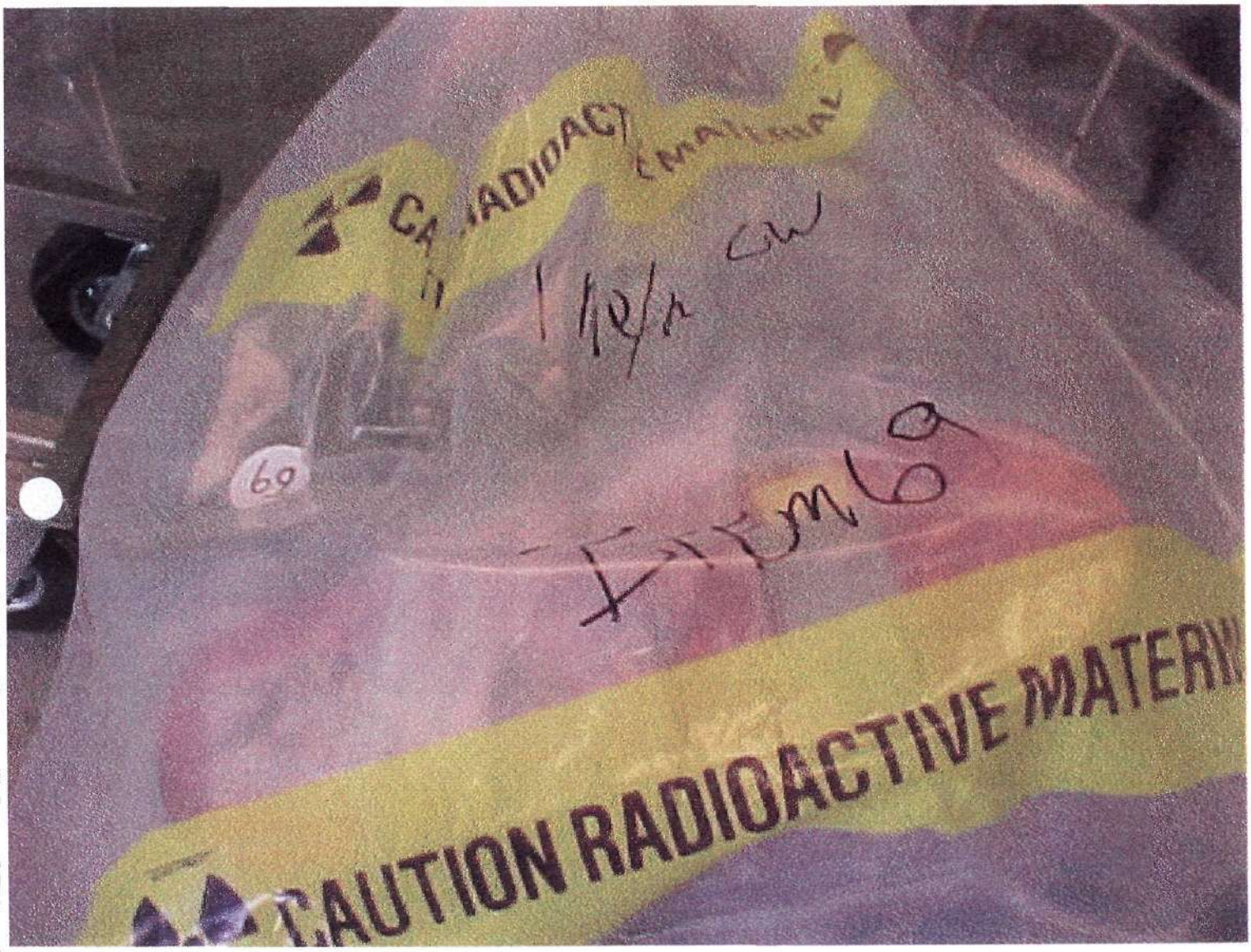
ITEM68



Acquired: 4/1/2002 3:51:38 PM Real Time: 60.00 s. Live Time: 57.50 s.

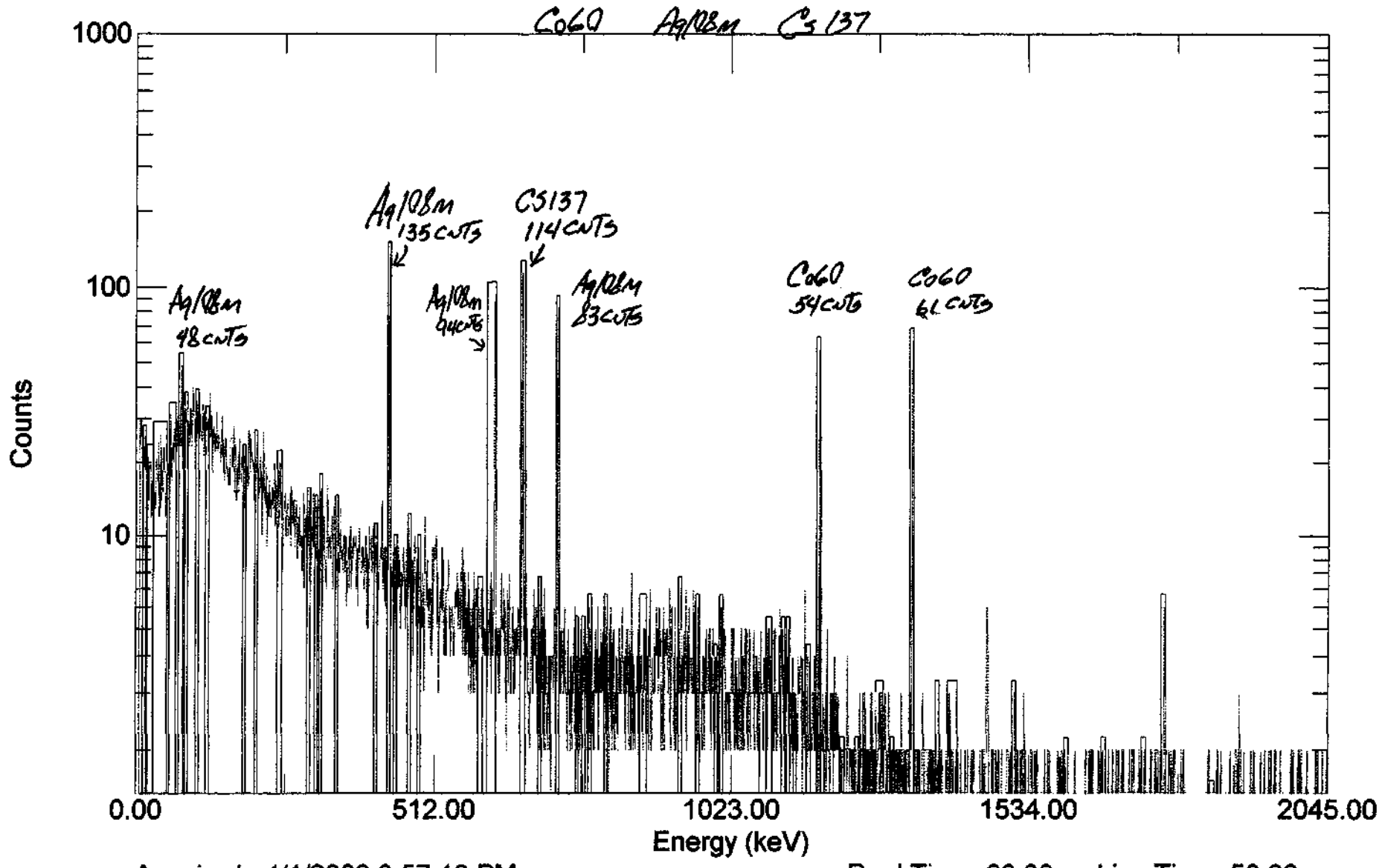
File: C:\User\GNIWEB~1\019 ITEM68 4-1-2002 3.51.39 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


CAUTION RADIOACTIVE MATERIAL
69
Item 69

020 ITEM69 4-1-2002 3.57.11 PM

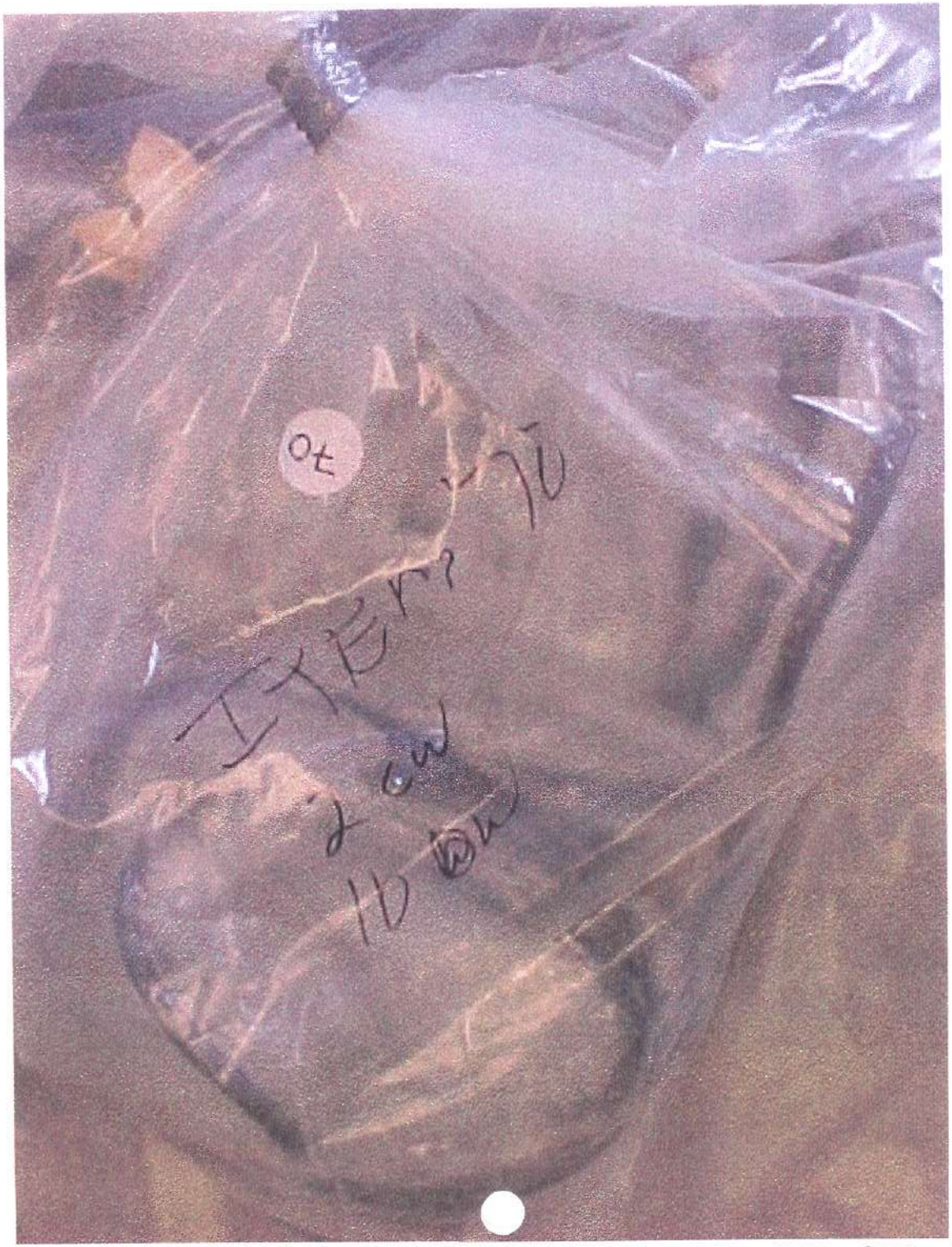
ITEM69



Acquired: 4/1/2002 3:57:10 PM Real Time: 60.00 s. Live Time: 58.66 s.

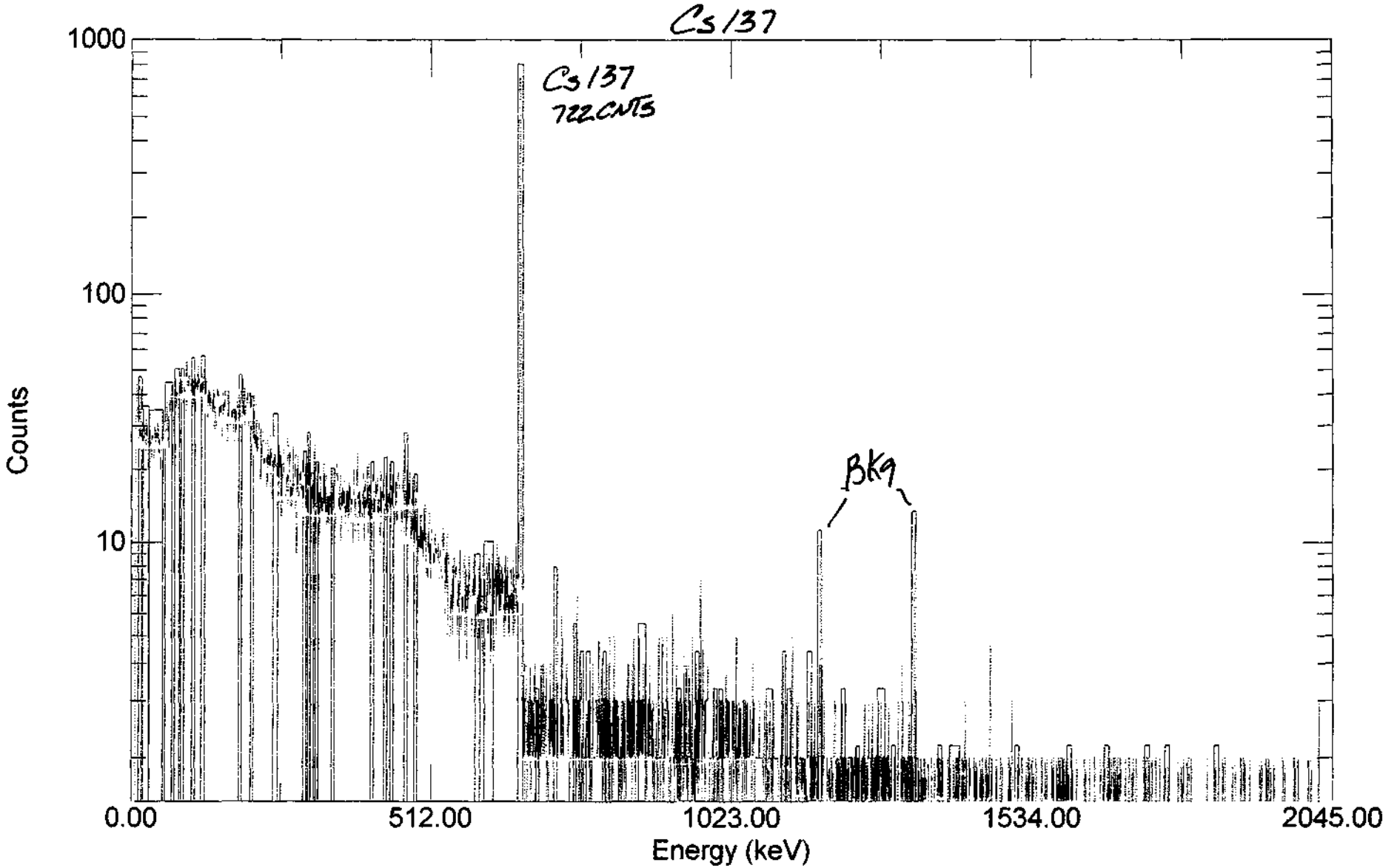
File: C:\User\GNIWEB~1\020 ITEM69 4-1-2002 3.57.11 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ot

021 ITEM70 4-1-2002 4.00.20 PM

ITEM70



Acquired: 4/1/2002 4:00:20 PM Real Time: 60.00 s. Live Time: 58.02 s.

File: C:\User\GNIWEB~1\021 ITEM70 4-1-2002 4.00.20 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

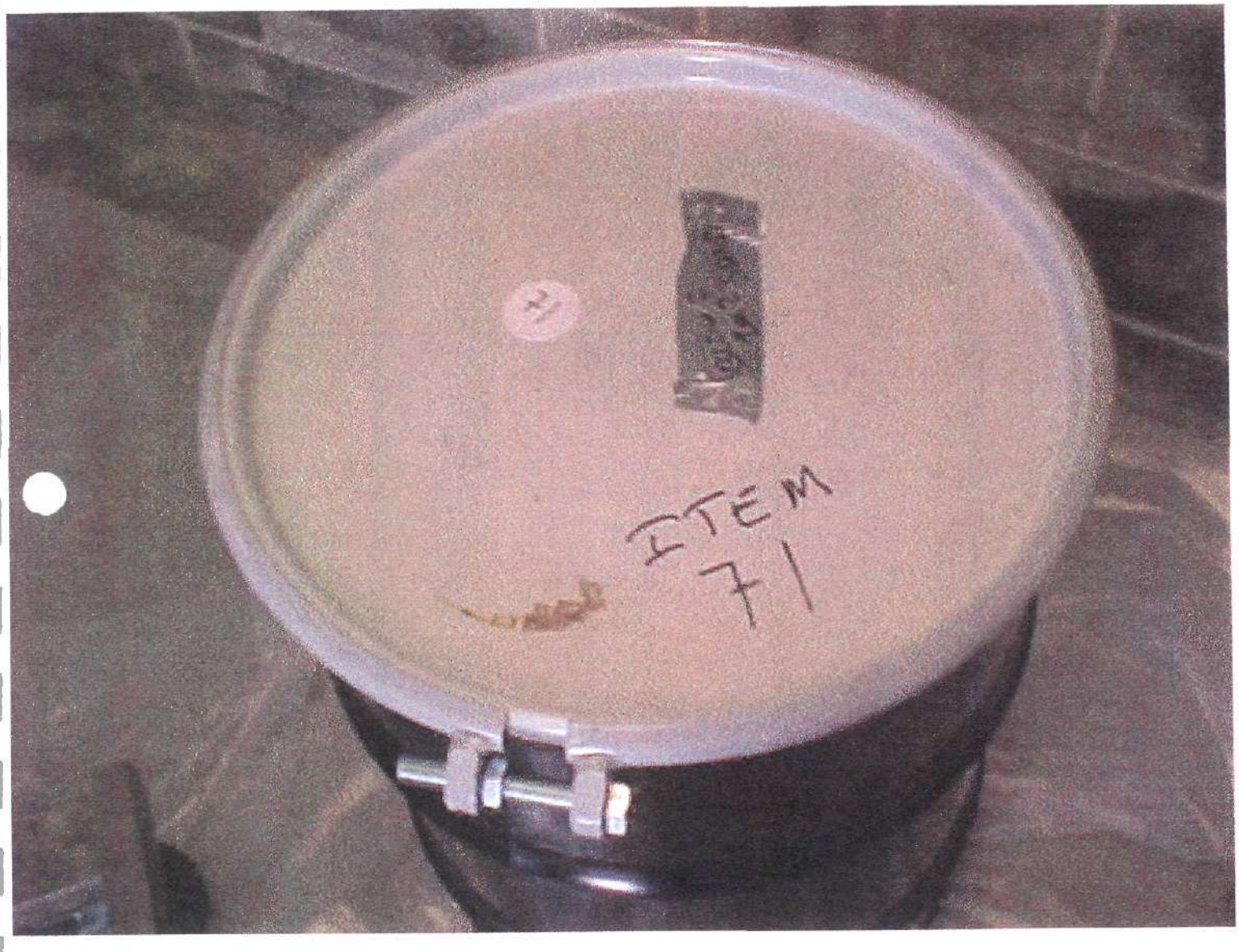
USEcology
FS-TX-02-01
Source Log

Date 4·1·02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

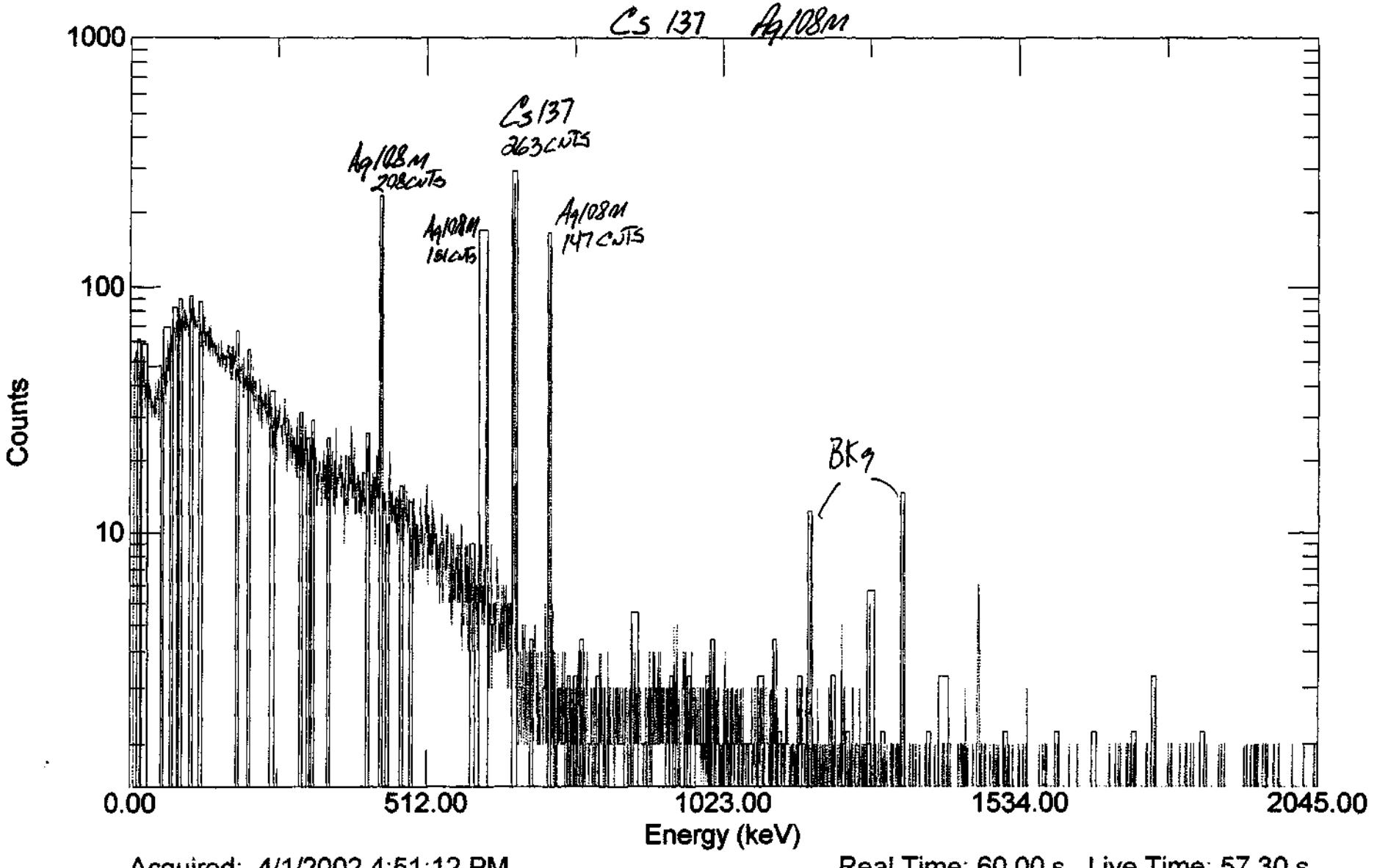
Items

Container #	71	72	73	74	75
External on pig in mR/hr	0.4	0.4	0.9	0.6	2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	0.4	0.4	0.9	0.6	2
Beta on open pig mR/hr O/W	0.4	0.4	0.9	0.6	2
Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	
Table Readings					
Source mR/hr @ 6 inchs	0.2	0.2	0.3	0.3	0.5
Source mR/hr @ 12 inches	↓	↓	0.2	0.2	0.3
Source mR/hr @ 36 inches	↓	↓	0.2	0.2	0.2
Size of source in cc's	3½ FT³	3½ FT³	3½ FT³	3½ FT³	3½ FT³
Weight in grams	DAM HEAVY 342 Lb.	→ 342 Lb.	→ 342 Lb.	→ 342 Lb	→ 342 Lb
CPM Alpha	N/A	→	→	→	→
Direct Beta/Gamma					
Info on source:	30 GAL. SAND	→	→	→	→
Information on pig: NO PIG	FROM BLDG 2 RM 2	→	→	→	→
Smear DPM per 100 cm^2 Alpha	N/A	→	→	→	
Smear DPM per 100 cm^2 Beta					


ITEM
71

022 ITEM71 4-1-2002 4.51.13 PM

ITEM71



Acquired: 4/1/2002 4:51:12 PM Real Time: 60.00 s. Live Time: 57.30 s.

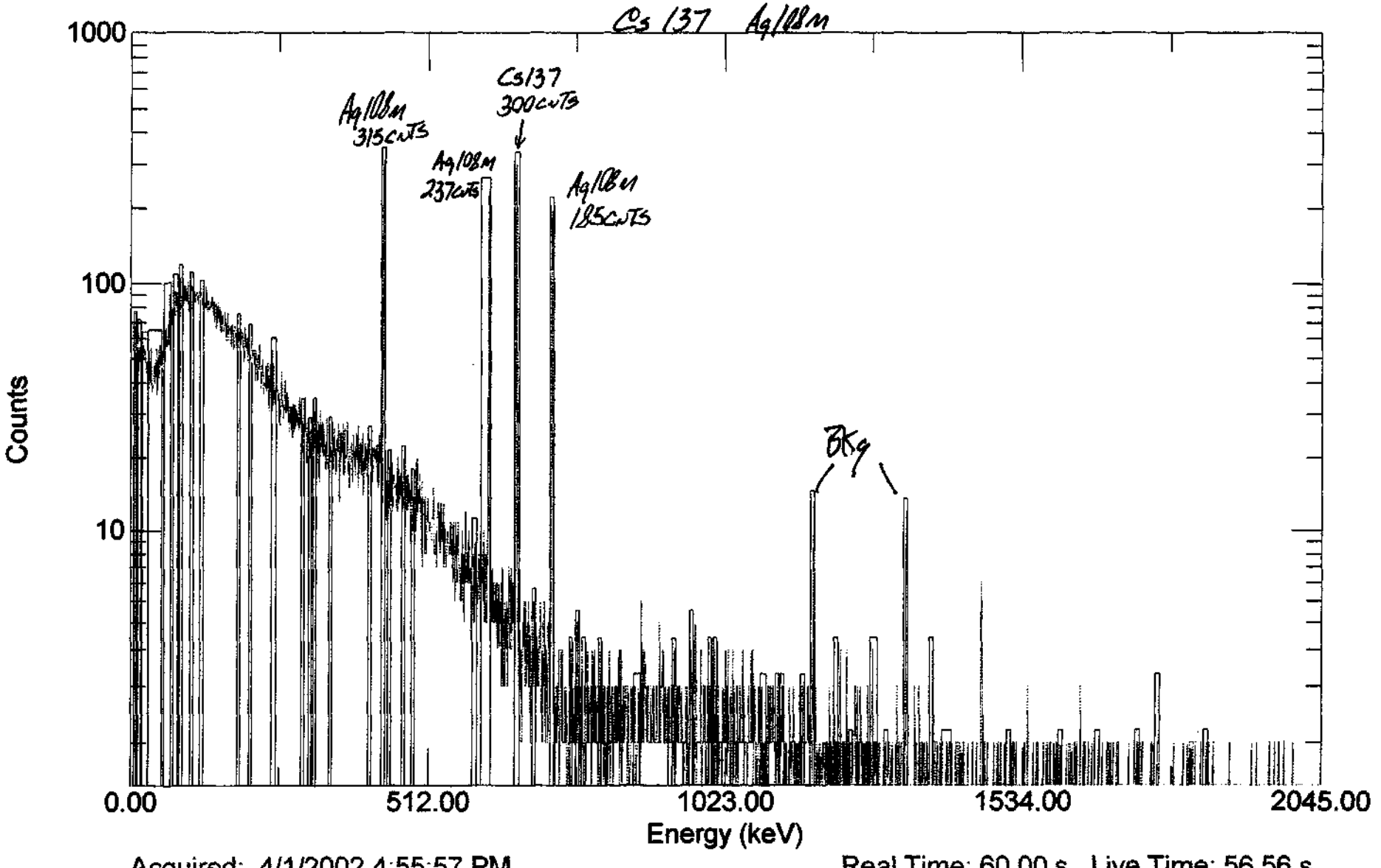
File: C:\User\GNIWEB~1\022 ITEM71 4-1-2002 4.51.13 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM 72
BLDG 2 rm 2
SAND

023 ITEM72 4-1-2002 4.55.56 PM

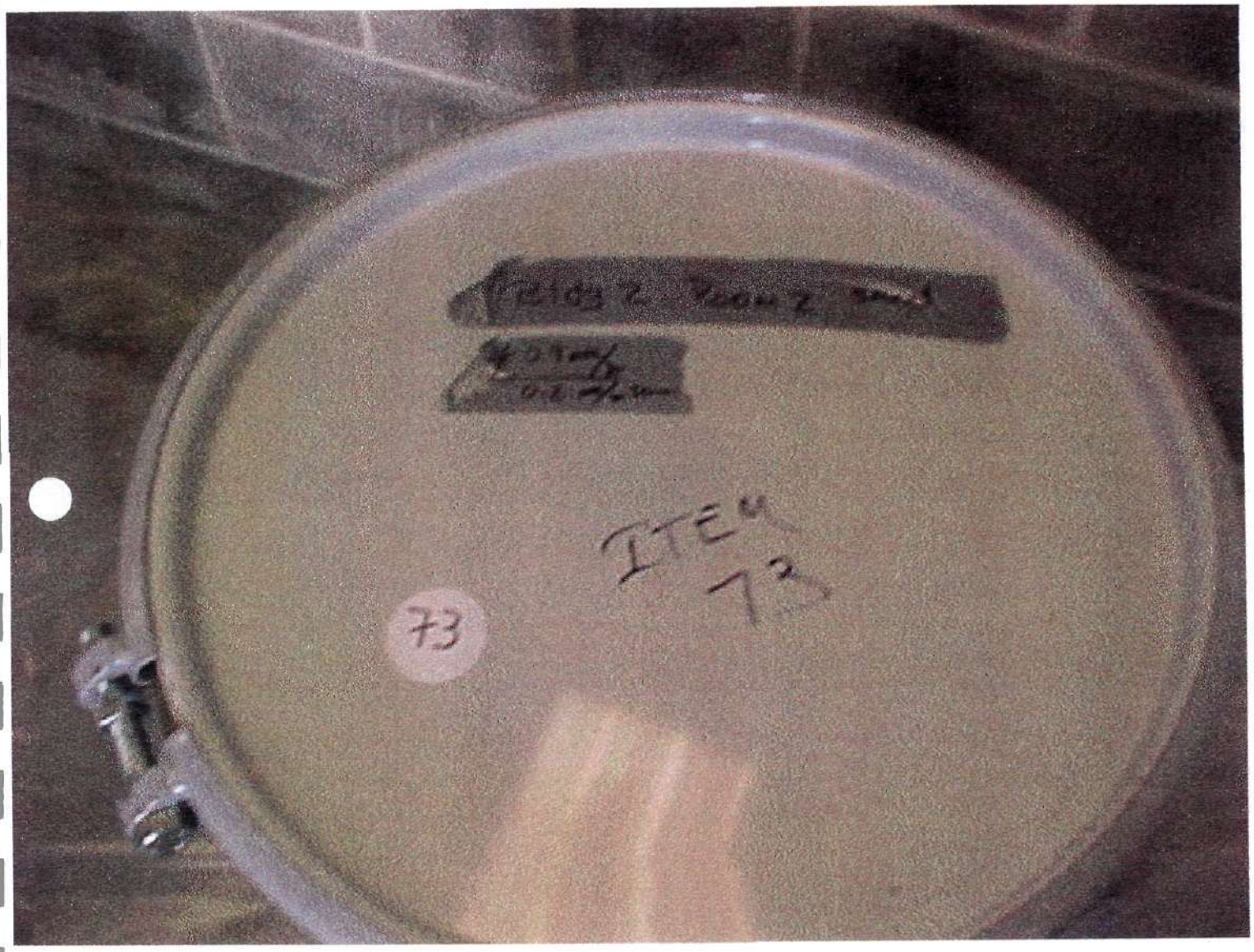
ITEM72



Acquired: 4/1/2002 4:55:57 PM Real Time: 60.00 s. Live Time: 56.56 s.

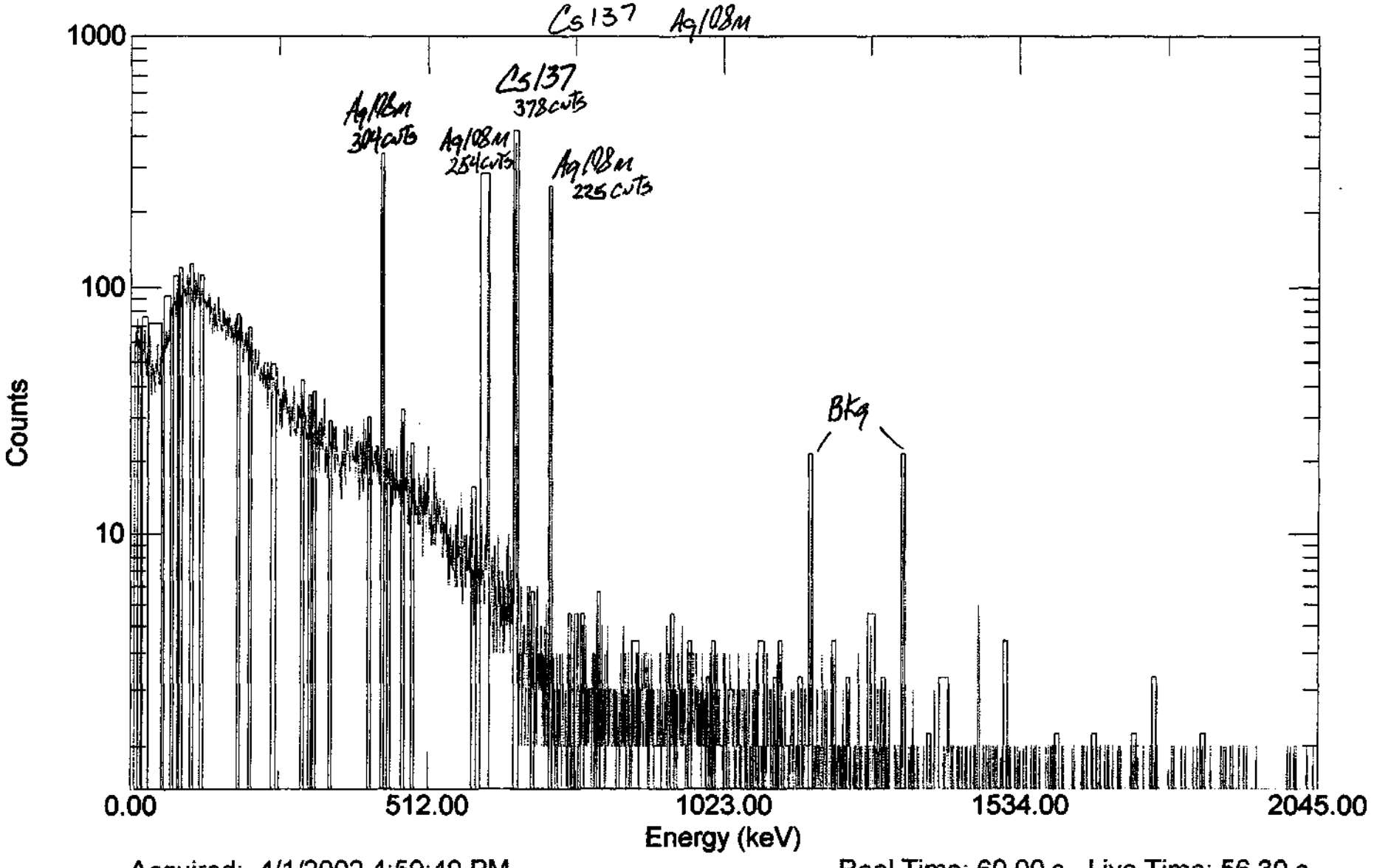
File: C:\User\GNIWEB~1\023 ITEM72 4-1-2002 4.55.56 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
73
73

025 ITEM73 4-1-2002 4.59.49 PM

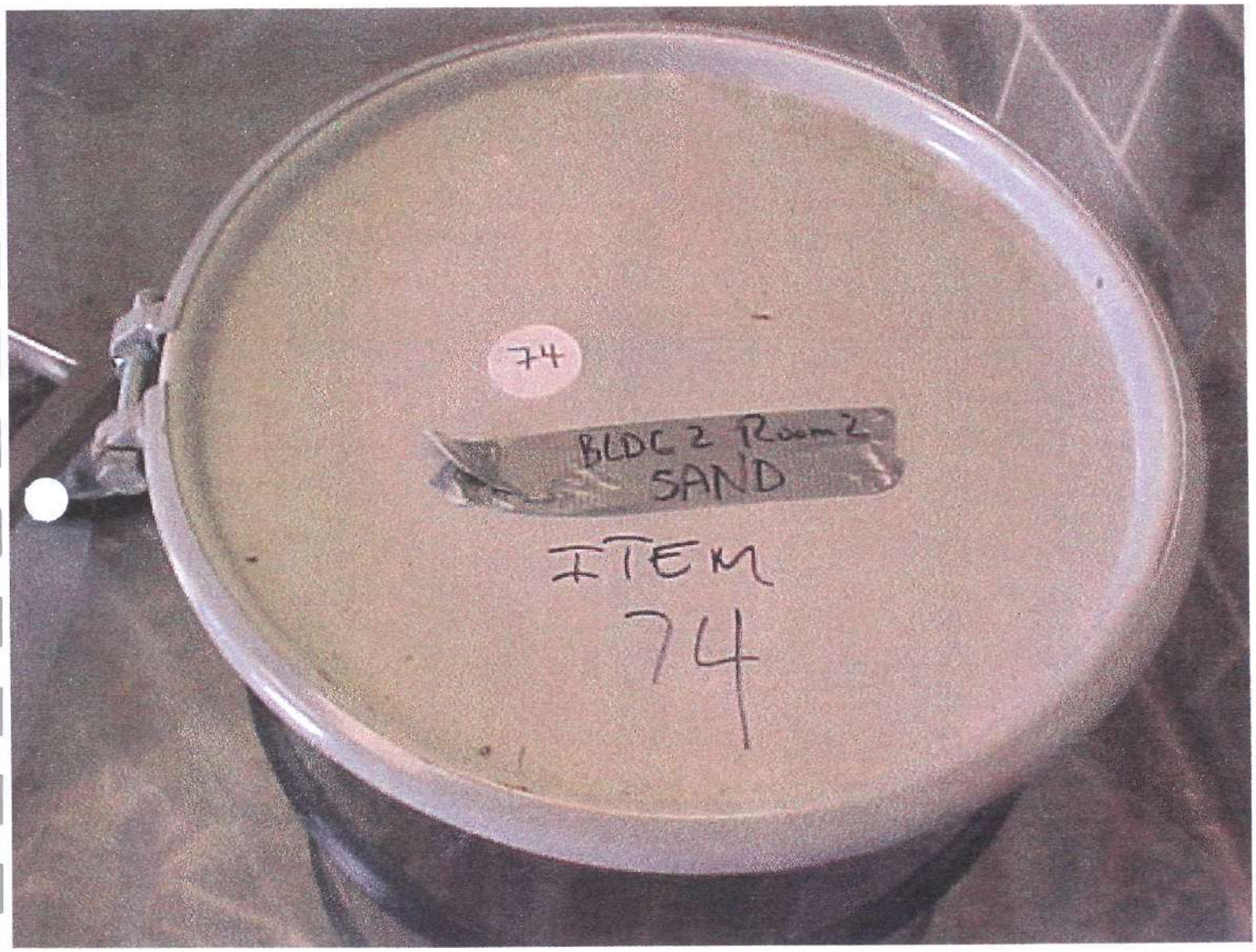
ITEM73



Acquired: 4/1/2002 4:59:49 PM Real Time: 60.00 s. Live Time: 56.30 s.

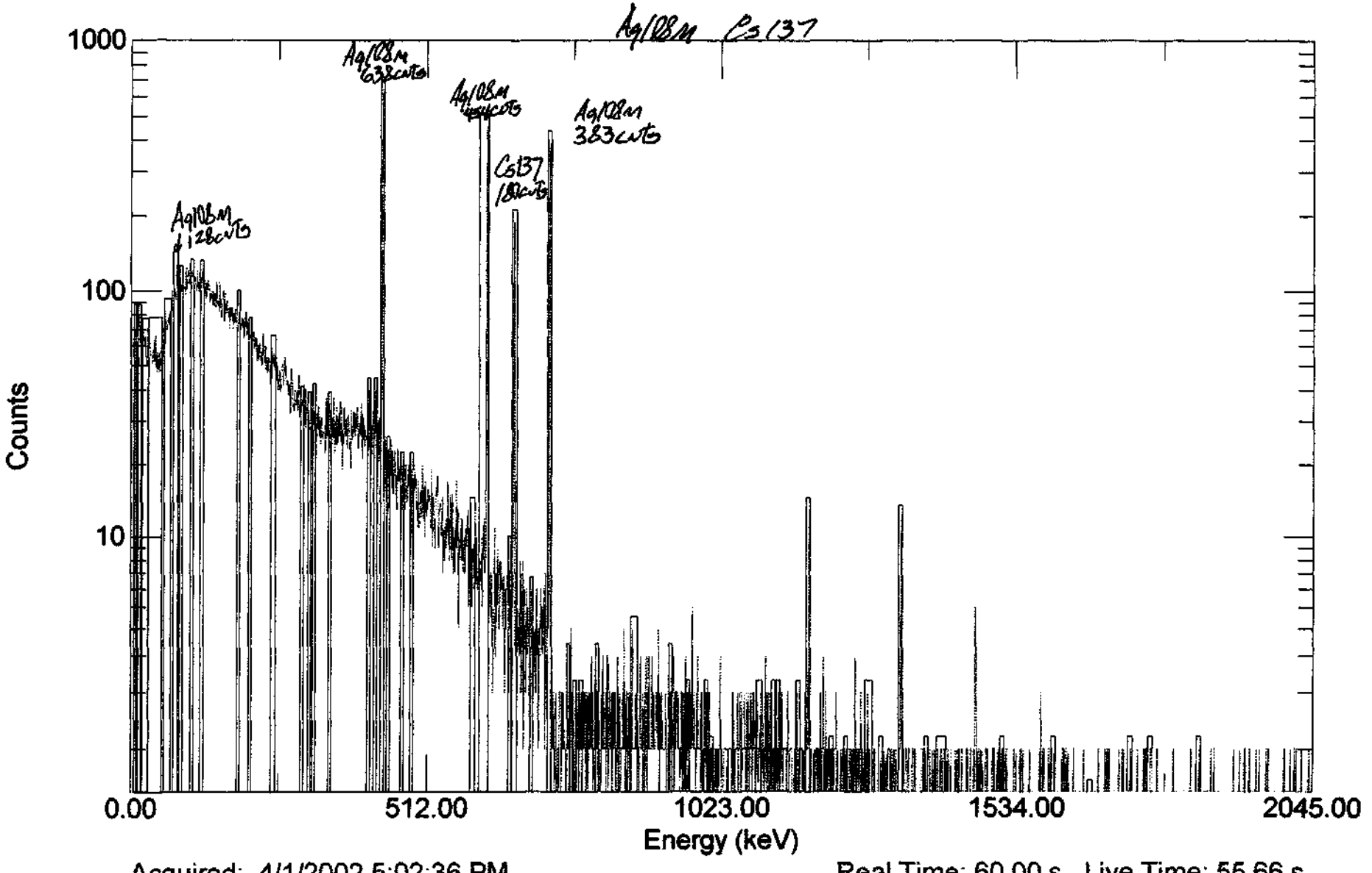
File: C:\User\GNIWEB~1\025 ITEM73 4-1-2002 4.59.49 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


74
BLDC 2 Room 2
SAND
ITEM
74

026 ITEM74 4-1-2002 5.02.35 PM

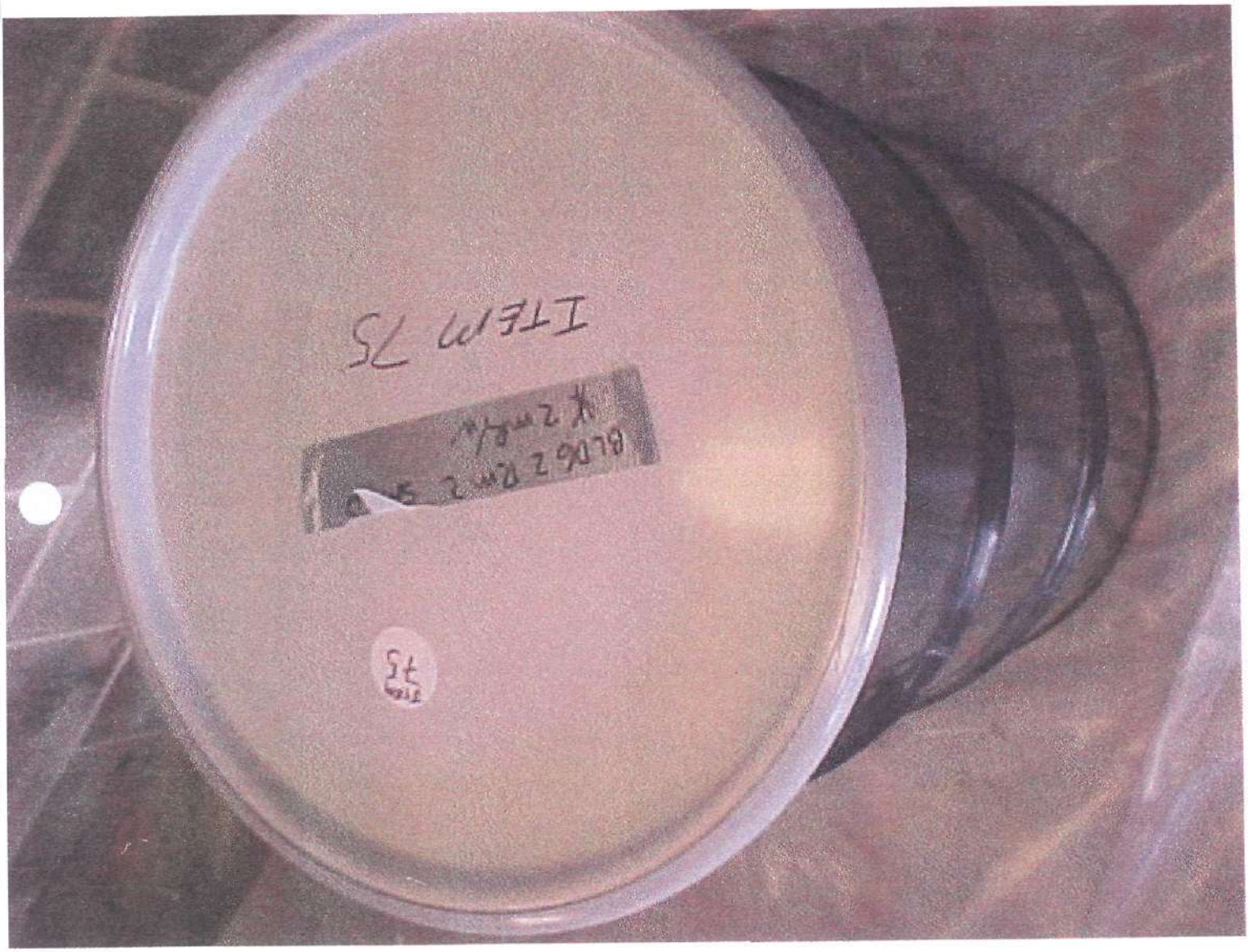
ITEM74



Acquired: 4/1/2002 5:02:36 PM Real Time: 60.00 s. Live Time: 55.66 s.

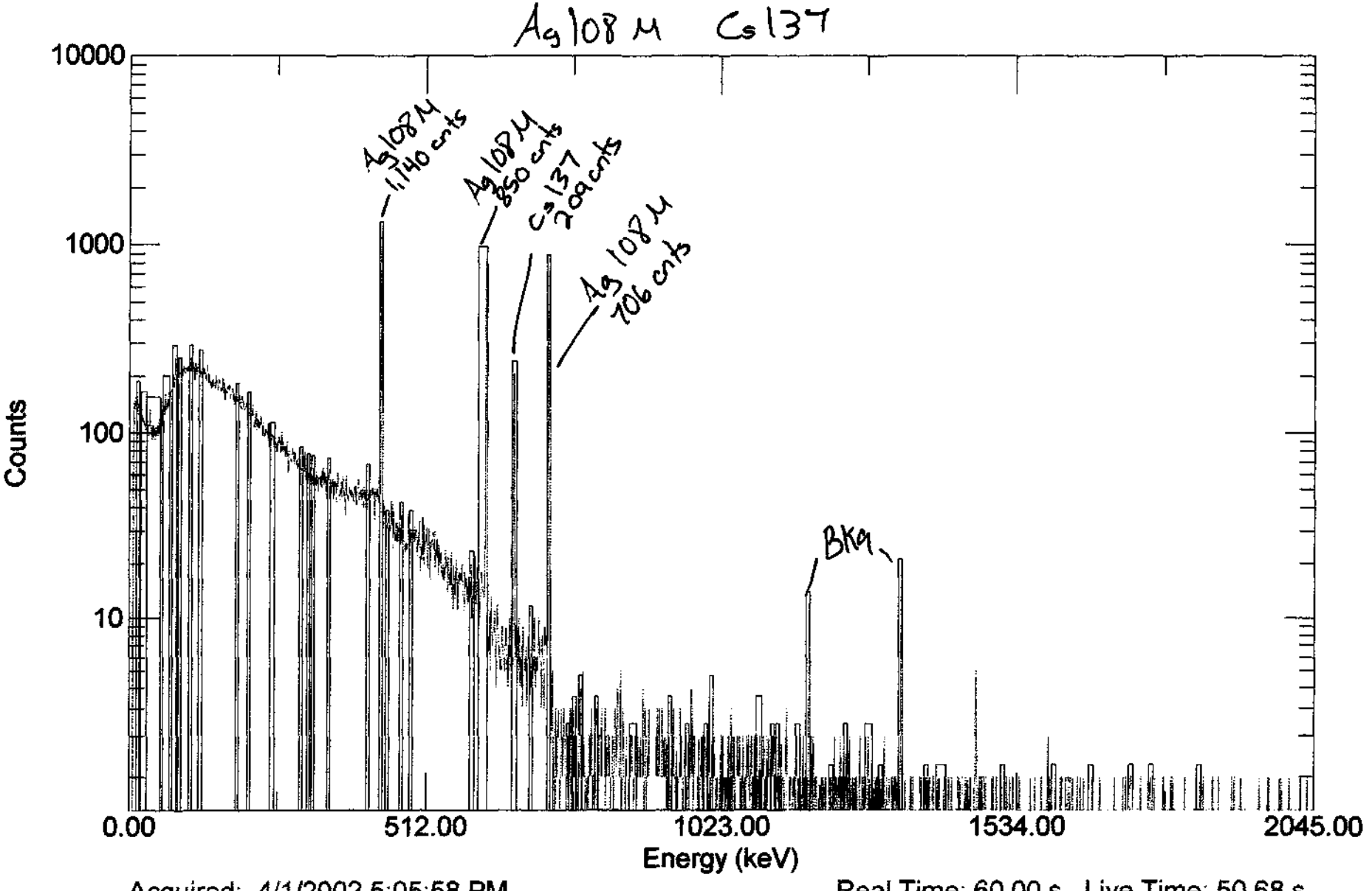
File: C:\User\GNIWEB~1\026 ITEM74 4-1-2002 5.02.35 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



027 ITEM75 4-1-2002 5.05.58 PM

ITEM75



Acquired: 4/1/2002 5:05:58 PM Real Time: 60.00 s. Live Time: 50.68 s.

File: C:\User\GNIWEB~1\027 ITEM75 4-1-2002 5.05.58 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4.1.02

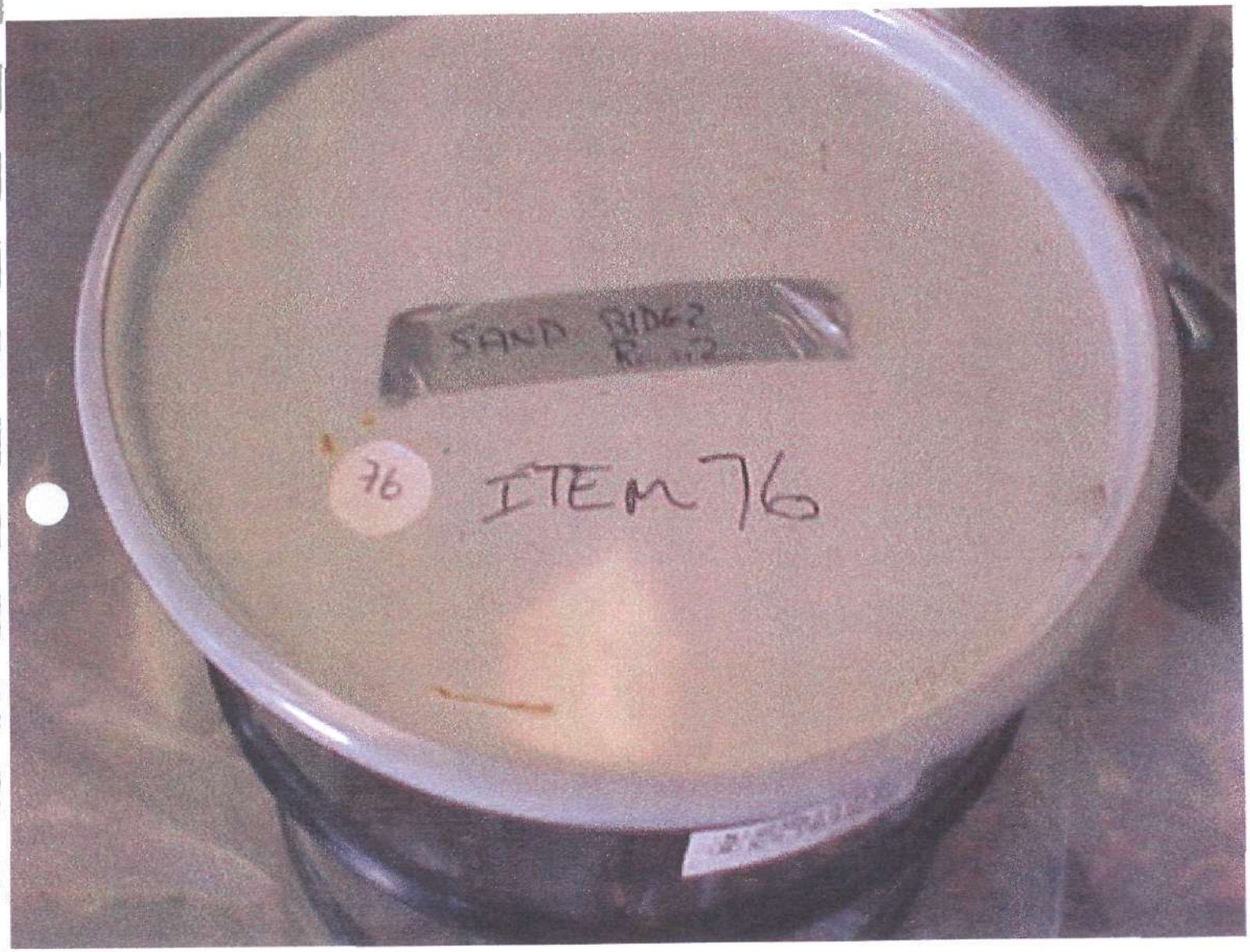
BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

ITEMS

Container #	76	77	78	79	80
External on ~~pig~~ in mR/hr	3.3	BKG	BKG	BKG	BKG
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr	3.3	BKG	BKG	BKG	BKG
Beta on open ~~pig~~ mR/hr O/W	3.3	↓	↓	↓	↓
Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

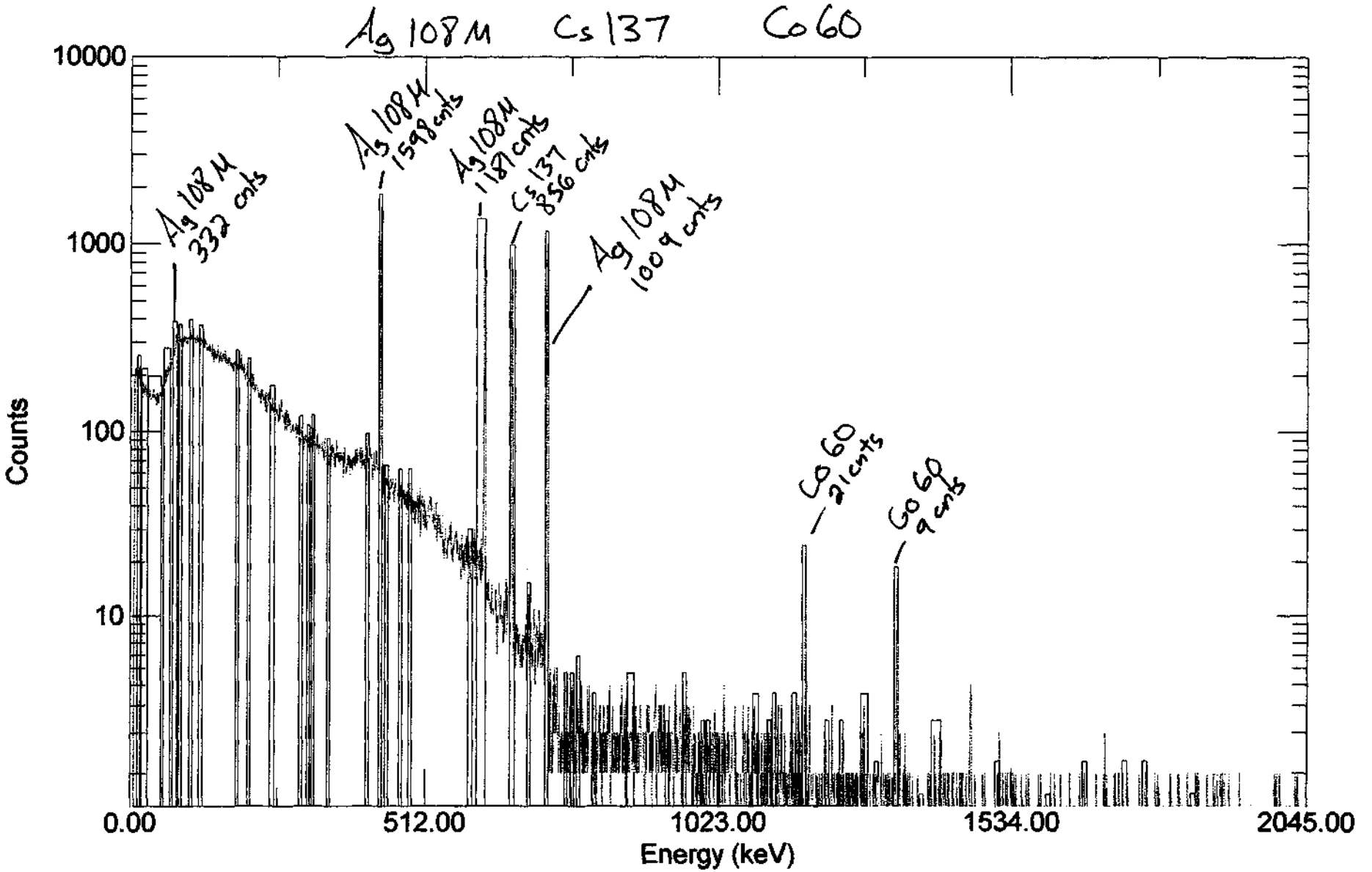
Table Readings

Source mR/hr @ 6 inchs	1 ~~0.6~~	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	0.6	↓	↓	↓	↓
Source mR/hr @ 36 inches	0.2	↓	↓	↓	↓
Size of source in cc's	3 ½ FT³	10.5 FT³	10.5 FT³	5 FT³	10.5
Weight in grams	337 Lb.	93 Lb.	93 Lb.	5 Lbs.	93 Lb
CPM Alpha	N/A				
Direct Beta/Gamma					
Info on source:	30 GAL. SAND	"Timmy's BAG" ~~55 GAL. DRUM~~ →		Timmys (2) BOX'S	OVER PACK
Information on ~~pig~~ N/A:	BLDG 2 RM 2	BLDG 3 RM 4/5	BLDG 3 RM 4/5 →	→	
Smear DPM per 100 cm^2 Alpha	N/A	200K	200K	200K	400K
Smear DPM per 100 cm^2 Beta					10K
	BLDG 2 RM 2	OVER PACK DRUM BOTTOM DEFEATED	OVER PACK "Timmys DRUM"		TIMMYS OVER PACK DRUM


SAND RIDGE
76
ITEM 76

028 ITEM76 4-1-2002 5.10.04 PM

ITEM76

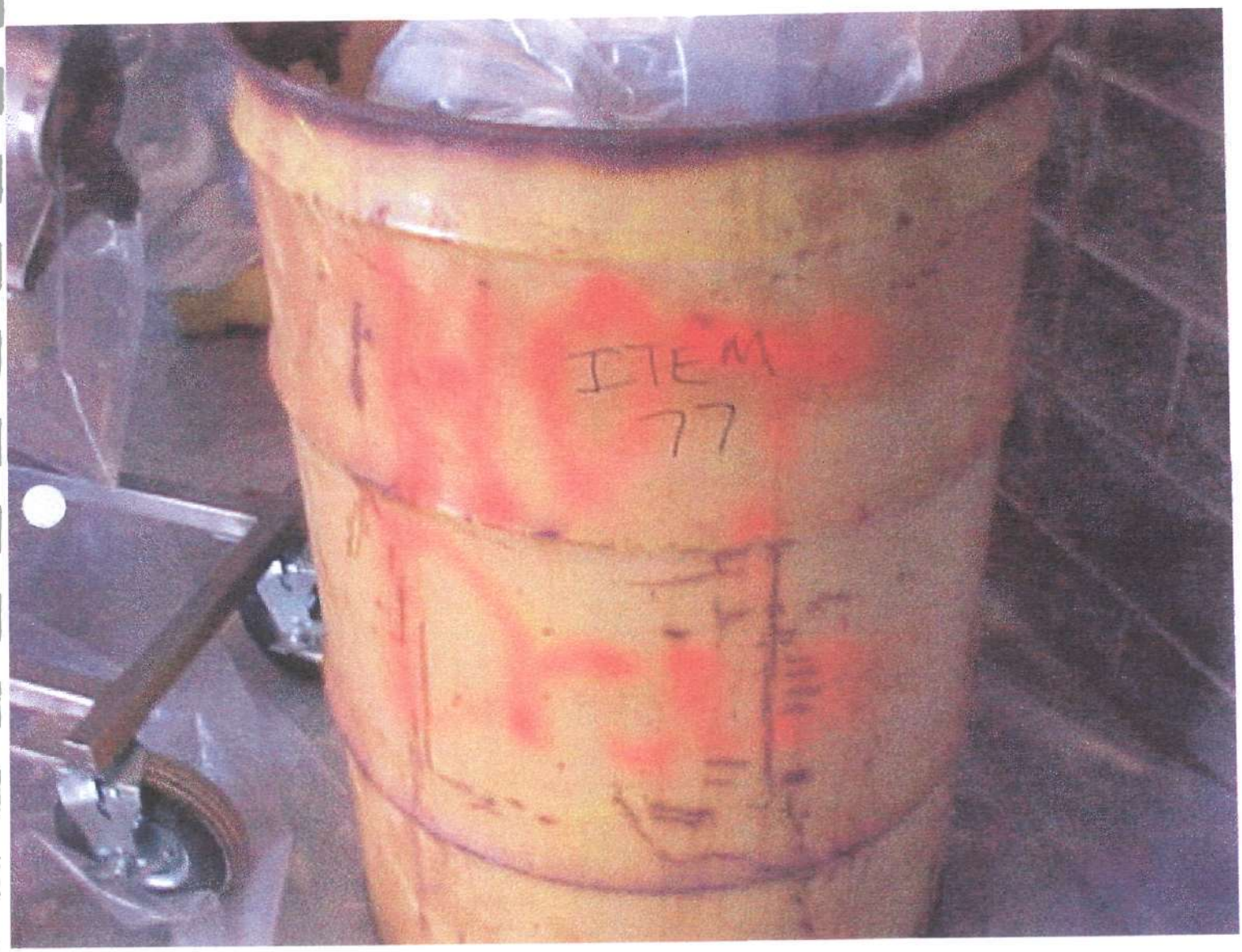


Acquired: 4/1/2002 5:10:03 PM Real Time: 60.00 s. Live Time: 46.32 s.

File: C:\User\GNIWEB~1\028 ITEM76 4-1-2002 5.10.04 PM.Spc Channels: 8192

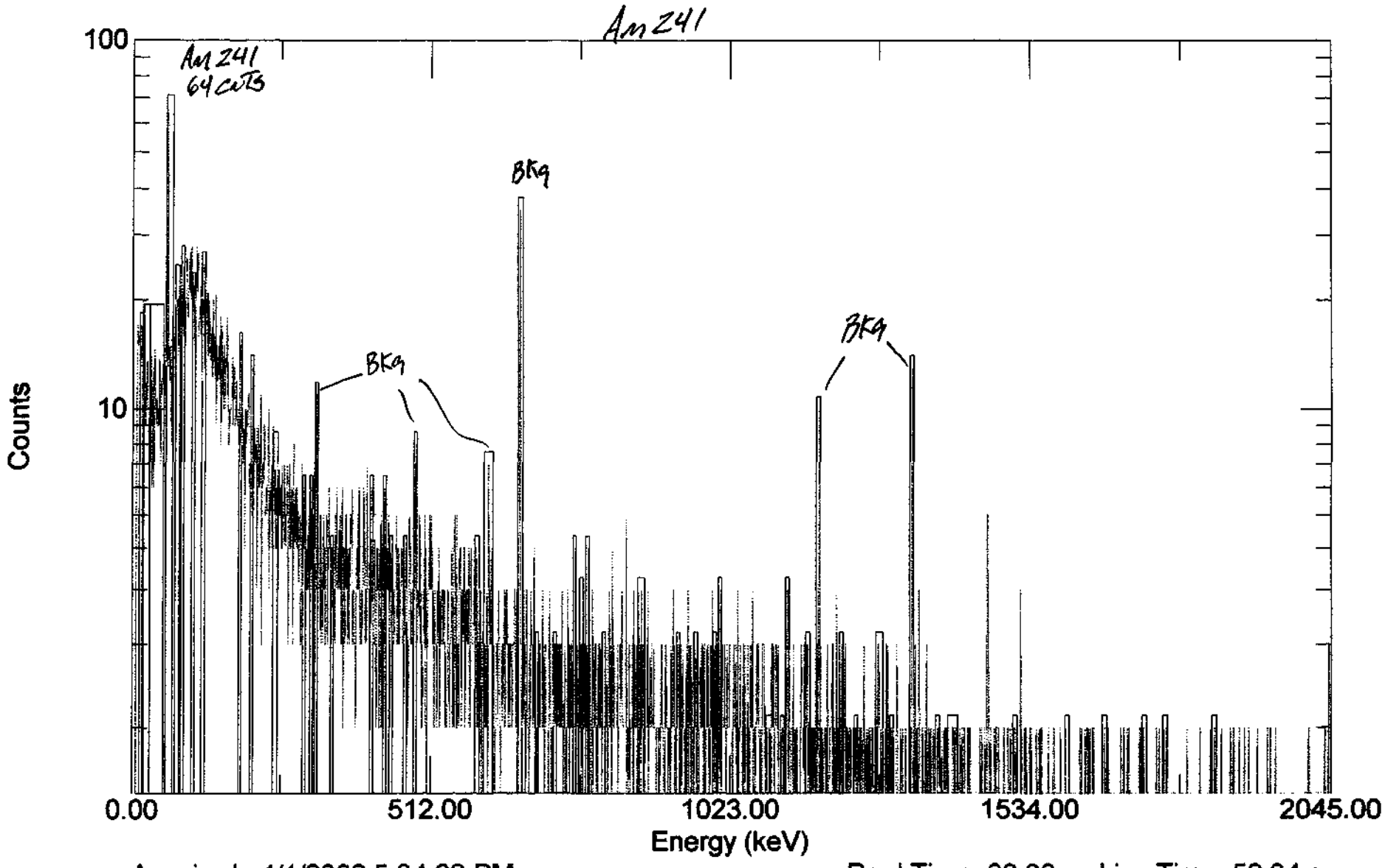
Detector: #1 digiDART USE 1b

77


ITEM
77

036 ITEM77 4-1-2002 5.34.22 PM

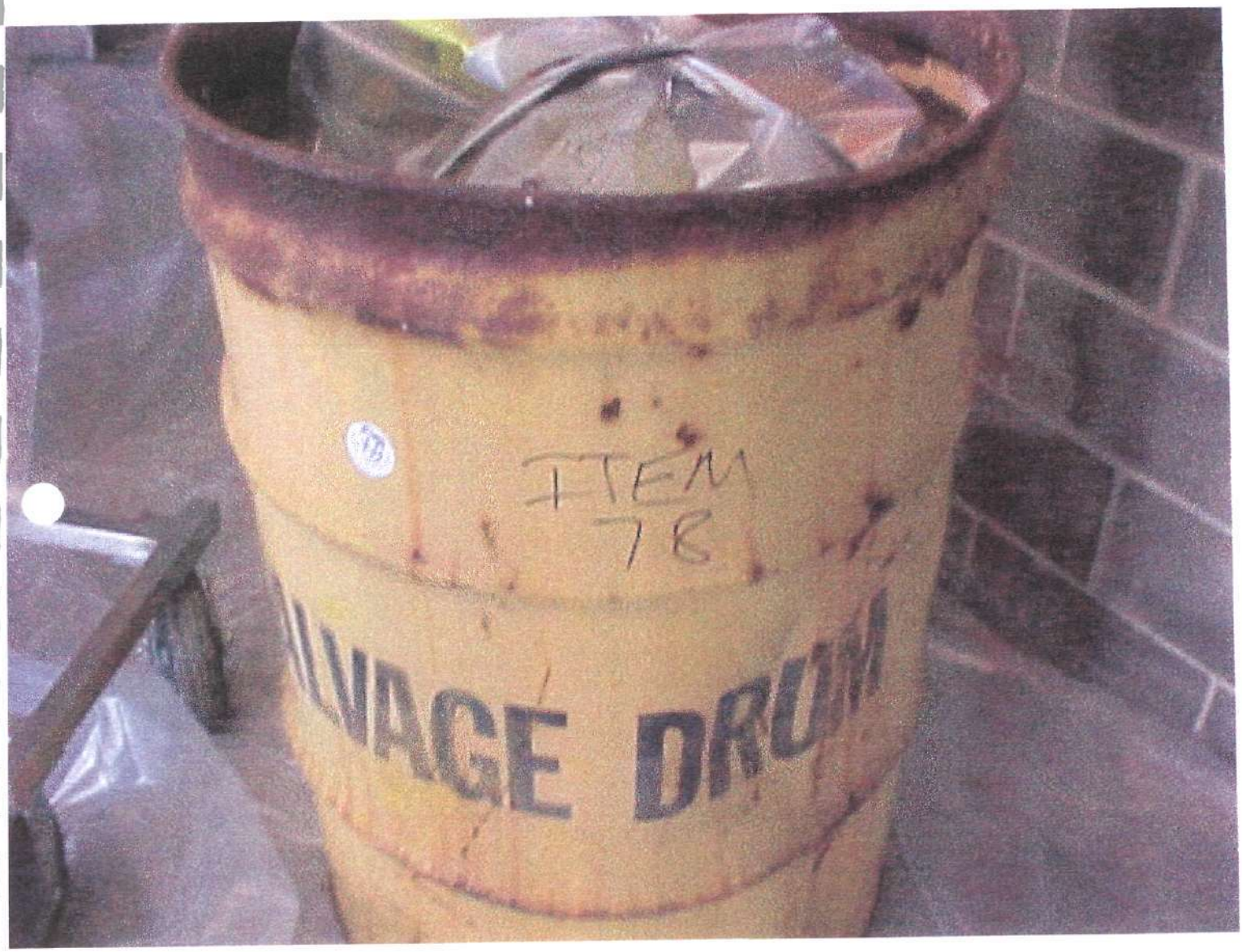
ITEM77



Acquired: 4/1/2002 5:34:22 PM Real Time: 60.00 s. Live Time: 59.34 s.

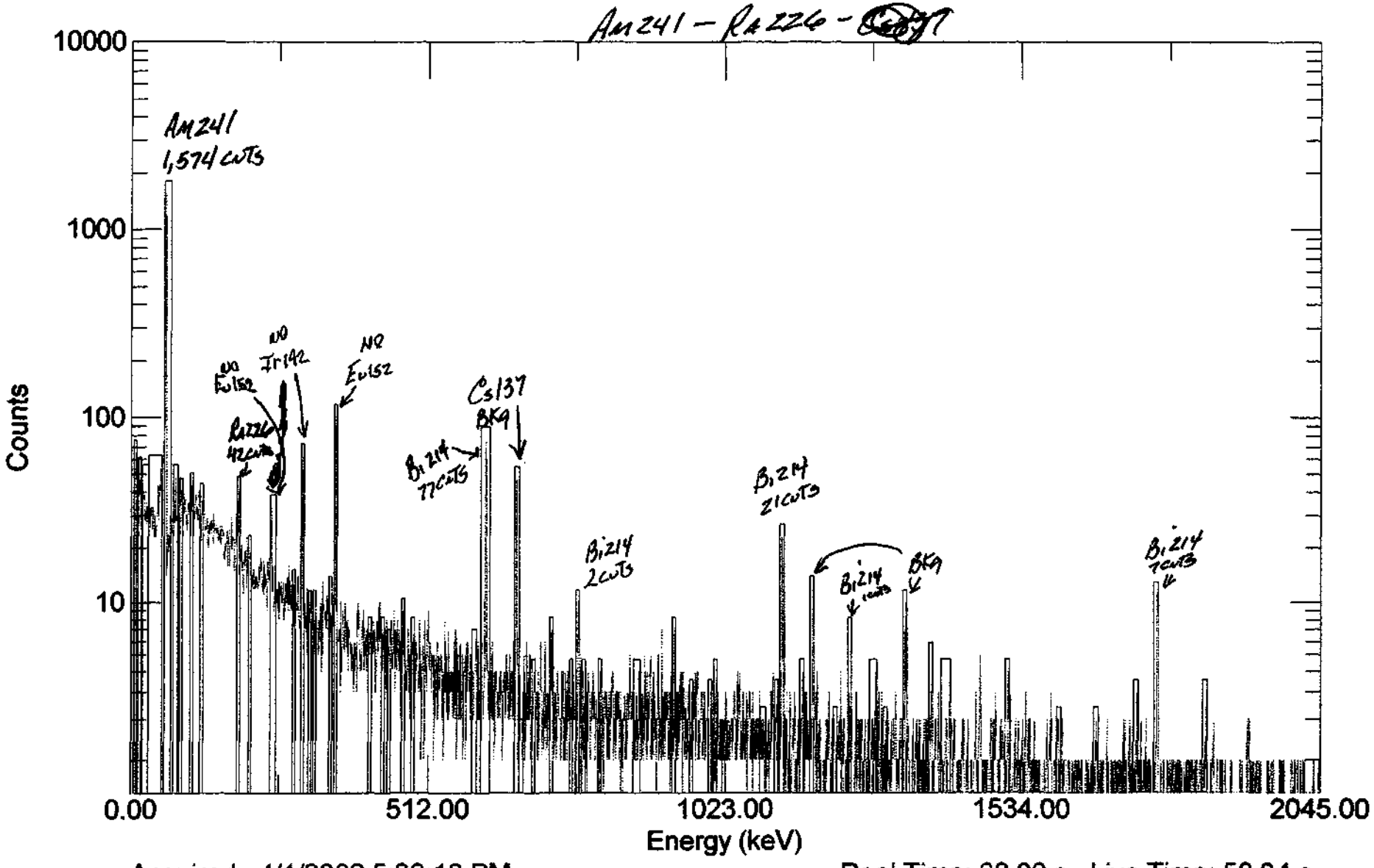
File: C:\User\GNIWEB~1\036 ITEM77 4-1-2002 5.34.22 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
78
NAGE DRUM

037 ITEM78 4-1-2002 5.39.19 PM

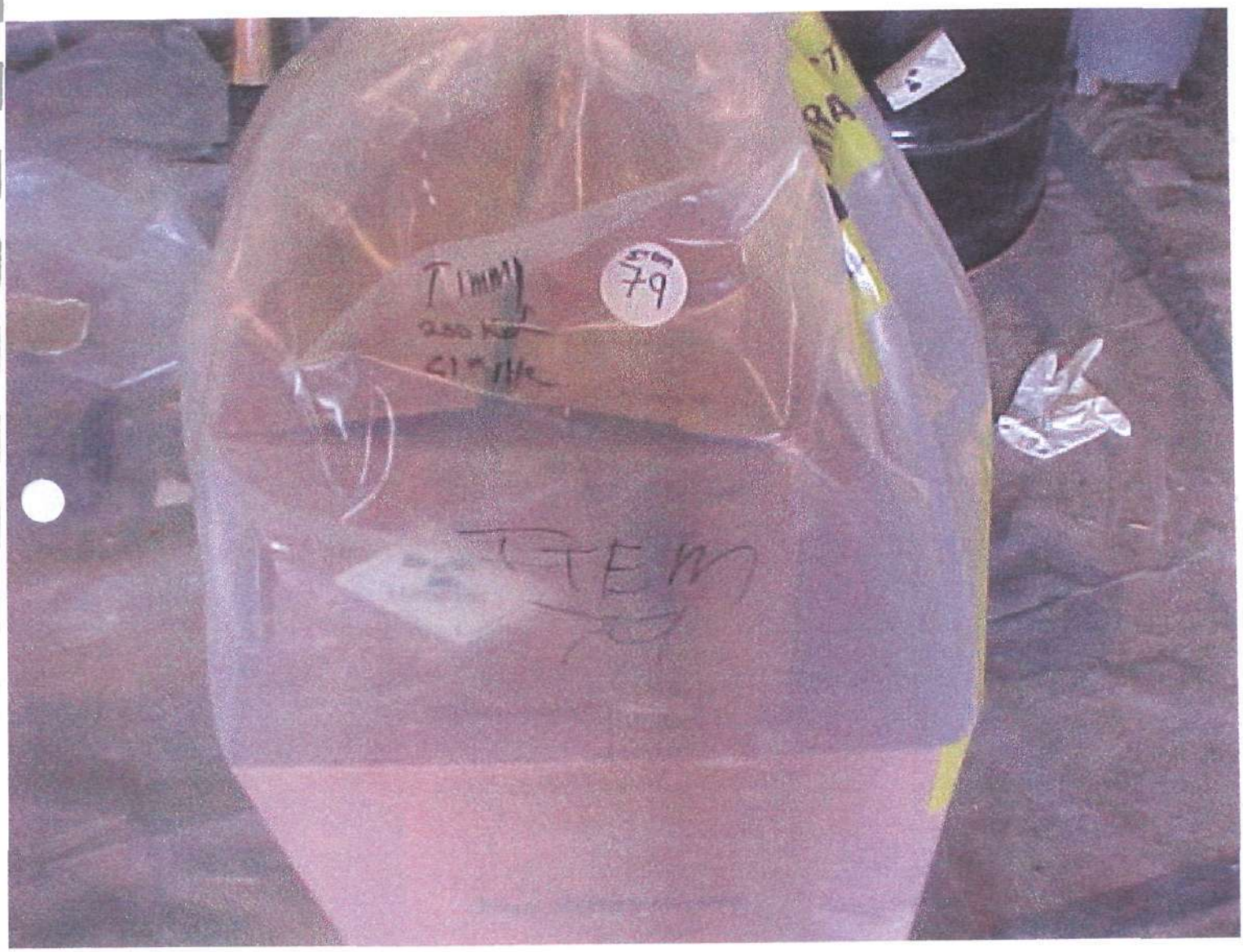
ITEM78



Acquired: 4/1/2002 5:39:18 PM Real Time: 60.00 s. Live Time: 58.34 s.

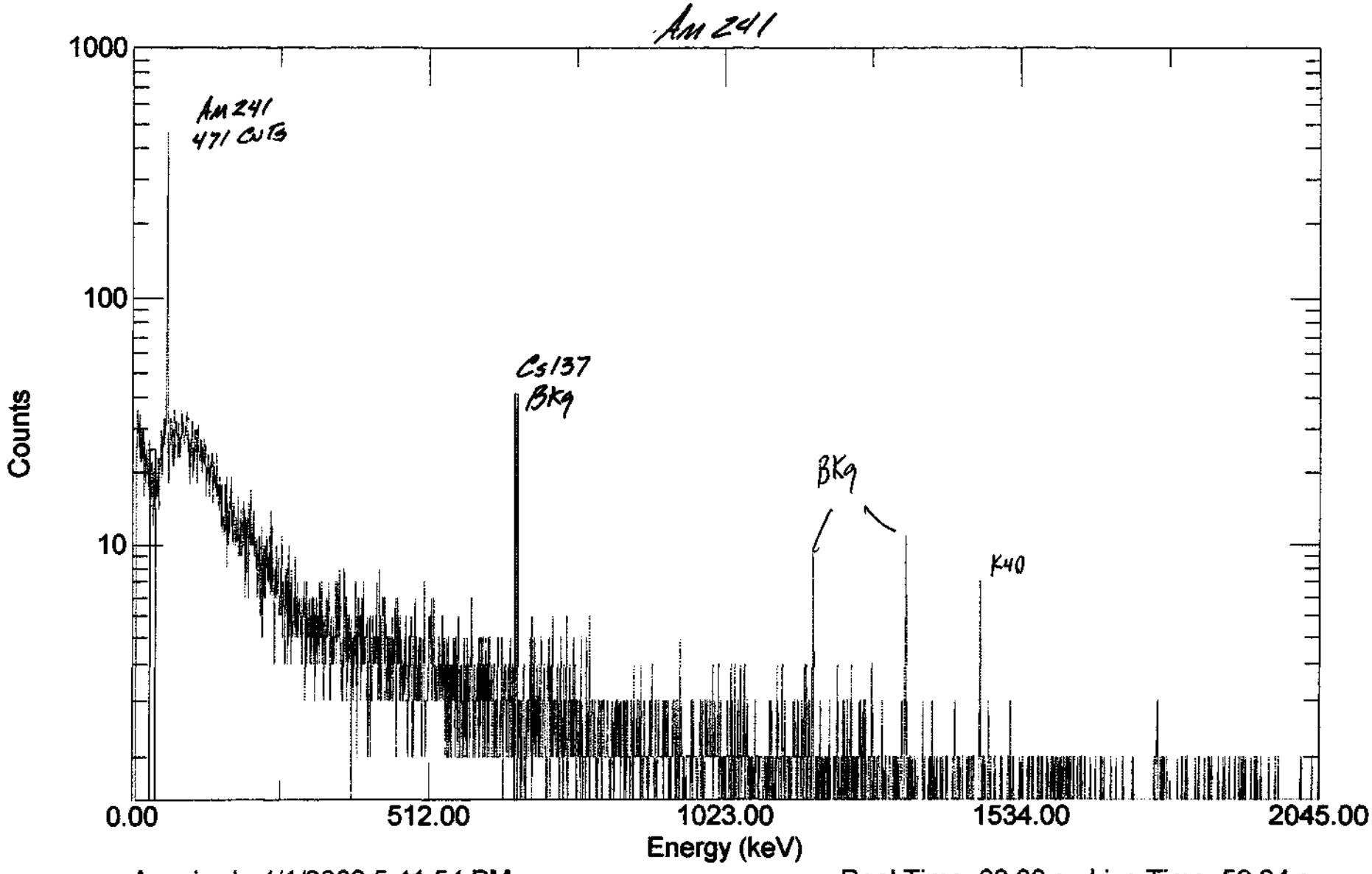
File: C:\User\GNIWEB~1\037 ITEM78 4-1-2002 5.39.19 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


79

038 ITEM79 4-1-2002 5.41.54 PM

ITEM79



Acquired: 4/1/2002 5:41:54 PM Real Time: 60.00 s. Live Time: 59.04 s.

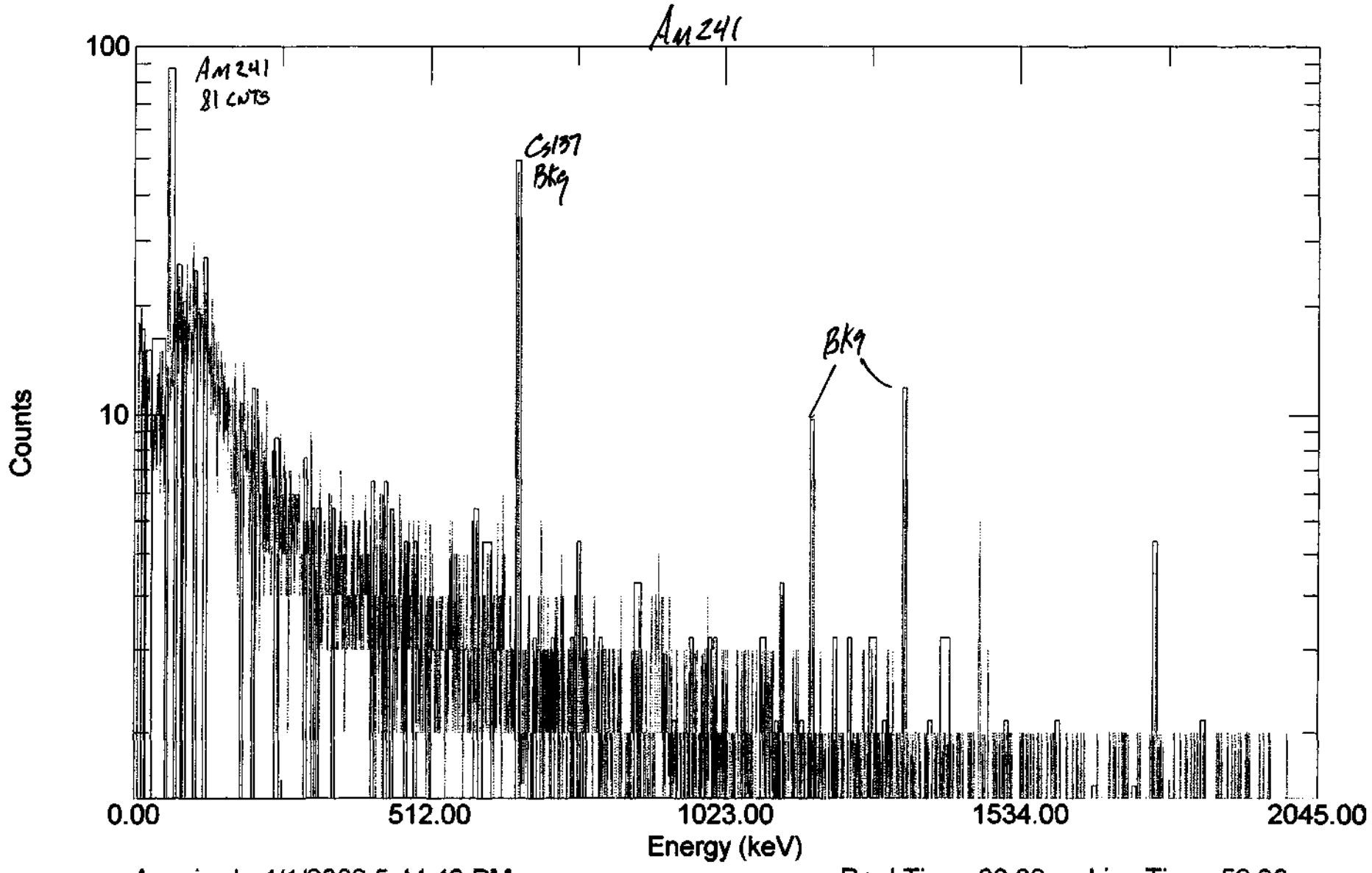
File: C:\User\GNIWEB~1\038 ITEM79 4-1-2002 5.41.54 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

80

039 ITEM80 4-1-2002 5.44.43 PM

ITEM80



Acquired: 4/1/2002 5:44:43 PM Real Time: 60.00 s. Live Time: 59.38 s.

File: C:\User\GNIWEB~1\039 ITEM80 4-1-2002 5.44.43 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-1-02

ITEMS

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

Container #	81	82	83	84	85
External on pig in mR/hr	BKG	BKG	BKG	0.2	BKG.
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	BKG.	BKG	BKG.	0.2	BKG
Beta on open pig mR/hr O/W	↓	↓	↓	0.2	↓

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG.	BKG.	BKG	BKG.
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	1 FT^3	2½ FT^3	280 cc	0.5 FT^3	3 FT^3
Weight in grams	8 Lb	30 Lb.	20 Lb.	100 Lb.	13 Lb.

CPM Alpha					
Direct Beta/Gamma	N/A →				

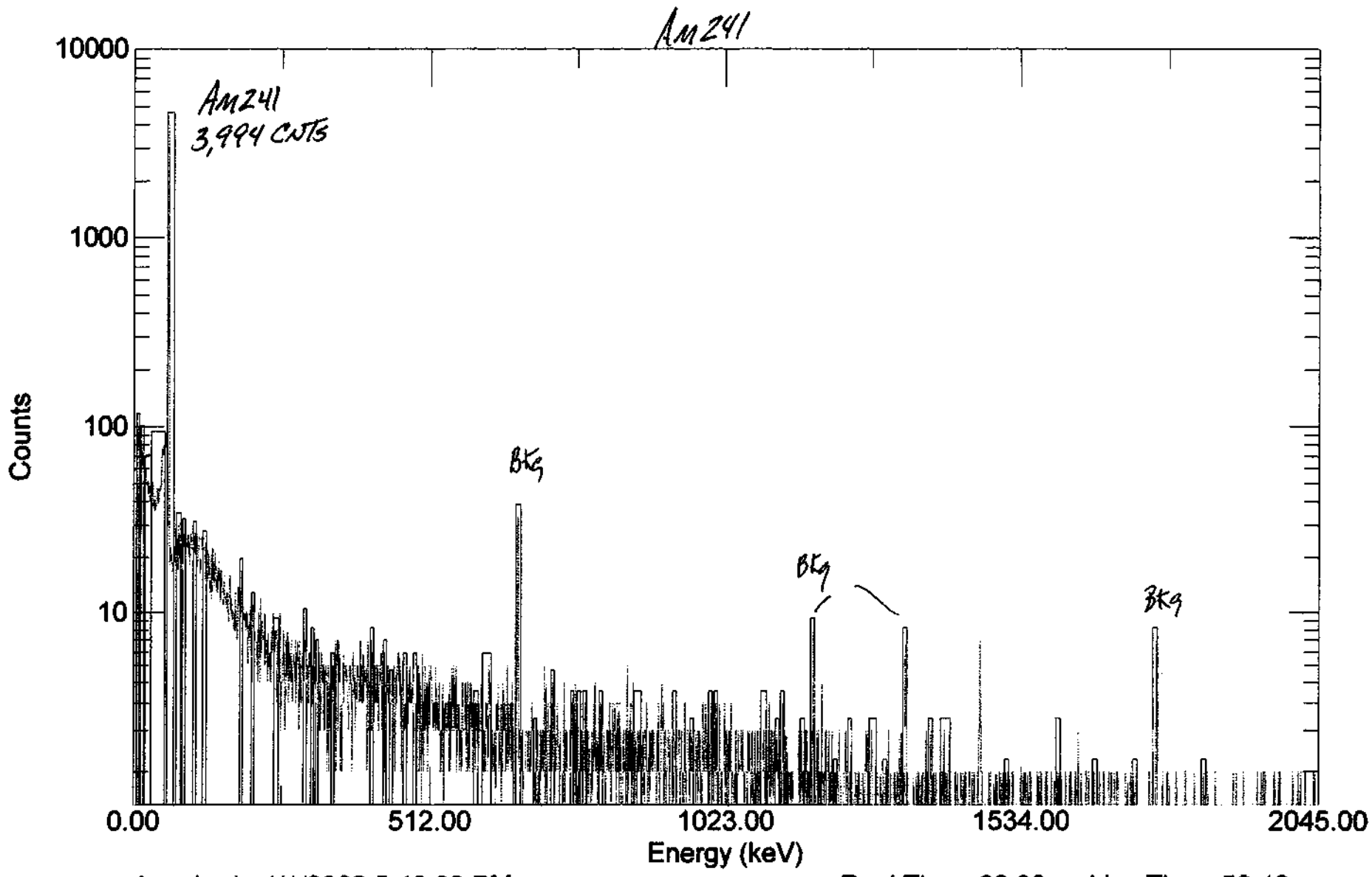
Info on source:	~~BLACK~~ METAL WRAPED IN BLACK PLASTIC	Ru 192 20 GAL DRUM	Lid to A Pig	Pig	BOX (WOOD)

Information on pig:	ROOM 4/5 BLDG. 3 →	→	→	→	→
Smear DPM per 100 cm^2 Alpha	200K	200K	200K	200K	200K
Smear DPM per 100 cm^2 Beta					
	TIMMYS STUFF →	→	→	→	→

500
ITEM 91
Amount
200K

040 ITEM81 4-. .2002 5.48.03 PM

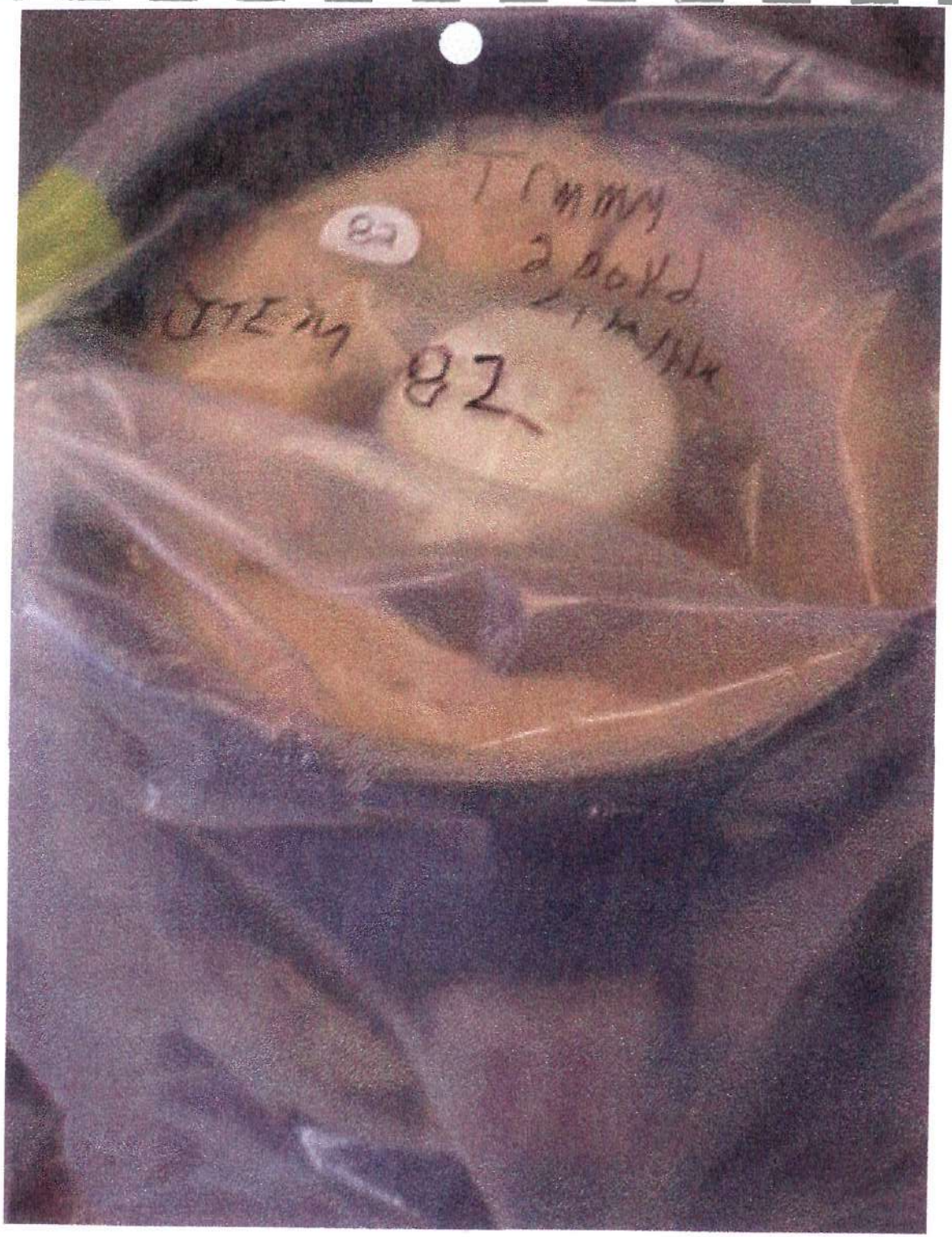
ITEM81



Acquired: 4/1/2002 5:48:02 PM Real Time: 60.00 s. Live Time: 58.42 s.

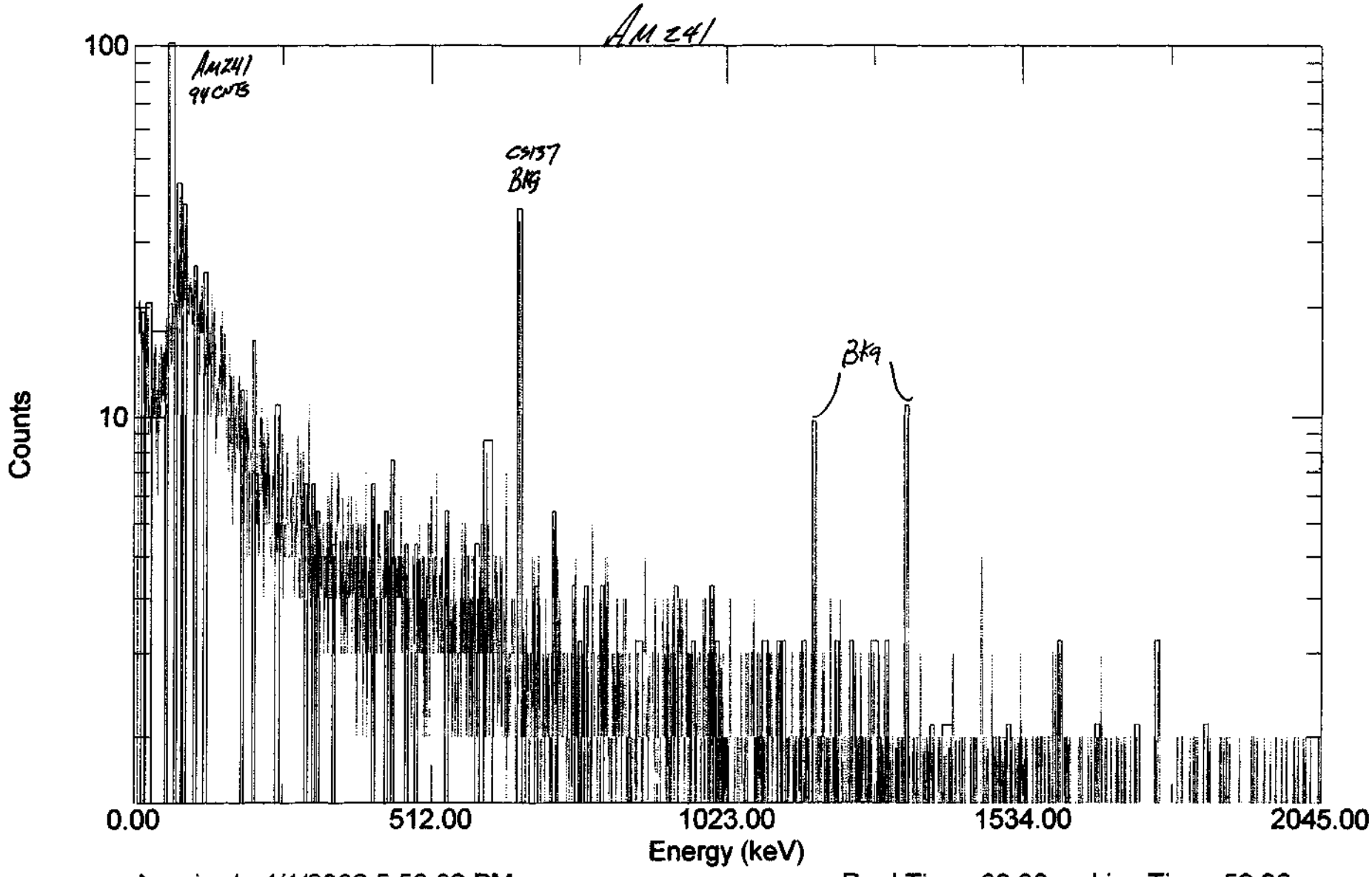
File: C:\User\GNIWEB~1\040 ITEM81 4-1-2002 5.48.03 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


82

041 ITEM82 4-. .2002 5.50.02 PM

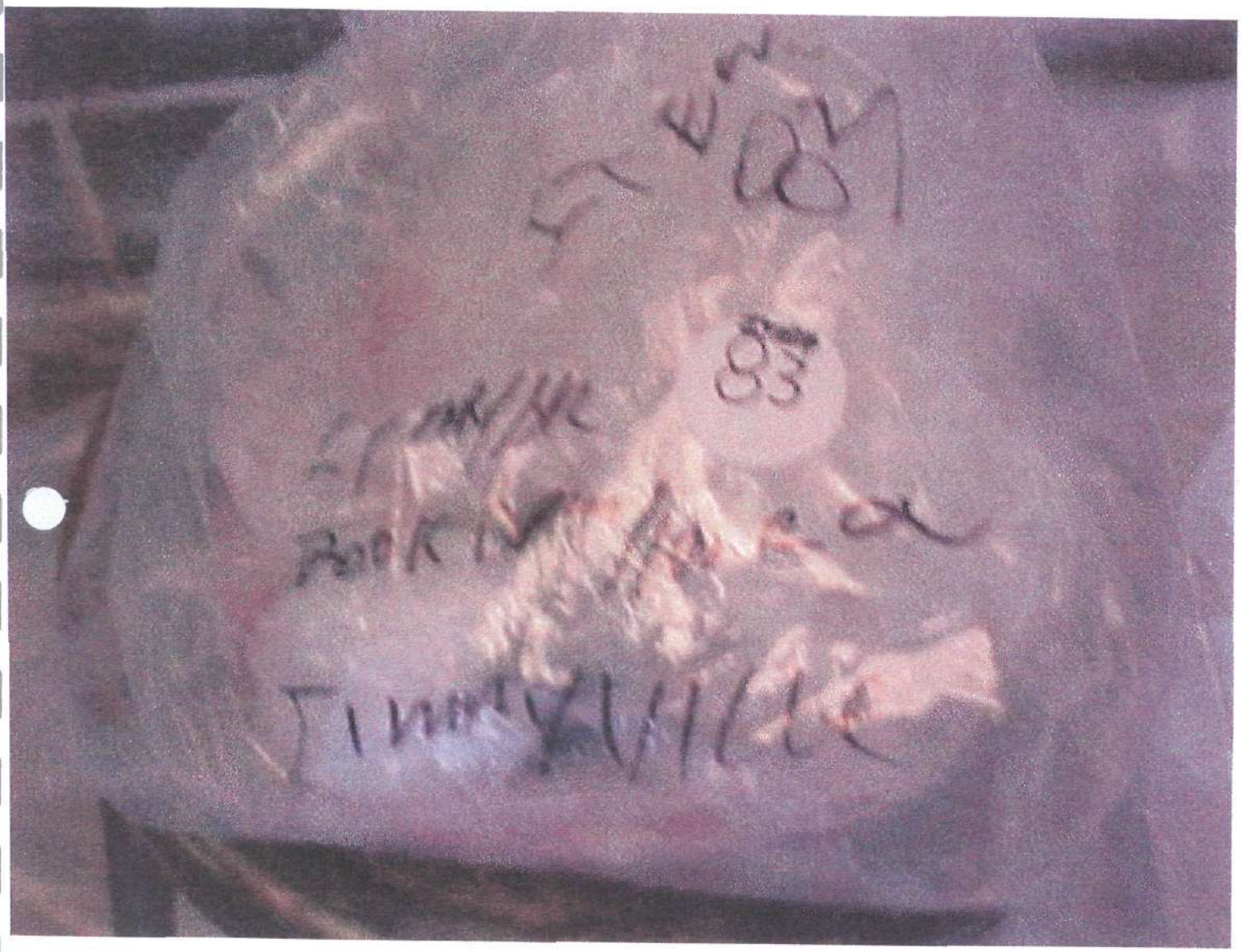
ITEM82



Acquired: 4/1/2002 5:50:02 PM Real Time: 60.00 s. Live Time: 59.32 s.

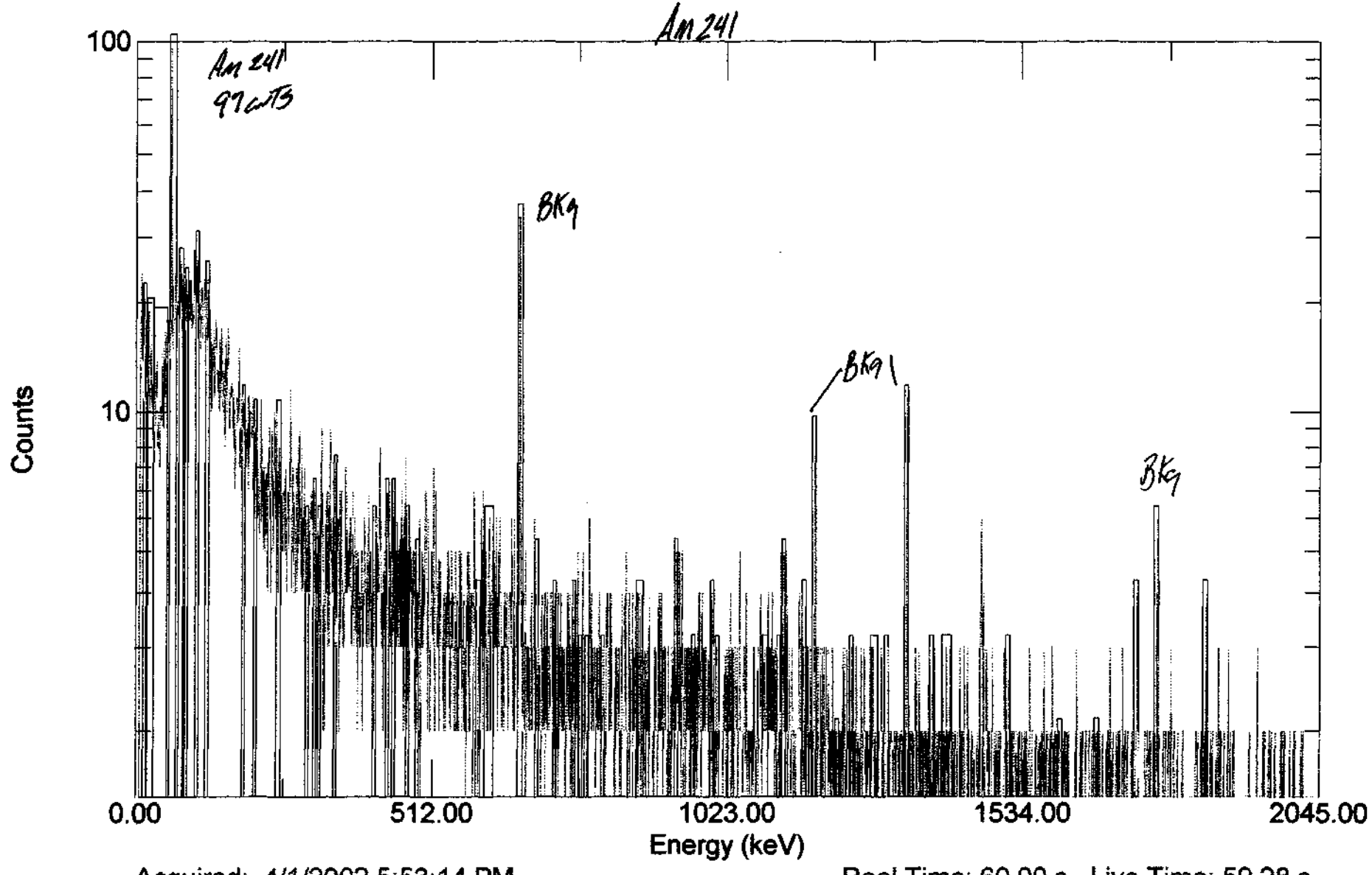
File: C:\User\GNIWEB~1\041 ITEM82 4-1-2002 5.50.02 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



042 ITEM83 4- . 2002 5.53.14 PM

ITEM83



Acquired: 4/1/2002 5:53:14 PM Real Time: 60.00 s. Live Time: 59.28 s.

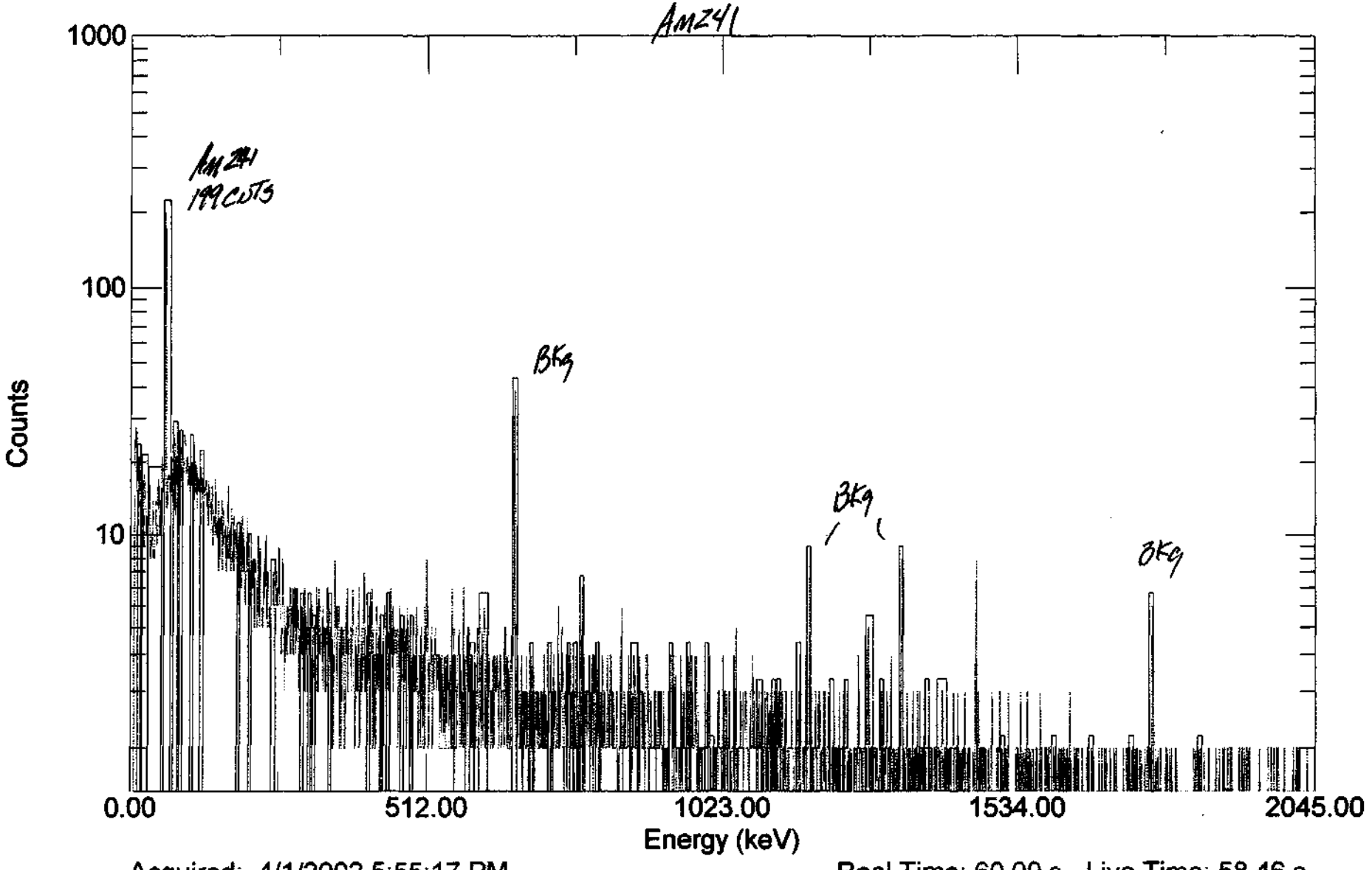
File: C:\User\GNIWEB~1\042 ITEM83 4-1-2002 5.53.14 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

84

043 ITEM84 4-. .2002 5.55.17 PM

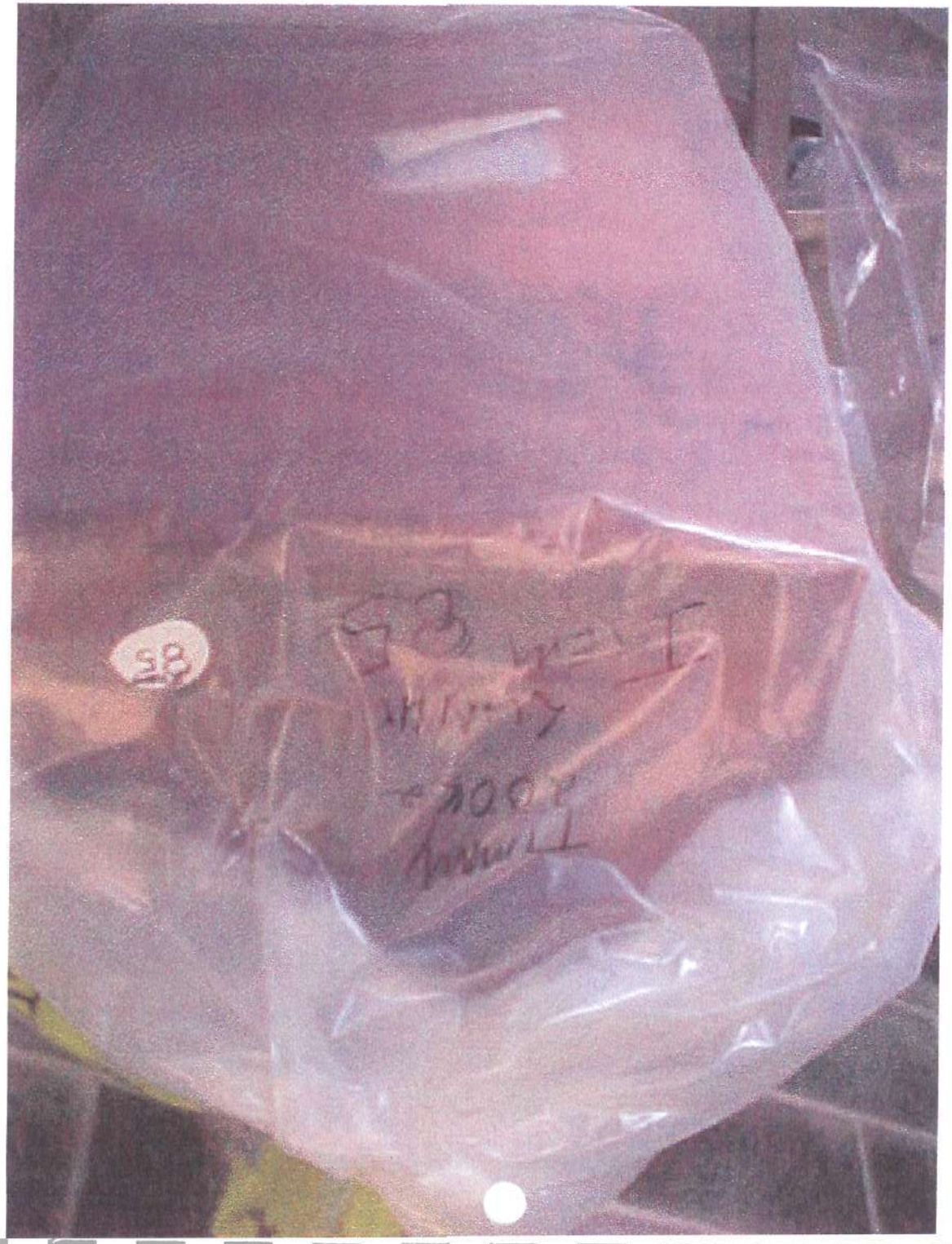
ITEM84



Acquired: 4/1/2002 5:55:17 PM Real Time: 60.00 s. Live Time: 58.46 s.

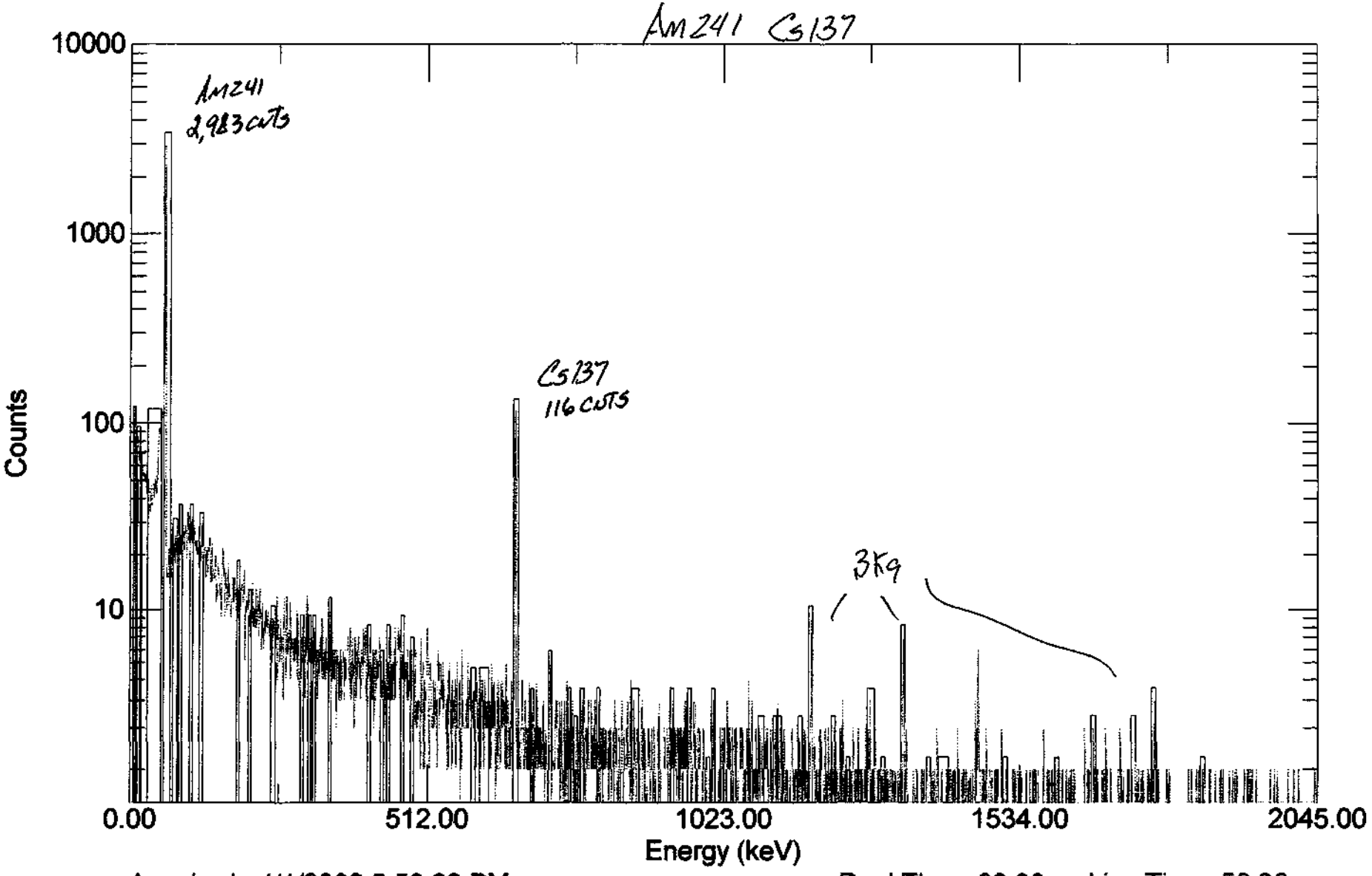
File: C:\User\GNIWEB~1\043 ITEM84 4-1-2002 5.55.17 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


58

044 ITEM85 4-. .2002 5.59.23 PM

ITEM85



Acquired: 4/1/2002 5:59:22 PM Real Time: 60.00 s. Live Time: 58.38 s.

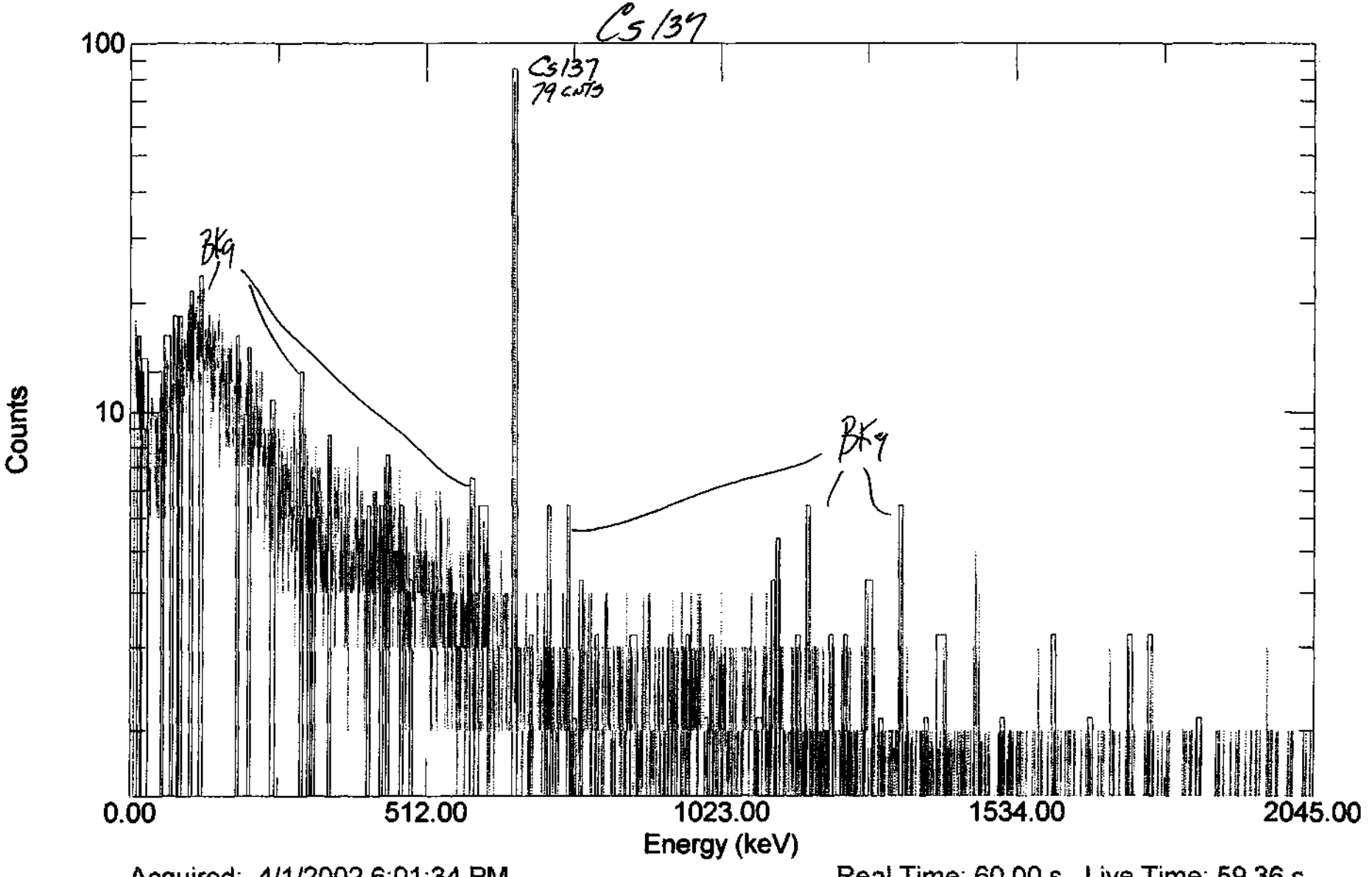
File: C:\User\GNIWEB~1\044 ITEM85 4-1-2002 5.59.23 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM
82

045 ITEM86 4-. .2002 6.01.34 PM

ITEM86



Acquired: 4/1/2002 6:01:34 PM Real Time: 60.00 s. Live Time: 59.36 s.

File: C:\User\GNIWEB~1\045 ITEM86 4-1-2002 6.01.34 PM.Spc Channels: 8192

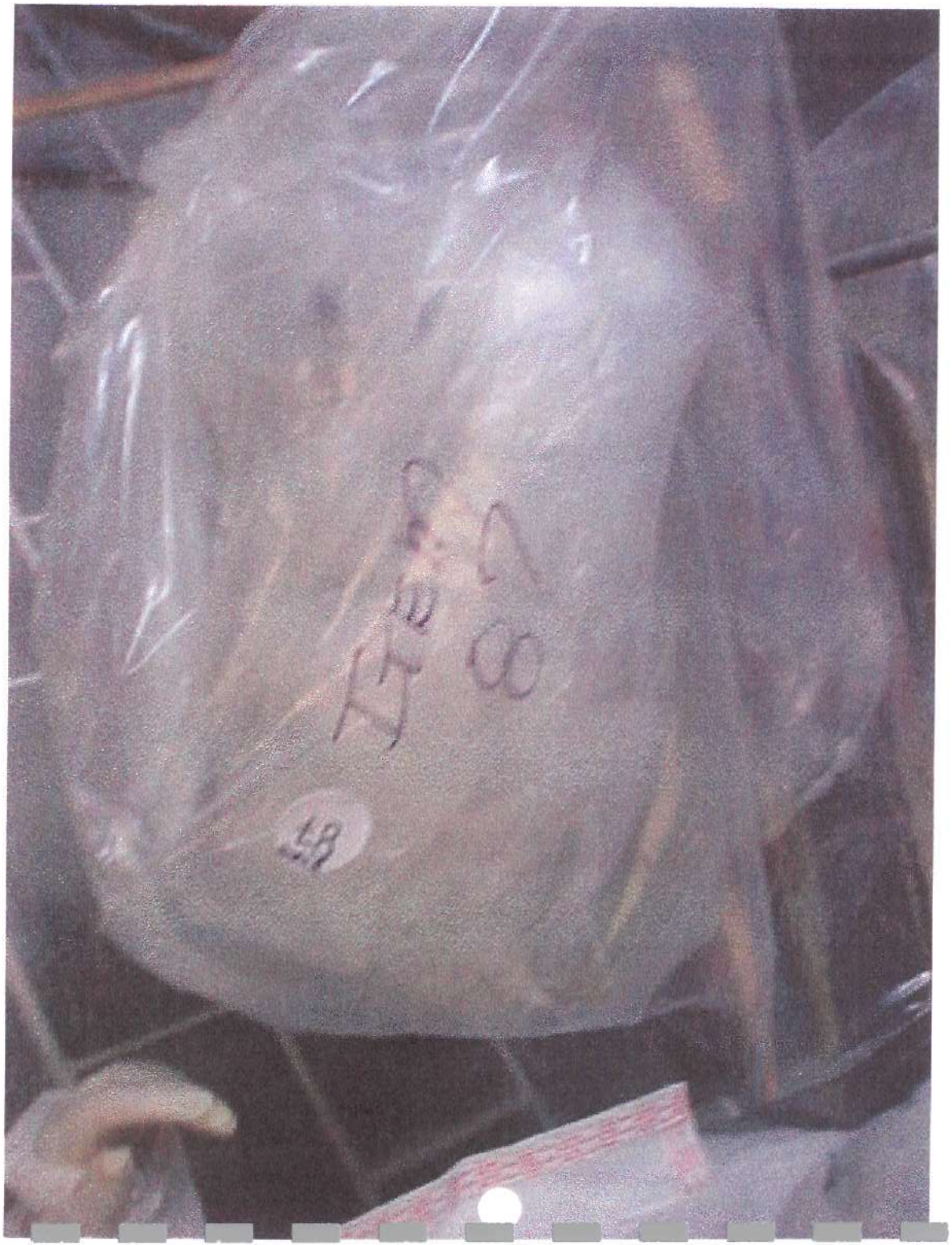
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4·1·02

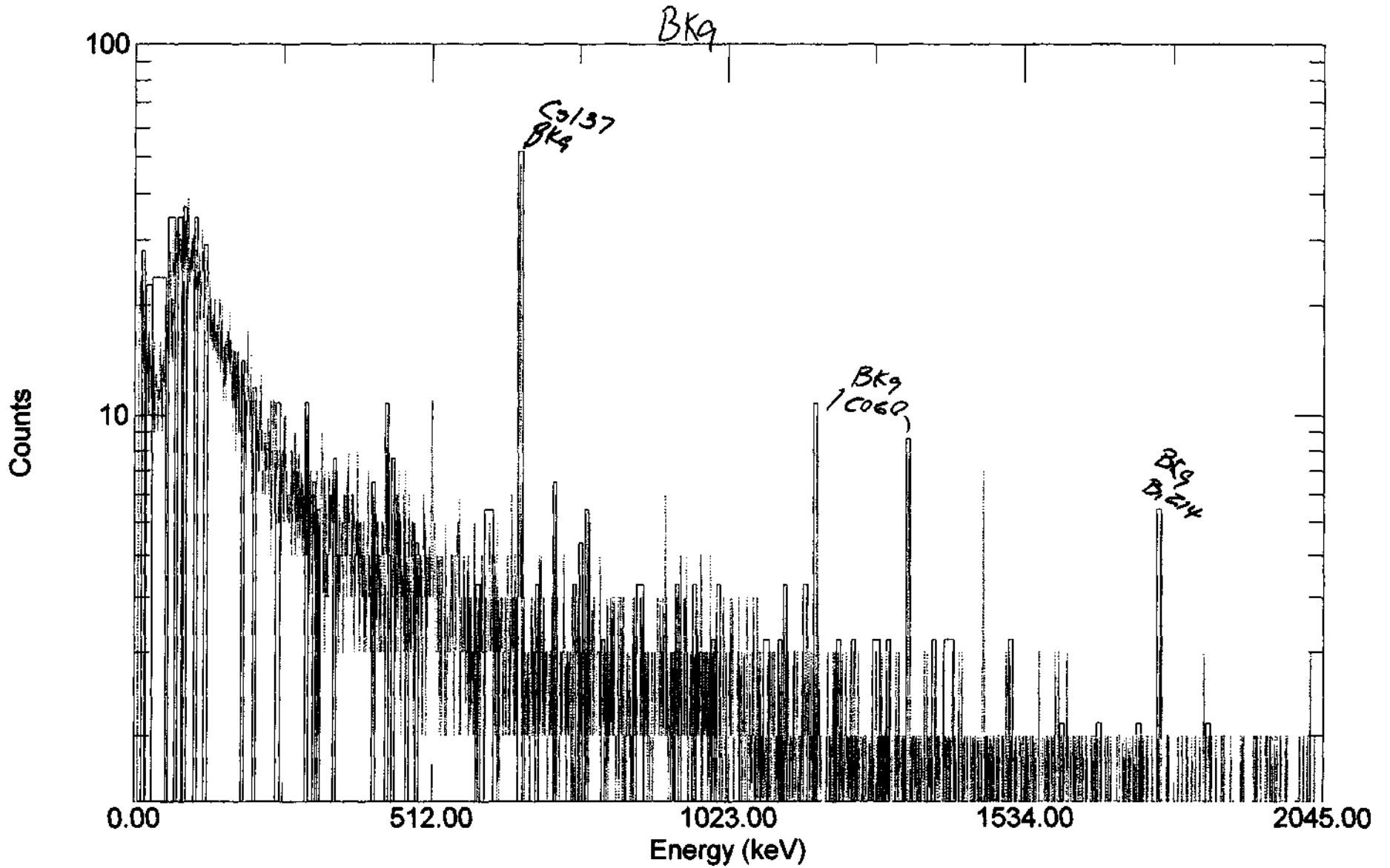
BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

	ITEM	ITEM	ITEM	ITEM	ITEM
Container #	86	87	88	89	90
External on pig in mR/hr	BKG	BKG	BKG	BKG	
External on pig Neutron mR/hr	<1	<1	<1	<1	
Contact open pig mR/hr	BKG	BKG	BKG	BKG	
Beta on open pig mR/hr O/W	↓	↓	↓	↓	
Picture	✓	✓	✓	✓	
DIGET	✓	✓	✓	✓	
Table Readings					
Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	
Source mR/hr @ 12 inches	↓	↓	↓	↓	
Source mR/hr @ 36 inches	↓	↓	↓	↓	
Size of source in cc's	12 ~~125~~ FT³	2 FT³	1 FT³	3 FT³	
Weight in grams	60 Lbs	27.2 Lb	212.9 Lb	20 Lb.	
CPM Alpha					
Direct Beta/Gamma					
Info on source:	METAL CABINET	WOOD DEBRIS Filter	Pig	TRASH WOOD PANELING RESP. CEILING TILE	
Information on pig:	BLDG 3 RM 1	~~TIMBERS STUFF~~			
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	42x25 x25				



046 ITEM87 4-. .2002 6.05.21 PM

ITEM87



Acquired: 4/1/2002 6:05:22 PM Real Time: 60.00 s. Live Time: 59.16 s.

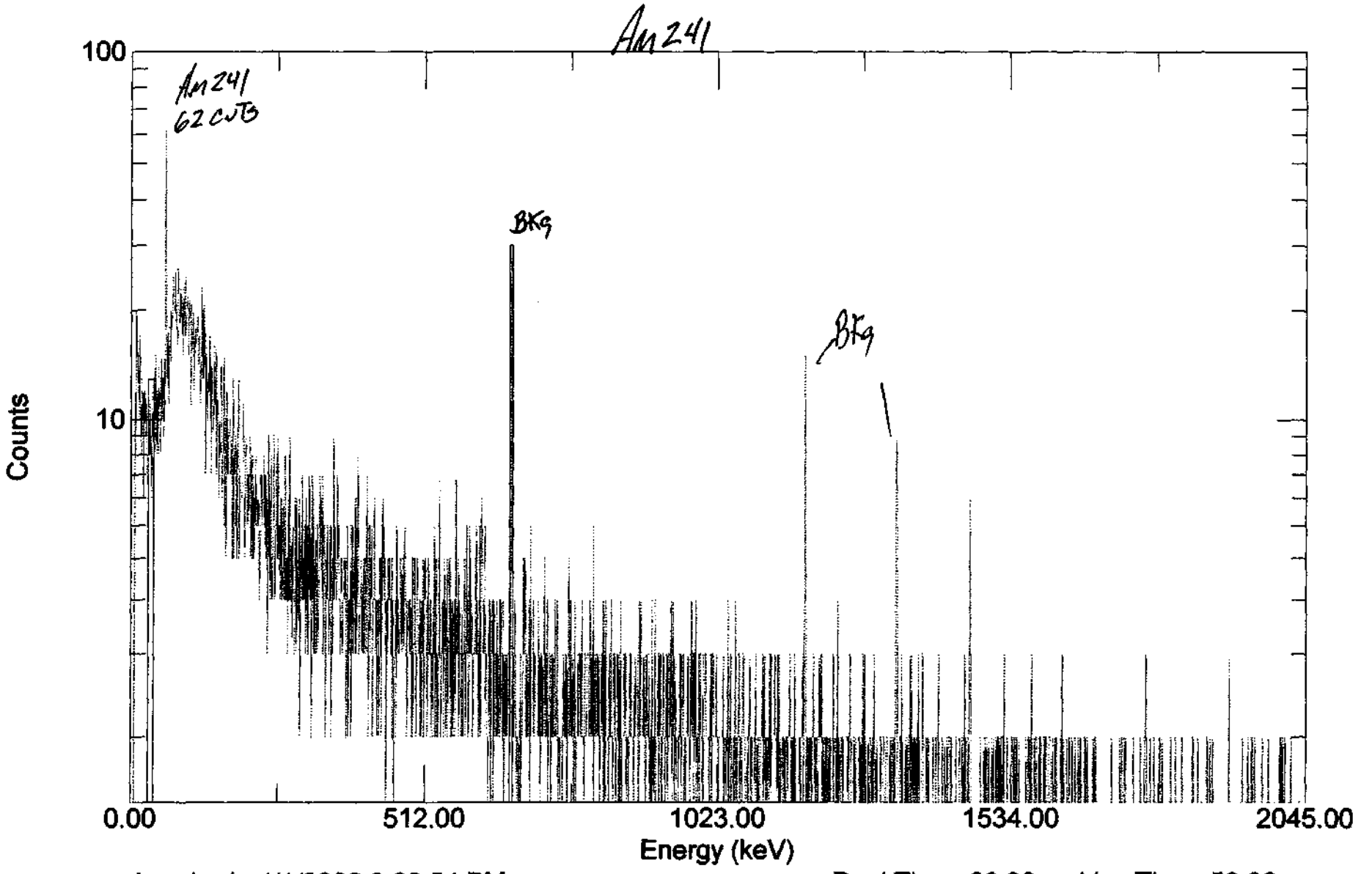
File: C:\User\GNIWEB~1\046 ITEM87 4-1-2002 6.05.21 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

88
ITEM
BQ

047 ITEM88 4-. .2002 6.08.54 PM

ITEM88



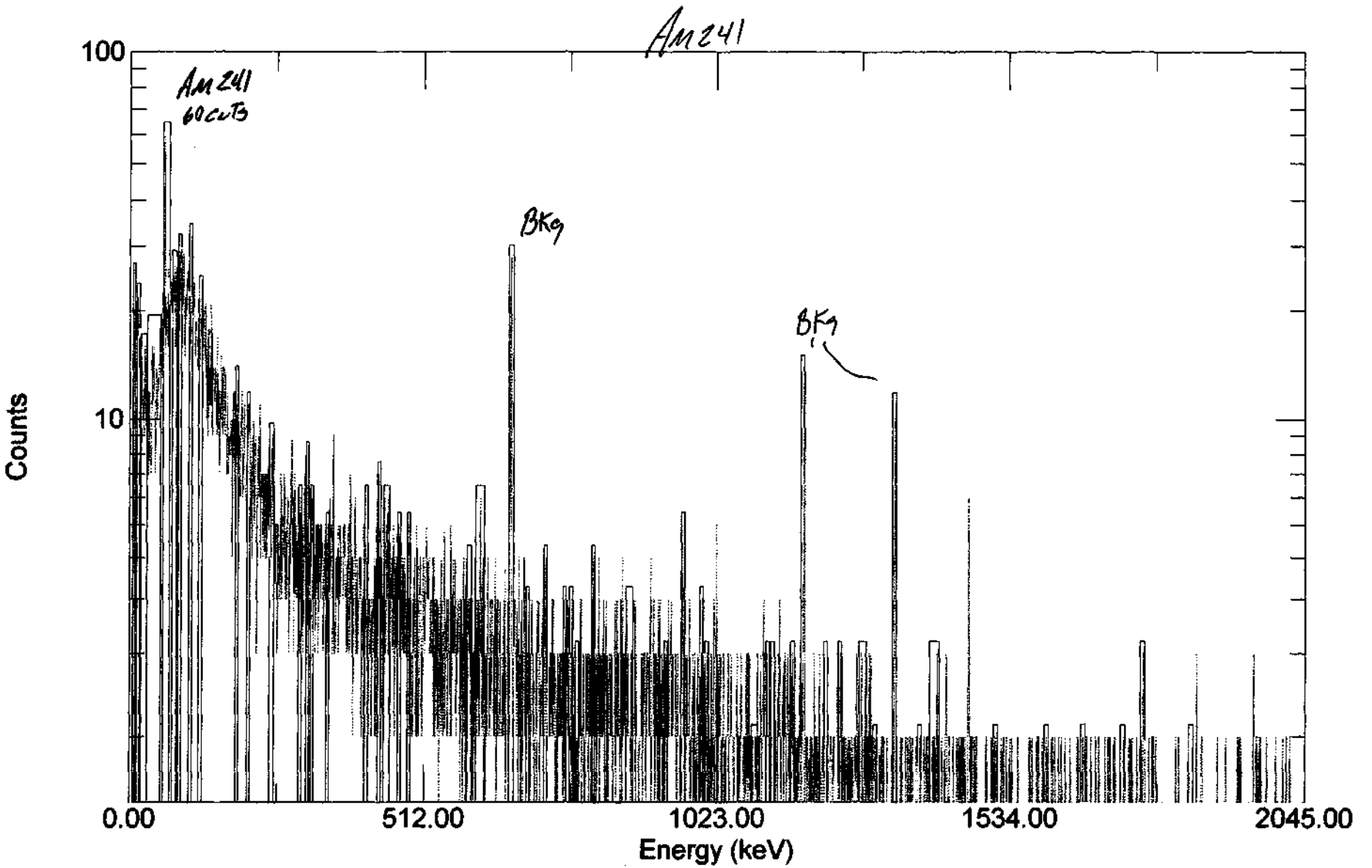
Acquired: 4/1/2002 6:08:54 PM Real Time: 60.00 s. Live Time: 59.36 s.

File: C:\User\GNIWEB~1\047 ITEM88 4-1-2002 6.08.54 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

048 ITEM89 4-. .-2002 6.11.27 PM

ITEM89



Acquired: 4/1/2002 6:11:27 PM Real Time: 60.00 s. Live Time: 59.32 s.

File: C:\User\GNIWEB~1\048 ITEM89 4-1-2002 6.11.27 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Item/Source	Radinuclides	mr/hr on Contact Dose Rate	Weight Grams	% Ratio Cs-137	% Ratio Am-241	% Ratio Co-60
I-98	Am-241	bkg	1362	0%	100%	0%
I-102	Am-241	bkg	9080	0%	100%	0%
I-103	Cs-137, Am-241, Ag-108m, Eu-154	0.3	13620	25%	39%	0%
I-105	Am-241, Ag-108m, Cs-137, Co-60	1.5	13620	51%	12%	5%
I-51	Am-241, Ag-108m, Eu-154	0.5	9080	0%	20%	0%
I-80	Am-241	bkg	42222	0%	100%	0%
I-82	Am-241	bkg	16350	0%	100%	0%
I-83	Am-241	bkg	9080	0%	100%	0%
I-88	Am-241	bkg	96656.6	0%	100%	0%
I-89	Am-241	bkg	9080	0%	100%	0%
I-99	Am-241	bkg	2724	0%	100%	0%
I-100	Am-241, Cs-137	bkg	2724	30%	70%	0%
I-94	Am-241, Cs-137	bkg	9080	60%	40%	0%
I-97	Am-241	bkg	6810	0%	100%	0%
I-77	Am-241	0.2	42222	0%	100%	0%
I-64	Am-241, Cs-137, Ag-108m	0.2	172	92%	6%	0%
I-57	Am-241,Eu154, Ag108M, Cs-137	0.2	252	11%	16%	0%
I-55	Am-241, Ag-108m,Eu-154,Cs-137	0.2	1135	10%	14%	1%
I-22	AM-241,CS-137	1	11350	68%	32%	0%

Item/Source	% Ratio Eu-154	% Ratio Eu-152	% Ratio Ag-108m	% Ratio Ra-226	% Ratio Eu-155	% Ratio Ir-192
I-98	0%	0%	0%	0%	0%	0%
I-102	0%	0%	0%	0%	0%	0%
I-103	19%	0%	16%	0%	0%	0%
I-105	0%	0%	33%	0%	0%	0%
I-51	57%	0%	23%	0%	0%	0%
I-80	0%	0%	0%	0%	0%	0%
I-82	0%	0%	0%	0%	0%	0%
I-83	0%	0%	0%	0%	0%	0%
I-88	0%	0%	0%	0%	0%	0%
I-89	0%	0%	0%	0%	0%	0%
I-99	0%	0%	0%	0%	0%	0%
I-100	0%	0%	0%	0%	0%	0%
I-94	0%	0%	0%	0%	0%	0%
I-97	0%	0%	0%	0%	0%	0%
I-77	0%	0%	0%	0%	0%	0%
I-64	0%	0%	2%	0%	0%	0%
I-57	68%	0%	5%	0%	0%	0%
I-55	60%	0%	15%	0%	0%	0%
I-22	0%	0%	0%	0%	0%	0%

Item/Source	Radinuclides	mr/hr on Contact Dose Rate	Weight Grams	% Ratio Cs-137	% Ratio Am-241	% Ratio Co-60
133	CS-137,AM241	na	600	42%	50%	0%
I-23	CS-137,AM-241,EU-154,EU-152	1.5	9080	0%	98%	0%
I-25	CS-137,AM-241	<	18160	0%	100%	0%
I-7	AM-241,CS-137	10	70	27%	73%	0%
I-8	AM-241,CS-137, Eu-154	10	70	11%	88%	0%
I-9	AM-241,CS-137, Eu-154	5	68	30%	66%	0%
I-10	AM-241,CS-137	5	68	50%	50%	0%
I-11	AM-241,CS-137	4	775.3	40%	60%	0%
I-12	AM-241,CS-137	20	4540	50%	50%	0%
I-13	AM-241,CS-137, co-60	1.5	381	73%	26%	1%
I-16	AM-241,CS-137	0.2	59	44%	56%	0%
I-17	CS-137,AM-241,EU-154	5	10160	29%	58%	0%
I-18	CS-137,AM-241,CO-60, Ag-108m	1	31780	35%	14%	8%
I-19	AM-241,CS-137	50	22	59%	27%	0%
I-33	Cs137 Co60 Ag108m Am241	0.5	36320	75%	9%	0%
I-35	Ag108m Ir192 Cs137 Co60 Am241	0.7	9080	87%	6%	2%
I-37	Am241 Eu152 Eu154 Ag108m	0.4	4540	3%	5%	0%
I-40	Am241 Ag108m Eu154 Co60	0.6	6810	70%	7%	3%
I-44	Ag109m Cs137 Am241 Co60 Ir192	0.3	5448	52%	12%	1%
I-4	Am-241	0.6	3178	0%	100%	0%
I-53	Eu-155, Am241, Ra-226, Eu154, Ag108m, Cs	4	1362	1%	4%	0%
I-54	Am-241,Eu-154,Cs-137	3	908	26%	73%	0%
I-56	Am-241, Ag-108m,Eu-154,Cs-137	0.2	1816	39%	43%	0%
I-63	Am-241, Cs-137, Ag-108m	0.2	1816	75%	16%	0%
I-68	Am-241, Eu-155, Eu-154, Ag-108m, Cs-137	0.2	15	9%	22%	0%
I-78	Am-241, Ra-226, Cs-137	bkg	42222	0%	76%	0%
I-79	Am-241	bkg	2270	0%	100%	0%
I-81	Am-241	bkg	1362	0%	100%	0%
I-84	Am-241	bkg	45400	0%	100%	0%
I-85	Am-241, Cs-137	bkg	5902	2%	98%	0%
I-91	Am-241, Ra-226	bkg	3178	0%	86%	0%
I-92	Am-241	bkg	2270	0%	100%	0%
I-93	Am-241	bkg	11350	0%	100%	0%

Item/Source	% Ratio Eu-154	% Ratio Eu-152	% Ratio Ag-108m	% Ratio Ra-226	% Ratio Eu-155	% Ratio Ir-192
133	8%	0%	0%	0%	0%	0%
I-23	1%	2%	0%	0%	0%	0%
I-25	0%	0%	0%	0%	0%	0%
I-7	0%	0%	0%	0%	0%	0%
I-8	1%	0%	0%	0%	0%	0%
I-9	4%	0%	0%	0%	0%	0%
I-10	0%	0%	0%	0%	0%	0%
I-11	0%	0%	0%	0%	0%	0%
I-12	0%	0%	0%	0%	0%	0%
I-13	0%	0%	0%	0%	0%	0%
I-16	0%	0%	0%	0%	0%	0%
I-17	13%	0%	0%	0%	0%	0%
I-18	0%	0%	43%	0%	0%	0%
I-19	13%	0%	0%	0%	0%	0%
I-33	0%	0%	16%	0%	0%	0%
I-35	0%	0%	4%	0%	0%	2%
I-37	34%	10%	48%	0%	0%	0%
I-40	16%	0%	3%	0%	0%	0%
I-44	0%	0%	28%	0%	0%	7%
I-4	0%	0%	0%	0%	0%	0%
I-53	32%	0%	2%	44%	18%	0%
I-54	1%	0%	0%	0%	0%	0%
I-56	9%	0%	9%	0%	0%	0%
I-63	0%	0%	9%	0%	0%	0%
I-68	59%	0%	4%	0%	6%	0%
I-78	0%	0%	0%	24%	0%	0%
I-79	0%	0%	0%	0%	0%	0%
I-81	0%	0%	0%	0%	0%	0%
I-84	0%	0%	0%	0%	0%	0%
I-85	0%	0%	0%	0%	0%	0%
I-91	0%	0%	0%	14%	0%	0%
I-92	0%	0%	0%	0%	0%	0%
I-93	0%	0%	0%	0%	0%	0%

bags of water 1foot tall 6" diameter

Runs

mci CS	mci AM			oc	6	12	36
10		10	20	14	4.6	1.9	0.3
8		12	20	13	4.2	1.7	0.3
6		14	20	12	3.9	1.6	0.3
4		16	20	11	3.5	1.4	0.25
16		4	20	18	5.7	2.4	0.4
16		2	18	17	5.4	2.3	0.4
12		8	20	16	4.9	2.1	0.35

	cs%	am%	oc		6	12	36	activity	cs	am	am limit	% am limit	weight	
I-85	2	98	bkg	b	b	b								
I-100	30	70	bkg	b	b	b								
I-94	60	40	bkg	b	b	b								
I-22	68	32	1	0.2	b	b		1.25	0.85	0.4	10	3.524229	11350	cstable for

item	radionuclides	oc	grams	cs %	am%	eu-154	eu152	6	12	36
I-7	AM-241,CS-137	10	70	27	73	0	0	0.35 b	b	
I-8	AM-241,CS-137, Eu-154	10	70	11	88	1	0	1	0.8 b	
I-9	AM-241,CS-137, Eu-154	5	68	30	66	4	0	0.8 b	b	
I-10	AM-241,CS-137	5	68	50	50	0	0	0.25 b	b	
I-23	CS-137,AM-241,EU-154,EU-152	1.5	9080	0	97.6	0.6	1.7	0.5	0.3 b	

I-7 microshield
10 mci total
7.3 mc am
2.7 mc cs

microshield		item		oc	6	cs	am	am			
oc				mci	mci	mci	mci	nci	grams	nci/gm	
	6	oc	6	total	total	0.27	0.73		70		
37.9	12.8	10	0.35	2.638522	0.273438	0.712401	1.926121	1926121	70	27516.02	greater than class c

I-8 microshield
10 mci total
8.8 mci am .1 mci eu-154
1.1 mci cs

microshield		item		oc	6	cs	am	am				0.01
oc				mci	mci	mci	mci	nci	grams	nci/gm		eu
	6	oc	6	total	total	0.11	0.88		70			mci
21.8	7.4	10	1	4.587156	1.351351	0.504587	4.036697	4036697	70	57667.1	greater than class c	0.013514

I-9 microshield
10 mci total
6.6 mci am
3 mci cs
microshield
oc

	.4 mci eu154													
				oc		6	cs	am	am					0.04
	item			mci	mci		mci	mci	nci	grams	nci/gm		eu	
oc	6	oc		6	total	total					68		mci	
94	25		5	0.8	0.531915	0.32	0.159574	0.351064	351063.8	68	5162.703	greater than class c	0.0128	

I-10 microshield
10 mci total
5 mci am
5 mci cs
microshield
oc

				oc		6	cs	am	am					0
	item			mci	mci		mci	mci	nci	grams	nci/gm		eu	
oc	6	oc		6	total	total					68		mci	
46	19		5	0.25	1.086957	0.131579	0.543478	0.543478	543478.3	68	7992.327	greater than class c		0

I-10 microshield
10 mci total
9.76 mci am
.6 mci eu 154
microshield
oc

	1.7 mci eu 152													
				oc		6	eu-152	am	am					0.006
	item			mci	mci		mci	mci	nci	grams	nci/gm		eu154	
oc	6	oc		6	total	total					68		mci	
4.6	2.2		1.5	0.5	3.26087	2.272727	0.055435	3.182609	3182609	68	46803.07	greater than class c	0.013636	

Item/Source	Radinuclides	mr/hr on Contact Dose Rate	Weight Grams	% Ratio Cs-137	% Ratio Am-241	% Ratio Co-60	% Ratio Eu-154	% Ratio Eu-152	% Ratio Ag-108m	% Ratio Ra-226	% Ratio Eu-155	% Ratio Ir-192
133	CS-137,AM241	na	600	42%	50%	0%	8%	0%	0%	0%	0%	0%
I-23	CS-137,AM-241,EU-154,EU-152	1.5	9080	0%	97.6%	0%	0.6%	1.7%	0%	0%	0%	0%
I-25	CS-137,AM-241	<	18160	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-7	AM-241,CS-137	10	70	27%	73%	0%	0%	0%	0%	0%	0%	0%
I-8	AM-241,CS-137, Eu-154	10	70	11%	88%	0%	1%	0%	0%	0%	0%	0%
I-9	AM-241,CS-137, Eu-154	5	68	30%	66%	0%	4%	0%	0%	0%	0%	0%
I-10	AM-241,CS-137	5	68	50%	50%	0%	0%	0%	0%	0%	0%	0%
I-11	AM-241,CS-137	4	775.3	40%	60%	0%	0%	0%	0%	0%	0%	0%
I-12	AM-241,CS-137	20	4540	50%	50%	0%	0%	0%	0%	0%	0%	0%
I-13	AM-241,CS-137, co-60	1.5	381	73%	26%	1%	0%	0%	0%	0%	0%	0%
I-16	AM-241,CS-137	0.2	59	44%	56%	0%	0%	0%	0%	0%	0%	0%
I-17	CS-137,AM-241,EU-154	5	10160	29%	58%	0%	13%	0%	0%	0%	0%	0%
I-18	CS-137,AM-241,CO-60, Ag-108m	1	31780	35%	14%	8%	0%	0%	43%	0%	0%	0%
I-19	AM-241,CS-137	50	22	59%	27%	0%	13%	0%	0%	0%	0%	0%
I-33	Cs137 Co60 Ag108m Am241	0.5	36320	75%	9%	0%	0%	0%	16%	0%	0%	0%
I-35	Ag108m Ir192 Cs137 Co60 Am241	0.7	9080	87%	6%	2%	0%	0%	4%	0%	0%	2%
I-37	Am241 Eu152 Eu154 Ag108m	0.4	4540	3%	5%	0%	34%	10%	48%	0%	0%	0%
I-40	Am241 Ag108m Eu154 Co60	0.6	6810	70%	7%	3%	16%	0%	3%	0%	0%	0%
I-44	Ag109m Cs137 Am241 Co60 Ir192	0.3	5448	52%	12%	1%	0%	0%	28%	0%	0%	7%
I-4	Am-241	0.6	3178	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-53	Eu-155, Am241, Ra-226, Eu154, Ag108m, Ce	4	1362	1%	4%	0%	32%	0%	2%	44%	18%	0%
I-54	Am-241,Eu-154,Cs-137	3	908	26%	73%	0%	1%	0%	0%	0%	0%	0%
I-56	Am-241, Ag-108m,Eu-154,Cs-137	0.2	1816	39%	43%	0%	9%	0%	9%	0%	0%	0%
I-63	Am-241, Cs-137, Ag-108m	0.2	1816	75%	16%	0%	0%	0%	9%	0%	0%	0%
I-68	Am-241, Eu-155, Eu-154, Ag-108m, Cs-137	0.2	15	9%	22%	0%	59%	0%	4%	0%	6%	0%
I-78	Am-241, Ra-226, Cs-137	bkg	42222	0%	76%	0%	0%	0%	0%	24%	0%	0%
I-79	Am-241	bkg	2270	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-81	Am-241	bkg	1362	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-84	Am-241	bkg	45400	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-85	Am-241, Cs-137	bkg	5902	2%	98%	0%	0%	0%	0%	0%	0%	0%
I-91	Am-241, Ra-226	bkg	3178	0%	86%	0%	0%	0%	0%	14%	0%	0%
I-92	Am-241	bkg	2270	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-93	Am-241	bkg	11350	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-98	Am-241	bkg	1362	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-102	Am-241	bkg	9080	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-103	Cs-137, Am-241, Ag-108m, Eu-154	0.3	13620	25%	39%	0%	19%	0%	16%	0%	0%	0%
I-105	Am-241, Ag-108m, Cs-137, Co-60	1.5	13620	51%	12%	5%	0%	0%	33%	0%	0%	0%
I-51	Am-241, Ag-108m, Eu-154	0.5	9080	0%	20%	0%	57%	0%	23%	0%	0%	0%
I-80	Am-241	bkg	42222	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-82	Am-241	bkg	16350	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-83	Am-241	bkg	9080	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-88	Am-241	bkg	96856.6	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-89	Am-241	bkg	9080	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-99	Am-241	bkg	2724	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-100	Am-241, Cs-137	bkg	2724	30%	70%	0%	0%	0%	0%	0%	0%	0%
I-94	Am-241, Cs-137	bkg	9080	60%	40%	0%	0%	0%	0%	0%	0%	0%
I-97	Am-241	bkg	6810	0%	100%	0%	0%	0%	0%	0%	0%	0%
I-77	Am-241	0.2	42222	0%	100%	0%	0%	0%	0%	0%	0%	0%

Item/Source	Radinuclides	mr/hr on Contact Dose Rate	Weight Grams	% Ratio Cs-137	% Ratio Am-241	% Ratio Co-60	% Ratio Eu-154	% Ratio Eu-152	% Ratio Ag-108m	% Ratio Ra-226	% Ratio Eu-155	% Ratio Ir-192
I-64	Am-241, Cs-137, Ag-108m	0.2	172	92%	8%	0%	0%	0%	2%	0%	0%	0%
I-57	Am-241,Eu154, Ag108M, Cs-137	0.2	252	11%	16%	0%	68%	0%	5%	0%	0%	0%
I-55	Am-241, Ag-108m,Eu-154,Cs-137	0.2	1135	10%	14%	1%	60%	0%	15%	0%	0%	0%
I-22	AM-241,CS-137	1	11350	68%	32%	0%	0%	0%	0%	0%	0%	0%

USEcology
FS-TX-02-01
Source Log

Date 4/2/02

BKG	mR/hr
6"	<0.2
12"	<0.2
36"	<0.2

ITEMS

Container #	90	91	92	93	94
External on ~~pig~~ in mR/hr	BKG	BKG	BKG	BKG	BKG
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr	BKG	BKG	BKG	BKG	BKG
Beta on open ~~pig~~ mR/hr O/W	↓	↓	↓	↓	↓

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG.
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	7.5 FT³	1 FT³	2 FT³	3 FT³	1½ FT³
Weight in grams	50 Lb.	7 Lb	5 Lb	25 Lb	20 Lb

CPM Alpha	N/A	N/A	N/A	N/A	50K
Direct Beta/Gamma					NOBG

Info on source:	55 GAL DRUM α ONLY	PC'S α ONLY	PC'S α ONLY	WOOD METAL DEBRIE α ONLY	PIPE

Information on ~~pig~~:					
Smear DPM per 100 cm^2 Alpha	40.8				5000
Smear DPM per 100 cm^2 Beta	78.5				NOBG

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **4/3/02 TIME 1115**

ITEMS #90-213

Survey #

MDA Alpha DPM	MDA Beta DPM
10.7	65

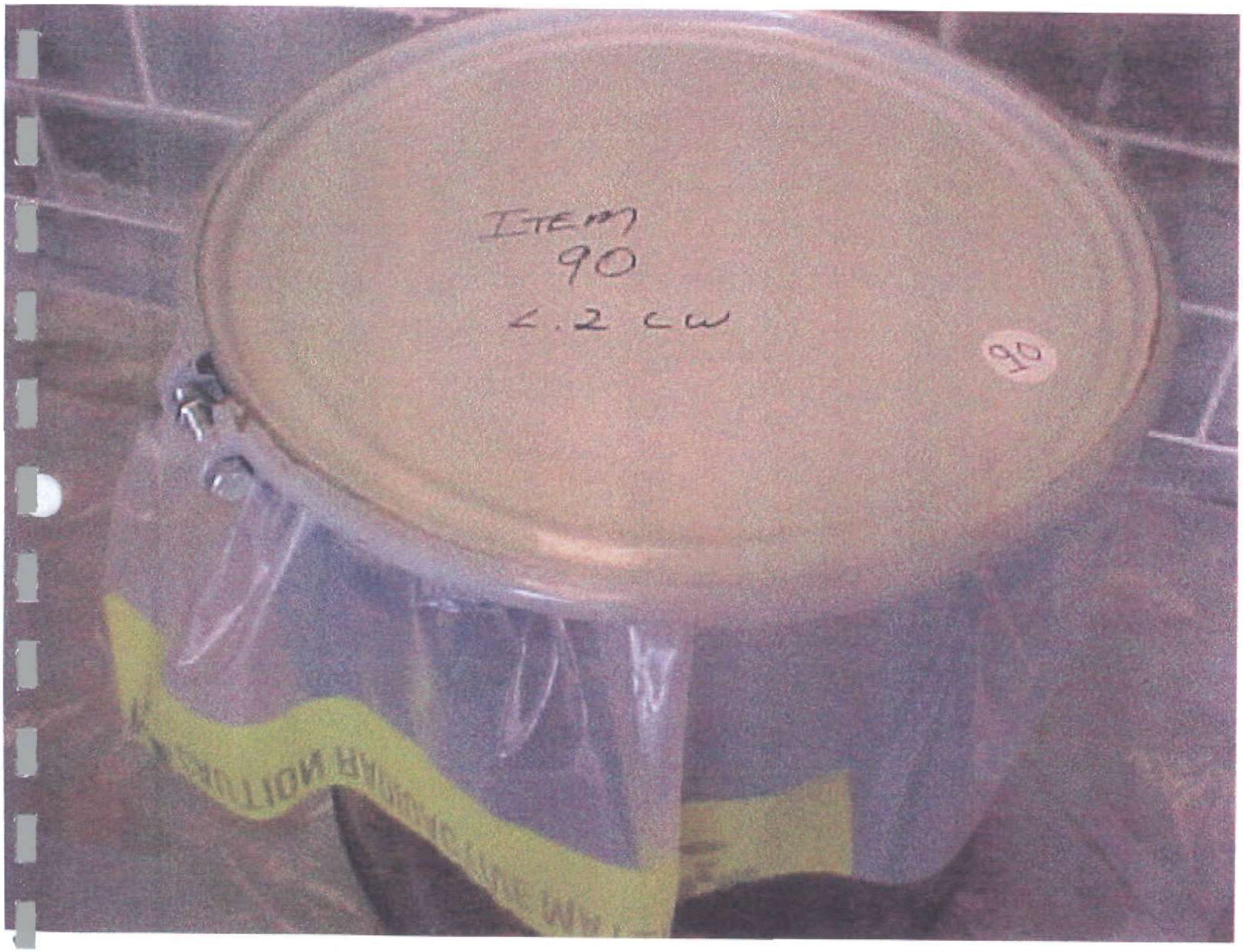
BKG Alpha CPM	BKG Beta CPM
0.4	69.1

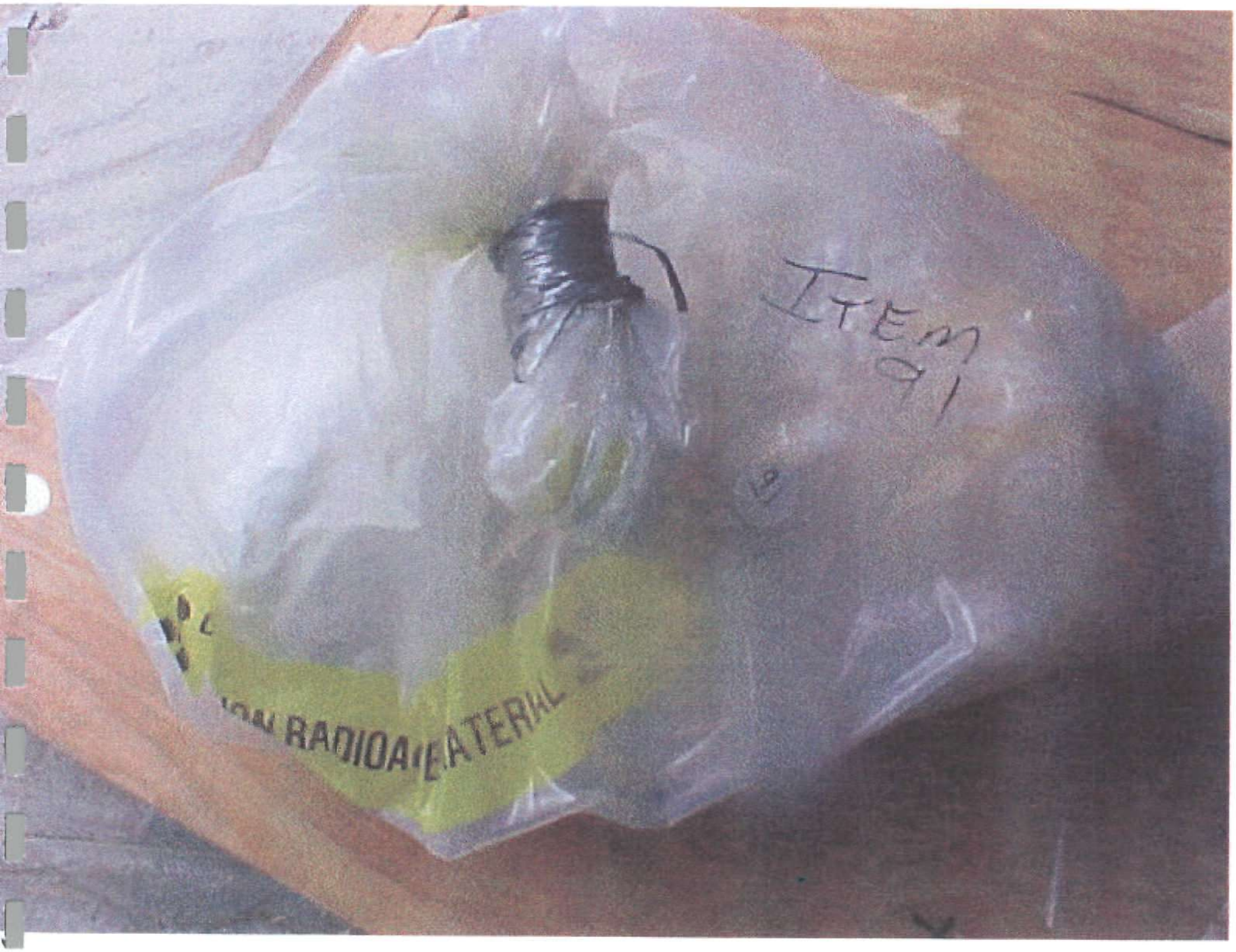
Alpha Eff 0.26

	2 Min CPM	DPM
90	22	40.8
99	64	121.5
100	48	90.8
101	19	35.0
190	15	27.3
191	755	1,450.4
192	92	175.4
193	46	86.9
194	2	2.3
195	4	6.2
196	10	17.7
197	2	2.3
198	6	10.0
199	3	4.2
205	3	4.2
206	178	340.8
208	214	410.0
213	0	-1.5
		-1.5
		-1.5
		-1.5
		-1.5
		-1.5
		-1.5
		-1.5

Beta/Gamma Eff 0.33

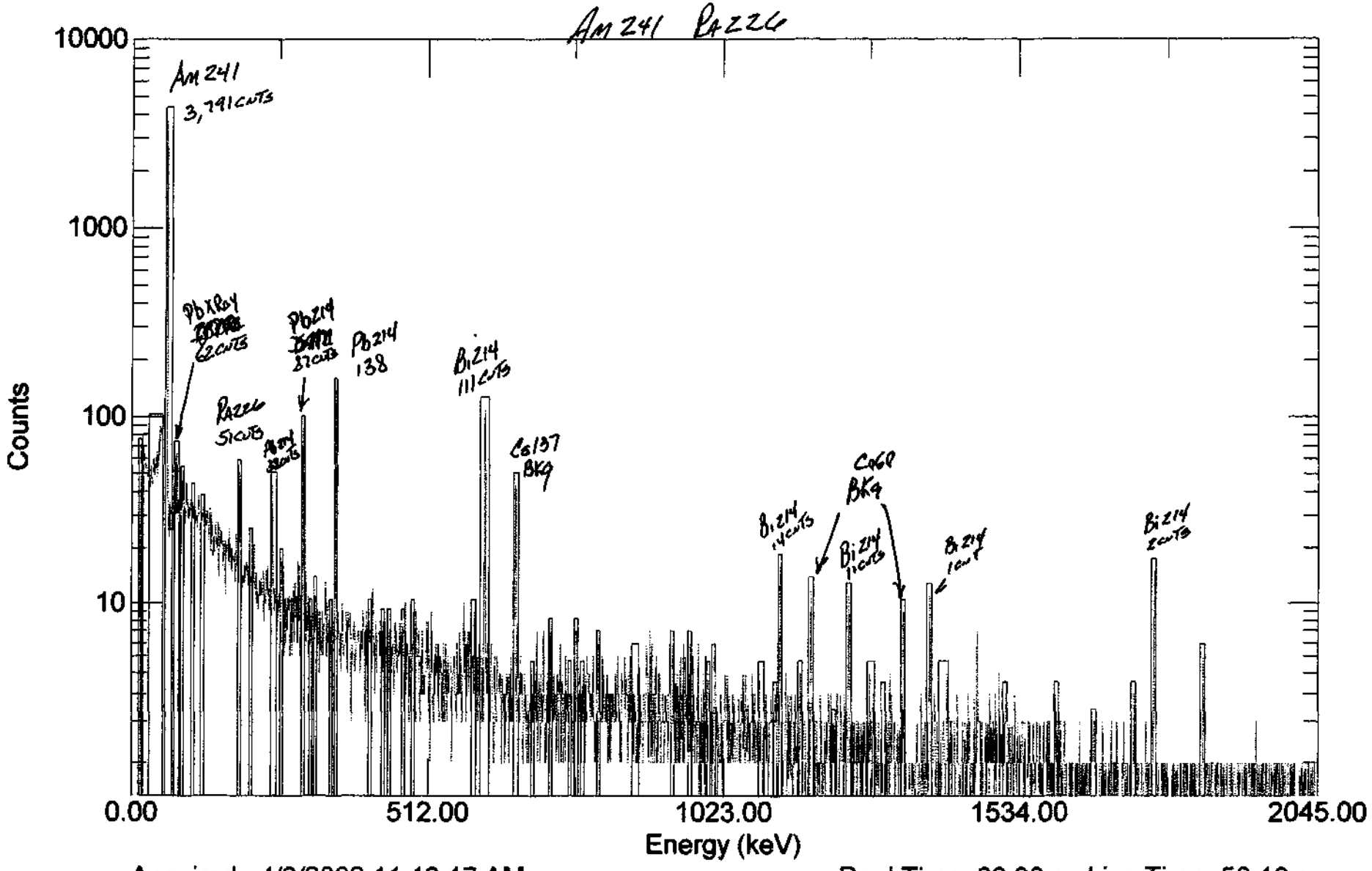
	2 Min CPM	DPM
90	190	78.5
99	225	131.5
100	169	46.7
101	1523	2,098.2
190	154	23.9
191	258	181.5
192	146	11.8
193	246	163.3
194	150	17.9
195	151	19.4
196	160	33.0
197	134	-6.4
198	156	27.0
199	176	57.3
205	142	5.8
206	799	1,001.2
208	1160	1,548.2
213	112	-39.7
		-209.4
		-209.4
		-209.4
		-209.4
		-209.4
		-209.4
		-209.4


ITEM
90
2.2 cm
90


ITEM
91
RADIOACTIVE

003 ITEM91 4-2-2002 11.12.17 AM

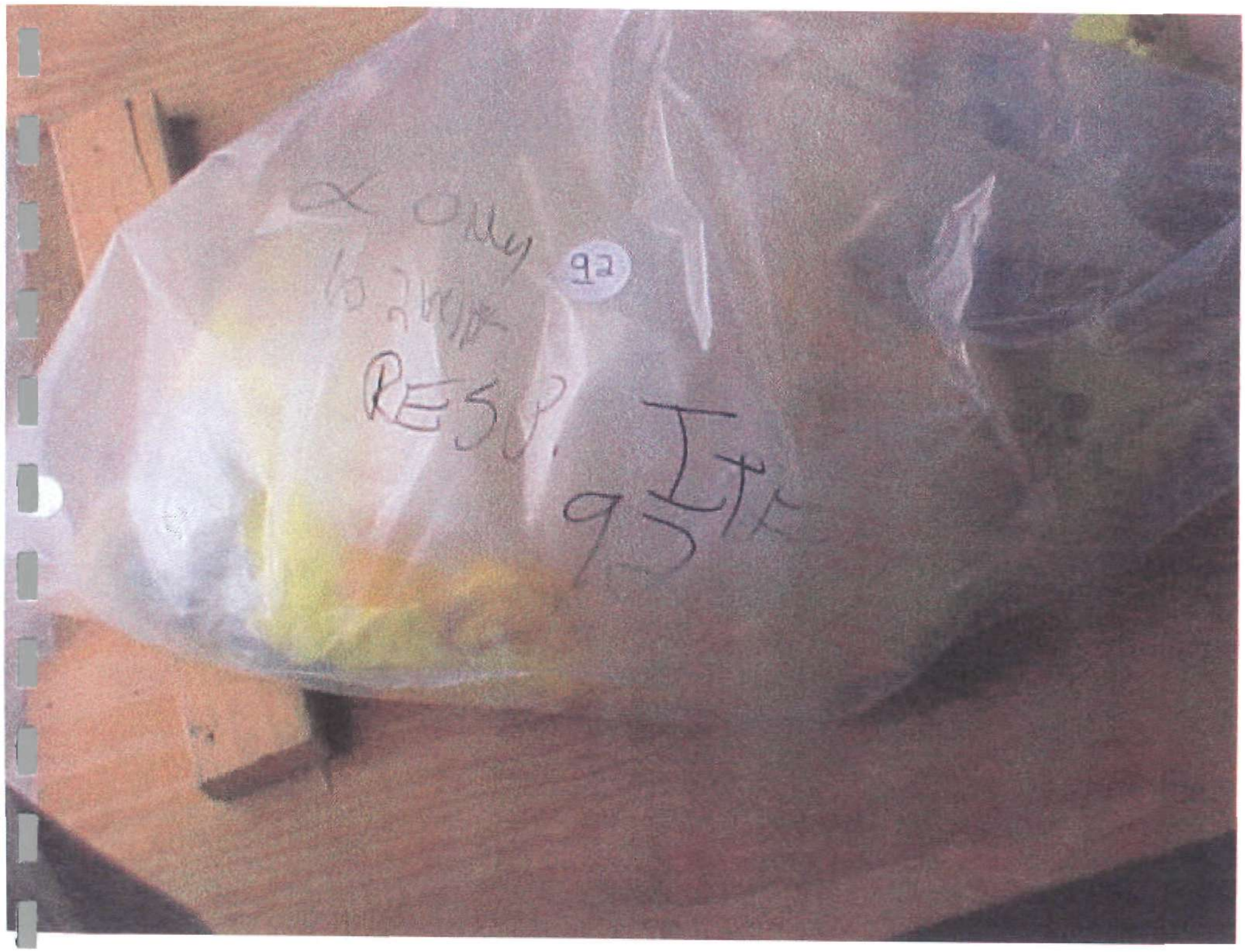
ITEM91



Acquired: 4/2/2002 11:12:17 AM Real Time: 60.00 s. Live Time: 58.10 s.

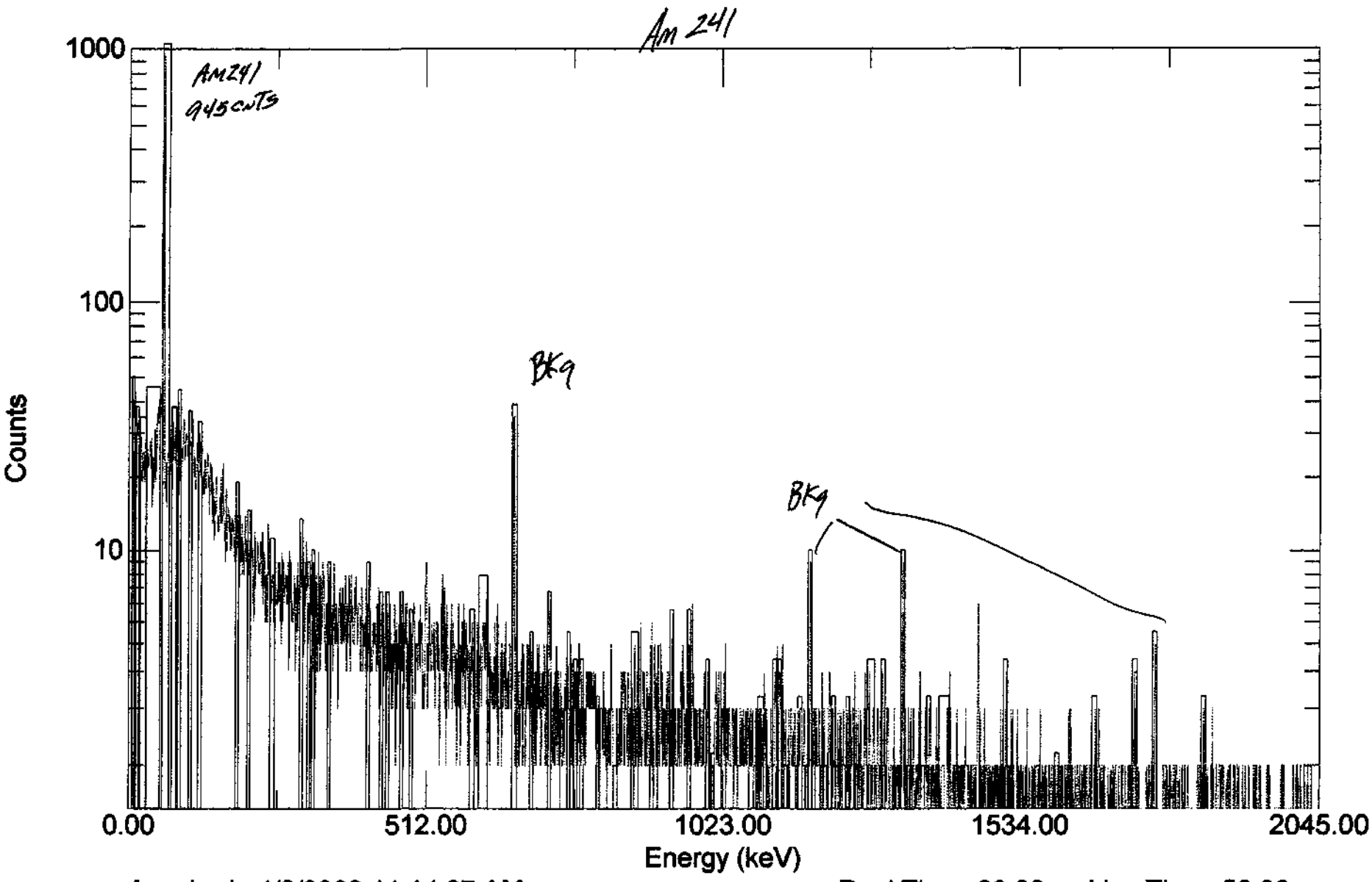
File: C:\User\GNIWEB~1\003 ITEM91 4-2-2002 11.12.17 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


92
RE5U.
95

004 ITEM92 4-2-2002 11.14.26 AM

ITEM92

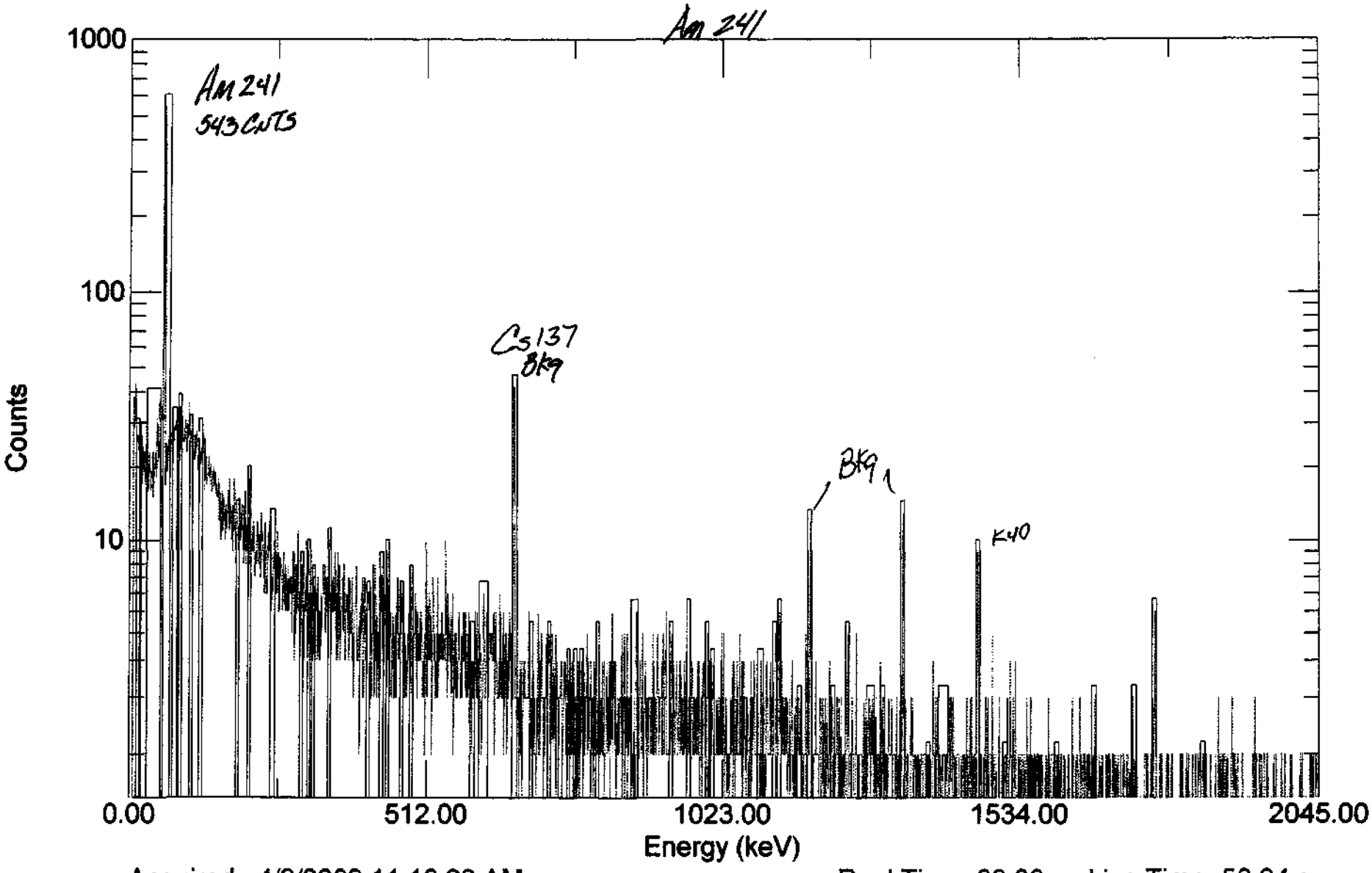


Acquired: 4/2/2002 11:14:27 AM Real Time: 60.00 s. Live Time: 58.96 s.
File: C:\User\GNIWEB~1\004 ITEM92 4-2-2002 11.14.26 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

ITEM
93
93

005 ITEM93 4-2-2002 11.16.23 AM

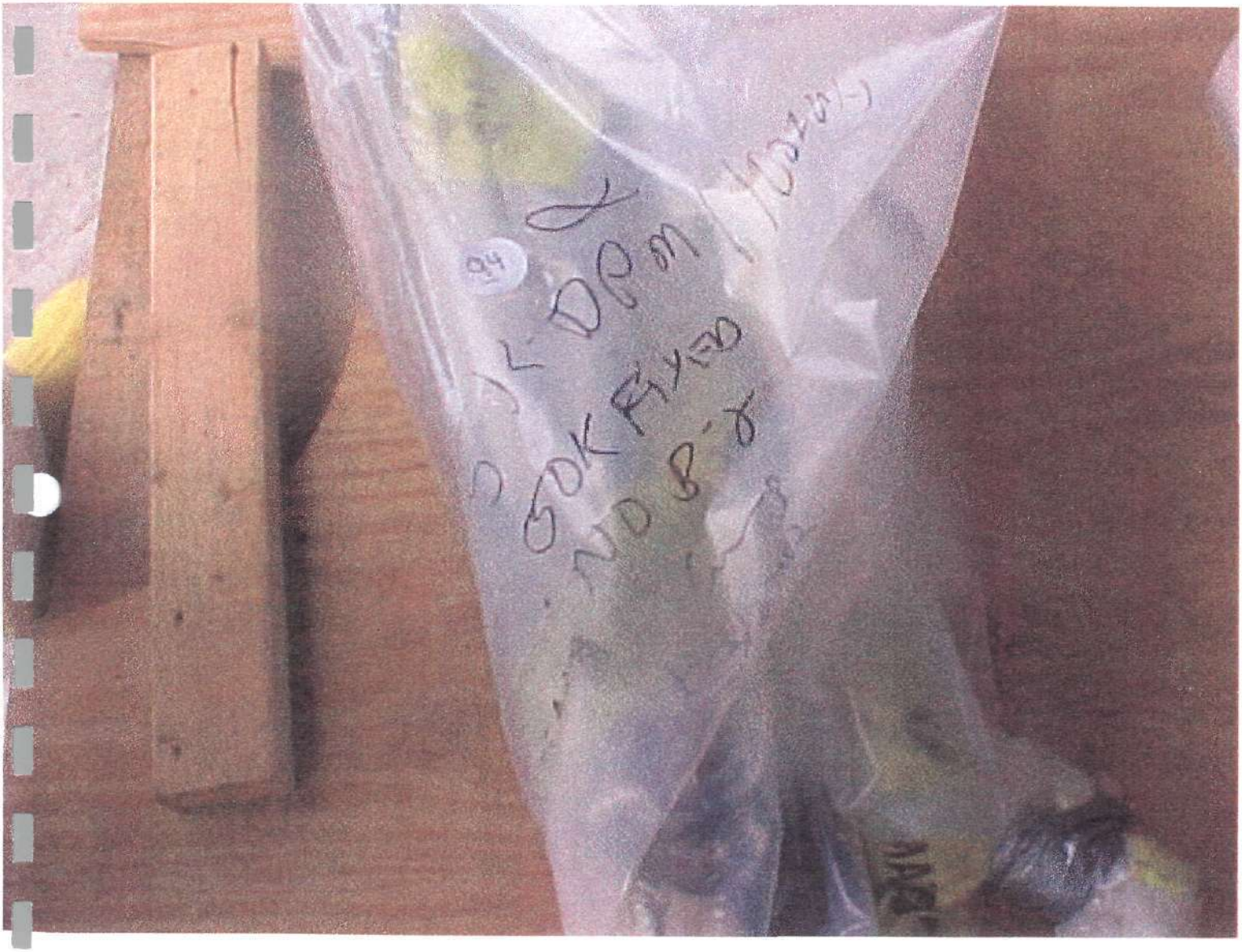
ITEM93



Acquired: 4/2/2002 11:16:22 AM Real Time: 60.00 s. Live Time: 58.94 s.

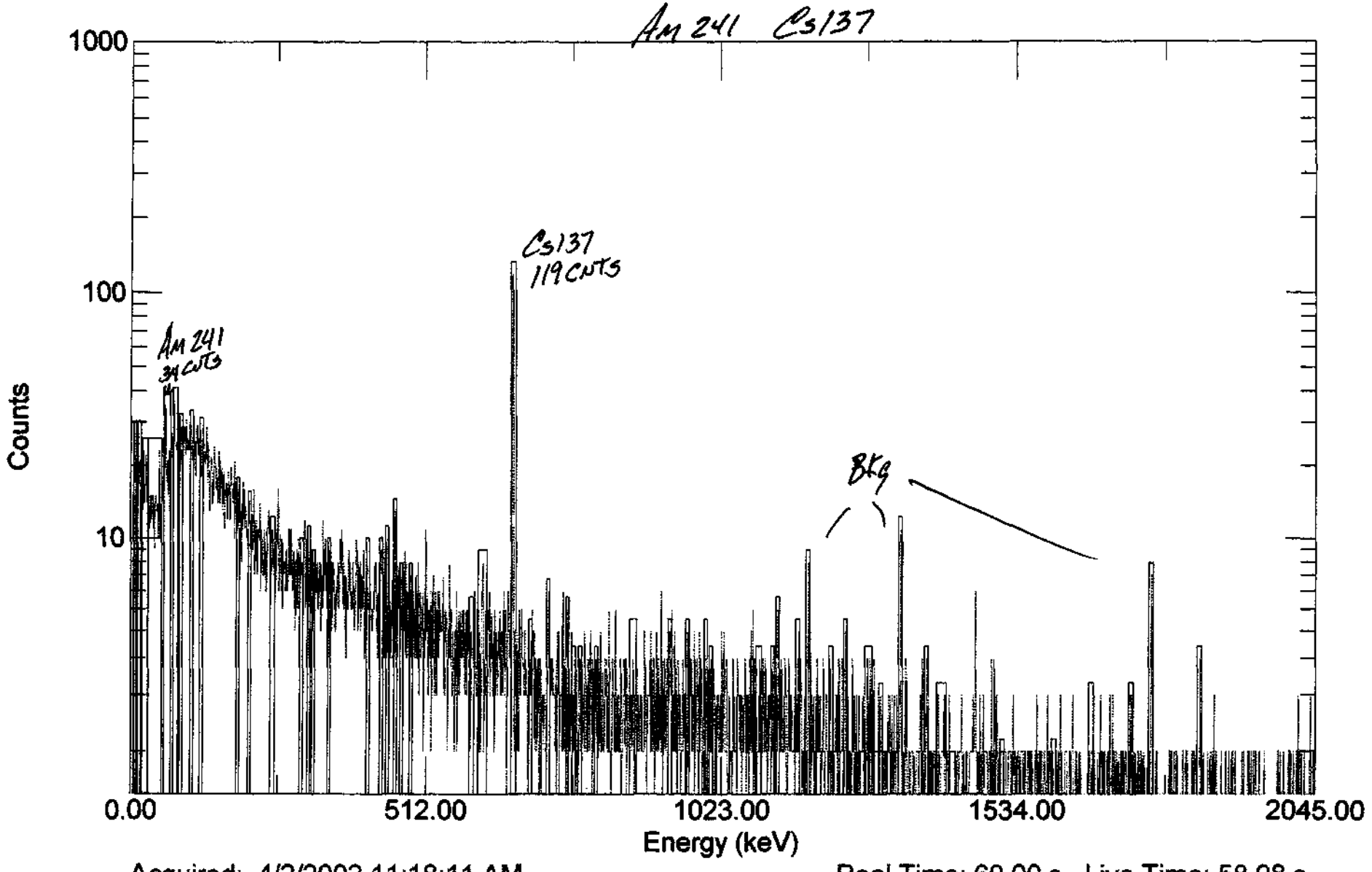
File: C:\User\GNIWEB~1\005 ITEM93 4-2-2002 11.16.23 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


94
GOK FIXED
NO B-7

006 ITEM94 4-2-2002 11.18.11 AM

[redacted]



Acquired: 4/2/2002 11:18:11 AM Real Time: 60.00 s. Live Time: 58.98 s.
File: C:\User\GNIWEB~1\006 ITEM94 4-2-2002 11.18.11 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-2-02

BKG	mR/hr
6"	<0.2
12"	<0.2
36"	<0.2

ITEMS

Container #	95	96	97	98	99
External on pig in mR/hr	BKG	BKG	BKG	BKG	BKG
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	BKG	BKG	BKG	BKG	BKG
Beta on open pig mR/hr O/W	↓	↓	↓	↓	↓

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

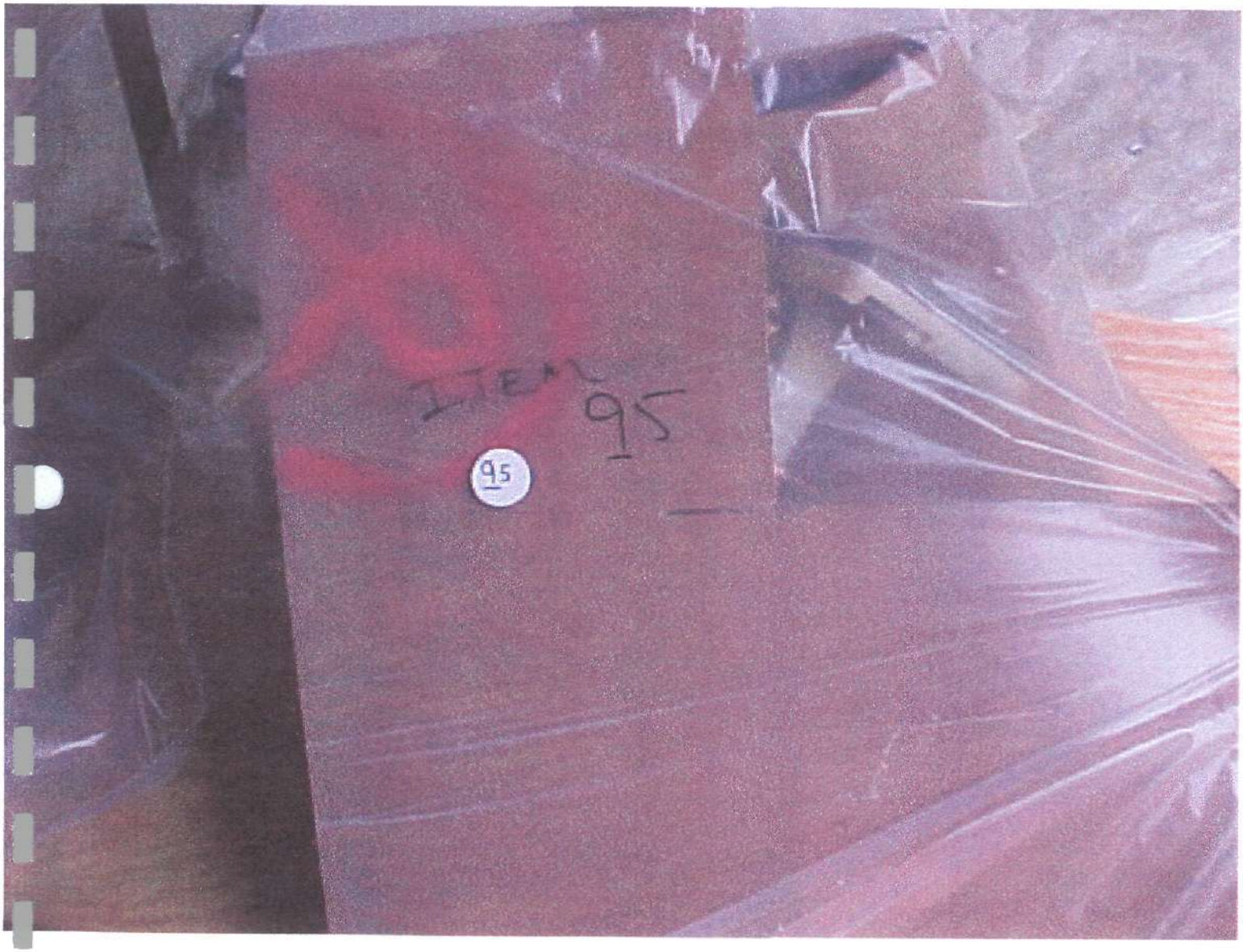
Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	4 FT³	0.75 FT³	3.5 FT³	½ FT³	6 FT³
Weight in grams	27 Lb	16 Lb.	15 Lb	3 Lb	6 Lb

CPM Alpha	N/A	N/A	N/A	N/A	N/A
Direct Beta/Gamma					

Info on source:	WOOD METAL DEBRIS	VICE	METAL WOOD TRASH. PLASTIC STAND	John + DAVE'S CLOTHES	TANK#1 BLDG 2 Rm 6

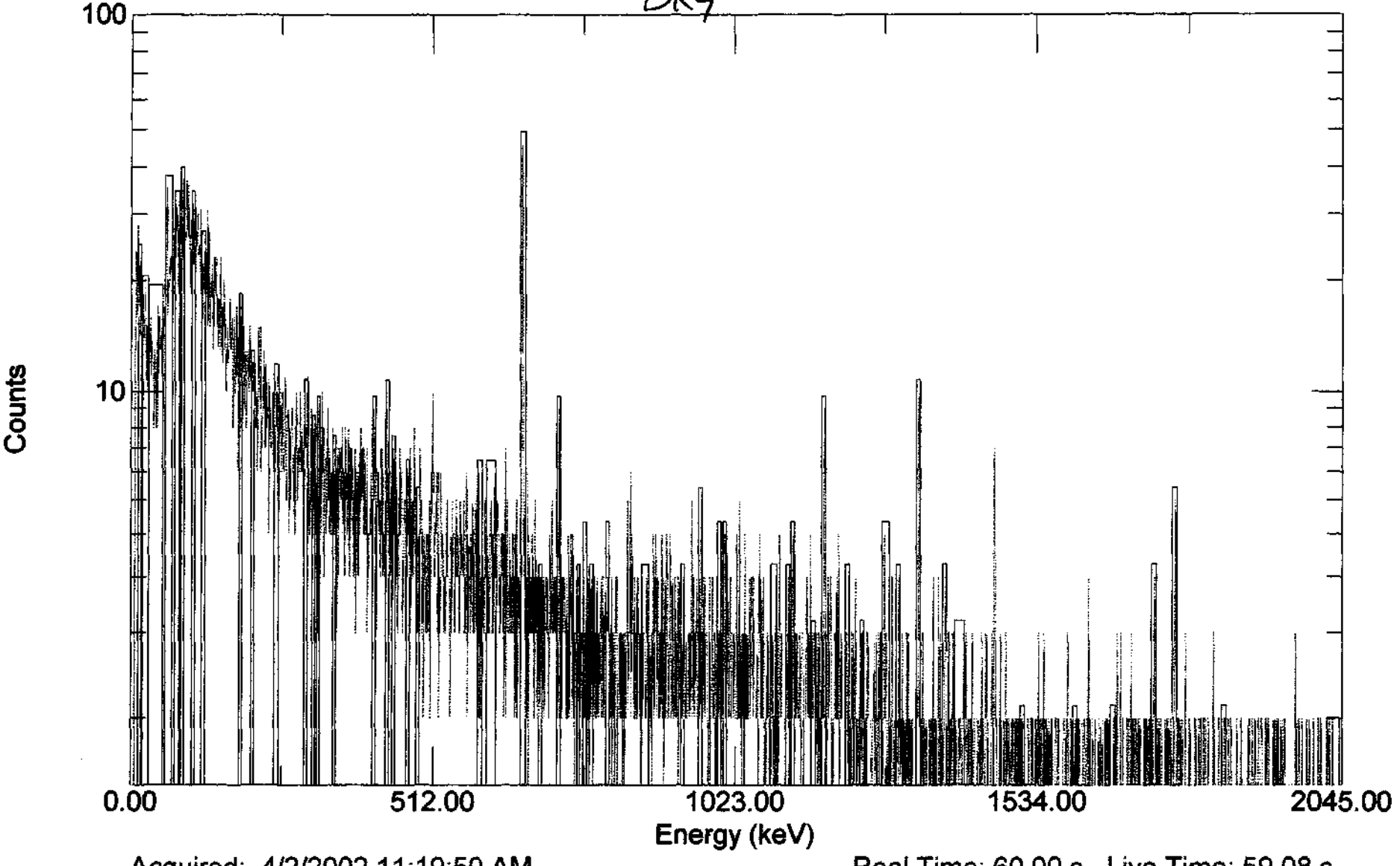
Information on pig:					
Smear DPM per 100 cm^2 Alpha					121.5
Smear DPM per 100 cm^2 Beta					131.5


ITEM 95
95

007 ITEM95 4-2-2002 11.19.50 AM

[redacted]

Bkg

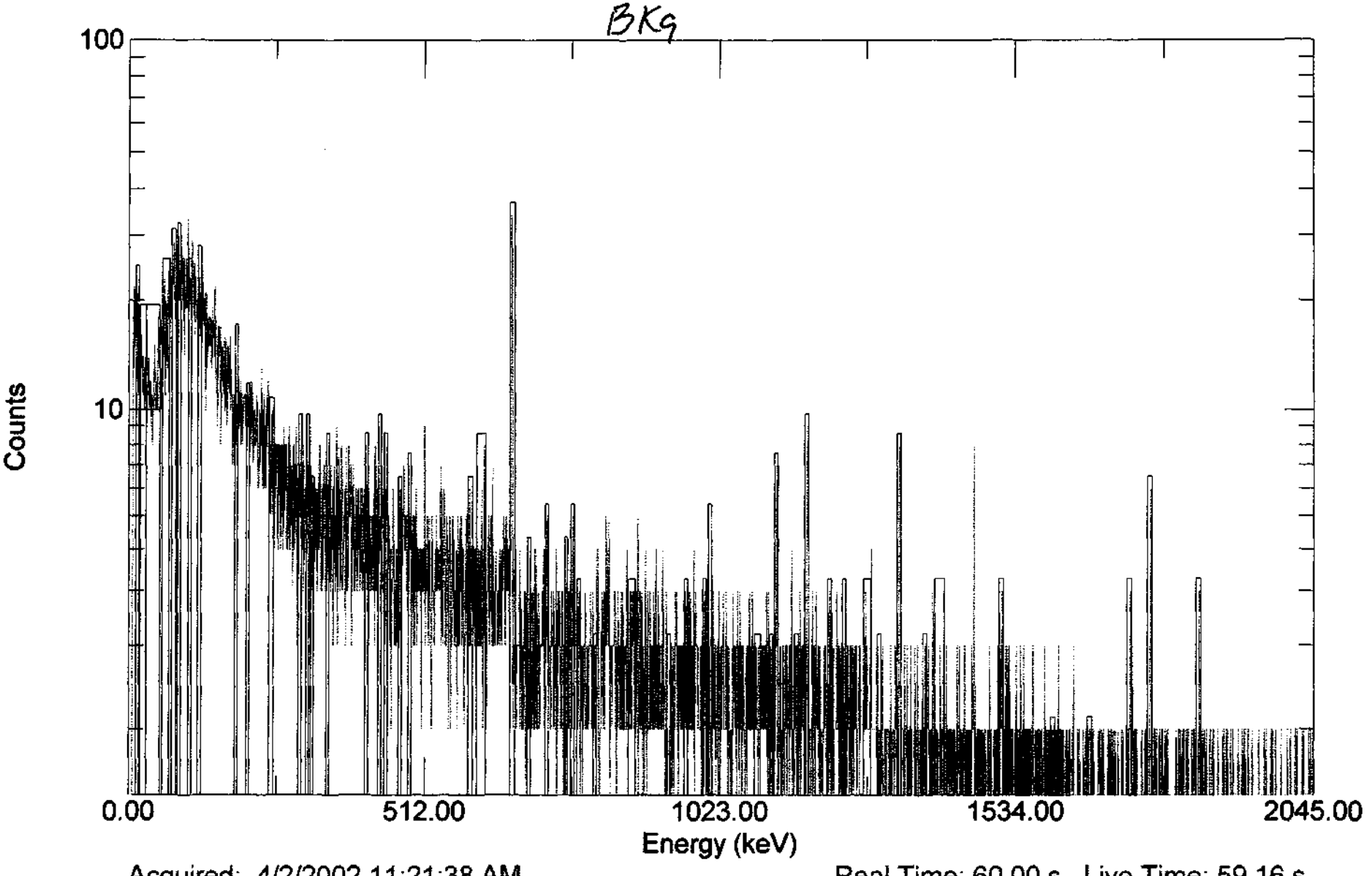


Acquired: 4/2/2002 11:19:50 AM Real Time: 60.00 s. Live Time: 59.08 s.
File: C:\User\GNIWEB~1\007 ITEM95 4-2-2002 11.19.50 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

96

008 ITEM96 4-2-2002 11.21.38 AM

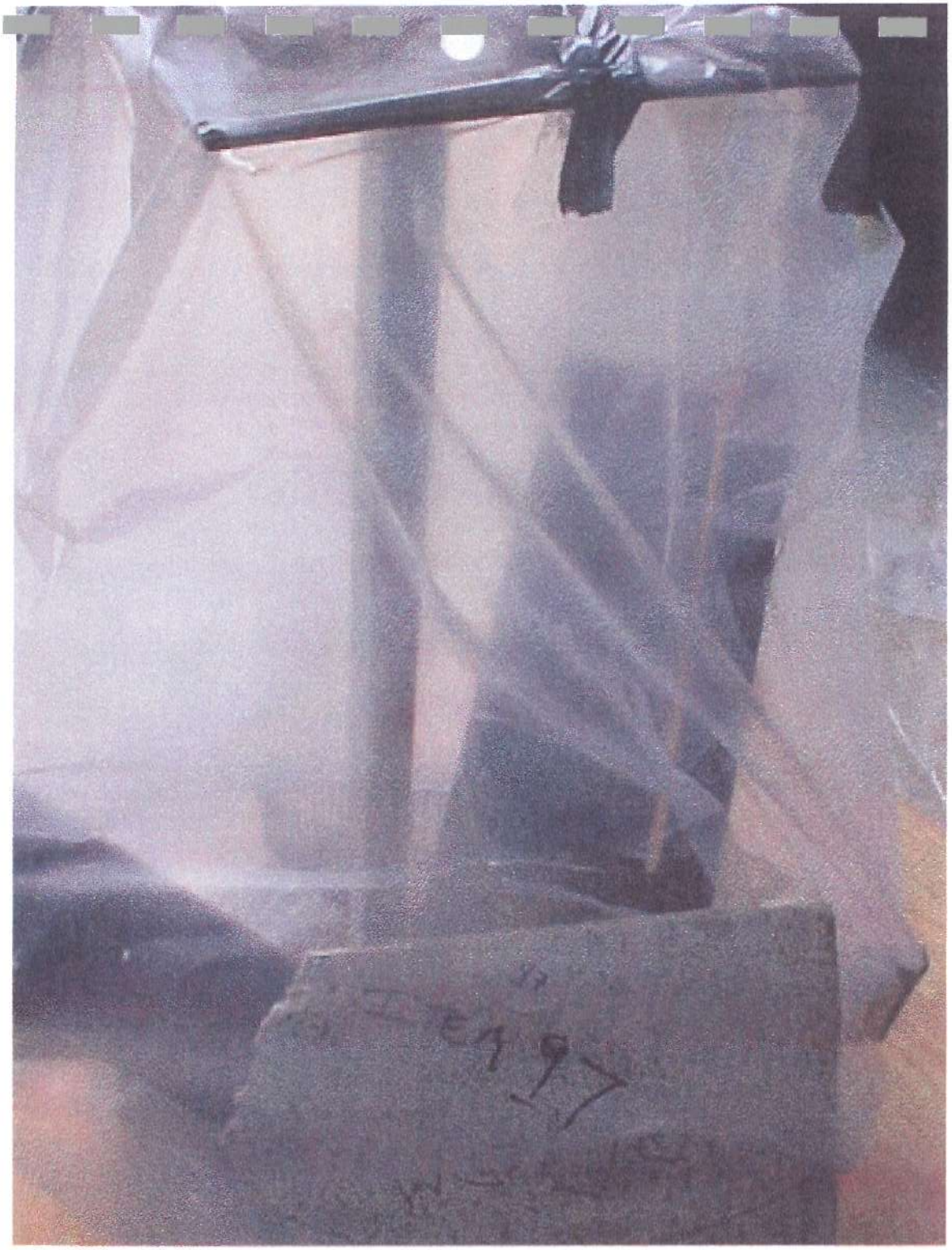
ITEM96



Acquired: 4/2/2002 11:21:38 AM Real Time: 60.00 s. Live Time: 59.16 s.

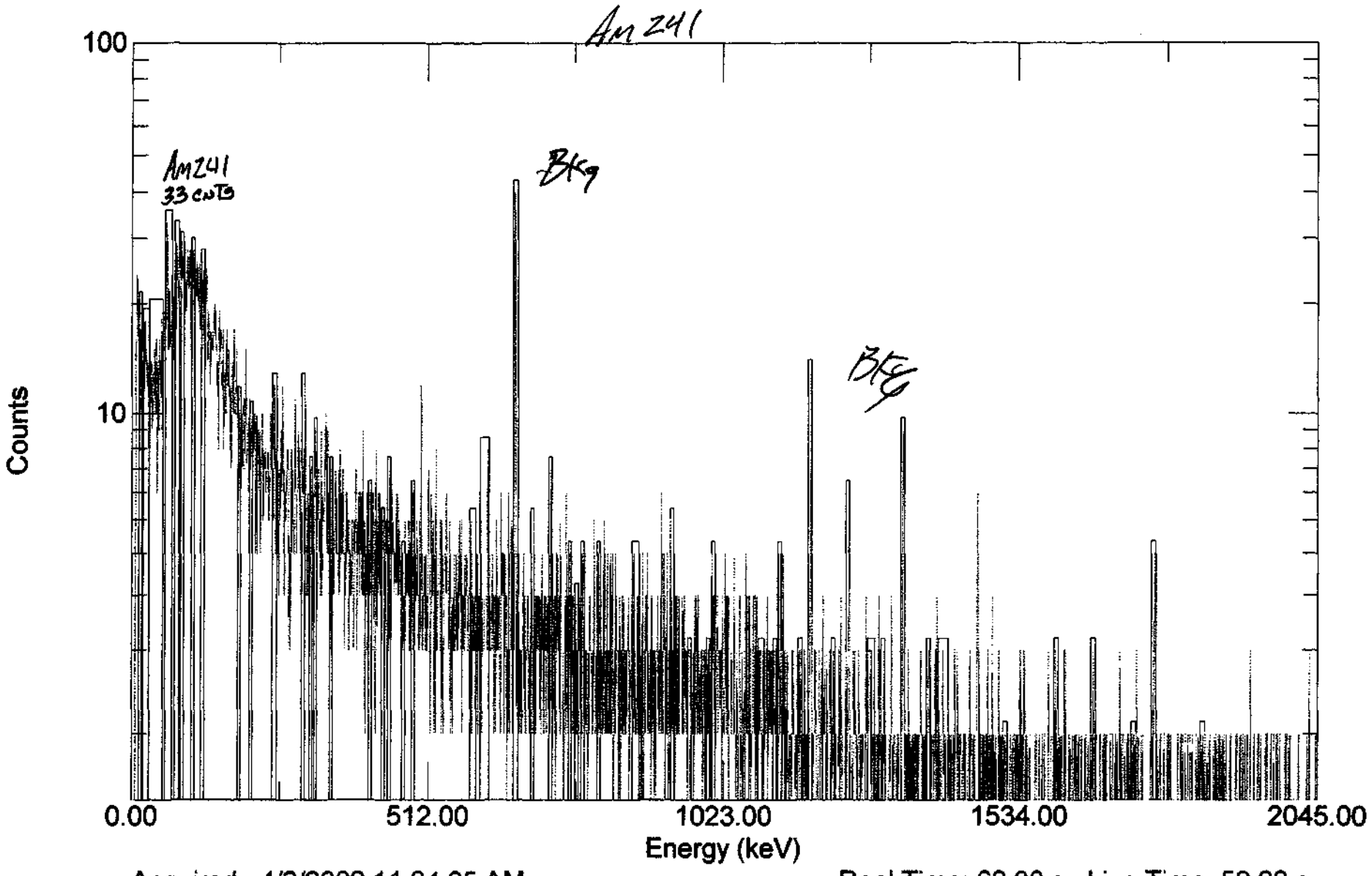
File: C:\User\GNIWEB~1\008 ITEM96 4-2-2002 11.21.38 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



009 ITEM97 4-2-2002 11.24.04 AM

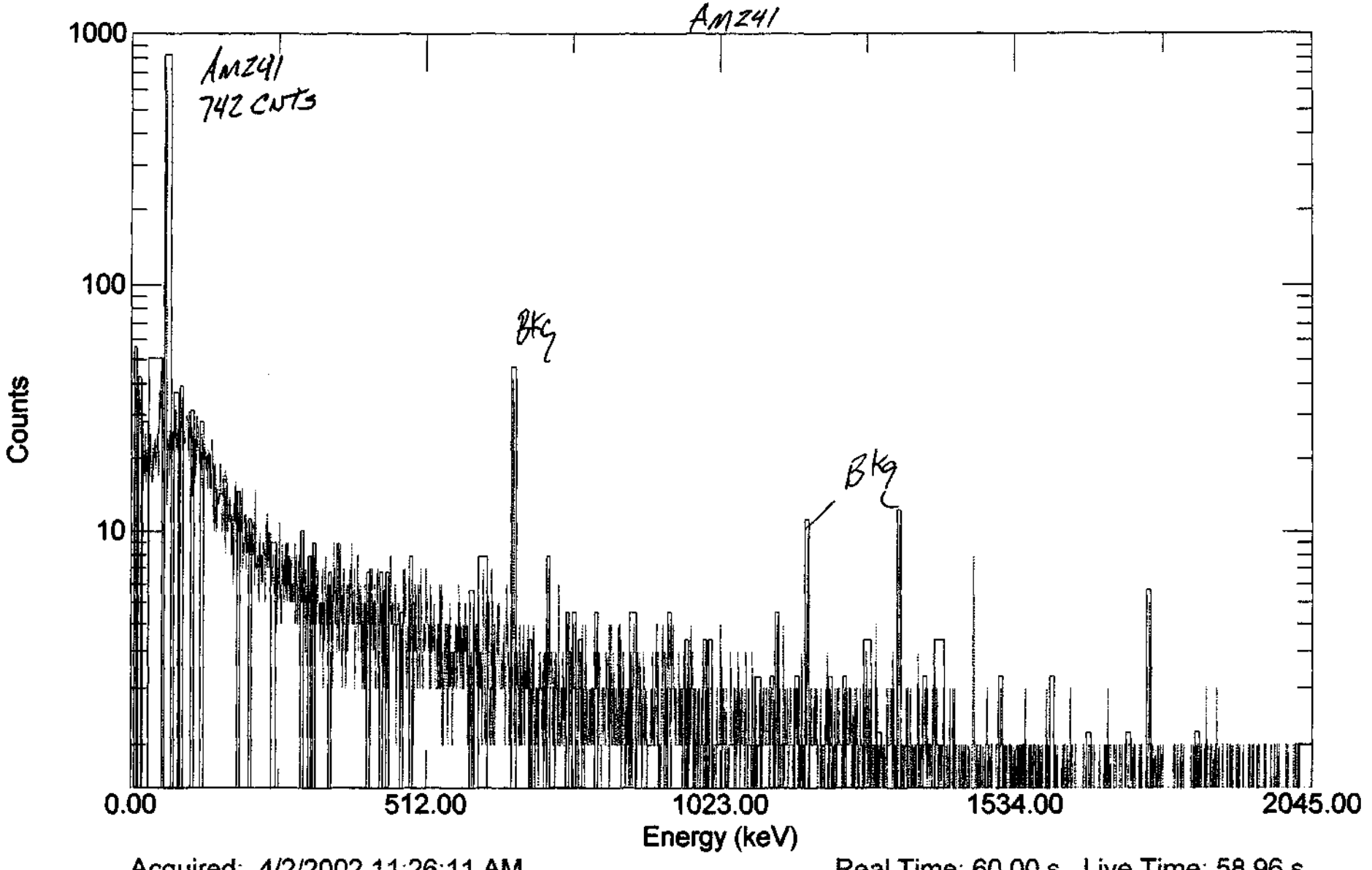
ITEM97



Acquired: 4/2/2002 11:24:05 AM Real Time: 60.00 s. Live Time: 59.20 s.
File: C:\User\GNIWEB~1\009 ITEM97 4-2-2002 11.24.04 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

010 ITEM98 4-2-2002 11.26.12 AM

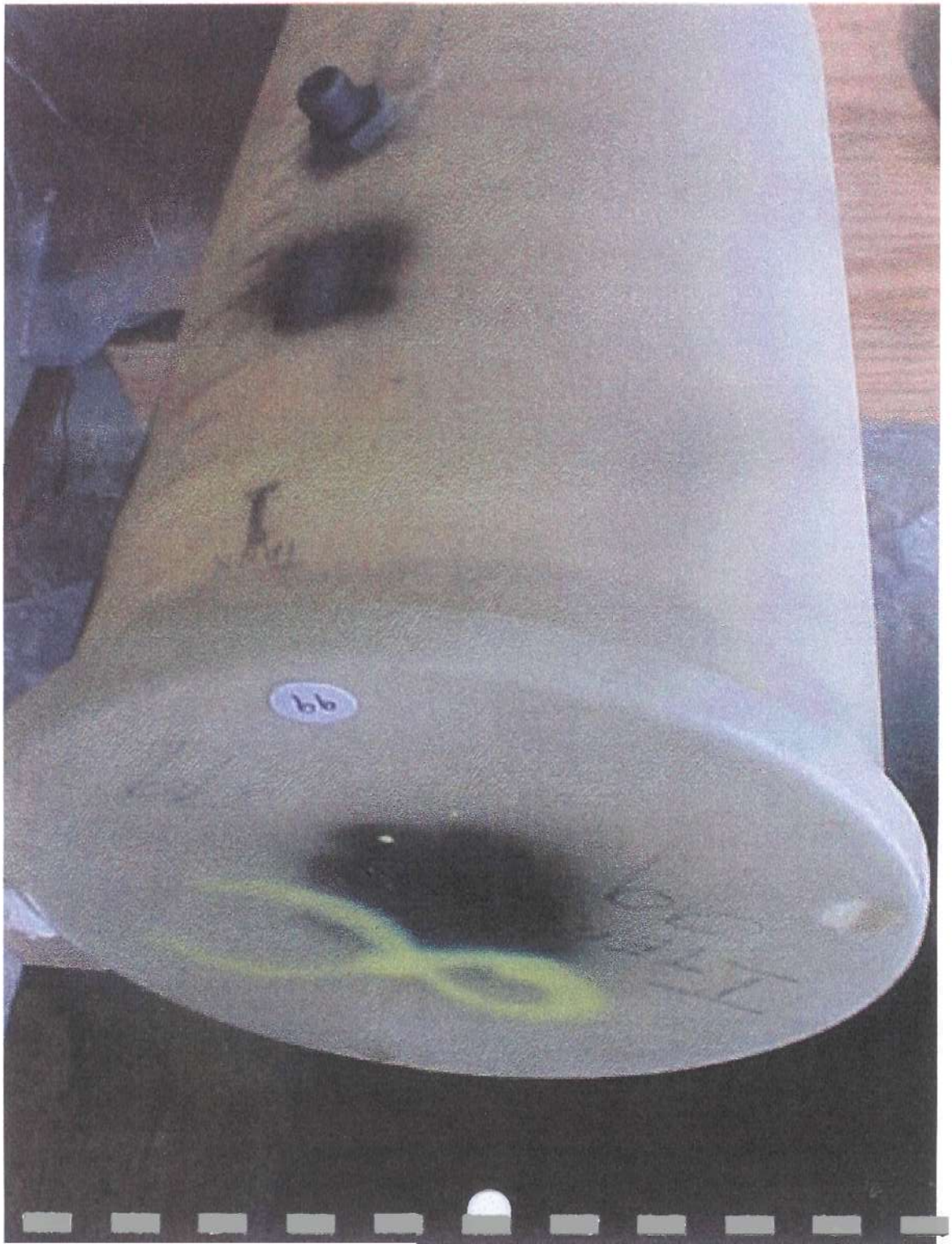
ITEM98



Acquired: 4/2/2002 11:26:11 AM Real Time: 60.00 s. Live Time: 58.96 s.

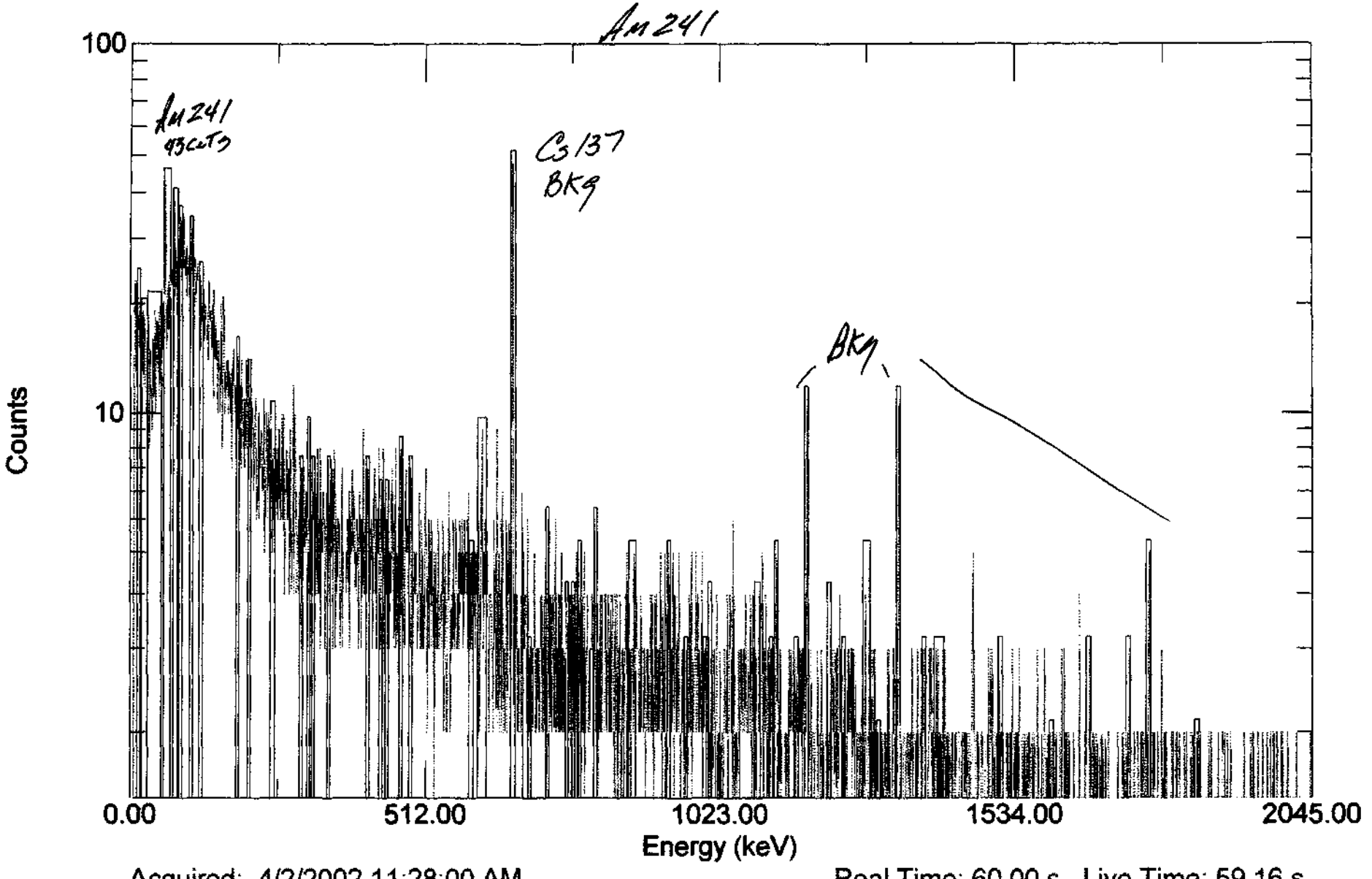
File: C:\User\GNIWEB~1\010 ITEM98 4-2-2002 11.26.12 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


bb

011 ITEM99 4-2-2002 11.27.59 AM

ITEM99



Acquired: 4/2/2002 11:28:00 AM Real Time: 60.00 s. Live Time: 59.16 s.

File: C:\User\GNIWEB~1\011 ITEM99 4-2-2002 11.27.59 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 9-2-02

BKG	mR/hr
6"	<.2
12"	↓
36"	↓

ITEMS

Container #	100	101	102	103	104
External on ~~pig~~ in mR/hr	BKG	BKG	BKG	1.5	1
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr	BKG	BKG	BKG	1.5	1
Beta on open ~~pig~~ mR/hr O/W	↓	↓	↓	45	1.5

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	.3	.2
Source mR/hr @ 12 inches	↓	↓	↓	BKG	BKG
Source mR/hr @ 36 inches	↓	↓	↓	BKG	BKG
Size of source in cc's	6 FT³	7.5 FT³	2	1.5 cf	1
Weight in grams	6 Lb	6 Lb	20 lbs	38 lbs	6 lbs

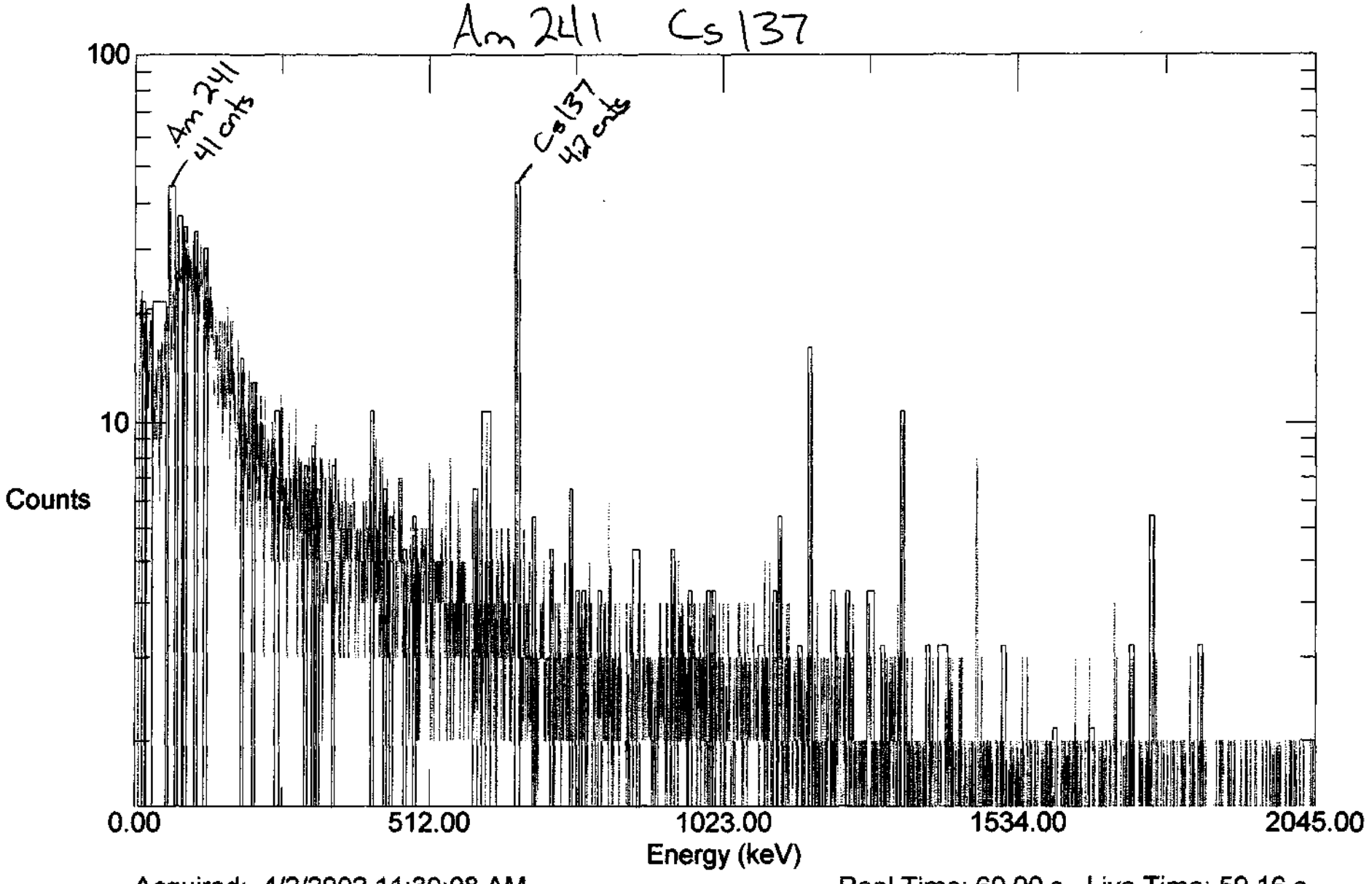
CPM Alpha					
Direct Beta/Gamma					

Info on source:	TANK #2 BLDG 2 RM 6	BLDG 2 Rm 2 10 GAL DRUM 1/2 FULL SAND	BOARD WRAPPED IN PLASTIC	BAG OF Debris BIDG 2 ROOM 1	VAC BOTTOMS DIRT & DEBRIS

Information on ~~pig~~:					
Smear DPM per 100 cm^2 Alpha	90.8	35.0			
Smear DPM per 100 cm^2 Beta	46.7	2,098.2			

012 ITEM100 4-2-2002 11.30.09 AM

ITEM100



Acquired: 4/2/2002 11:30:08 AM Real Time: 60.00 s. Live Time: 59.16 s.

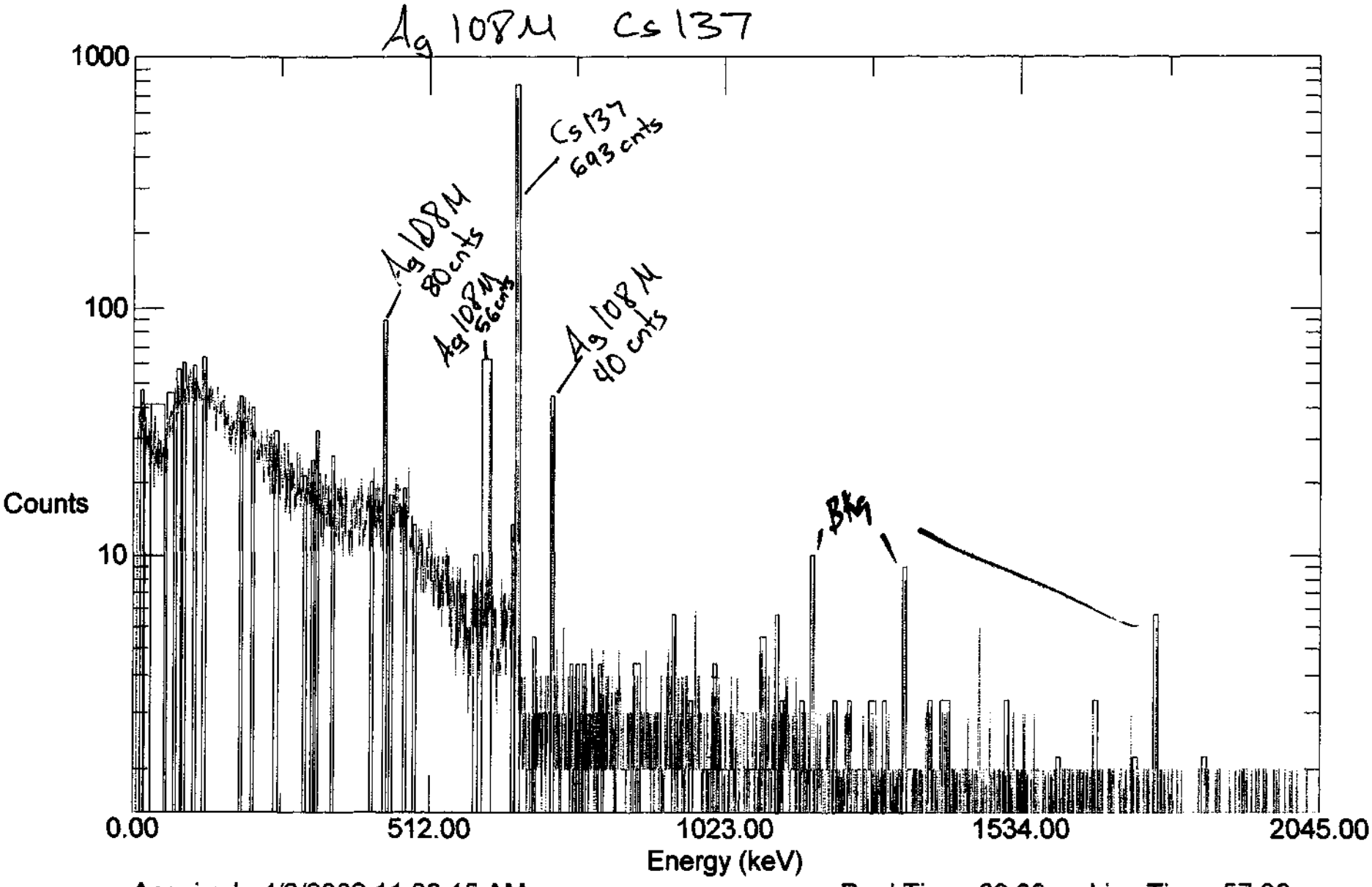
File: C:\User\GNIWEB~1\012 ITEM100 4-2-2002 11.30.09 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

101

013 ITEM101 4-2-2002 11.32.15 AM

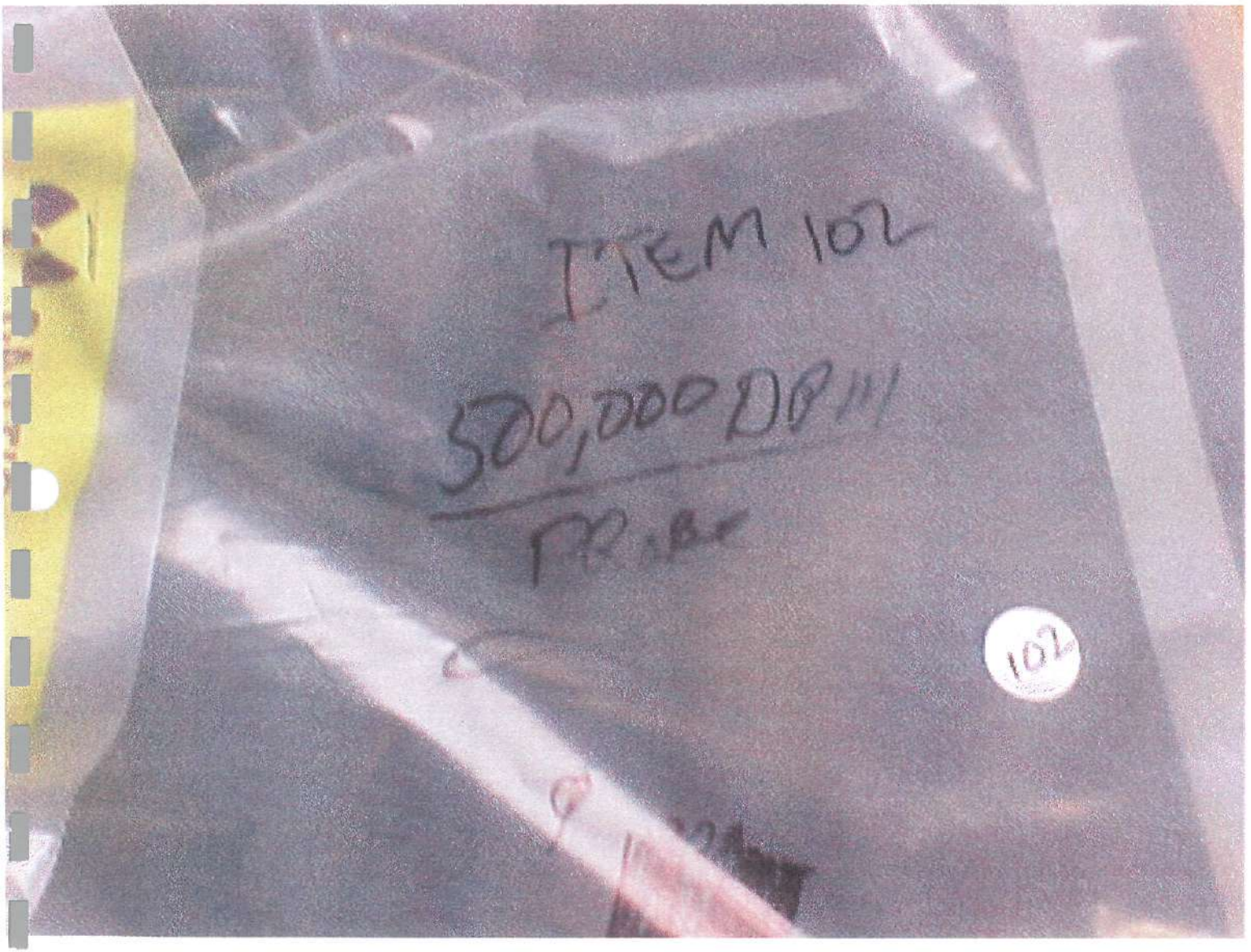
ITEM101



Acquired: 4/2/2002 11:32:15 AM Real Time: 60.00 s. Live Time: 57.90 s.

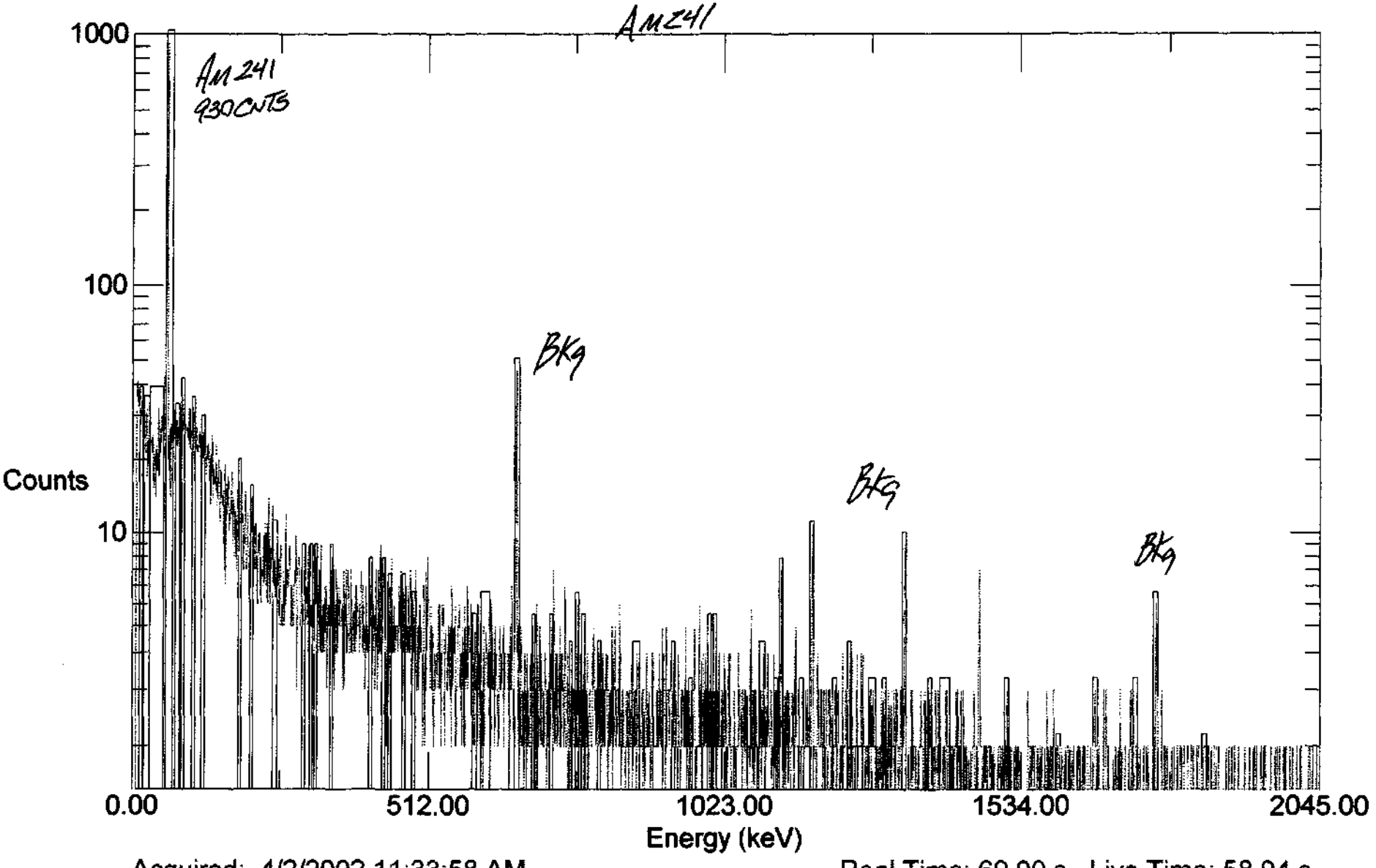
File: C:\User\GNIWEB~1\013 ITEM101 4-2-2002 11.32.15 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM 102
500,000 DB 111
102

014 ITEM102 4-2-2002 11.33.59 AM

ITEM102



Acquired: 4/2/2002 11:33:58 AM Real Time: 60.00 s. Live Time: 58.94 s.

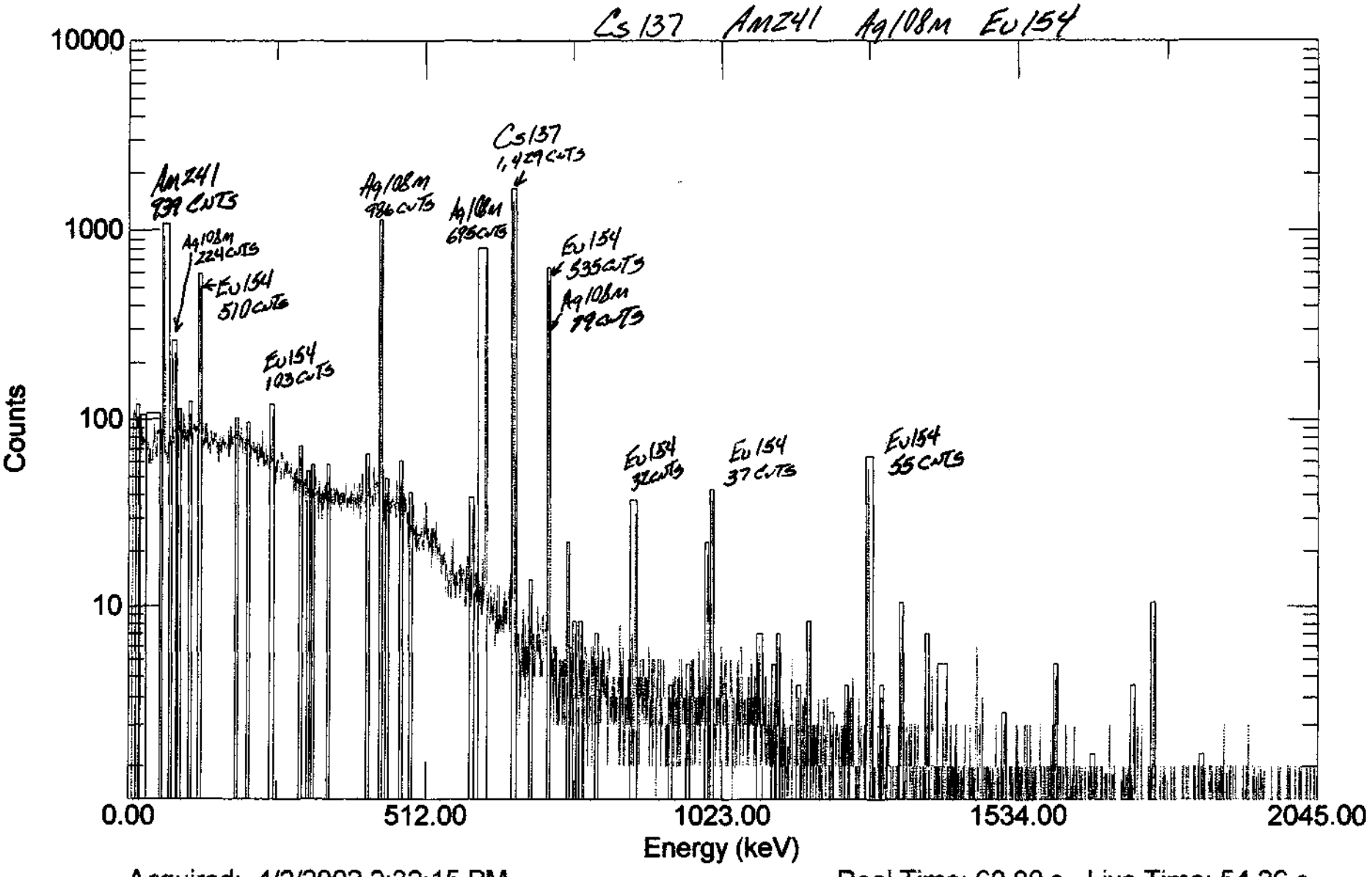
File: C:\User\GNIWEB~1\014 ITEM102 4-2-2002 11.33.59 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

103
103
1.5 cb
1.5 uw

017 ITEM103 4-2-2002 2.32.15 PM

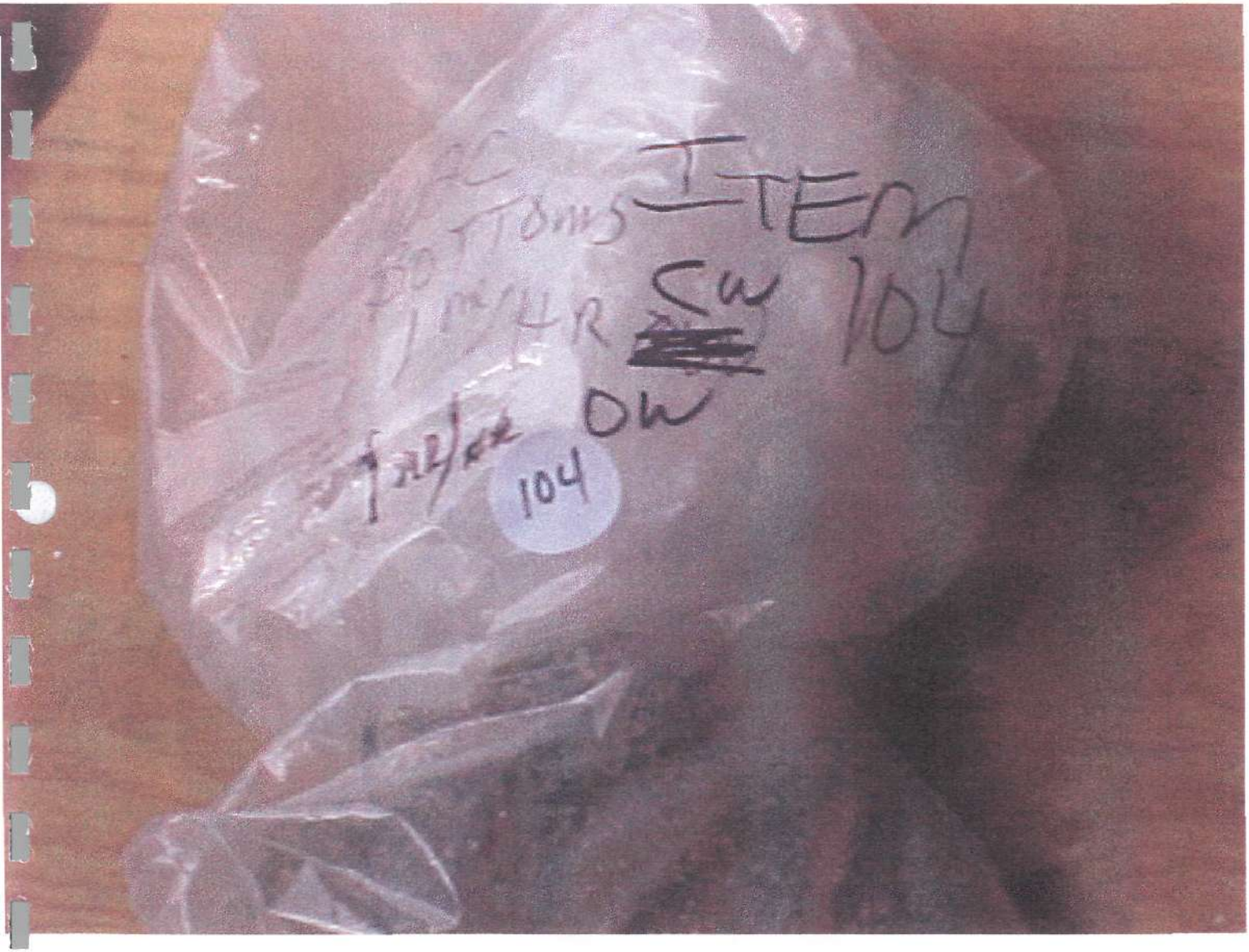
ITEM103



Acquired: 4/2/2002 2:32:15 PM Real Time: 60.00 s. Live Time: 54.26 s.

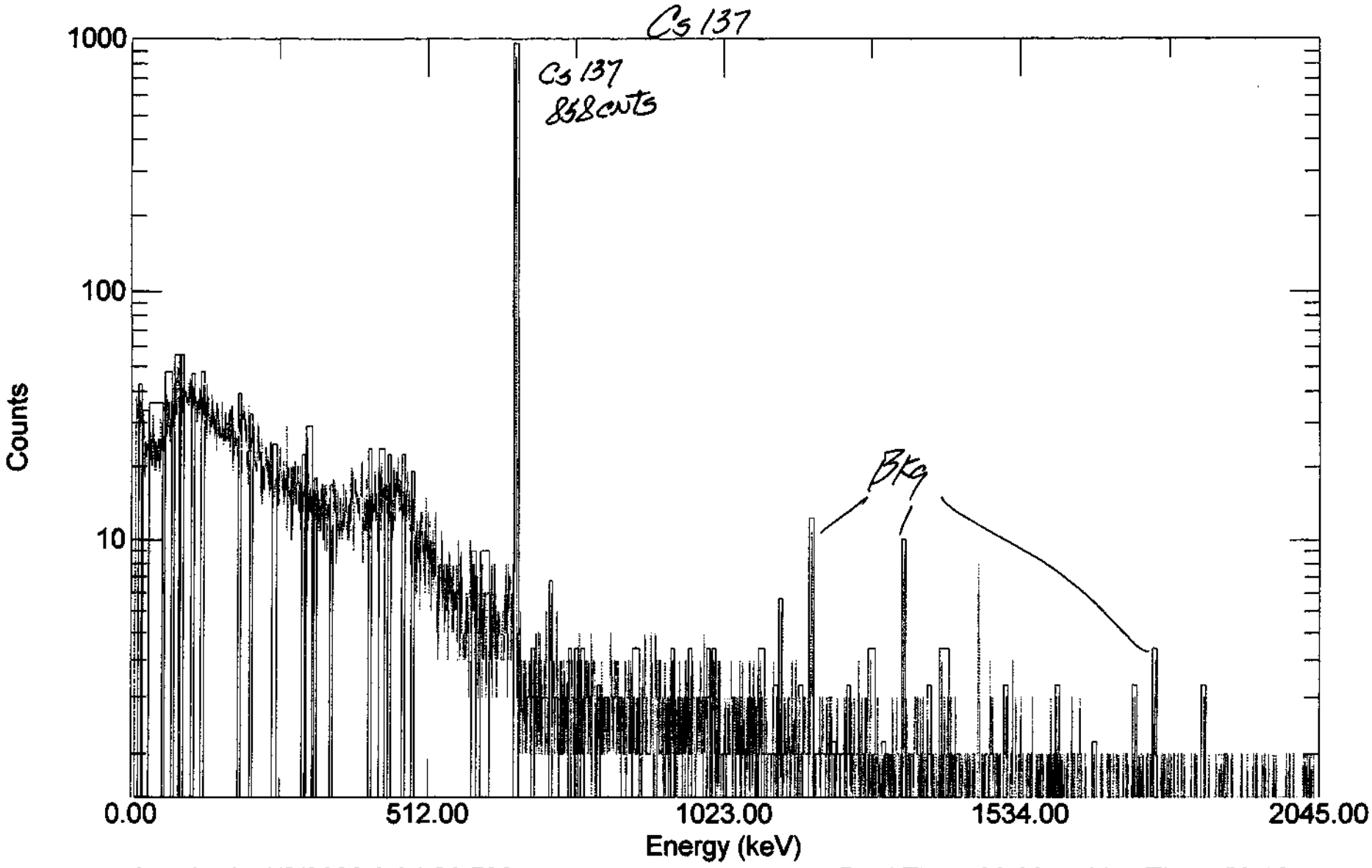
File: C:\User\GNIWEB~1\017 ITEM103 4-2-2002 2.32.15 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
SW 104
OW
104

018 ITEM104 4-2-2002 2.34.19 PM

ITEM104



Acquired: 4/2/2002 2:34:20 PM Real Time: 60.00 s. Live Time: 58.18 s.

File: C:\User\GNIWEB~1\018 ITEM104 4-2-2002 2.34.19 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3/2/02

BKG	mR/hr
6"	<.2
12"	↓
36"	↓

	ITEM				
Container #	105				
External on pig in mR/hr	4				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	4				
Beta on open pig mR/hr O/W	6				

Picture	✓				
DIGET					

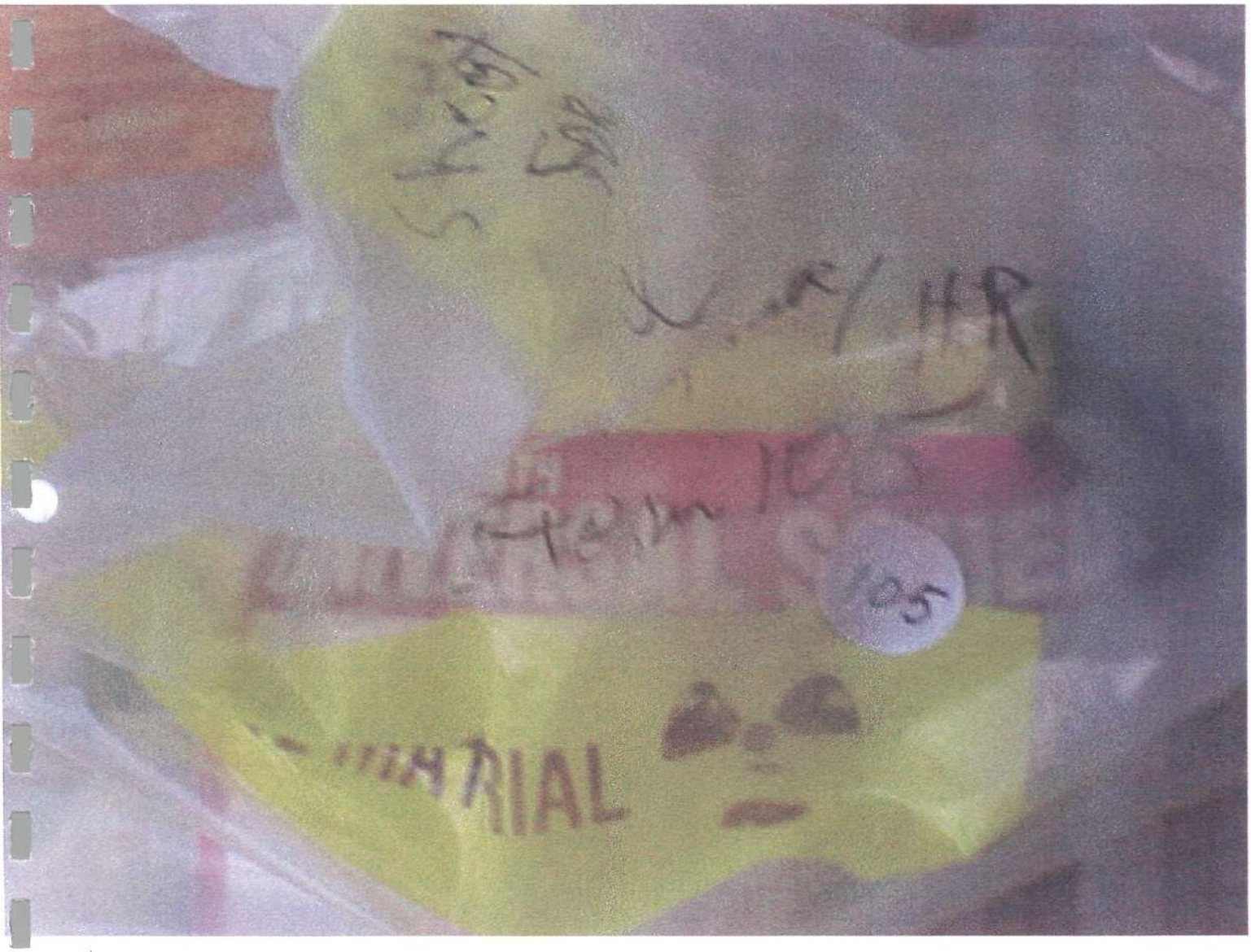
Table Readings

Source mR/hr @ 6 inchs	1.5				
Source mR/hr @ 12 inches	.7				
Source mR/hr @ 36 inches	.3				
Size of source in cc's	2.5 FT³				
Weight in grams	30 lbs				

CPM Alpha	NA				
Direct Beta/Gamma					

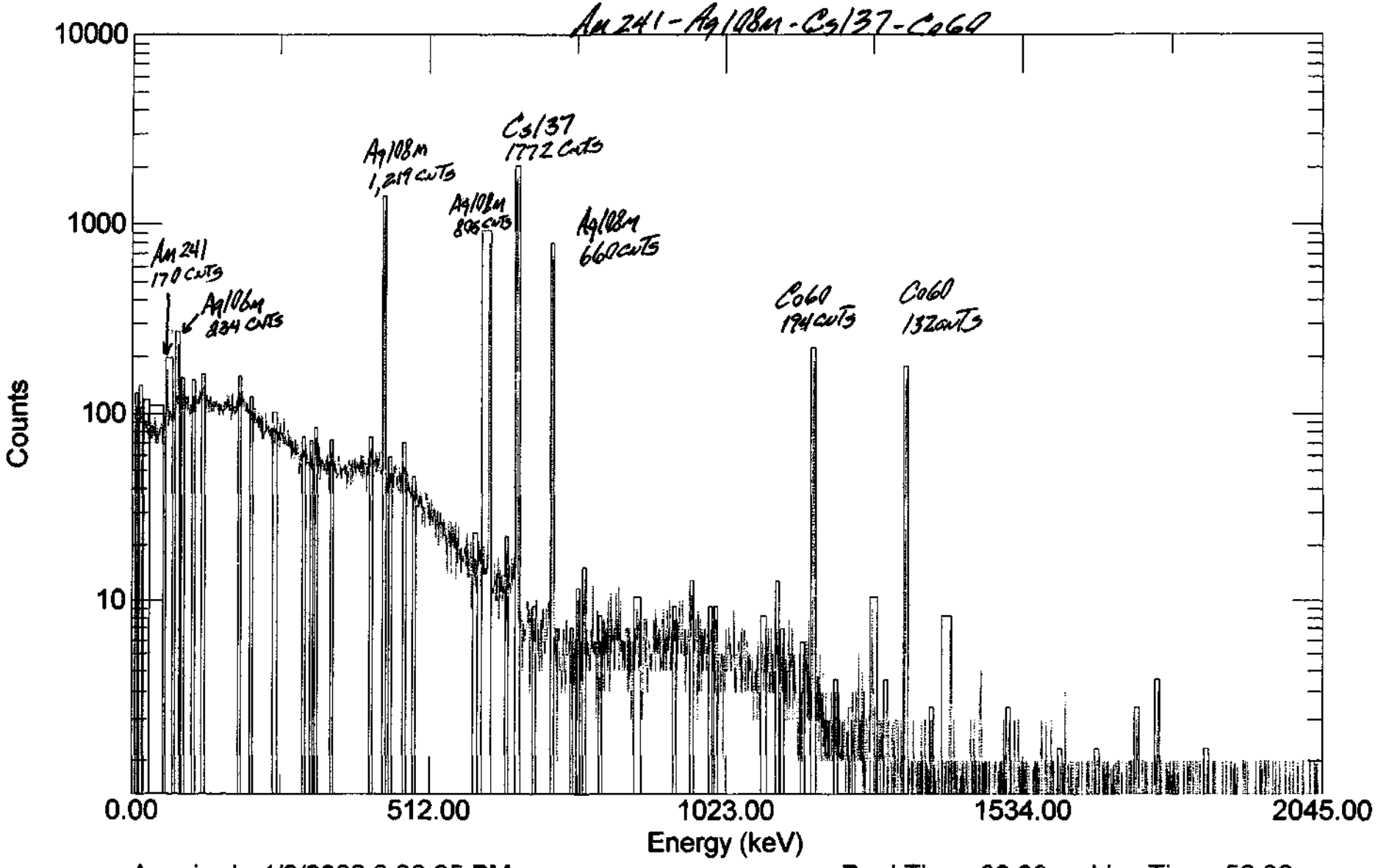
Info on source:	BAG OF Debris				

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					


125
RIAL

019 ITEM105 4-2-2002 2.36.25 PM

ITEM105



Acquired: 4/2/2002 2:36:25 PM Real Time: 60.00 s. Live Time: 52.32 s.

File: C:\User\GNIWEB~1\019 ITEM105 4-2-2002 2.36.25 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4.2.02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

ITEMS

Container #	106	107	108	109	110
External on pig in mR/hr	30	100	35	0.5	BKG
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	30	100	35	0.5	BKG
Beta on open pig mR/hr O/W	18	160	35	0.5	BKG

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	5	14	8	.2	BKG
Source mR/hr @ 12 inches	1.5	6	4	BKG	BKG
Source mR/hr @ 36 inches	0.5	2	0.5	BKG	BKG
Size of source in cc's	30	400	3 cf³	3 cf³	.5 cf³
Weight in grams	211g	50g	40lb	12lbs	4lbs

CPM Alpha			—	—	[redacted]
Direct Beta/Gamma	800960	344251	—	—	500

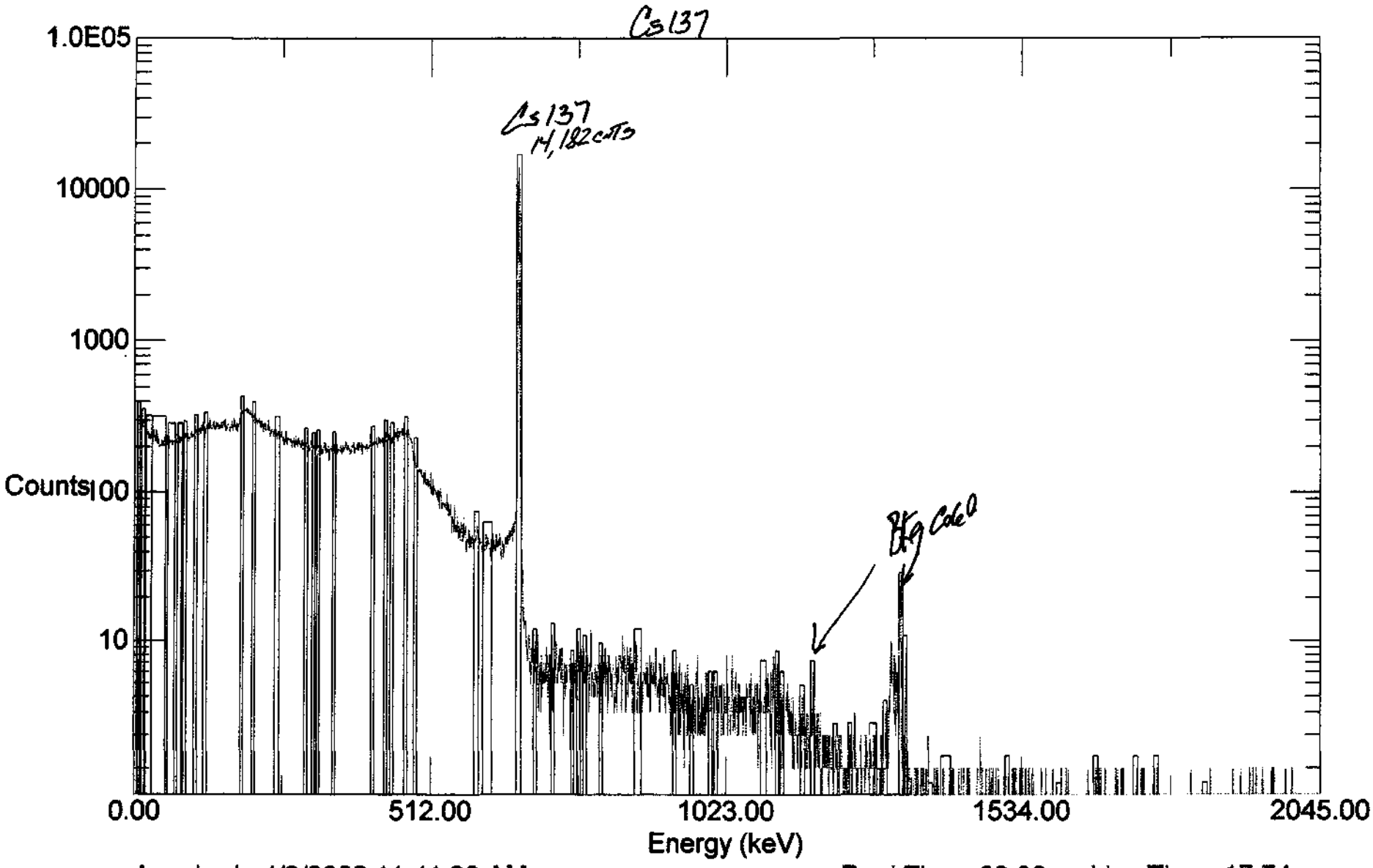
Info on source:	SOCKET EXTENTION CONVERTED W/BRASS TIP	GLASS BEAKER FROM BLDG 2 RM 1 CELL	BAG OF TRASH	BAG TRASH PPE, PLASTIC	EMPTY WOOD SOURCE TO BOX

Information on pig:					
Smear DPM per 100 cm^2 Alpha	[redacted]				200000
Smear DPM per 100 cm^2 Beta					—

106
2

030 ITEM106 4-3-2002 11.41.21 AM

ITEM106



Acquired: 4/3/2002 11:41:22 AM Real Time: 60.00 s. Live Time: 17.74 s.

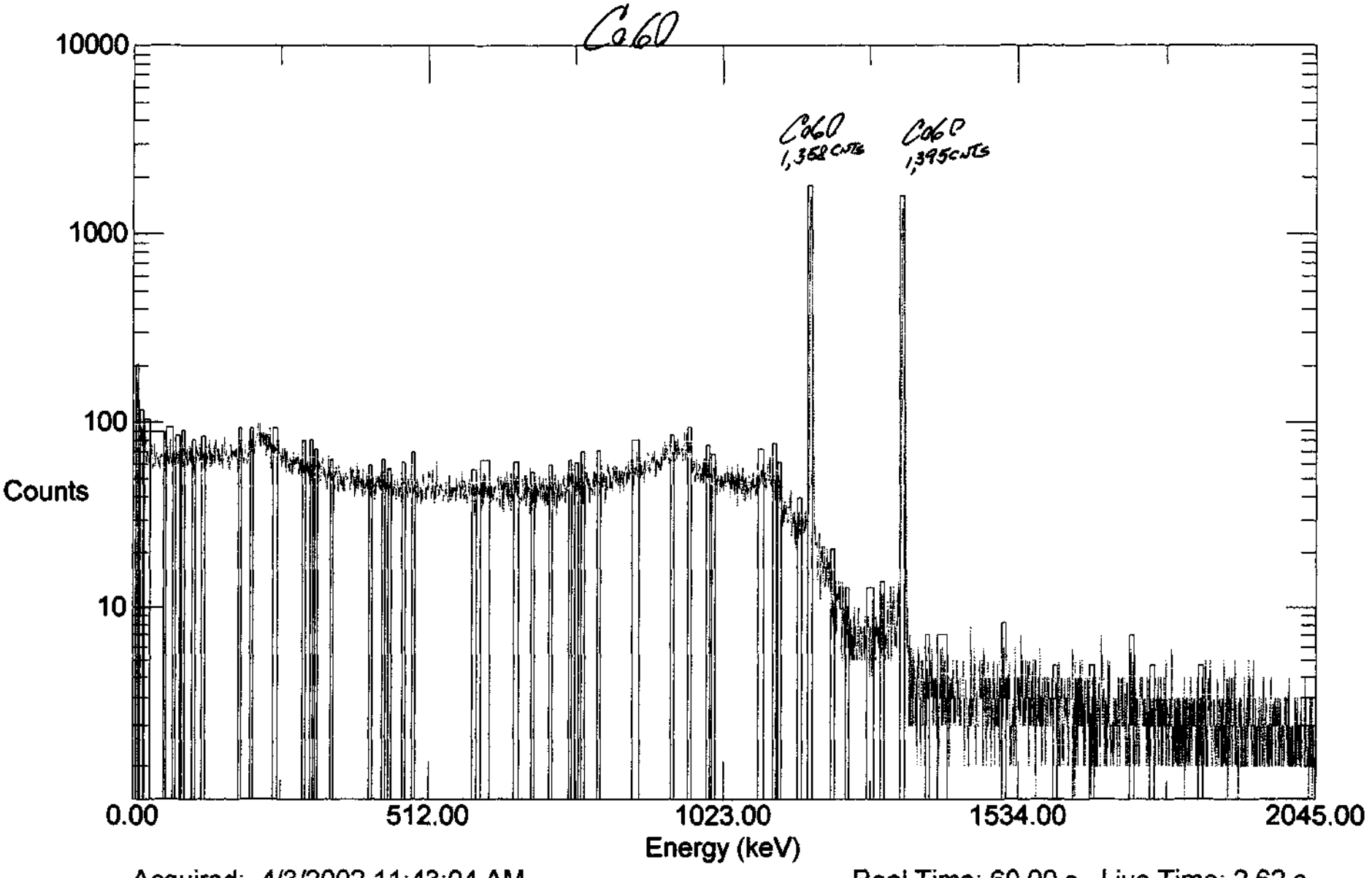
File: C:\User\GNIWEB~1\030 ITEM106 4-3-2002 11.41.21 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

400
10

031 ITEM107 4-3-2002 11.43.03 AM

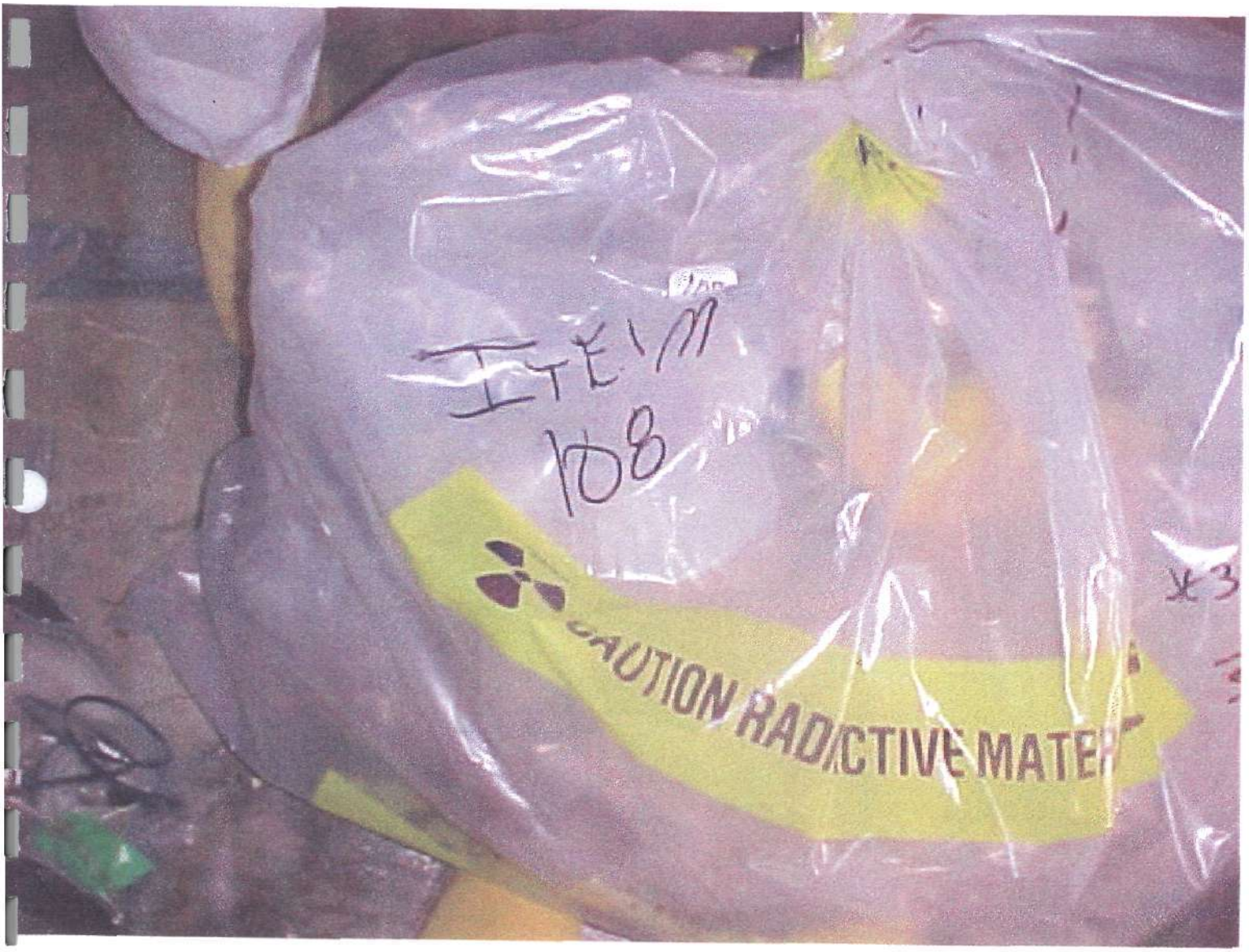
ITEM107



Acquired: 4/3/2002 11:43:04 AM Real Time: 60.00 s. Live Time: 2.62 s.

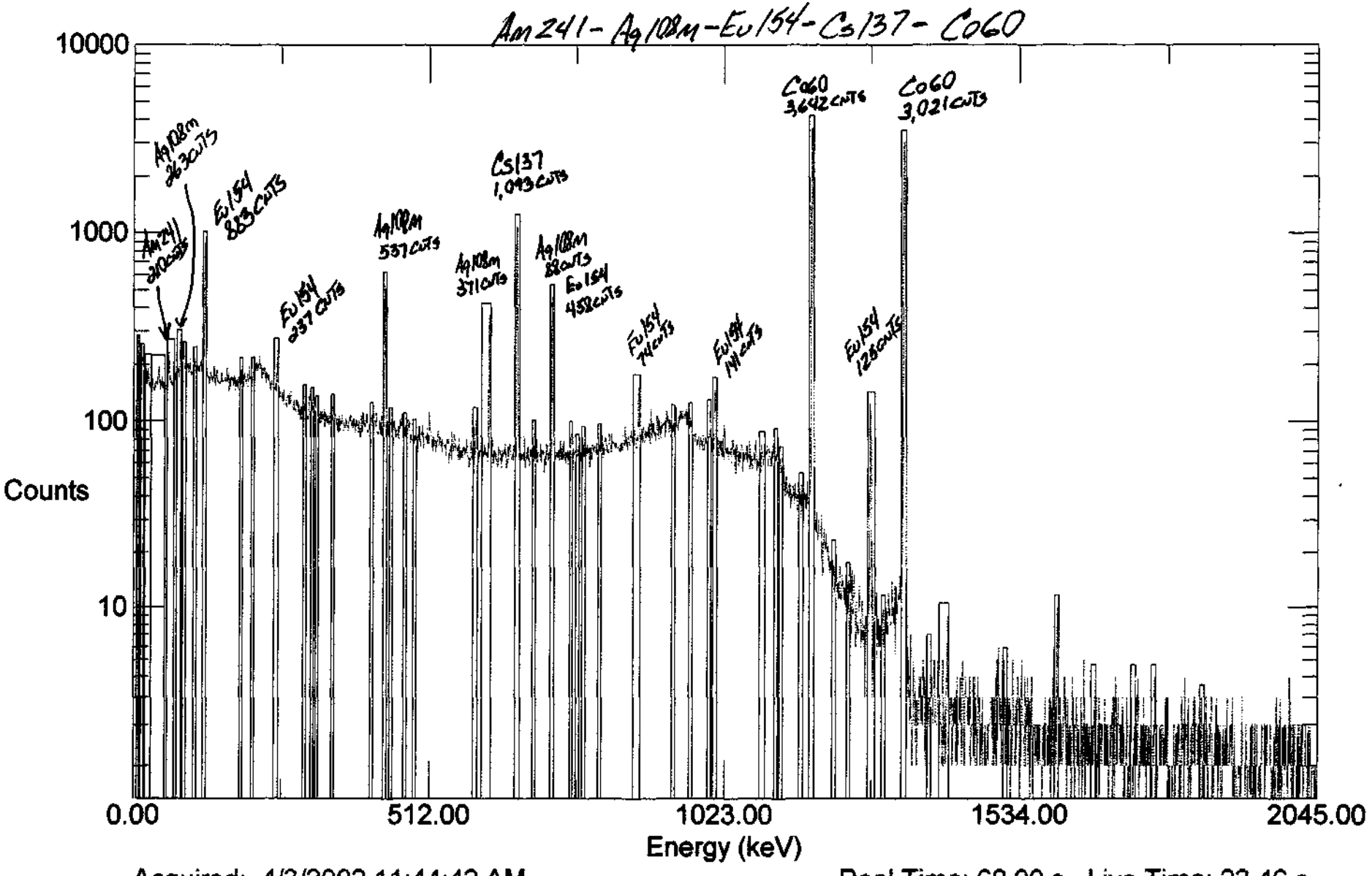
File: C:\User\GNIWEB~1\031 ITEM107 4-3-2002 11.43.03 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

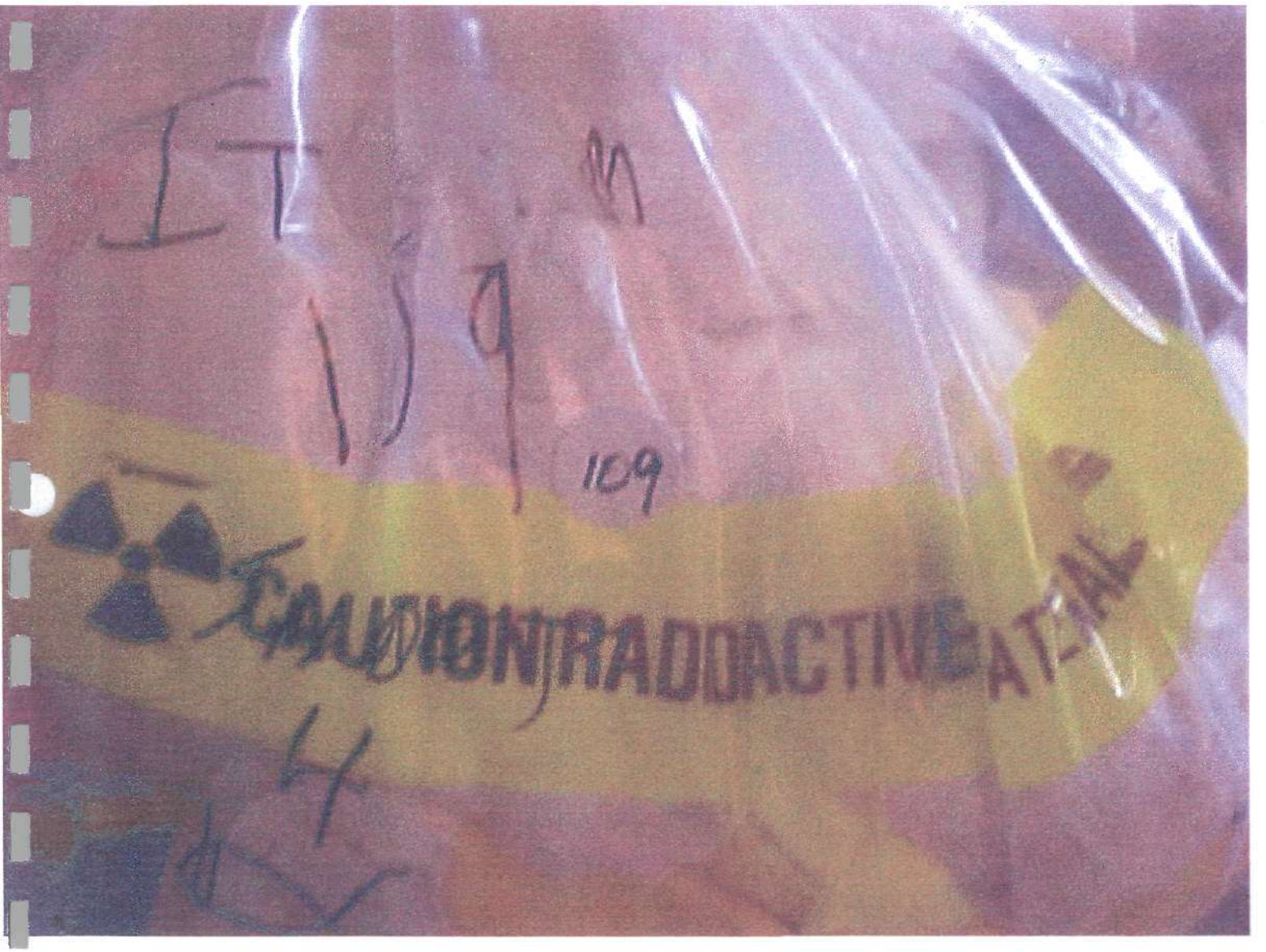

ITEM
108
CAUTION RADIOACTIVE MATER

032 ITEM108 4-3-2002 11.44.42 AM

ITEM108

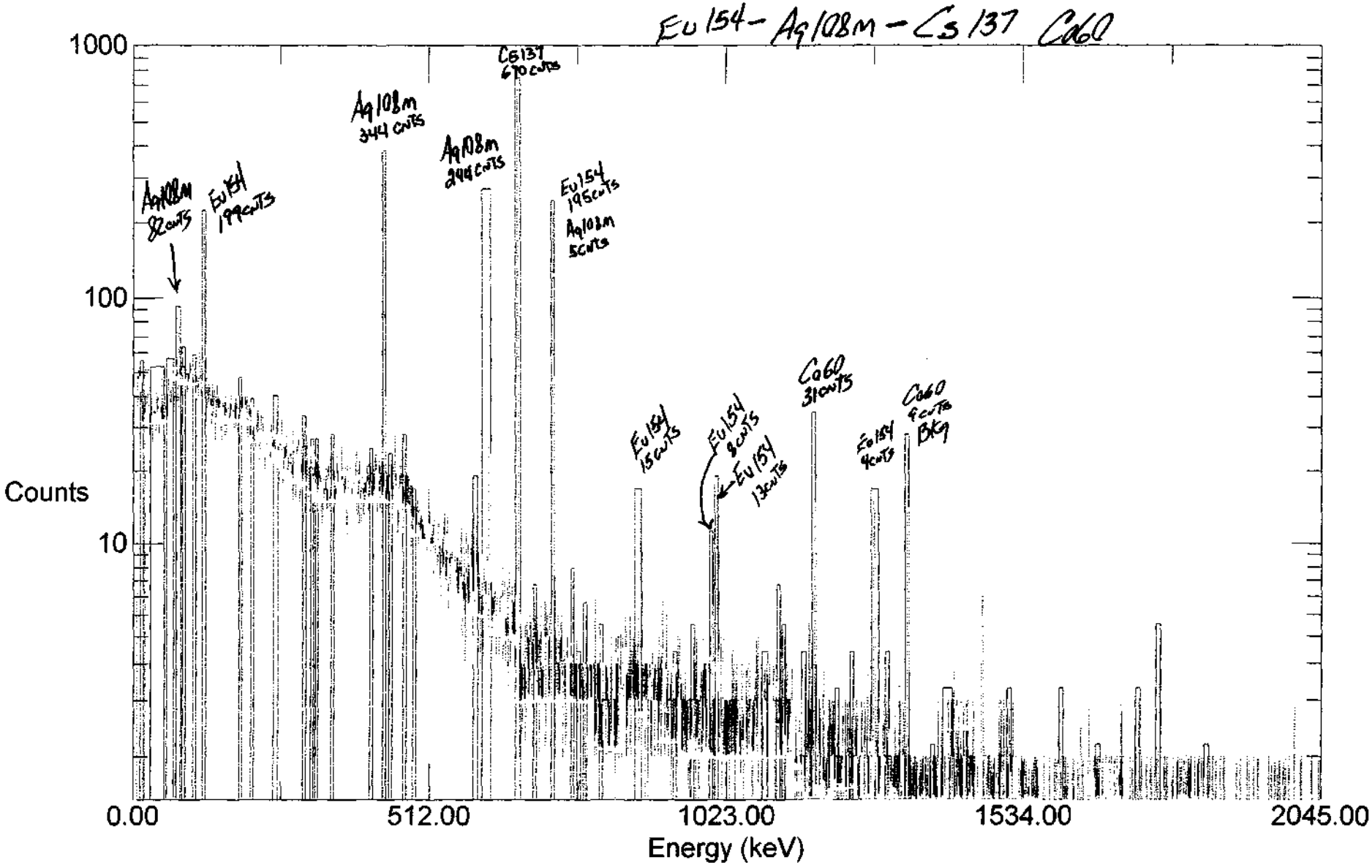


Acquired: 4/3/2002 11:44:42 AM Real Time: 60.00 s. Live Time: 23.46 s.
File: C:\User\GNIWEB~1\032 ITEM108 4-3-2002 11.44.42 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


IT
159
109
CAUTION RADIOACTIVE MATERIAL
4

033 ITEM109 4-3-2002 11.46.16 AM

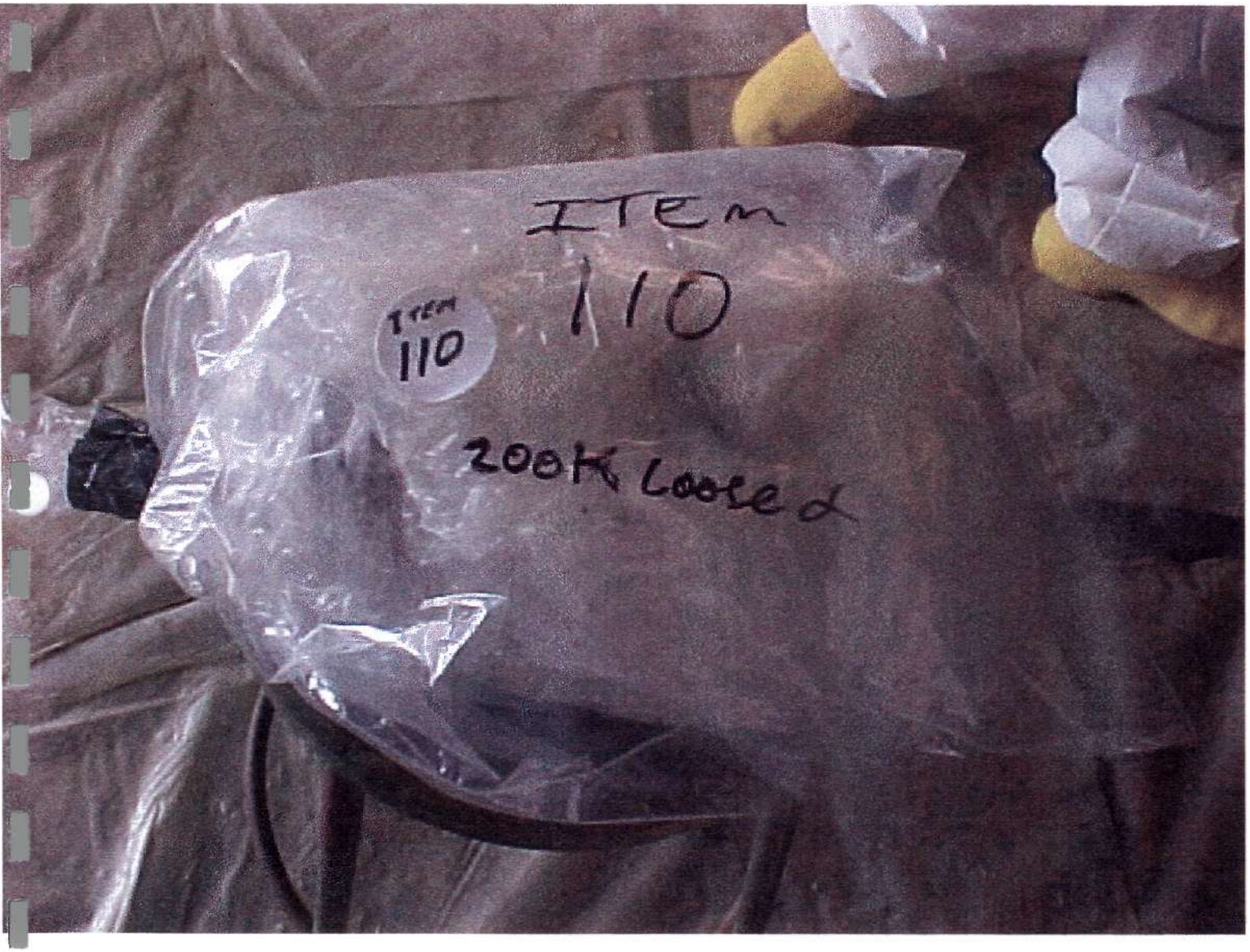
ITEM109



Acquired: 4/3/2002 11:46:16 AM Real Time: 60.00 s. Live Time: 57.46 s.

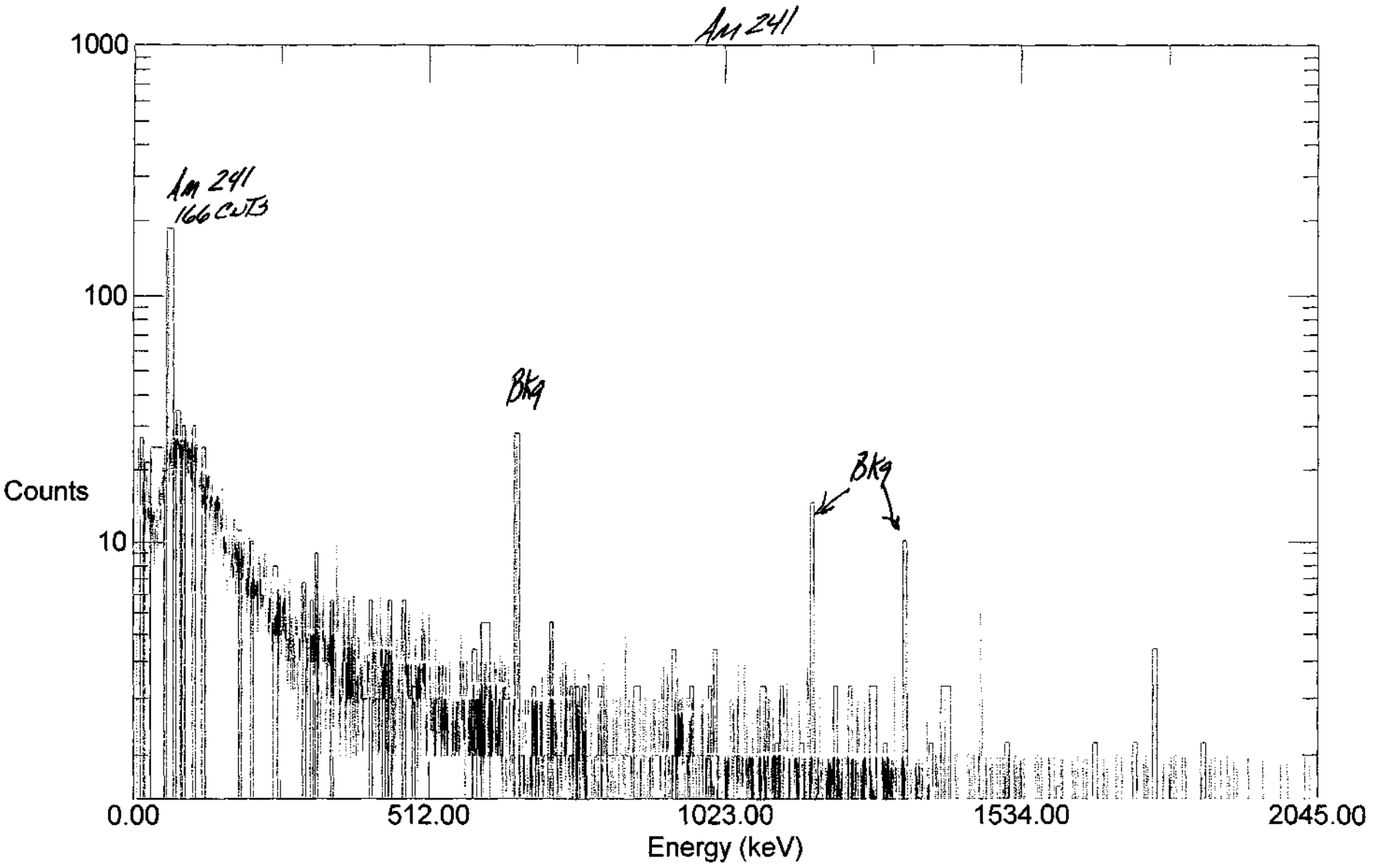
File: C:\User\GNIWEB~1\033 ITEM109 4-3-2002 11.46.16 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


ITEM
110
ITEM
110
200K Loose

034 ITEM110 4-3-2002 11.48.15 AM

ITEM110



Acquired: 4/3/2002 11:48:15 AM Real Time: 60.00 s. Live Time: 59.32 s.

File: C:\User\GNIWEB~1\034 ITEM110 4-3-2002 11.48.15 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM'S

USEcology
FS-TX-02-01
Source Log

Date 5-19-02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

Container #	111	112	113	114	115
[redacted]					
[redacted]					
Contact [redacted] mR/hr	50	17	74	200	1
[redacted]					

Picture	✓	✓	✓	✓	
DART	✓	✓	✓	✓	

Table Readings

Source mR/hr @ 6 inchs	7	1	4	12	0.2
Source mR/hr @ 12 inches	2.3	0.3	1.0	3	0.3
Source mR/hr @ 36 inches	0.8	0.2	0.4	0.9	0.3
Size of source in cc's	1 GAL	300	7 FT³	1 QT	2000
Weight in grams	4 LBS	5 LBS	30 LBS	1 LB	

[redacted]					
[redacted]					

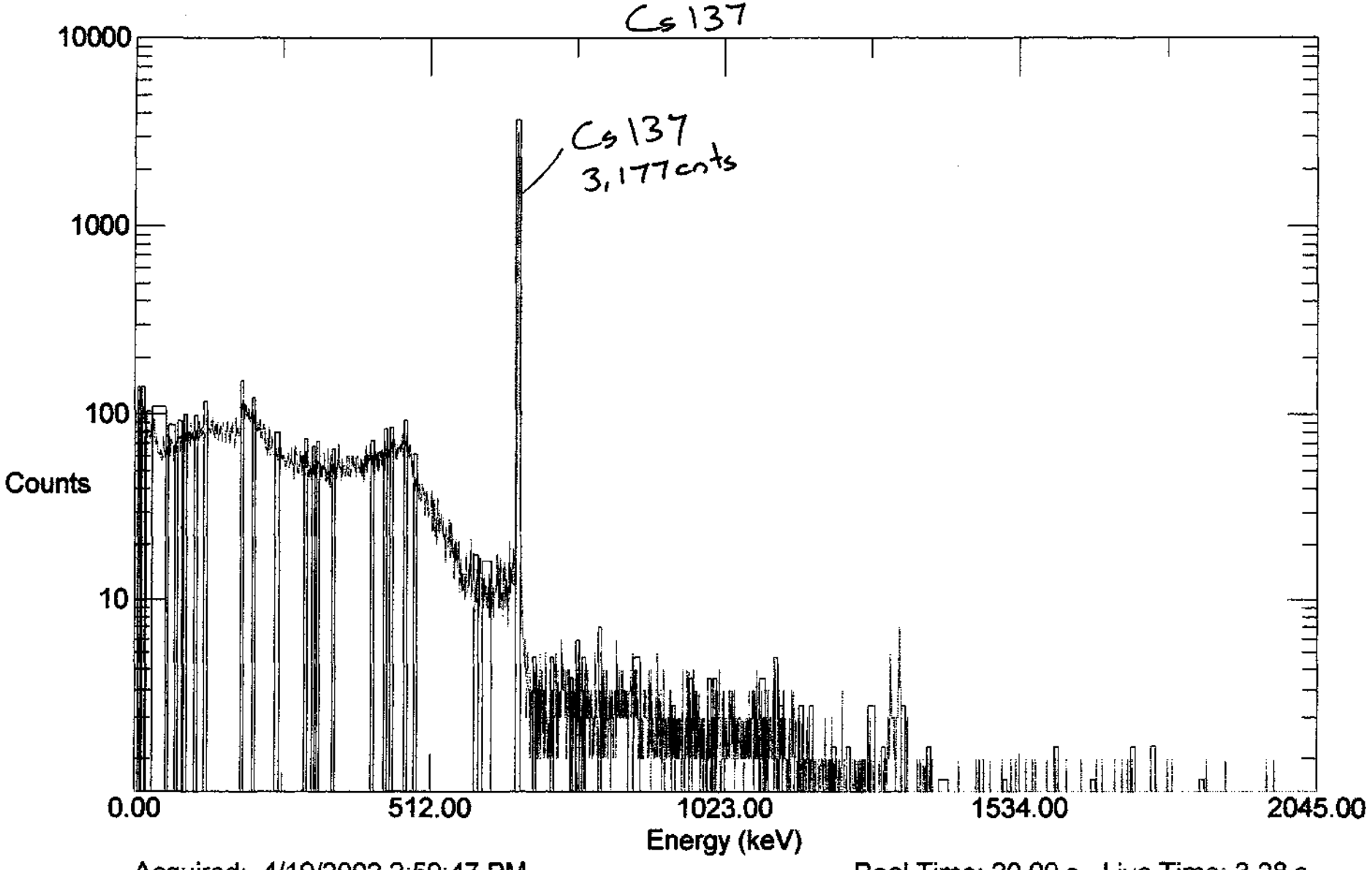
Info on source					

[redacted]					
[redacted]					
[redacted]					

HE

002 ITEM111 4-19-2002 2.59.47 PM

ITEM111

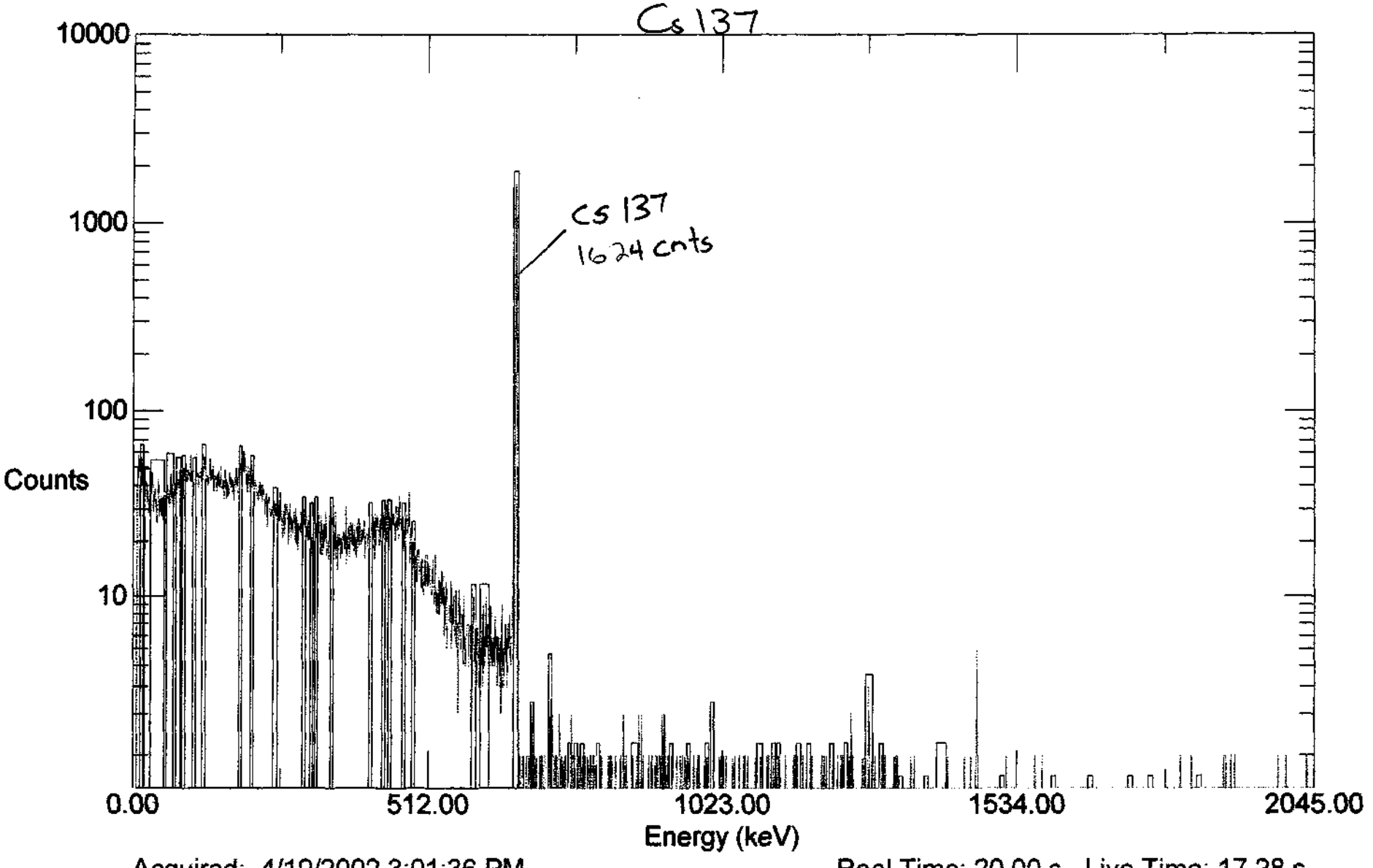


Acquired: 4/19/2002 2:59:47 PM Real Time: 20.00 s. Live Time: 3.28 s.
File: C:\User\GNIWEB~1\002 ITEM111 4-19-2002 2.59.47 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

H
112

003 ITEM112 4-19-2002 3.01.36 PM

ITEM112



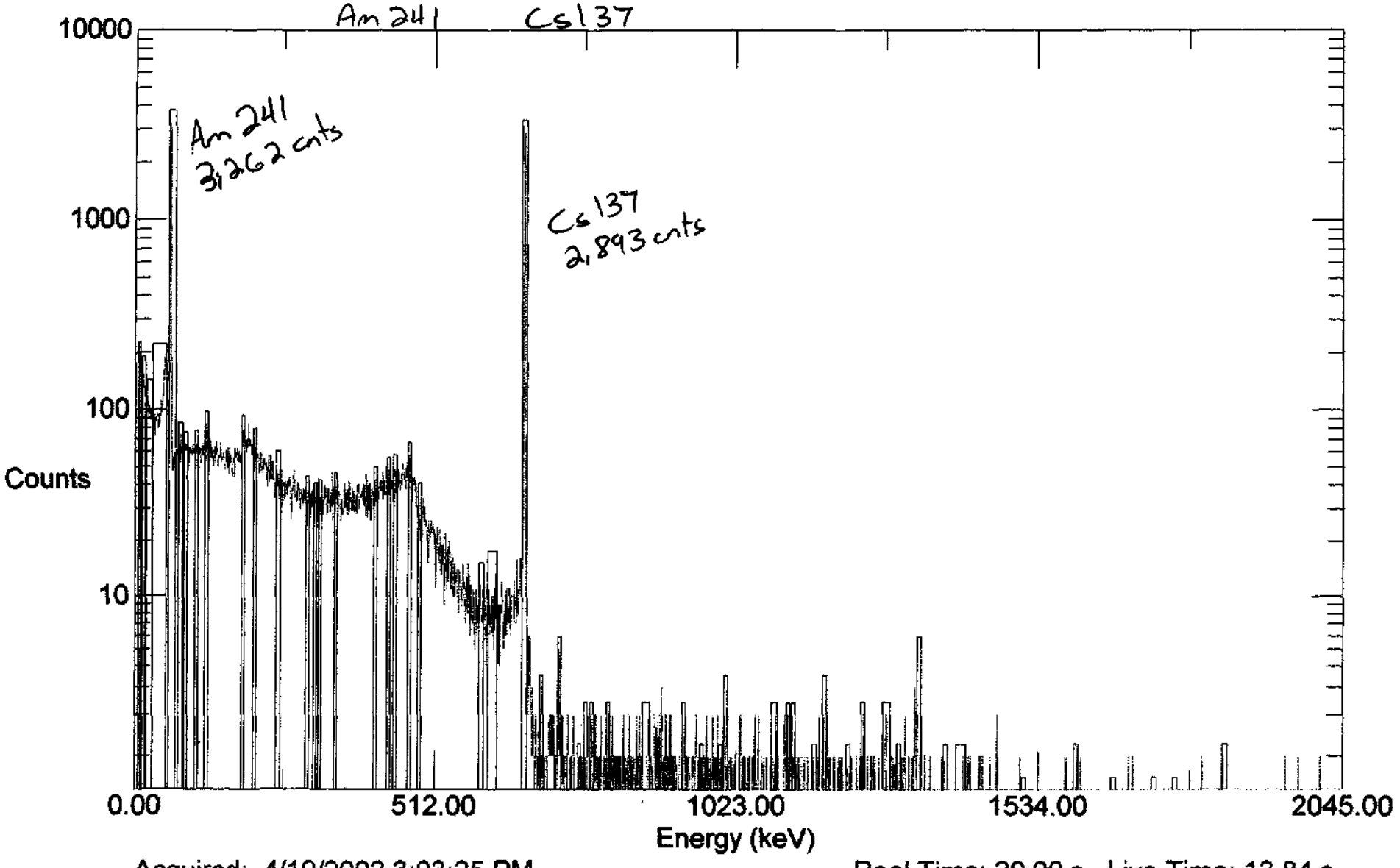
Acquired: 4/19/2002 3:01:36 PM Real Time: 20.00 s. Live Time: 17.28 s.

File: C:\User\GNIWEB~1\003 ITEM112 4-19-2002 3.01.36 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

004 ITEM113 4-19-2002 3.03.25 PM

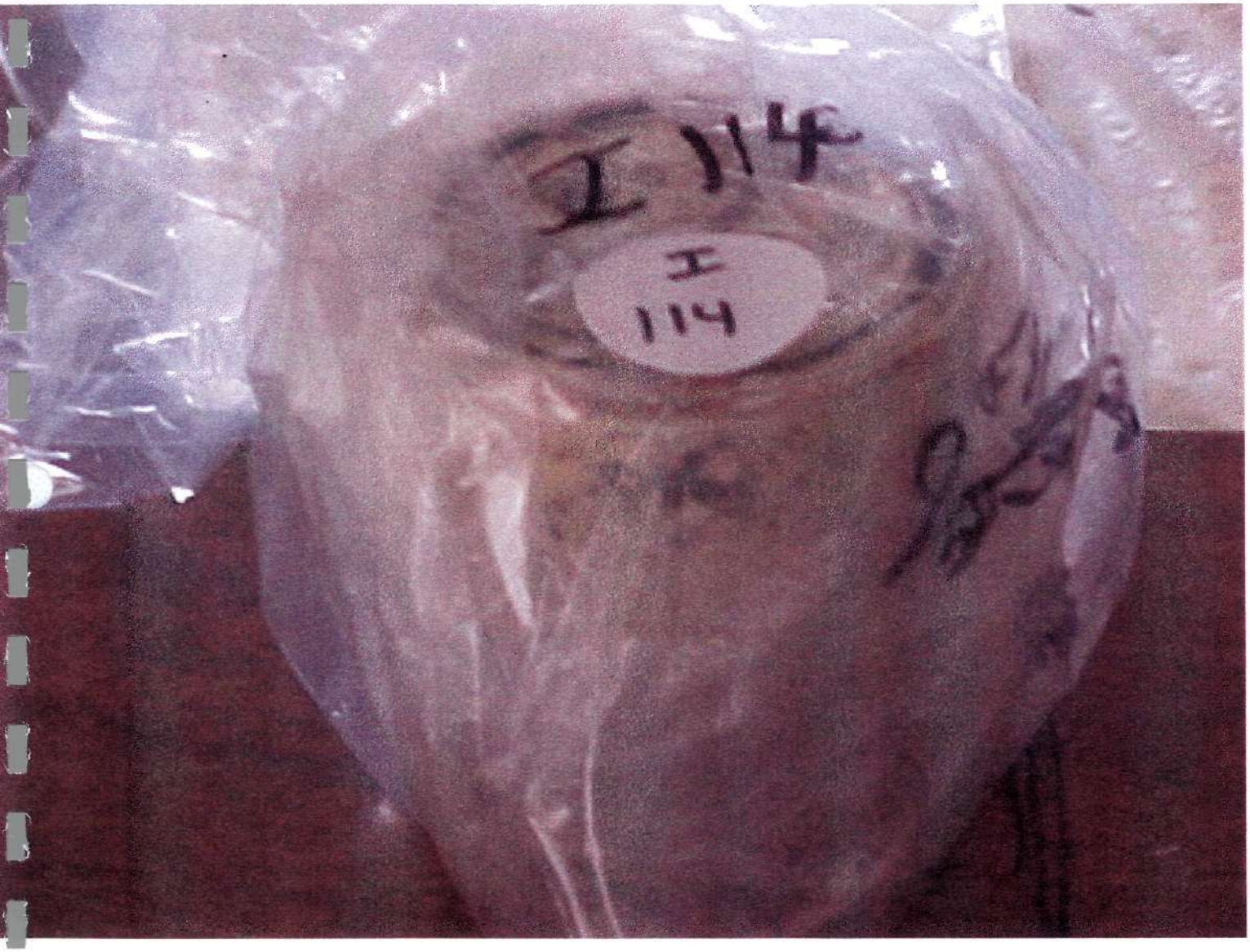
ITEM113



Acquired: 4/19/2002 3:03:25 PM Real Time: 20.00 s. Live Time: 13.84 s.

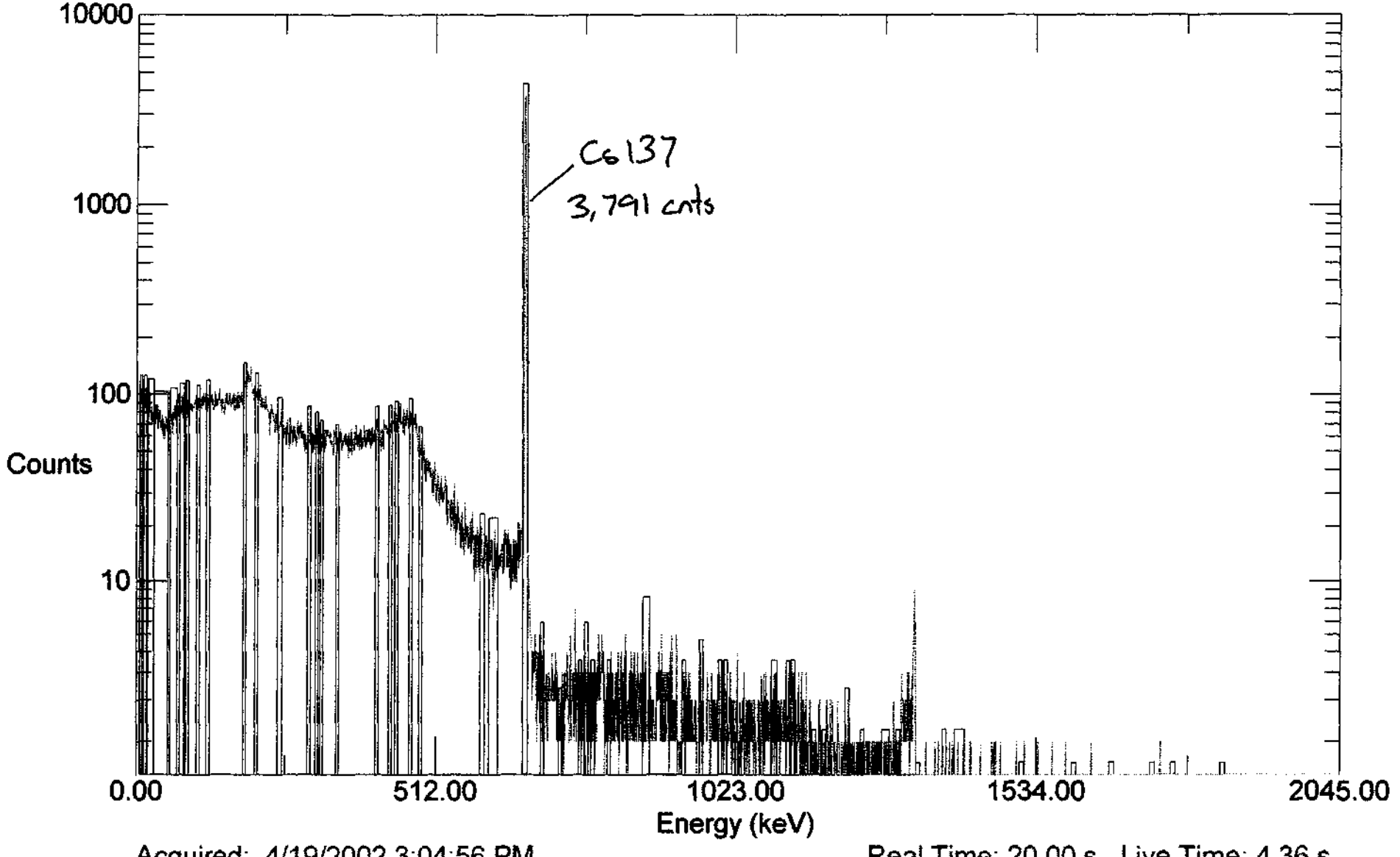
File: C:\User\GNIWEB~1\004 ITEM113 4-19-2002 3.03.25 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I 114
I
114

005 ITEM114 4-19-2002 3.04.56 PM

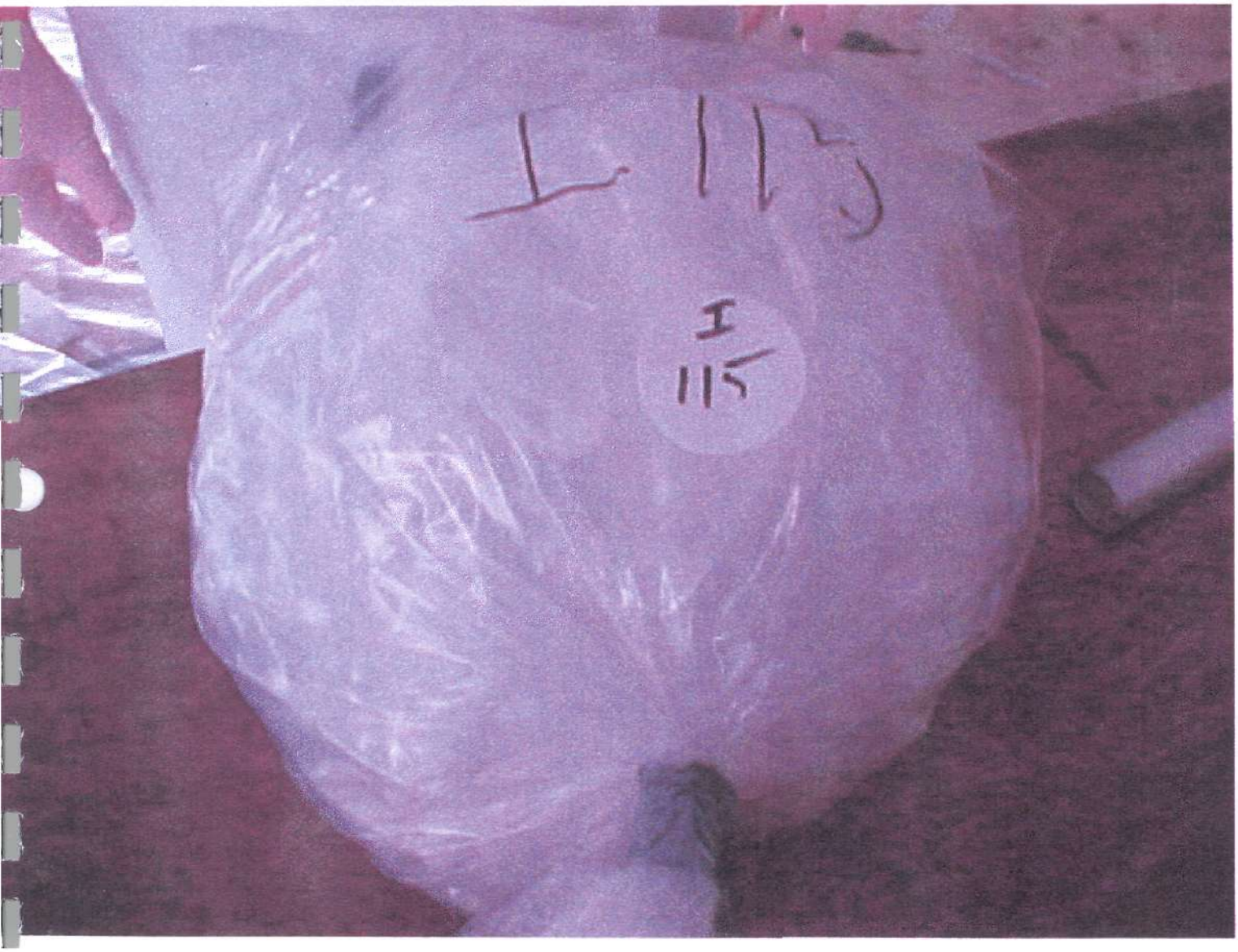
ITEM114



Acquired: 4/19/2002 3:04:56 PM Real Time: 20.00 s. Live Time: 4.36 s.

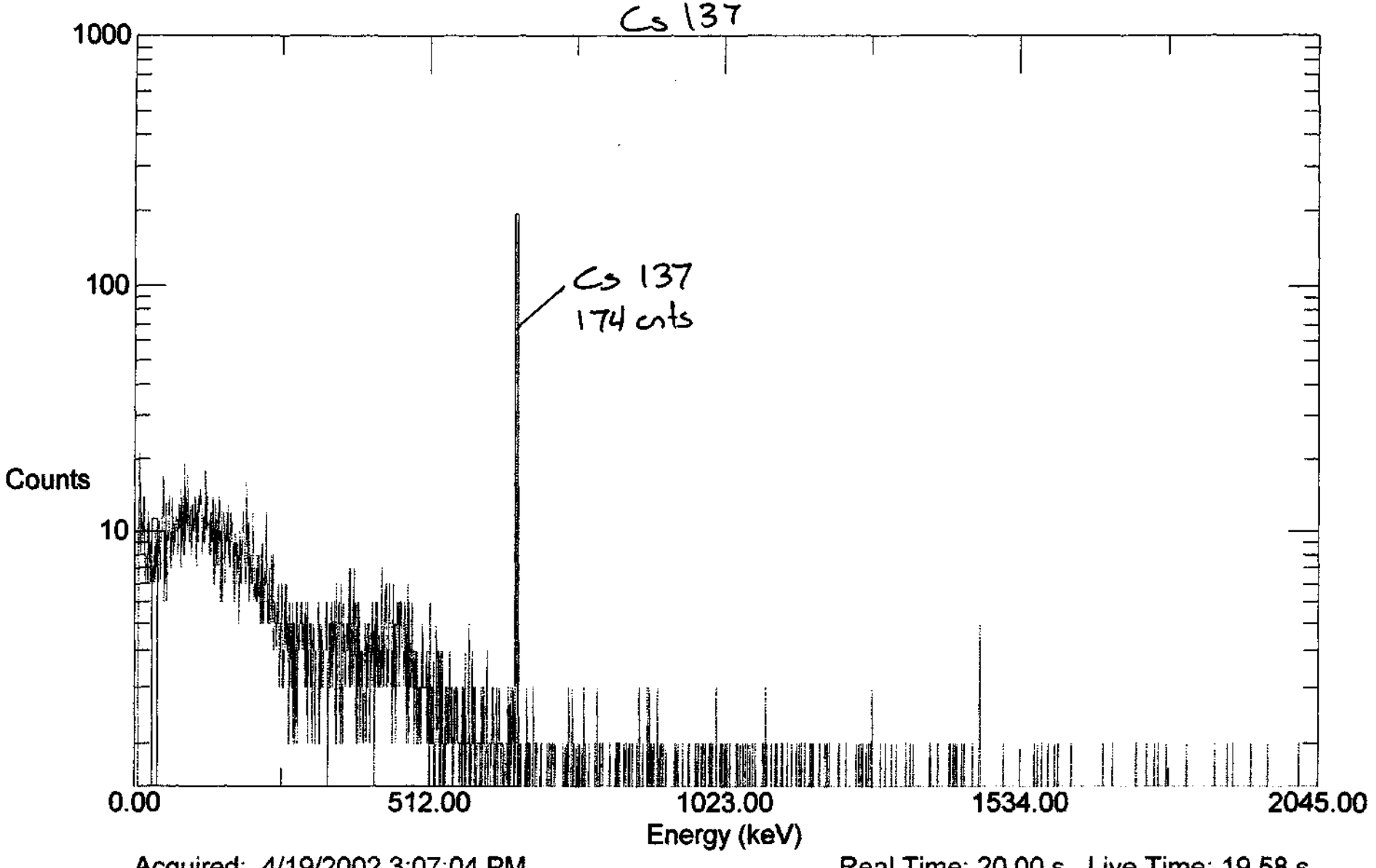
File: C:\User\GNIWEB~1\005 ITEM114 4-19-2002 3.04.56 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


上 113
I
115

006 ITEM115 4-19-2002 3.07.05 PM

ITEM115



Acquired: 4/19/2002 3:07:04 PM Real Time: 20.00 s. Live Time: 19.58 s.
File: C:\User\GNIWEB~1\006 ITEM115 4-19-2002 3.07.05 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 4-19-03

BKG	mR/hr
6"	0.3
12"	0.3
36"	0.3

Container #	116	117	118	119	120
[redacted]					
[redacted]					
Contact [redacted] mR/hr	110	1400	5	3	8
[redacted]					

Picture					
DART					

Table Readings

Source mR/hr @ 6 inches	12	50	0.4	0.4	1.0
Source mR/hr @ 12 inches	5	18	0.4	0.3	[redacted] 0.4
Source mR/hr @ 36 inches	2.3	7	0.5	0.3	0.6
Size of source in cc's	46AL	26AL	5M3	36AL	6CF3 — Fi
Weight in grams	10LBS	5LBS	20LBS	30LBS	40

[redacted]					
[redacted]					

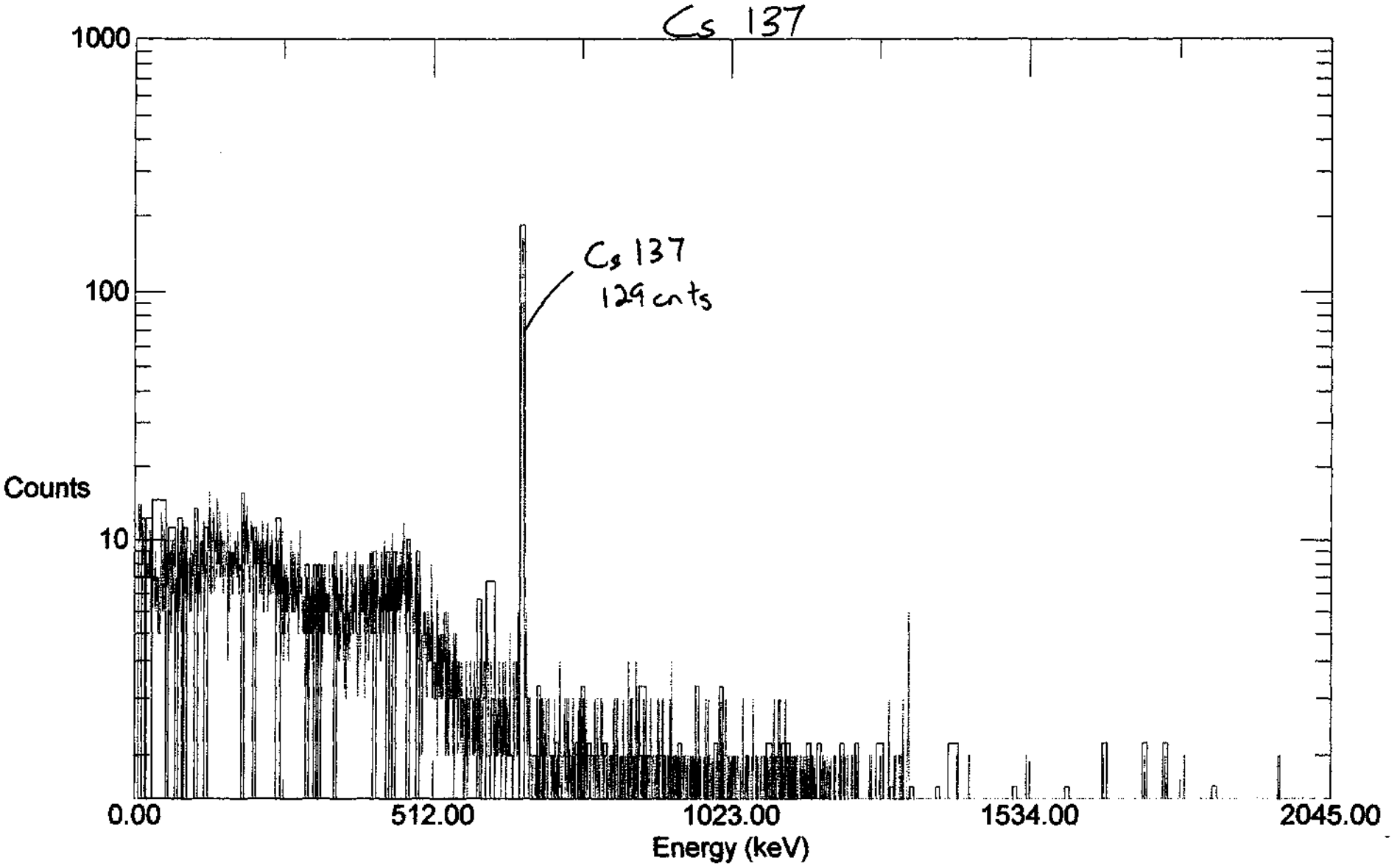
Info [redacted]					
				110 mR/hr OW	

[redacted]					
[redacted]					
[redacted]					

911
E

007 ITEM116 4-19-2002 3.11.57 PM

ITEM116



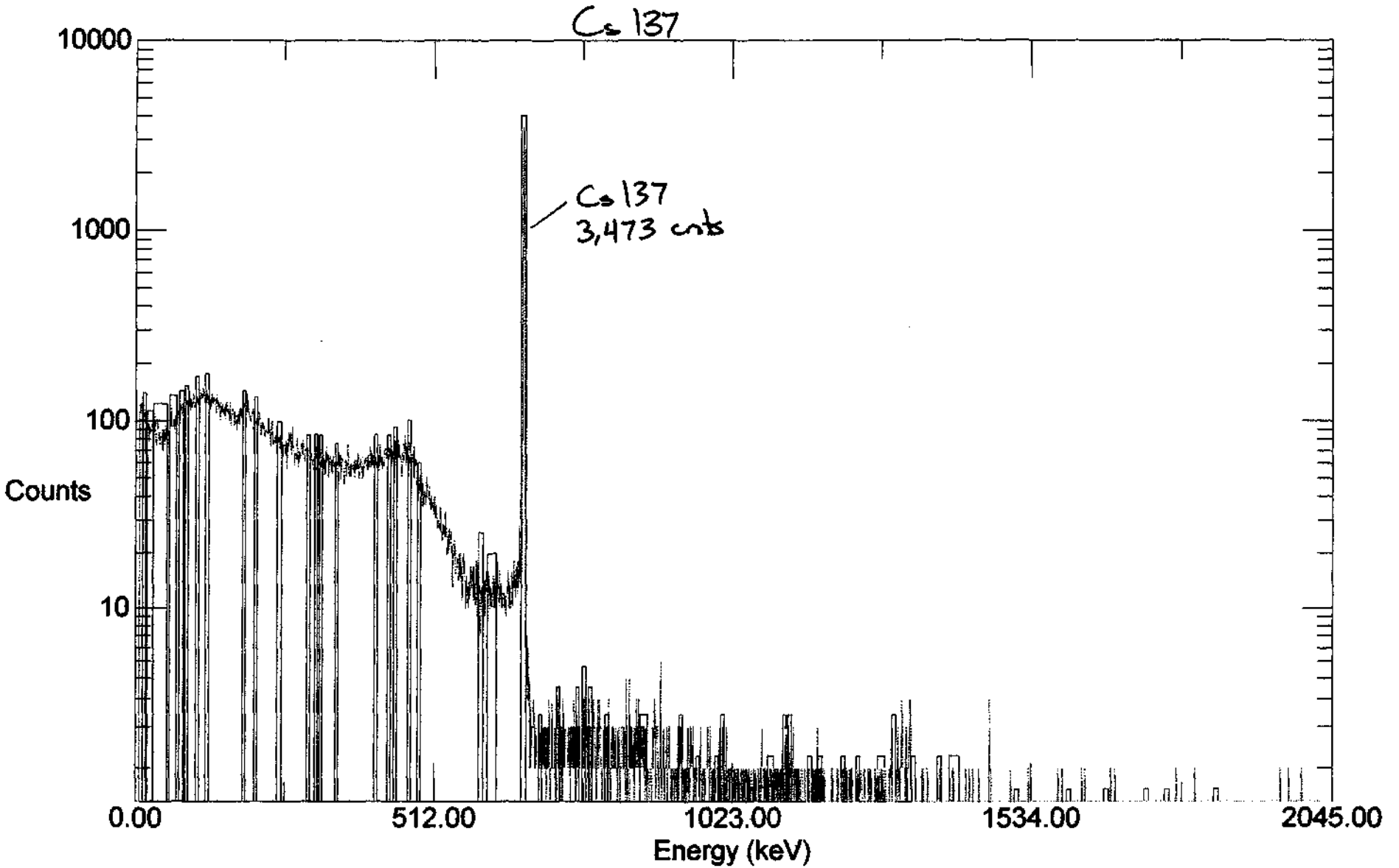
Acquired: 4/19/2002 3:11:57 PM Real Time: 20.00 s. Live Time: 0.00 s.

File: C:\User\GNIWEB~1\007 ITEM116 4-19-2002 3.11.57 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

008 ITEM117 4-19-2002 3.16.57 PM

ITEM117



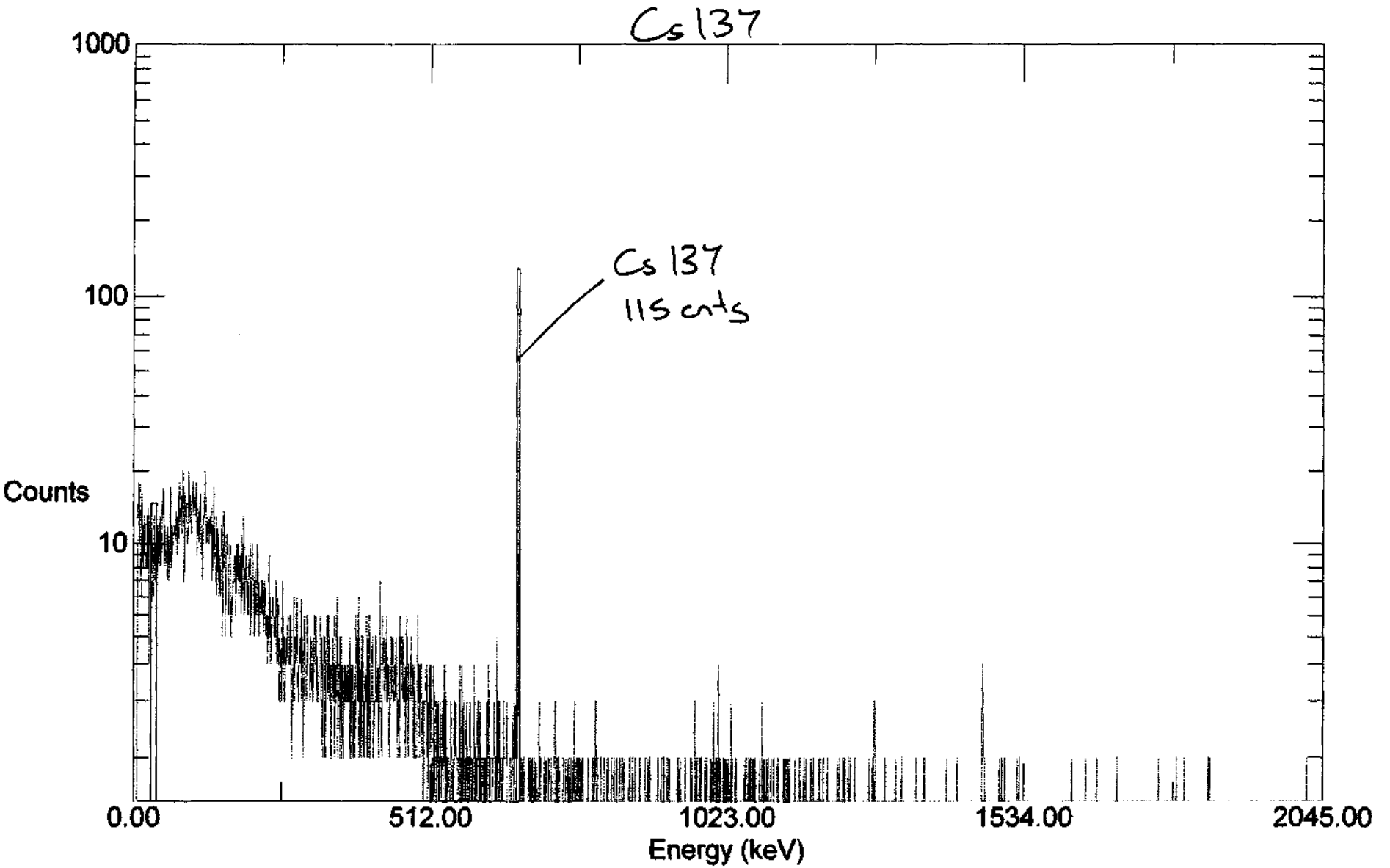
Acquired: 4/19/2002 3:16:57 PM Real Time: 20.00 s. Live Time: 9.16 s.
File: C:\User\GNIWEB~1\008 ITEM117 4-19-2002 3.16.57 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

I
118

I 118

009 ITEM118 4-19-2002 3.19.14 PM

ITEM118

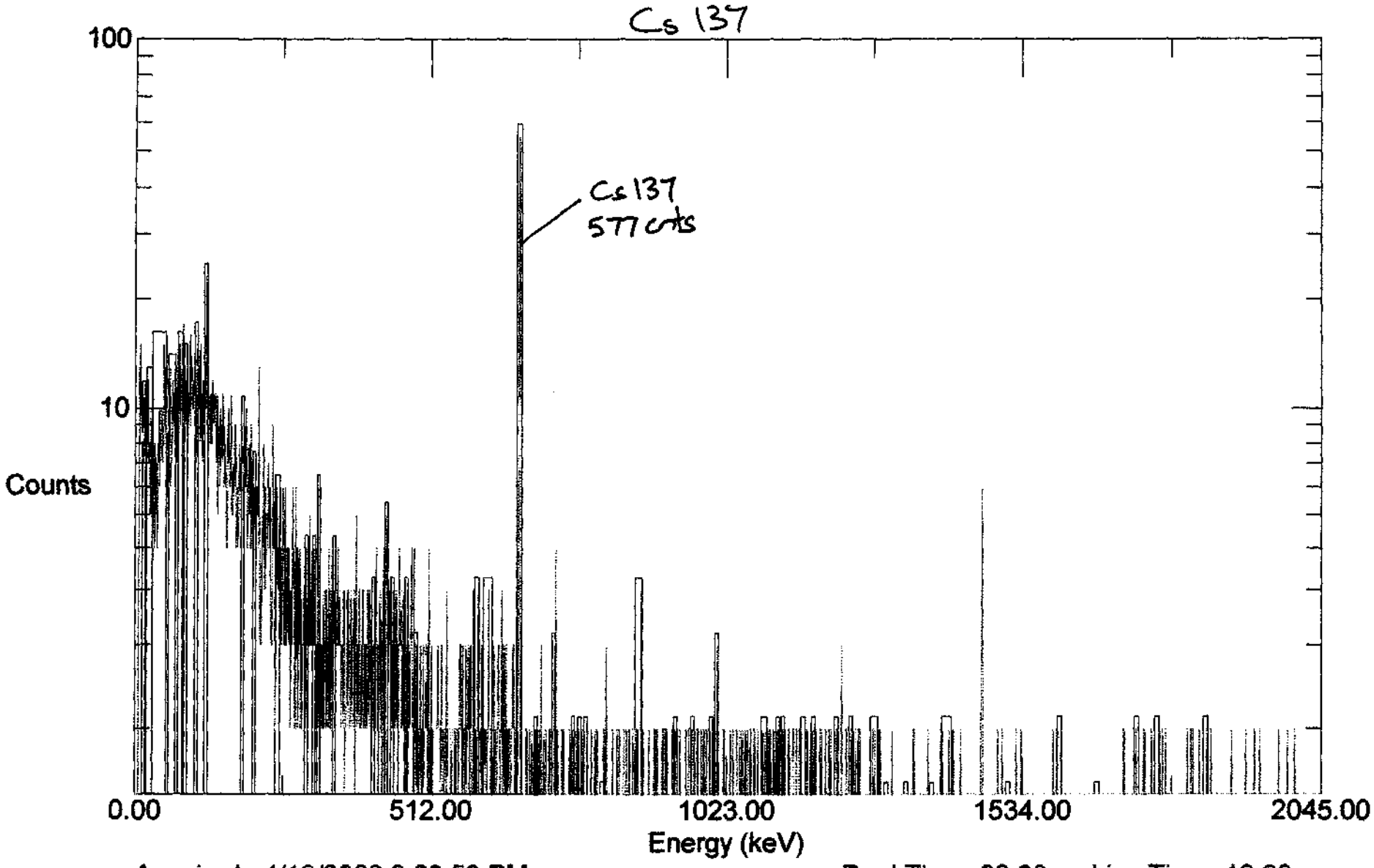


Acquired: 4/19/2002 3:19:14 PM Real Time: 20.00 s. Live Time: 19.58 s.
File: C:\User\GNIWEB~1\009 ITEM118 4-19-2002 3.19.14 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

119

010 ITEM119 4-19-2002 3.20.53 PM

ITEM119

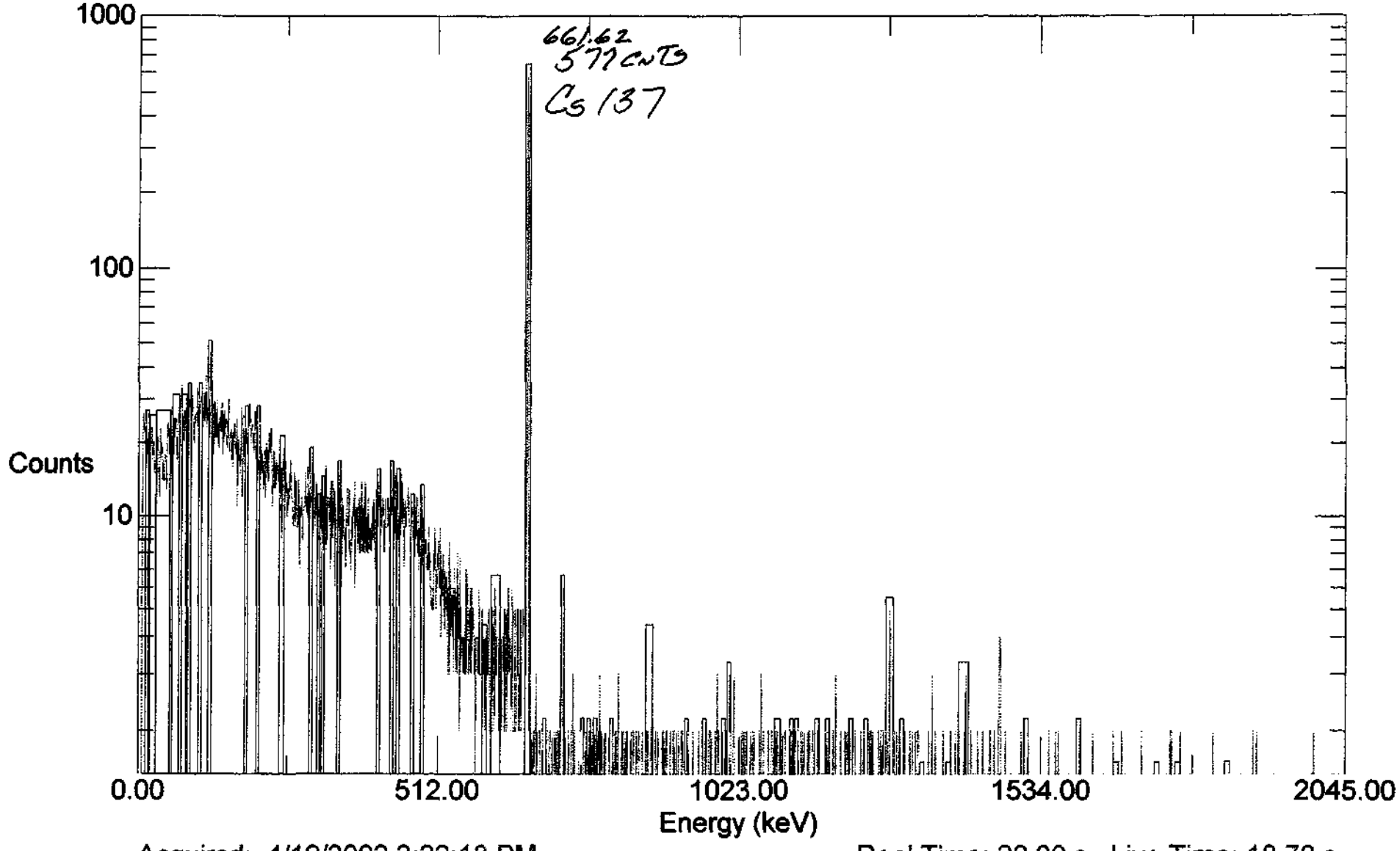


Acquired: 4/19/2002 3:20:53 PM Real Time: 20.00 s. Live Time: 19.66 s.
File: C:\User\GNIWEB~1\010 ITEM119 4-19-2002 3.20.53 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

I
120

011 ITEM120 4-19-2002 3.22.18 PM

ITEM120



Acquired: 4/19/2002 3:22:18 PM Real Time: 20.00 s. Live Time: 18.78 s.
File: C:\User\GNIWEB~1\GNISOU~1\011 ITEM120 4-19-2002 3.22.18 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 4-19-03

BKG	mR/hr
6"	0.4
12"	0.4
36"	0.6

Container #	121	122	123	124	125
[redacted]					
[redacted]					
Contact [redacted] mR/hr	15	5	100	10	BKG
[redacted]					

Picture					
DAKT	/	/	/	/	/

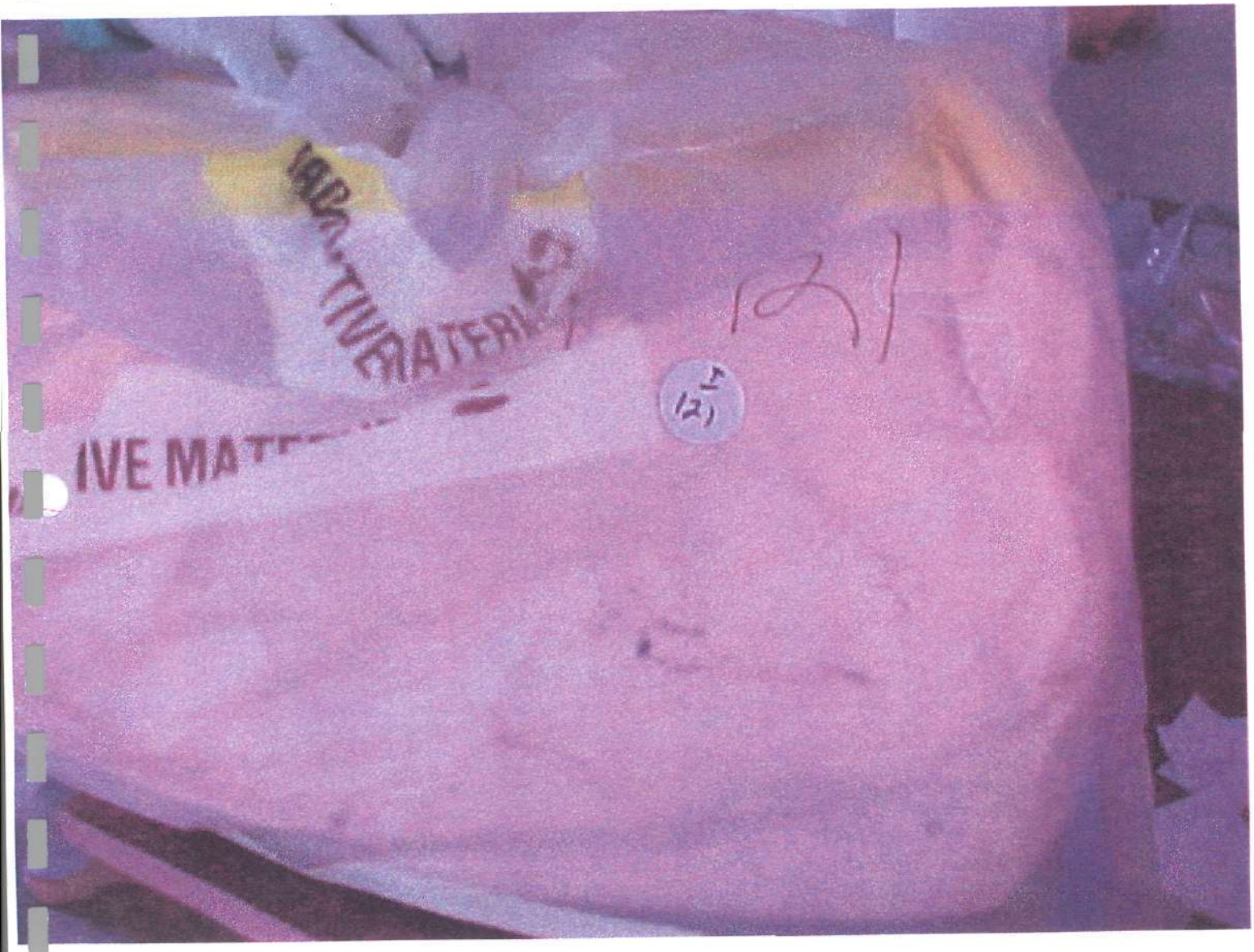
Table Readings

Source mR/hr @ 6 inchs	1.4	0.5	3.0	0.6	BKG
Source mR/hr @ 12 inches	1	0.5	1.8	1.3	BKG
Source mR/hr @ 36 inches	1.0	0.6	1.8	1.3	BKG
Size of source in cc's	6 FT³	4 FT³	6 FT³	1 FT³	1 FT³
Weight in grams	25 LBS	30 LBS	20 LBS	5 LB	8 OZ

[redacted]					
[redacted]					

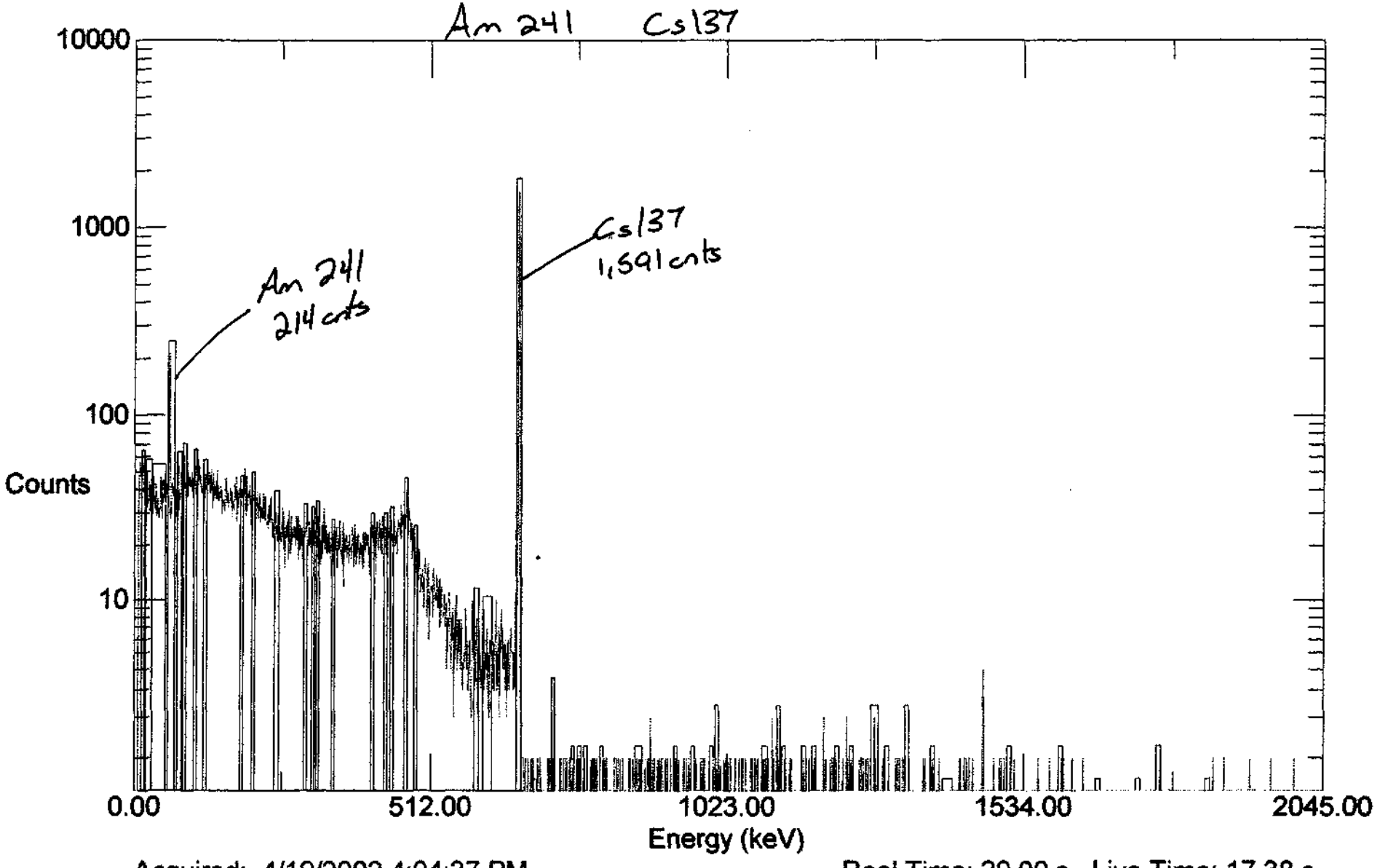
[redacted]	25 OPW	10 OW			

[redacted]					
[redacted]					
[redacted]					


IVE MA
TIVE MATERIAL
121

001 ITEM121 4-19-2002 4.04.37 PM

ITEM121



Acquired: 4/19/2002 4:04:37 PM Real Time: 20.00 s. Live Time: 17.38 s.

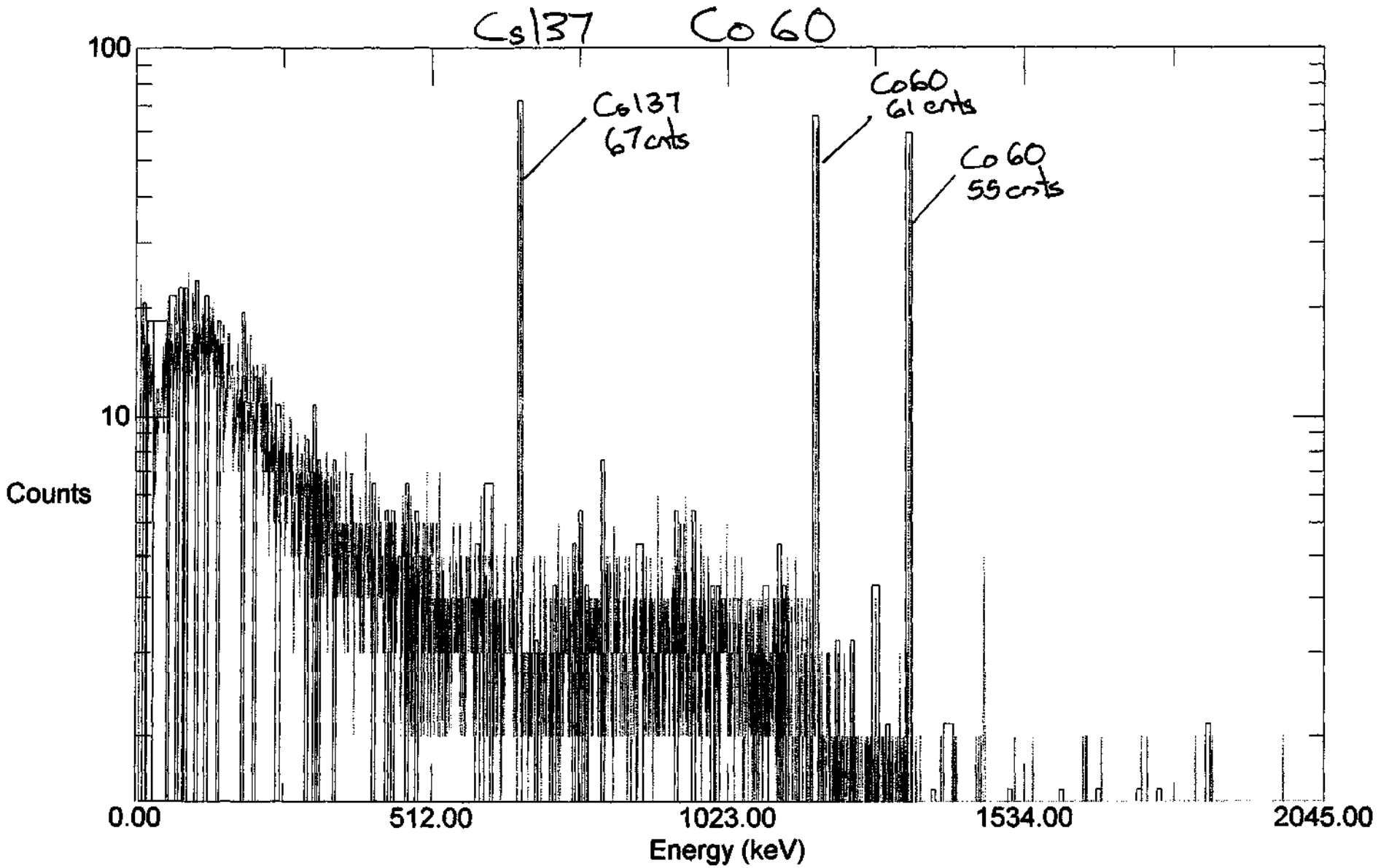
File: C:\User\GNIWEB~1\001 ITEM121 4-19-2002 4.04.37 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

122

002 ITEM122 4-19-2002 4.06.31 PM

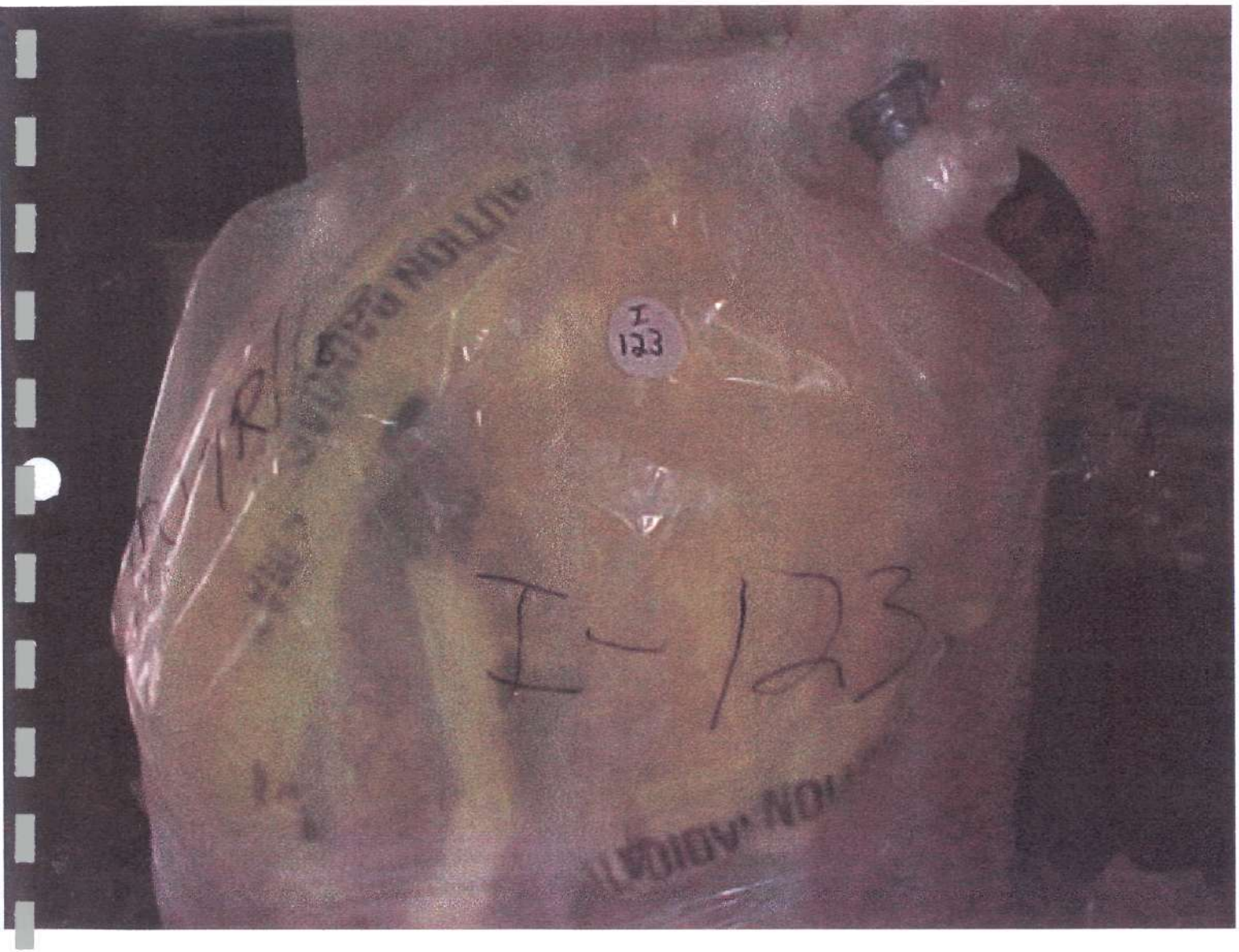
ITEM122



Acquired: 4/19/2002 4:06:31 PM Real Time: 20.00 s. Live Time: 19.30 s.

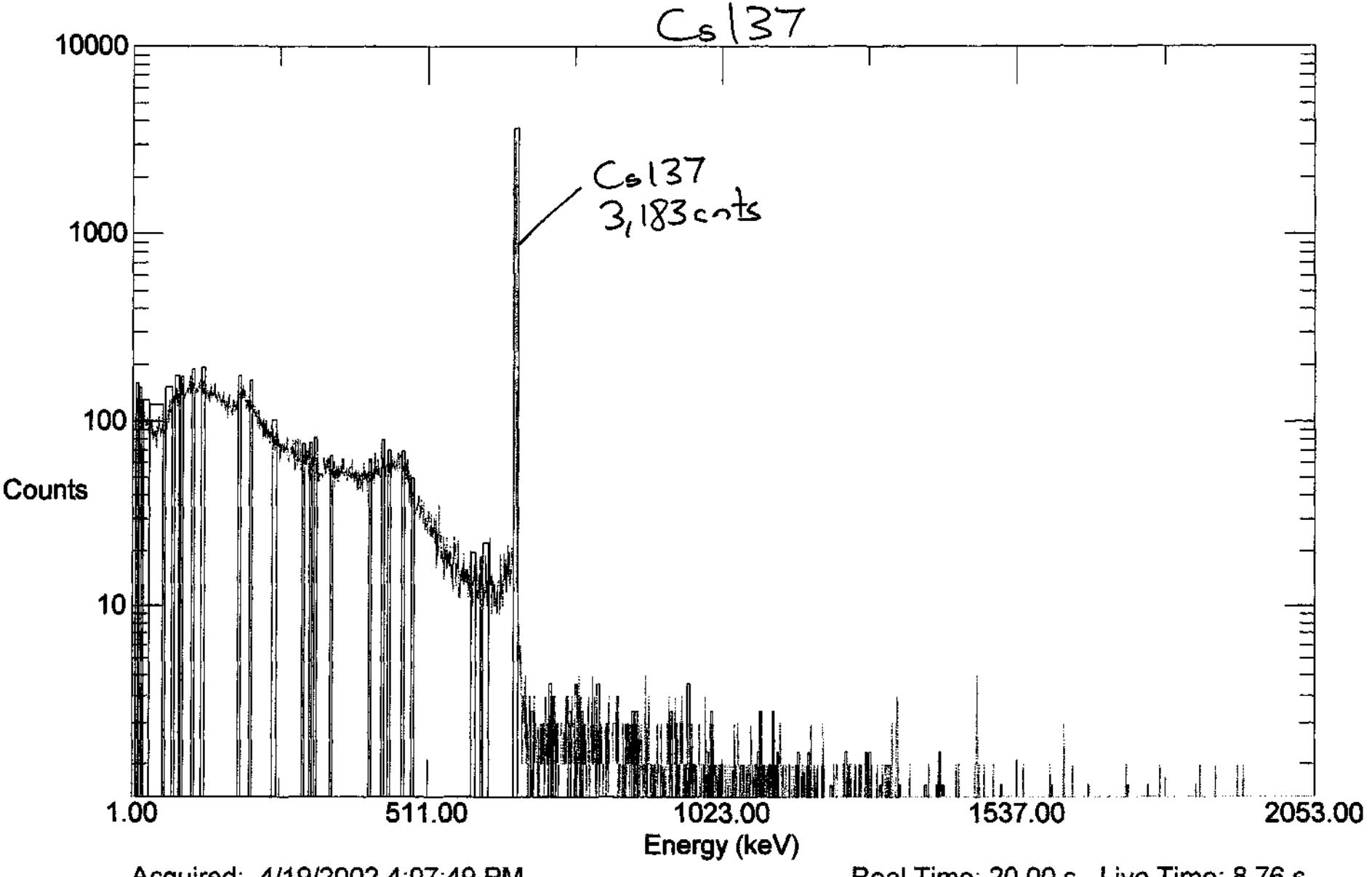
File: C:\User\GNIWEB~1\002 ITEM122 4-19-2002 4.06.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

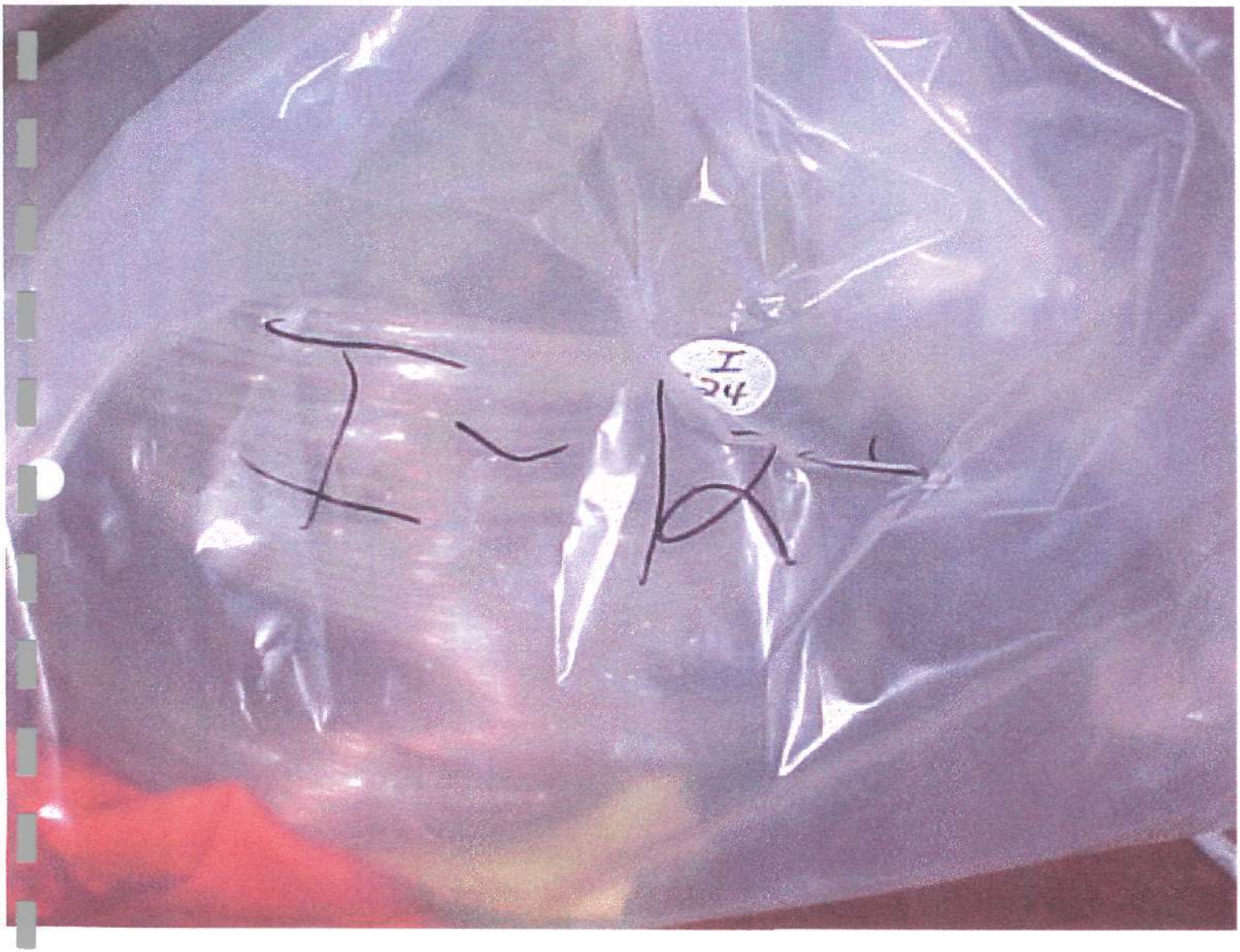

I
123
I-123

003 ITEM123 4-19-2002 4.07.49 PM

ITEM123

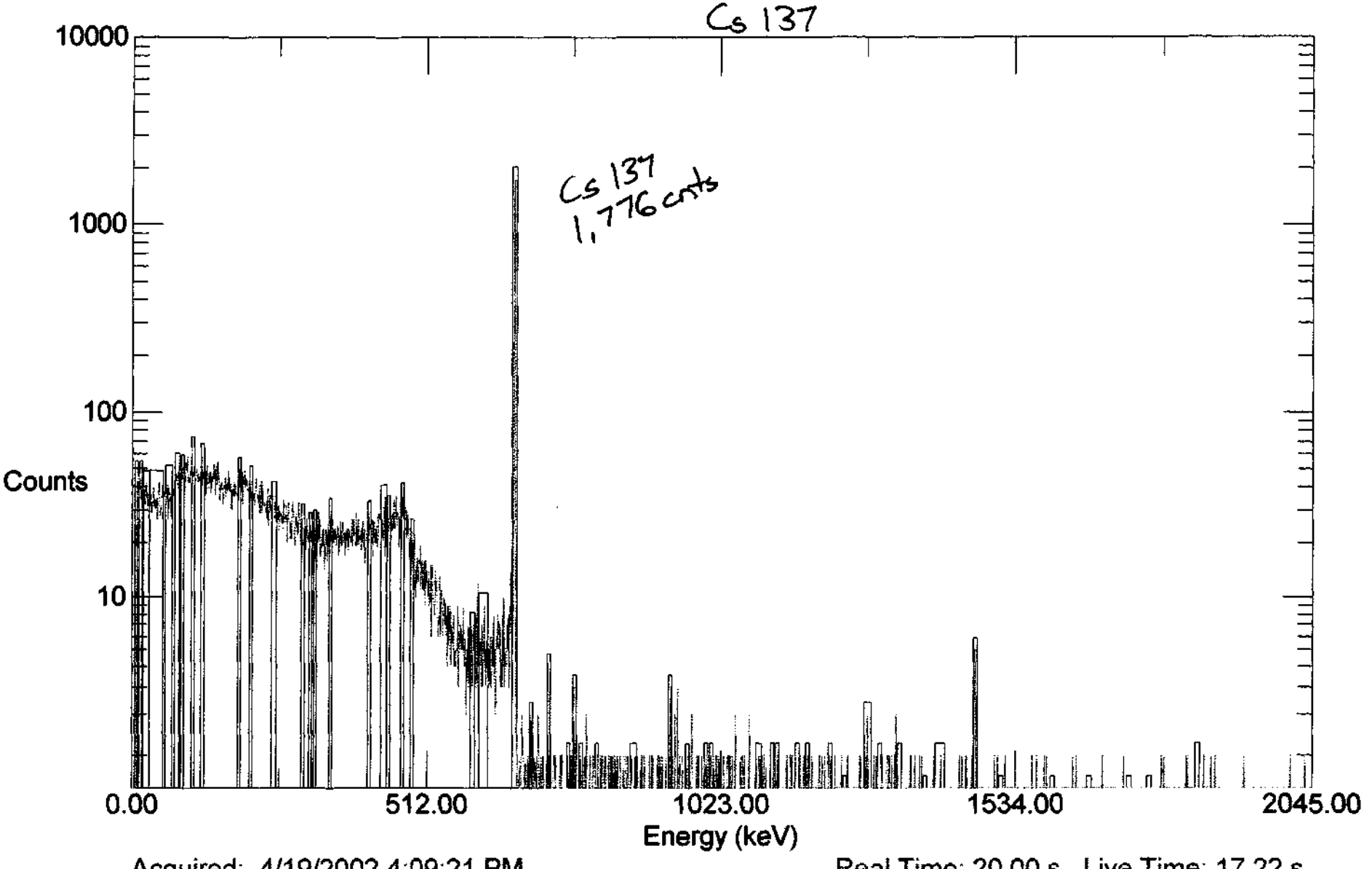


Acquired: 4/19/2002 4:07:49 PM Real Time: 20.00 s. Live Time: 8.76 s.
File: C:\User\GNIWEB~1\003 ITEM123 4-19-2002 4.07.49 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


I
24

004 ITEM124 4-19-2002 4.09.20 PM

ITEM124



Acquired: 4/19/2002 4:09:21 PM Real Time: 20.00 s. Live Time: 17.22 s.

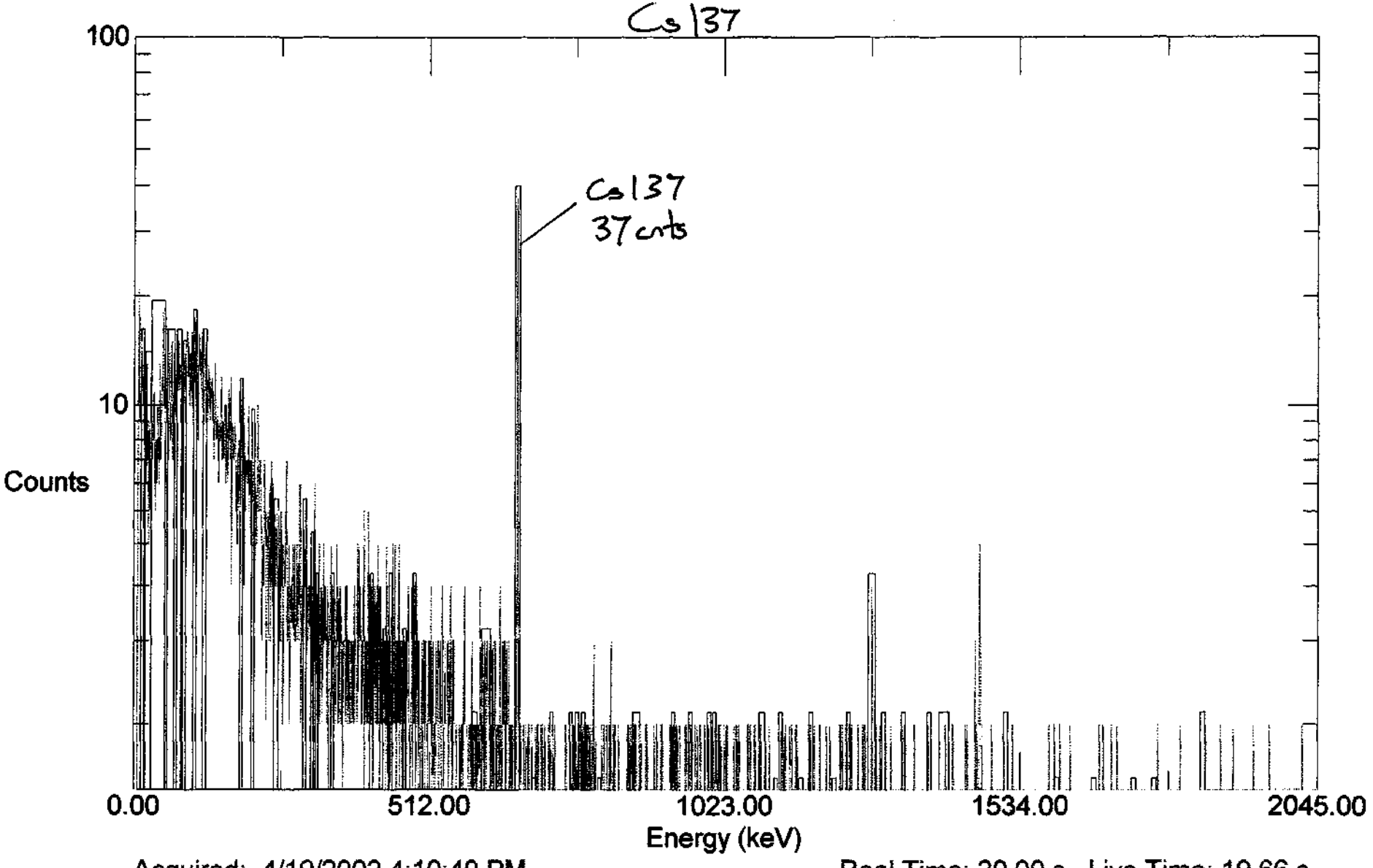
File: C:\User\GNIWEB~1\004 ITEM124 4-19-2002 4.09.20 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

I-125

005 ITEM125 4-19-2002 4.10.40 PM

ITEM125



Acquired: 4/19/2002 4:10:40 PM Real Time: 20.00 s. Live Time: 19.66 s.
File: C:\User\GNIWEB~1\005 ITEM125 4-19-2002 4.10.40 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 4-19-61

BKG	mR/hr
6"	0.7
12"	0.7
36"	0.7

Container #	126	127	128	129	130
[redacted]					
[redacted]					
Contact [redacted] mR/hr	5	<1	BKG	<1	<1
[redacted]					

Picture					
DACT					

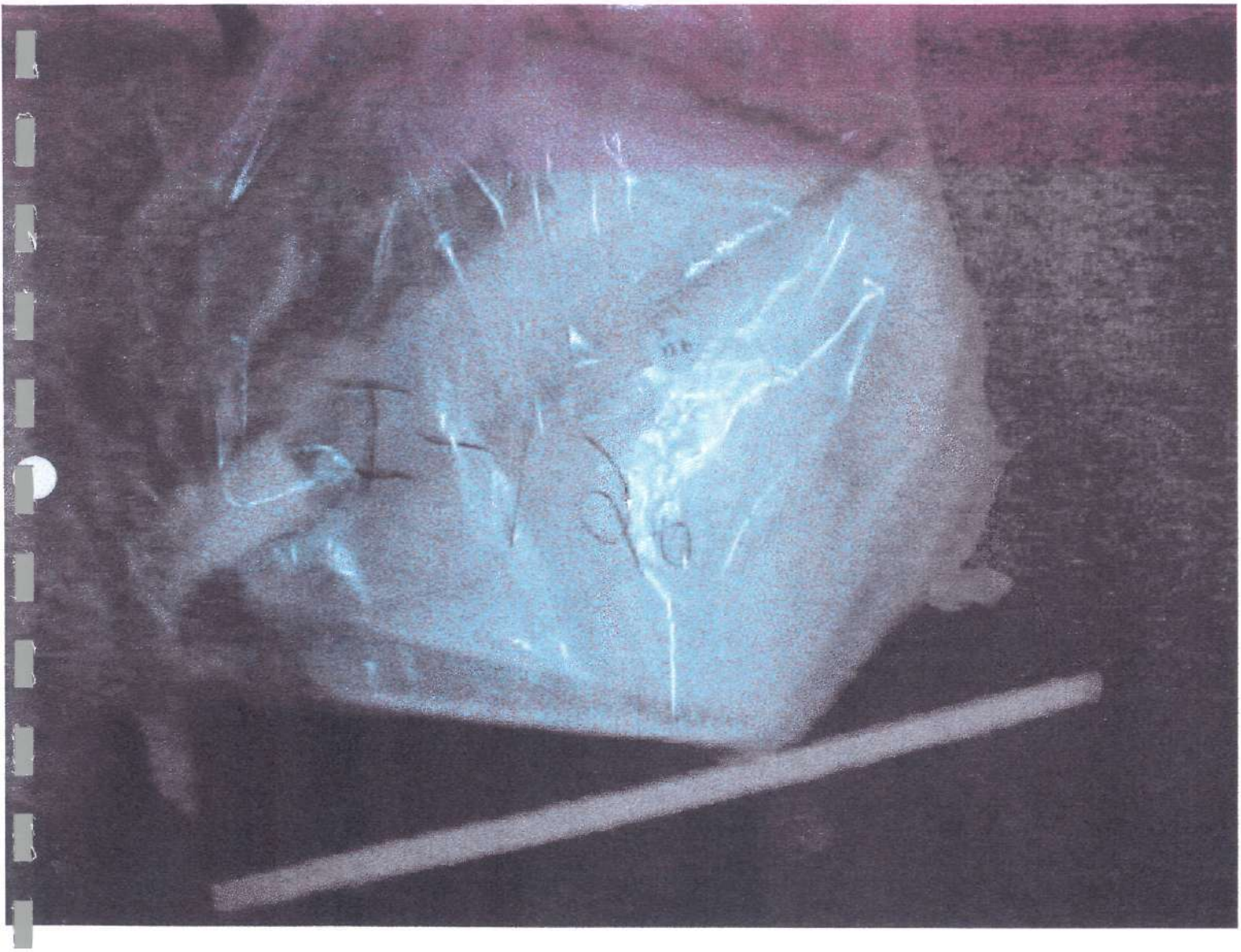
Table Readings

Source mR/hr @ 6 inches	0.5	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	0.4	BKG	BKG	BKG	BKG
Source mR/hr @ 36 inches	0.8	BKG	BKG	BKG	BKG
Size of source in [redacted] RT?	5	5	0.4	7	0.5
Weight in [redacted] AB	25	50	30	20	0.4

[redacted]					
[redacted]					

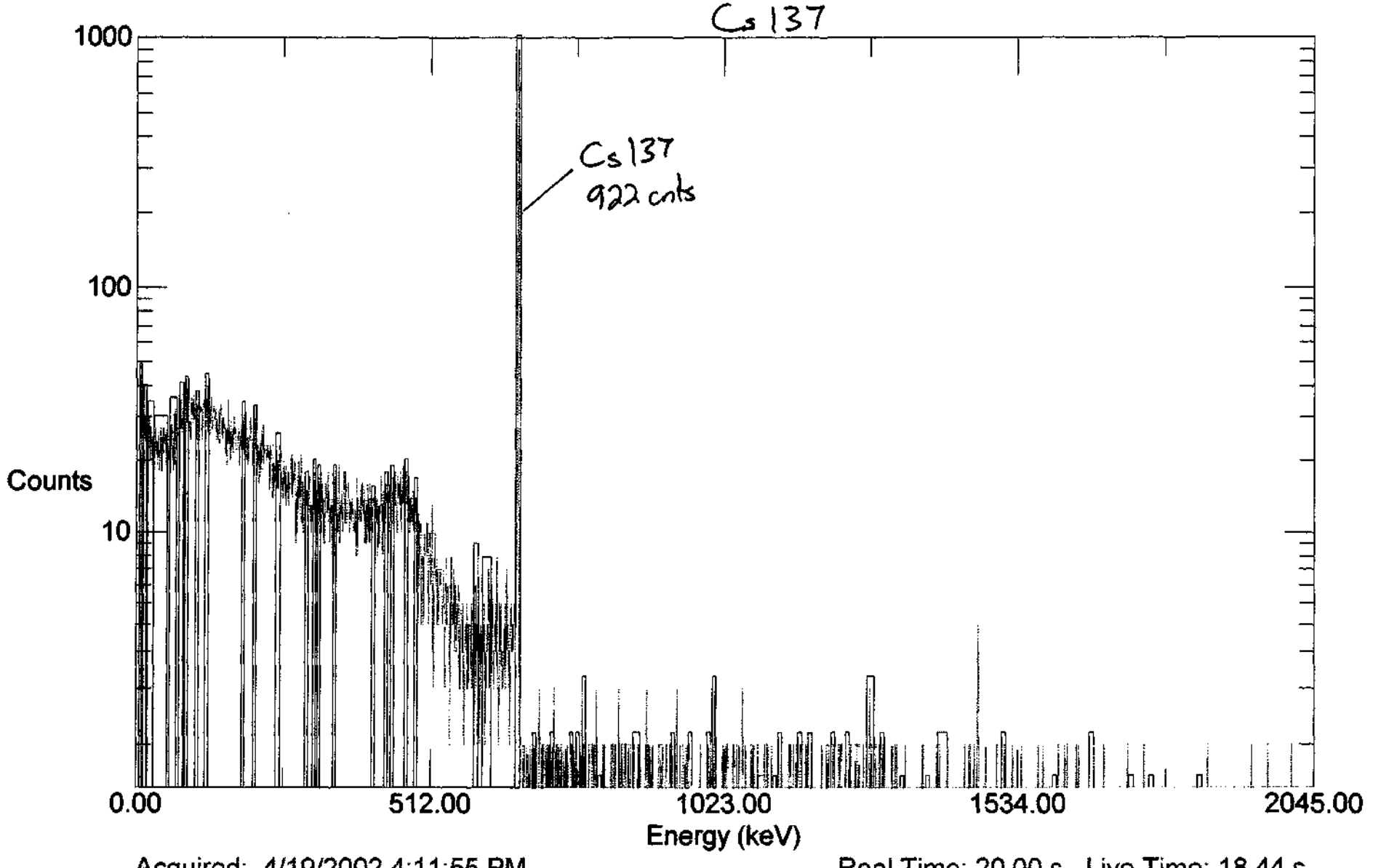
Info [redacted]					

[redacted]					
[redacted]					
[redacted]					



006 ITEM126 4-19-2002 4.11.56 PM

ITEM126

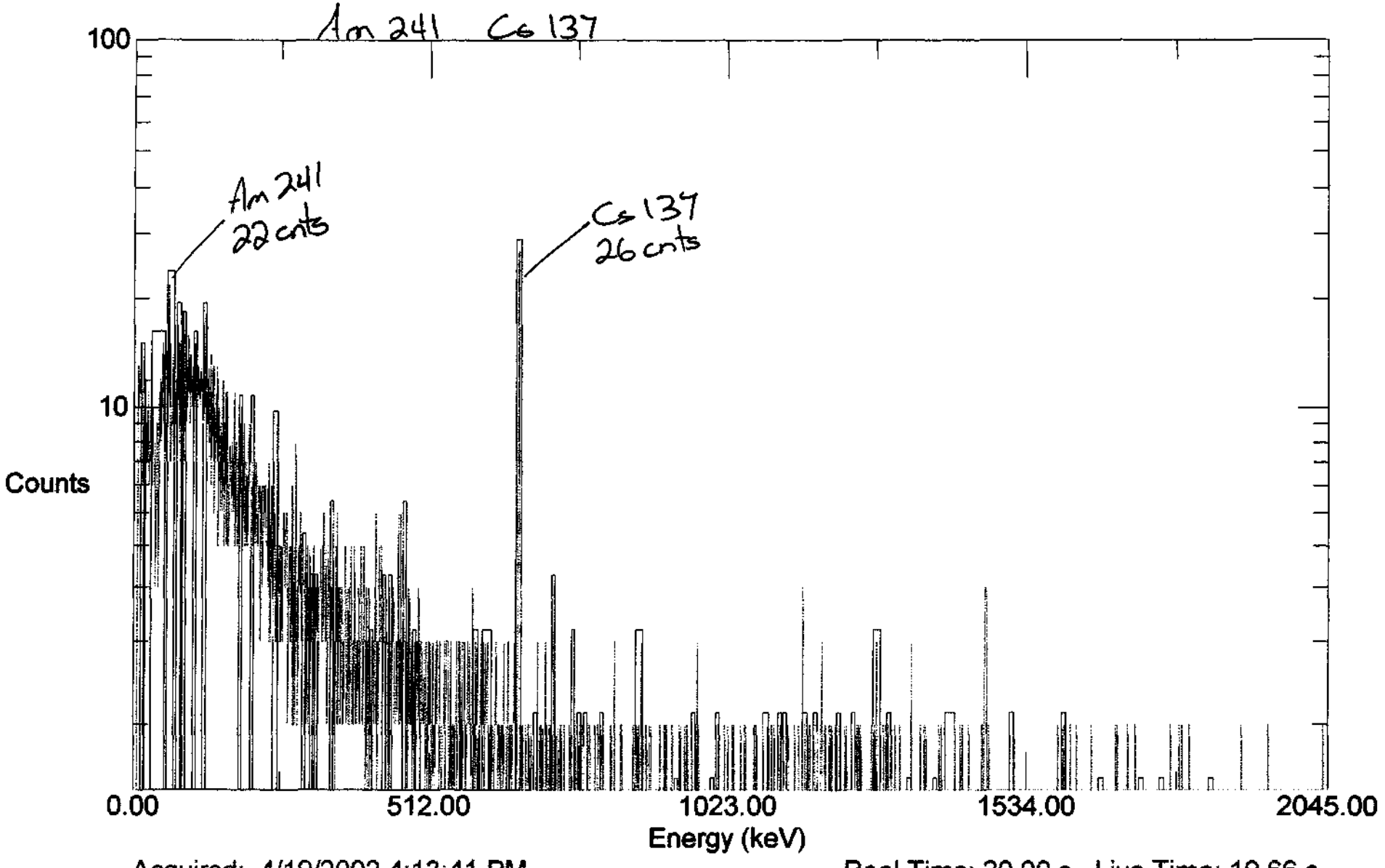


Acquired: 4/19/2002 4:11:55 PM Real Time: 20.00 s. Live Time: 18.44 s.
File: C:\User\GNIWEB~1\006 ITEM126 4-19-2002 4.11.56 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

CAUTION
I-127

007 ITEM127 4-19-2002 4.13.41 PM

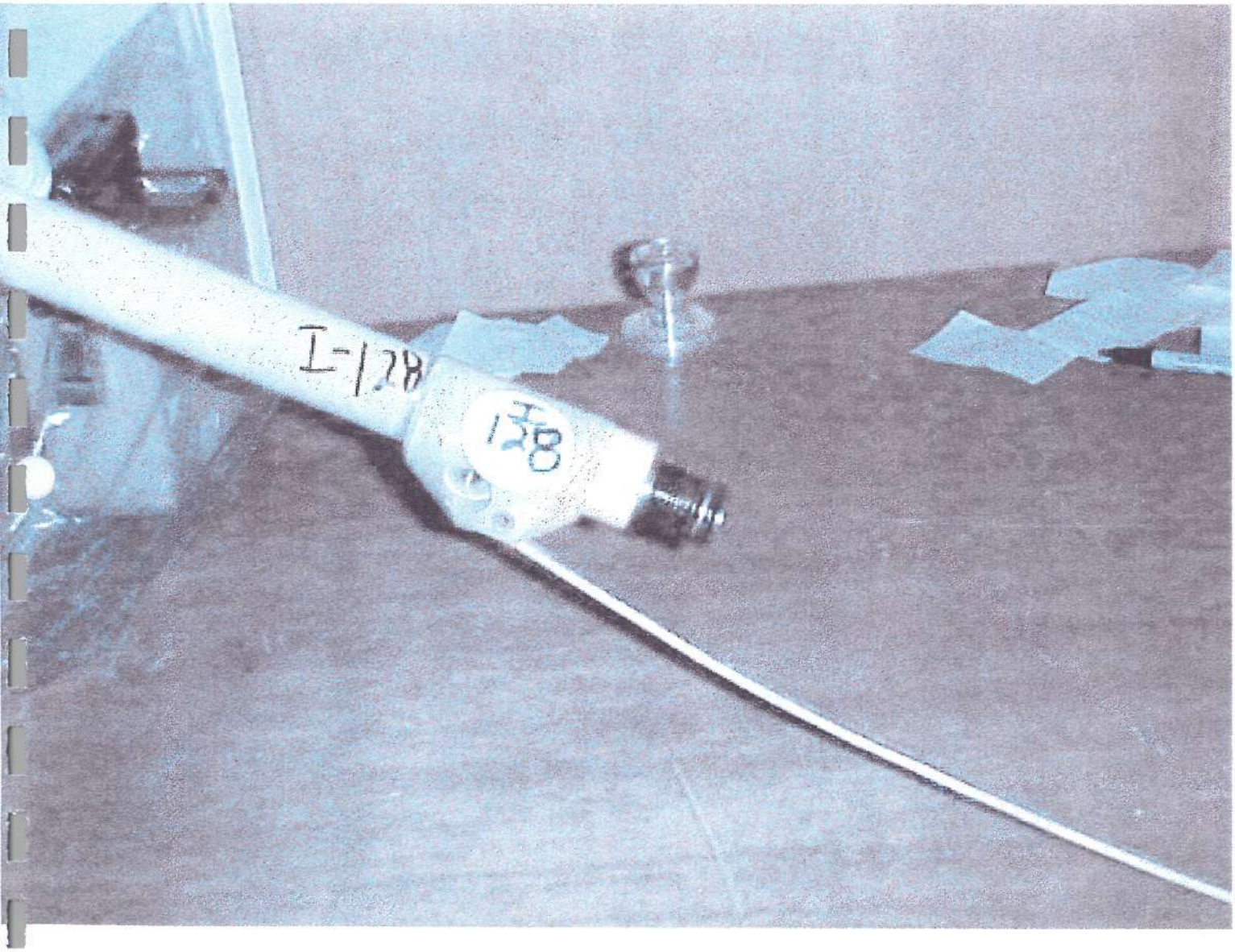
ITEM127



Acquired: 4/19/2002 4:13:41 PM Real Time: 20.00 s. Live Time: 19.66 s.

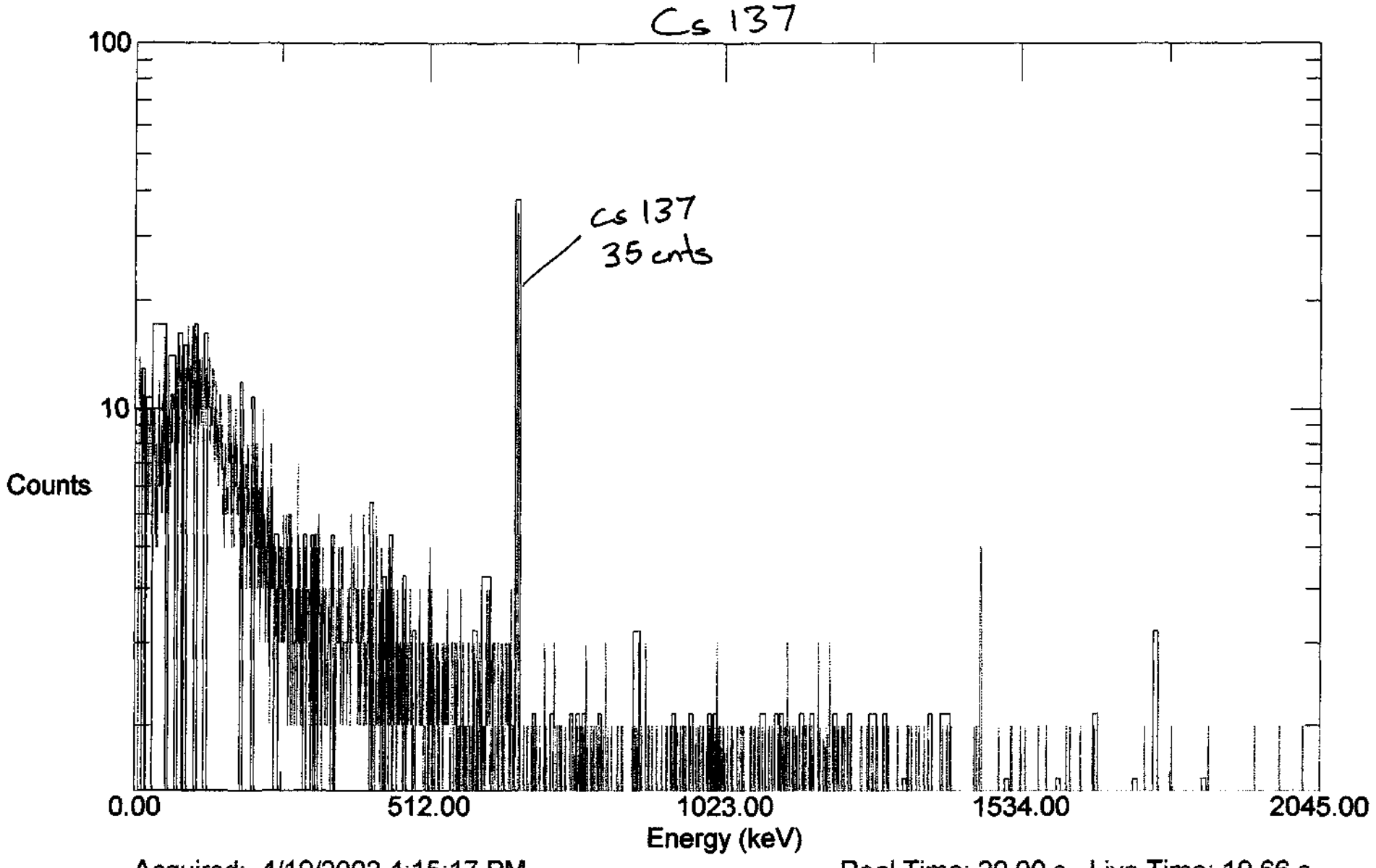
File: C:\User\GNIWEB~1\007 ITEM127 4-19-2002 4.13.41 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-128
I-128

008 ITEM128 4-19-2002 4.15.18 PM

ITEM128



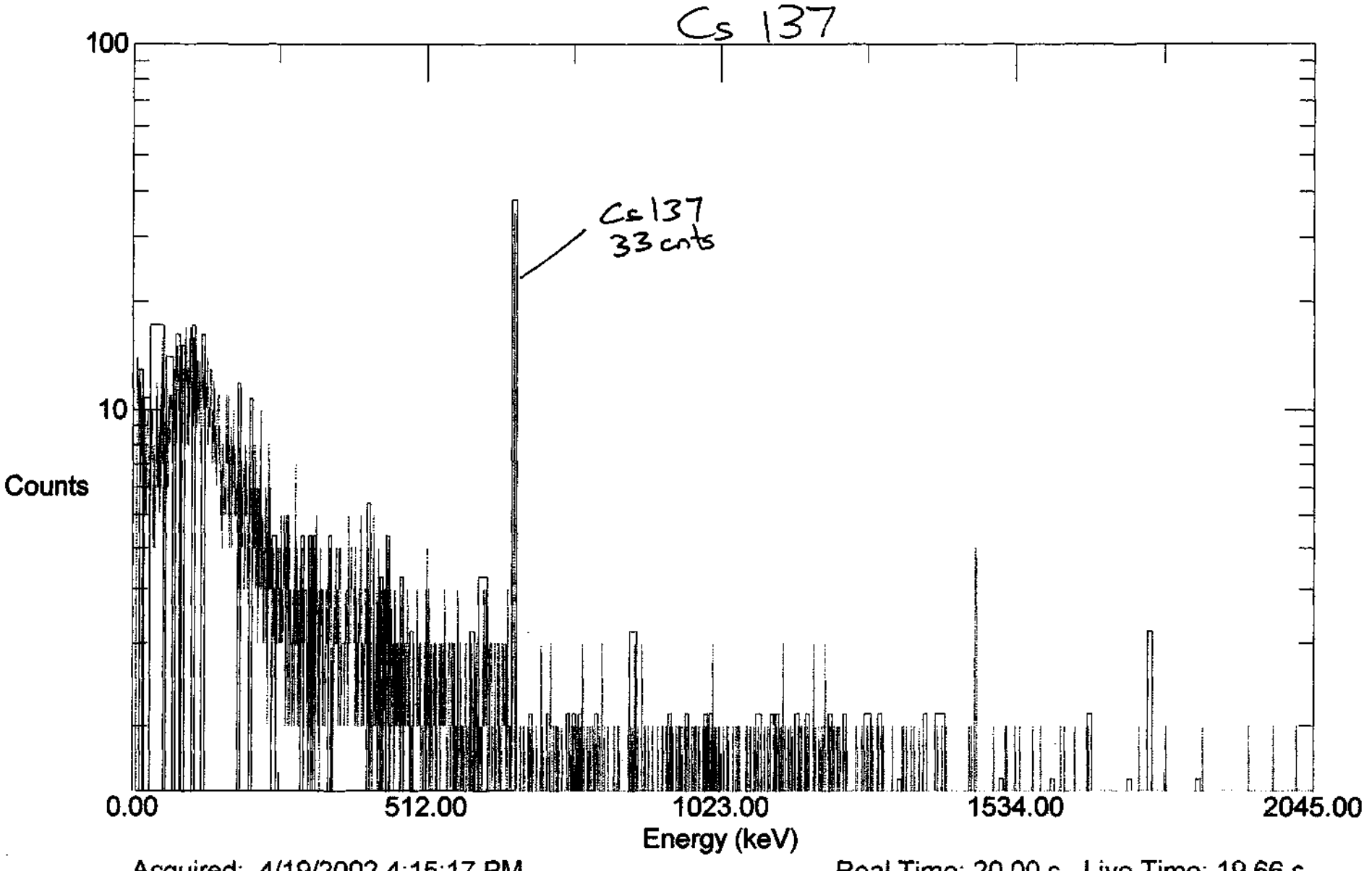
Acquired: 4/19/2002 4:15:17 PM Real Time: 20.00 s. Live Time: 19.66 s.

File: C:\User\GNIWEB~1\008 ITEM128 4-19-2002 4.15.18 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

008 ITEM128 4-19-2002 4.15.18 PM

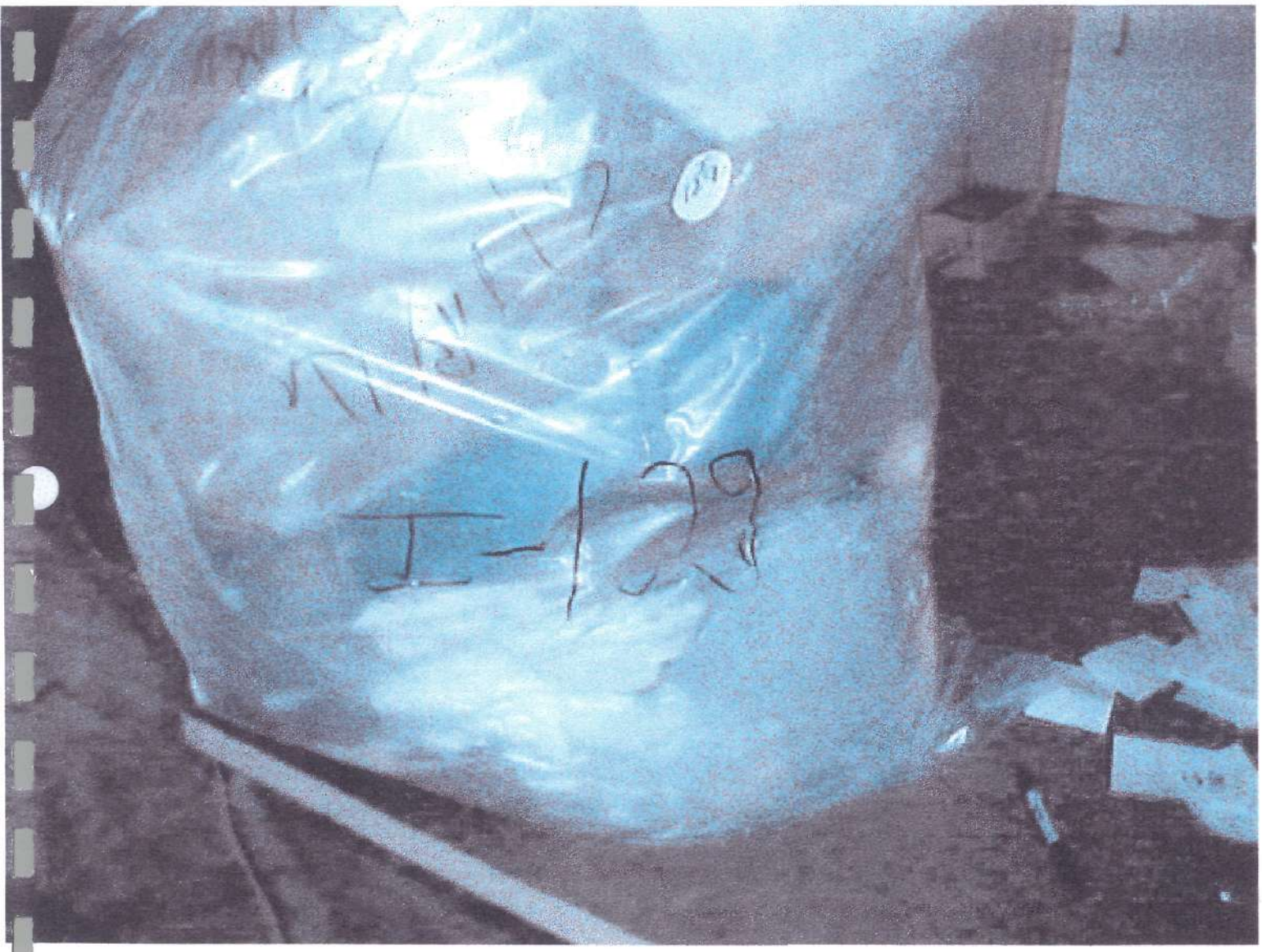
ITEM128



Acquired: 4/19/2002 4:15:17 PM Real Time: 20.00 s. Live Time: 19.66 s.

File: C:\User\GNIWEB~1\008 ITEM128 4-19-2002 4.15.18 PM.Spc Channels: 8192

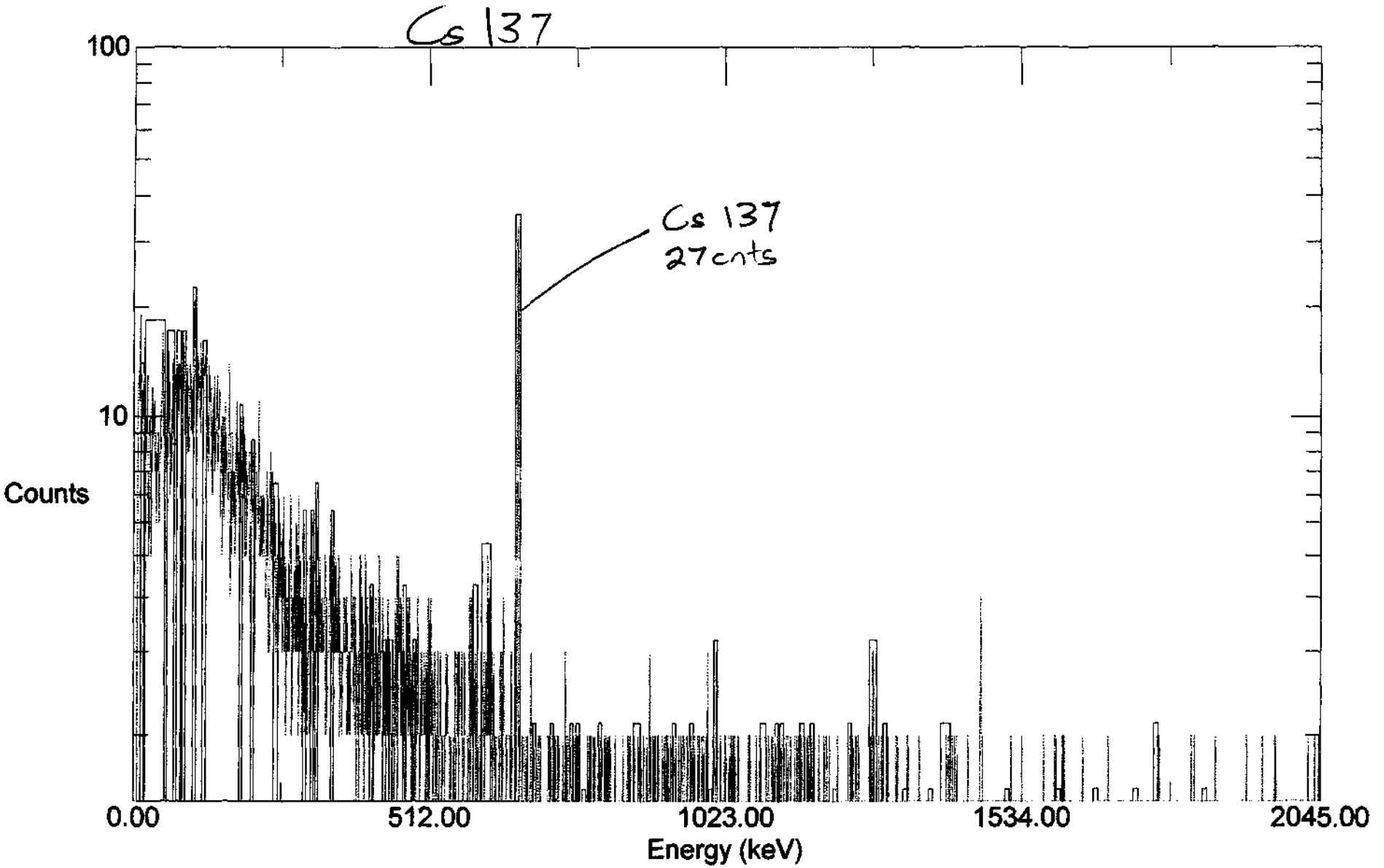
Detector: #1 digiDART USE 1b


I-129

I-129

009 ITEM129 4-19-2002 4.16.14 PM

ITEM129



Acquired: 4/19/2002 4:16:14 PM Real Time: 20.00 s. Live Time: 19.66 s.

File: C:\User\GNIWEB~1\009 ITEM129 4-19-2002 4.16.14 PM.Spc Channels: 8192

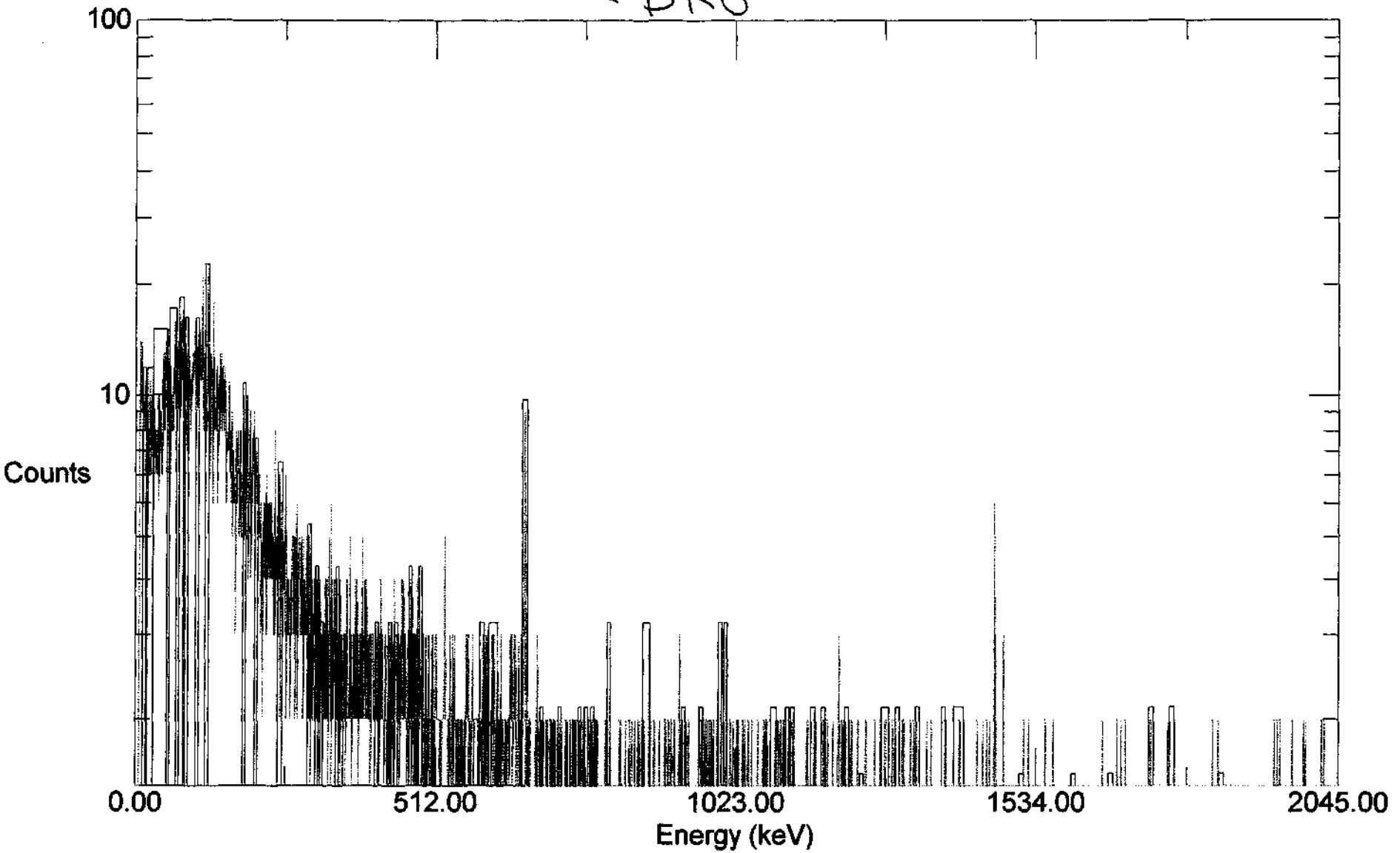
Detector: #1 digiDART USE 1b

T-130

010 ITEM130 4-19-2002 4.18.03 PM

ITEM130

< BKG



Acquired: 4/19/2002 4:18:03 PM Real Time: 20.00 s. Live Time: 19.68 s.

File: C:\User\GNIWEB~1\010 ITEM130 4-19-2002 4.18.03 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 4-11-02

BKG	mR/hr
6"	0.3
12"	0.3
36"	0.3

Container #	131	132	133	134	135
[redacted]					
[redacted]					
Contact [redacted] mR/hr	5	0.4	4	5	<1
[redacted]					

Picture					
DART					

Table Readings

Source mR/hr @ 6 inchs	0.3	0.7	1.0	0.9	BKG
Source mR/hr @ 12 inches	0.3	0.7	0.7	0.4	BKG
Source mR/hr @ 36 inches	0.7	0.7	0.8	0.7	BKG
Size of source in [redacted] CUBE FT	2	3	4	3	3
Weight in [redacted] LBS	15	10	40	9	20

[redacted]					
[redacted]					

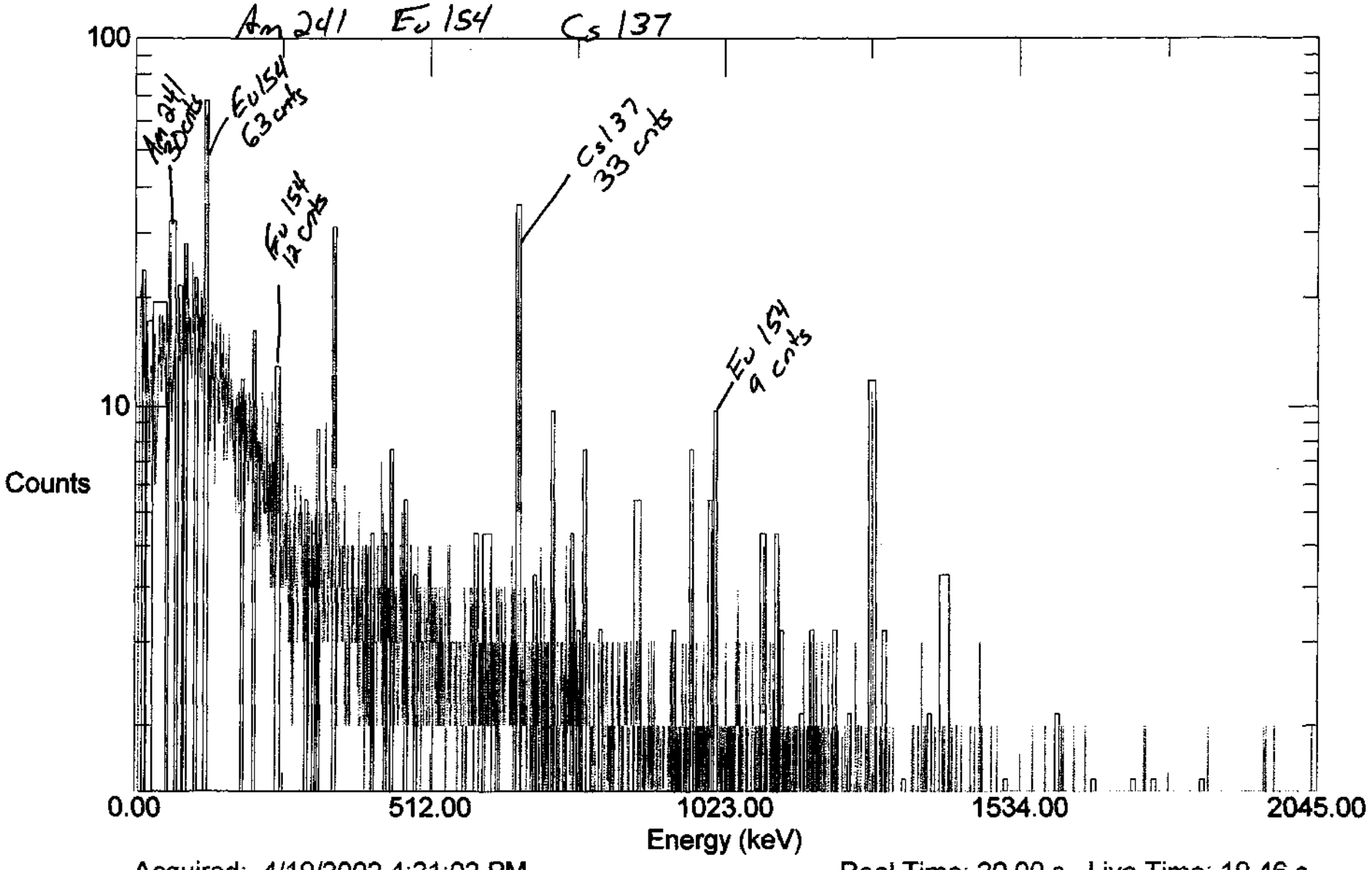
Info [redacted]					

[redacted]					
[redacted]					
[redacted]					

151

011 ITEM131 4-19-2002 4.21.02 PM

ITEM131



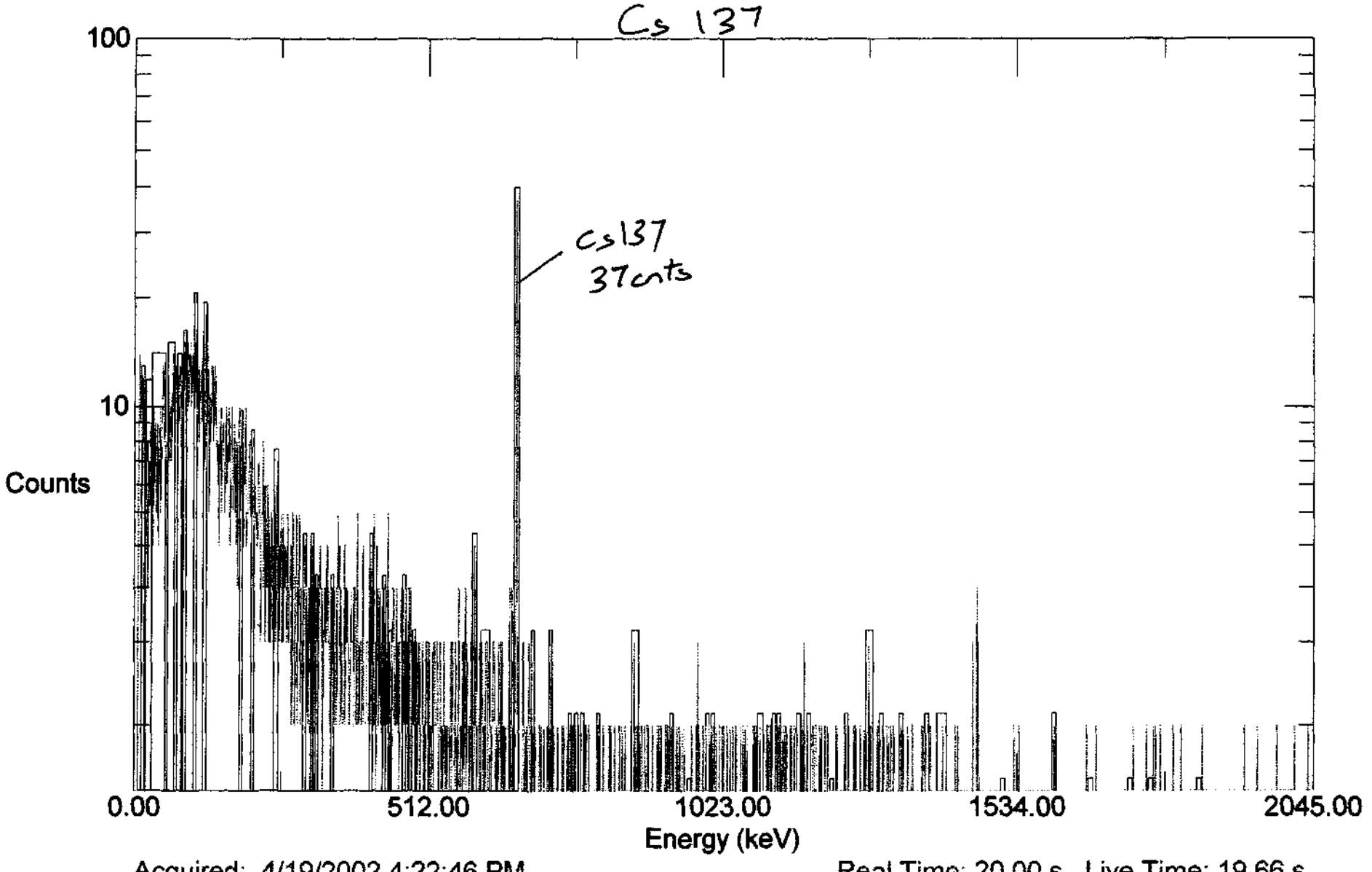
Acquired: 4/19/2002 4:21:02 PM Real Time: 20.00 s. Live Time: 19.46 s.

File: C:\User\GNIWEB~1\011 ITEM131 4-19-2002 4.21.02 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

012 ITEM132 4-19-2002 4.22.47 PM

ITEM132



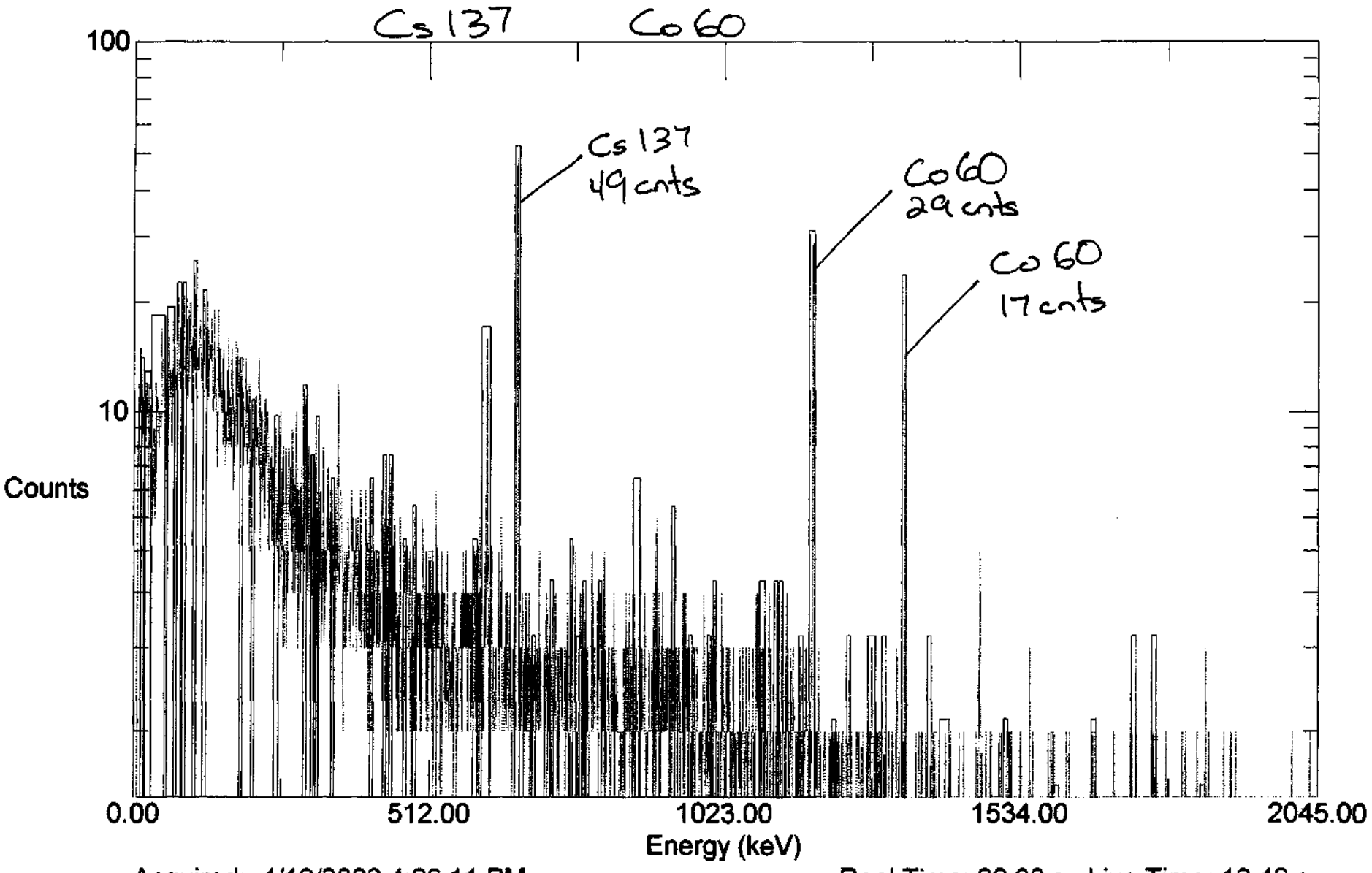
Acquired: 4/19/2002 4:22:46 PM Real Time: 20.00 s. Live Time: 19.66 s.

File: C:\User\GNIWEB~1\012 ITEM132 4-19-2002 4.22.47 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

013 ITEM133 4-19-2002 4.26.12 PM

ITEM133



Acquired: 4/19/2002 4:26:11 PM Real Time: 20.00 s. Live Time: 19.42 s.

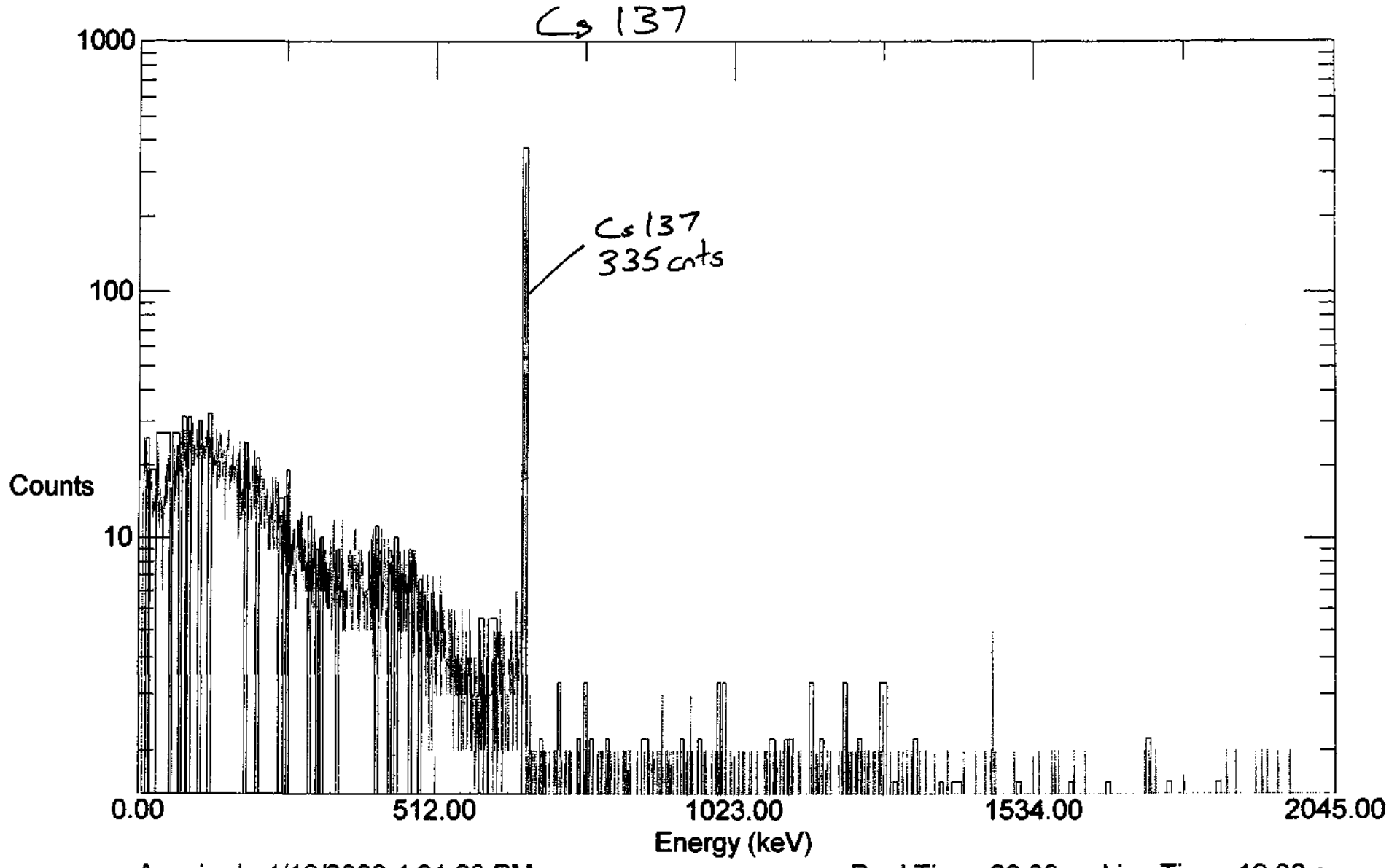
File: C:\User\GNIWEB~1\013 ITEM133 4-19-2002 4.26.12 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

CAUTION RADIOACTIVE MA
I
134

014 ITEM134 4-19-2002 4.31.00 PM

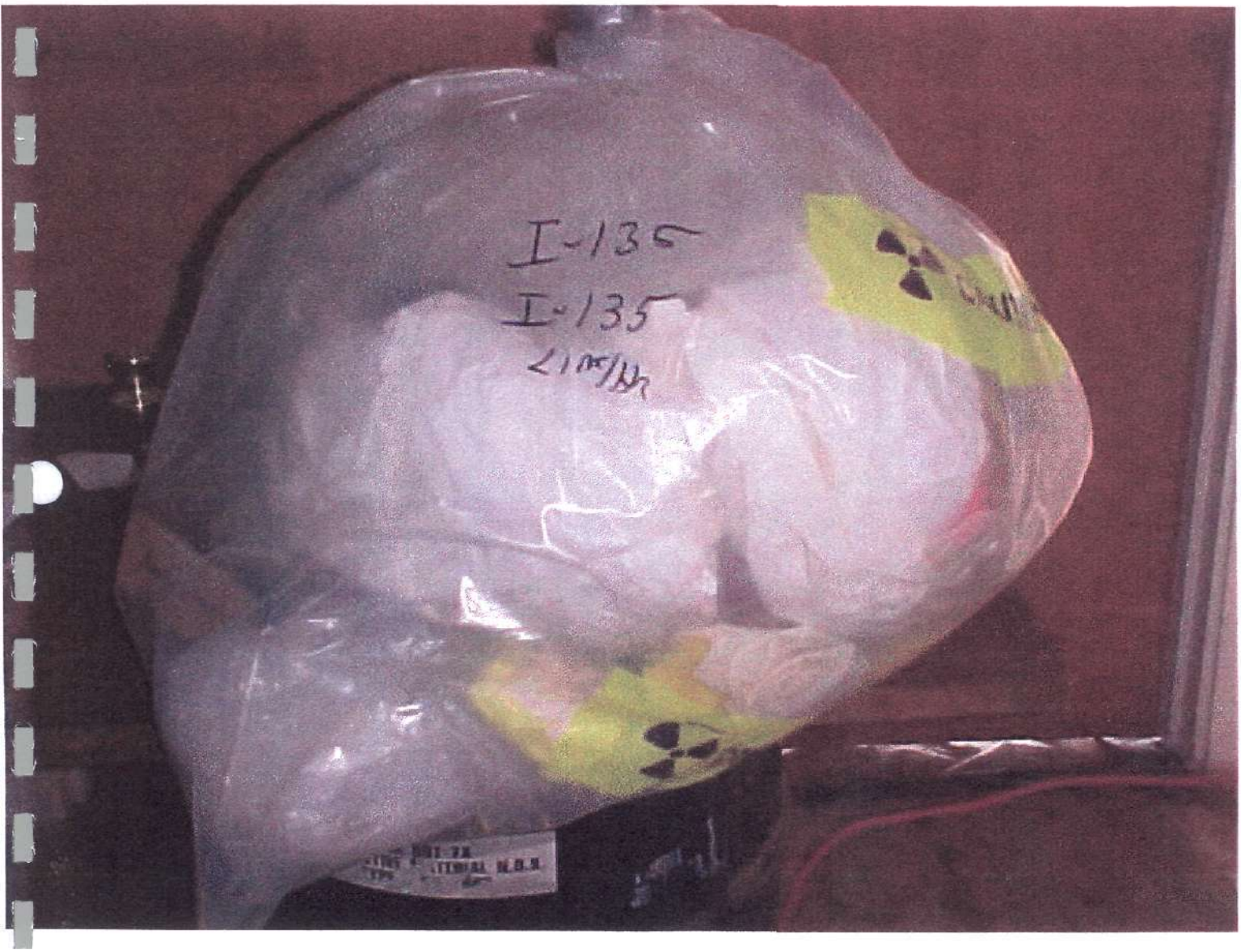
ITEM134



Acquired: 4/19/2002 4:31:00 PM Real Time: 20.00 s. Live Time: 19.08 s.

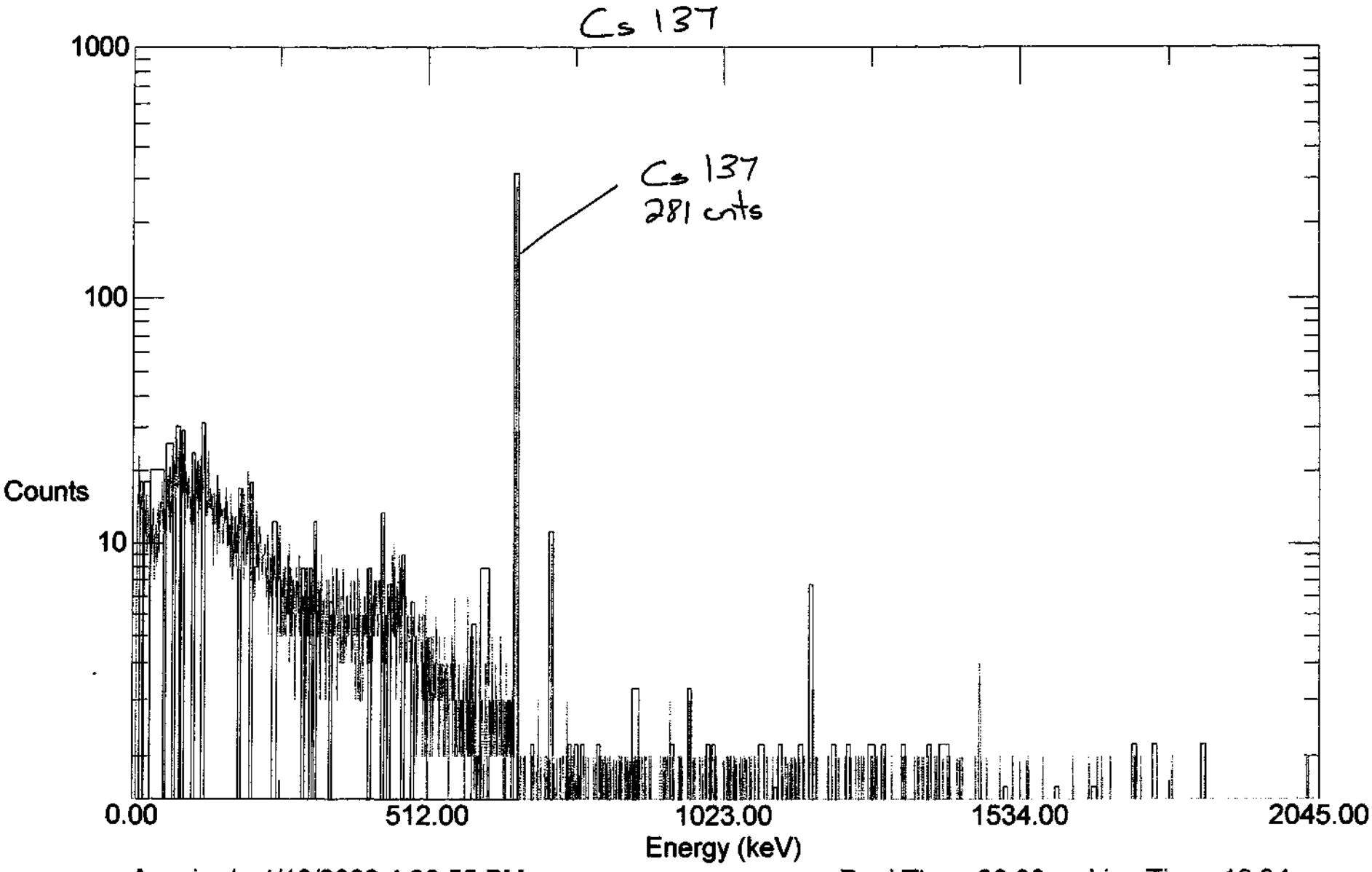
File: C:\User\GNIWEB~1\014 ITEM134 4-19-2002 4.31.00 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-135
I-135
<10mR/hr

015 ITEM135 4-19-2002 4.38.55 PM

ITEM135



Acquired: 4/19/2002 4:38:55 PM Real Time: 20.00 s. Live Time: 19.34 s.
File: C:\User\GNIWEB~1\015 ITEM135 4-19-2002 4.38.55 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

ITEM'S

USEcology
FS-TX-02-01
Source Log

Date 5-7-02

Items

BKG	mR/hr
6"	<0.2
12"	↓
36"	↓

Container #	136	137	138	139	140
External [redacted] in mR/hr	2.5R	4R	100	800	4
[redacted]					
[redacted]		25 Row			
[redacted]		[redacted]			

Picture	✓	✓	✓	✓	
DART	✓	✓	✓	✓	

Table Readings

Source mR/hr @ 6 inchs	600	600	30	300	[redacted].7
Source mR/hr @ 12 inches	400	350	10	100	[redacted].5
Source mR/hr @ 36 inches	80	100	4	30	.5
Size of source in cc's	3000	100 ~~6 inches~~	3000	5 cf	10
Weight in grams	150	~~100~~ 100	15 lbs	5 lbs	5

BKG .5

[redacted]					
[redacted]					

~~Info on source:~~	CAN 1 GAL PAINT	MANP. FINGERS	1 gal Paint Car	1 board	SMEARS Rm#17

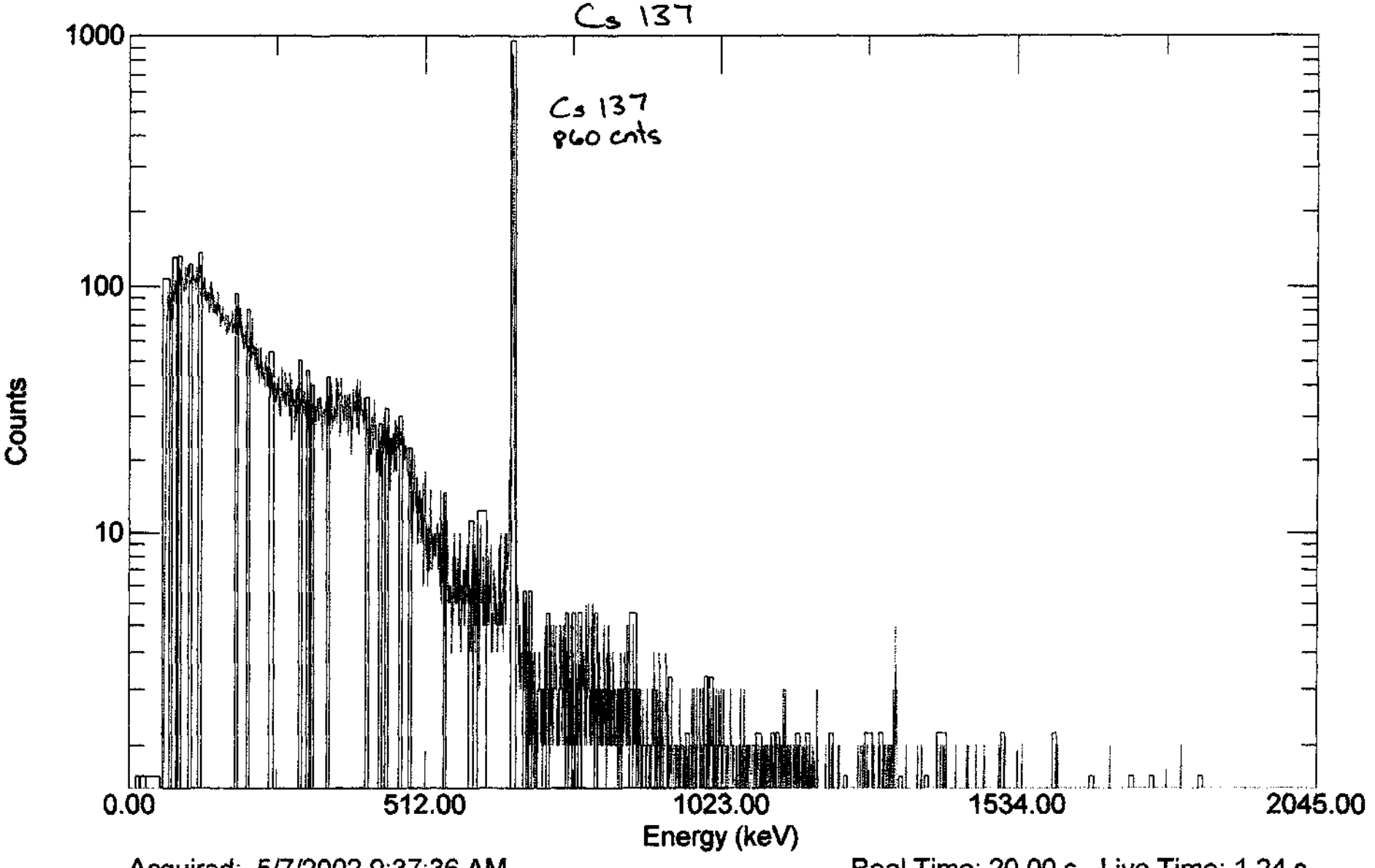
~~Information on pig:~~			LEAD BBS		
~~Smear DPM per 100 cm^2 Alpha~~					
~~Smear DPM per 100 cm^2 Beta~~					

Rm 20

I. 136
I. 136

003 ITEM136 5-7-2002 9.37.36 AM

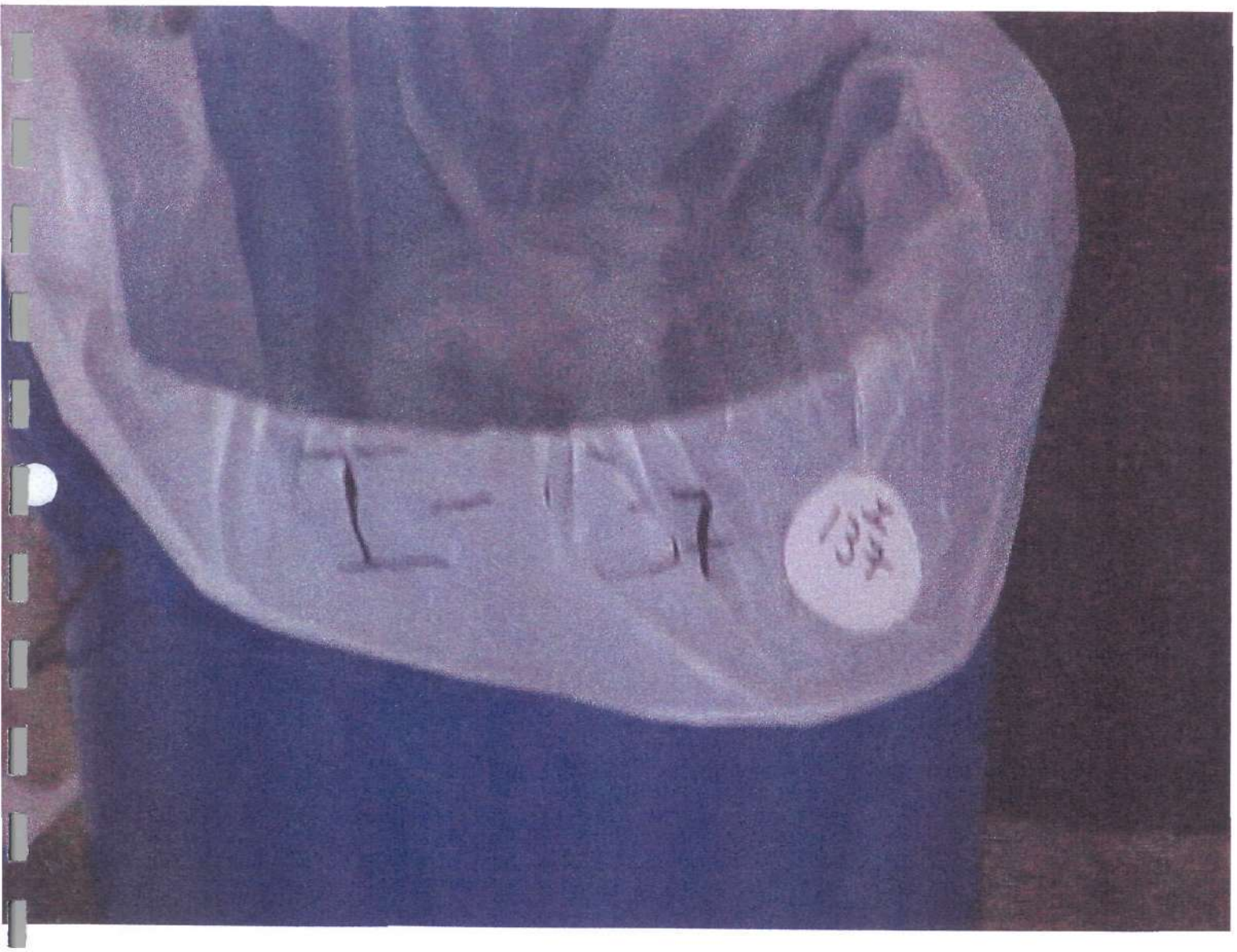
ITEM136



Acquired: 5/7/2002 9:37:36 AM Real Time: 20.00 s. Live Time: 1.24 s.

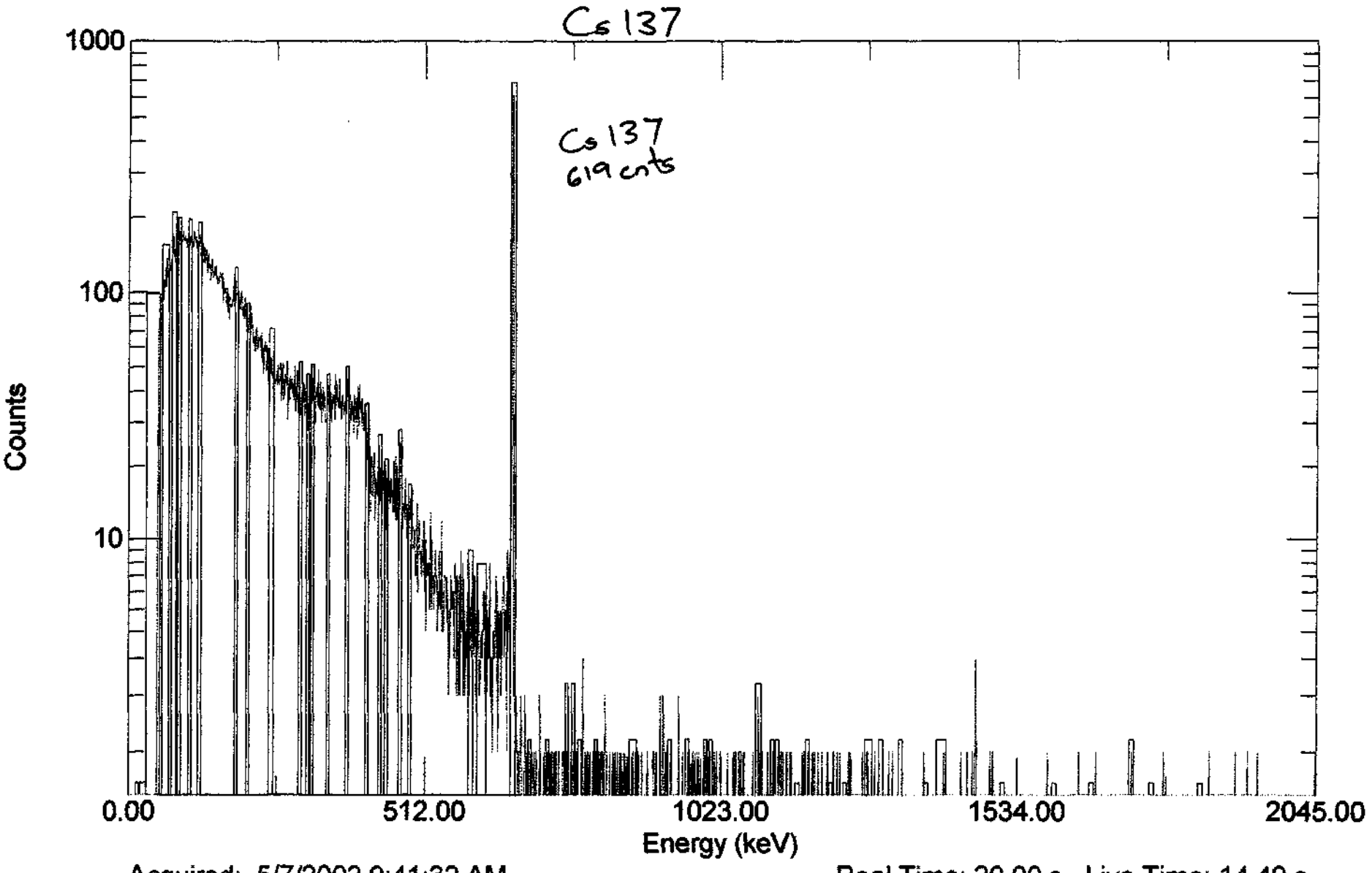
File: C:\User\GNIWEB~1\003 ITEM136 5-7-2002 9.37.36 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



004 ITEM137 5-7-2002 9.41.32 AM

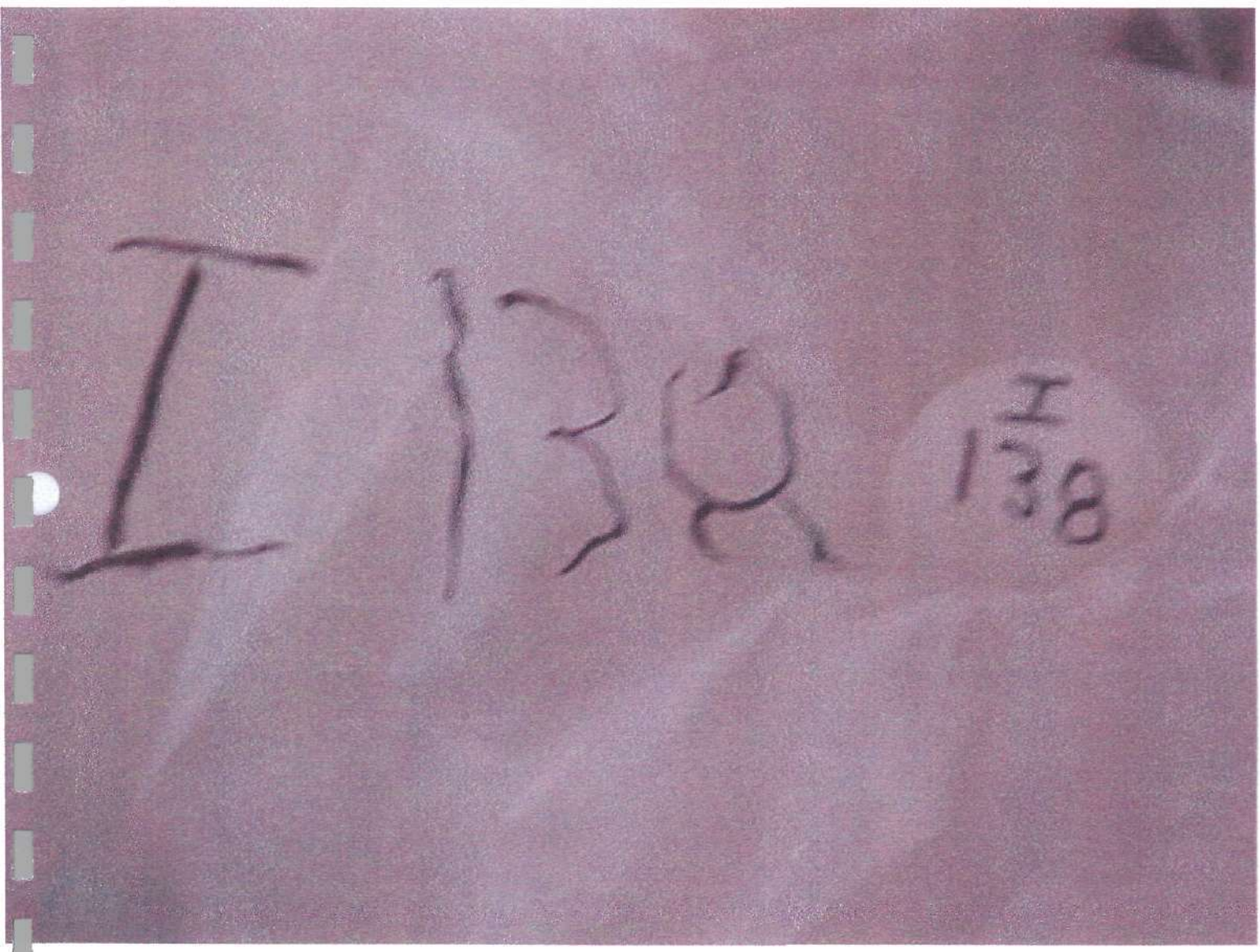
ITEM137



Acquired: 5/7/2002 9:41:32 AM Real Time: 20.00 s. Live Time: 14.40 s.

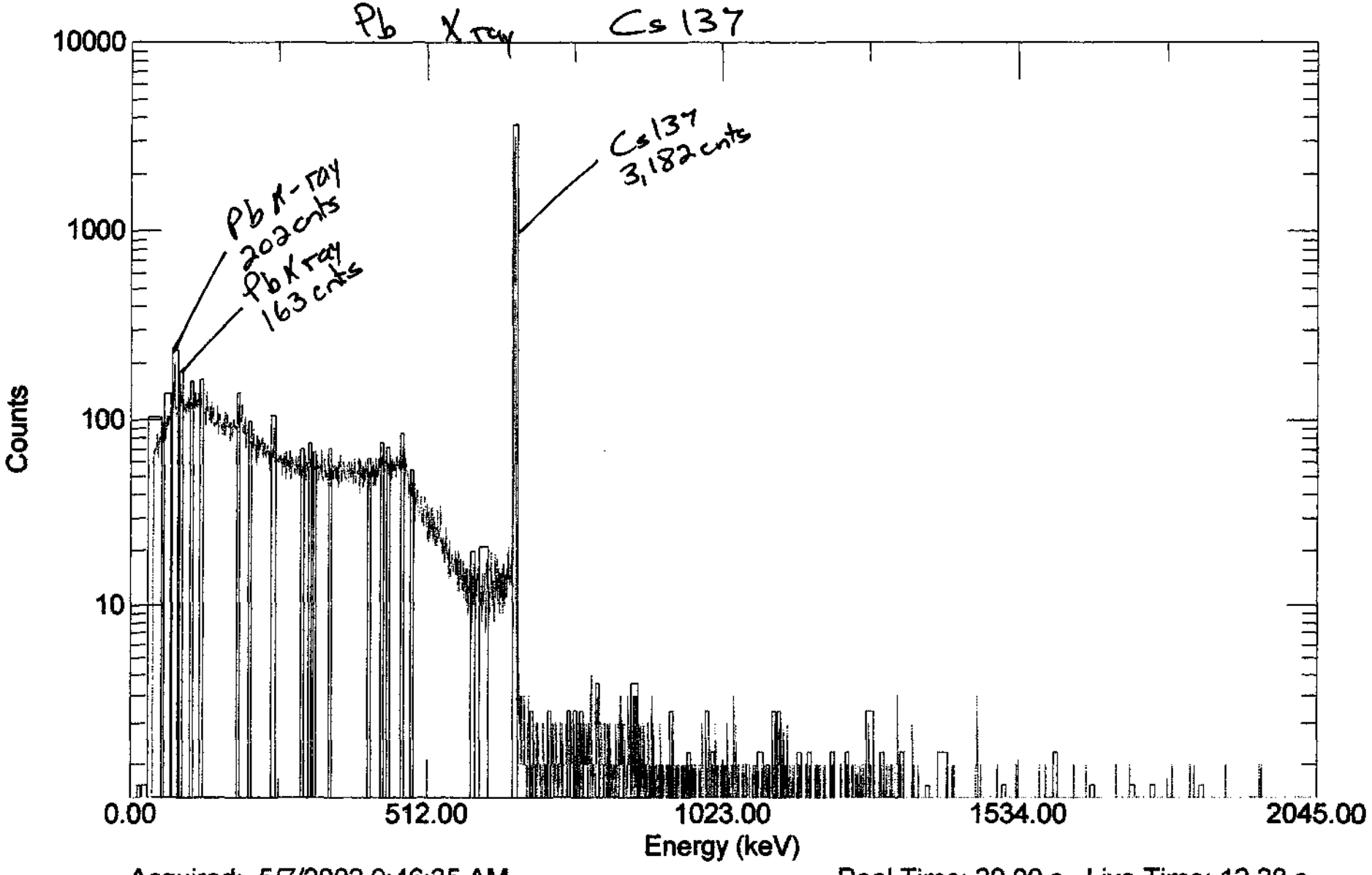
File: C:\User\GNIWEB~1\004 ITEM137 5-7-2002 9.41.32 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I 138

005 ITEM138 5-7-2002 9.46.35 AM

ITEM138



Acquired: 5/7/2002 9:46:35 AM Real Time: 20.00 s. Live Time: 12.28 s.

File: C:\User\GNIWEB~1\005 ITEM138 5-7-2002 9.46.35 AM.Spc Channels: 8192

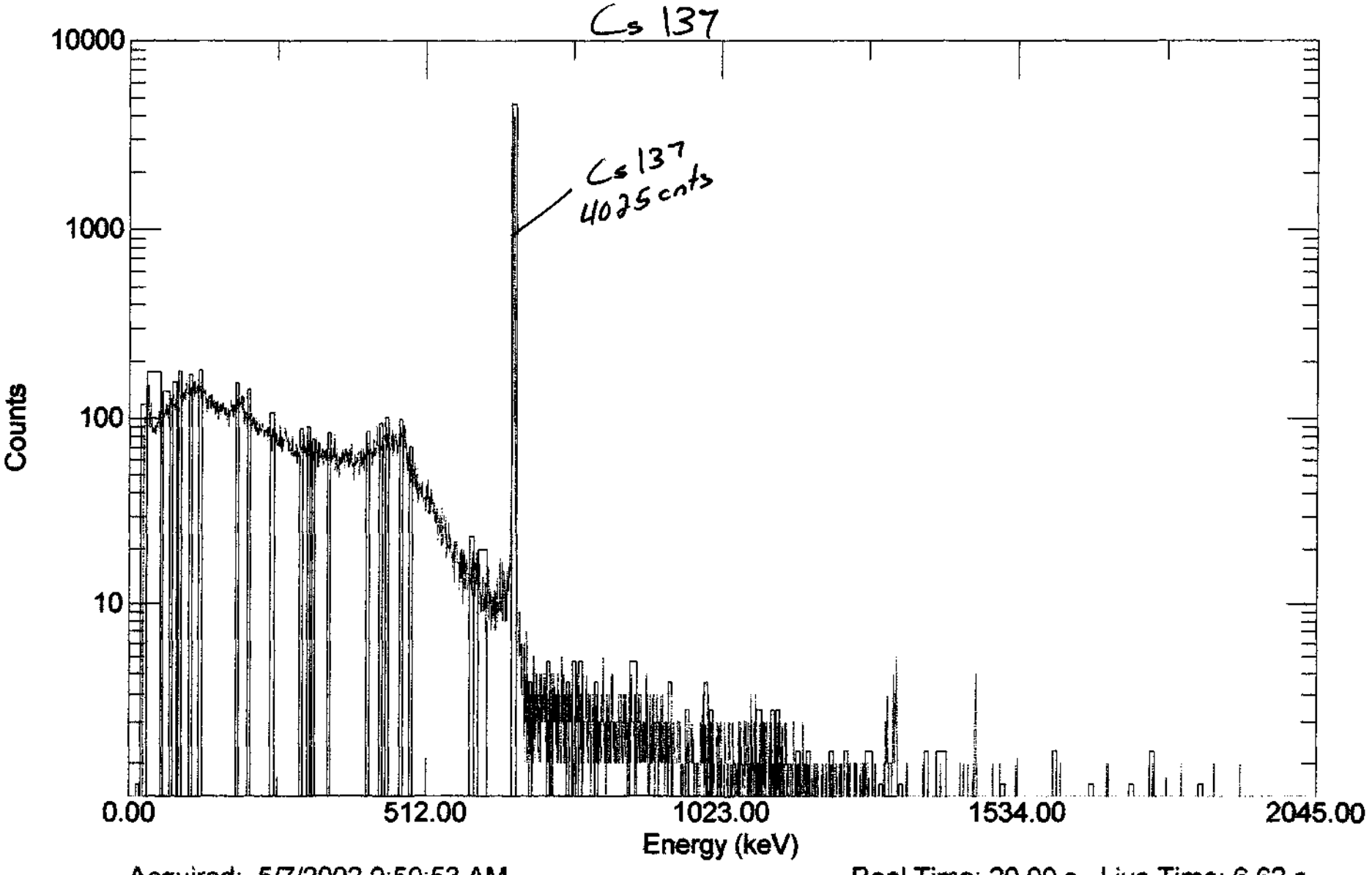
Detector: #1 digiDART USE 1b

800
d/w ~~80~~ mR/hr
d/w 1.5 R/hr

Item 134

006 ITEM139 5-7-2002 9.50.53 AM

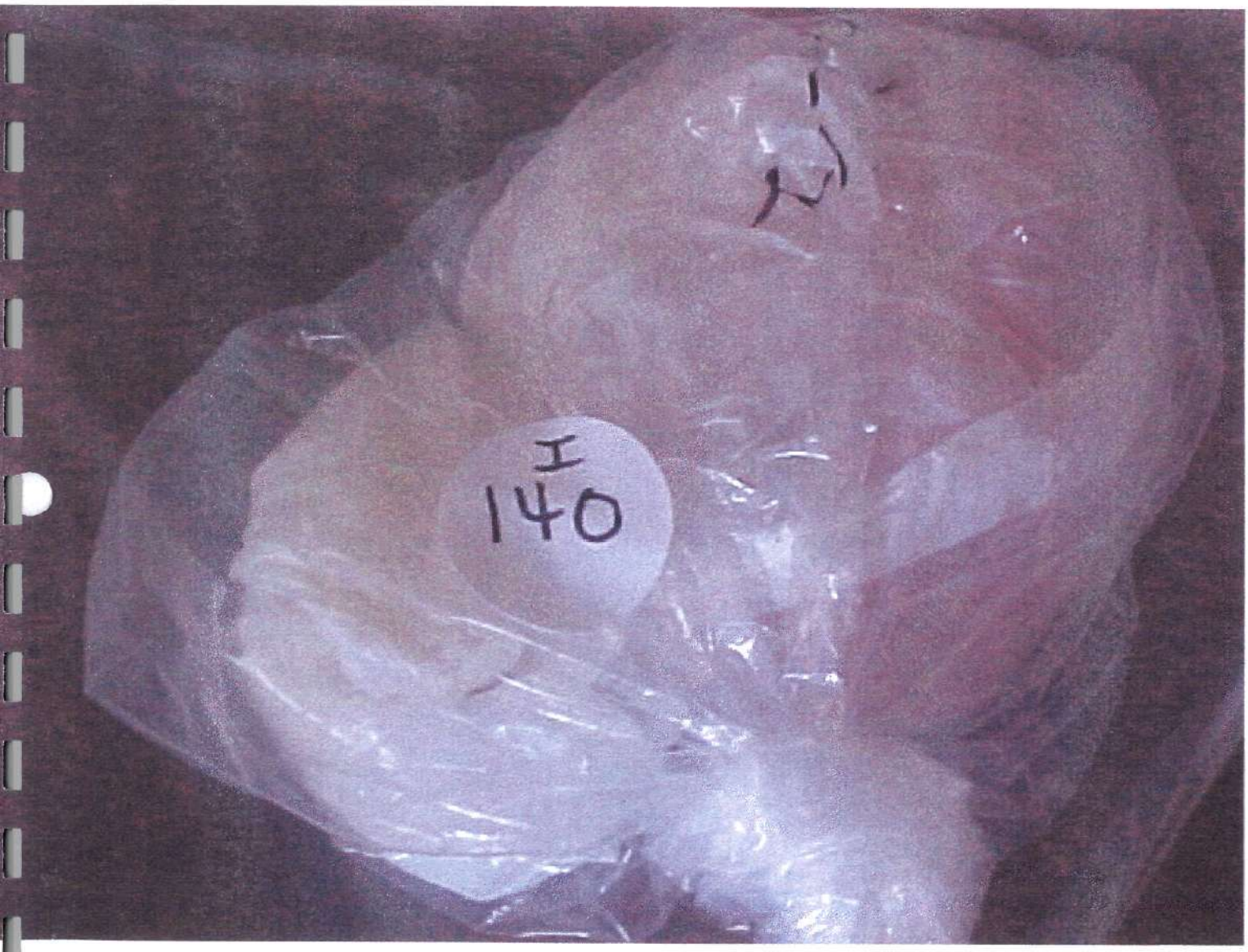
ITEM139



Acquired: 5/7/2002 9:50:53 AM Real Time: 20.00 s. Live Time: 6.62 s.

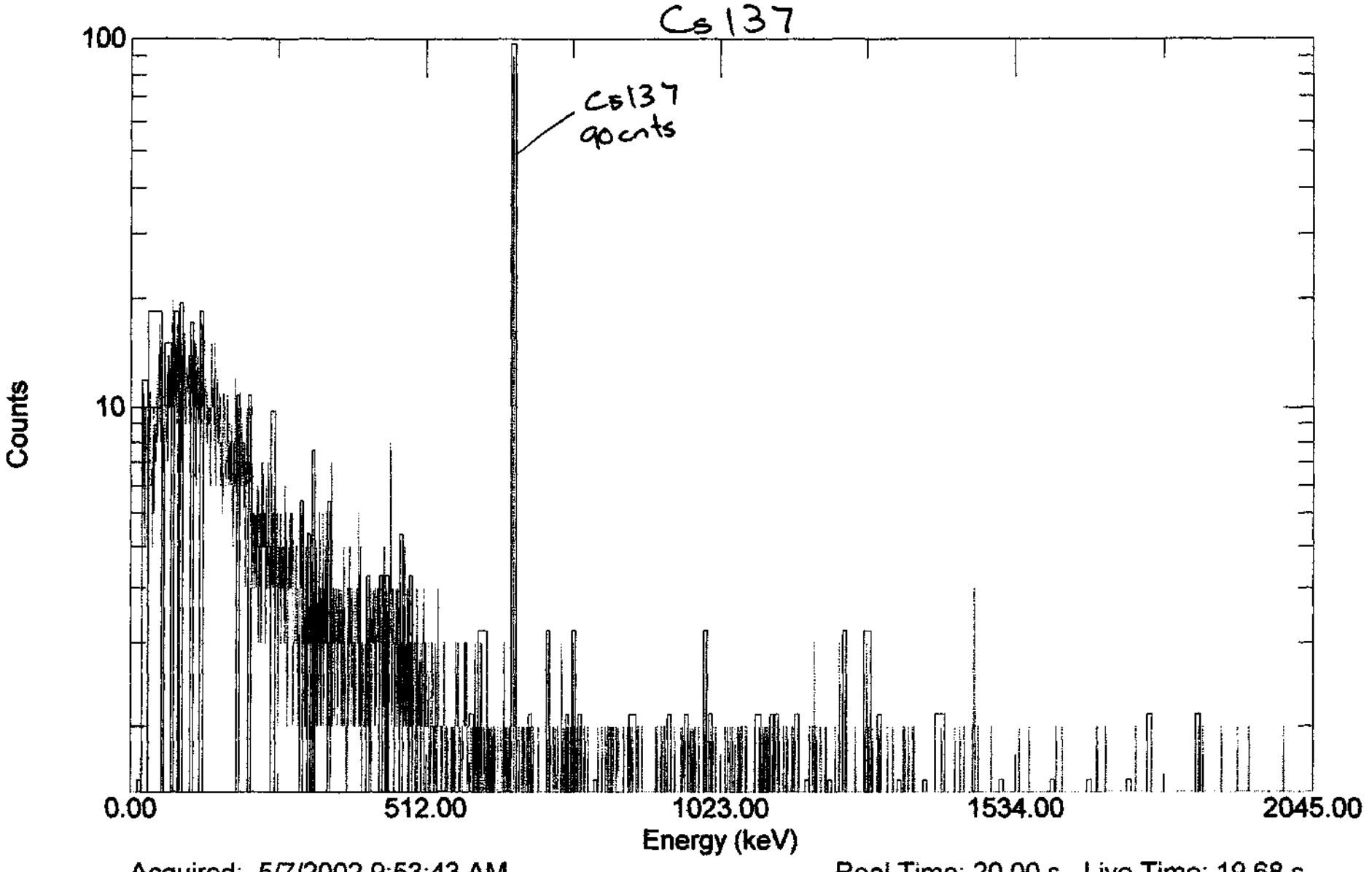
File: C:\User\GNIWEB~1\006 ITEM139 5-7-2002 9.50.53 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I
140

007 ITEM140 5-7-2002 9.53.43 AM

ITEM140



Acquired: 5/7/2002 9:53:43 AM Real Time: 20.00 s. Live Time: 19.68 s.

File: C:\User\GNIWEB~1\007 ITEM140 5-7-2002 9.53.43 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM'S

USEcology
FS-TX-02-01
Source Log

Date 5-7-02

BKG	mR/hr
6"	0.4
12"	↓
36"	↓

Container #	141	142	143	144	145
External [redacted] in mR/hr	50	10	16	60	2.5
~~[redacted]~~					
~~Contact [redacted]~~					
~~Beta or [redacted] OAW~~					

Picture	✓	~~NO~~ ✓	~~NO~~ ✓	~~NO~~ ✓	~~NO~~ ✓
DART	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	16	5	7	15	1
Source mR/hr @ 12 inches	7	3	3.8	6	0.7
Source mR/hr @ 36 inches	1.2	.7	1	1	0.3
Size of source in cc's	2cf	3cf	3cf	1cf	4CF
Weight in grams	3lbs	1lb	2lbs	1lb	8lbs

~~CPM Alpha~~					
~~Direct [redacted]~~					

~~Info on source:~~	Trash	TRASH	Trash	Decon Rags	Trash

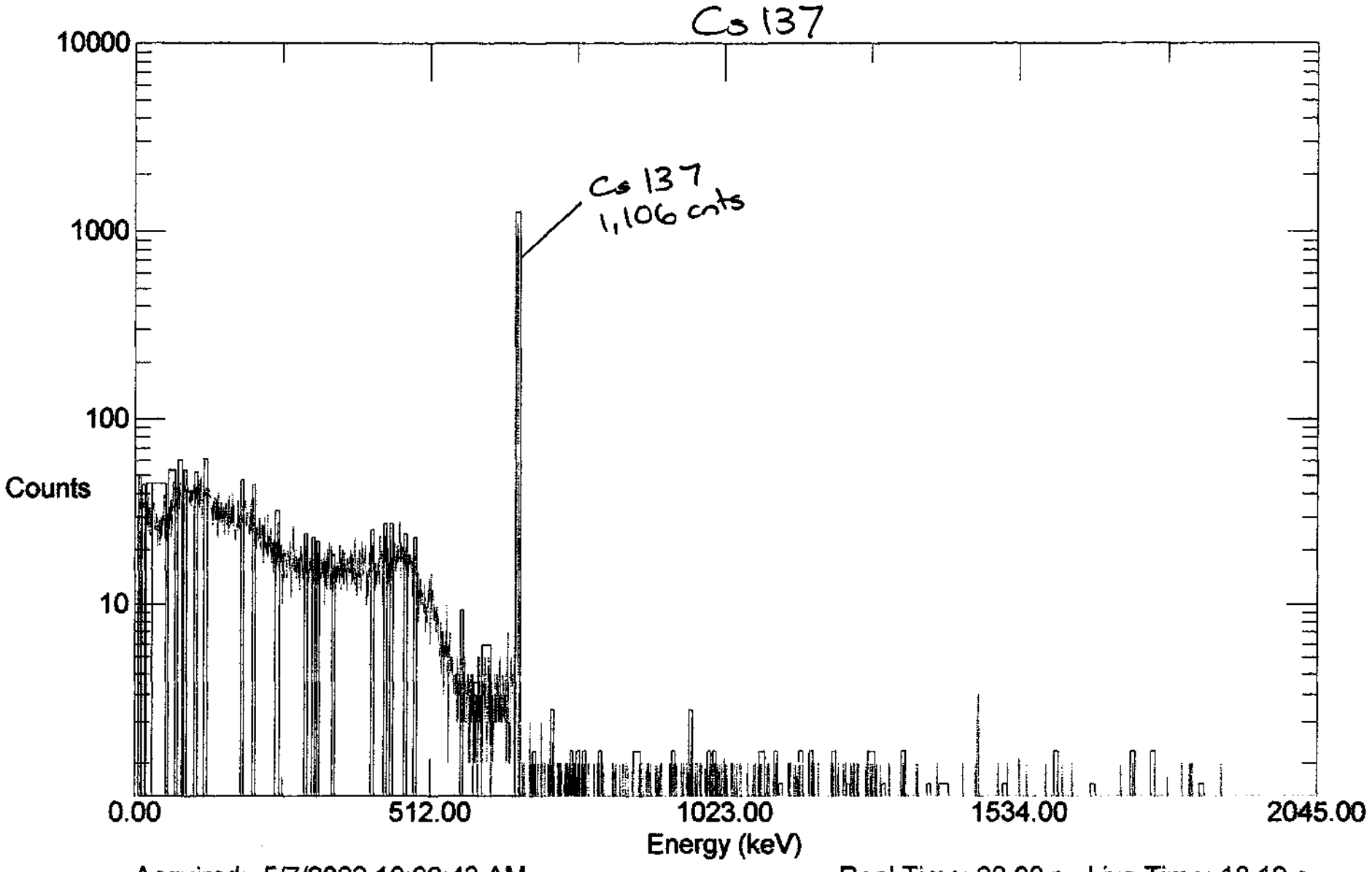
~~Information on pig:~~					
~~Smear [redacted] Alpha~~					
~~Smear DPM per 100 cm^2 Beta~~					
				NEED TO DRY	

RM 20

141
Z-141

008 ITEM141 5-7-2002 10.00.43 AM

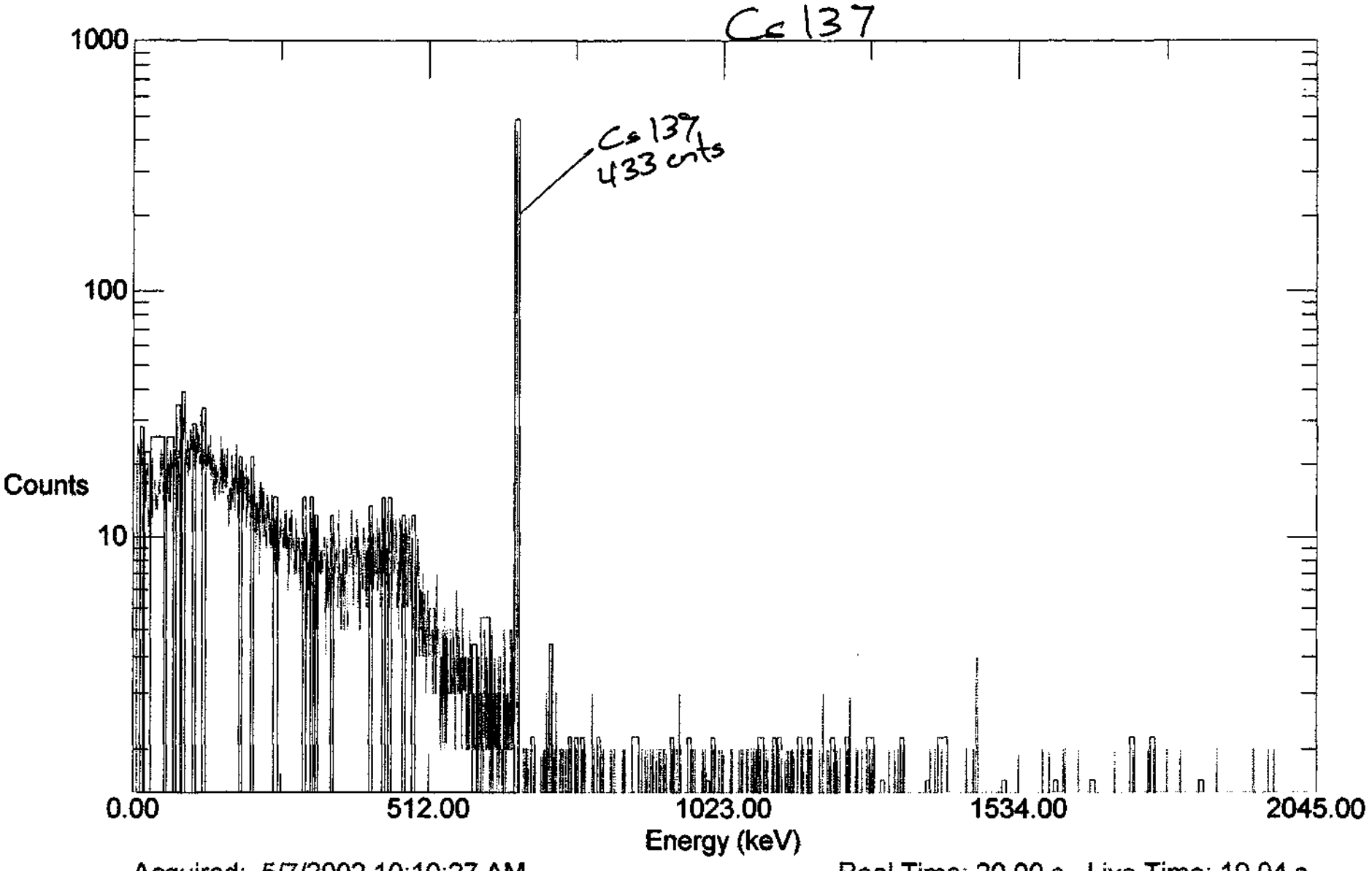
ITEM141



Acquired: 5/7/2002 10:00:43 AM Real Time: 20.00 s. Live Time: 18.12 s.
File: C:\User\GNIWEB~1\008 ITEM141 5-7-2002 10.00.43 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

009 ITEM142 5-7-2002 10.10.26 AM

ITEM142



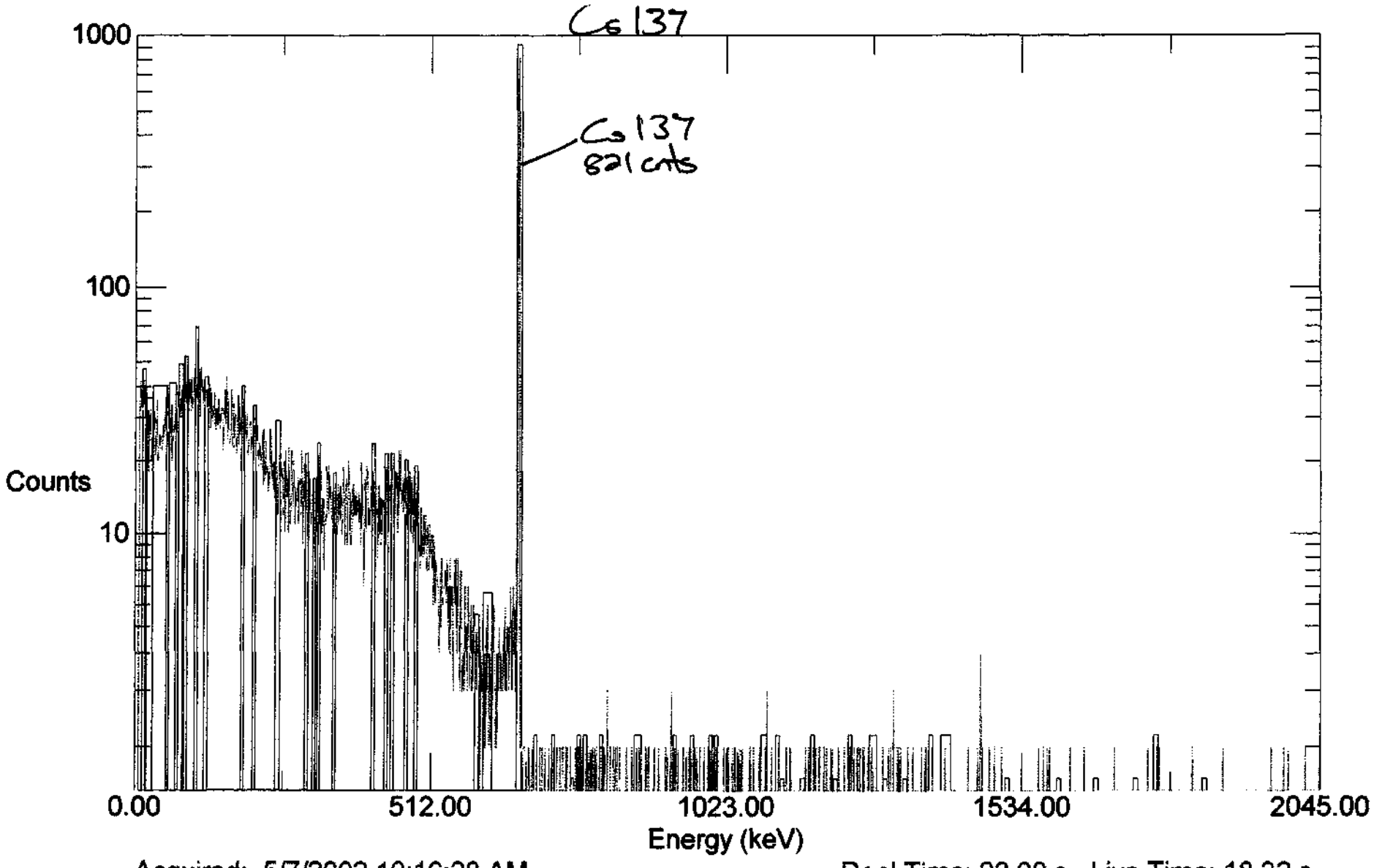
Acquired: 5/7/2002 10:10:27 AM Real Time: 20.00 s. Live Time: 19.04 s.

File: C:\User\GNIWEB~1\009 ITEM142 5-7-2002 10.10.26 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

010 ITEM143 5-7-2002 10.16.28 AM

ITEM143



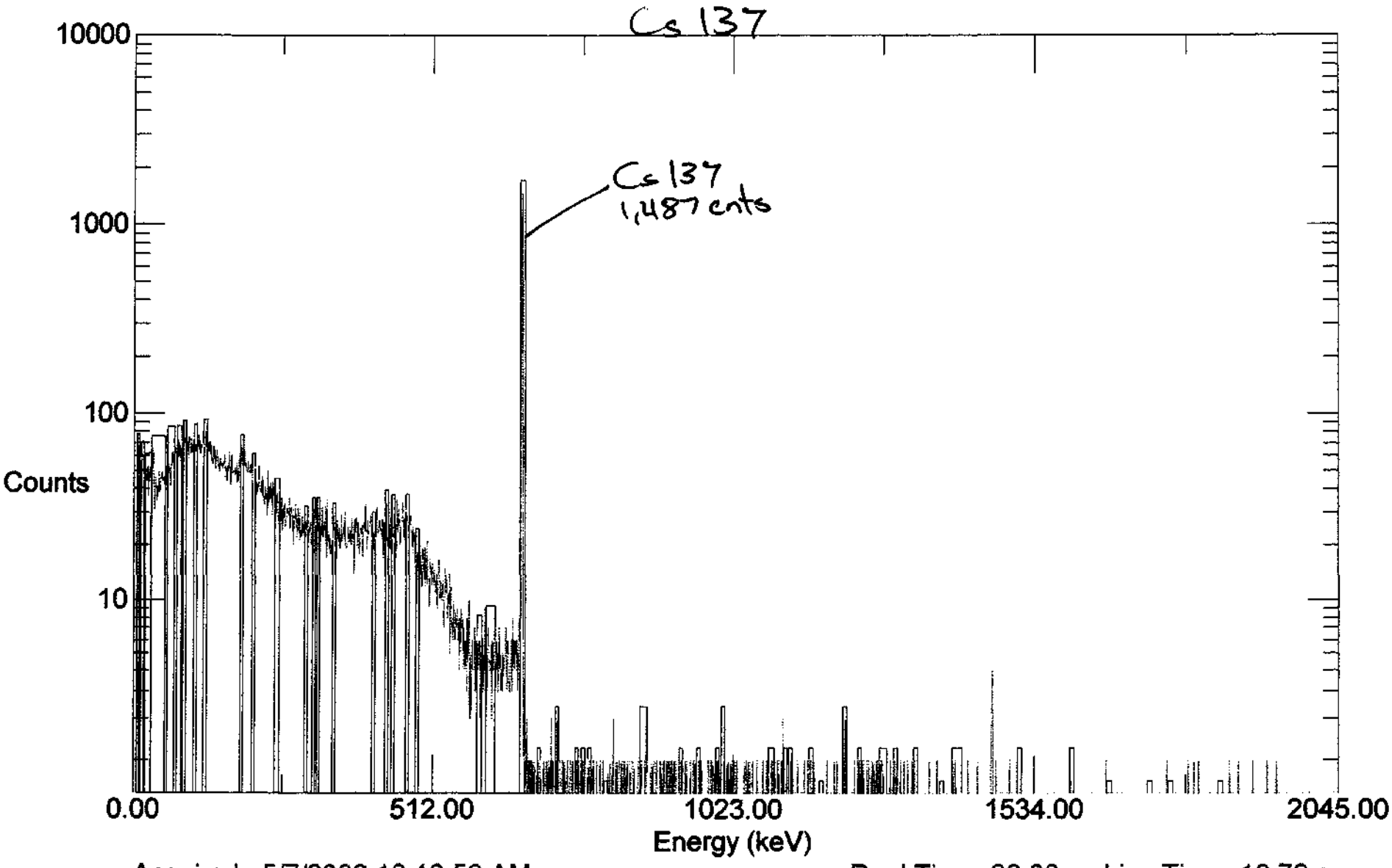
Acquired: 5/7/2002 10:16:28 AM Real Time: 20.00 s. Live Time: 18.32 s.

File: C:\User\GNIWEB~1\010 ITEM143 5-7-2002 10.16.28 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

011 ITEM144 5-7-2002 10.18.50 AM

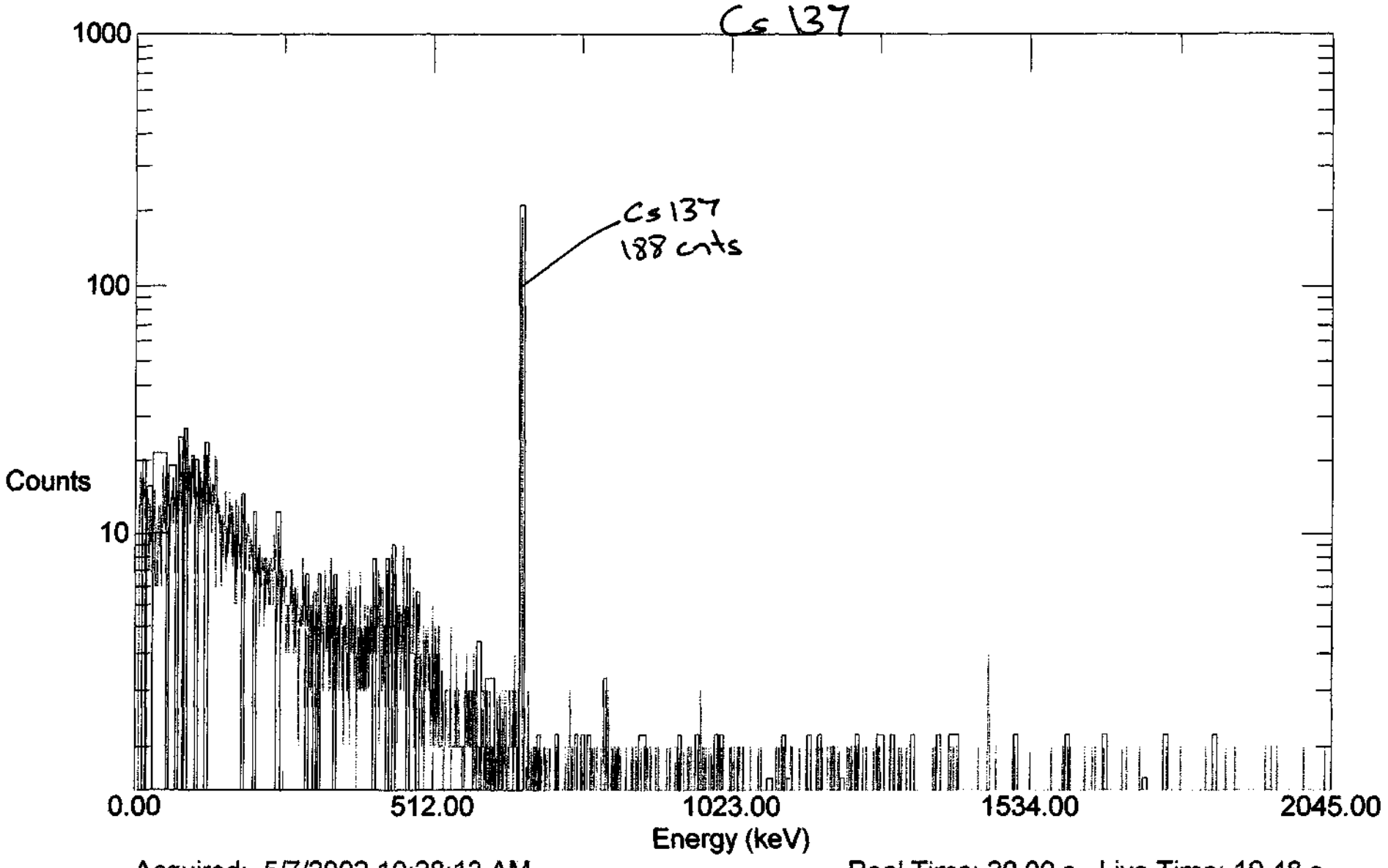
ITEM144



Acquired: 5/7/2002 10:18:50 AM Real Time: 20.00 s. Live Time: 16.76 s.
File: C:\User\GNIWEB~1\011 ITEM144 5-7-2002 10.18.50 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

012 ITEM145 5-7-2002 10.28.13 AM

ITEM145



Acquired: 5/7/2002 10:28:13 AM Real Time: 20.00 s. Live Time: 19.48 s.

File: C:\User\GNIWEB~1\012 ITEM145 5-7-2002 10.28.13 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM's

USEcology
FS-TX-02-01
Source Log

Date 5-7-02

BKG	mR/hr
6"	
12"	
36"	

Container #	I-146	147	148	149	150
External [redacted] in mR/hr	12	10	7	50	1
[redacted]					
[redacted]					
[redacted]					

Picture	✓	✓	✓	✓	✓
DART	✓	✓	✓	✓	

Table Readings

Source mR/hr @ 6 inchs	2.4	2	1.2	17	.5
Source mR/hr @ 12 inches	1.4	1.2	.7	11	.4
Source mR/hr @ 36 inches	.4	.6	.4	3.4	.2
Size of source in cc's	3cf	4ft	1cf	4cf	3cf
Weight in grams	8lbs	1lbs	½lb	5lb	3lbs

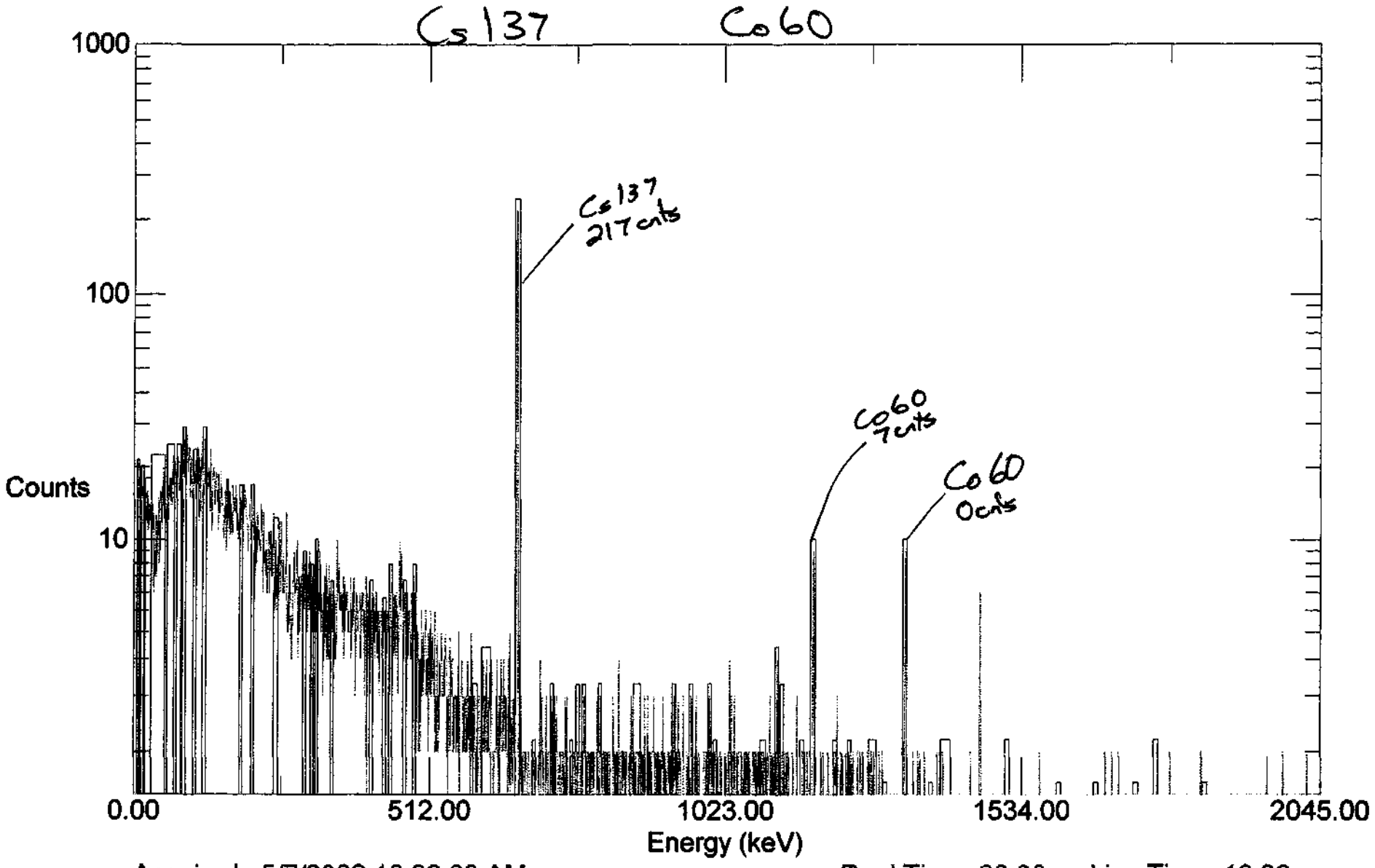
[redacted]					
[redacted]					

[redacted]	Trash	Wooden Plank	Hepa Hose	Trash	Trash

[redacted]					
[redacted] Alpha					
[redacted] Beta					

013 ITEM146 5-7-2002 10.32.09 AM

ITEM146



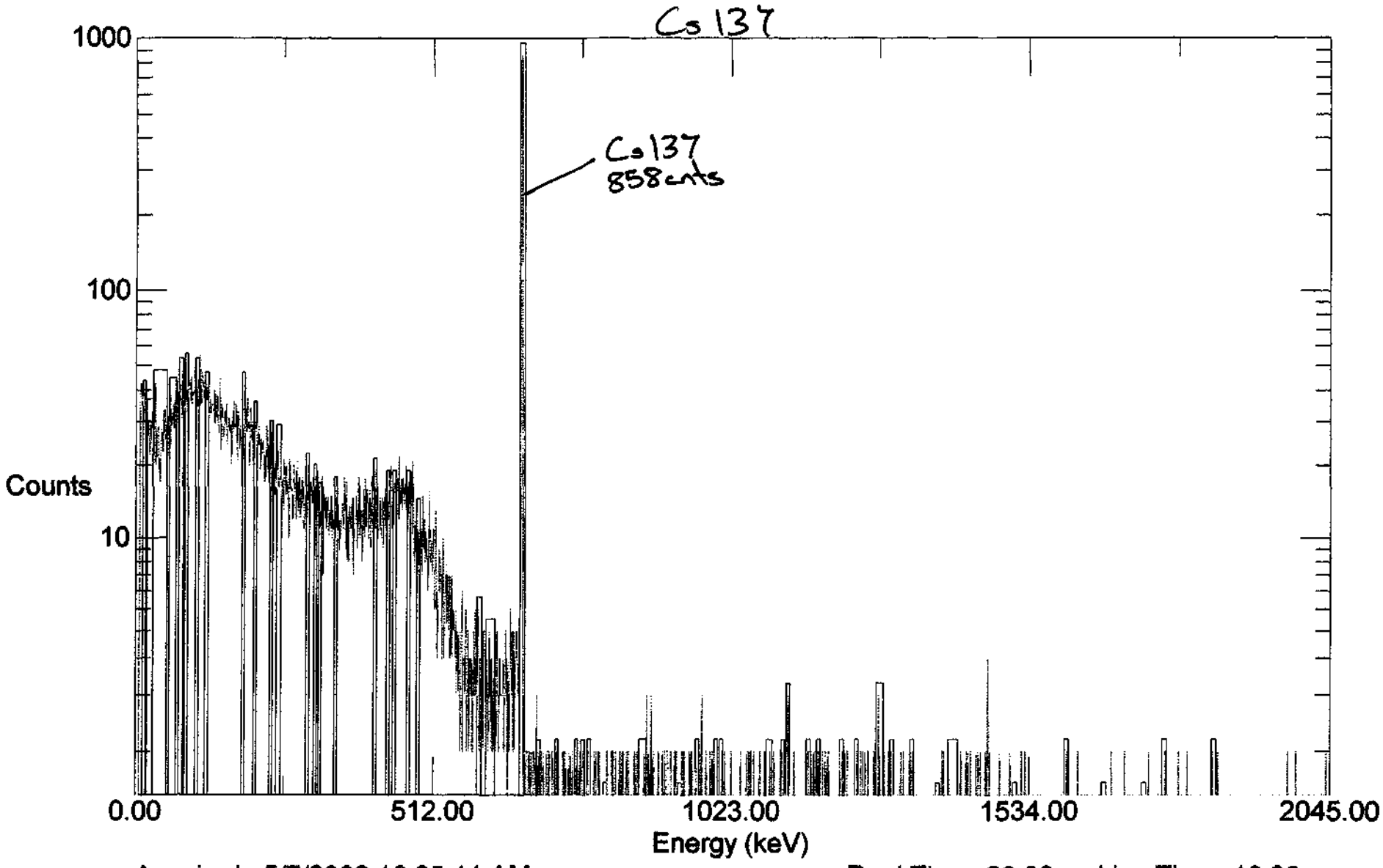
Acquired: 5/7/2002 10:32:09 AM Real Time: 20.00 s. Live Time: 19.32 s.

File: C:\User\GNIWEB~1\013 ITEM146 5-7-2002 10.32.09 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

014 ITEM147 5-7-2002 10.35.10 AM

ITEM147



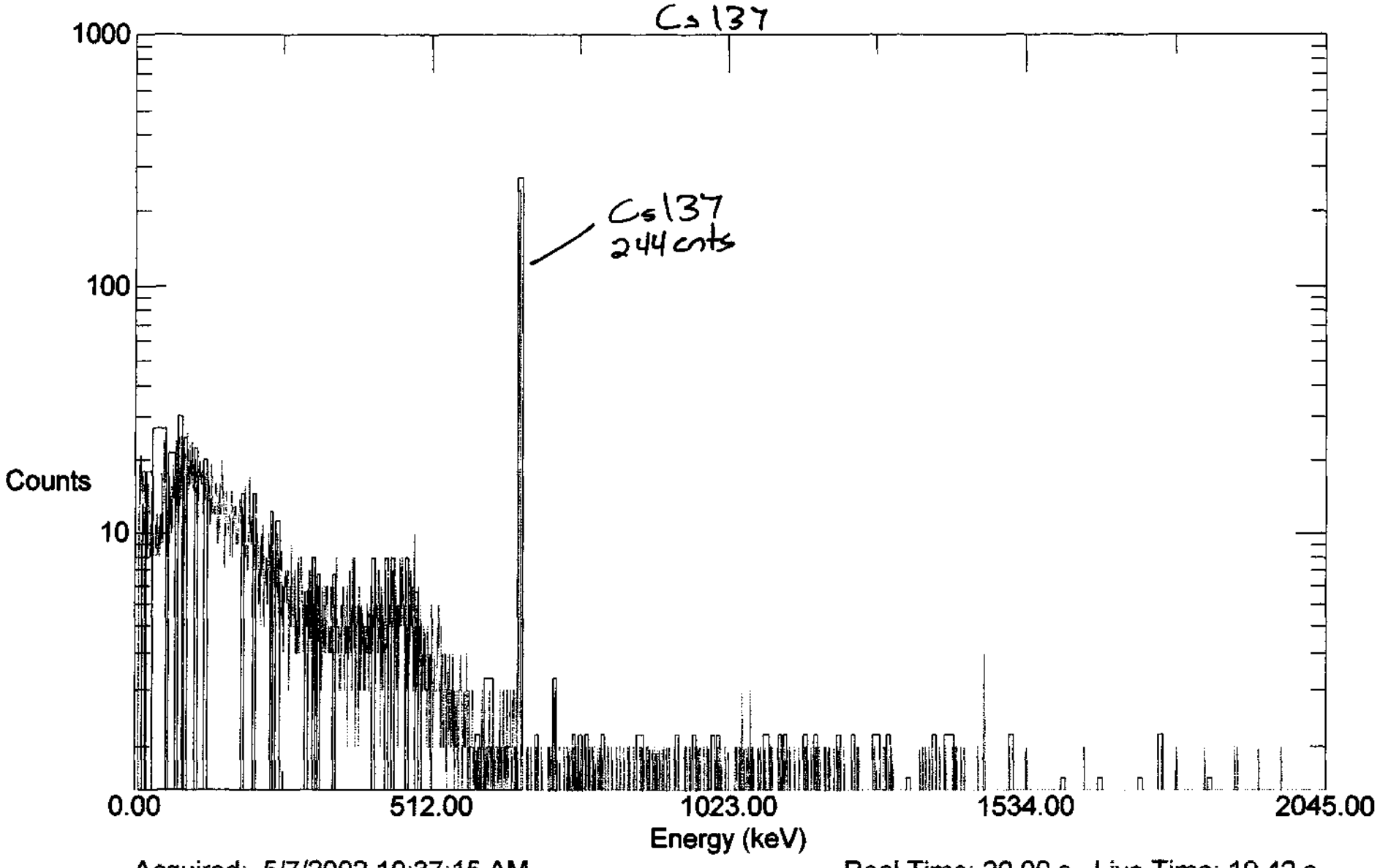
Acquired: 5/7/2002 10:35:11 AM Real Time: 20.00 s. Live Time: 18.30 s.

File: C:\User\GNIWEB~1\014 ITEM147 5-7-2002 10.35.10 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

015 ITEM148 5-7-2002 10.37.16 AM

ITEM148



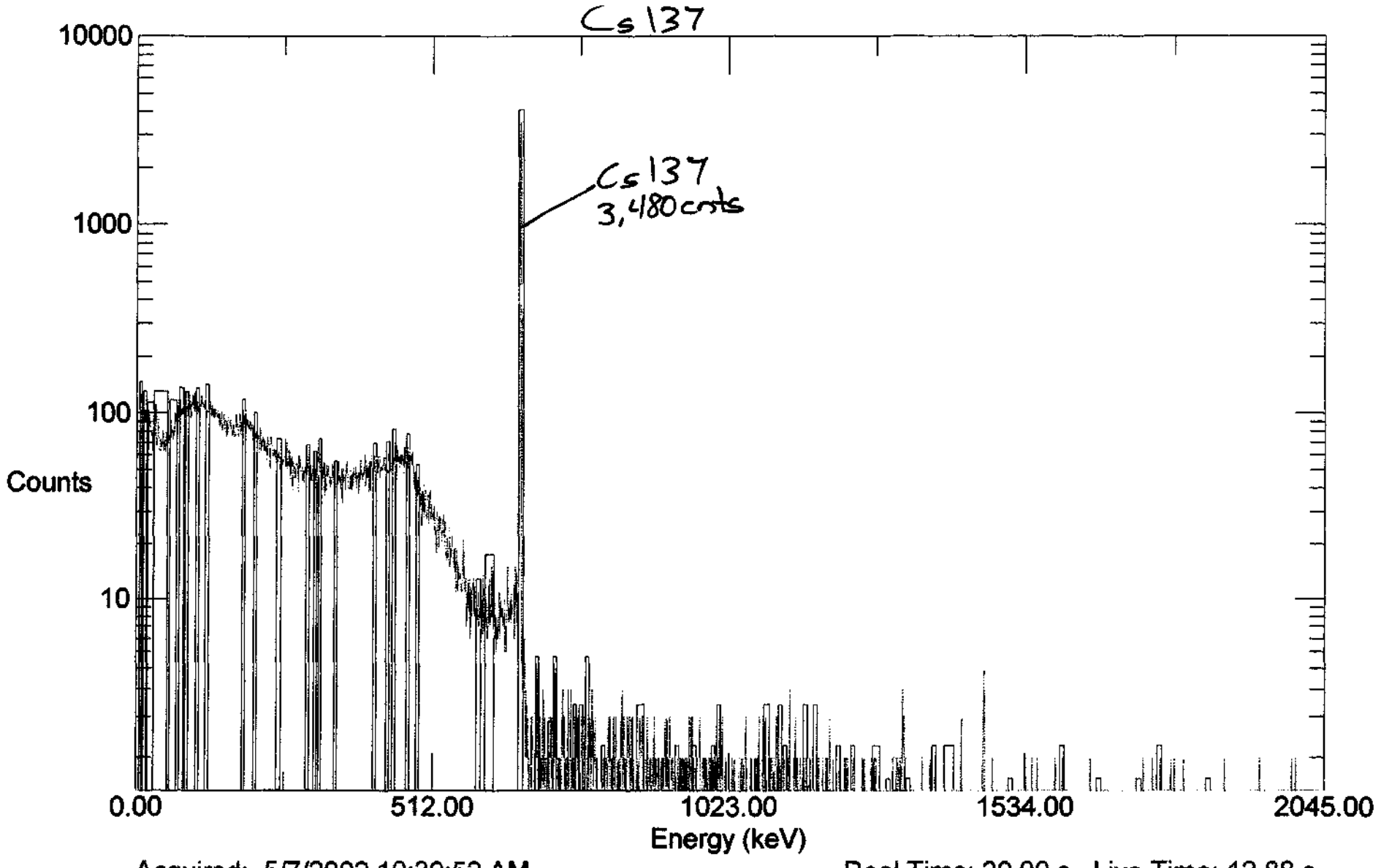
Acquired: 5/7/2002 10:37:15 AM Real Time: 20.00 s. Live Time: 19.42 s.

File: C:\User\GNIWEB~1\015 ITEM148 5-7-2002 10.37.16 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

016 ITEM149 5-7-2002 10.39.52 AM

ITEM149



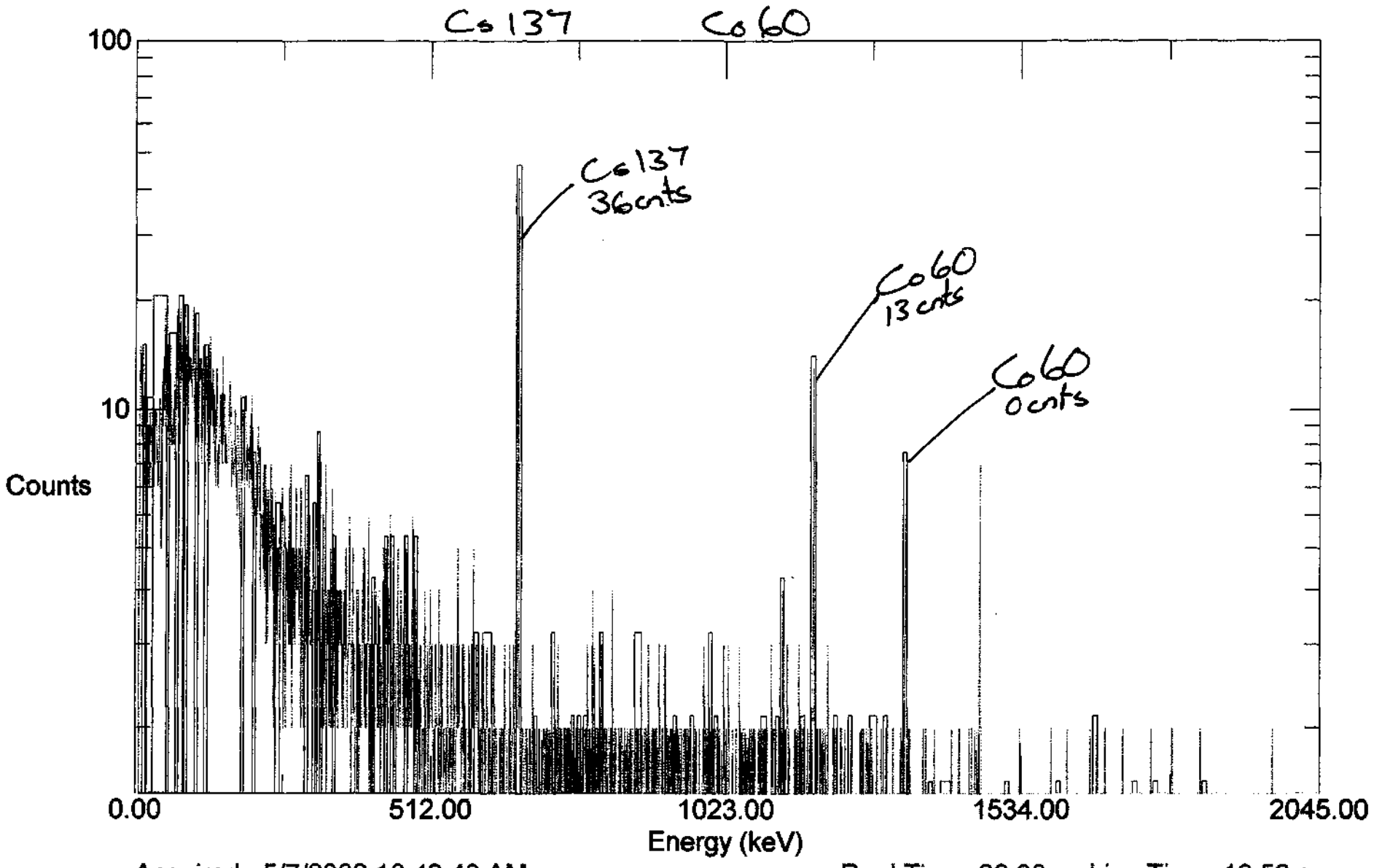
Acquired: 5/7/2002 10:39:52 AM Real Time: 20.00 s. Live Time: 12.88 s.

File: C:\User\GNIWEB~1\016 ITEM149 5-7-2002 10.39.52 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

017 ITEM150 5-7-2002 10.42.47 AM

ITEM150



Acquired: 5/7/2002 10:42:48 AM Real Time: 20.00 s. Live Time: 19.52 s.

File: C:\User\GNIWEB~1\017 ITEM150 5-7-2002 10.42.47 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18-02

BKG	mR/hr
6"	0.3
12"	0.3
36"	

Container #	151	152	153	154	155
External [redacted] in mR/hr	7	300	1200	.7	15
External [redacted] Neutron mR/hr	<1	[redacted] 2mr	30mr	<1	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W	12	300	1500	.7	15

Picture	✓	✓	✓	✓	✓
DART					

Table Readings

Source mR/hr @ 6 inchs	2.5	90	500	.6	2
Source mR/hr @ 12 inches	.2	60	400	.3	1.6
~~Source mR/hr @ 36 inches~~	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in ~~cals~~ CF	6	4	2		
Weight in ~~grams~~ pounds	10	18	25		

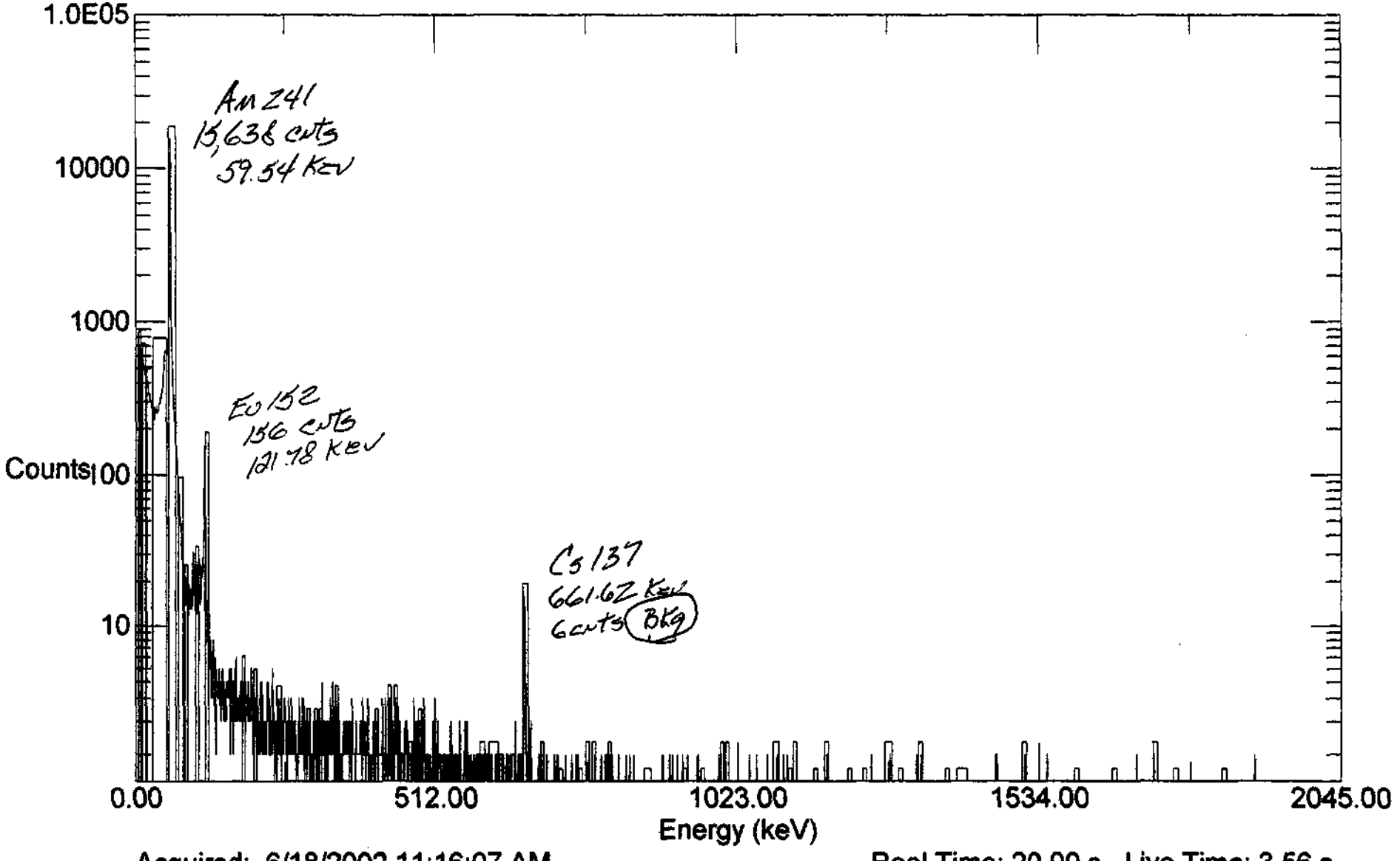
CPM Alpha					
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

005 ITEM-151 6-18-2002 11.16.06 AM

ITEM-151



Acquired: 6/18/2002 11:16:07 AM Real Time: 20.00 s. Live Time: 3.56 s.

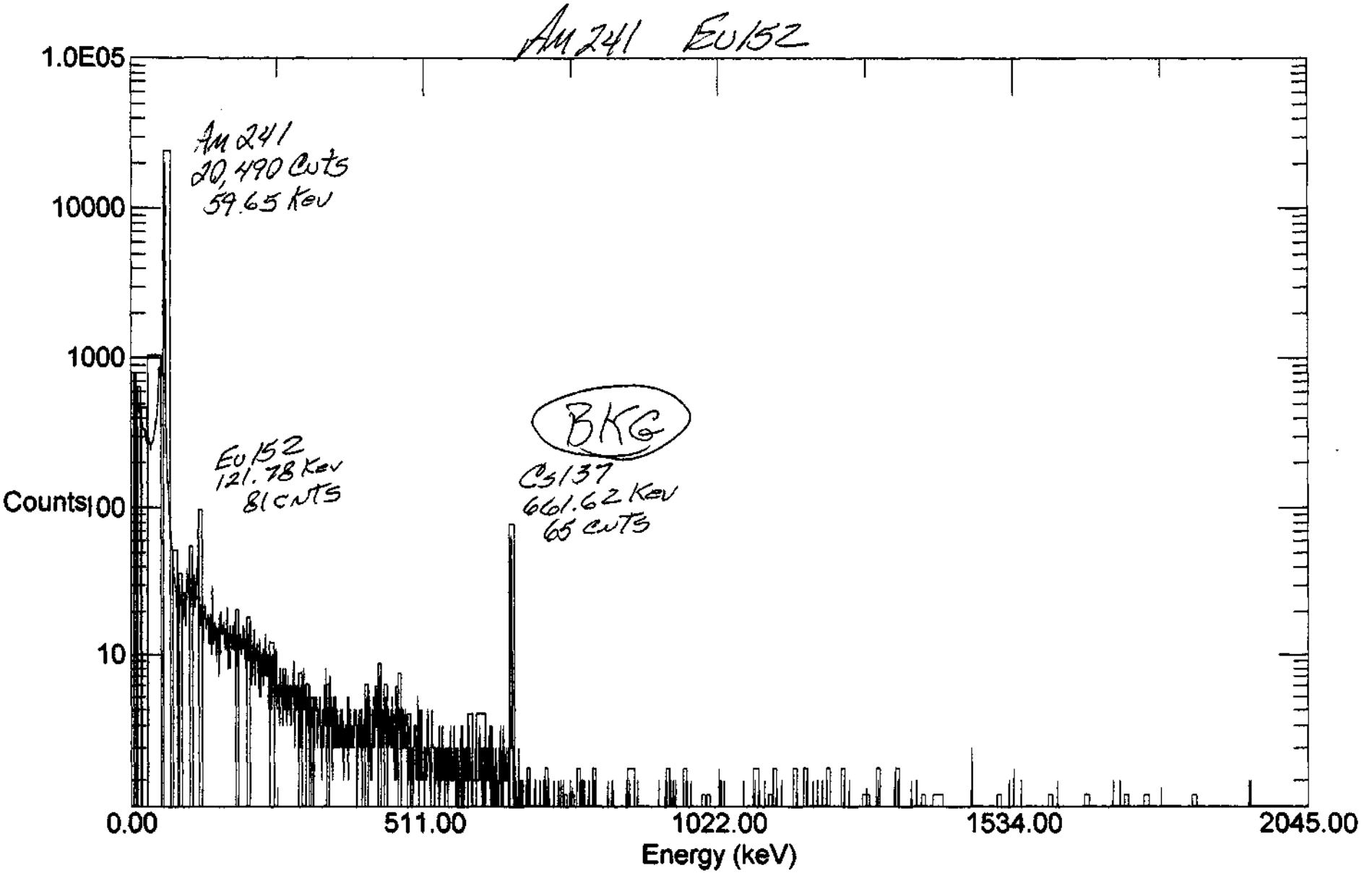
File: C:\User\GNIWEB~1\005 ITEM-151 6-18-2002 11.16.06 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Item
151

006 ITEM-152 6-18-2002 11.20.25 AM

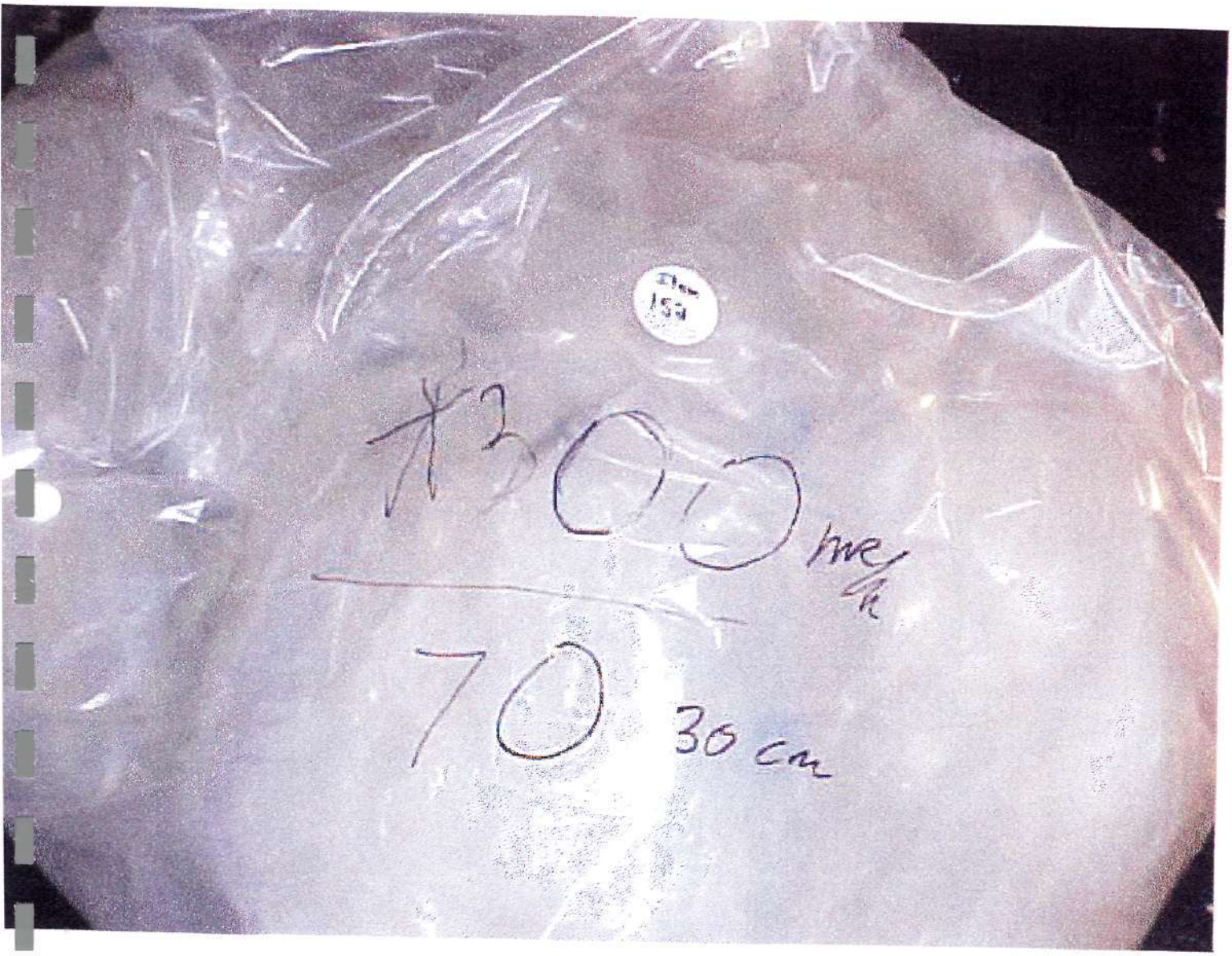
ITEM-152



Acquired: 6/18/2002 11:20:25 AM Real Time: 20.00 s. Live Time: 9.72 s.

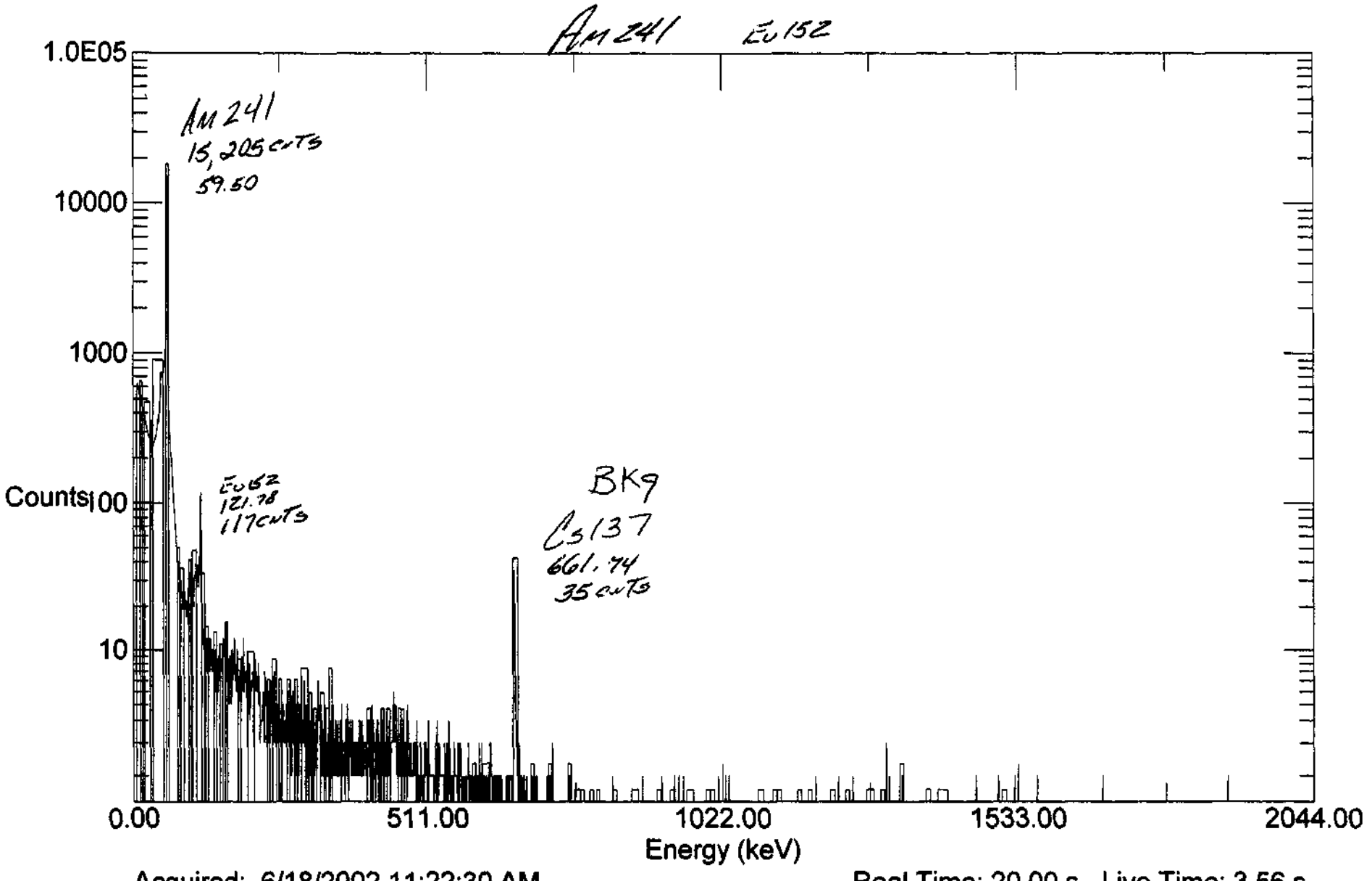
File: C:\User\GNIWEB~1\006 ITEM-152 6-18-2002 11.20.25 AM.An1 Channels: 8192

Detector: #1 digiDART USE 1b


#300 mg/h
70 30 cm

007 ITEM-153 6-18-2002 11.22.30 AM

ITEM-153



Acquired: 6/18/2002 11:22:30 AM Real Time: 20.00 s. Live Time: 3.56 s.

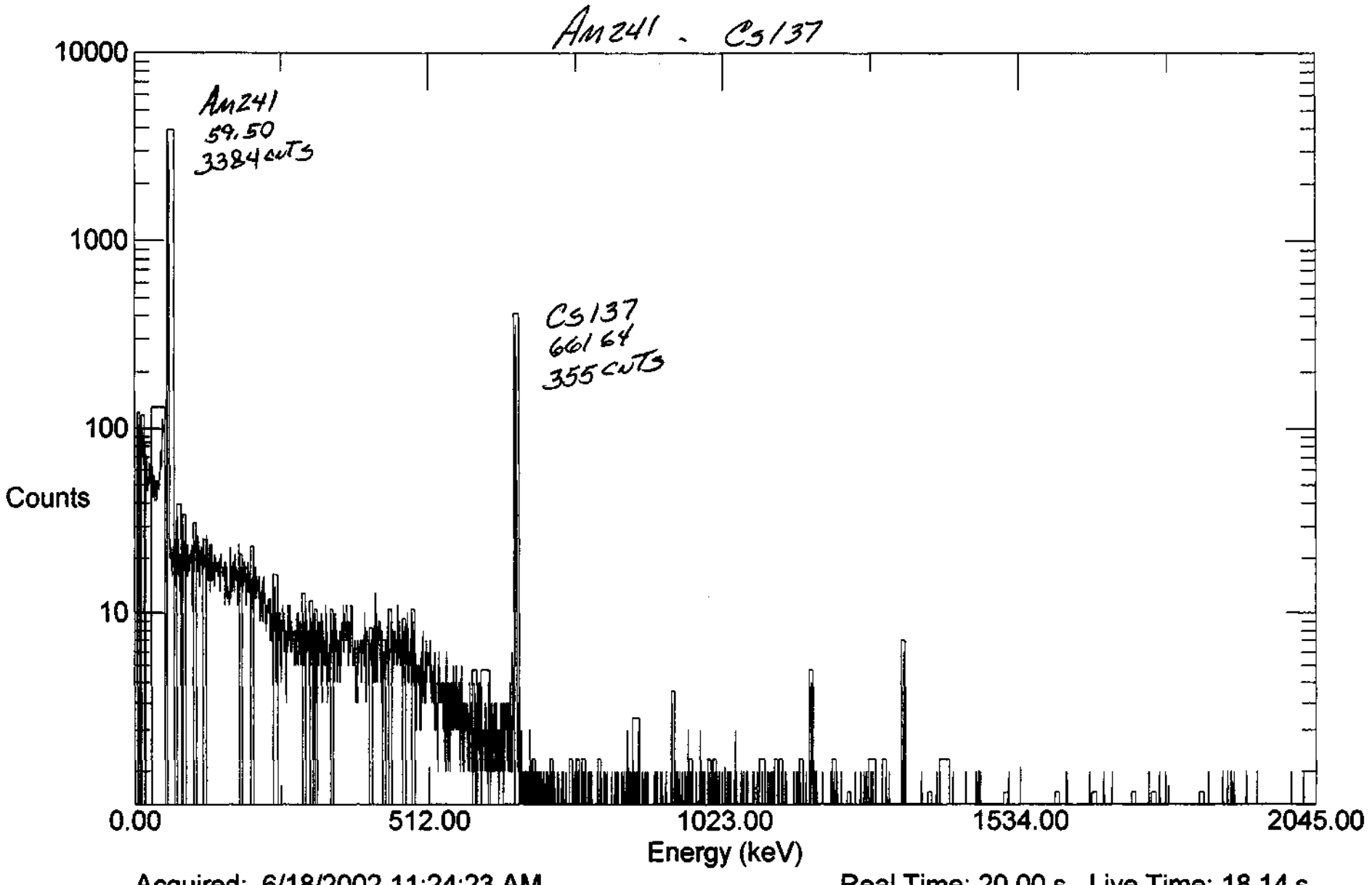
File: C:\User\GNIWEB~1\007 ITEM-153 6-18-2002 11.22.30 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Item
153

008 ITEM-154 6-18-2002 11.24.23 AM

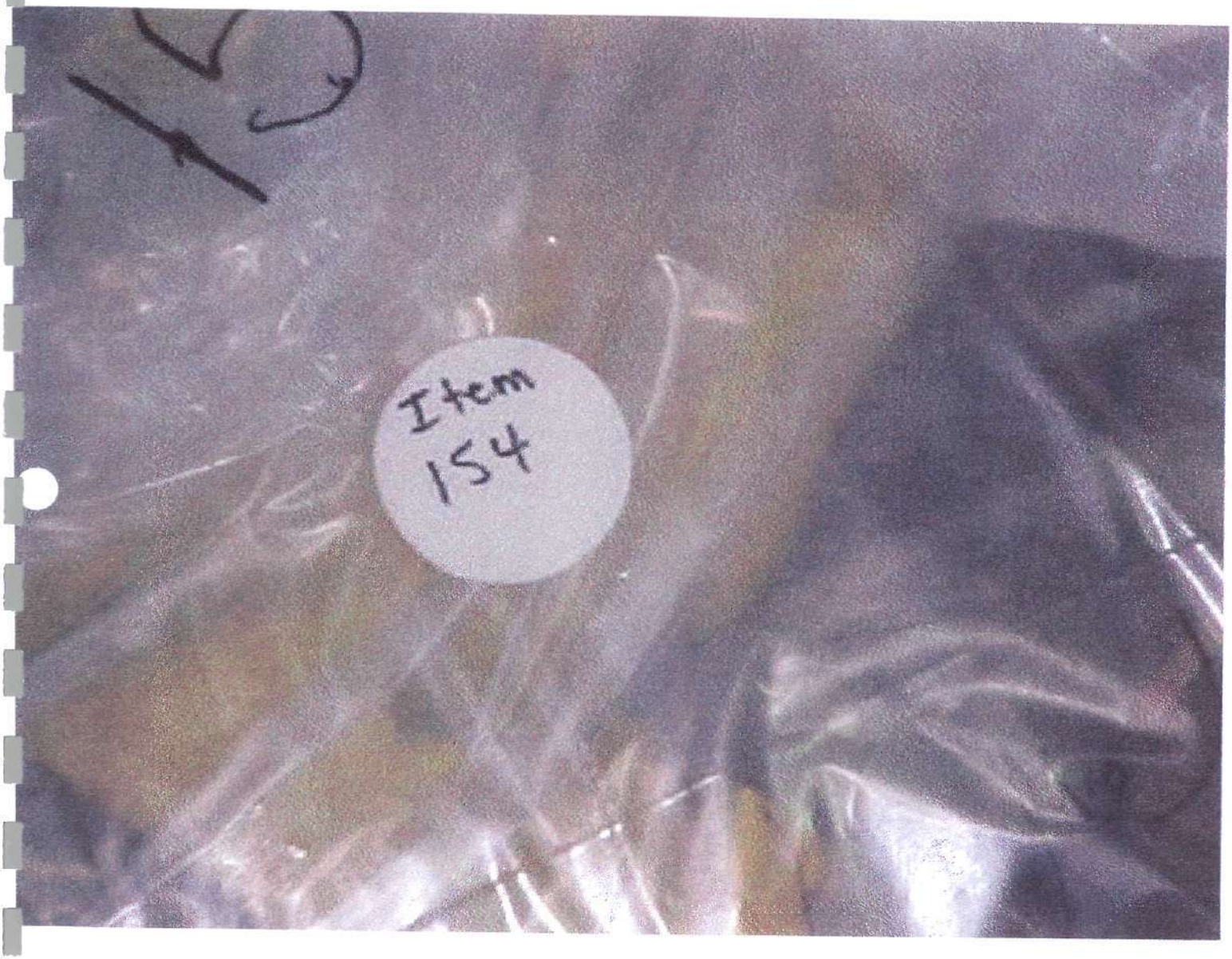
ITEM-154



Acquired: 6/18/2002 11:24:23 AM Real Time: 20.00 s. Live Time: 18.14 s.

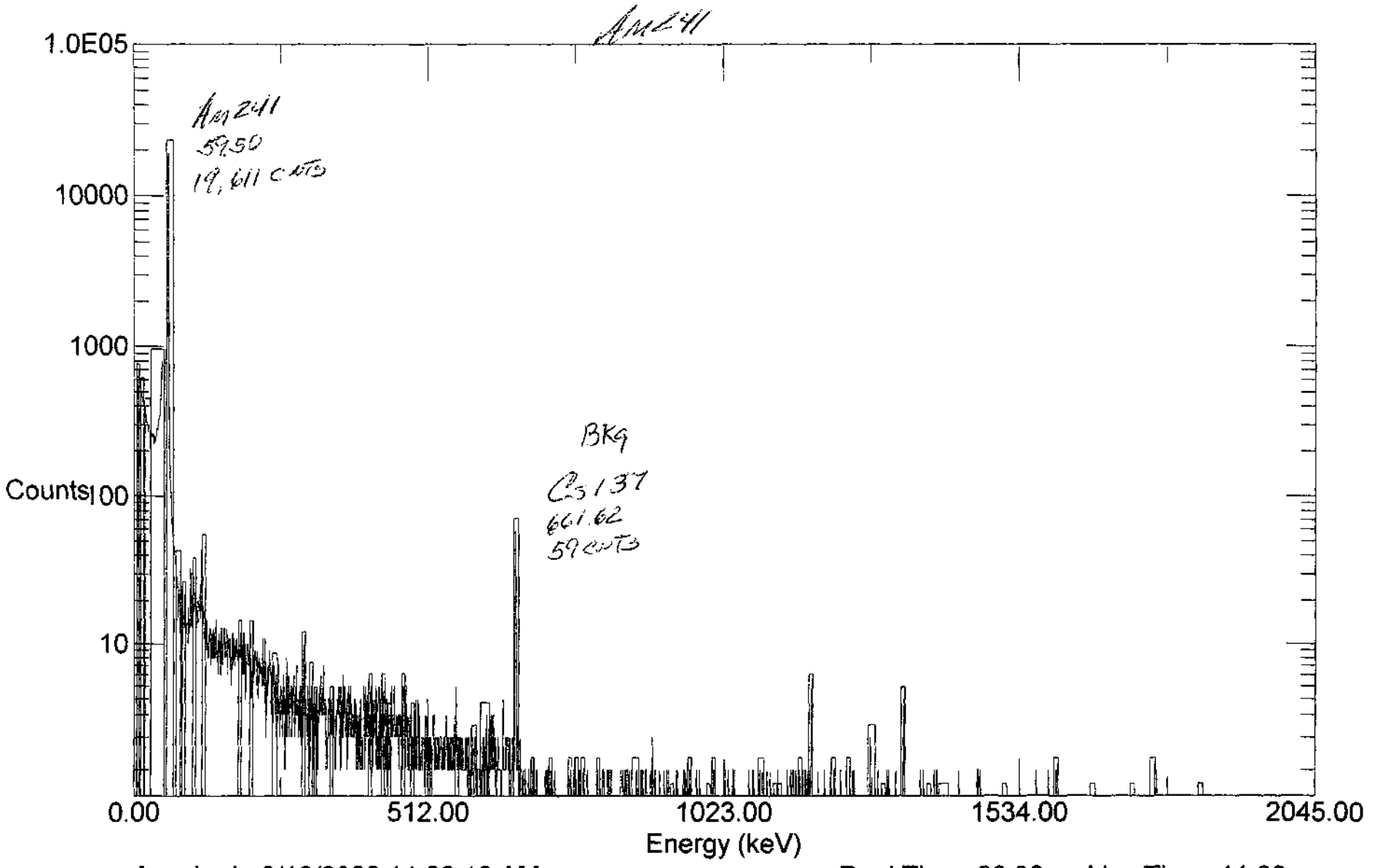
File: C:\User\GNIWEB~1\008 ITEM-154 6-18-2002 11.24.23 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


Item
154

009 ITEM-155 6-18-2002 11.26.09 AM

ITEM-155



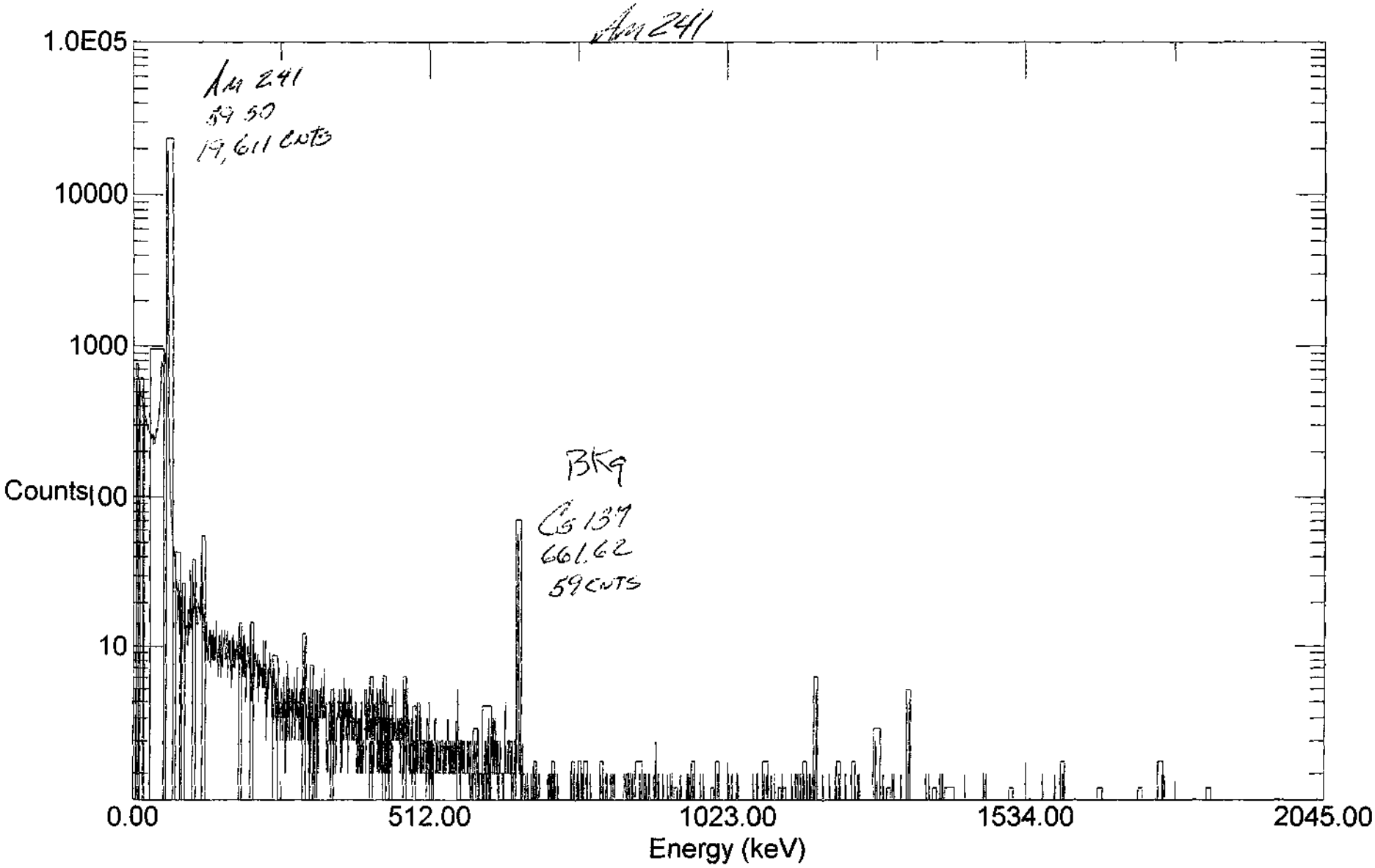
Acquired: 6/18/2002 11:26:10 AM Real Time: 20.00 s. Live Time: 11.08 s.

File: C:\User\GNIWEB~1\009 ITEM-155 6-18-2002 11.26.09 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

009 ITEM-155 6-18-2002 11.26.09 AM

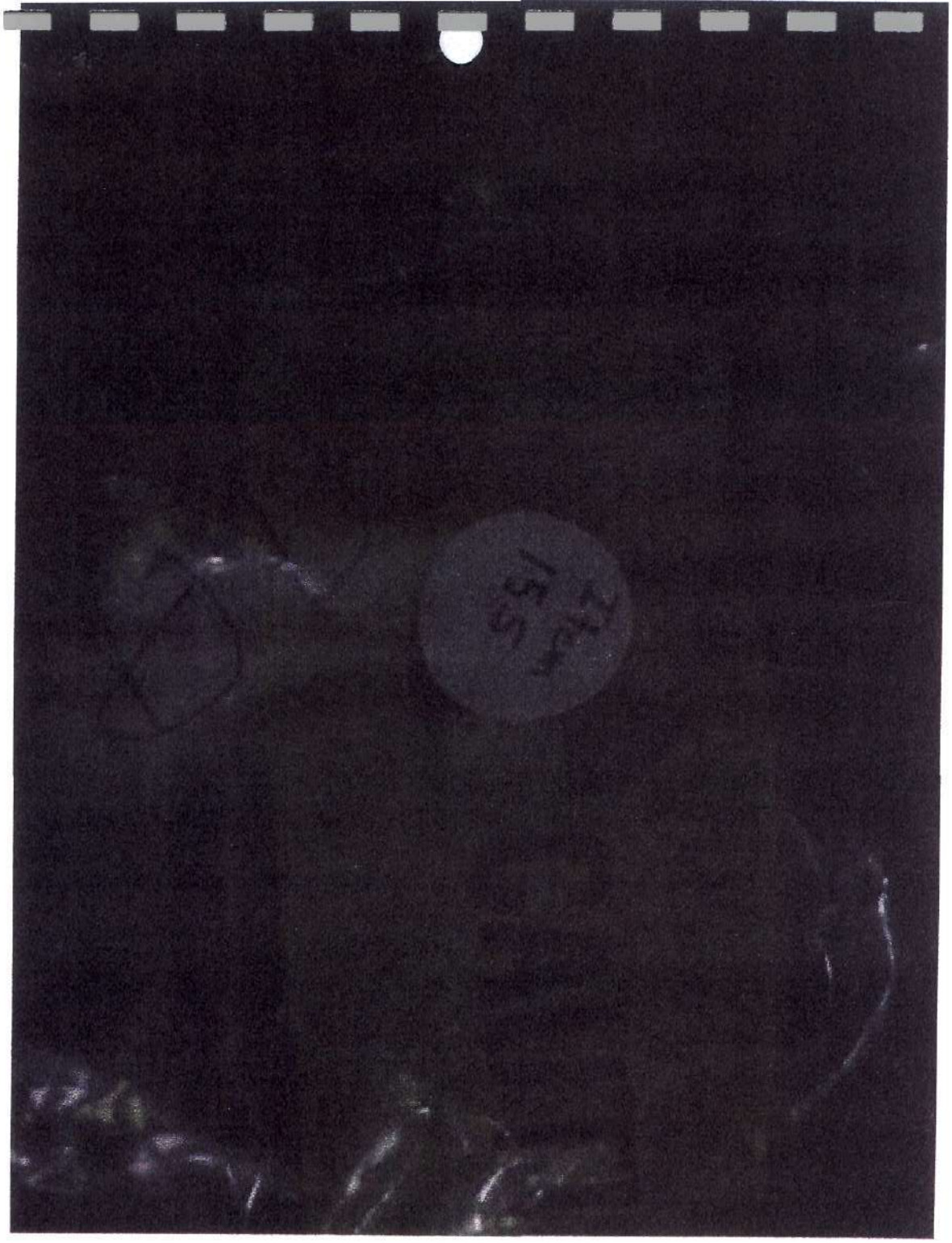
ITEM-155



Acquired: 6/18/2002 11:26:10 AM Real Time: 20.00 s. Live Time: 11.08 s.

File: C:\User\GNIWEB~1\009 ITEM-155 6-18-2002 11.26.09 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18-02

BKG	[redacted] uR/hr
6"	Co
12"	Cu
36"	

Container #	156	157	158	159	160
External [redacted] in m[redacted]r uR/hr	70	70	150	90	90
External [redacted] Neutron mR/hr	<1	<1	<1	<1	<1
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W	NA	NA	NA	NA	NA

Picture	✓	✓	✓	✓	
DARS					

Table Readings

Source m[redacted]r @ 6 inchs uR/hr	70	70	110	70	70
Source m[redacted]r @ 12 inches uR/hr	60	65	90	60	65
~~Source mR/[redacted] inches~~	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in [redacted] FT³	4	3	3	3	1
Weight in [redacted] LBS	15	7	20	25	25

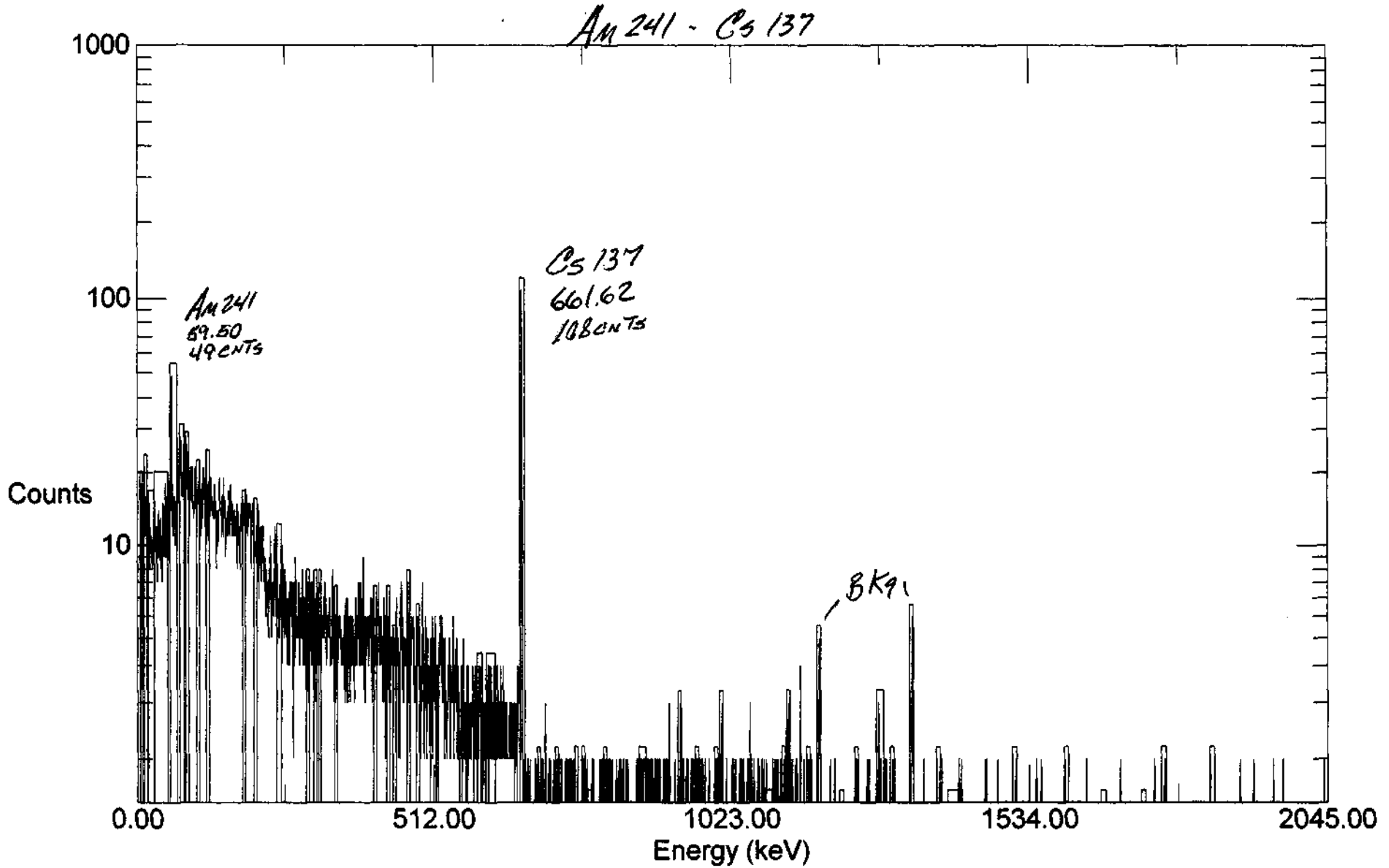
CPM Alpha					
Direct Beta/Gamma					

Info on source:					Source Rack

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

010 ITEM-156 6-18-2002 11.27.37 AM

ITEM-156



Acquired: 6/18/2002 11:27:36 AM Real Time: 20.00 s. Live Time: 19.36 s.

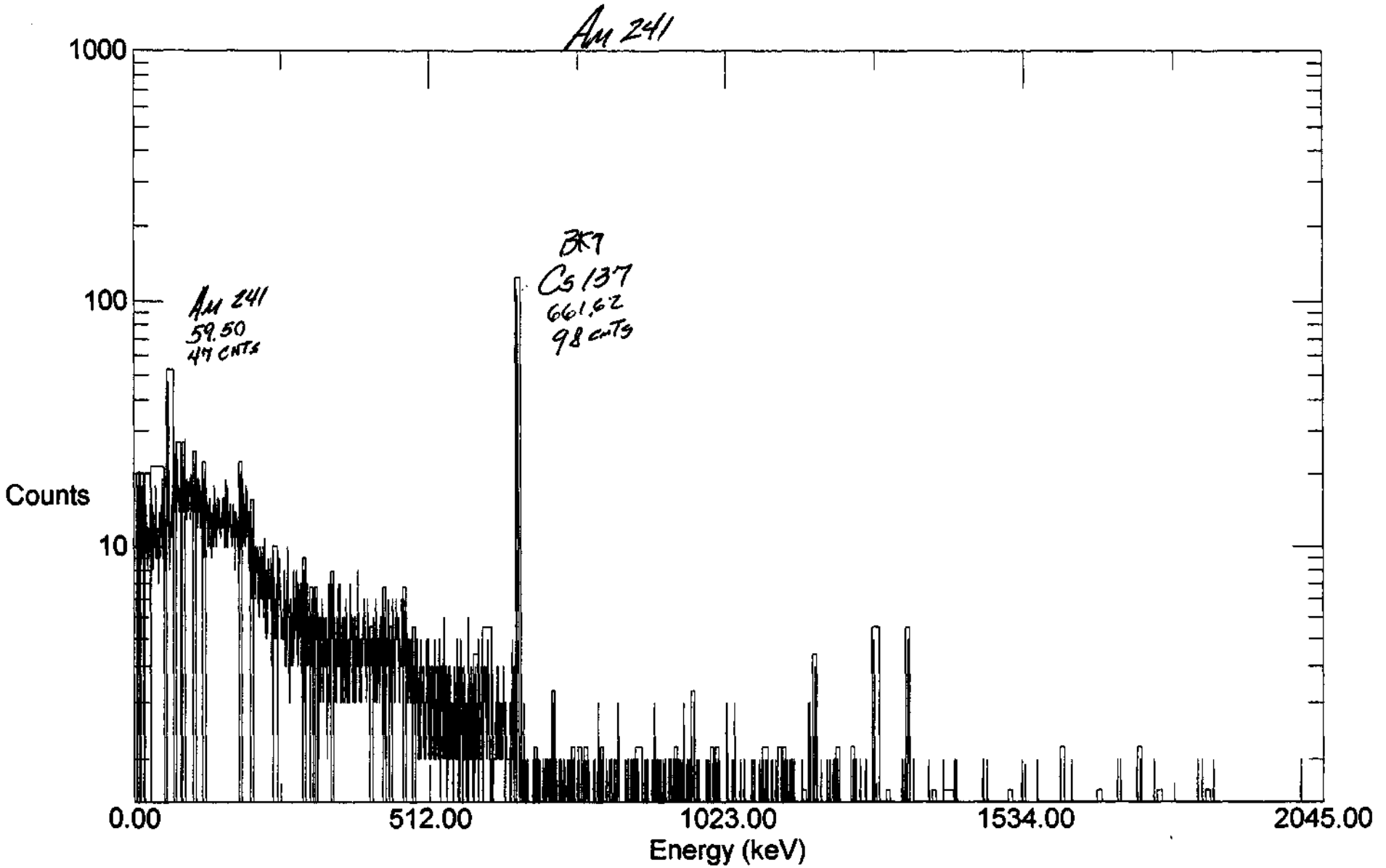
File: C:\User\GNIWEB~1\010 ITEM-156 6-18-2002 11.27.37 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

CAUTI

011 ITEM-157 6-18-2002 11.28.51 AM

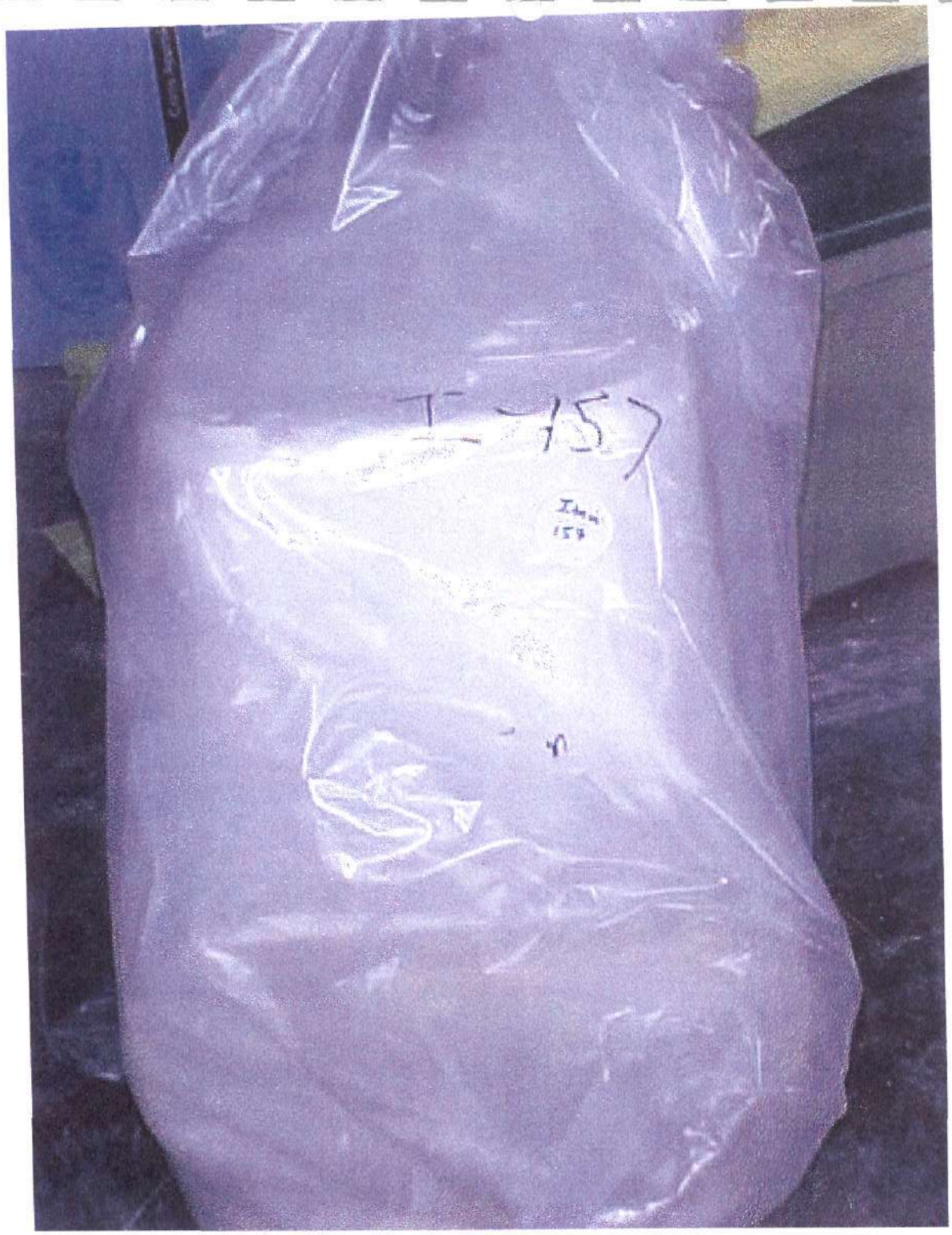
ITEM-157



Acquired: 6/18/2002 11:28:51 AM Real Time: 20.00 s. Live Time: 19.40 s.

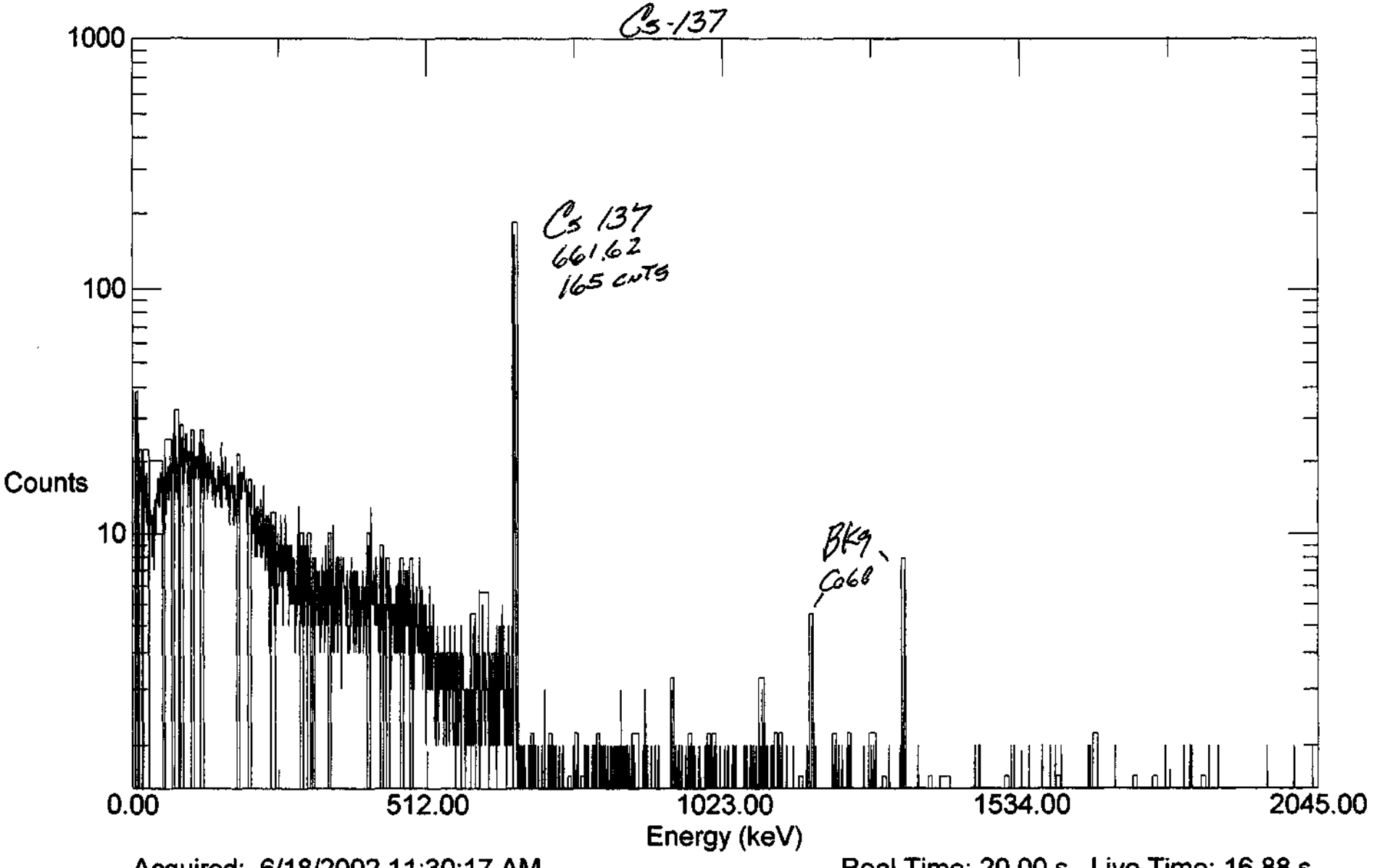
File: C:\User\GNIWEB~1\011 ITEM-157 6-18-2002 11.28.51 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


T-157

012 ITEM-158 6-18-2002 11.30.17 AM

ITEM-158



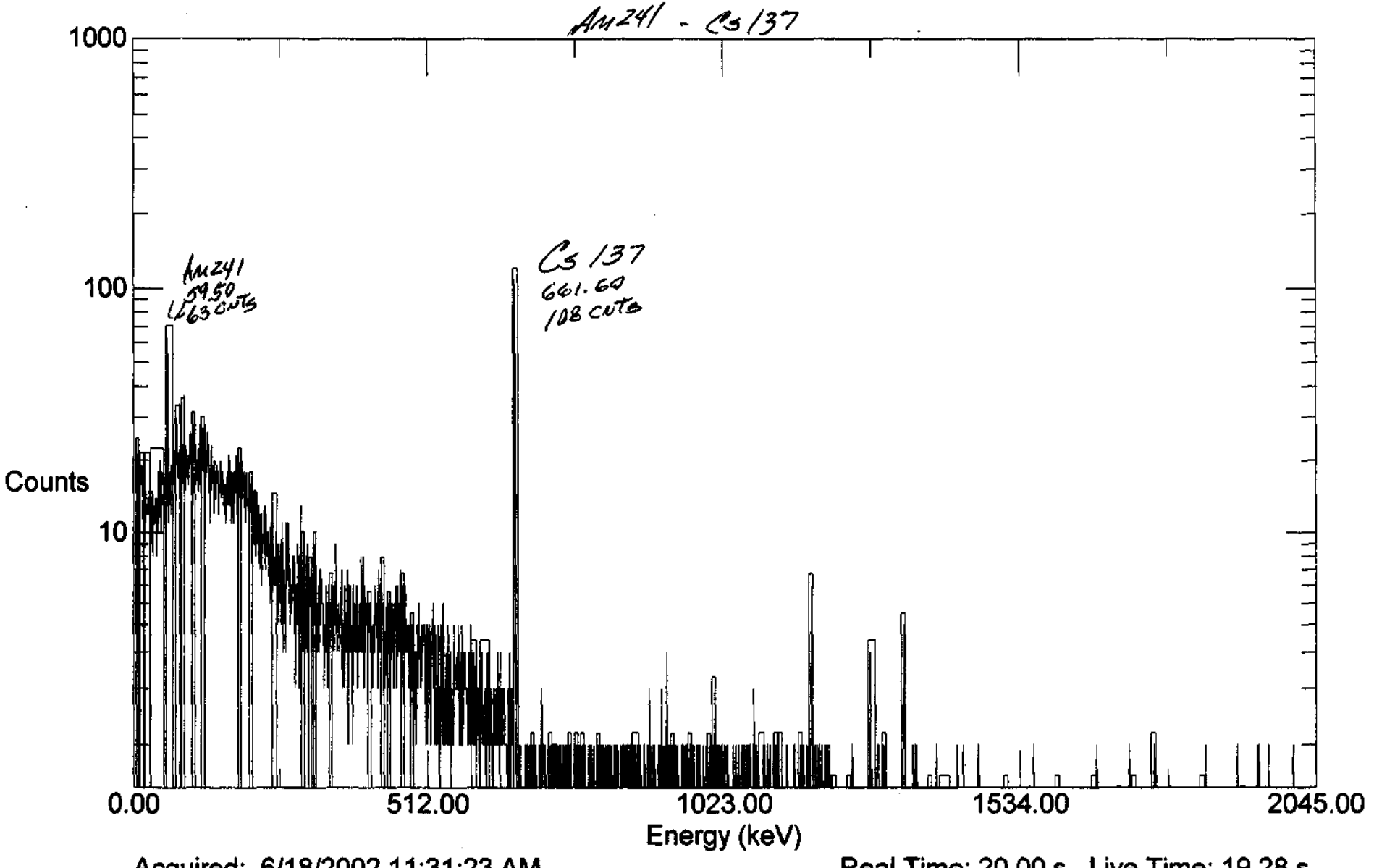
Acquired: 6/18/2002 11:30:17 AM Real Time: 20.00 s. Live Time: 16.88 s.

File: C:\User\GNIWEB~1\012 ITEM-158 6-18-2002 11.30.17 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

013 ITEM-159 6-18-2002 11.31.24 AM

ITEM-159



Acquired: 6/18/2002 11:31:23 AM Real Time: 20.00 s. Live Time: 19.28 s.

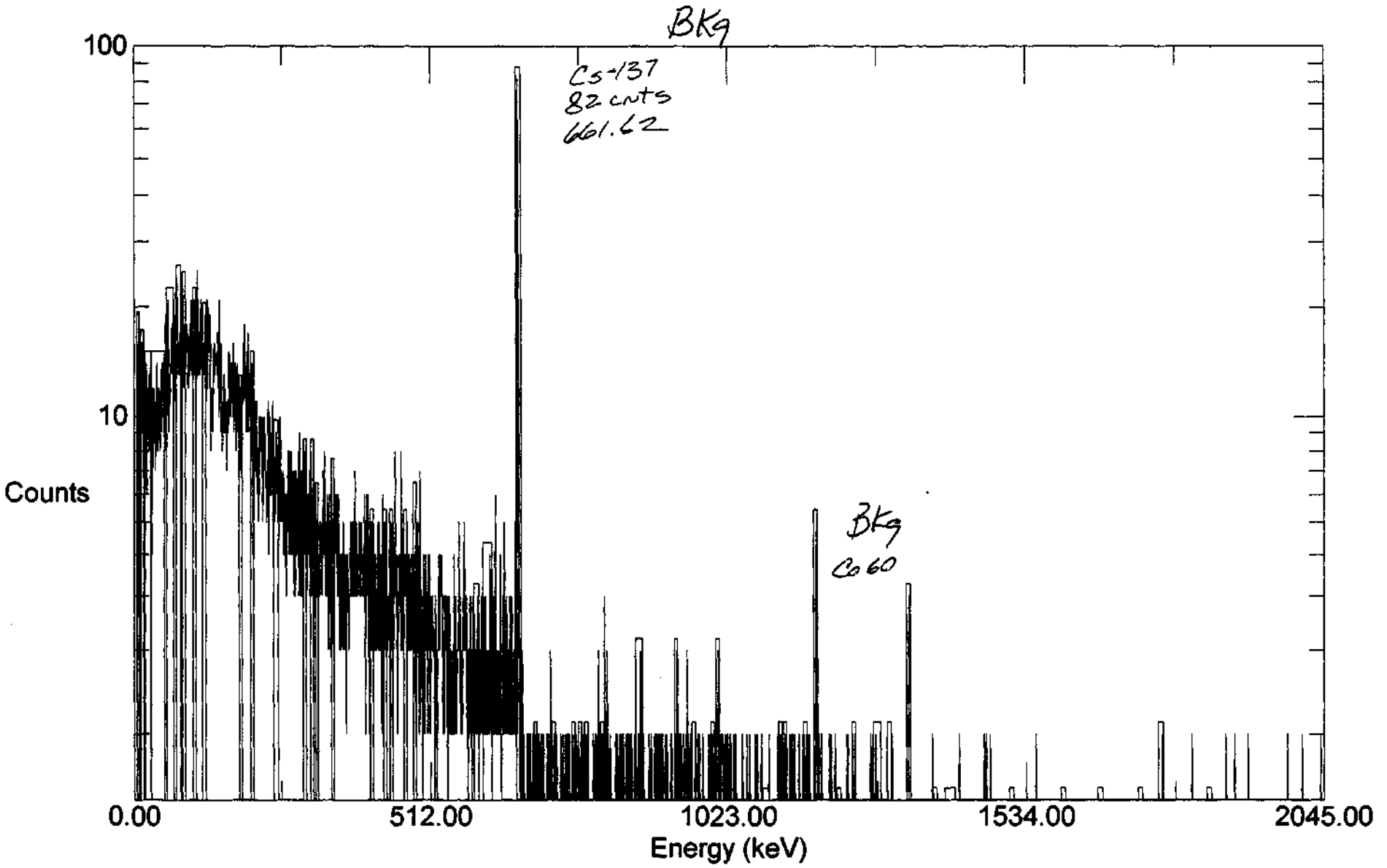
File: C:\User\GNIWEB~1\013 ITEM-159 6-18-2002 11.31.24 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

CTIVE MATERIAL
C/RA/E/I

014 ITEM-160 6-18-2002 11.32.16 AM

ITEM-160



Acquired: 6/18/2002 11:32:16 AM Real Time: 20.00 s. Live Time: 19.46 s.
File: C:\User\GNIWEB~1\014 ITEM-160 6-18-2002 11.32.16 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18-02

BKG	mR/hr
6"	60
12"	60
36"	

Container #	161	162	163	164	165
External [redacted] in mR/hr	90	70	70	500	90
External [redacted] Neutron mR/hr	<1	<1	<1	<1	<1
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W	N/A	N/A	N/A	N/A	N/A

Picture	✓	✓	✓	✓	
DART					

Table Readings

Source [redacted] @ 6 inches UR	80	70	65	300	80
Source mR/hr @ 12 inches UR	70	68	60	220	70
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in [redacted] FT³	3	2	2	2	1
Weight in [redacted] lbs	2	20	10	15	1

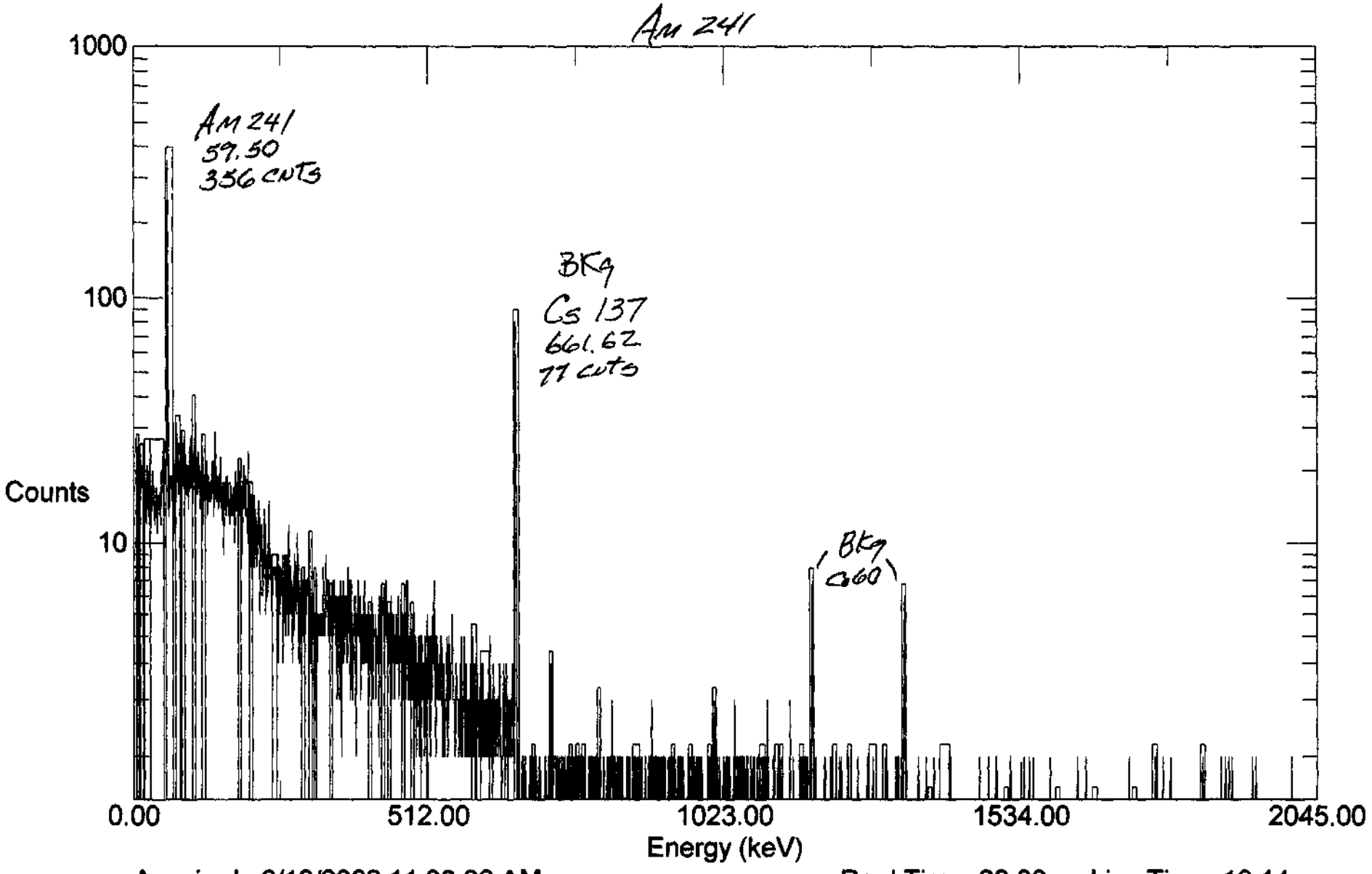
CPM Alpha					
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

015 ITEM-161 6-18-2002 11.33.21 AM

ITEM-161



Acquired: 6/18/2002 11:33:22 AM Real Time: 20.00 s. Live Time: 19.14 s.

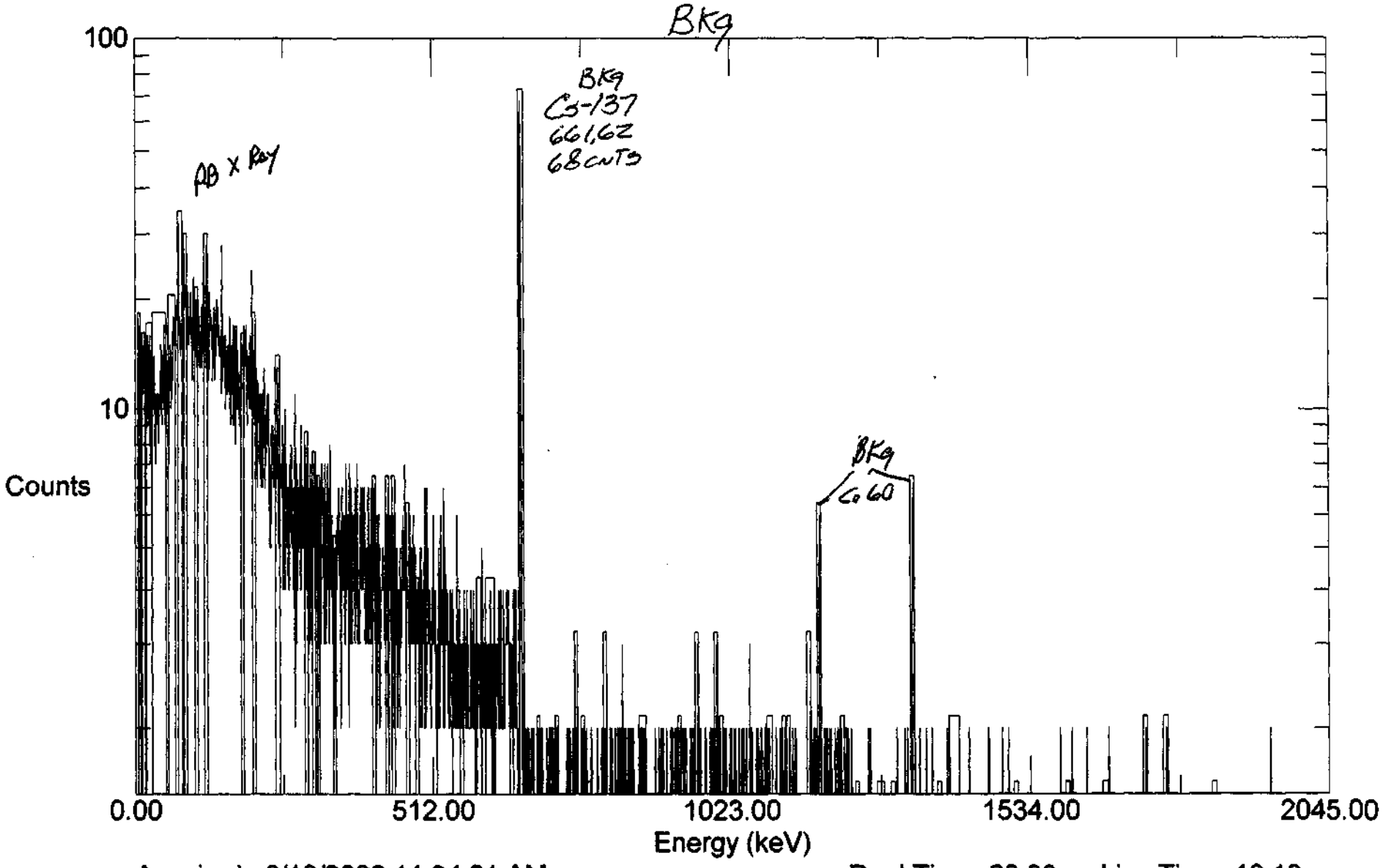
File: C:\User\GNIWEB~1\015 ITEM-161 6-18-2002 11.33.21 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

191-I

016 ITEM-162 6-18-2002 11.34.20 AM

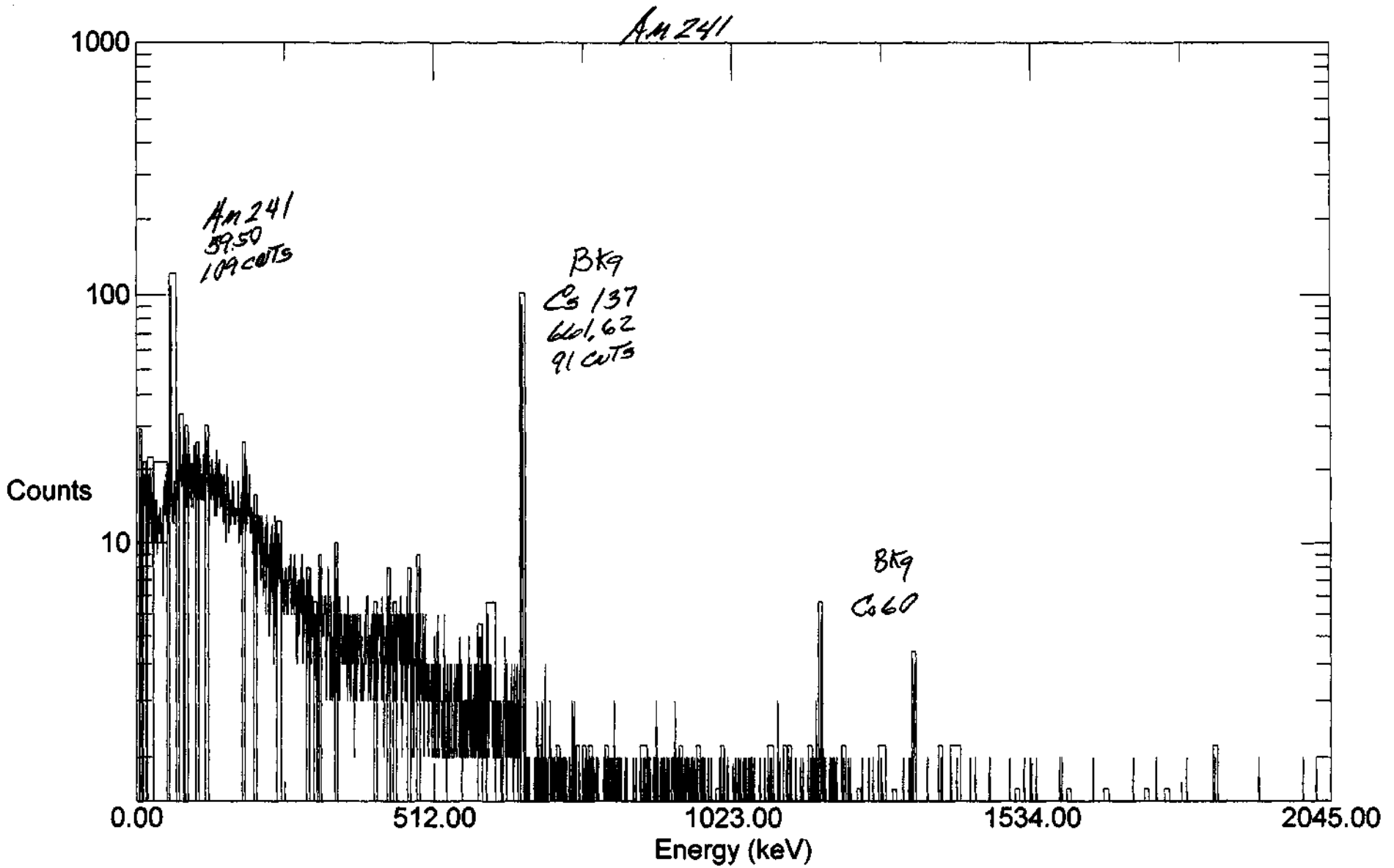
ITEM-162



Acquired: 6/18/2002 11:34:21 AM Real Time: 20.00 s. Live Time: 19.16 s.
File: C:\User\GNIWEB~1\016 ITEM-162 6-18-2002 11.34.20 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

017 ITEM-163 6-18-2002 11.35.28 AM

ITEM-163



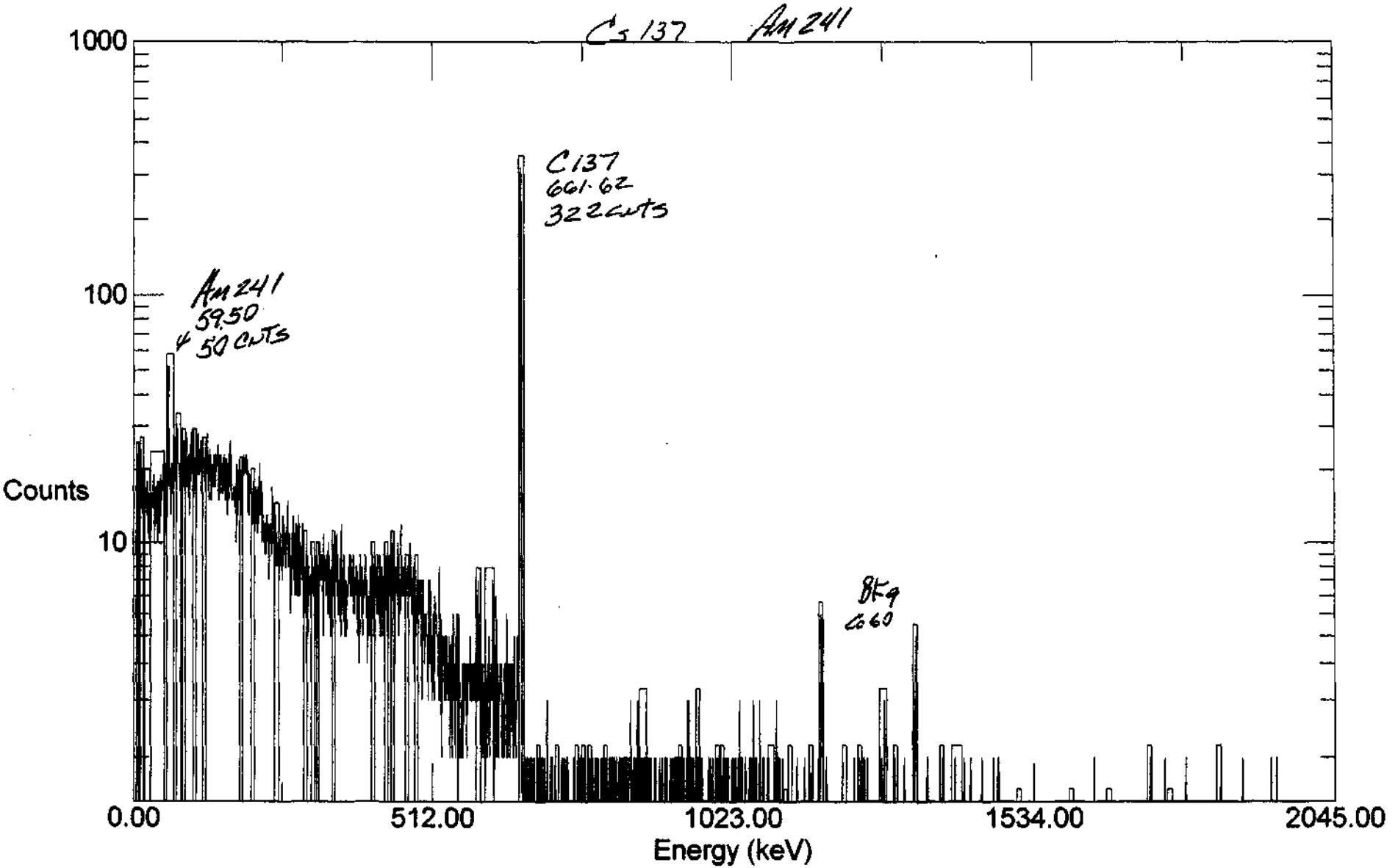
Acquired: 6/18/2002 11:35:28 AM Real Time: 20.00 s. Live Time: 19.28 s.

File: C:\User\GNIWEB~1\017 ITEM-163 6-18-2002 11.35.28 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

018 ITEM-164 6-18-2002 11.36.21 AM

ITEM-164



Acquired: 6/18/2002 11:36:22 AM Real Time: 20.00 s. Live Time: 19.06 s.

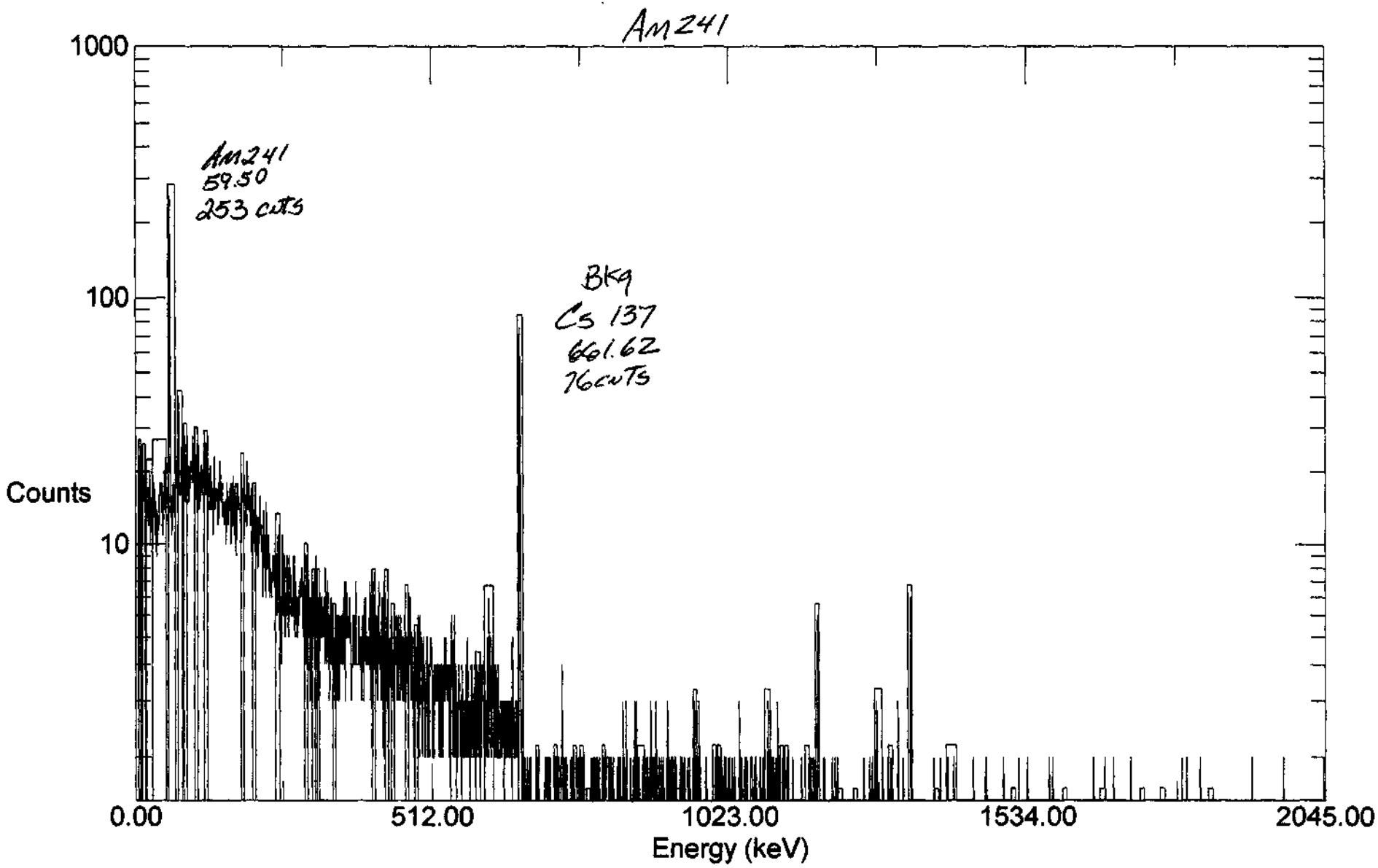
File: C:\User\GNIWEB~1\018 ITEM-164 6-18-2002 11.36.21 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

CAUTION

019 ITEM-165 6-18-2002 11.37.13 AM

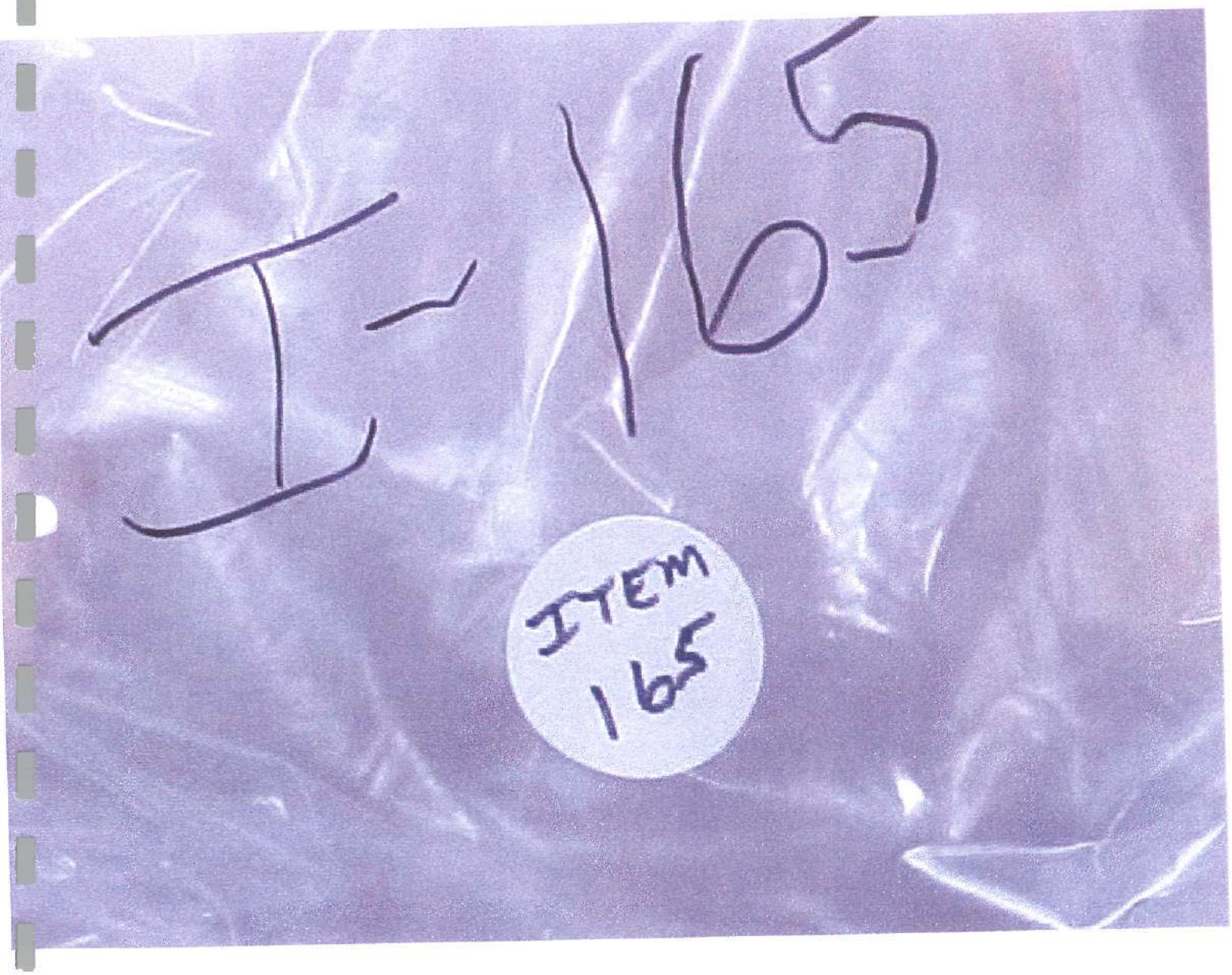
ITEM-165



Acquired: 6/18/2002 11:37:13 AM Real Time: 20.00 s. Live Time: 19.26 s.

File: C:\User\GNIWEB~1\019 ITEM-165 6-18-2002 11.37.13 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-165
ITEM
165

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18-02

BKG	~~m~~R/hr
6"	60
12"	60
36"	

Container #	166	167	168	[redacted]	[redacted]
External [redacted] in ~~m~~R/hr	70	70	180		
External [redacted] Neutron mR/hr	<1	<1	<1		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W	N/A	N/A	N/A		

Picture	✓	✓	✓		
DART					

Table Readings

Source ~~m~~R/hr @ 6 inchs	65	70	130		
Source ~~m~~R/hr @ 12 inches	60	60	100		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in ~~cc's~~ FT³	1	1½	4		
Weight in ~~grams~~ lbs	1	8	12		

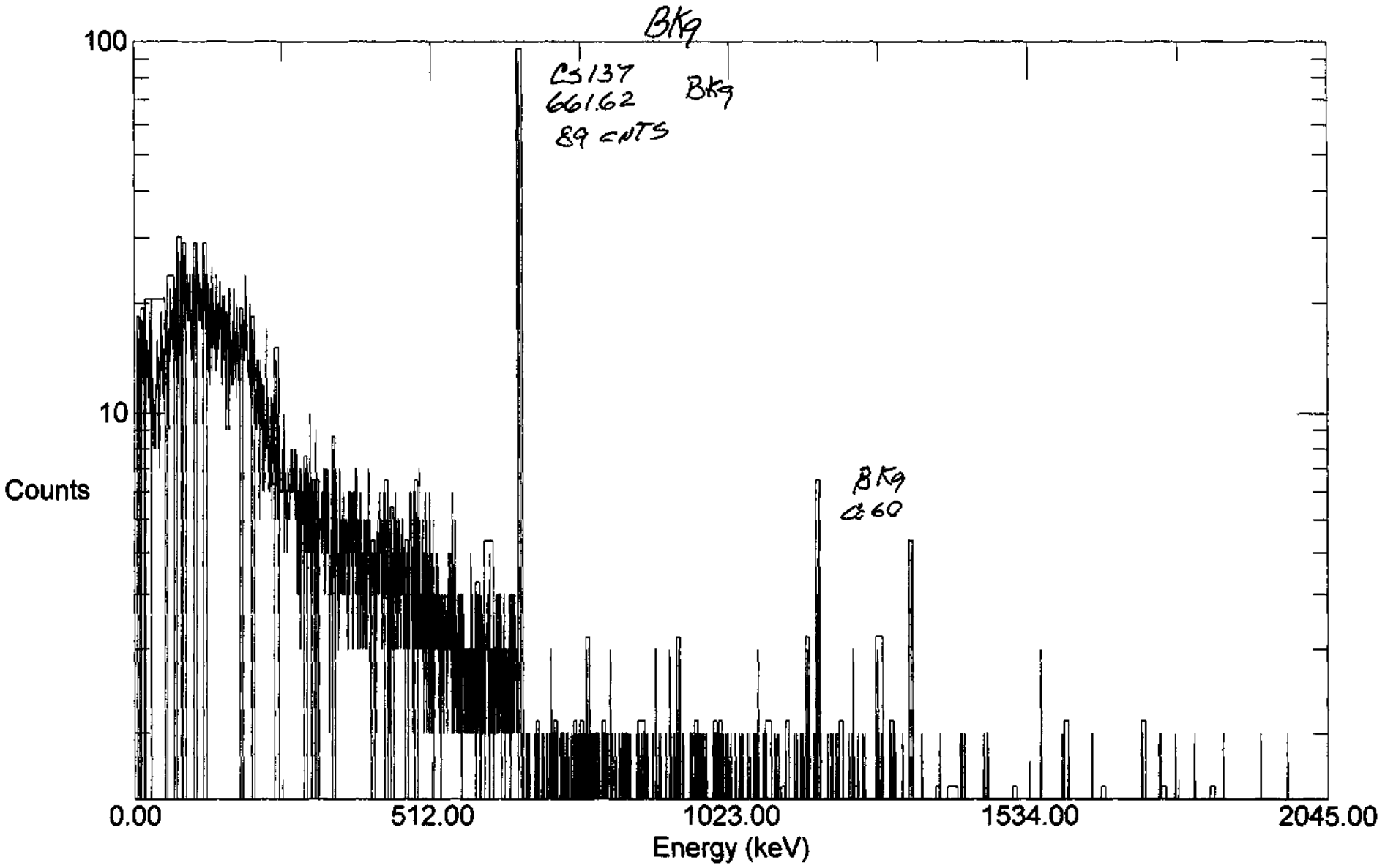
CPM Alpha					
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

020 ITEM-166 6-18-2002 11.38.13 AM

ITEM-166



Acquired: 6/18/2002 11:38:13 AM Real Time: 20.00 s. Live Time: 19.24 s.

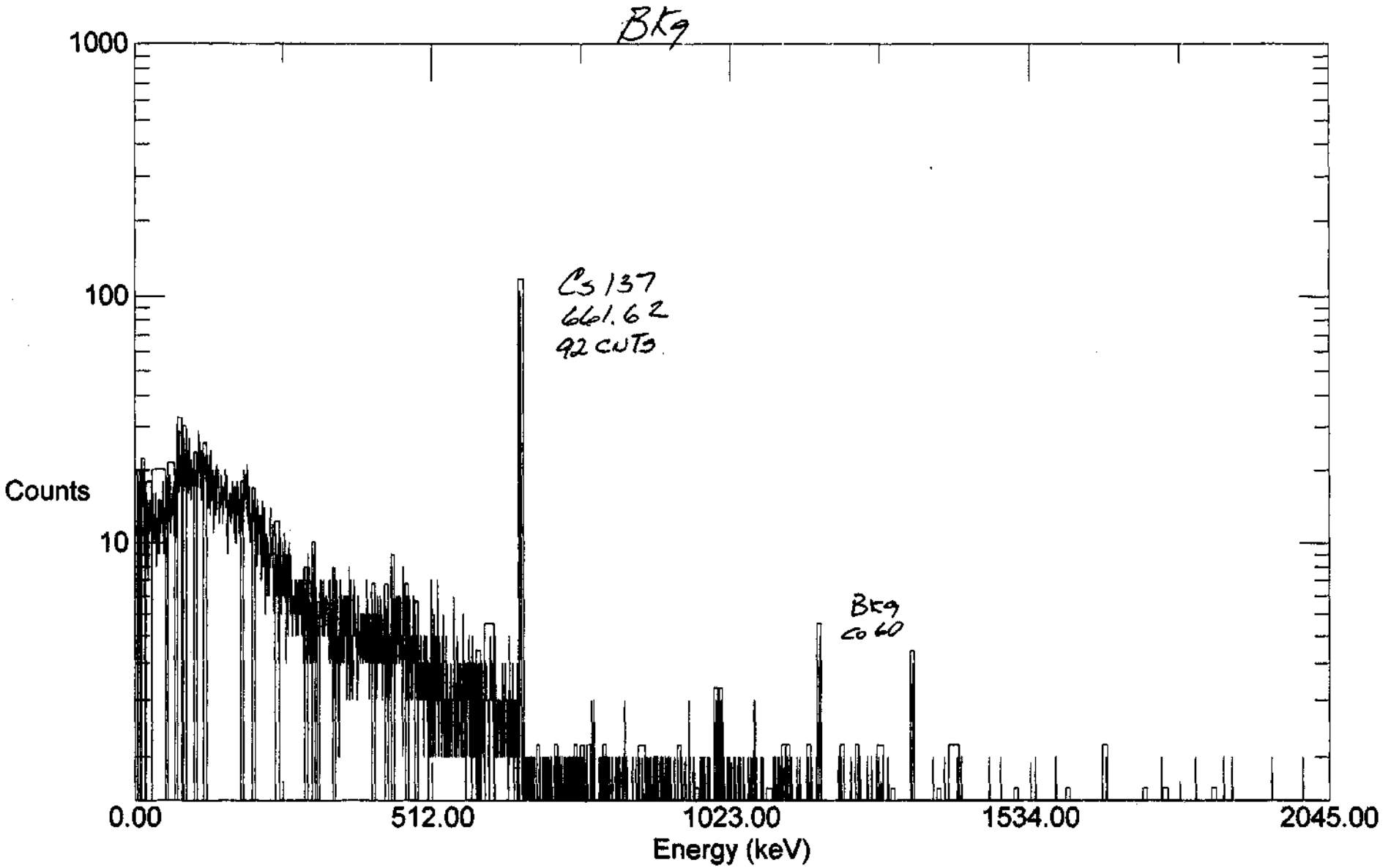
File: C:\User\GNIWEB~1\020 ITEM-166 6-18-2002 11.38.13 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEM
166
FIGG

021 ITEM-167 6-18-2002 11.39.12 AM

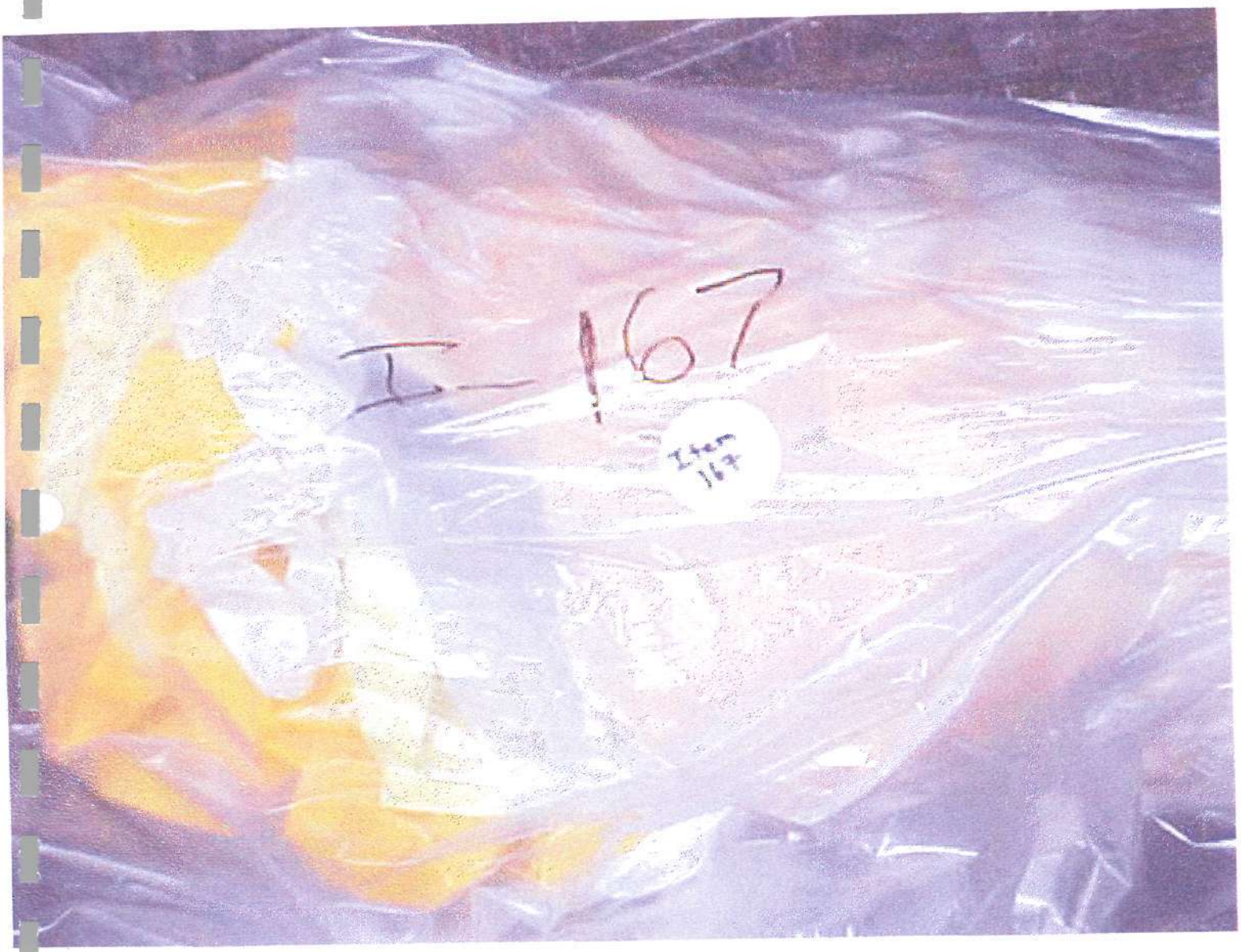
ITEM-167



Acquired: 6/18/2002 11:39:13 AM Real Time: 20.00 s. Live Time: 19.26 s.

File: C:\User\GNIWEB~1\021 ITEM-167 6-18-2002 11.39.12 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-167
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022 ITEM-168 6-18-2002 11.40.07 AM

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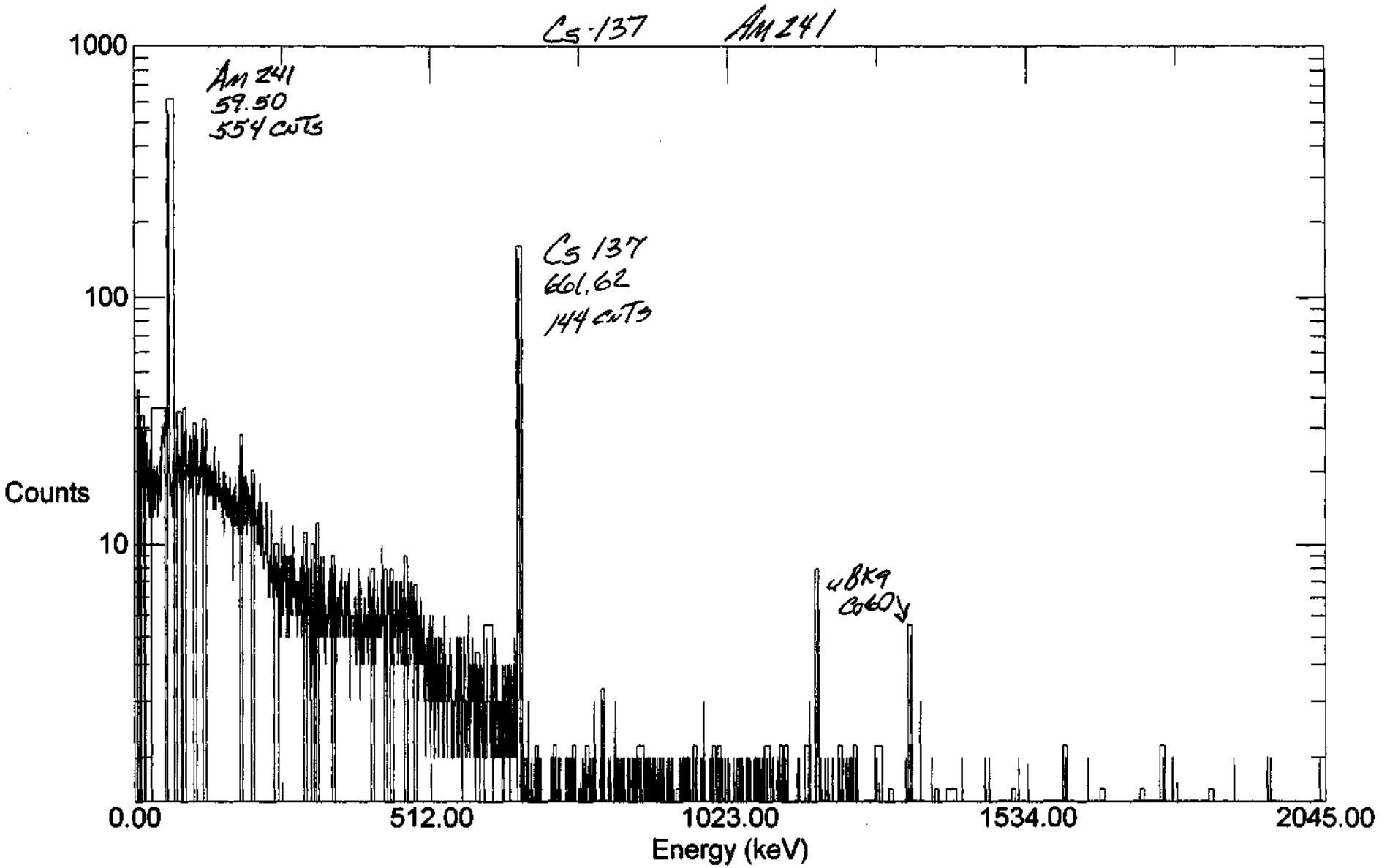


Acquired: 6/18/2002 11:40:07 AM Real Time: 20.00 s. Live Time: 19.08 s.

File: C:\User\GNIWEB~1\022 ITEM-168 6-18-2002 11.40.07 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

F-168

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18-02

BKG	~~mR~~ uR/hr
6"	~~30~~ 50
12"	
36"	

Container #	169	170	171	172	~~173~~
External [redacted] in ~~m~~R/hr	~~55~~ 60	60	70	500	60
External [redacted] Neutron mR/hr	<1	<1	<1	<1	<1
[redacted] hr	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W					

Picture	✓	✓	✓	✓	
DART					

Table Readings

Source ~~m~~R/hr @ 6 inchs	~~50~~ 55	55	60	300	55
Source ~~m~~R/hr @ 12 inches	50	50	55	250	50
~~Source [redacted] inches~~	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in ~~cc's~~ FT3	1½	1½	12	4	1
Weight in grams lbs	10	30	3	10	5

CPM Alpha					
Direct Beta/Gamma					

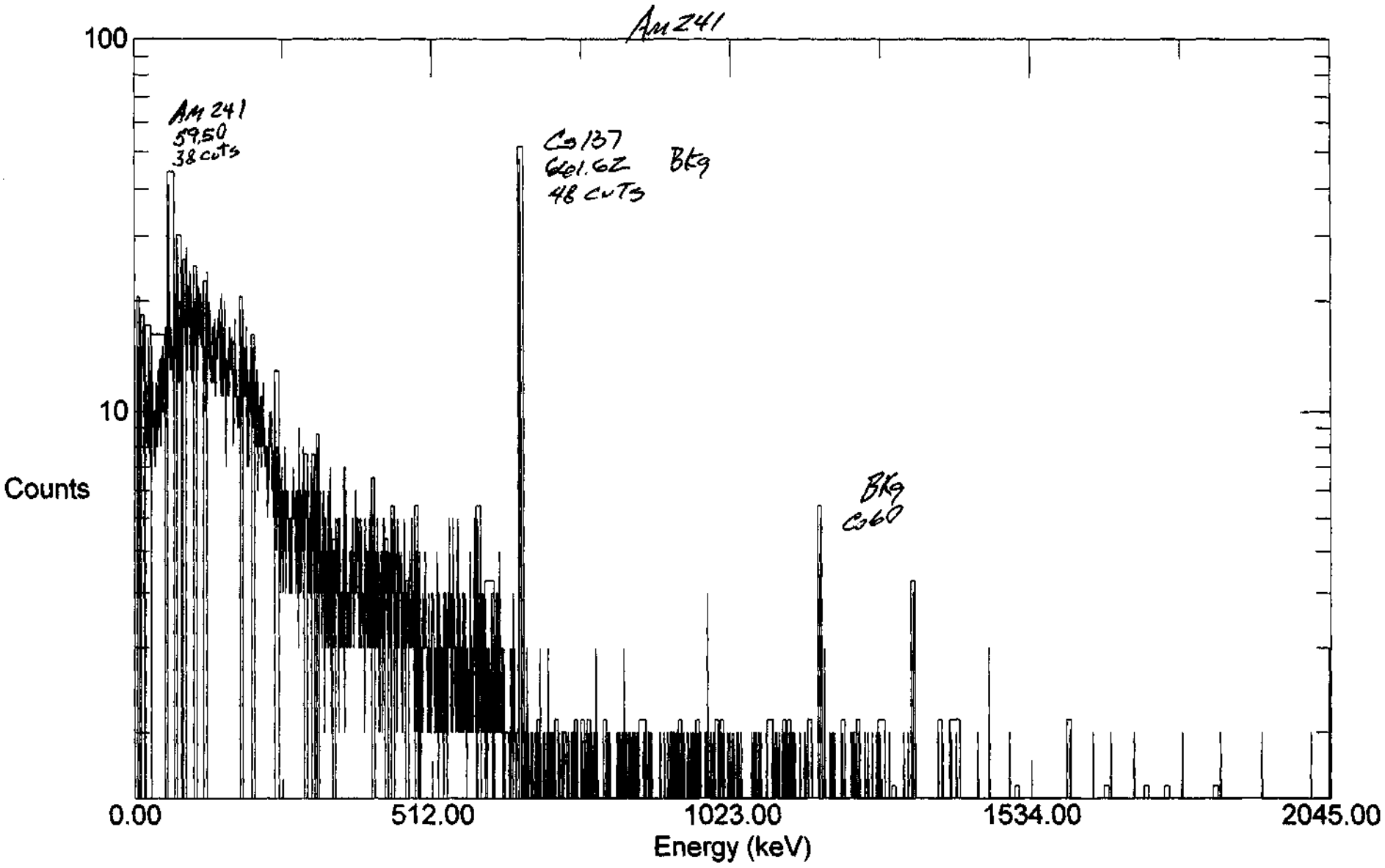
Info on source:					~~NCI 63~~ NI 63 Plating

Smears have been sent

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

023 ITEM-169 6-18-2002 11.41.00 AM

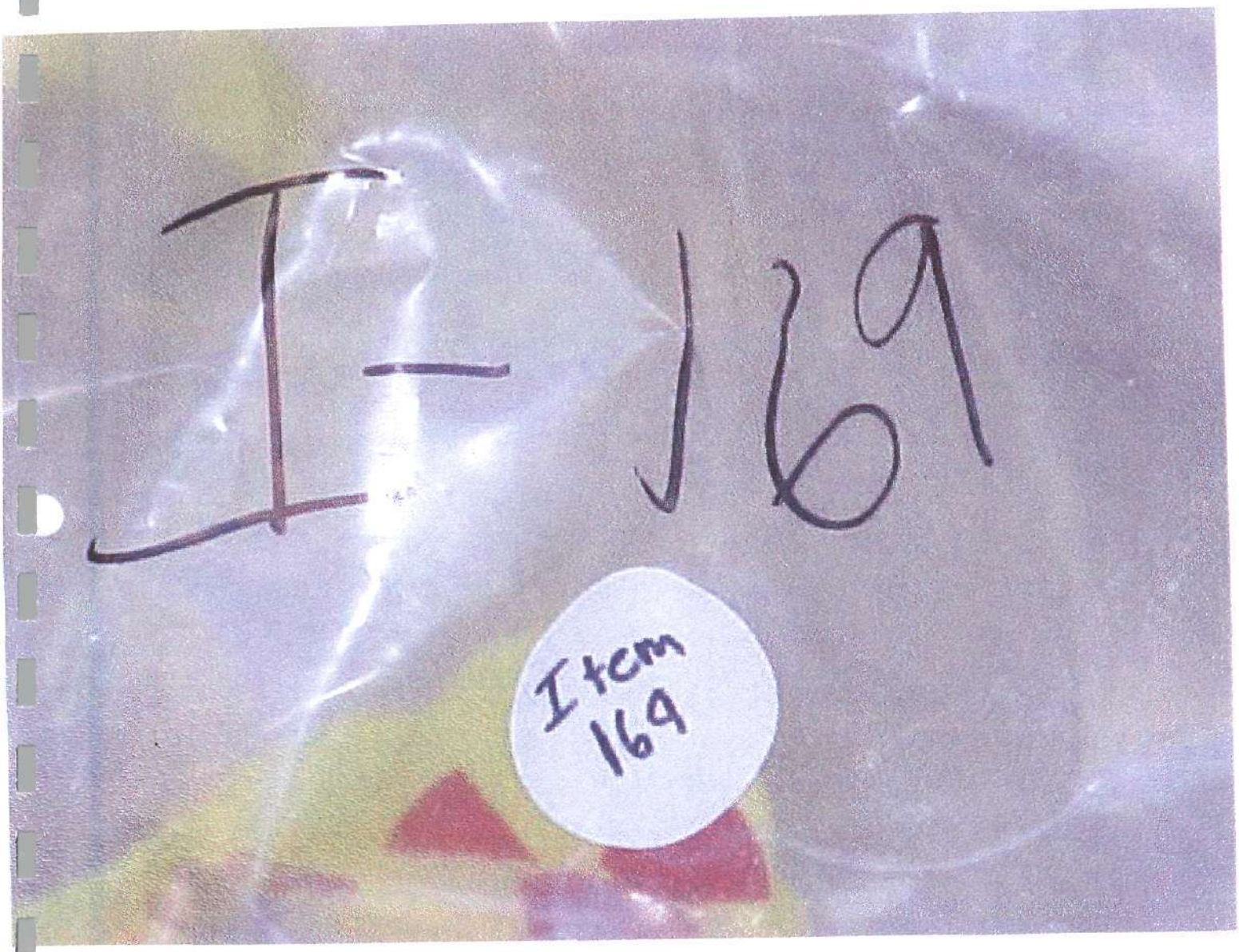
ITEM-169



Acquired: 6/18/2002 11:41:01 AM Real Time: 20.00 s. Live Time: 19.42 s.

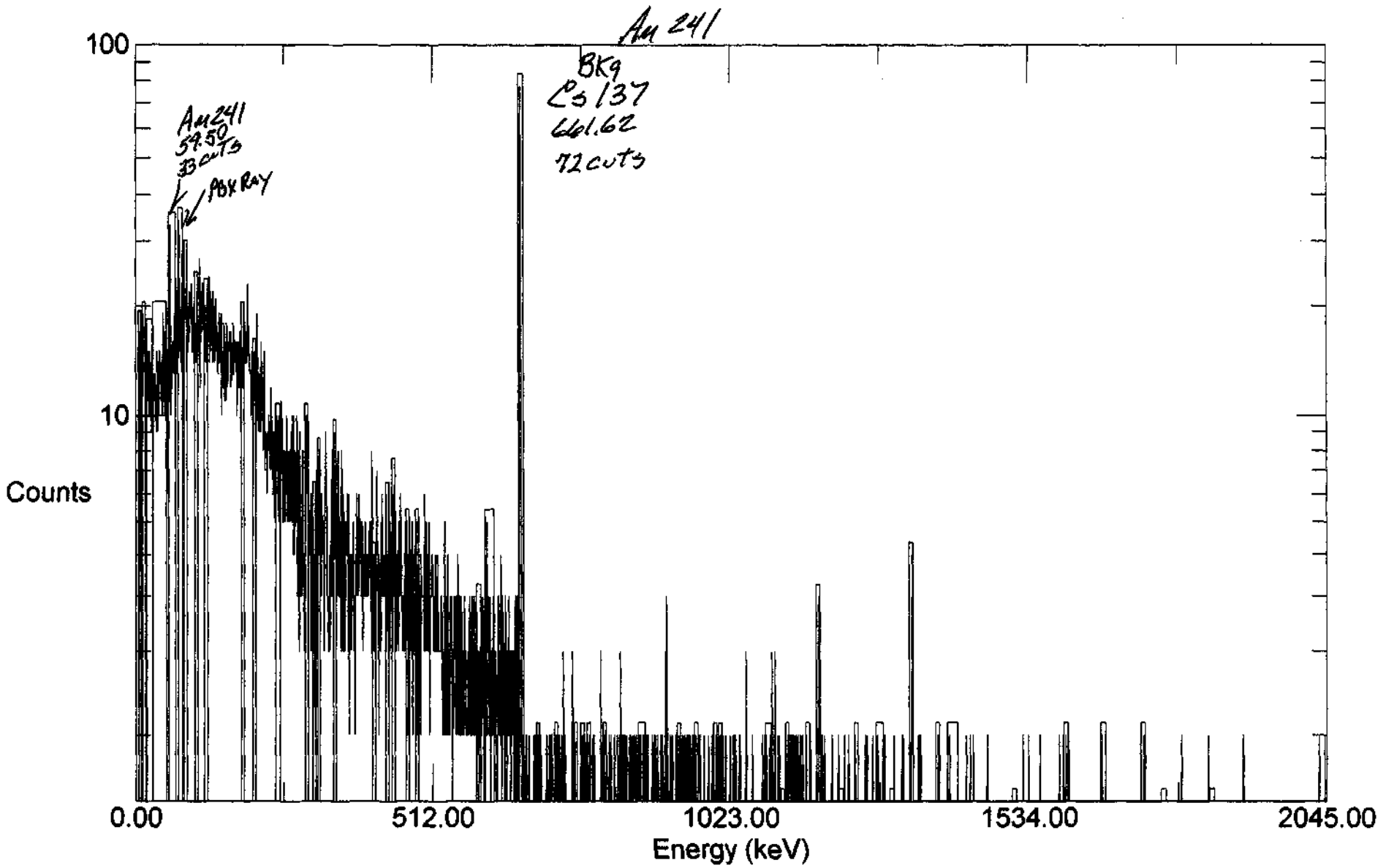
File: C:\User\GNIWEB~1\023 ITEM-169 6-18-2002 11.41.00 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-169
Item
169

024 ITEM-170 6-18-2002 11.42.07 AM

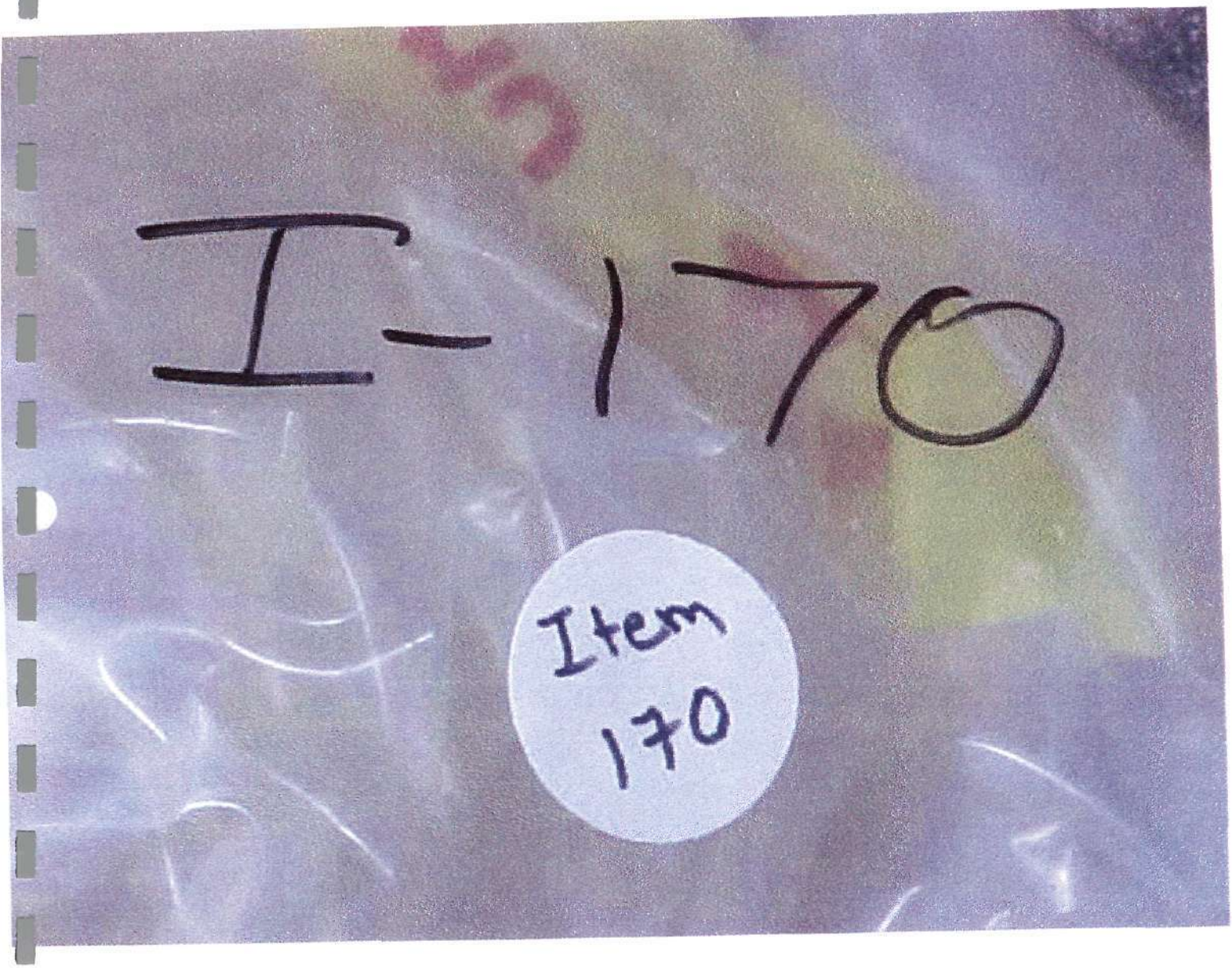
ITEM-170



Acquired: 6/18/2002 11:42:06 AM Real Time: 20.00 s. Live Time: 19.34 s.

File: C:\User\GNIWEB~1\024 ITEM-170 6-18-2002 11.42.07 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-170
Item
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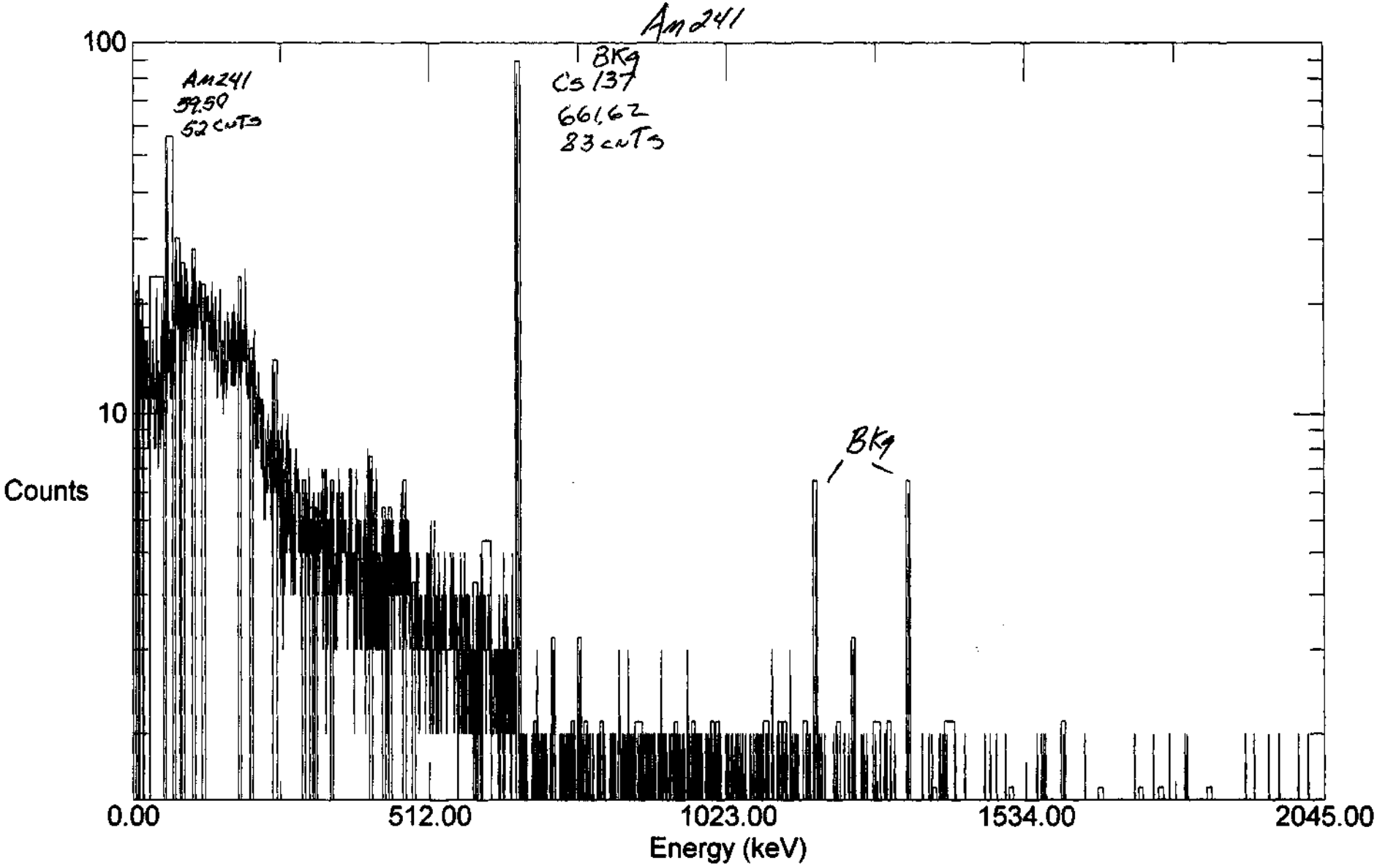
025 ITEM-171 6-18-2002 11.43.00 AM

ITEM-171



Acquired: 6/18/2002 11:43:00 AM Real Time: 20.00 s. Live Time: 19.32 s.
File: C:\User\GNIWEB~1\025 ITEM-171 6-18-2002 11.43.00 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

026 ITEM-172 6-18-2002 11.43.43 AM

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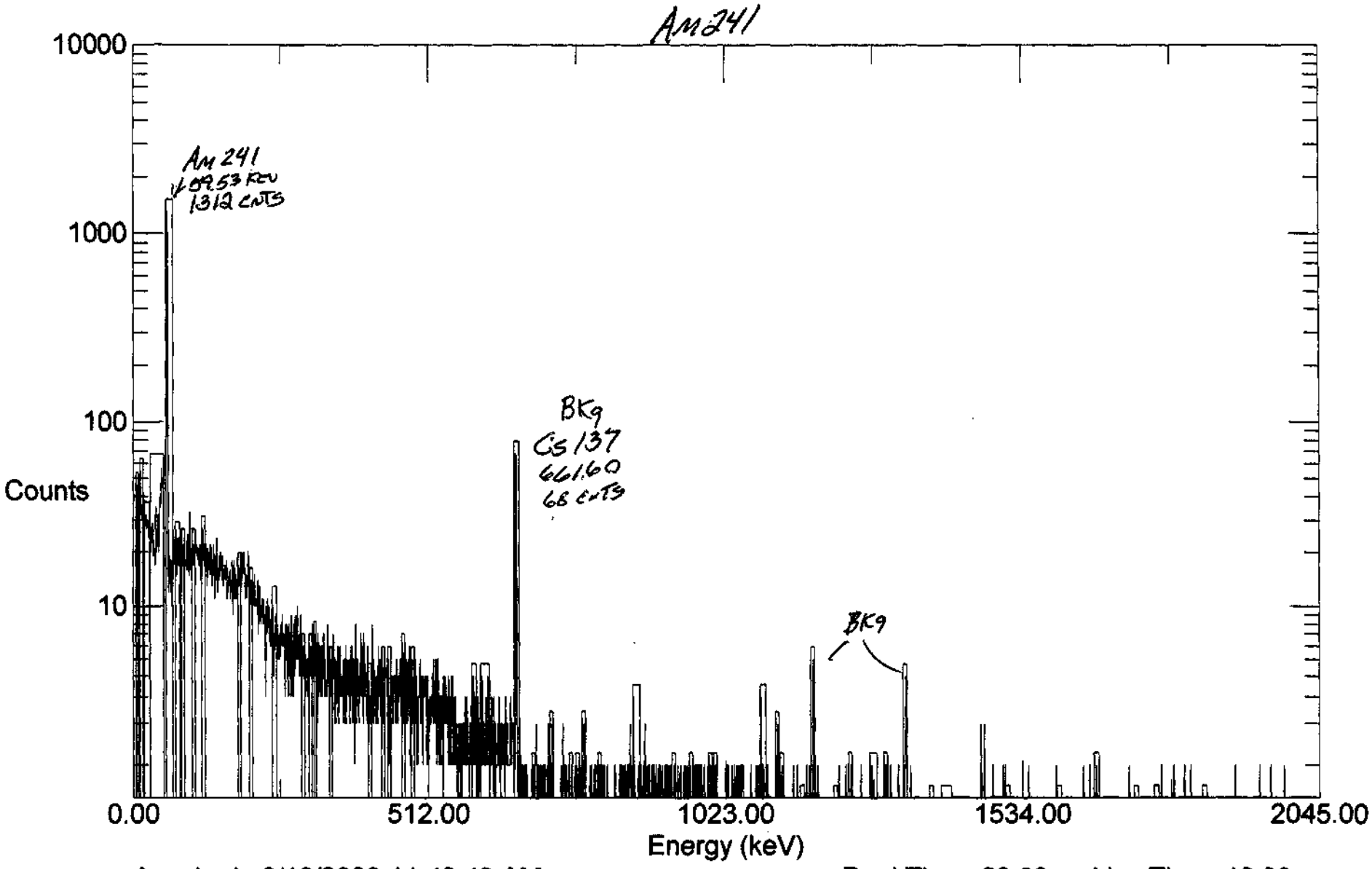
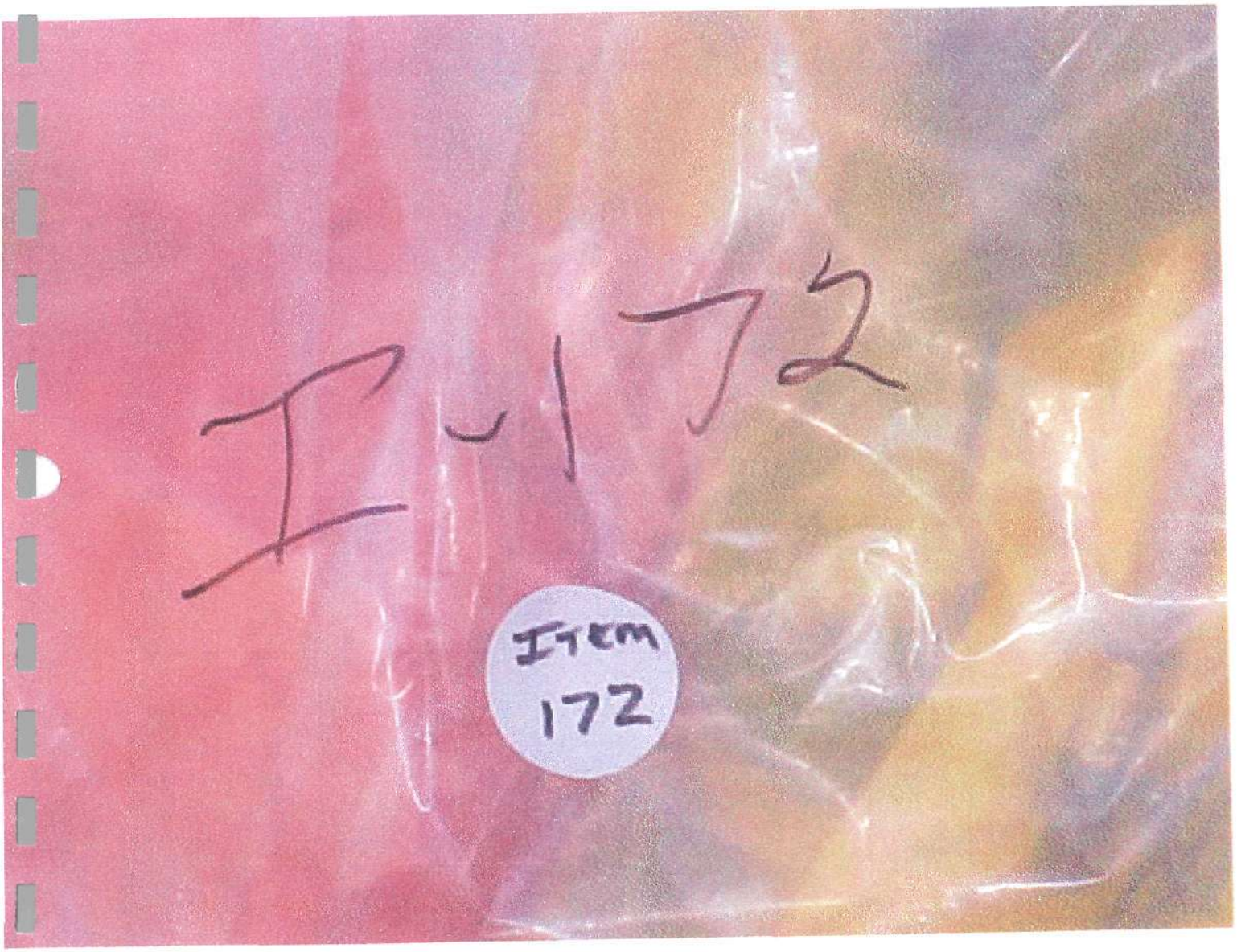


Acquired: 6/18/2002 11:43:43 AM Real Time: 20.00 s. Live Time: 18.98 s.

File: C:\User\GNIWEB~1\026 ITEM-172 6-18-2002 11.43.43 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


E-172
ITEM
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027 ITEM-173 6-18-2002 11.44.33 AM

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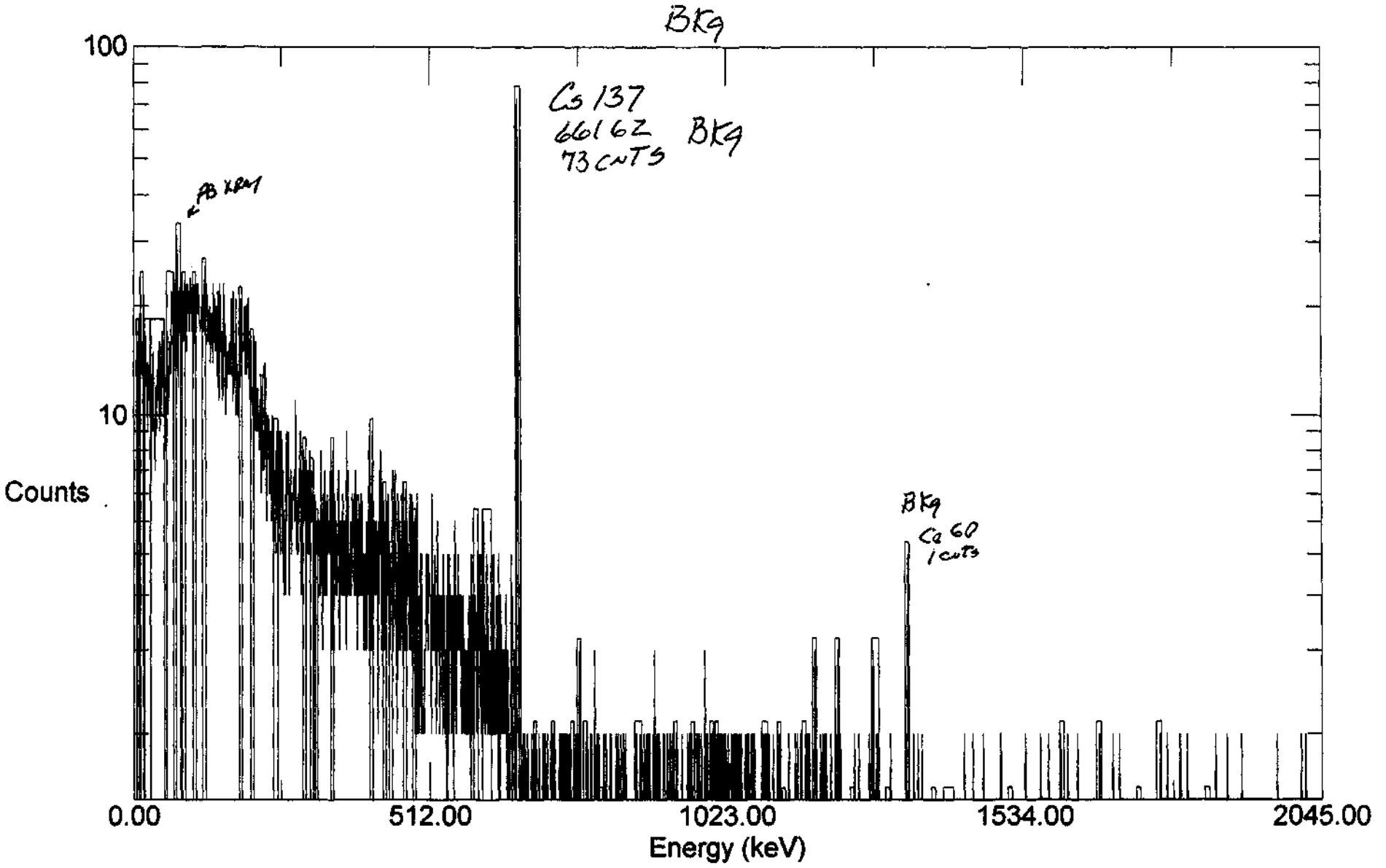
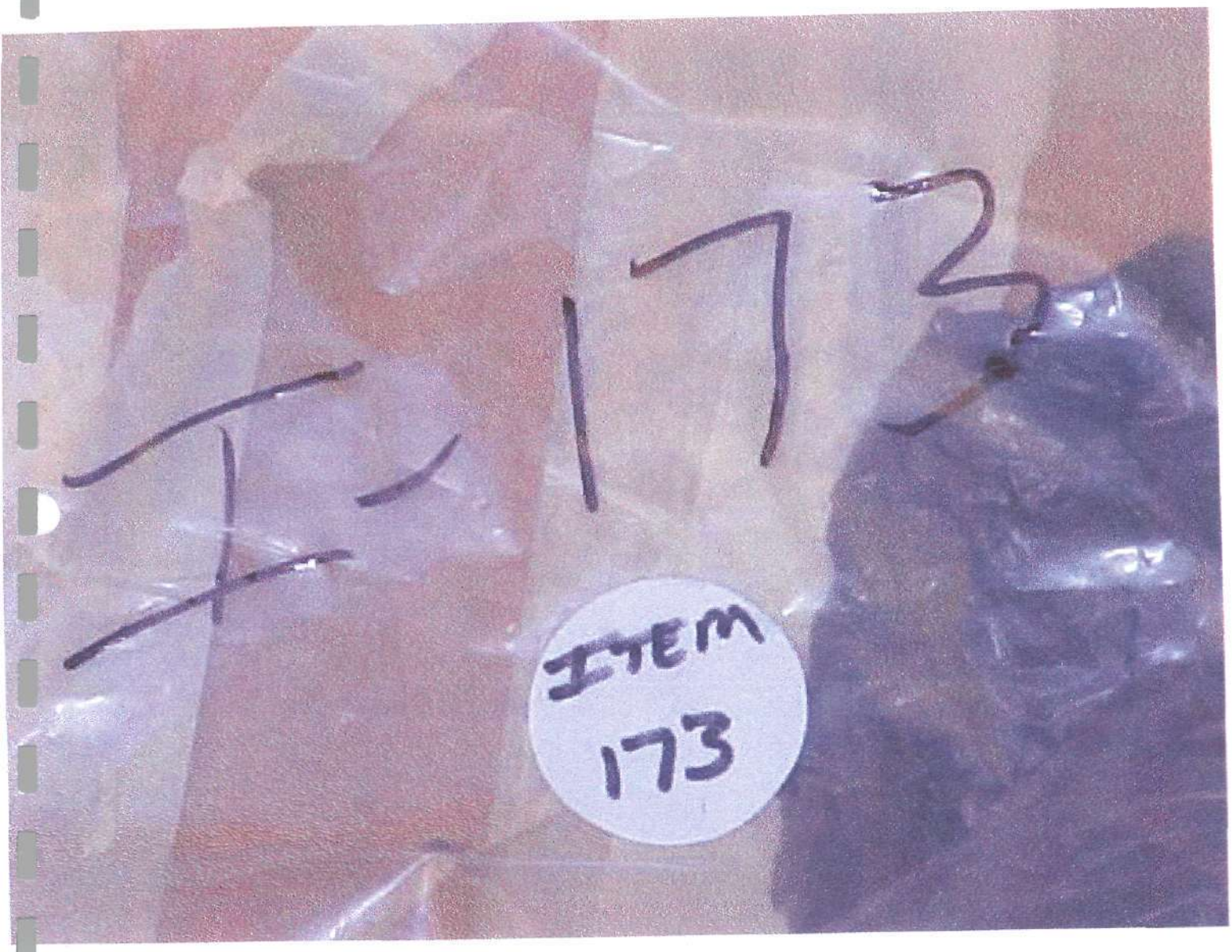


Acquired: 6/18/2002 11:44:33 AM Real Time: 20.00 s. Live Time: 19.32 s.
File: C:\User\GNIWEB~1\027 ITEM-173 6-18-2002 11.44.33 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


#173
ITEM
173

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18.02

BKG	mR/hr
6"	.5
12"	
36"	

Container #	174	175	176	177	178
External [redacted] in mR/hr	5	1	10	2	180
External [redacted] Neutron mR/hr	<1	<1	<1	<1	<1
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W	N/A	N/A	N/A	N/A	N/A

Picture	✓	✓			
DARS					

Table Readings

Source mR/hr @ 6 inchs	1.5	0.8	2.5	1.4	30
Source mR/hr @ 12 inches	1.4	0.6	2	1	12
~~Source mR/hr @ 36 inches~~	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in ~~cels~~ FT3	2	2	1	2	4
Weight in grams lbs	10	50	10	5	50

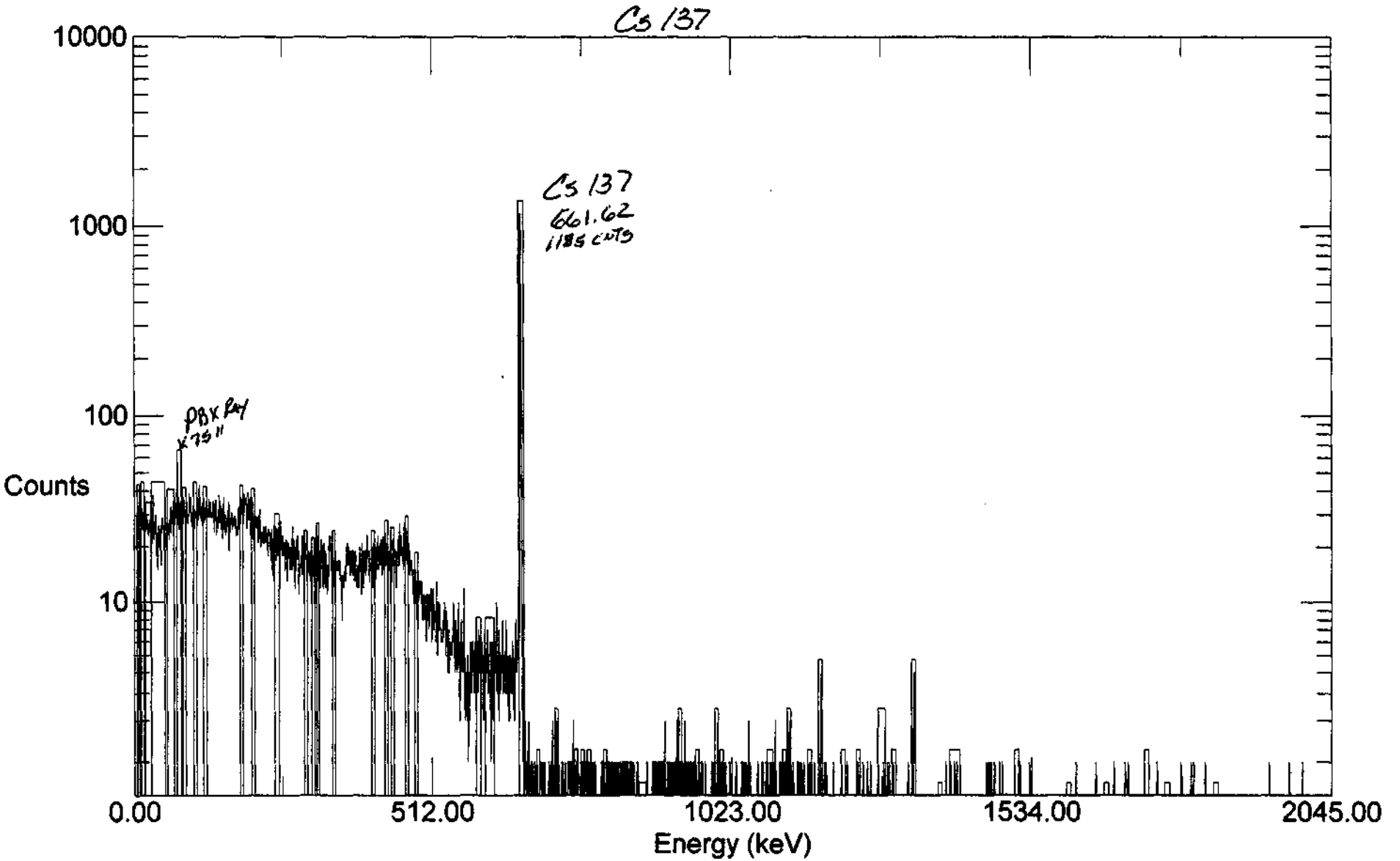
CPM Alpha					
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

028 ITEM-174 6-18-2002 1.17.21 PM

ITEM-174



Acquired: 6/18/2002 1:17:20 PM Real Time: 20.00 s. Live Time: 17.80 s.

File: C:\User\GNIWEB~1\028 ITEM-174 6-18-2002 1.17.21 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

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ITEM
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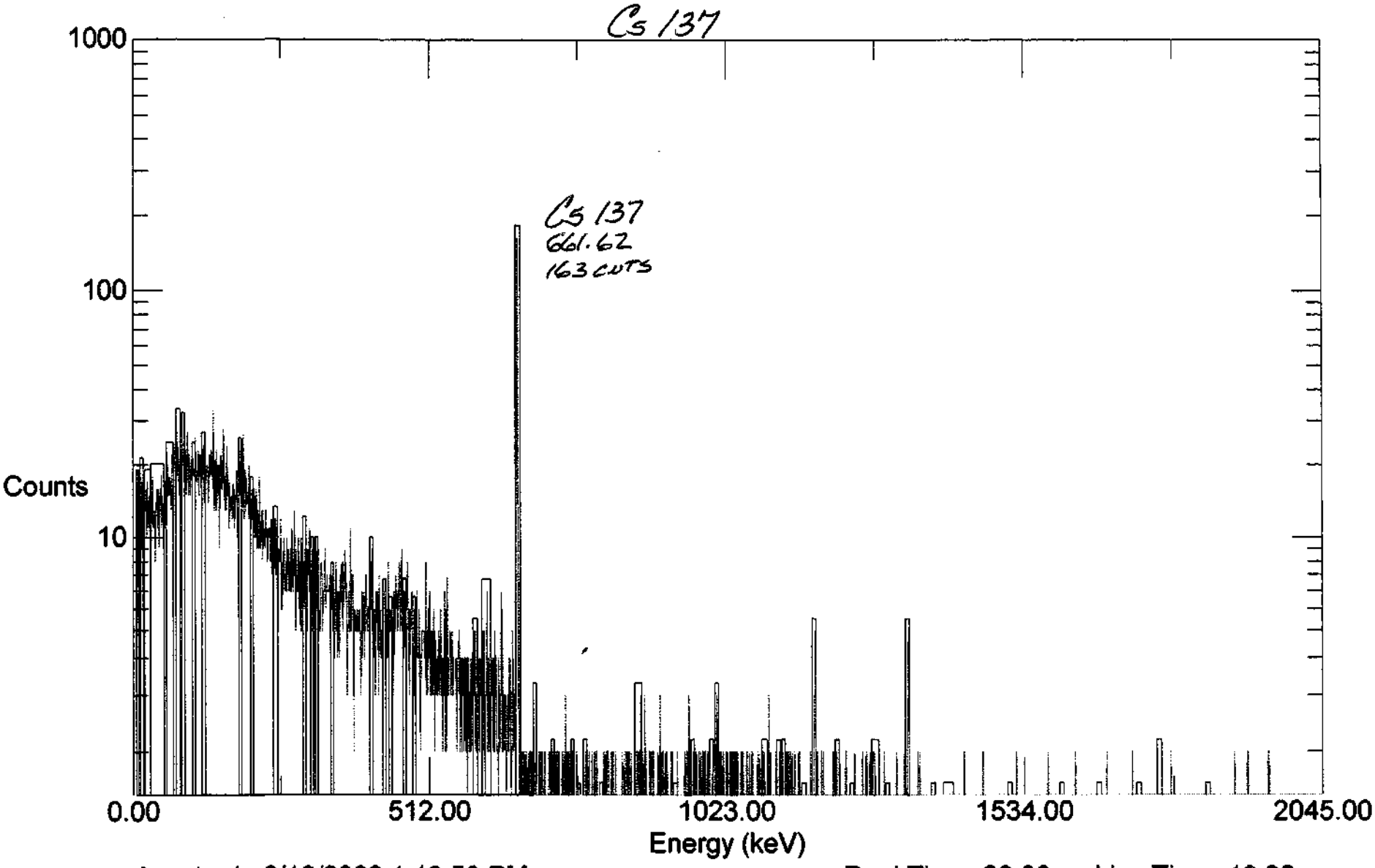
029 ITEM-175 6-18-2002 1.19.58 PM

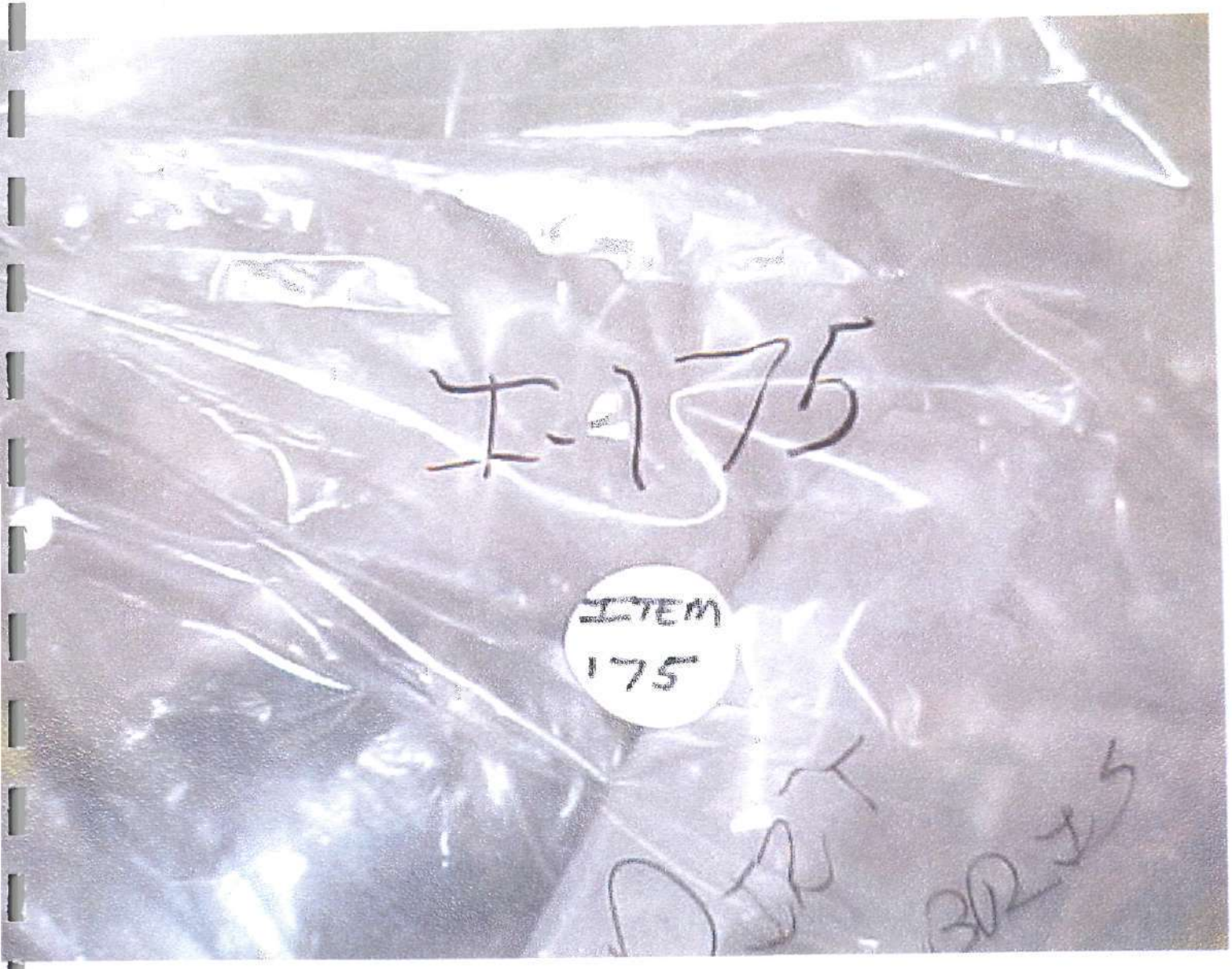
ITEM-175



Acquired: 6/18/2002 1:19:58 PM Real Time: 20.00 s. Live Time: 19.22 s.

File: C:\User\GNIWEB~1\029 ITEM-175 6-18-2002 1.19.58 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-175
ITEM
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030 ITEM-176 6-18-2002 1.21.27 PM

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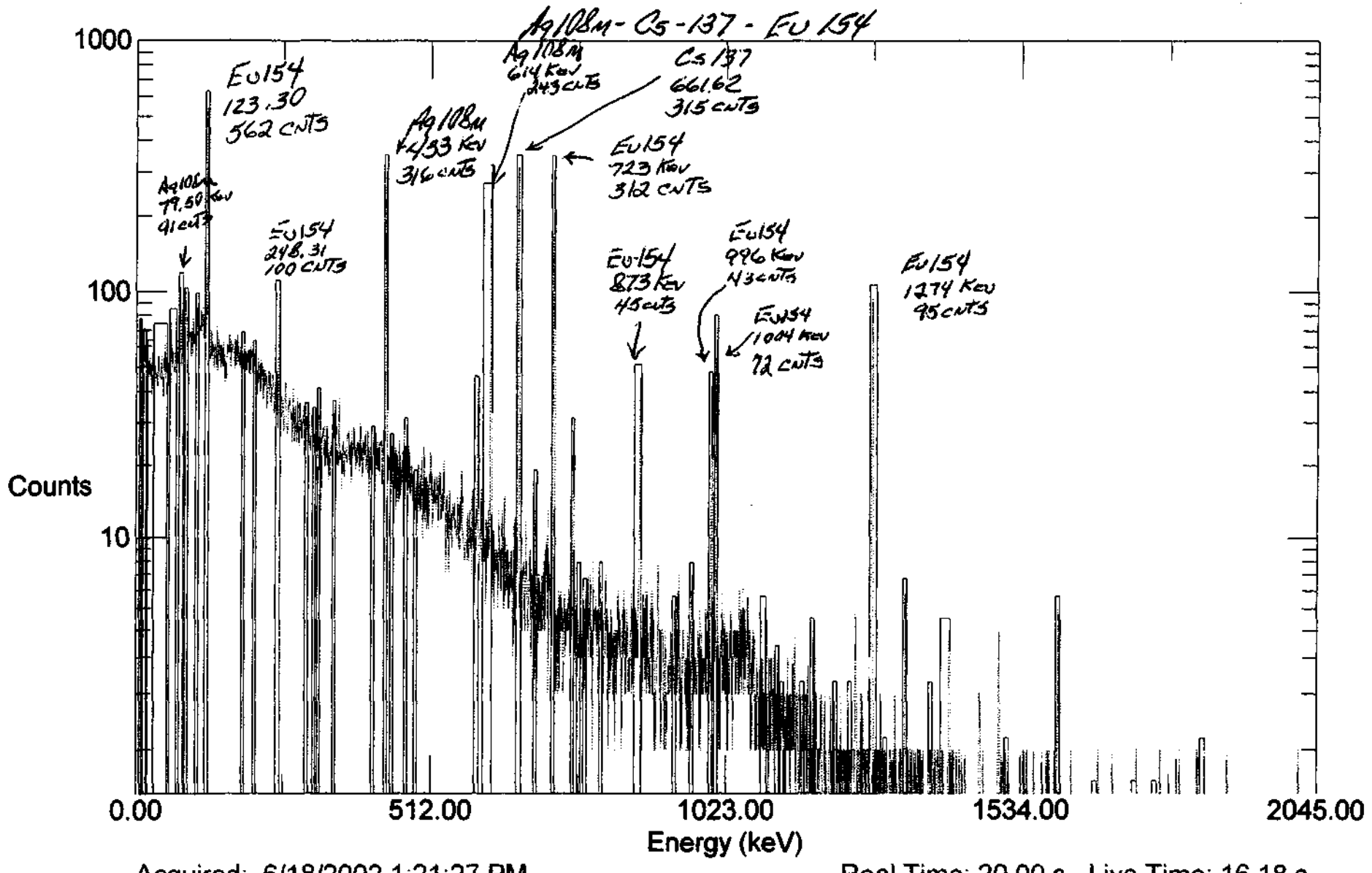
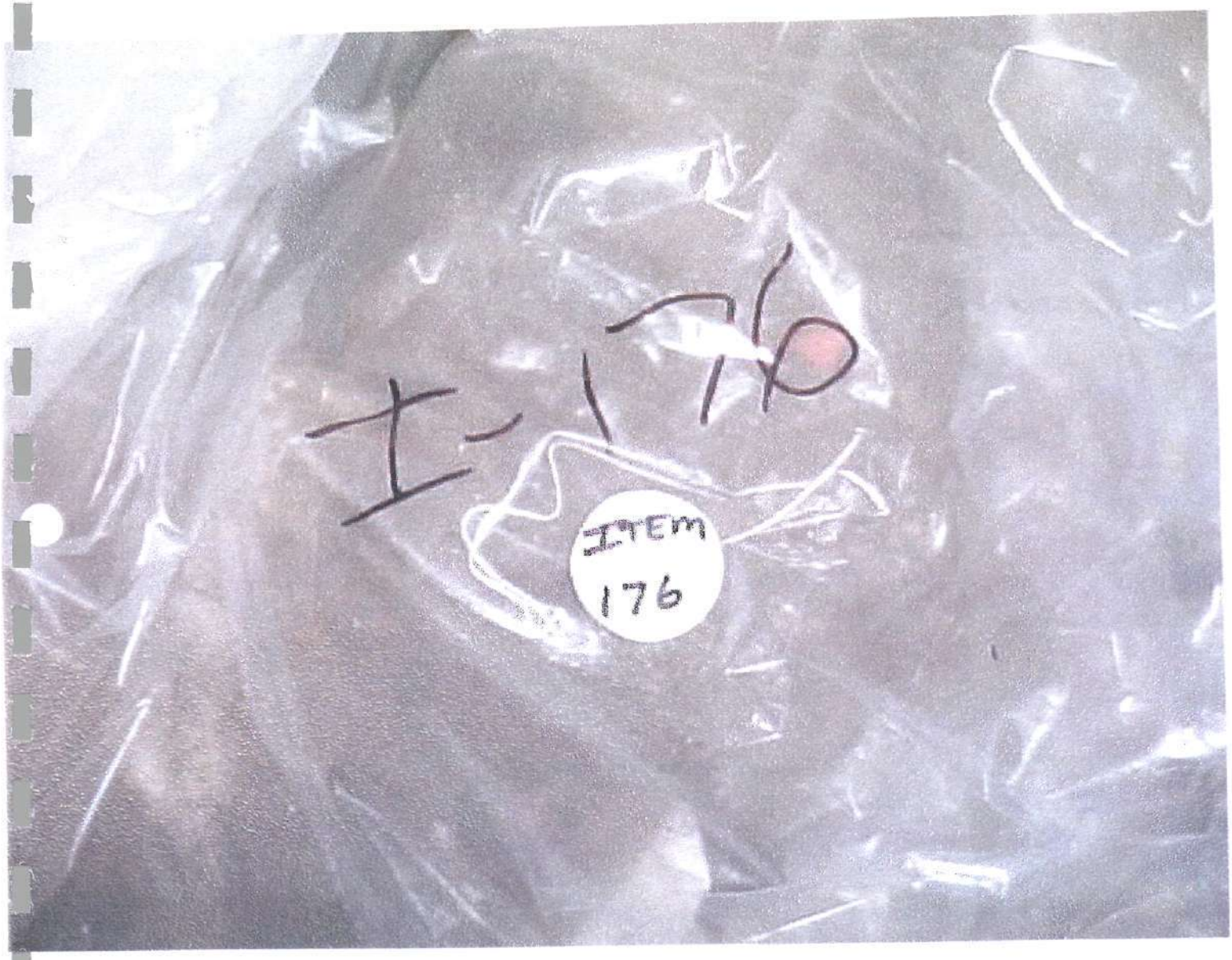


Acquired: 6/18/2002 1:21:27 PM Real Time: 20.00 s. Live Time: 16.18 s.

File: C:\User\GNIWEB~1\030 ITEM-176 6-18-2002 1.21.27 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


土ー176
ITEM
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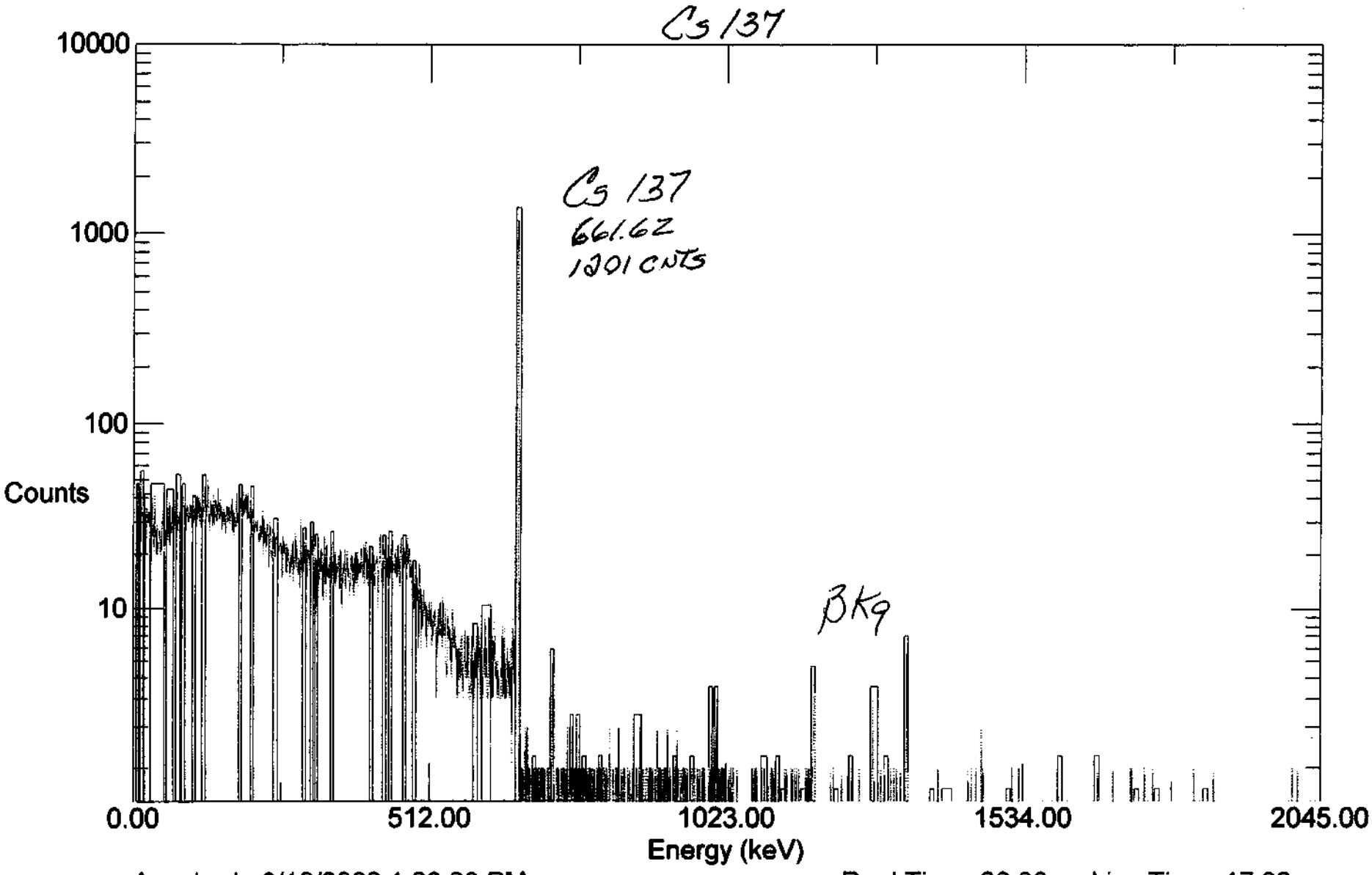
031 ITEM-177 6-18-2002 1.22.27 PM

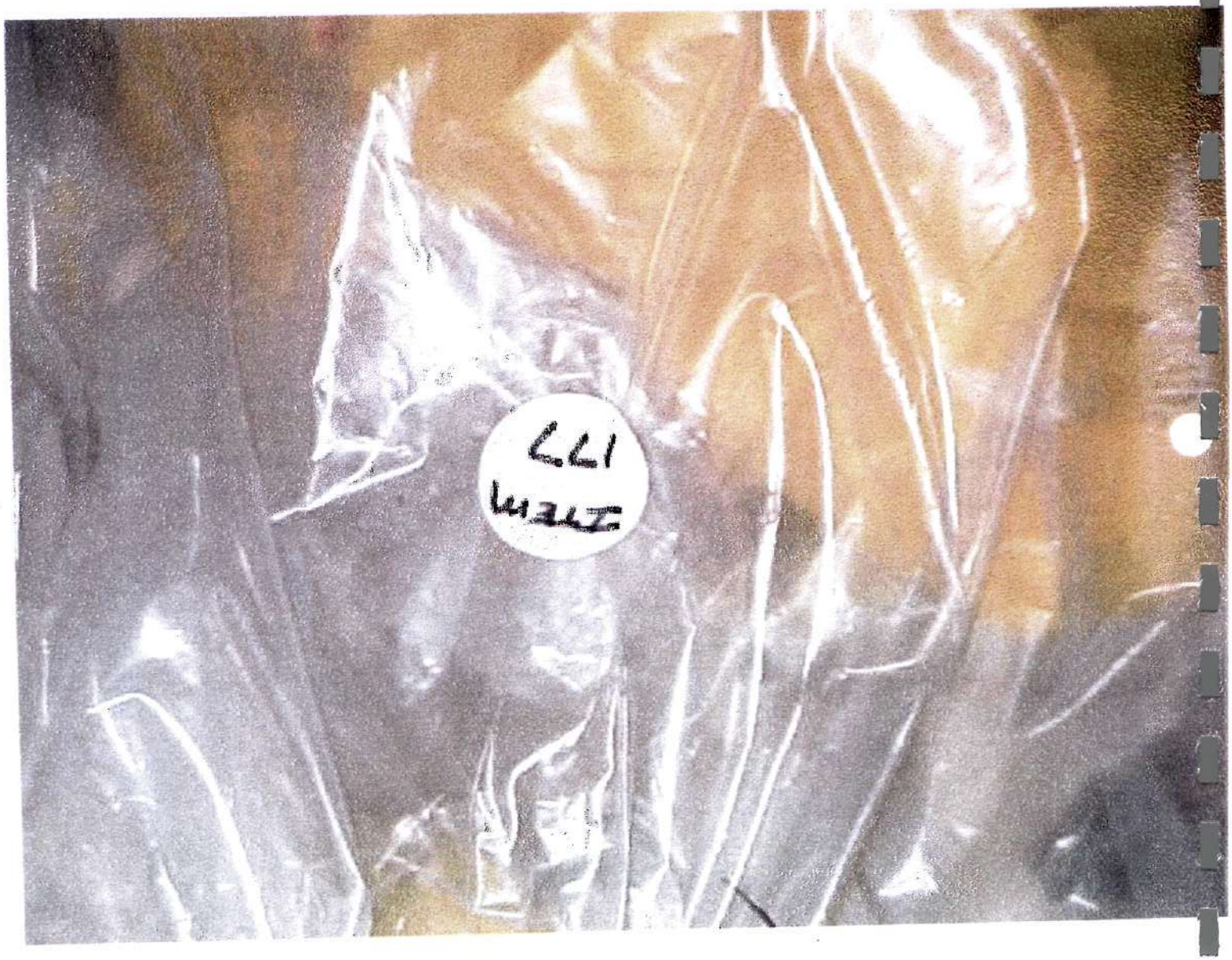
ITEM-177



Acquired: 6/18/2002 1:22:28 PM Real Time: 20.00 s. Live Time: 17.88 s.

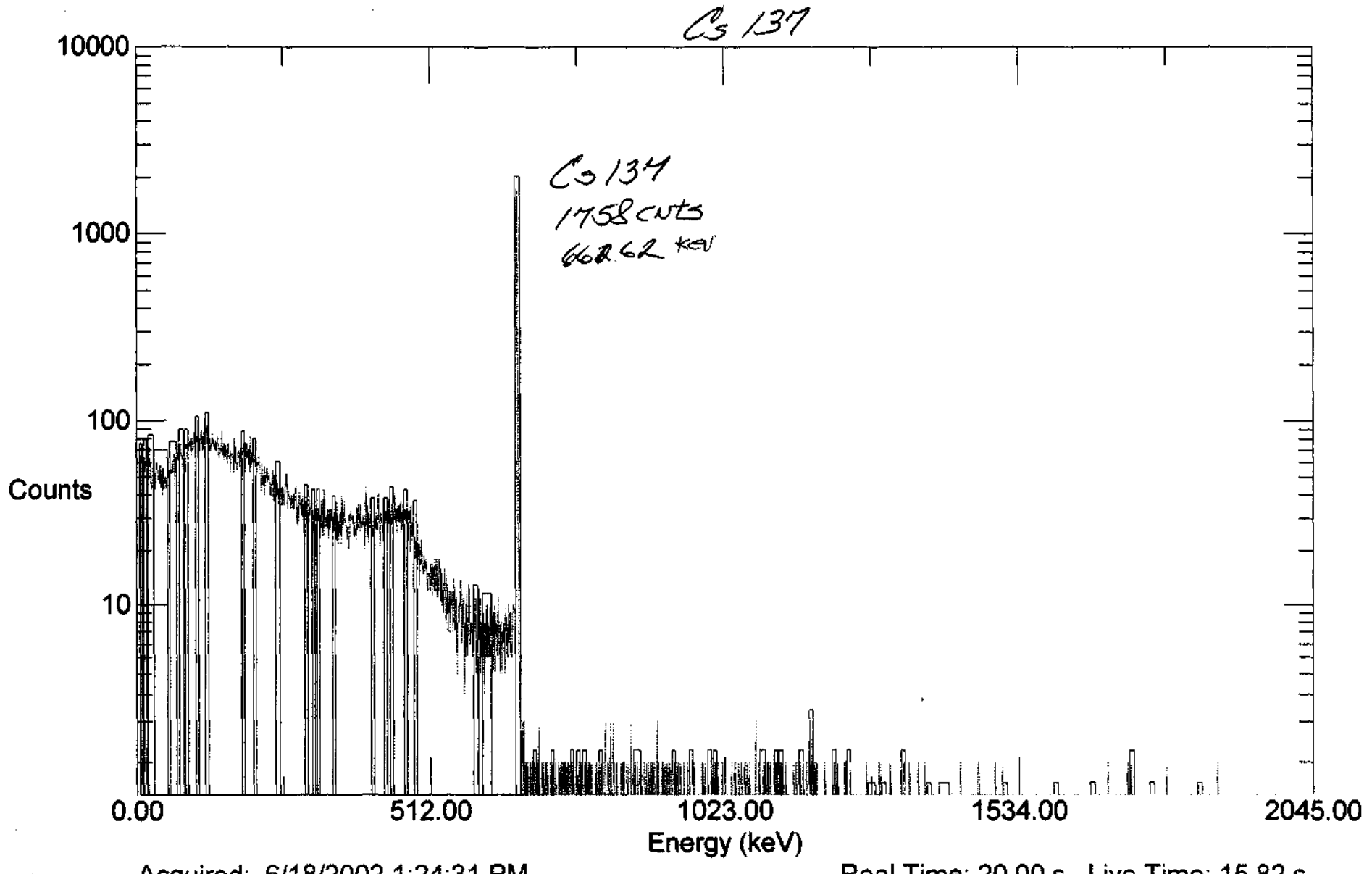
File: C:\User\GNIWEB~1\031 ITEM-177 6-18-2002 1.22.27 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


LL1
WALI

032 ITEM-178 6-18-2002 1.24.31 PM

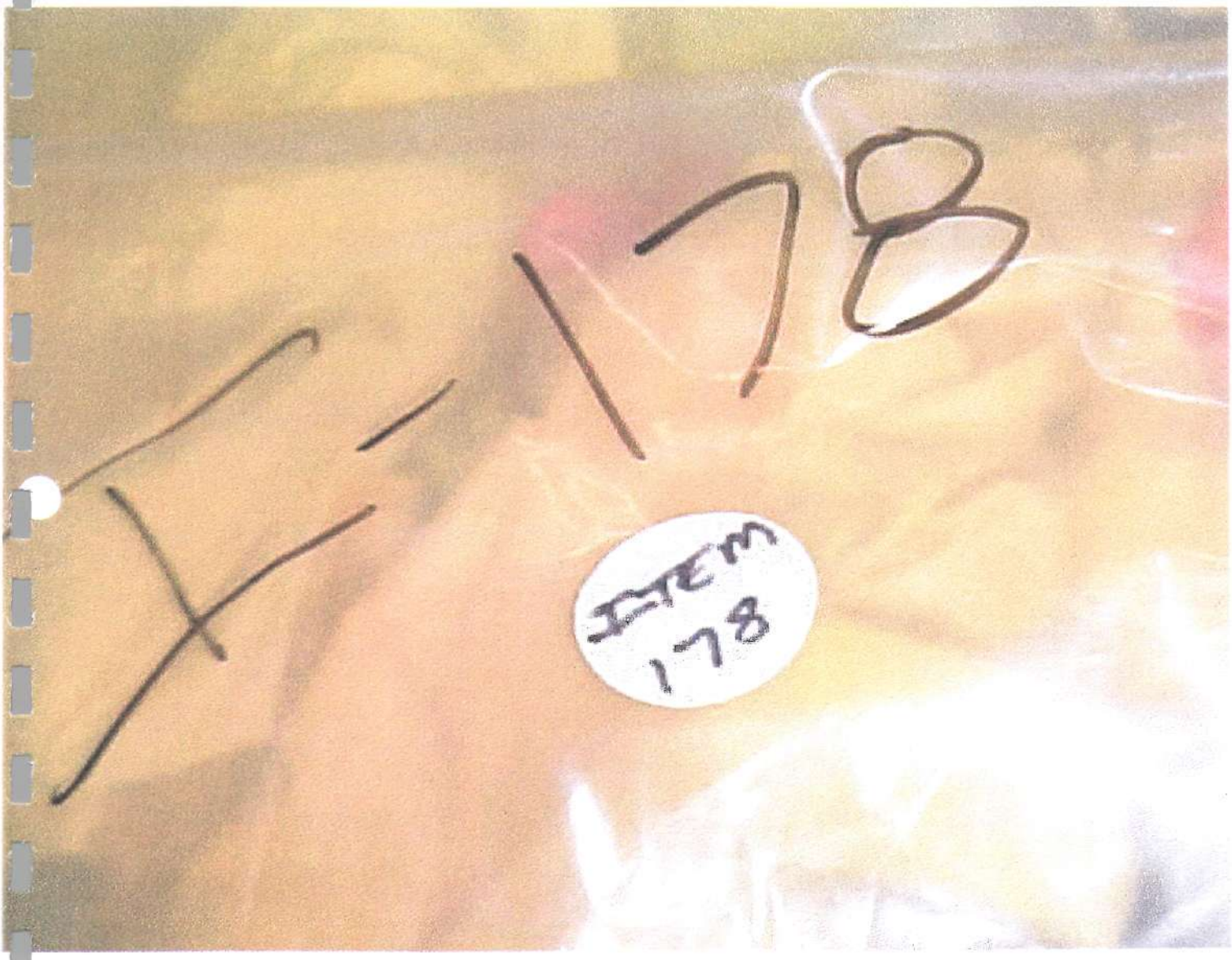
ITEM-178



Acquired: 6/18/2002 1:24:31 PM Real Time: 20.00 s. Live Time: 15.82 s.

File: C:\User\GNIWEB~1\032 ITEM-178 6-18-2002 1.24.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


F-178
ITEM
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ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18-02

BKG	mR/hr
6"	.5
12"	
36"	

Container #	179	180	181	182	183
External [redacted] in mR/hr	1	5	700	850	50
External [redacted] Neutron mR/hr	<1	<1	<1	<1	<1
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W	N/A	N/A	N/A	N/A	N/A

Picture	✓	✓	✓		
DART					

Table Readings

Source mR/hr @ 6 inchs	.7	1.3	100	15	20
Source mR/hr @ 12 inches	.5	1	60	12	13
~~[redacted]~~	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in cc's	3	3	3	3	2
Weight in grams	15	12	20	10	6

CPM Alpha					
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

033 ITEM-179 6-18-2002 1.25.43 PM

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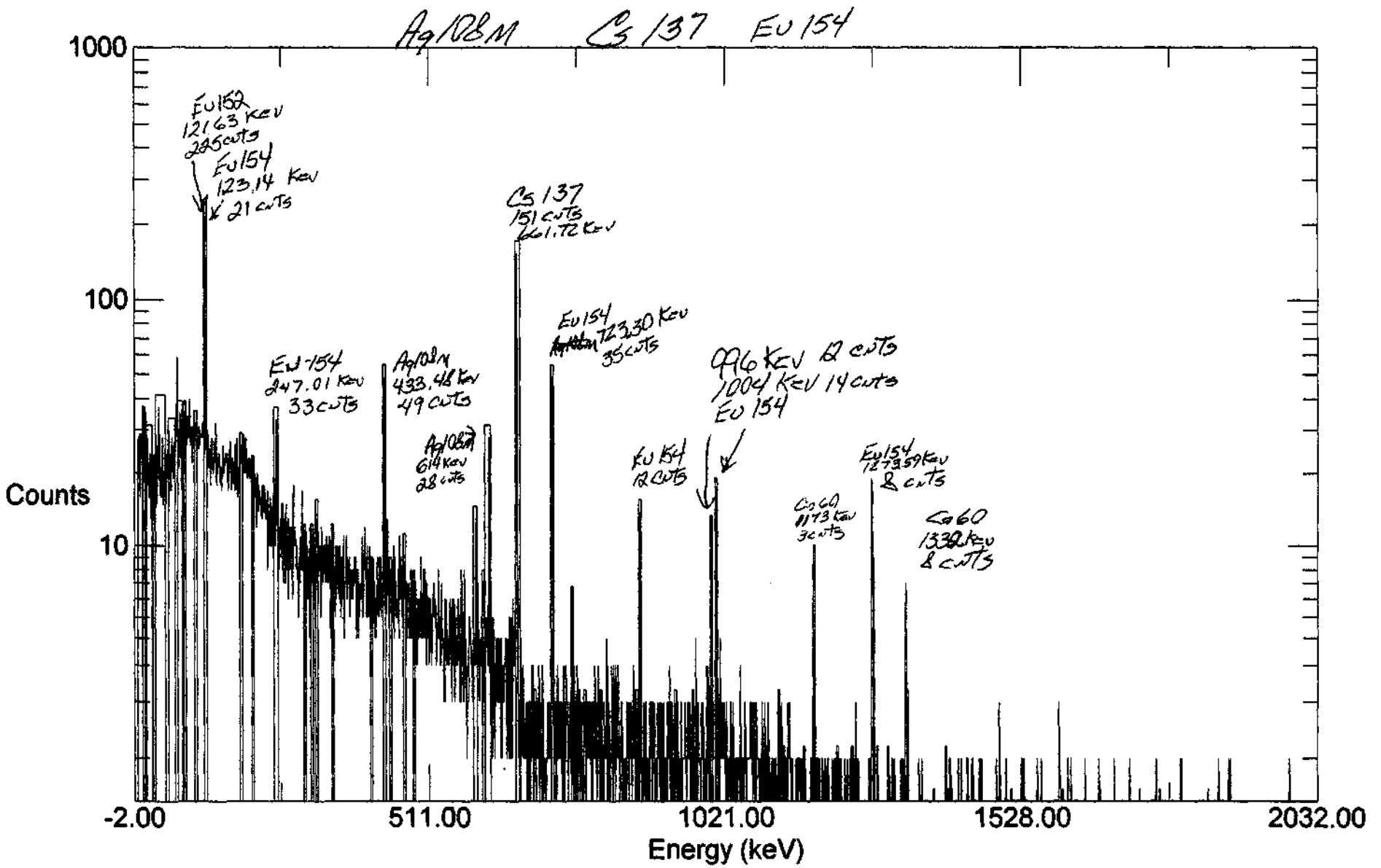
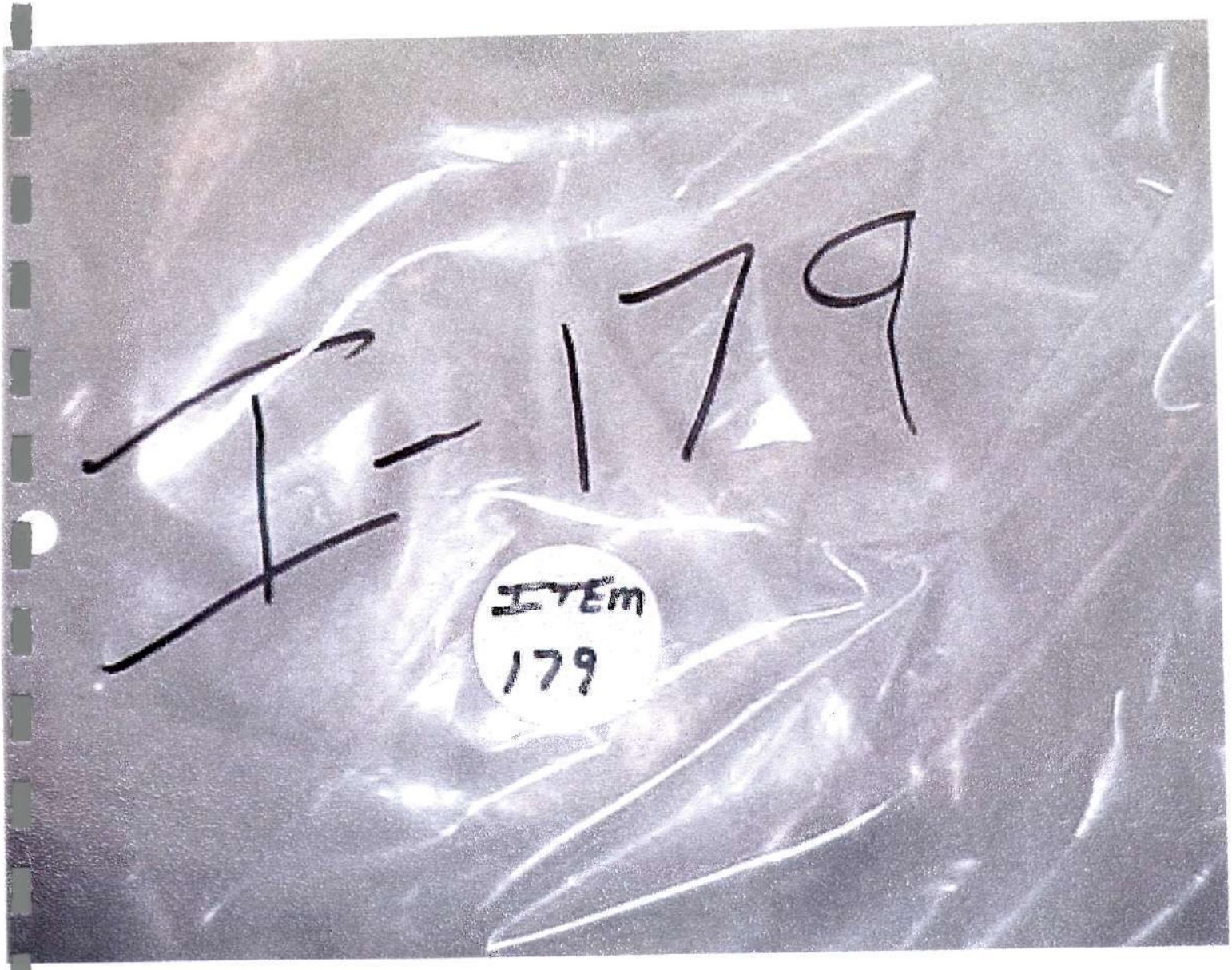


Acquired: 6/18/2002 1:25:43 PM Real Time: 20.00 s. Live Time: 18.80 s.

File: C:\User\GNIWEB~1\033 ITEM-179 6-18-2002 1.25.43 PM.An1 Channels: 8192

Detector: #1 digiDART USE 1b


I-179
ITEM
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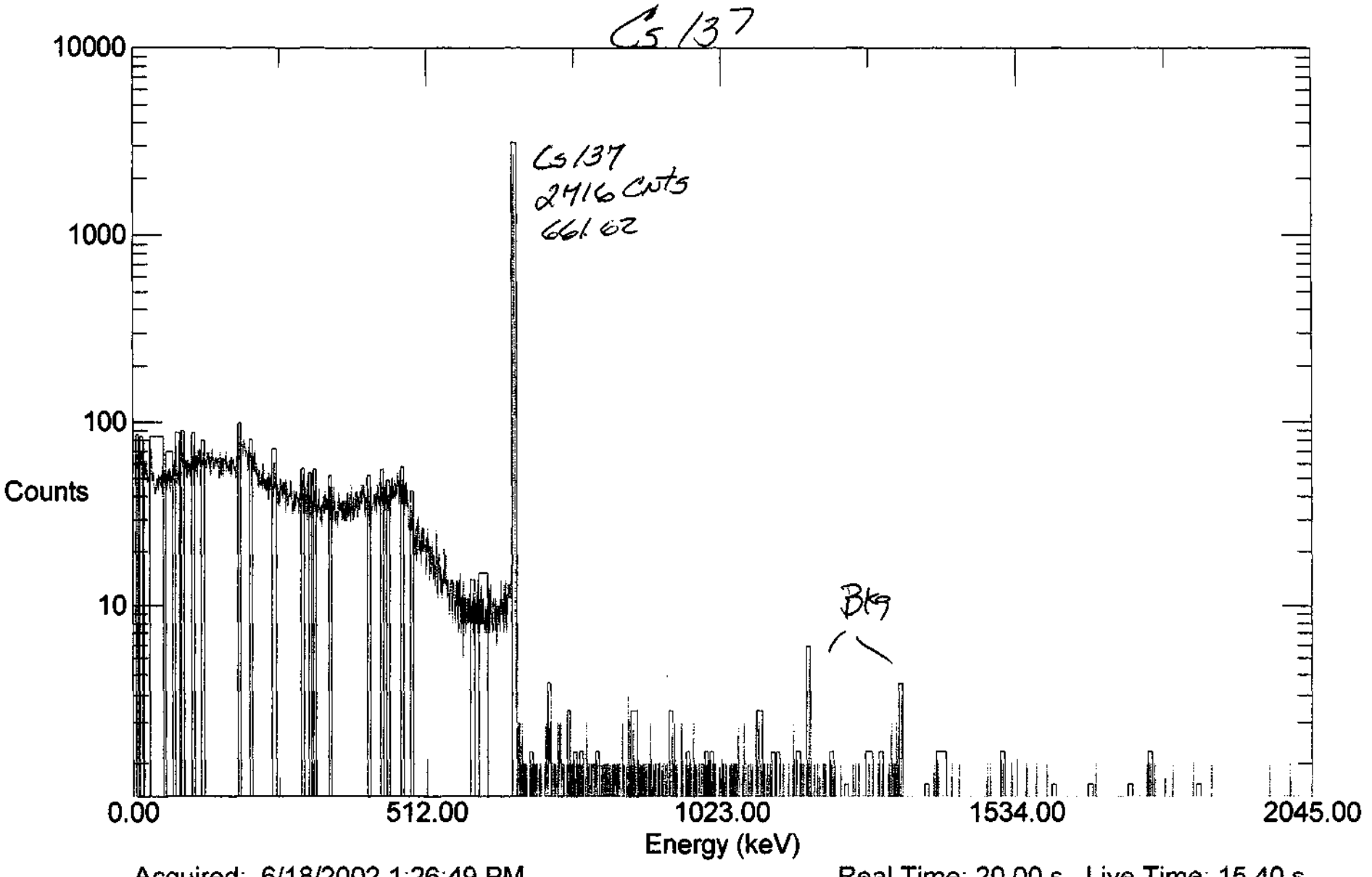
034 ITEM-180 6-18-2002 1.26.50 PM

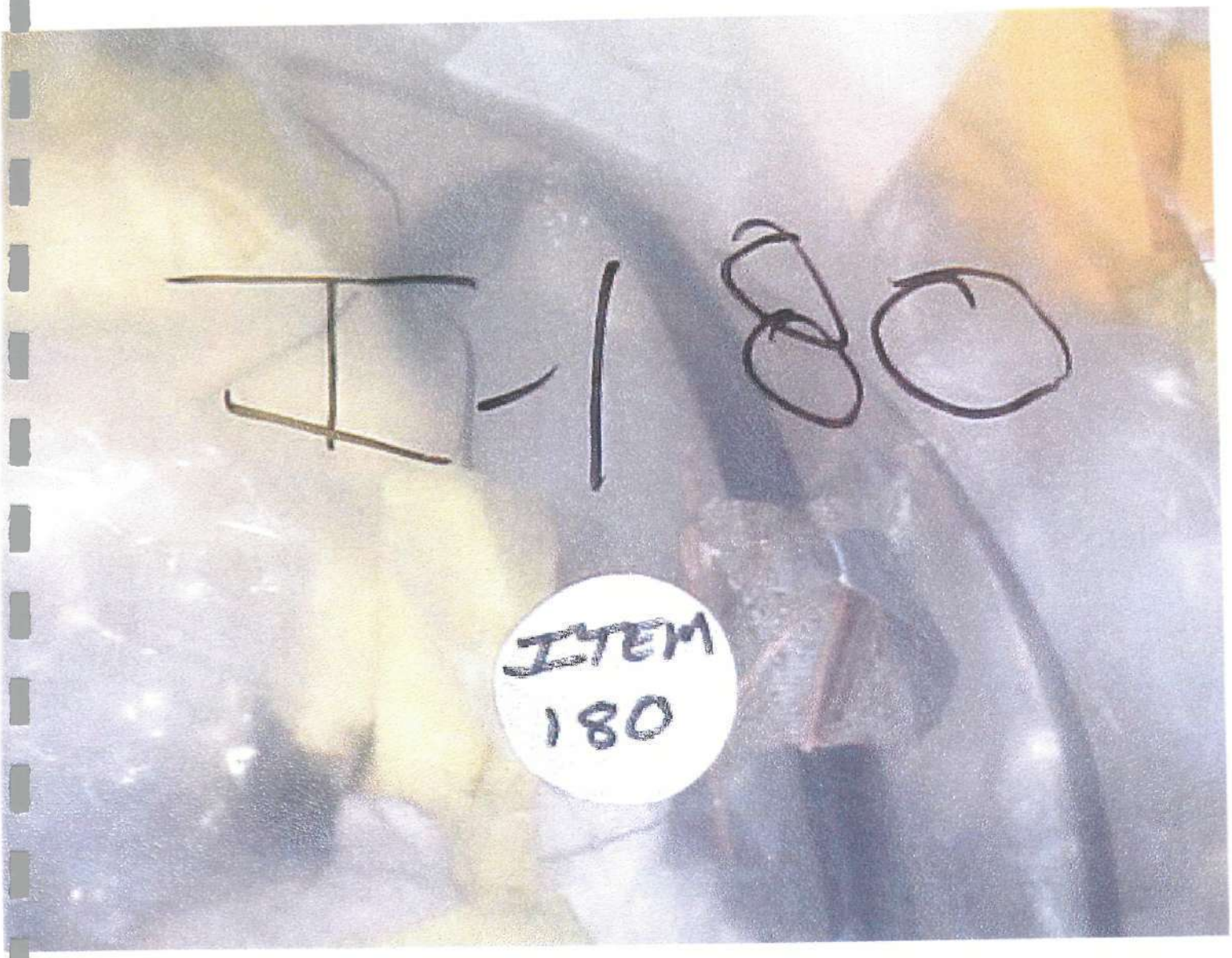
ITEM-180



Acquired: 6/18/2002 1:26:49 PM Real Time: 20.00 s. Live Time: 15.40 s.

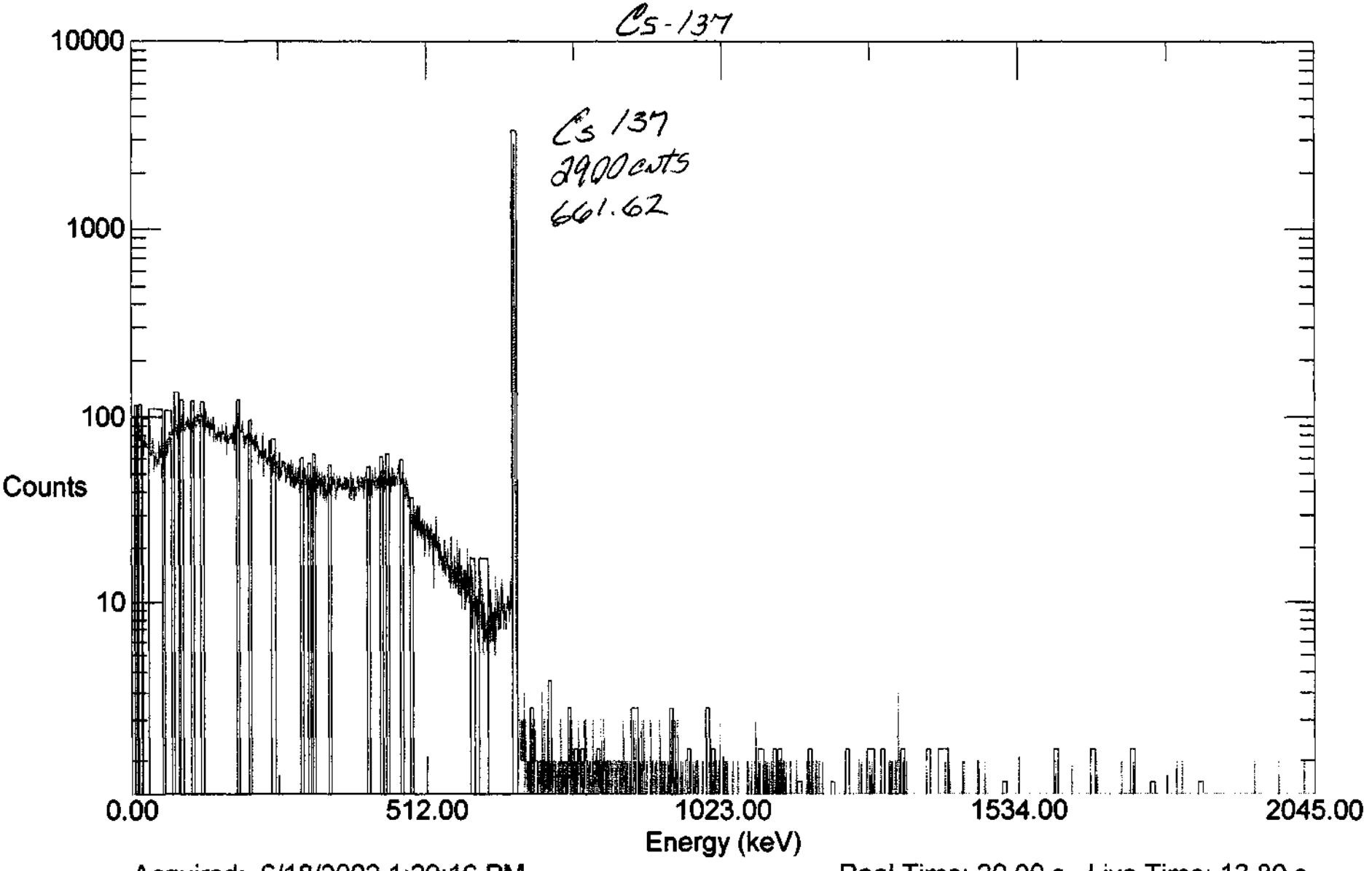
File: C:\User\GNIWEB~1\034 ITEM-180 6-18-2002 1.26.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


II-180
ITEM
180

035 ITEM-181 6-18-2002 1.29.16 PM

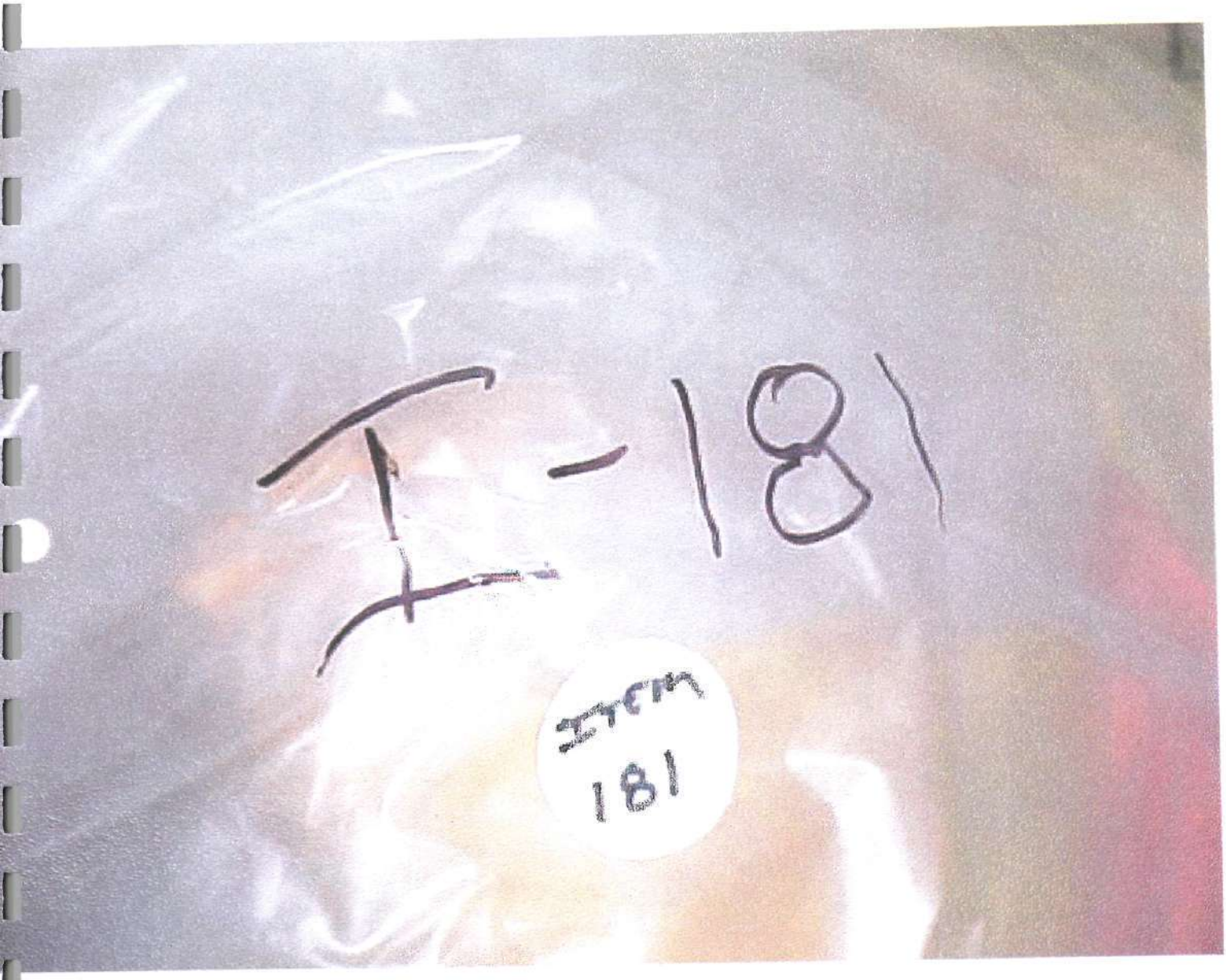
ITEM-181



Acquired: 6/18/2002 1:29:16 PM Real Time: 20.00 s. Live Time: 13.80 s.

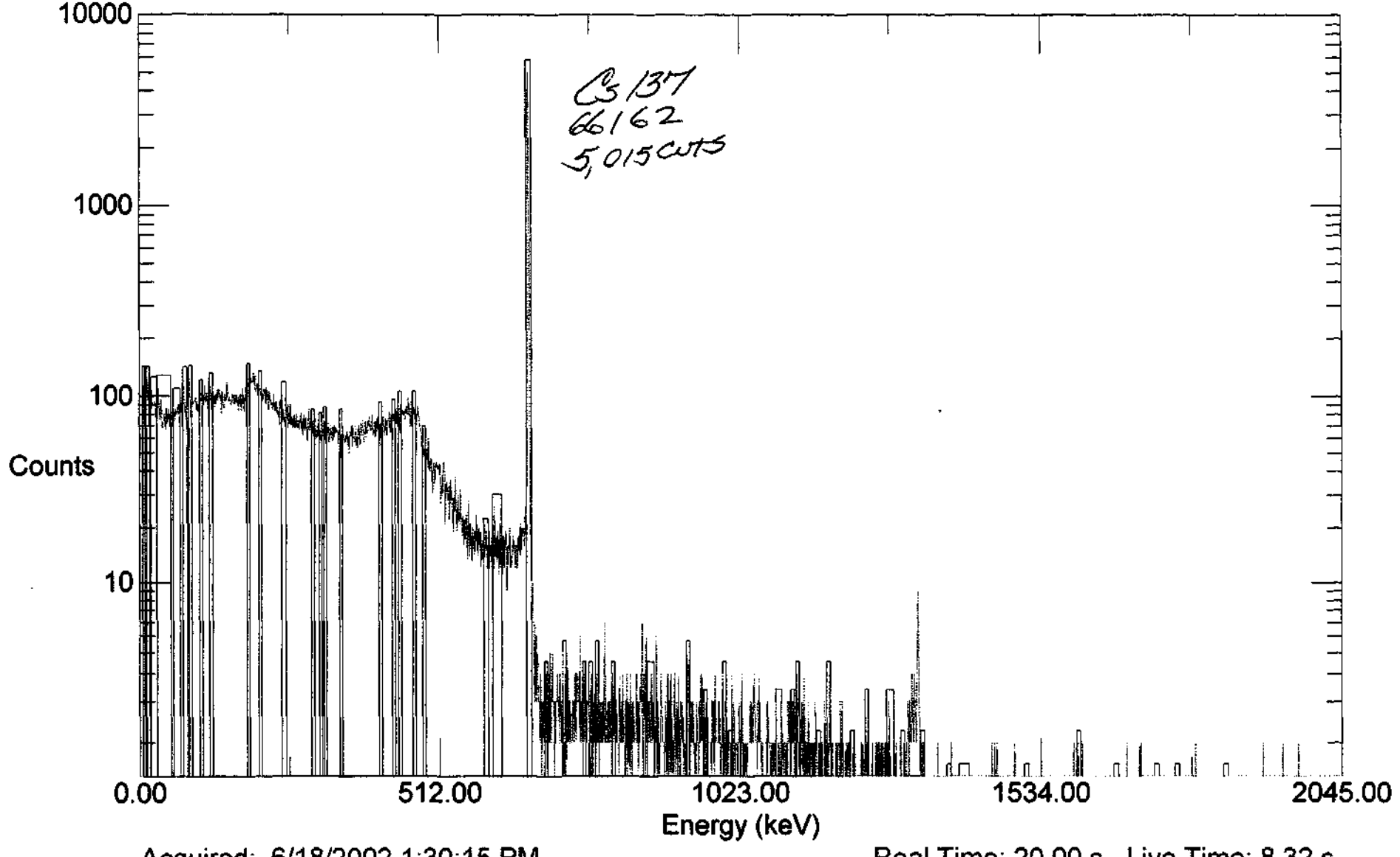
File: C:\User\GNIWEB~1\035 ITEM-181 6-18-2002 1.29.16 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-181
ITEM
181

036 ITEM-182 6-18-2002 1.30.15 PM

ITEM-182



Acquired: 6/18/2002 1:30:15 PM Real Time: 20.00 s. Live Time: 8.32 s.

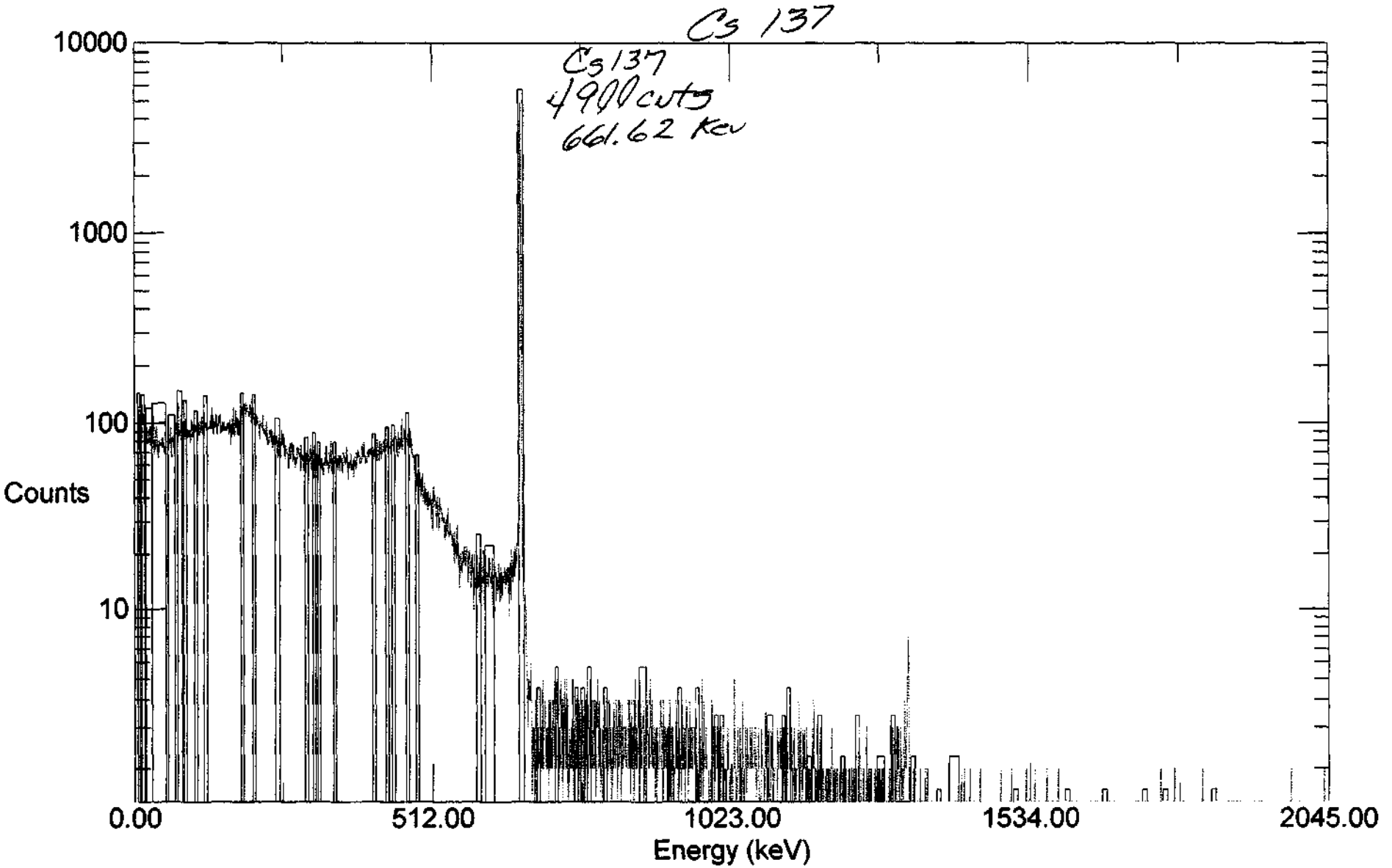
File: C:\User\GNIWEB~1\036 ITEM-182 6-18-2002 1.30.15 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Item
182

037 ITEM-183 6-18-2002 1.31.46 PM

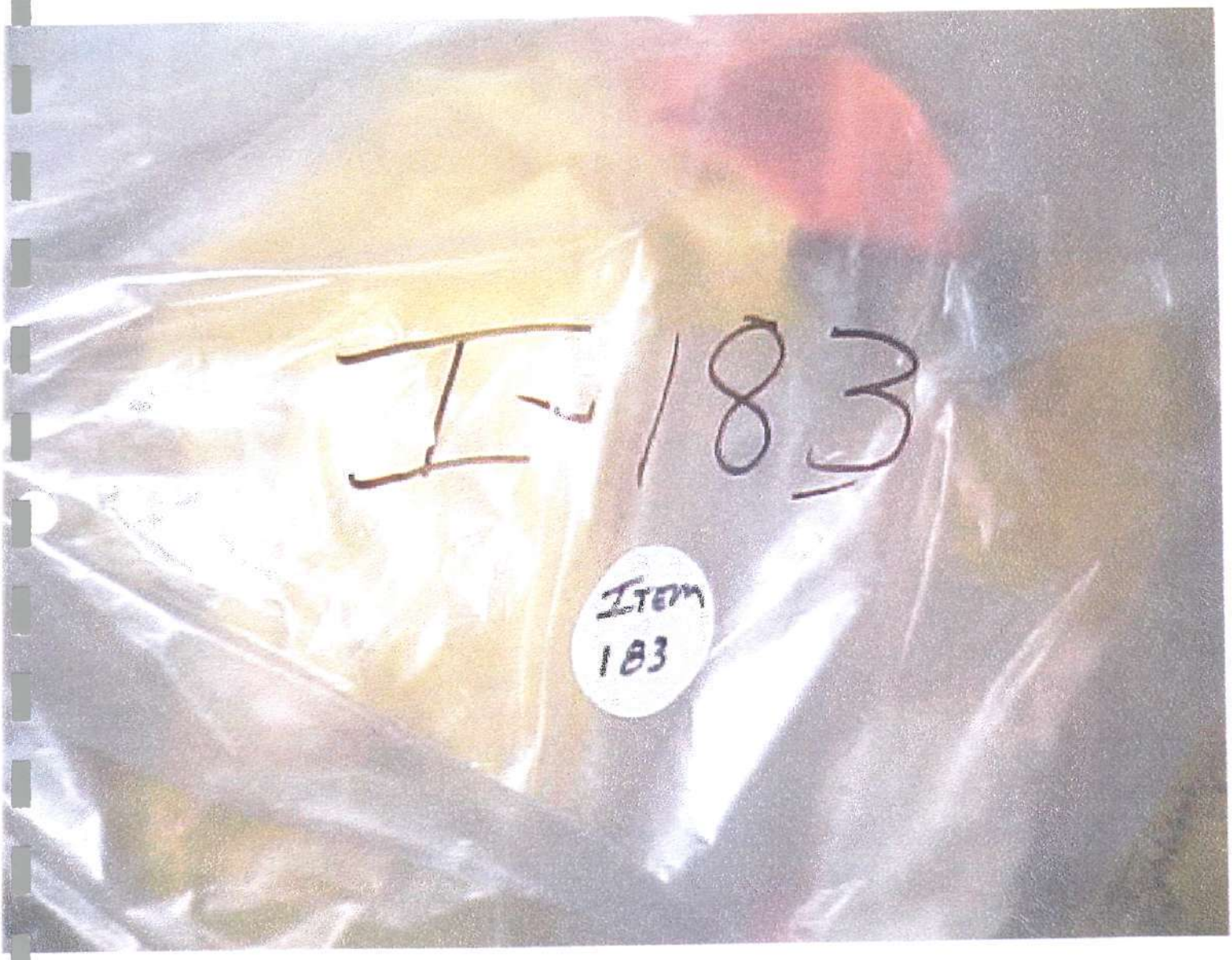
ITEM-183



Acquired: 6/18/2002 1:31:46 PM Real Time: 20.00 s. Live Time: 7.38 s.

File: C:\User\GNIWEB~1\037 ITEM-183 6-18-2002 1.31.46 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


I-183
ITEM
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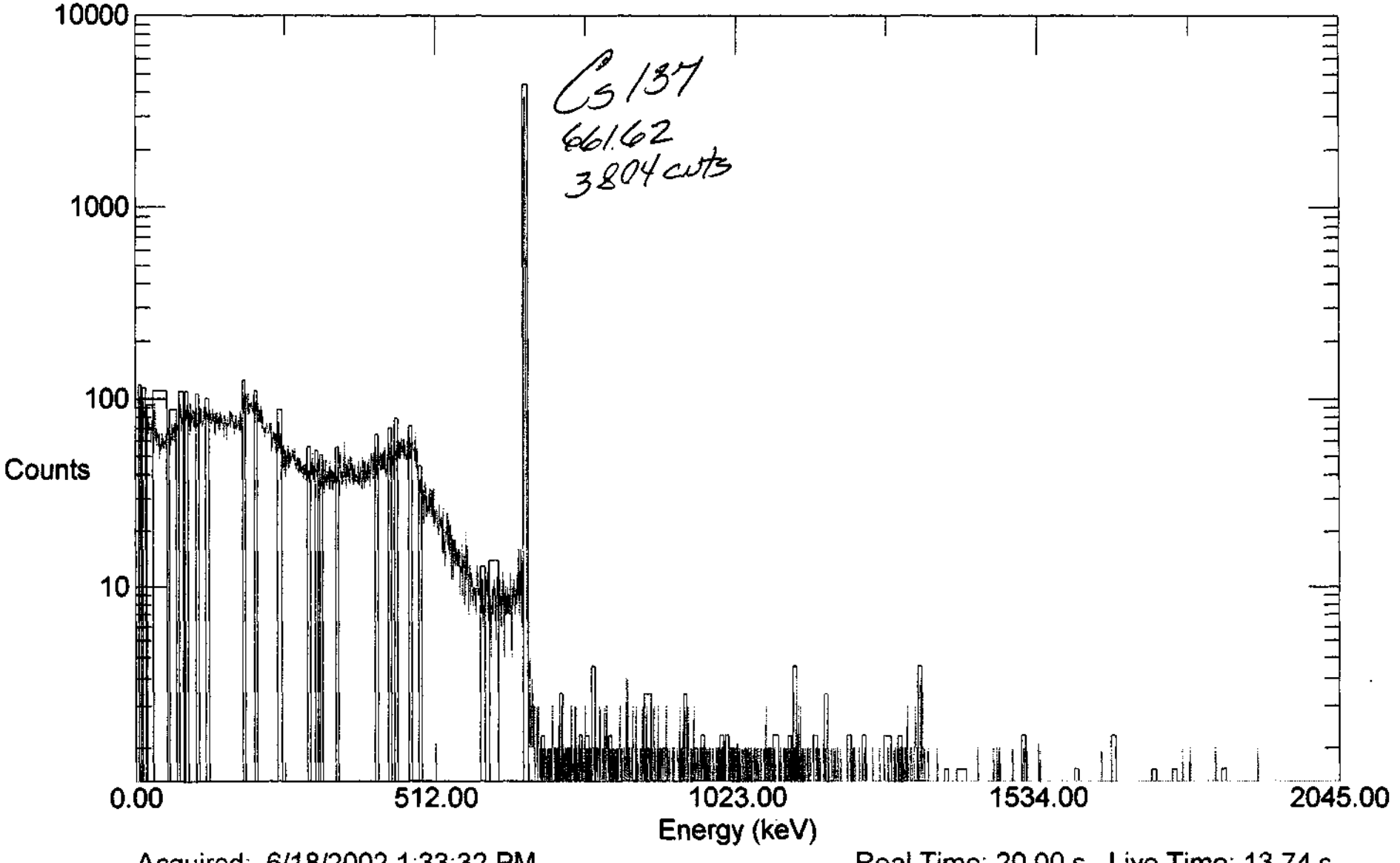
038 ITEM-184 6-18-2002 1.33.32 PM

ITEM-184



Acquired: 6/18/2002 1:33:32 PM Real Time: 20.00 s. Live Time: 13.74 s.

File: C:\User\GNIWEB~1\038 ITEM-184 6-18-2002 1.33.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ITEMS

USEcology
FS-TX-02-01
Source Log

Date 6-18-02

BKG	mR/hr
6"	.5
12"	
36"	

Container #	184	185			
External [redacted] in mR/hr	150	140			
External [redacted] Neutron mR/hr	<1	<1			
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Beta [redacted] mR/hr O/W	N/A	N/A			

Picture	✓	✓			
DARS					

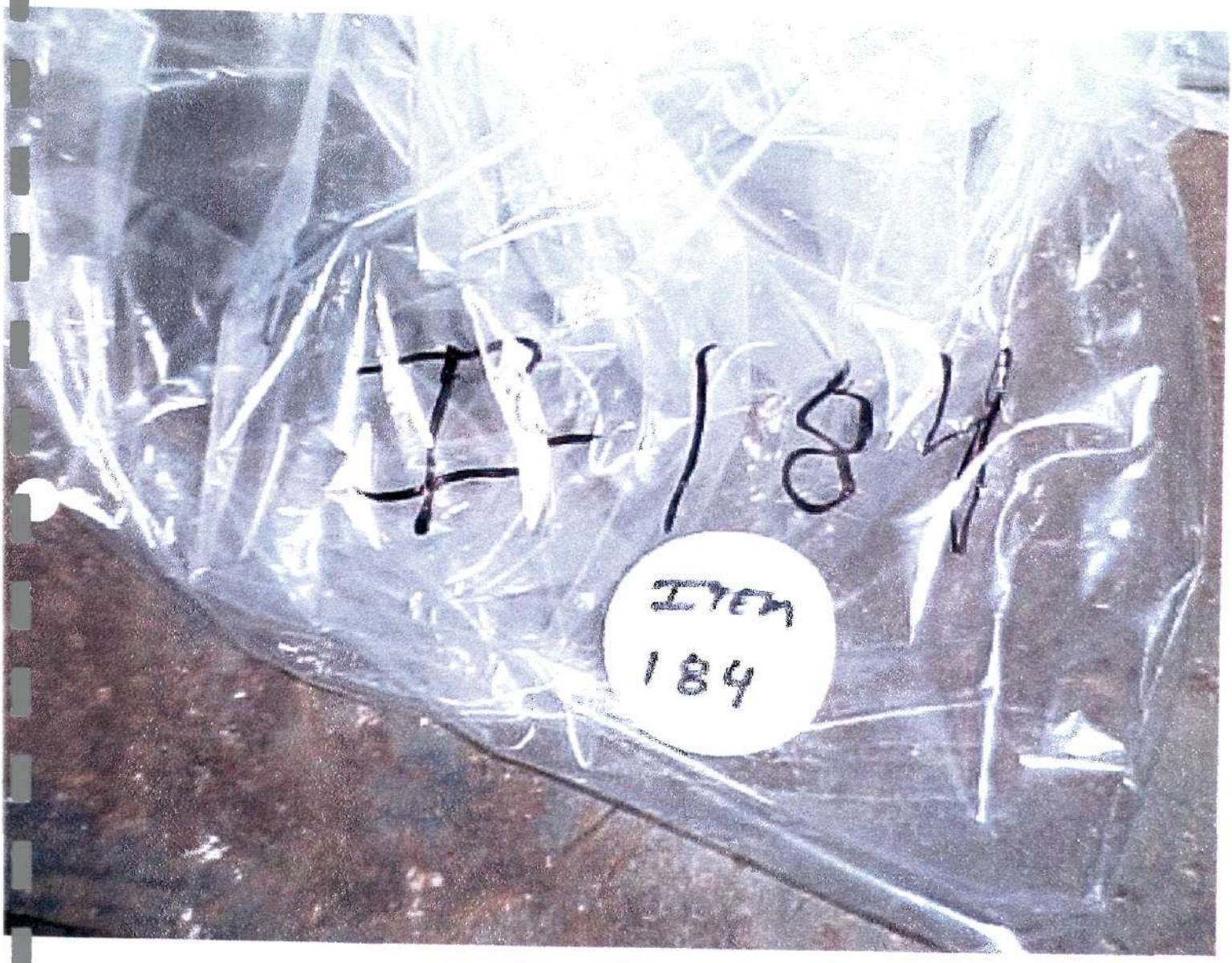
Table Readings

Source mR/hr @ 6 inchs	8	17			
Source mR/hr @ 12 inches	5	9			
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Size of source in ~~cc's~~ ~~CF~~ FT3	1/2	.5			
Weight in grams lb	1	1/2			

CPM Alpha					
Direct Beta/Gamma					

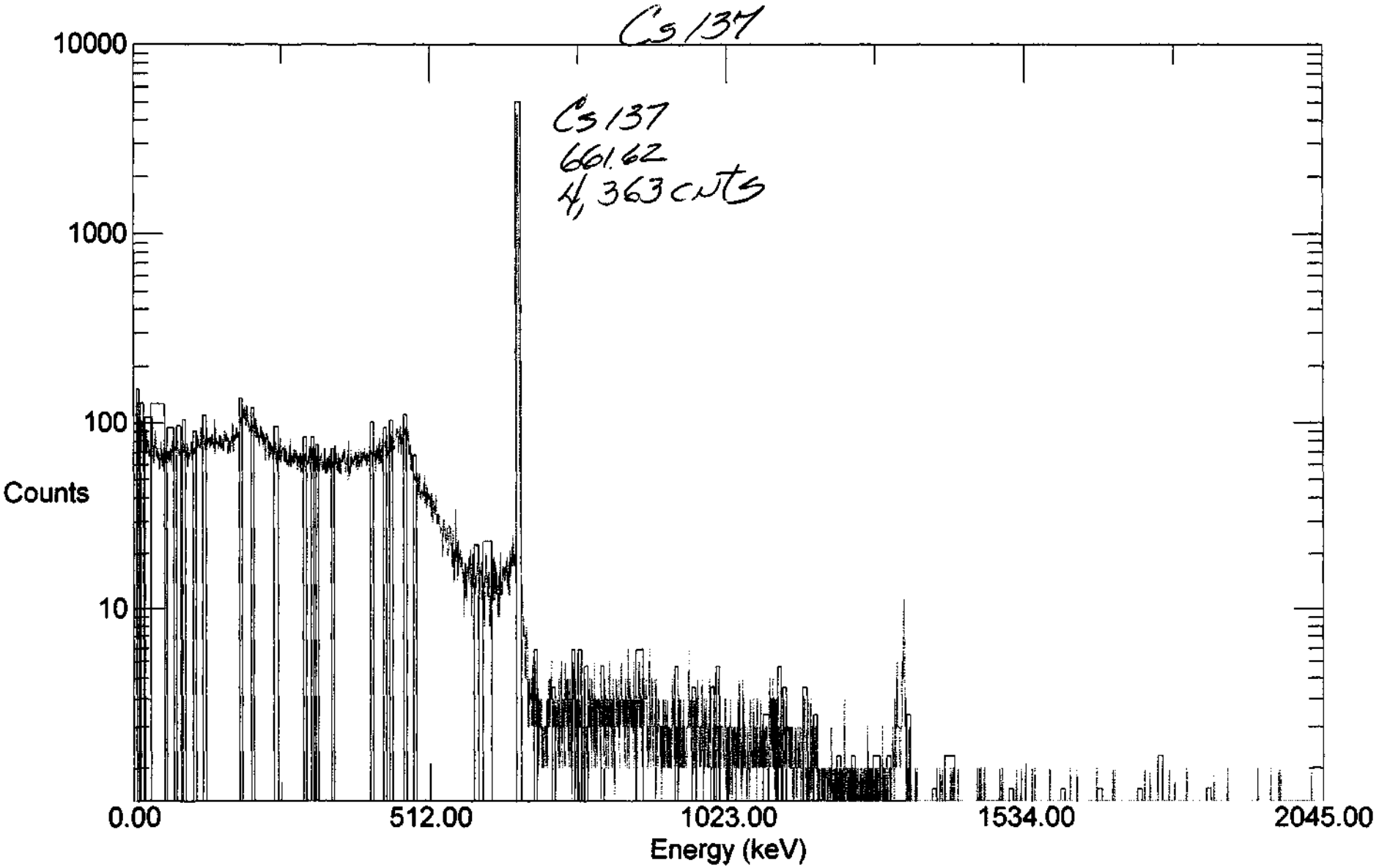
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					


ITEM
184

039 ITEM-185 6-18-2002 1.34.27 PM

ITEM-185



Acquired: 6/18/2002 1:34:28 PM Real Time: 20.00 s. Live Time: 4.38 s.

File: C:\User\GNIWEB~1\039 ITEM-185 6-18-2002 1.34.27 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

I-185

ITEM
185

USEcology
FS-TX-02-01
Source Log
Date: 1-24-02

	AU	AU	AU	AU	AU
Container #	1	2	3	4	5
External on pig in mR/hr	BKG	BKG	BKG	BKG	BKG

Table Readings

Source mR/hr @ 1 inch	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 36 inches	BKG	BKG	BKG	BKG	BKG
Smear ~~DPM~~ per ~~100 cm~~^2 Alpha	~~none~~ 2K	2K	~~2K~~ None	None	None
Smear DPM per 10~~0 cm~~^2 Beta	~~20K~~ 5K	3K	~~3K~~ 30K	~~3K~~ BKG	~~2K~~ ~~None~~ 20K
Size of source in cc's	4 cc	4	4	4	4
Weight in grams	2	2	2	2	2

Loaded Pig mR/hr	BKG	BKG	BKG	BKG	BKG

Info on source:

	Th-230 C-7519	Th-230 C-7518	Sr-90 BAIRD ATOMIC EB-4 2084	Po210 BAIRD ATOMIC ALPHA ES-1	Cl-36 BAIRD ATOMIC 36 BA 637-7

Information on pig:

	None	None	None	None	None
OW Ro2 mRem/HR	<1	<1	1 MR/HR	<1	<1

Dig A Dart Info:

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **1/25/02** **Time** 0900

Location Source Smears **MDA Alpha** **MDA Beta**

Survey #

BKG Alpha 0.3 **BKG Beta** 76

Alpha Eff 0.30414 **Beta/Gamma Eff** 0.33

	2 Min CPM	DPM
1	3	3.9
2	2	2.3
3	2	2.3
4	0	-1.0
5	0	-1.0
6		-1.0
7		-1.0
8		-1.0
9		-1.0
10		-1.0
11		-1.0
12		-1.0
13		-1.0
14		-1.0
15		-1.0
16		-1.0
17		-1.0
18		-1.0
19		-1.0
20		-1.0
21		-1.0
22		-1.0
23		-1.0
24		-1.0
25		-1.0

	2 Min CPM	DPM
1	143.00	-12.6
2	135	-24.7
3	141	-15.6
4	163	17.4
5	166	22.0
6		-227.7
7		-227.7
8		-227.7
9		-227.7
10		-227.7
11		-227.7
12		-227.7
13		-227.7
14		-227.7
15		-227.7
16		-227.7
17		-227.7
18		-227.7
19		-227.7
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21		-227.7
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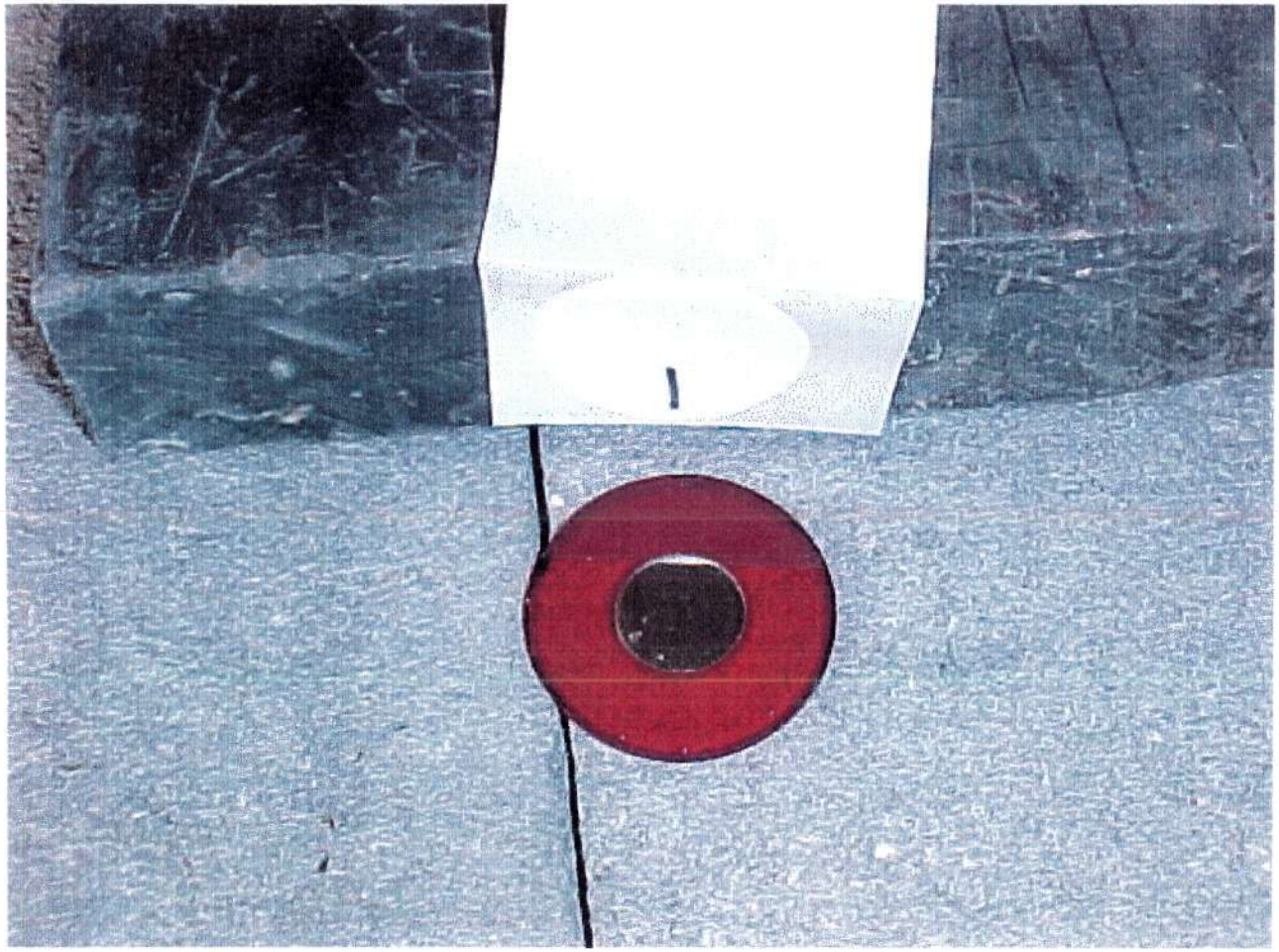
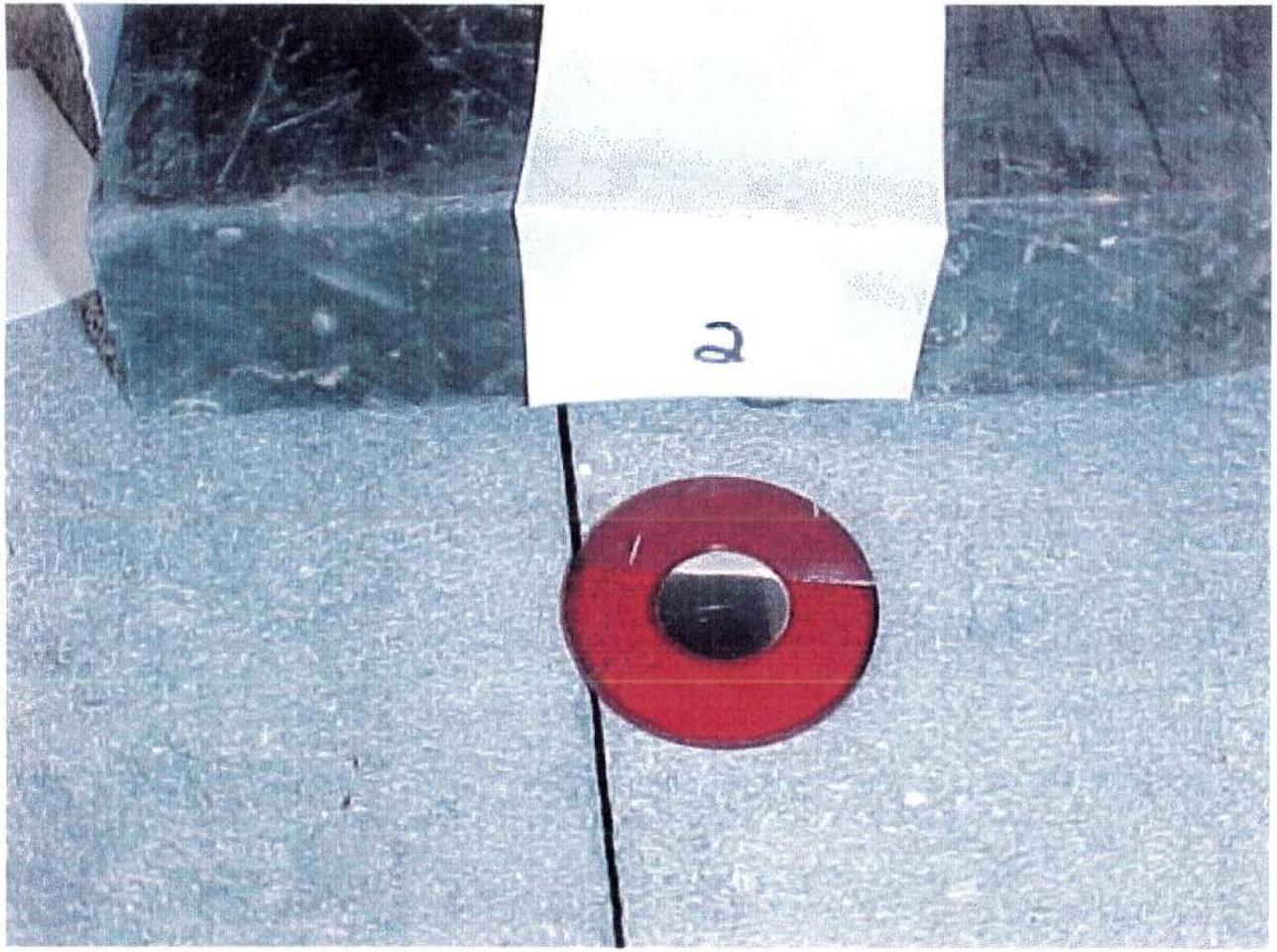
24		-227.7
25		-227.7

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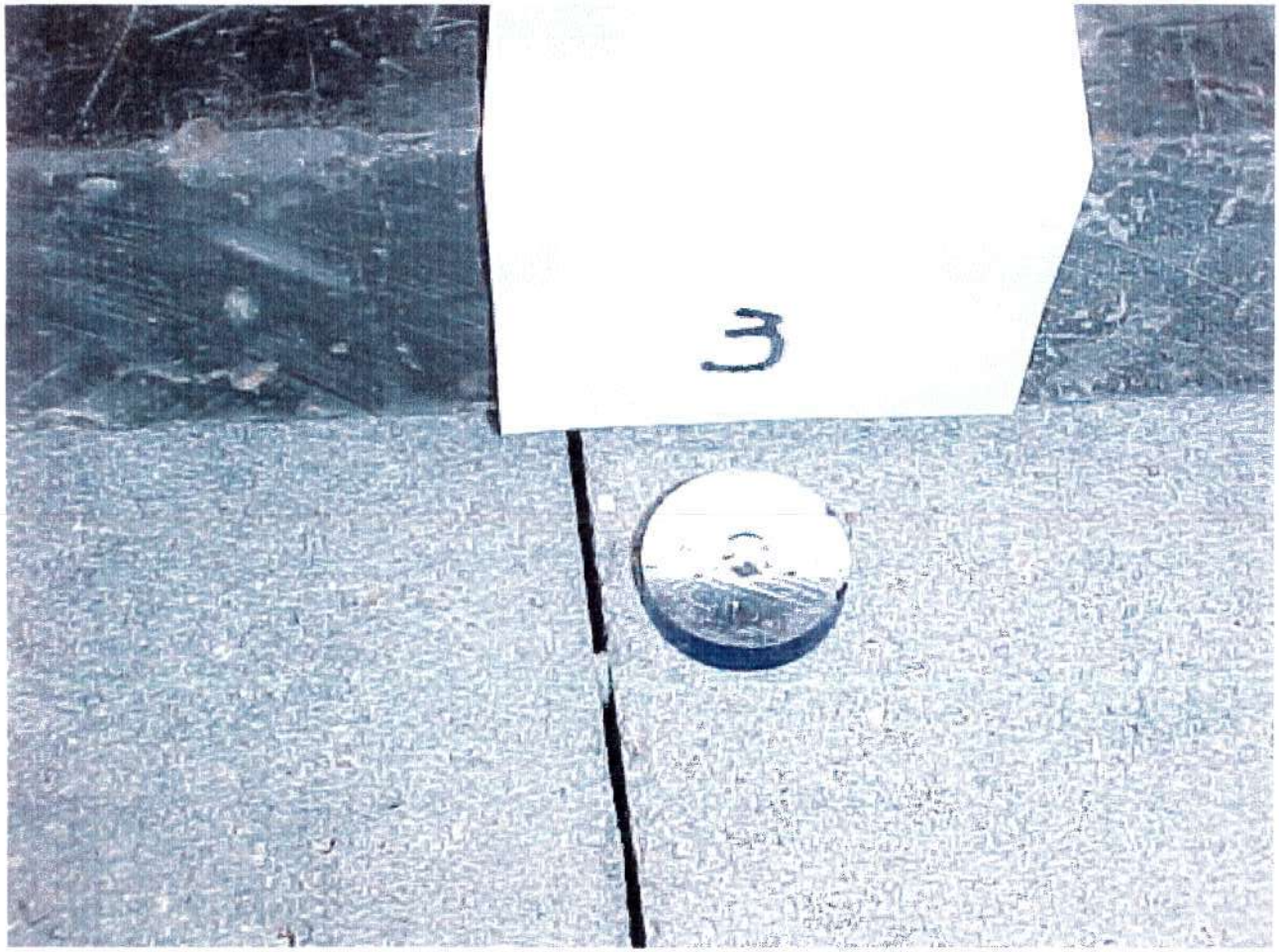
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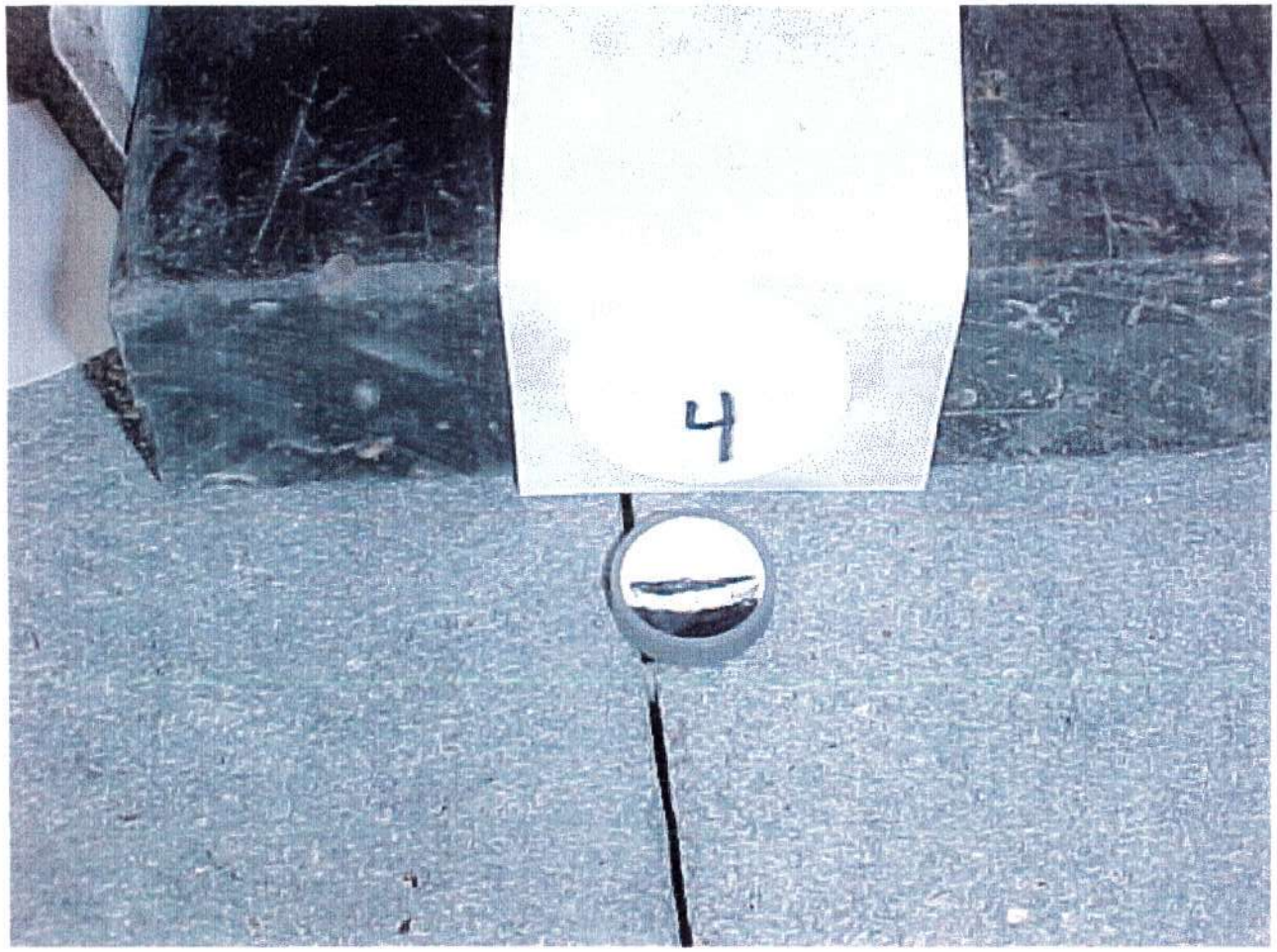
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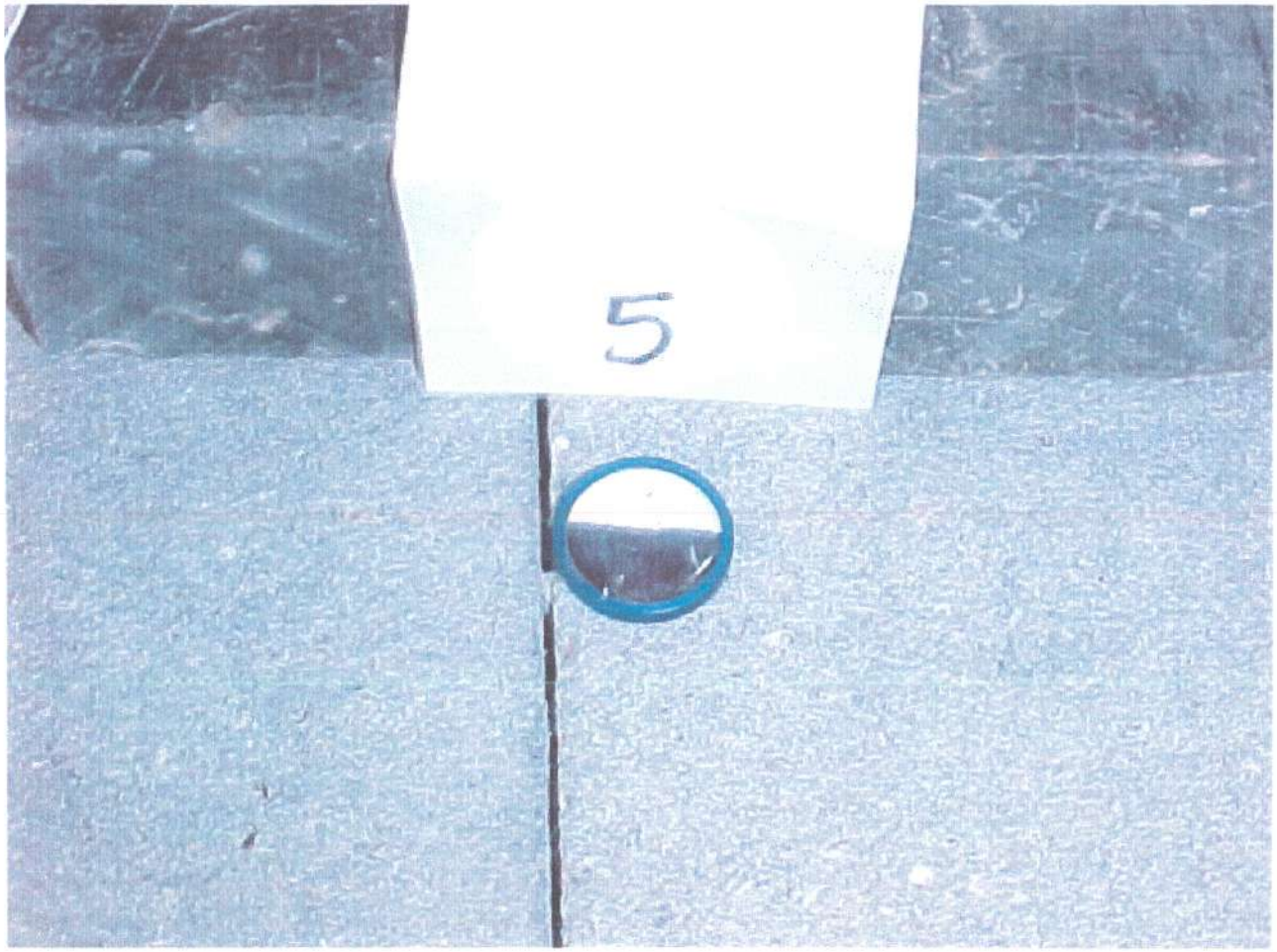
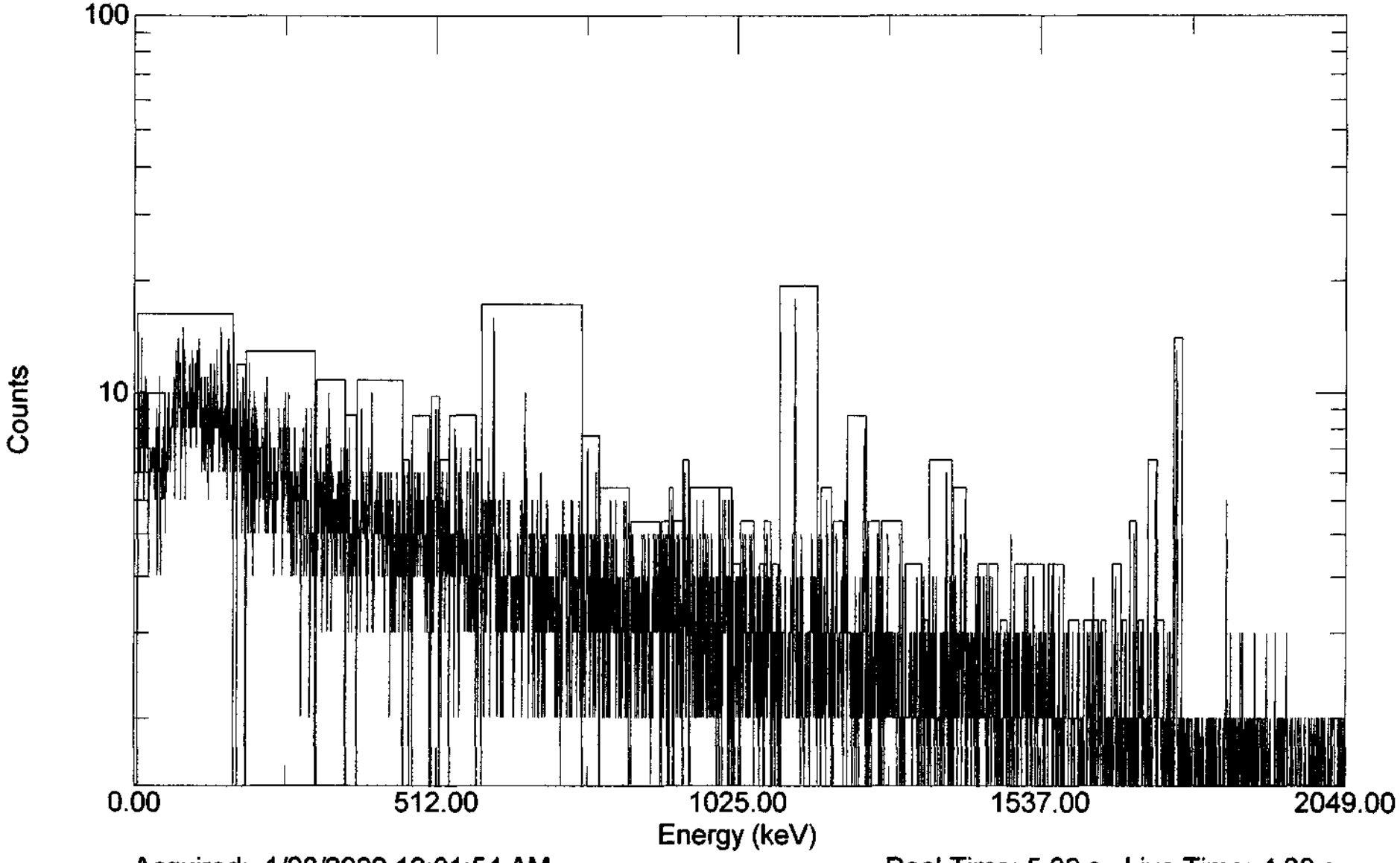

5

002 5BKG 1-28-2002 10.01.54 AM

5BKG



Acquired: 1/28/2002 10:01:54 AM
File: C:\GAMMAV~1\002 5BKG 1-28-2002 10.01.54 AM.Spc
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.38 s.
Channels: 8192

USEcology
FS-TX-02-01
Source Log
Date: 1-25-02

AM

Container #	6				
External on pig in mR/hr	BKG				

Table Readings

Source mR/hr @ 1 inch	BKG				
Source mR/hr @ 12 inches	BKG				
Source mR/hr @ 36 inches	BKG				
CPM Smear ~~DPM~~ per 1~~00 cm~~^2 Alpha	0				
CPM Smear ~~DPM~~ per 1~~00 cm~~^2 Beta	30K				
Size of source in cc's	2				
Weight in grams	4				

Loaded Pig mR/hr	BKG				

Info on source:

	C-14 BAIRD ATOMIC 14B0 6231				

Information on pig:

	None				
mR/HR ON	2				

Dig A Dart Info:

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **1/25/02** **Time** 0900

Location SOURCE # 6 SMEAR **MDA Alpha** **MDA Beta**

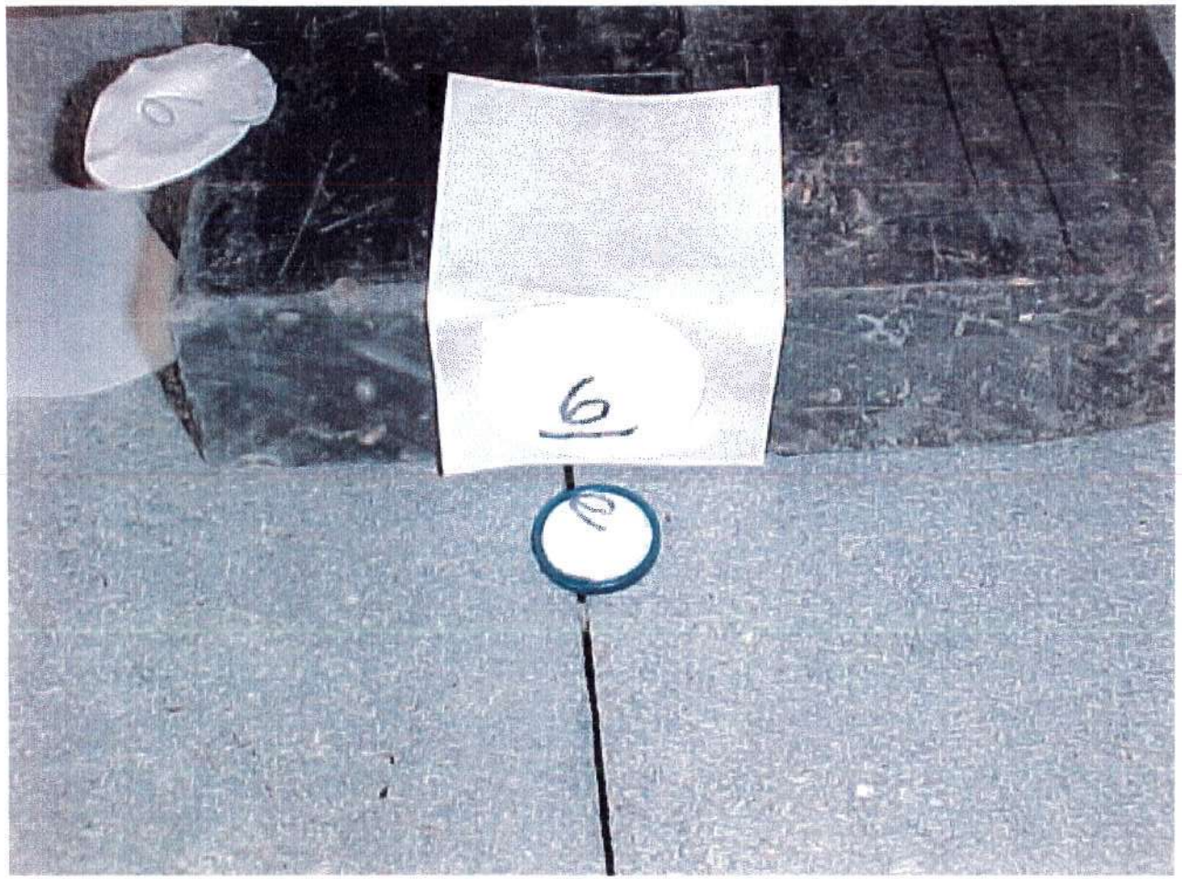
Survey #

BKG Alpha 0.3 **BKG Beta** 76

Alpha Eff 0.30414 **Beta/Gamma Eff** 0.33

	2 Min CPM	DPM
1	1	0.7
2		-1.0
3		-1.0
4		-1.0
5		-1.0
6		-1.0
7		-1.0
8		-1.0
9		-1.0
10		-1.0
11		-1.0
12		-1.0
13		-1.0
14		-1.0
15		-1.0
16		-1.0
17		-1.0
18		-1.0
19		-1.0
20		-1.0
21		-1.0
22		-1.0
23		-1.0
24		-1.0
25		-1.0

	2 Min CPM	DPM
1	148.00	-5.1
2		-227.7
3		-227.7
4		-227.7
5		-227.7
6		-227.7
7		-227.7
8		-227.7
9		-227.7
10		-227.7
11		-227.7
12		-227.7
13		-227.7
14		-227.7
15		-227.7
16		-227.7
17		-227.7
18		-227.7
19		-227.7
20		-227.7
21		-227.7
22		-227.7
23		-227.7
24		-227.7
25		-227.7


6

36" 14C: 0.9 mR/hr
1" BKg. 773: <.2
12" R020: 0.3

USEcology
FS-TX-02-01
Source Log
Date: 1-28-02

Container #	7	8	9	10	11
External on pig in mR/hr	40	3	2	3	2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	100	6	2	10	2
Beta on open pig mR/hr O/W	100	6	5	150	5

Table Readings

Source mR/hr @ 1 inch +ELE	850	55	10	42	8
Source mR/hr @ 12 inches R020	18	1.3	0.6	1.5	0.5
Source mR/hr @ 36 inches 14C	3	1.2	1	1.2	1.1
Smear DPM per 100 cm^2 Alpha	<100	<	<	<	<
Smear DPM per 100 cm^2 Beta	<	<	<	<	<
Size of source in cc's	10	10	2	5	4
Weight in grams	7	6	2	2	4

Loaded Pig mR/hr	<10	3	NA	NA	NA

Info on source:

	AG110	None	None	CO137	

Information on pig:

	SILVER WIRE 110 1/4"	CO 60 WIRE 10 UCI	CS-137 1 10 uCi EA 12-20-84	CS-137 210 uCi EA 10-25-85	CS-137 20UCi EA 12-20-84

Dig A Dart Info:

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **01/28/2002** **16:02**

Location Source Leak Rate Test

Survey #

MDA Alpha DPM	MDA Beta DPM
7	68

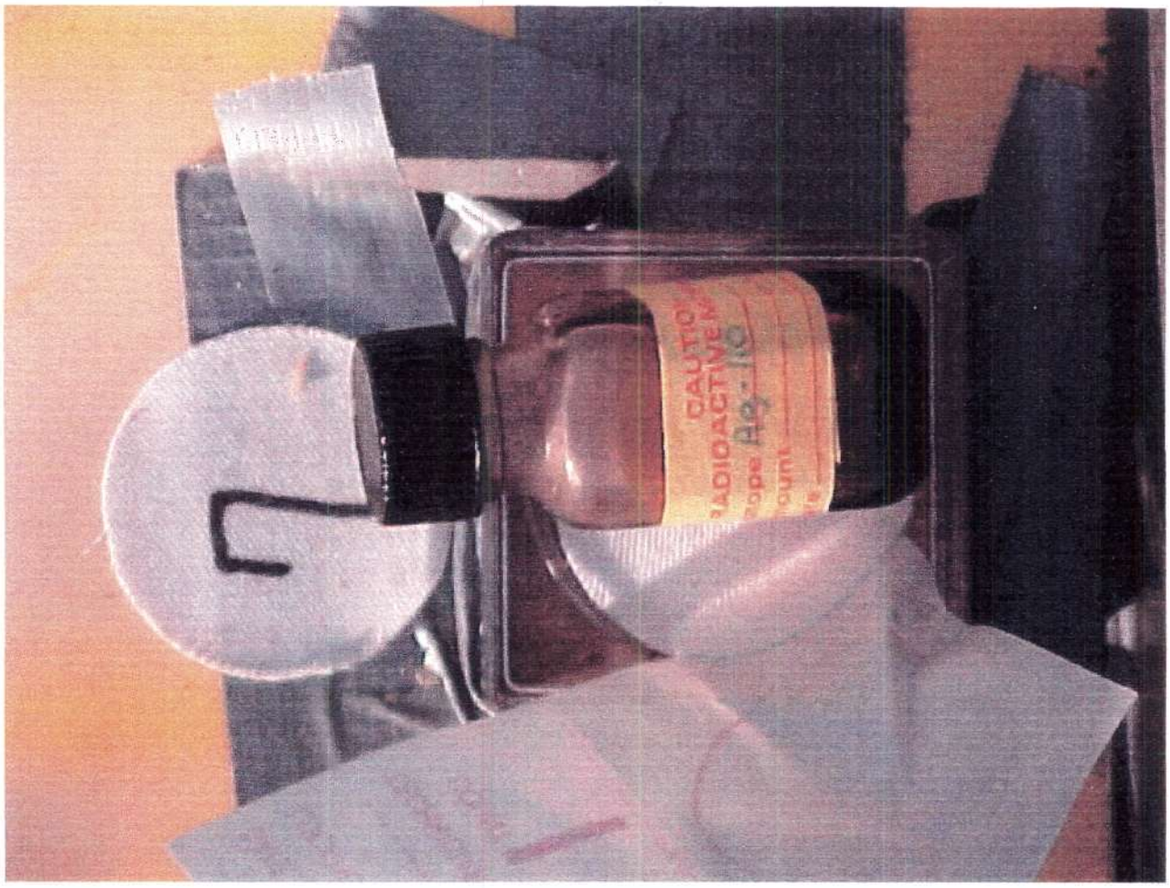
BKG Alpha CPM	BKG Beta CPM
0.05	74

Alpha Eff 0.33

	2 Min CPM	DPM
1		
2		
3		
4		
5		
6		
7	3	4.39
8	2	2.88
9	1	1.36
10	4	5.91
11	3	4.39
12	0	-0.15
13	3	4.39
14	0	-0.15
15	18	27.12
16	36	54.39
17	2	2.88
18		
19	26	39.24
20		
21		
22		
23		
24		
25		

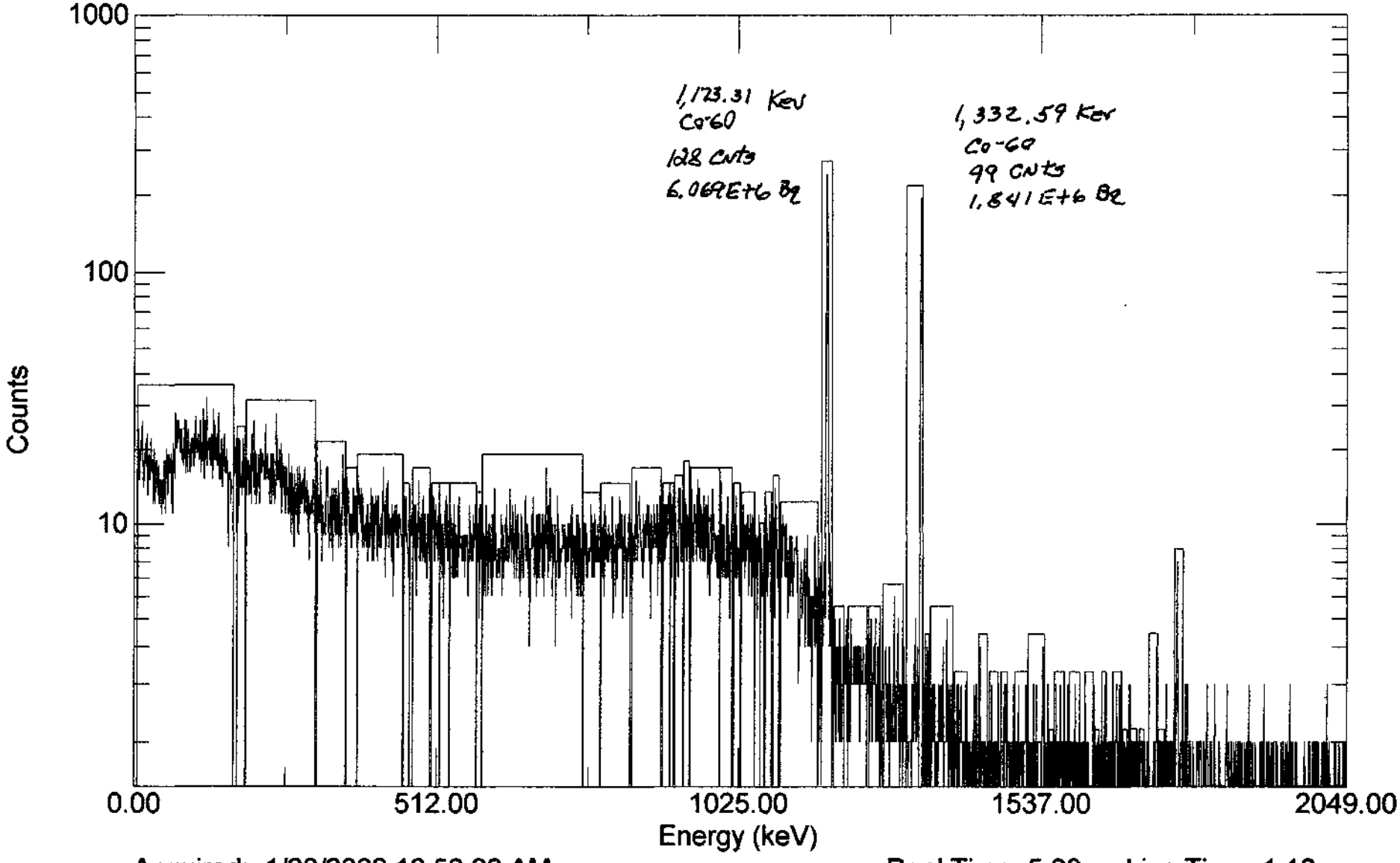
Beta/Gamma Eff 0.33

	2 Min CPM	DPM
1		
2		
3		
4		
5		
6		
7	142	-9.1
8	150	3.0
9	134	-21.2
10	134	-21.2
11	136	-18.2
12	108	-60.6
13	144	-6.1
14	142	-9.1
15	156	12.1
16	144	-6.1
17	158	15.2
18		
19	149	1.5
20		
21		
22		
23		
24		
25		


C
CAUTIO
RADIOACTIVE M
Ag-110

003 SC7 1-28-2002 10.53.21 AM

SC7



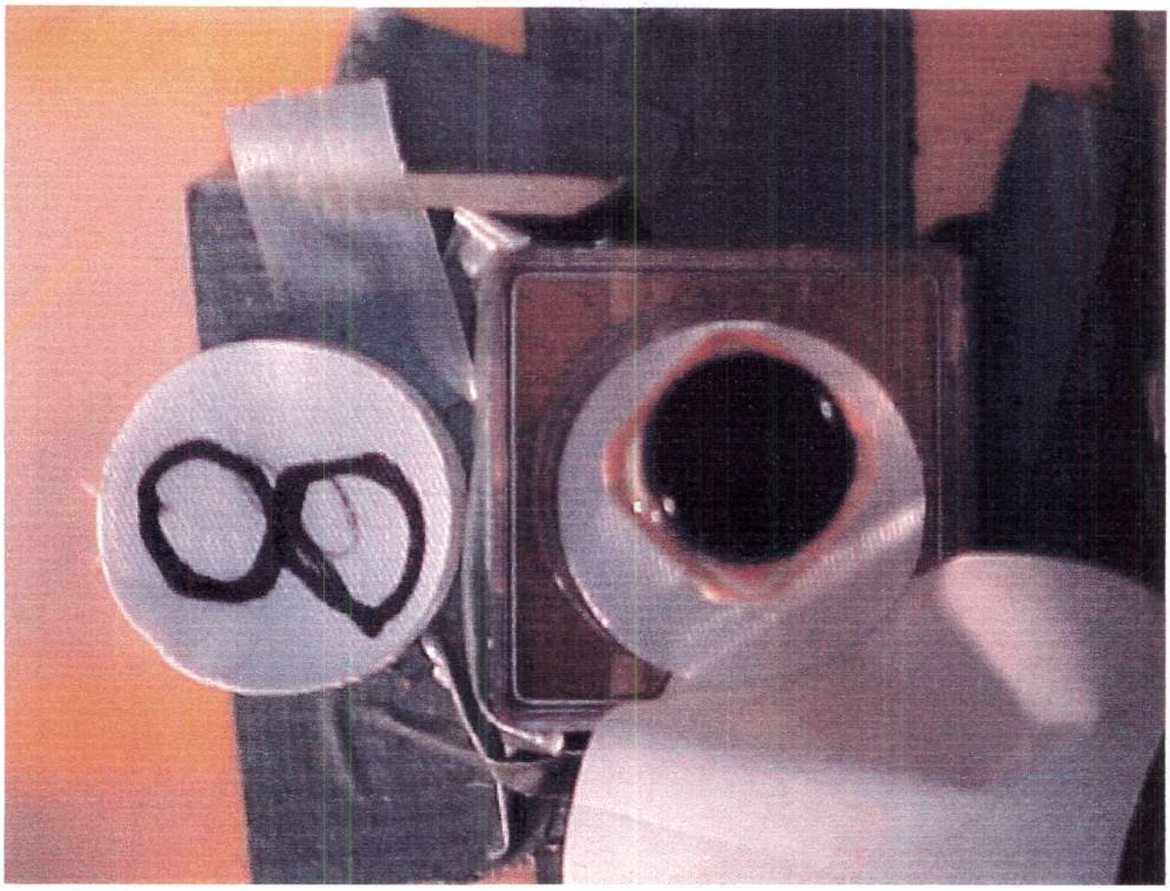
Acquired: 1/28/2002 10:53:22 AM

File: C:\GAMMAV~1\003 SC7 1-28-2002 10.53.21 AM.Spc

Detector: #1 digiDART USE 1b

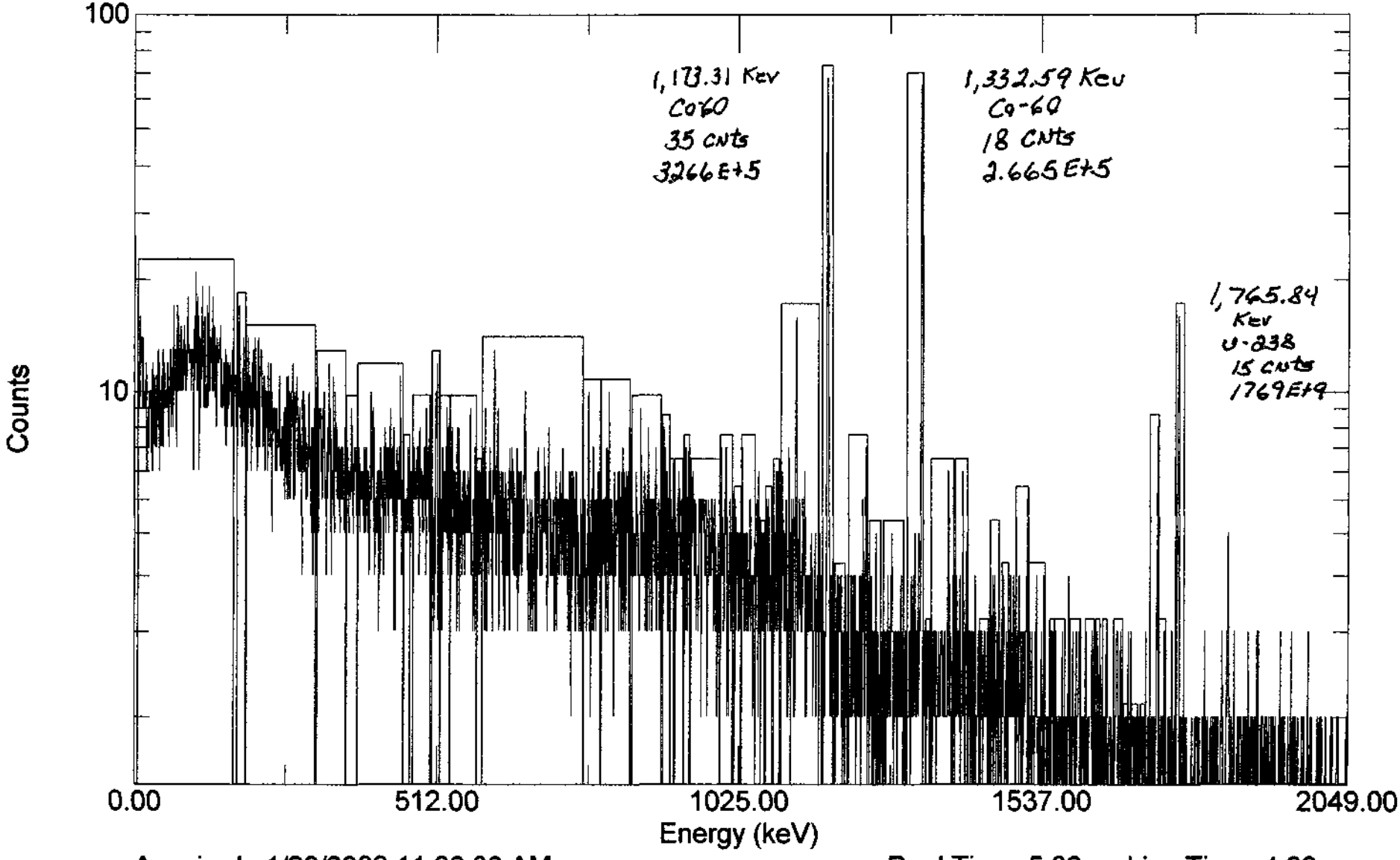
Real Time: 5.00 s. Live Time: 1.10 s.

Channels: 8192



004 SC8 1-28-2002 11.06.07 AM

SC8



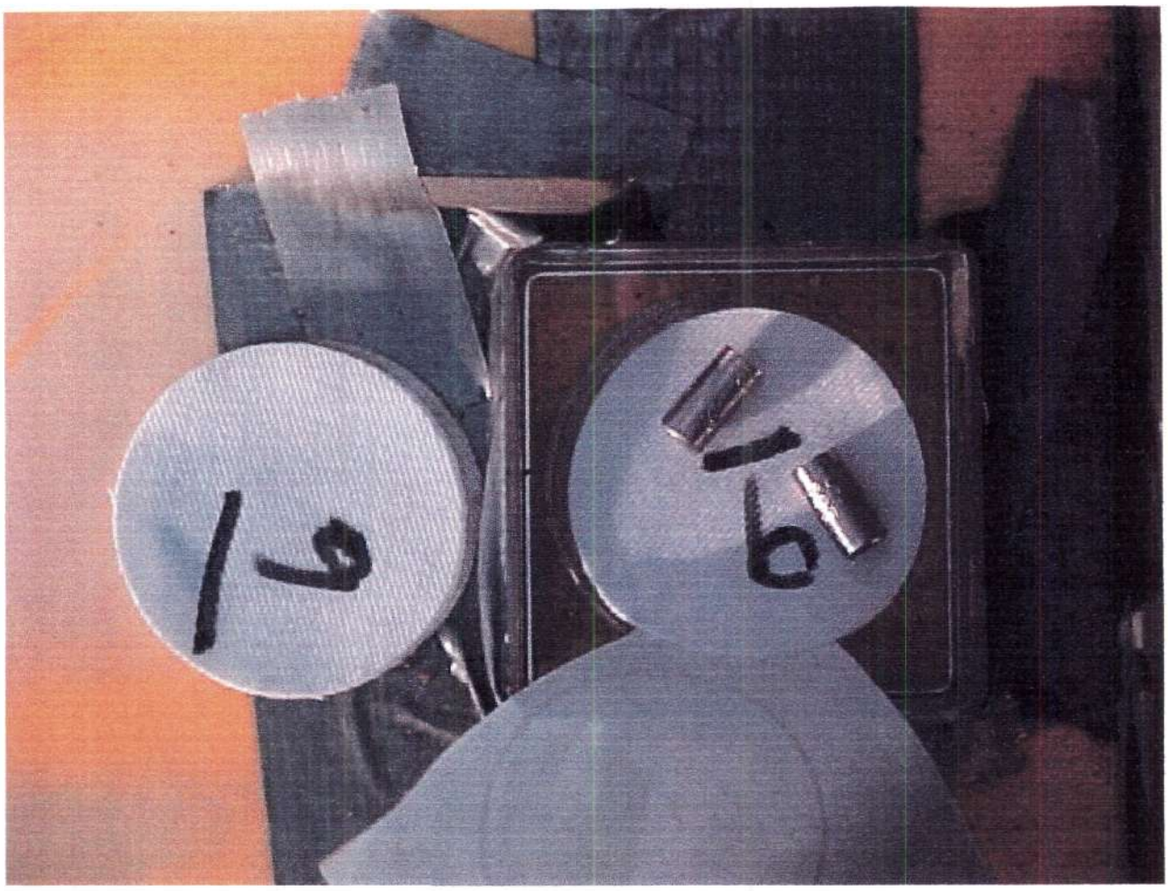
Acquired: 1/28/2002 11:06:06 AM

Real Time: 5.00 s. Live Time: 4.08 s.

File: C:\GAMMAV~1\004 SC8 1-28-2002 11.06.07 AM.Spc

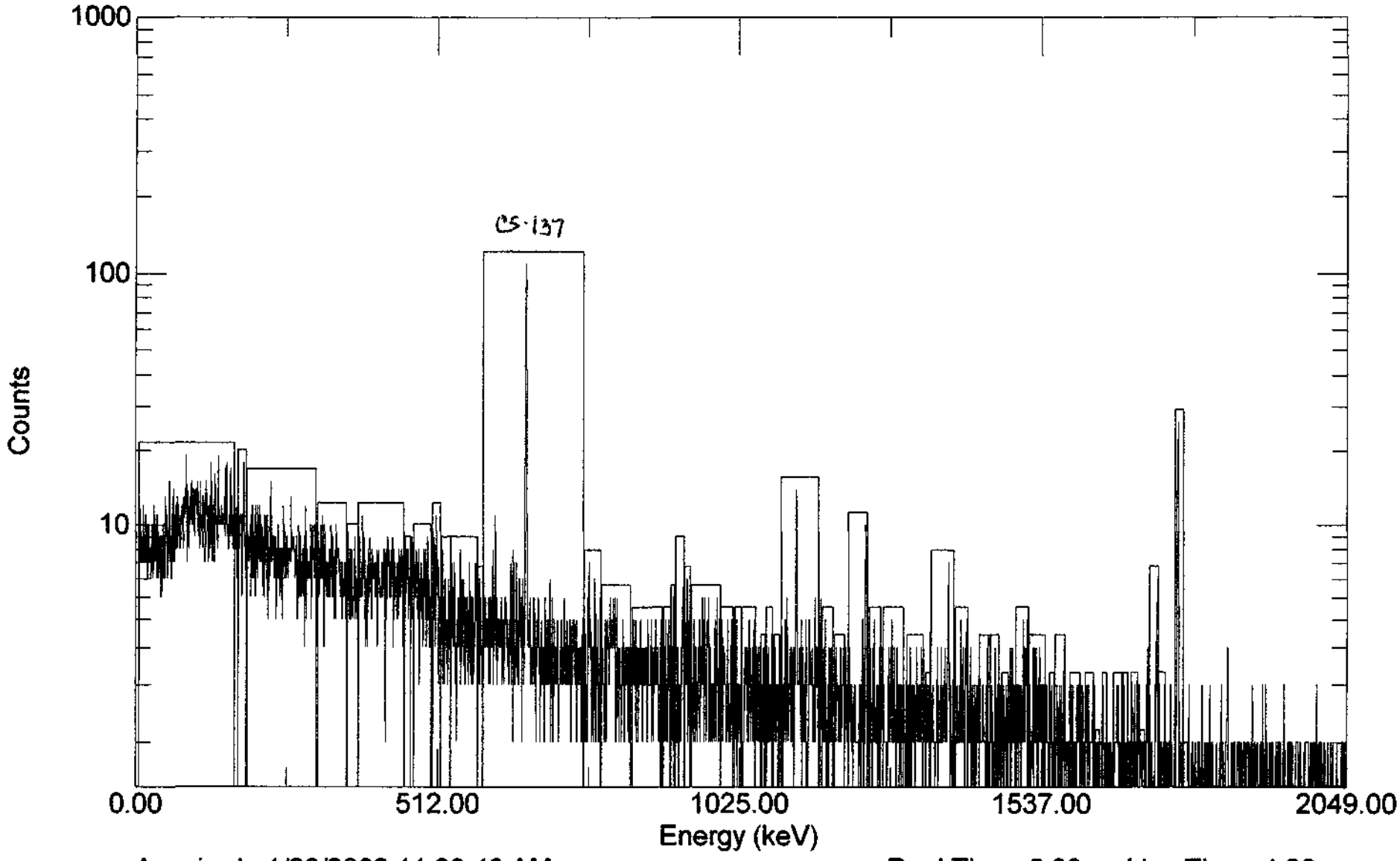
Channels: 8192

Detector: #1 digiDART USE 1b


13
6

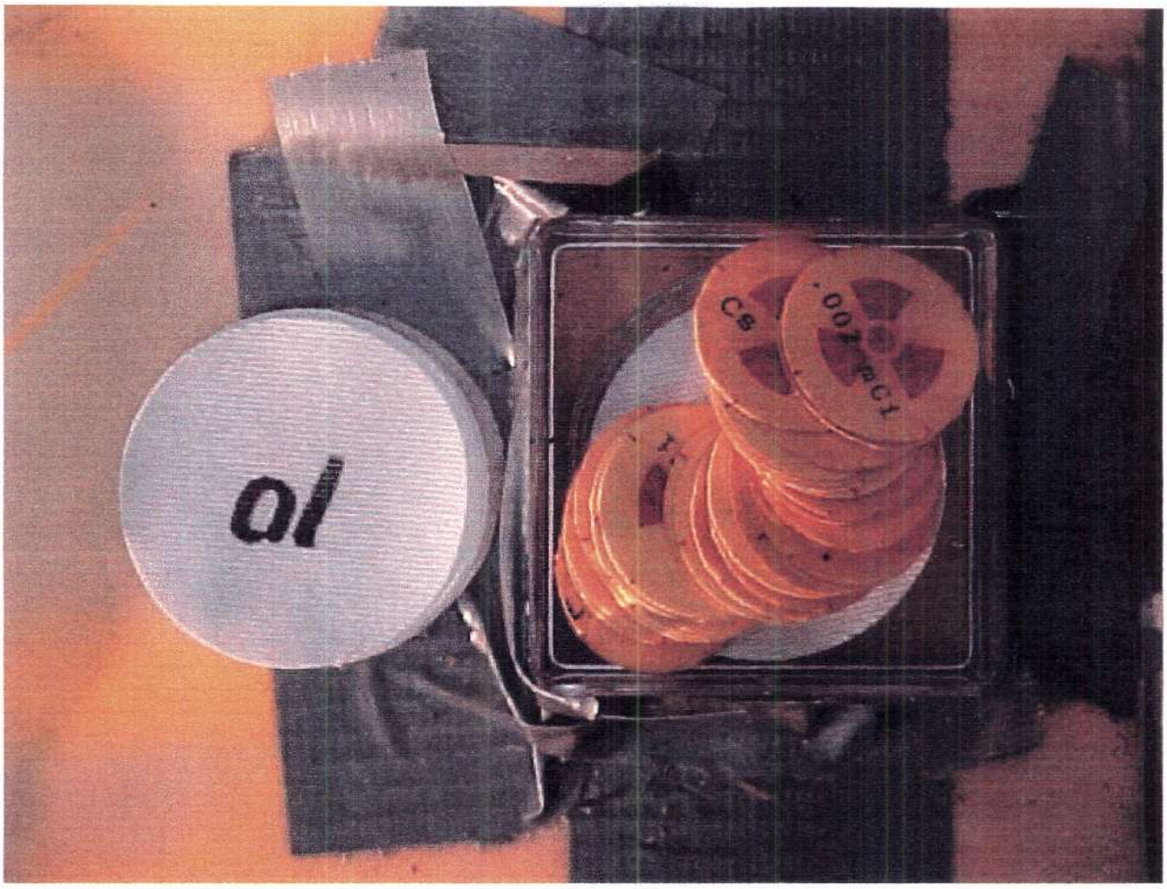
005 SC9 1-28-2002 11.20.47 AM

SC9



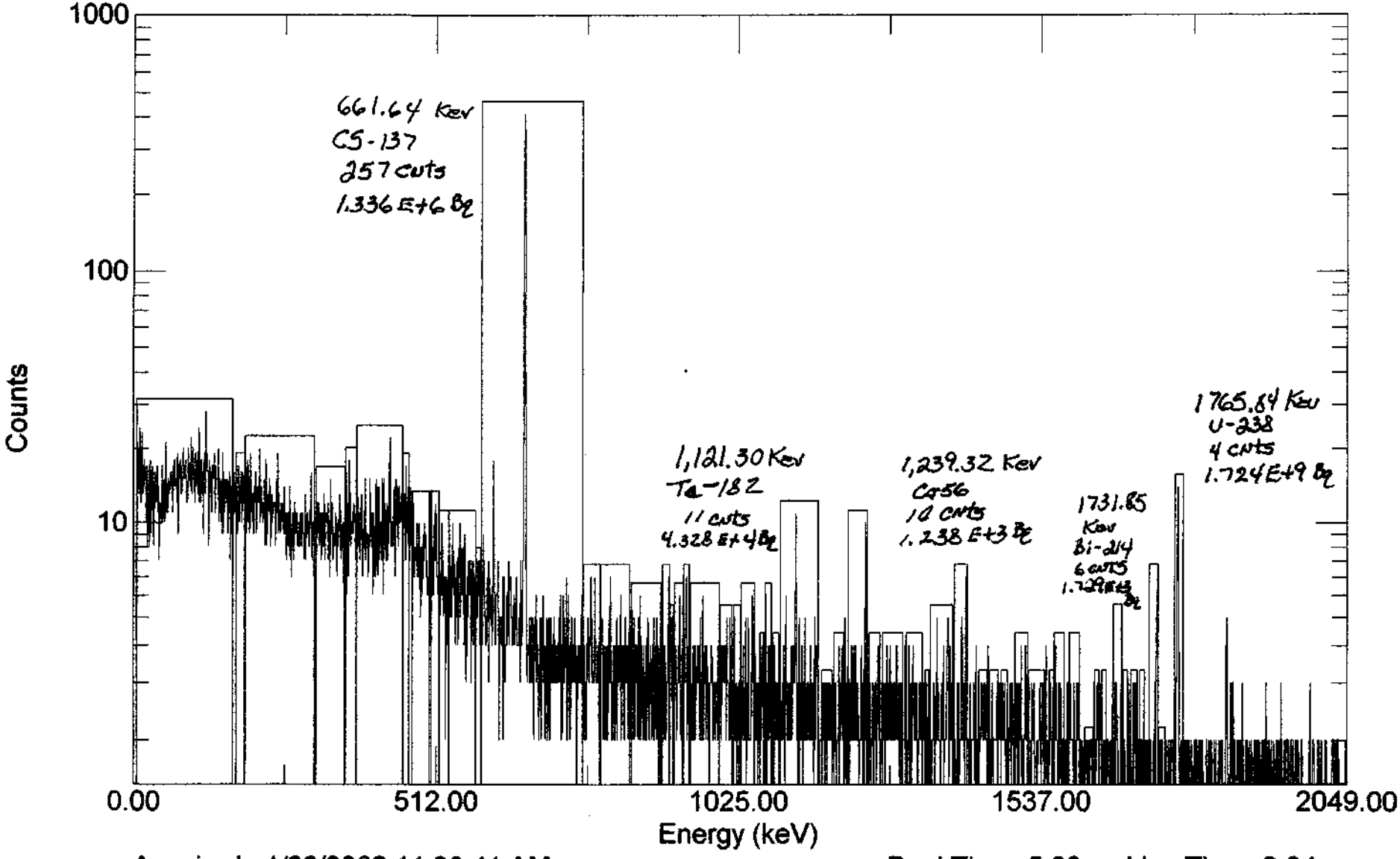
Acquired: 1/28/2002 11:20:46 AM
File: C:\GAMMAV~1\005 SC9 1-28-2002 11.20.47 AM.Spc
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.22 s.
Channels: 8192


.002 mCi
Cs
ol

006 SC10 1-28-2002 11.30.40 AM

SC10



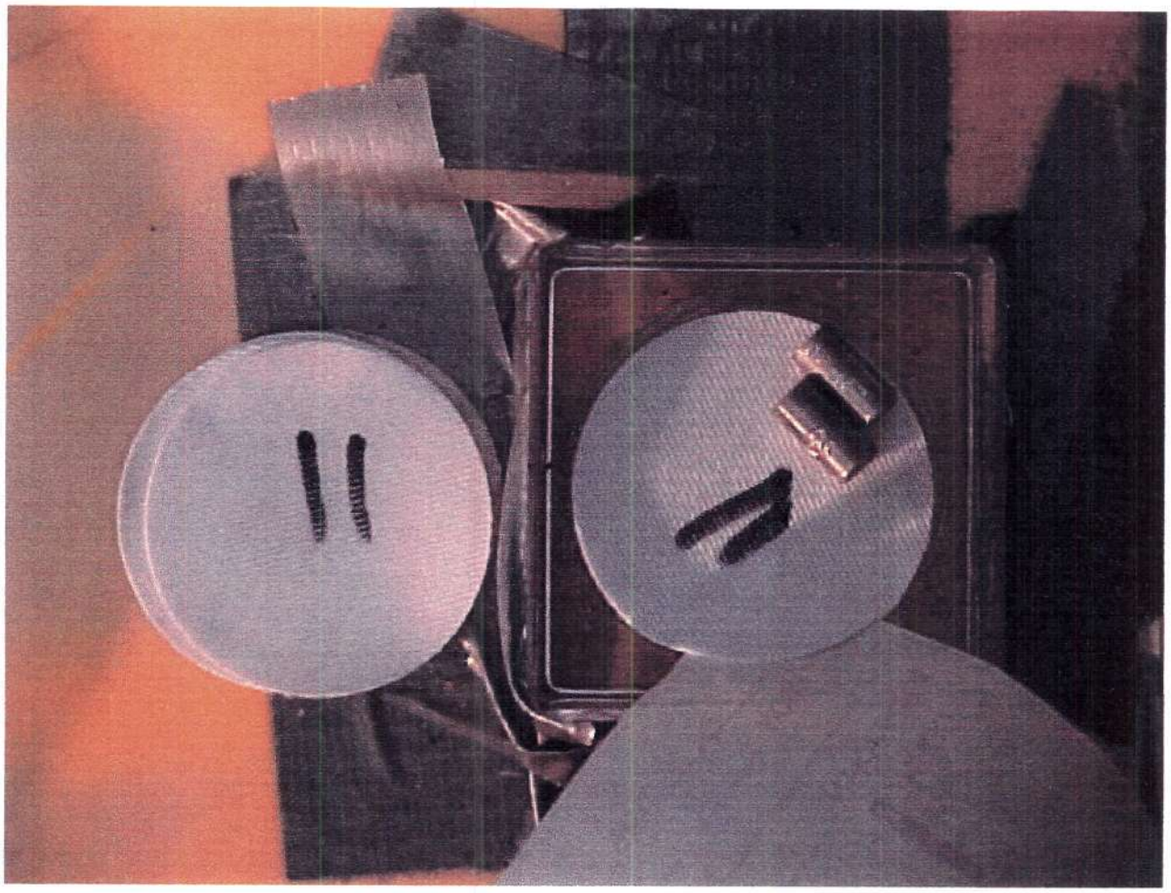
Acquired: 1/28/2002 11:30:41 AM

Real Time: 5.00 s. Live Time: 3.84 s.

File: C:\GAMMAV~1\006 SC10 1-28-2002 11.30.40 AM.Spc

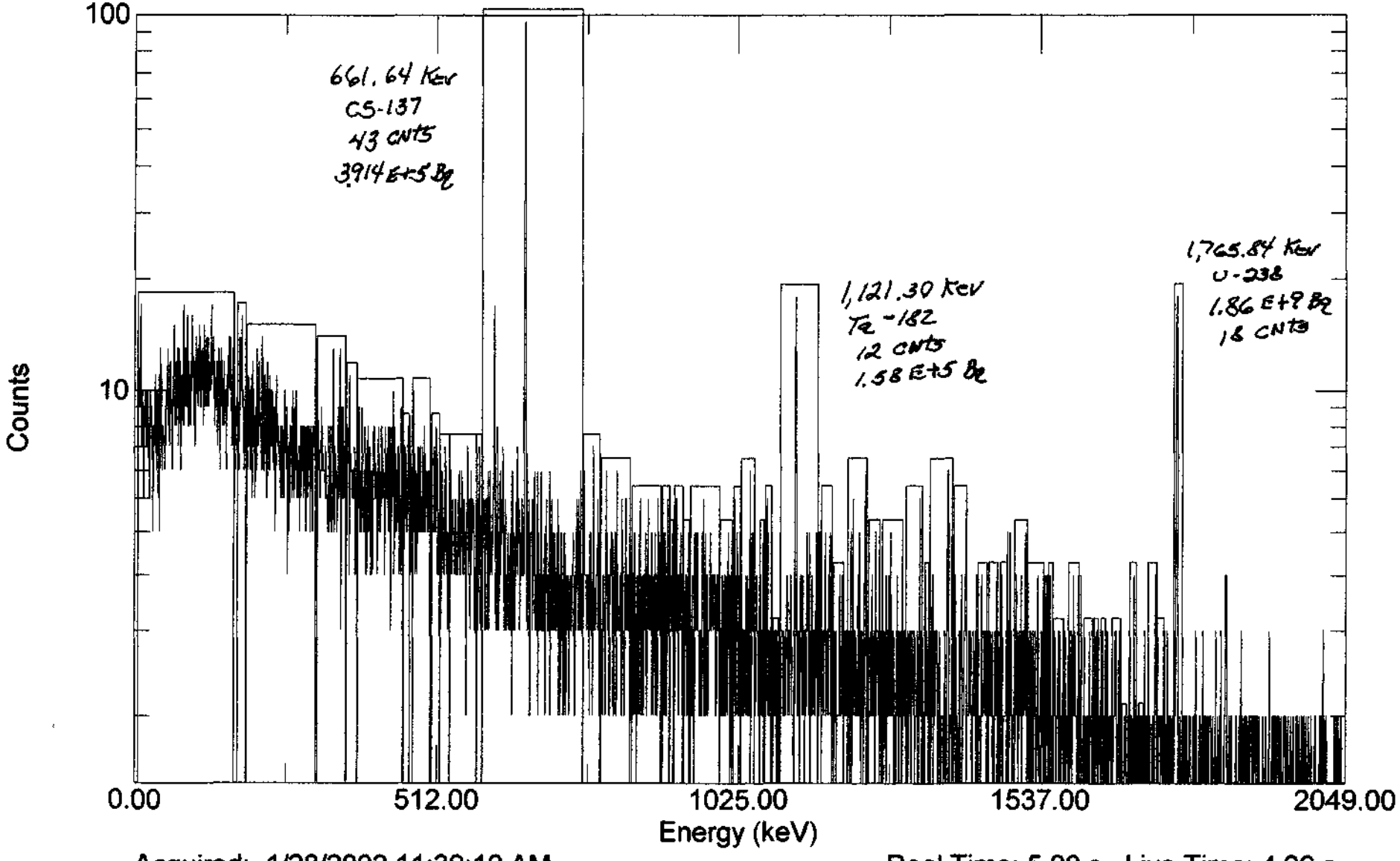
Channels: 8192

Detector: #1 digiDART USE 1b



007 SC11 1-2o-2002 11.39.10 AM

SC11



Acquired: 1/28/2002 11:39:10 AM Real Time: 5.00 s. Live Time: 4.26 s.

File: C:\GAMMAV~1\007 SC11 1-28-2002 11.39.10 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log
Date:

Container #	12	13	14	15	16
External on pig in mR/hr	<1	<1	<1	<1	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<1	<1	<1	<1	<1
Beta on open pig mR/hr O/W	<1	<1	<1	<1	<1
Table Readings CPM α	8	10	8	1,028	36
Table Readings CPM β	40K	<100	10K	5K	4500
Source mR/hr @ 1 inch					
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Smear [redacted] per 100 cm^2 Alpha	<	<	<	27	54
Smear [redacted] per 100 cm^2 Beta	<	<	<	<	<
Size of source in cc's	4	8	15	15	1
Weight in grams	2	12	25	25	1

Loaded Pig mR/hr					

Info on [redacted]: Pig

[redacted] VAD	TH228 9.28 uCI 12-1-81	~~100 uCI~~ ~~CS 137~~ ~~[redacted]~~ Nothing	Ga-153	TH228 20 uCI 7-1-87	Nothing

Information on [redacted] Source

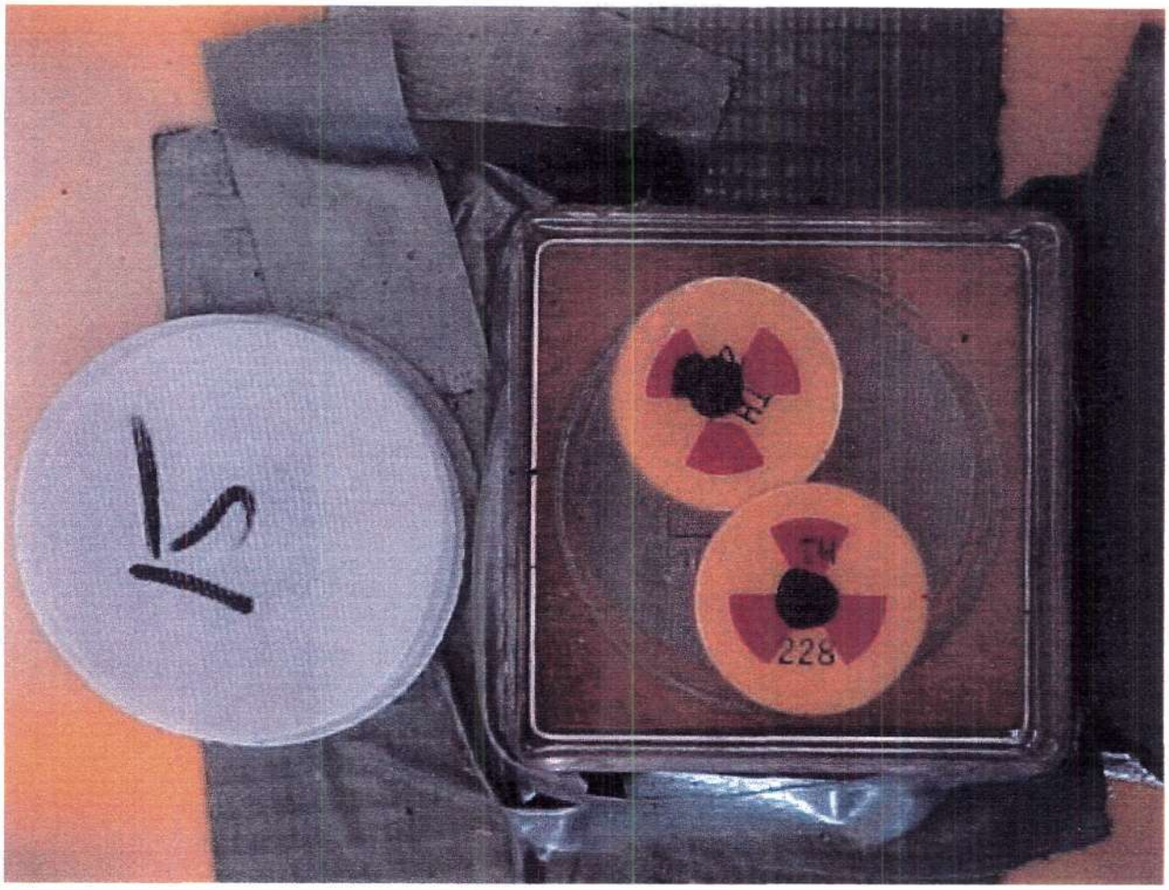
	TH228 9.28 uCI 12-1-81	2 sources	CO 1356 1CI 1386	TH228 ~~20 uCI~~ 20 uCI 7-1-87	GD ~~531~~ 153 9-5-86

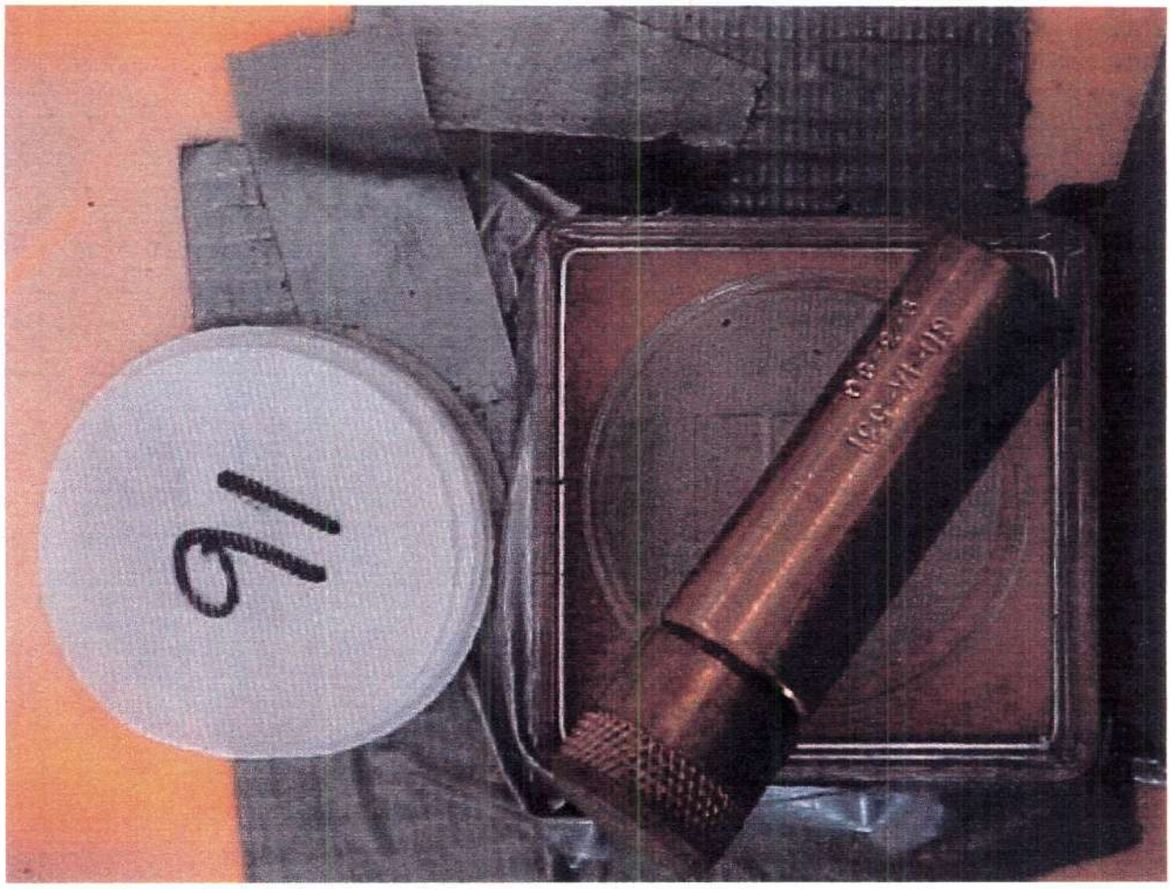
Dig A Dart Info:

ISOTOPE PRODUCTS
LABORATORIES

13

5


1
228


16

USEcology
FS-TX-02-01
Source Log
Date:

Container #		17	18	19	20	~~21~~
External on pig in mR/hr		<1	<1	<1	<1	
External on pig Neutron mR/hr		<1	<1	<1	<1	
Contact open pig mR/hr		<1	<1	<1	<1	
Beta on open pig mR/hr O/W		<1	<1	<1	<1	
Table Readings	CPM α	10	5,000	50	NA	
	CPM β+	Bkg	20,000	Bkg		
Source mR/hr @ 1 inch						
Source mR/hr @ 12 inches						
Source mR/hr @ 36 inches						
Smear DPM per 100 cm^2 Alpha		<	25,000	39	NA	
Smear DPM per 100 cm^2 Beta		<	10,000	<		
Size of source in cc's		10	10	10		
Weight in grams		12gr	2	4		

Loaded Pig mR/hr					

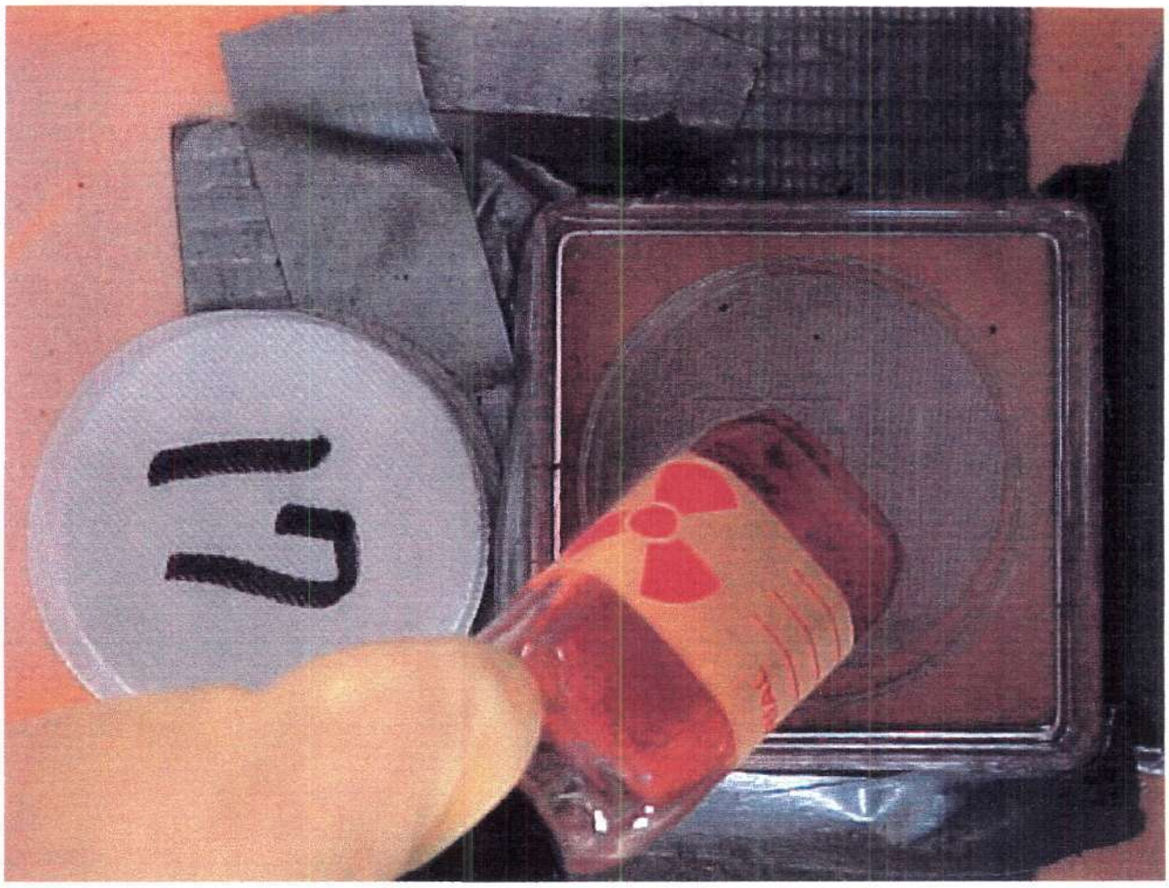
Info on source:

	Liquid Source	[redacted] Nothing	[redacted] I131 10mCI 2-26-89	Ag 110m	

Information on pig:

	ITW 192 IR 192 6 mci [redacted] IR 1-3-87 Amonium IR	Nothing [redacted]	Nothing [redacted]	Ag 110 M 10 mCI ea 8588	

Dig A Dart Info: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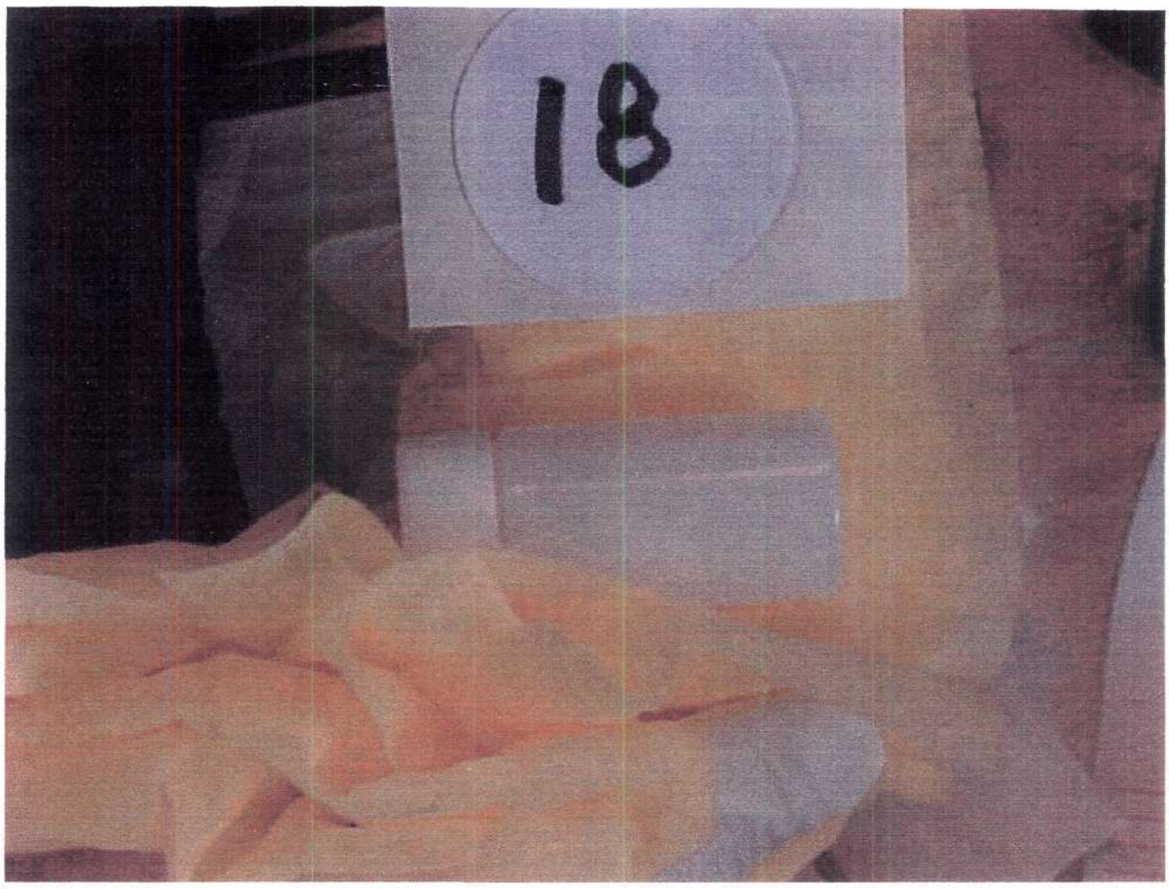
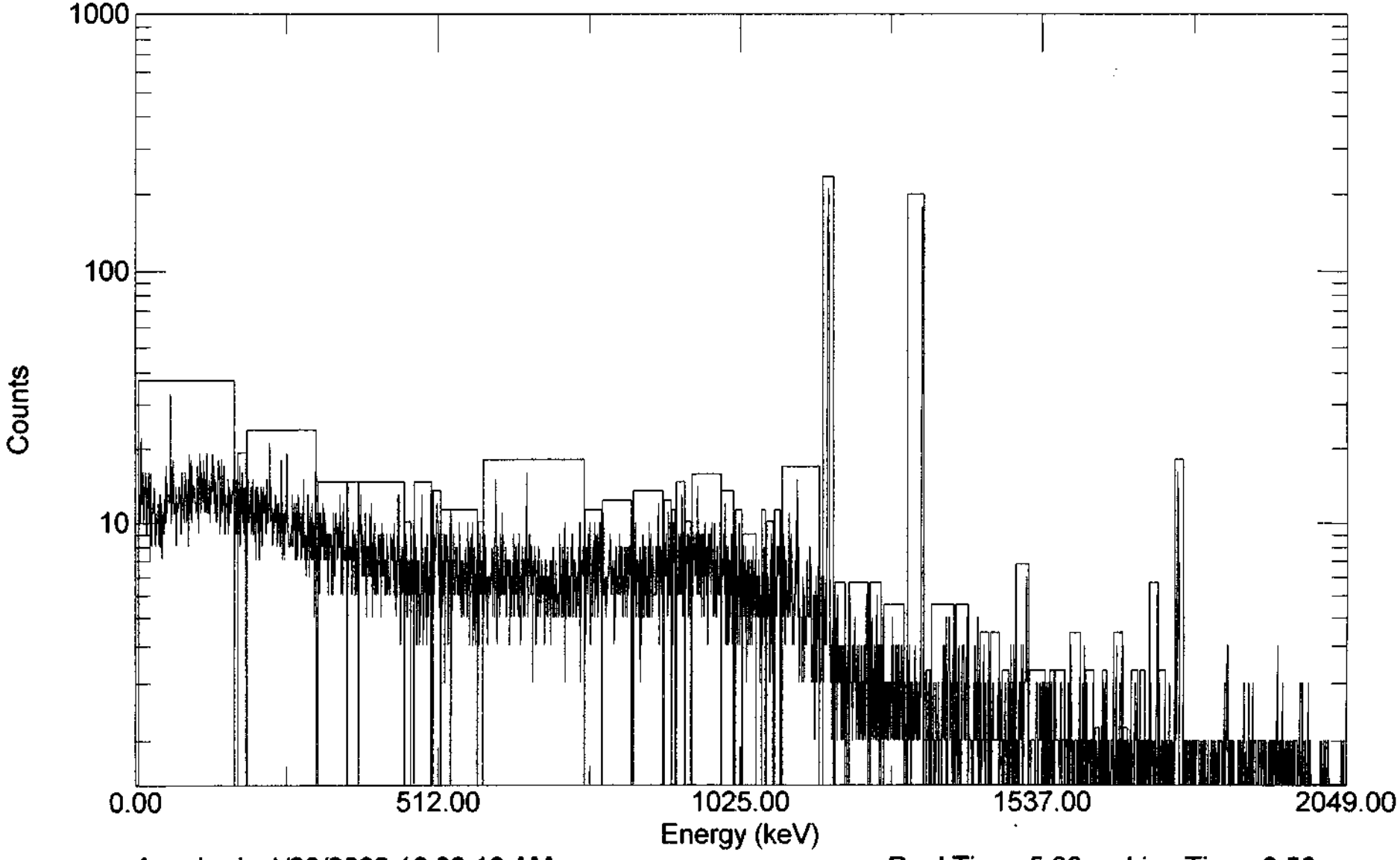

18

009 SC18 1-29-2002 10.02.15 AM

SC18



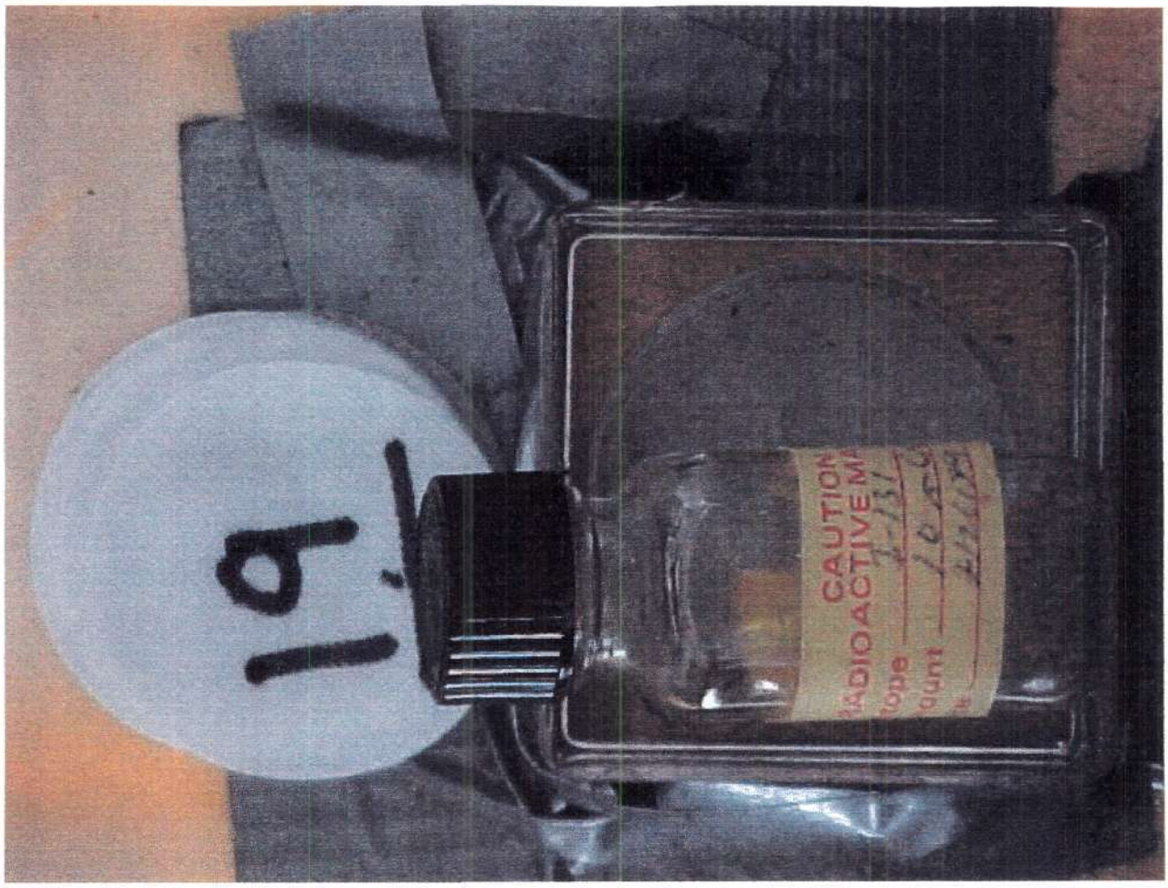
Acquired: 1/29/2002 10:02:16 AM

File: C:\GAMMAV~1\009 SC18 1-29-2002 10.02.15 AM.Spc

Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 3.58 s.

Channels: 8192


19
CAUTION
RADIOACTIVE M
I-131

1-29-02 BKG

	mR/Hr
1"	0.2
12"	0.2
36"	0.9

USEcology
FS-TX-02-01
Source Log
Date:

Container #	20	21	22	23	24
External on pig in mR/hr	<1	<1	<1	2	1
External on pig Neutron mR/hr	<1	<	<	<	<
Contact open pig mR/hr	<1	<	1	3	3
Beta on open pig mR/hr O/W	<1	<	2	4	~~2~~ 4 JEW 1-29-02

Table Readings

Source mR/hr @ 1 inch	18	2	1	30	8
Source mR/hr @ 12 inches	.8	.4	.4	1	.5
Source mR/hr @ 36 inches	.9	BKG	BKG	BKG	BKG
Smear DPM per 100 cm^2 Alpha	<	<	<	<	<
Smear DPM per 100 cm^2 Beta	<	<	<	<	<
Size of source in cc's	4	10	2	10	10
Weight in grams	6g	5 cc	3	5	5

Loaded Pig mR/hr					

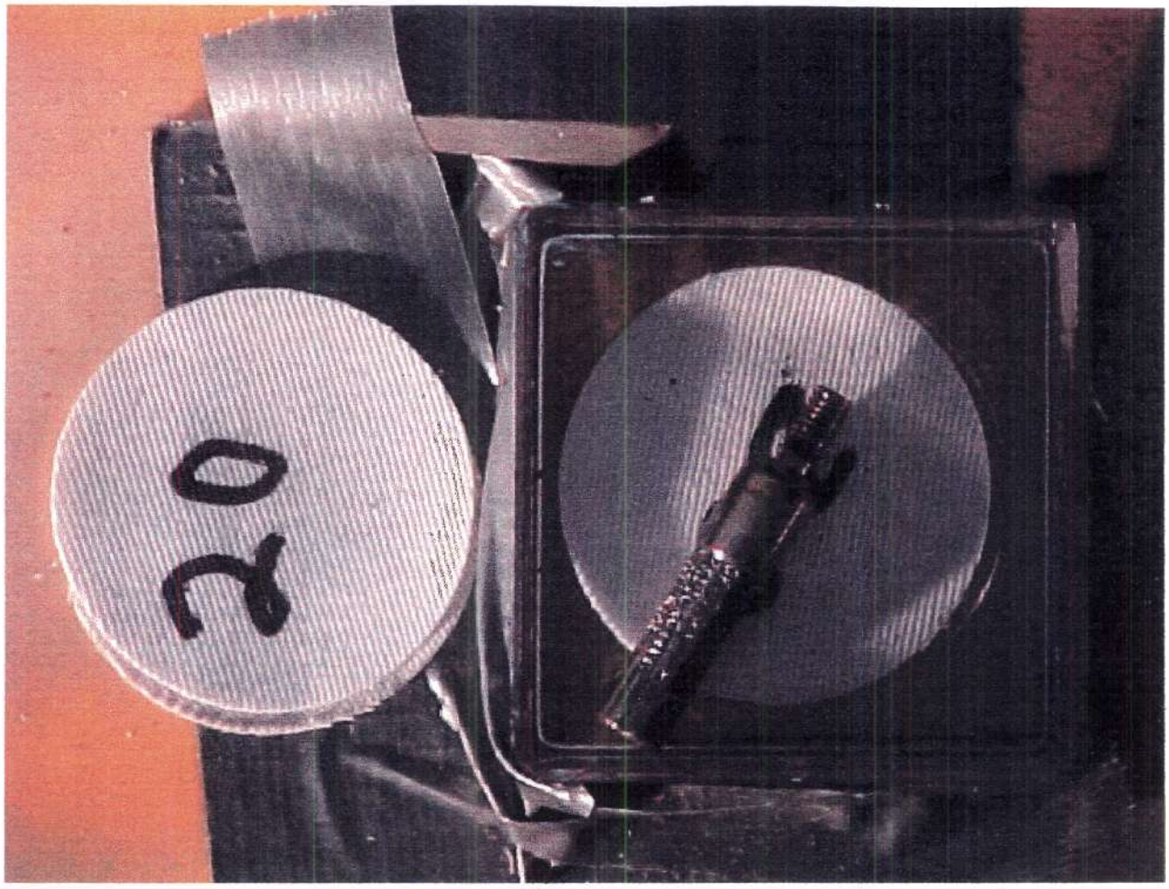
Info on ~~source~~: PIG

	100uCi CS137	Ag110 10uCi 8-5-85	N/A	N/A	CO 60 .00185g 0.2 TRANSPORT INDEX

Information on ~~pig~~ SOURCE

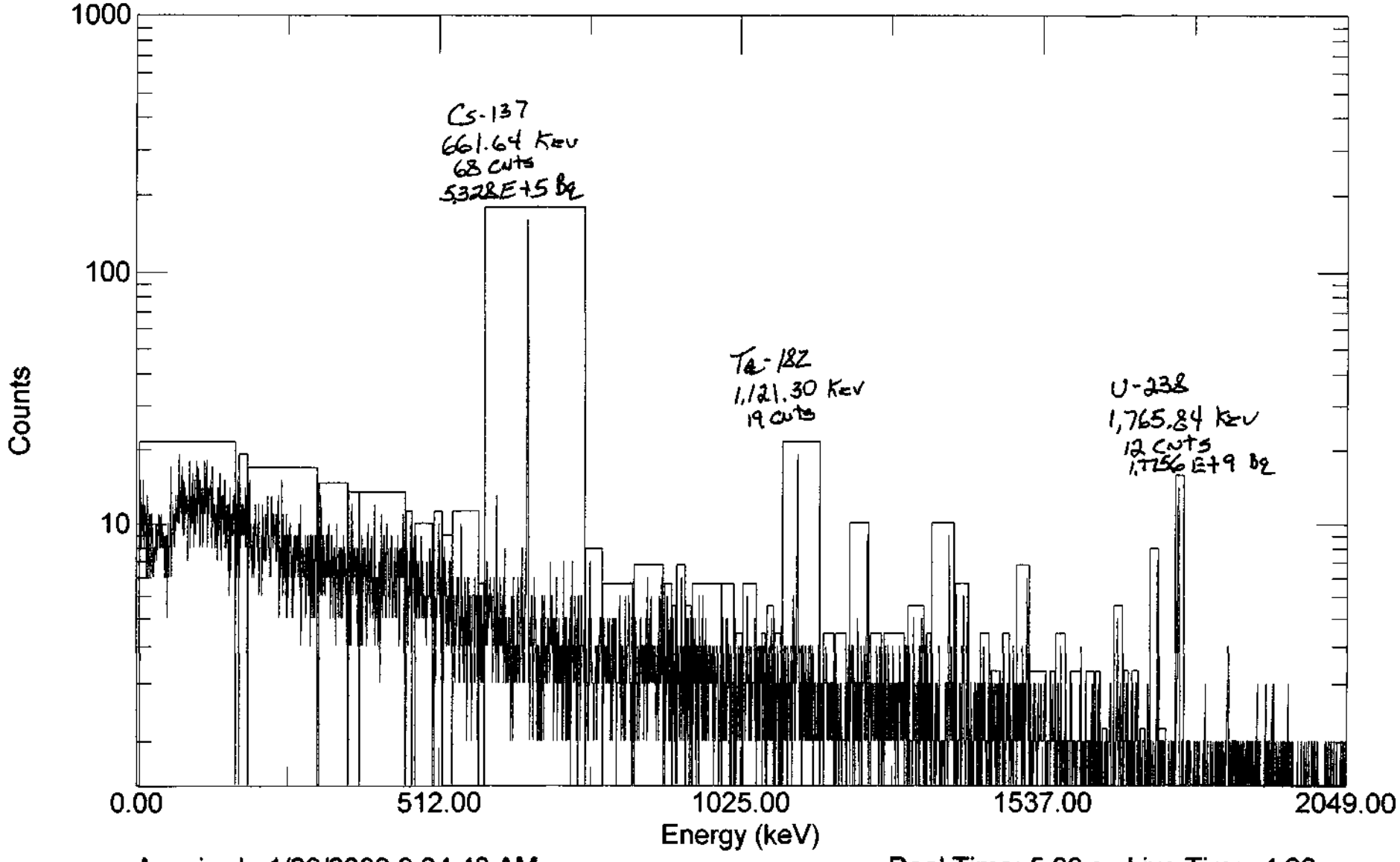
					CO 60 50uCi 91488

Dig A Dart Info:


20

004 SC20 1-29-2002 9.34.49 AM

SC20



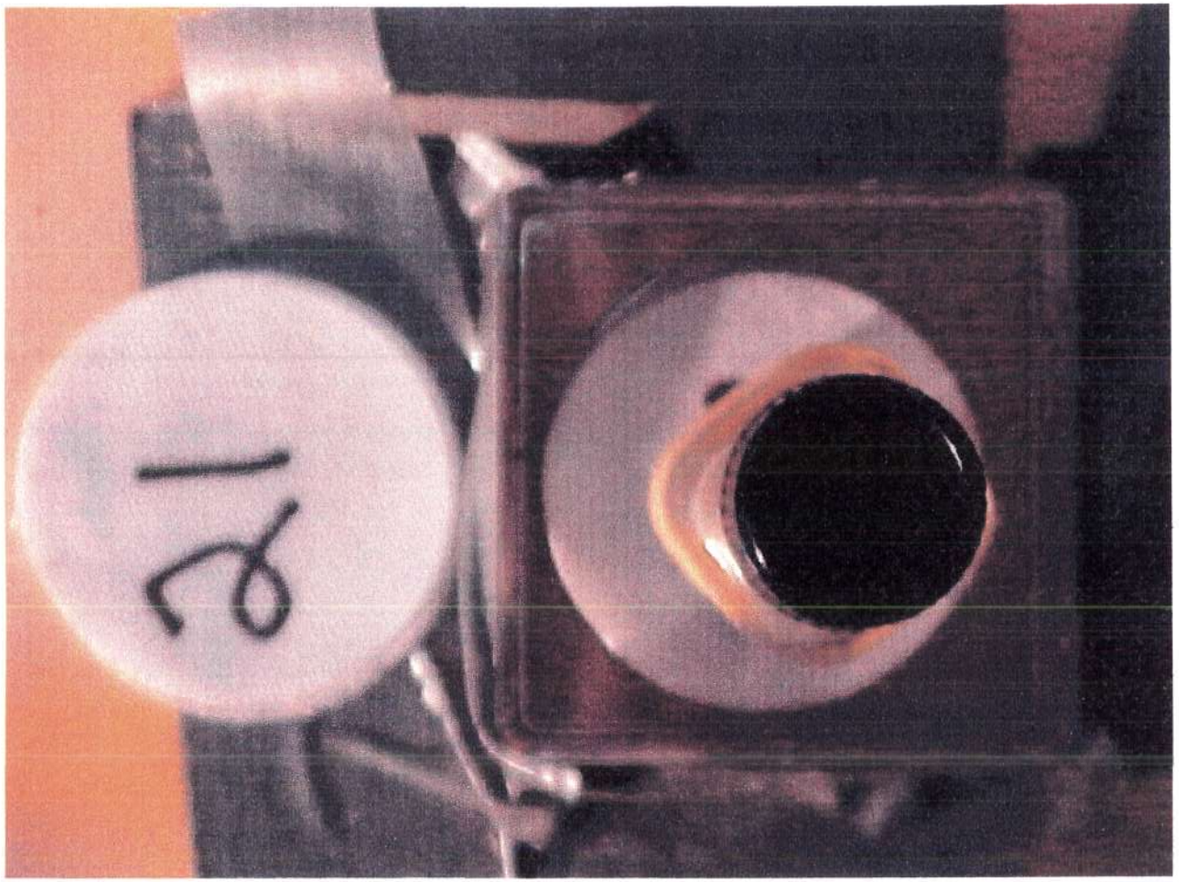
Acquired: 1/29/2002 9:34:48 AM

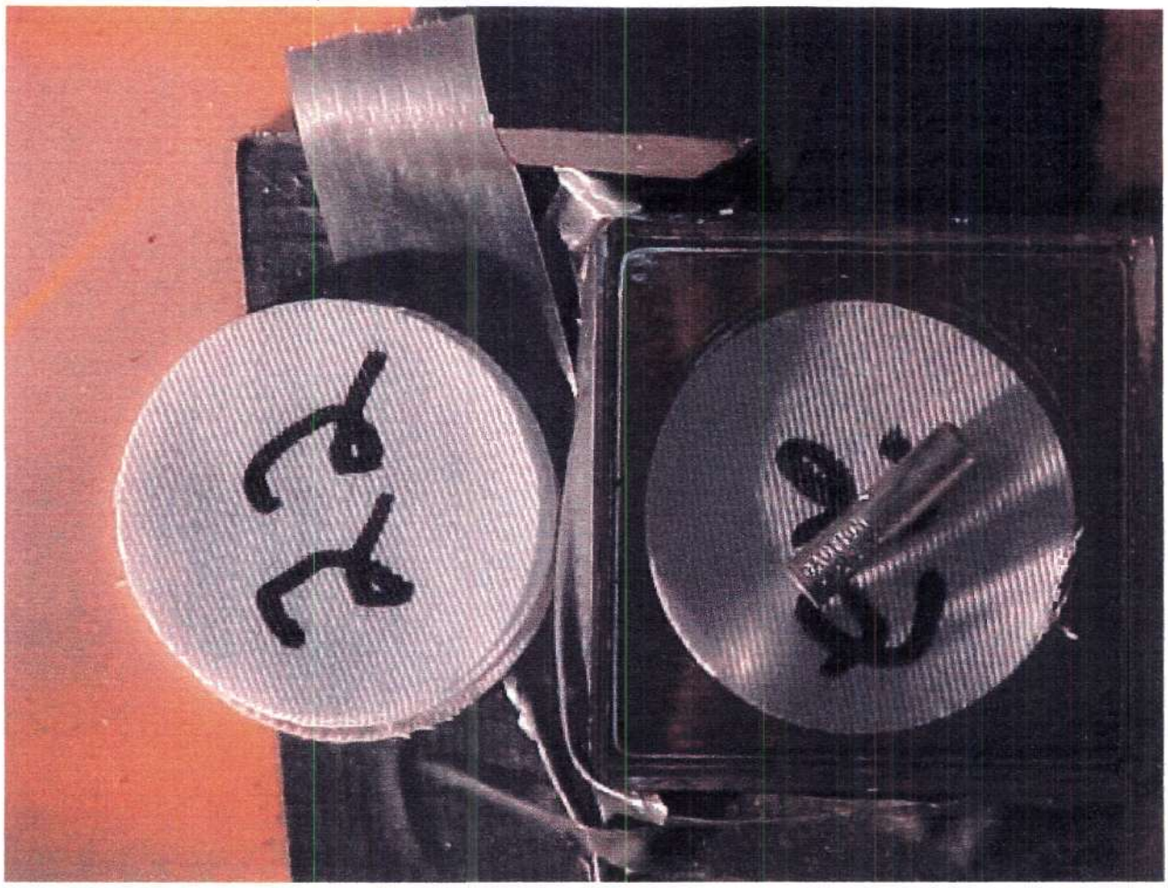
File: C:\GAMMAV~1\004 SC20 1-29-2002 9.34.49 AM.Spc

Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.20 s.

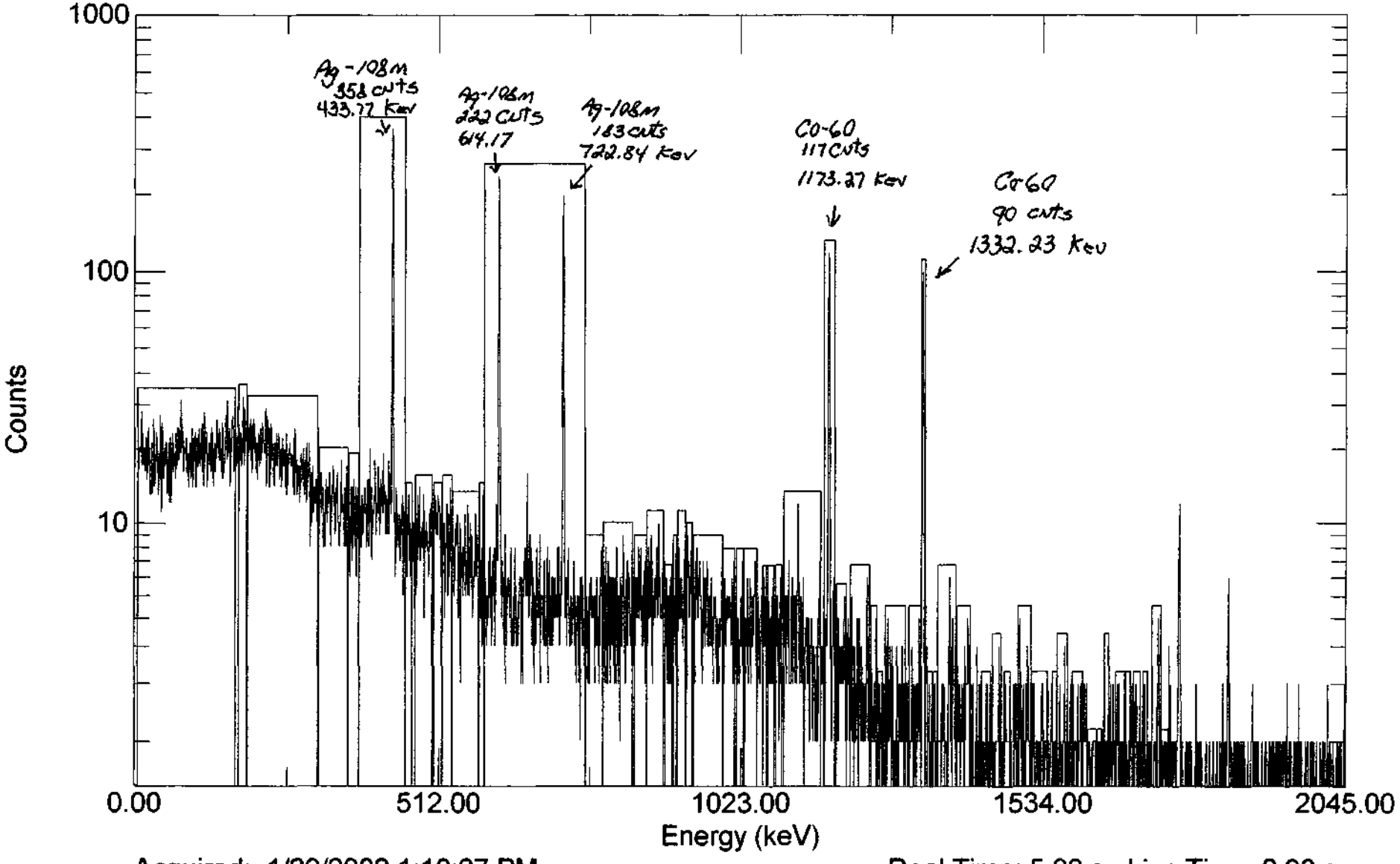
Channels: 8192


18



001 SC21-2 1-29-2002 1.10.27 PM

SC21-2



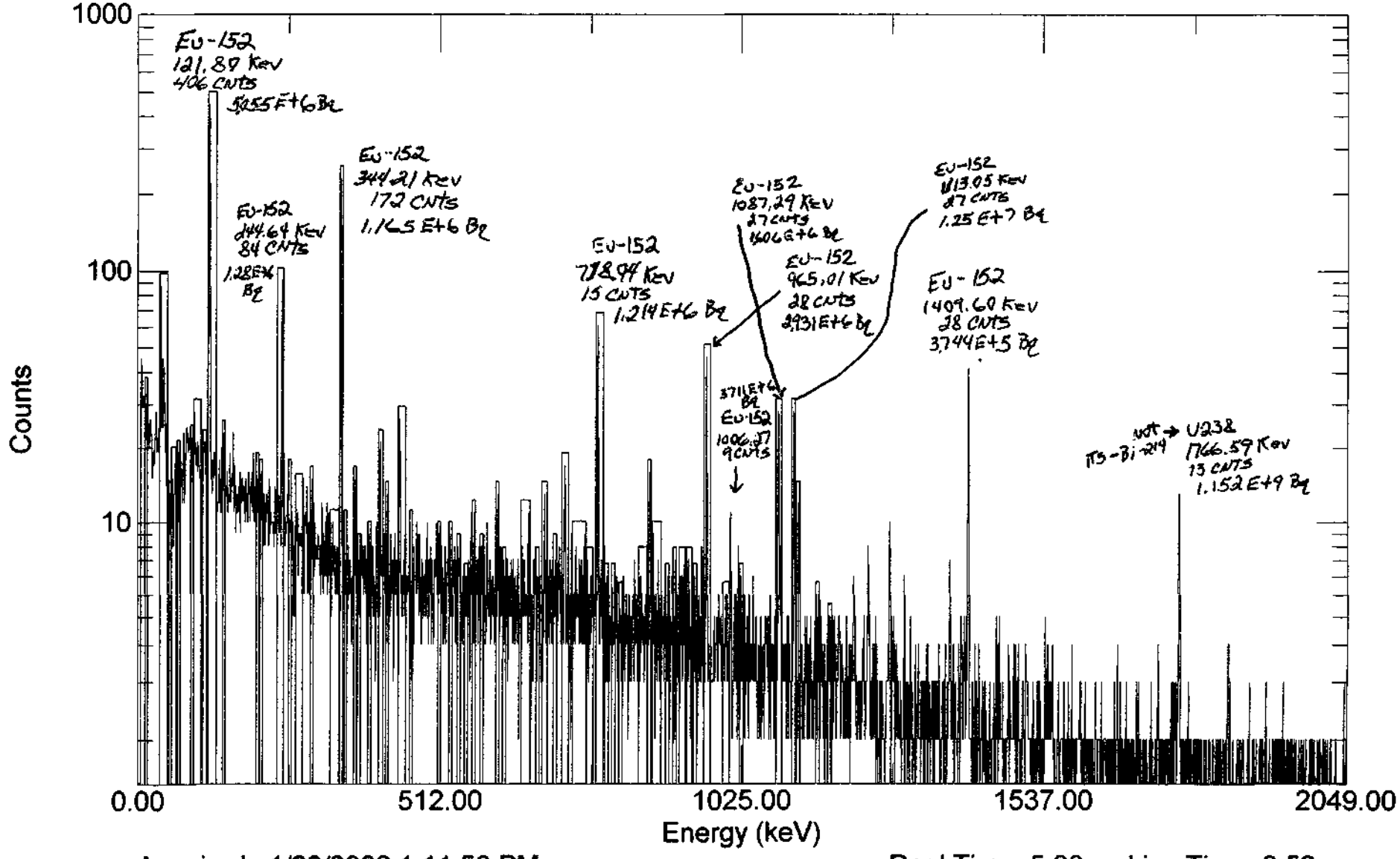
Acquired: 1/29/2002 1:10:27 PM Real Time: 5.00 s. Live Time: 2.90 s.

File: C:\GAMMAV~1\001 SC21-2 1-29-2002 1.10.27 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

002 SC22-2 1-29-2002 1.11.50 PM

SC22-2



Acquired: 1/29/2002 1:11:50 PM Real Time: 5.00 s. Live Time: 3.52 s.

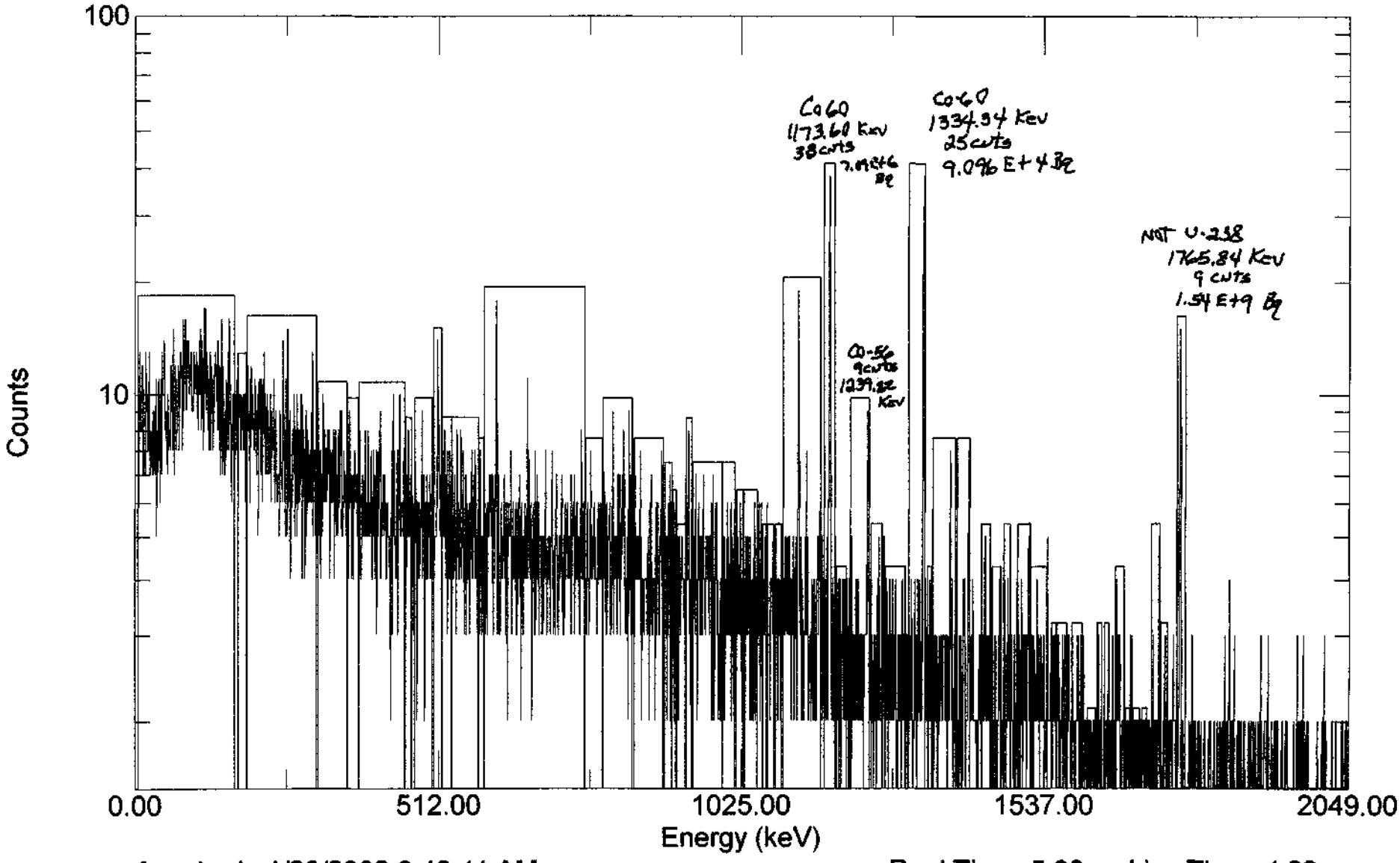
File: C:\GAMMAV~1\002 SC22-2 1-29-2002 1.11.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

23
RADIOA
Isotope
Amount
Date

007 SC23 1-29-2002 9.48.40 AM

SC23



Acquired: 1/29/2002 9:48:41 AM

File: C:\GAMMAV~1\007 SC23 1-29-2002 9.48.40 AM.Spc

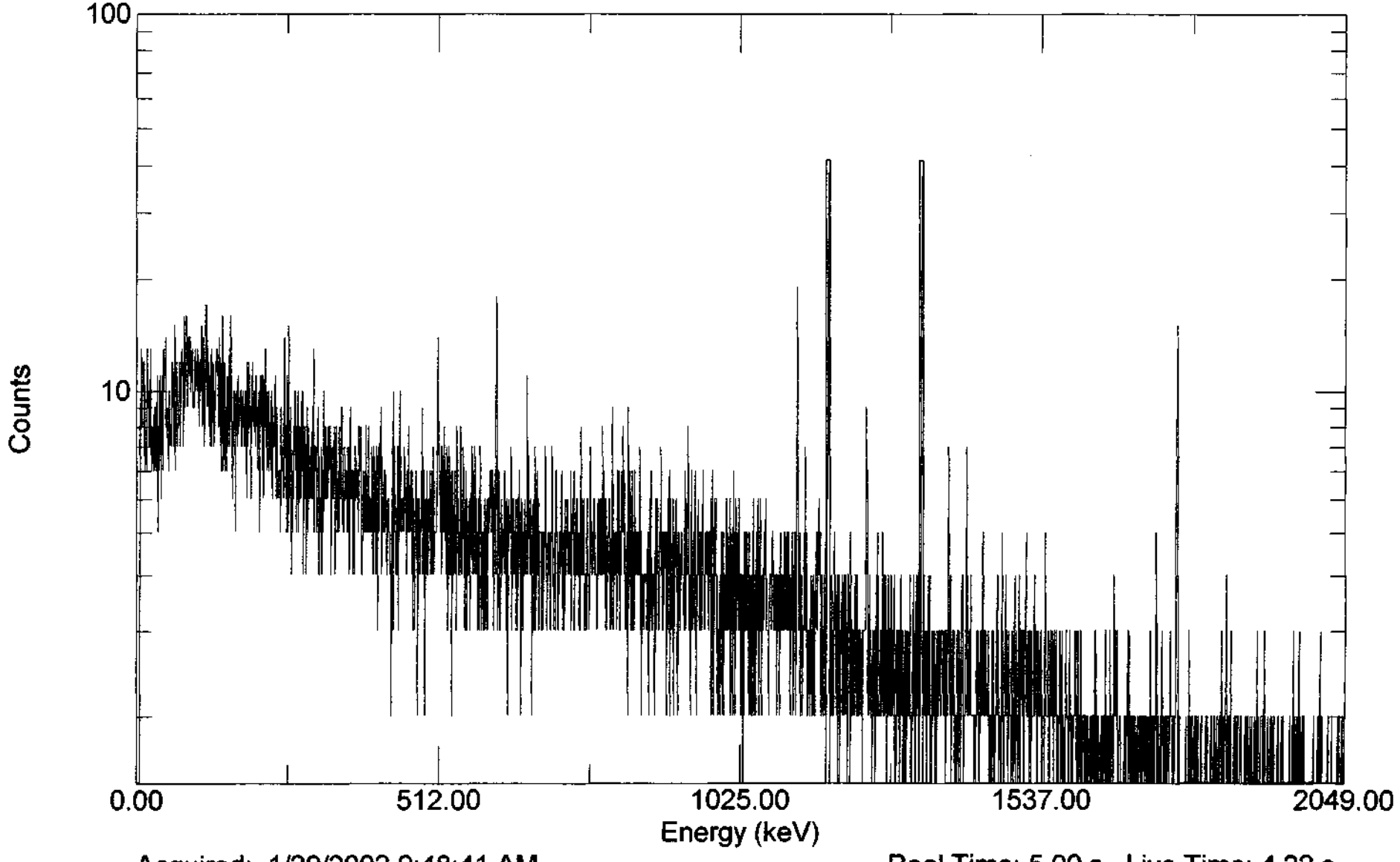
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.22 s.

Channels: 8192

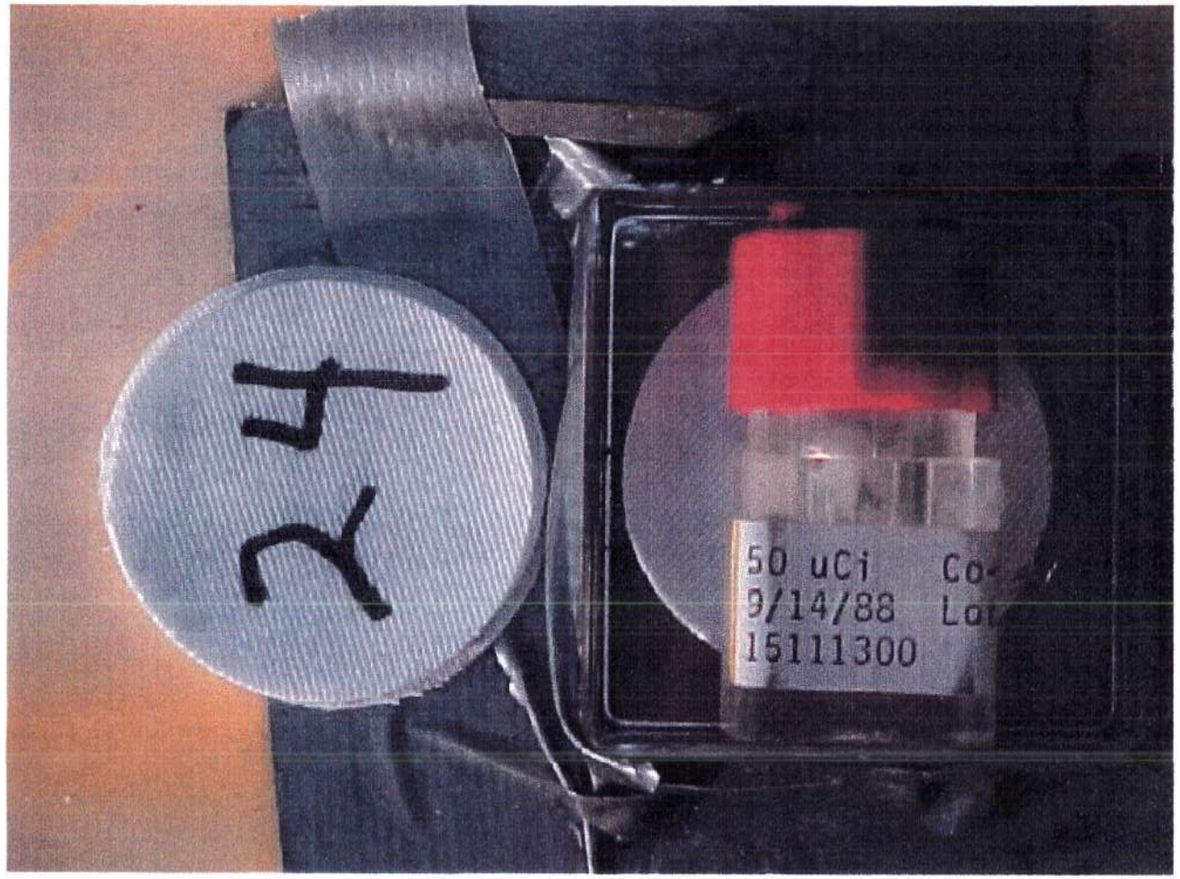
007 SC23 1-29-2002 9.48.40 AM

SC23



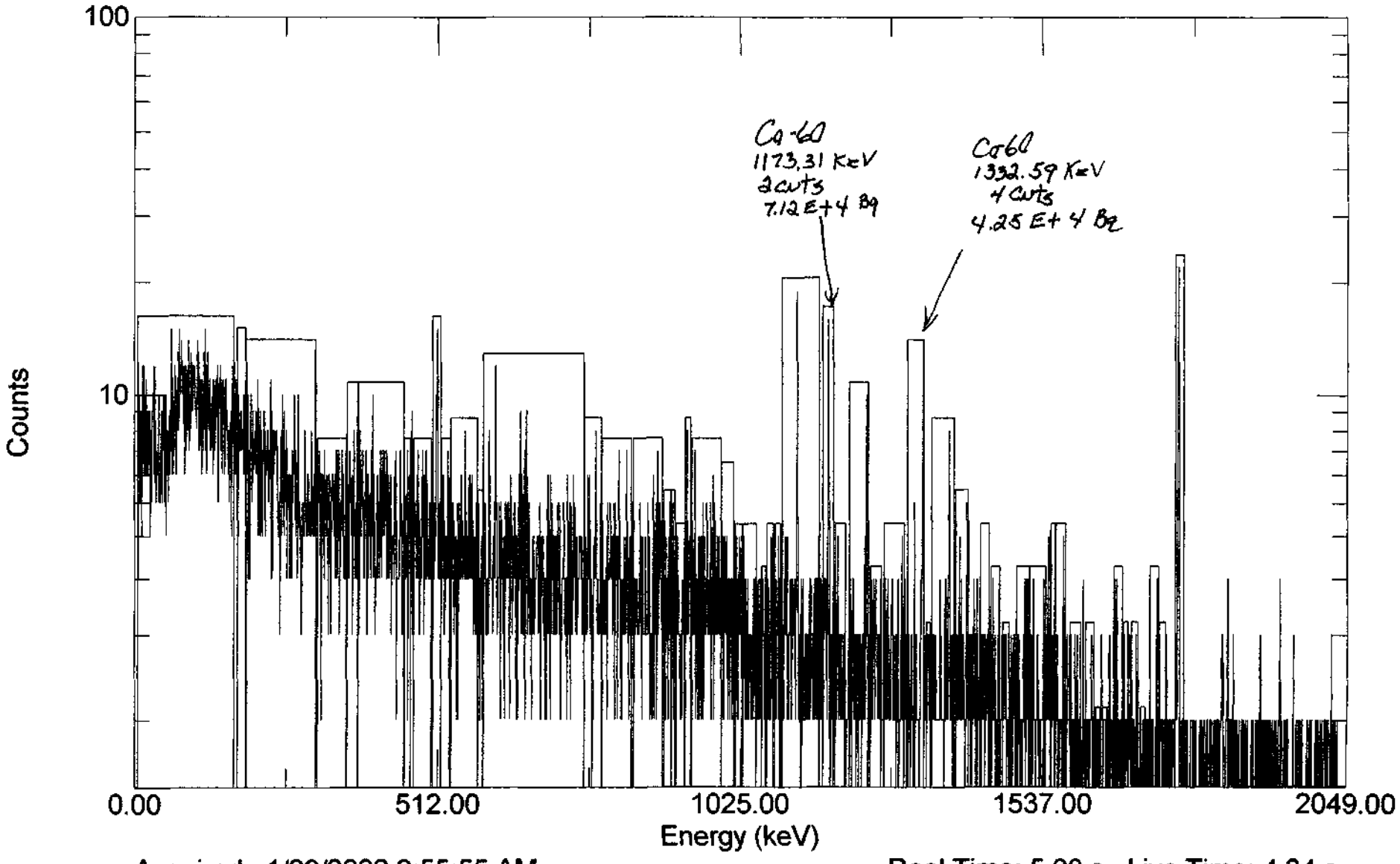
Acquired: 1/29/2002 9:48:41 AM
File: C:\GAMMAV~1\007 SC23 1-29-2002 9.48.40 AM.Spc
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.22 s.
Channels: 8192


24
50 uCi
9/14/88
15111300

008 SC24 1-29-2002 9.55.55 AM

SC24



Acquired: 1/29/2002 9:55:55 AM

File: C:\GAMMAV~1\008 SC24 1-29-2002 9.55.55 AM.Spc

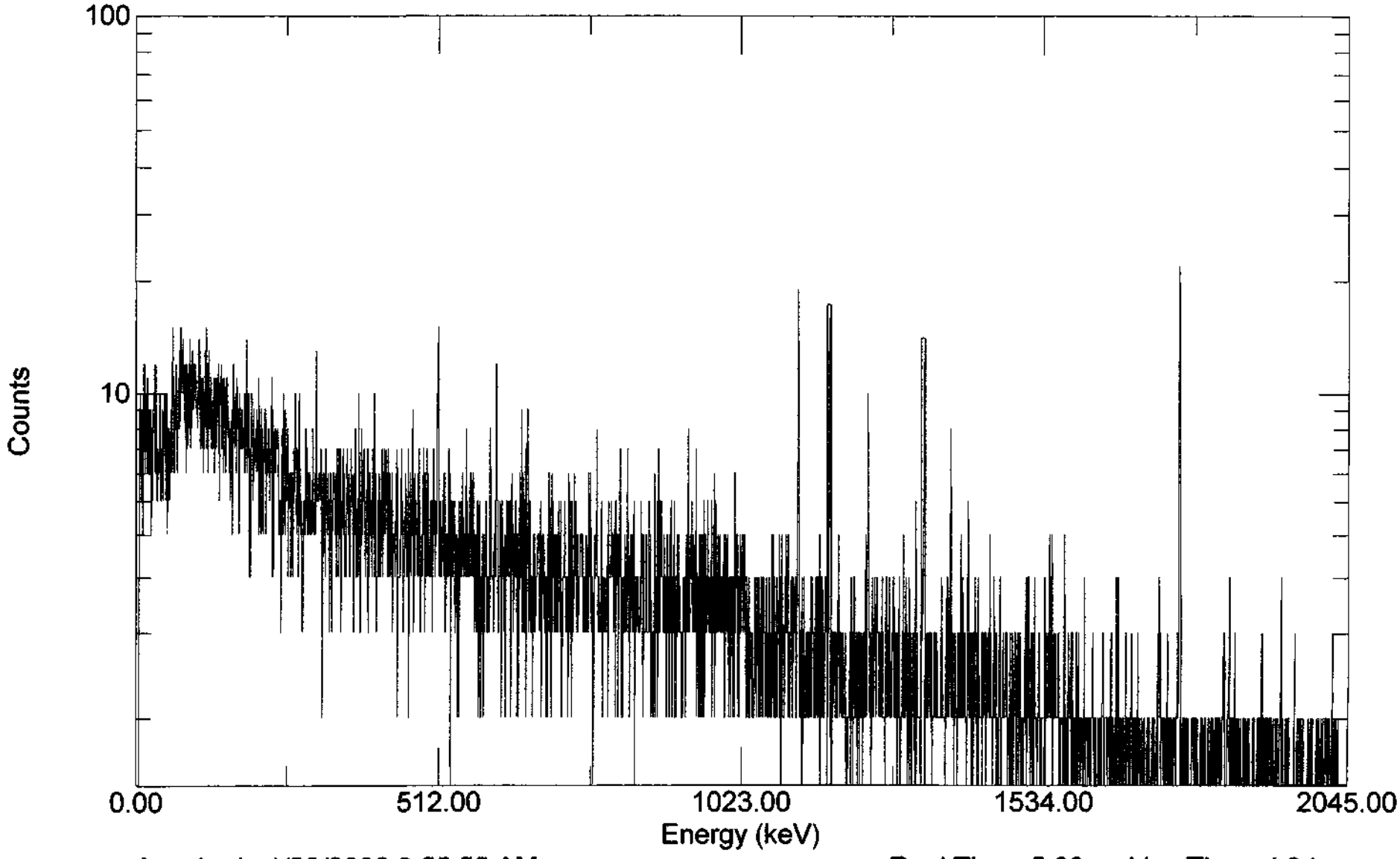
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.34 s.

Channels: 8192

008 SC24 1-29-2002 9.55.55 AM

SC24



Acquired: 1/29/2002 9:55:55 AM
File: C:\GAMMAV~1\008 SC24 1-29-2002 9.55.55 AM.An1
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.34 s.
Channels: 8192

USEcology
FS-TX-02-01
Source Log

Date 1-31-02

BKG	mR/hr
1"	
12"	
36"	

Container #	25				
External on pig in mR/hr	200				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr					
Beta on open pig mR/hr O/W					

Table Readings

Source mR/hr @ 1 inch					
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Smear DPM per 100 cm^2 Alpha	42				
Smear DPM per 100 cm^2 Beta	24				
Size of source in cc's					
Weight in grams					

CPM Alpha					
Direct Beta/Gamma					

Info on source:

Information on pig:

	CS137 18 CI				

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **01/31/2002** **1105**

Location Warehouse/Sources

Survey #

MDA Alpha DPM	MDA Beta DPM
10.7	65.4

BKG Alpha CPM	BKG Beta CPM
0.6	70

Alpha Eff 0.31

	2 Min CPM	DPM
1		-1.9
2		-1.9
3		-1.9
4		-1.9
5		-1.9
6		-1.9
7		-1.9
8		-1.9
9		-1.9
10		-1.9
11		-1.9
12		-1.9
13	N/A	-1.9
14		-1.9
15		-1.9
16		-1.9
17		-1.9
18		-1.9
19		-1.9
20		-1.9
21		-1.9
22		-1.9
23		-1.9
24		-1.9
25	27	41.6

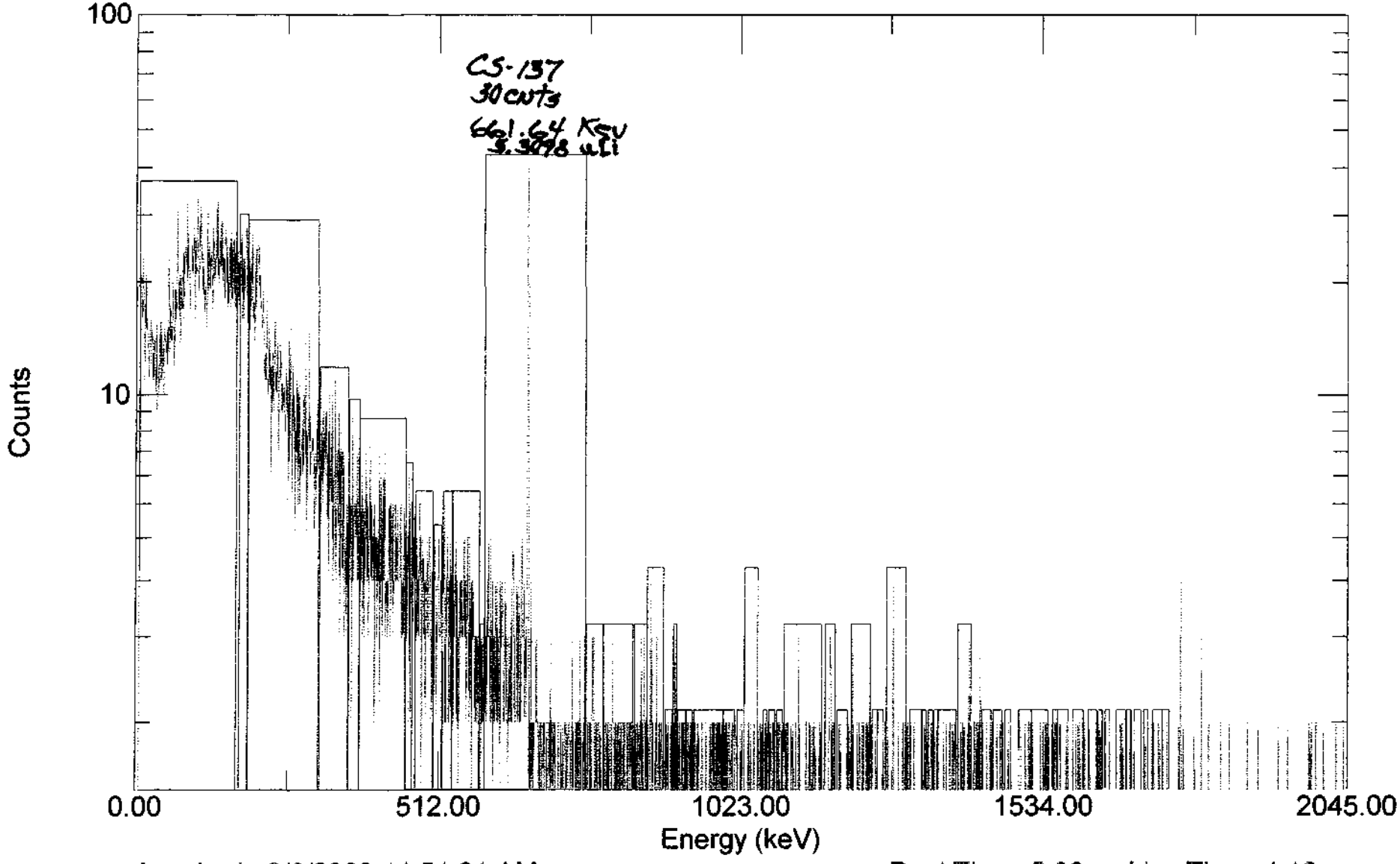
Beta/Gamma Eff 0.33

	2 Min CPM	DPM
1		-212.1
2		-212.1
3		-212.1
4		-212.1
5		-212.1
6		-212.1
7		-212.1
8		-212.1
9		-212.1
10		-212.1
11		-212.1
12	N/A	-212.1
13		-212.1
14		-212.1
15		-212.1
16		-212.1
17		-212.1
18		-212.1
19		-212.1
20		-212.1
21		-212.1
22		-212.1
23		-212.1
24		-212.1
25	156	24.2

25

0081SC-25 3-6 2002 11.51.30 AM

SC-25



Acquired: 3/6/2002 11:51:31 AM Real Time: 5.00 s. Live Time: 4.18 s.

File: C:\User\GNIWEB~1\GNISOU~1\0081SC-25 3-6-2002 11.51.30 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
28	8.11E+04	1.35E+04	0.00E+00	A Unstable						
29	8.11E+04	1.35E+04	0.00E+00	A Unstable						
13			0.00E+00	#VALUE!						
14			0.00E+00	#VALUE!						
16			0.00E+00	#VALUE!						
17			0.00E+00	#VALUE!						
41	2.43E+04	2.43E+04	0.00E+00	#VALUE!	A unstable					
33	2.43E+04	2.43E+04	8.23E-09	0.01	a unstable					
34	2.43E+04	2.43E+04	3.50E-08	0.0425	a unstable					
35	2.43E+04	2.43E+04	6.17E-09	0.0075	a unstable					
37	2.43E+04	2.43E+04	0.00E+00	0	a unstable					
19			0.00E+00	#VALUE!						
18	1.08E+04	1.08E+04	8.34E-09	0.009009	a-unstable					
20			0.00E+00	0.0375	a-unstable					
32	1.08E+04	1.08E+04	1.16E-07	0.0625	a unstable					
12	8.11E+03	1.08E+01	8.59E-04	na	a unstable					
15	8.11E+03	1.08E+01	1.85E-03	na	a unstable					
	Total Type Fractions		2.72E-03							

Drum 2
Biological

Rat	5.41E+04	1.35E+04	1.19E-05	0.032	A Unstable					

Drum 3
C- Stable, CNSI I

27	5.41E+04	1.35E+04	1.14E-05	5.120167	same for cs	0.116367	B Stable			
7	1.08E+04	1.08E+04	1.20E-04	130	1.86E-01	A-Stable				
23	1.08E+04	1.08E+04	4.63E-06	5	7.14E-03	a stable				
24	1.08E+04	1.08E+04	1.16E-06	1.25	1.79E-03	a stable				
8	1.08E+04	1.08E+04	9.26E-06	10	1.43E-02	astable				
31	1.08E+04	1.08E+04	1.85E-05	66.66667	2.86E-01	a stable				
22	2.43E+04	2.43E+04	1.65E-07	2	a stable					

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
GND-1-6										
Brick										
Melted Source										
W5										
W4	5.41E+03	2.70E+03	9.63E-02	6500	na	1.73E+00	0.037143	Class c		
W3										
W2										
I-1										
I-2										
I-3										
I-4										
I-5										
I-6										

Drum 1	2	18	500	83	7506	40	138	5520	1986
A-Unstable									
1	54100	5.41	2.50E-06	0.003378	A Unstable				
2	54100	5.41	2.50E-06	0.003378	A Unstable				
21	1.08E+04	1.08E+04	4.63E-10	0.001	a unstable				
36	2.43E+04	2.43E+04	6.17E-11	0.000375	a unstable				
30	5.41E+04	1.35E+04	3.70E-07	0.25	a- unstable				
61									
63									
3	5.41E+03	2.70E+03	5.01E-08	0.844595	3.38E-02	A-Unstable			
4	1.62E+04	2.43E+02	0.00E+00	A Unstable	A Unstable				
5	5.41E+05	1.35E+04	6.67E-09	0.022523	A Unstable				
6	1.08E+06	5.41E+04	1.25E-08	0.422297	A Unstable				
26	8.11E+04	1.35E+04	0.00E+00	A Unstable	A Unstable				

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
120										
121										
122										
123										
124										
125										
126										
127										
128										
129										
130										
131										
132										
133										
134										
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137										
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142										
143										
144										
145										
146										
147										
148										
149										
150										
151										

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
88										
89										
90										
91										
92										
93										
94										
95										
96										
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101										
102										
103										
104										
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106										
107										
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110										
111										
112										
113										
114										
115										
116										
117										
118										
119										

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
GNB 1-1			#DIV/0!	#DIV/0!						
GNB 1-2			#DIV/0!	#DIV/0!						
GNB 1-3			#DIV/0!	#DIV/0!						
GNB 1-4			#DIV/0!	#DIV/0!						
GNB 1-5			#DIV/0!	#DIV/0!						
GNB 1-6			#DIV/0!	#DIV/0!						
43										
62										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										
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76										
77										
78										
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80										
81										
82										
83										
84										
85										
86										
87										

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
11	Digidart	Cs-137	Same as 9	2.00E-02	1	1	44	4600
38	SAM-935	Sr-90	Beta Conversion	0.015	0.04	NA	150	7000
39	SAM-935	Sr-90	Beta Conversion	0.015	0.04	NA	150	7000
40	SAM-935	Sr-90	Beta Conversion	0.015	0.04	NA	150	7000
44	On source	Sr-90	Beta Conv.	5.4	0.04	NA	150	7000
45	On source	Sr-90	Beta Conv.	8.6	0.04	NA	150	7000
46	On source	Sr-90	Beta Conv.	10.7	0.04	NA	150	7000
47	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
48	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
49	On source	Sr-90	Beta Conv.	10.7	0.04	NA	150	7000
50	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
51	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
52	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
53	On source	Sr-90	Beta Conv.	10.7	0.04	NA	150	7000
54	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
55	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
56	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
57	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
58	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
59	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
60	On source	Sr-90	Beta Conv.	11.25	0.04	NA	150	7000
9	Digidart	Cs-137	ON SOURCE	2.00E-02	1	1	44	4600
10	Digidart	Cs-137	MICRO SHIELD	3.00E-01	1	1	44	4600

SET aside
Greater than Clas
or Greater than T

25	On Source	Cs-137	micro shield	18,000	1	1	44	4600
42	Strong Beta	Sr-90	Beta Conversion	162	0.04	NA	150	7000

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
28	On Source	I-131	on Source w/ t 1/2	0	1			
29	On Source	I-131	on Source w/ t 1/2	0	1			
13	Dead	na	na	na	AU			
14	Dead	Gd-153			AU			
16	Dead	Gd-153			AU			
17	Dead	Ir-192			AU			
41	SAM-935	Sr-90		dead	0.04	NA	150	7000
33	SAM-935	Eu-152	1/5 sc 34	2.00E-04	1	none	na	na
34	SAM-935	Eu-152	MICRO SHIELD	8.50E-04	1	none	na	na
35	SAM-935	Eu-152	3/4 sc 33	1.50E-04	1	none	na	na
37	SAM-935	Eu-152	dead	0	1	none	na	na
19	Dead	I-131			AU			
18	Digidart	Co-60	direct reading	9.01E-05	1	700	na	na
20	Digidart	Cs-137	MICRO SHIELD	1.50E-04	1	1	44	4600
32	SAM-935	C0-60	1/10 sc24	1.25E-03	1	700	NA	NA
12	On Source	Th-228	ON SOURCE	9.28E-03	1	na	na	na
15	On Source	Th-228	ON SOURCE	2.00E-02	1	na	na	na

Drum 2
Biological

Rat	SAM-935	Cs-137	Micro Shield	1.60E-01	1	1	44	4600

Drum 3
C- Stable, CNSI I

27	SAM-935	Cs-137	on Source w/ t 1/2	0.153605023	1	1	44	4600
7	DigiDart	Co-60	Micro Shield	1.30E+00	1	700	NA	NA
23	Digidart	Co-60	1/2 of sc8	5.00E-02	1	700	na	na
24	Digidart	Co-60	1/4 of sc23	1.25E-02	1	700	na	na
8	Digidart	Co-60	MICRO SHIELD	1.00E-01	1	700	na	na
31	SAM-935	Co-60	2x sc8	2.00E-01	1	700	NA	NA
22	Digidart	Eu-152	MICRO SHIELD	4.00E-03	1	none	na	na

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
GND-1-6								
Brick								
Melted Source								
W5	in intermodal							
W4	Guess	Sr-90	Beta Conver.	260	0.04	NA	150	7000
W3	in intermodal							
W2	in intermodal							
I-1								
I-2								
I-3								
I-4								
I-5								
I-6								

Drum 1 3 3
A-Unstable

1	On Source	Th-230	Direct Reading	1.35E-05	1	NA	NA	NA
2	On Source	Th-230	Direct Reading	1.35E-05	1	NA	NA	NA
21	Digidart	Co-60, Ag-108m	microshield	5.00E-06	1	1	700	na
36	SAM-935	Eu-152		1.50E-06	1	none	na	na
30	SAM-935	Cs-137	1/4 sc11	5.00E-03	1	1	44	4600
61	Dead	Class AU						
63	Dead	Class AU						
3	On Source	Sr-90	Direct Reading	1.35E-04	0.04	1	150	7000
4	On Source	Po-210	Dead	0.00E+00	1			
5	On Source	Cl-36	Direct Reading	9.01E-05	1			
6	On Source	C-14	Direct Reading	6.76E-04	0.8	NA	NA	8
26	On Source	I-131	on Source w/ t 1/2	0	1			

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
120								
121								
122								
123								
124								
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151								

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
88								
89								
90								
91								
92								
93								
94								
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119								

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
GNB 1-1					1			
GNB 1-2					1			
GNB 1-3					1			
GNB 1-4					1			
GNB 1-5					1			
GNB 1-6					1			
43								
62								
64								
65	On source	U-nat	Weight	0.000284				
66	On source	U-nat	Weight	0.000142				
67	On source	U-nat	Weight	0.000355				
68	On source	Th-nat	Weight	0.000132				
69	On source	U-nat	Weight	0.00284				
70	On source	Sr-90	Beta Conversion	268				
71	dead au							
72	dead au							
73								
74	Digidart	Ra-226	Micro Shield					
75	Digidart	Ra-226	Micro Shield					
76	Digidart	Ra-226	Micro Shield					
77	Digidart	Ra-226	Micro Shield					
78	Digidart	Ra-226	Micro Shield					
79	Digidart	Ra-226	Micro Shield					
80	Digidart	Ra-226	Micro Shield					
81	Digidart	Ra-226	Micro Shield					
82	Digidart	Ra-226	Micro Shield					
83	Digidart	Ra-226	Micro Shield					
84	Digidart	Ra-226	Micro Shield					
85								
86								
87								

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
11	4	0		Cs-137	12/20/84	0	4.39	-18.2
38	10	na	na	na	None	10	800	<1000
39	10	na	na	na	None	10	18.3	0
40	10	na	na	na	None	10	9.2	23.9
44	50	na	10138	Sr-90				
45	300	na	10144	Sr-90				
46	300	na	3m1071 3dig	Sr-90				
47	300	na	3m1085	Sr-90				
48	300	na	3m1083	Sr-90				
49	300	na	3m1075	Sr-90				
50	300	na	3m10115	Sr-90				
51	300	na	3m1088	Sr-90				
52	300	na	3m10209	Sr-90				
53	300	na	3m10204	Sr-90				
54	200	na	3m10145	Sr-90				
55	300	na	3m10198	Sr-90				
56	300	na	3m10153	Sr-90				
57	300	na	3m10114	Sr-90				
58	300	na	3m10143	Sr-90				
59	300	na	3m1089	Sr-90				
60	300	na	1017 3dig	Sr-90				
9	2	0	none	Cs-137	12/20/84	0	1.36	-21.2
10	2	0		Cs-137	10/25/85	0	5.91	-21.2

SET aside
Greater than Clas
or Greater than T

25	40	0			Cs-137	0	41.6	24.2
42	2	na	na	na	3.6 Rad/sec	25000@4"	1200	bkg

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
28	8	na	10 mCi 4/27/90	I-131	None	none	0.2	0
29	5	na	10 mCi 4/27/90	I-131	None	none	0	0
13	12	0		2 sources		0	4.39	-6.1
14	25	0	cd1356		Gd-153	0	-0.15	-9.1
16	1	0	Gd-153	Gd-153		0	54.39	-6.1
17	12	0	Liquid		Am/Ir 1-3-87	0	2.88	15.2
41	5	na	na	na	Ir-192 5 mci	none	7.7	0
33	20	na	na	na	None	100 pig	53.2	1.2
34	20	na	na	na	None	100 pig	62.3	123.9
35	20	na	na	na	None	100 pig	18.3	51.2
37	25	na	na	na	None	none	0.2	0
19	4	0	10 mCi	I-131	none	0	39.24	1.5
18	2	0						
20	6	0			Cs-137	0	0	0
32	30	na	na	na	Fe-59	20 pig	0.2	0
12	2	0	9.28 uCi	TH-228	12/1/81	0	-0.15	-60.6
15	25	0	20 uCi	TH-228	7/1/87	0	27.12	12.1

Drum 2
Biological

Rat	2000	na	na	na	None	none	na	na

Drum 3
C- Stable, CNSI I

27	454	na	Cs-137 .25mCi 2/	Cs-137	None	none	3.2	0
7	7	40		Ag-110	Silver Wire	0	4.39	-9.1
23	5	0				0	0	0
24	5	0	50 uCi	Co-60		0	0	0
8	6	3		Co-60	Wire		2.88	3
31	1	na	na	bulbs	Fe-59	20 pig	0	7.3
22	3	0				0	. 0	0

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
GND-1-6	22700							
Brick	27240							
Melted Source	10							
W5								
W4	1000				80 mr/hr cw at 6"	6k at 6"		
W3								
W2								
I-1	1000		item 1					
I-2	400		item 2					
I-3	5448		item 3					
I-4	3178		item 3					
I-5	300		item 5					
I-6	22700							

Drum 1
A-Unstable

1	2	BKG	c-7519	Th-230	None	BKG	3.9	-12.6
2	2	BKG	c-7519	Th-230	None	BKG	3.9	-12.6
21	10	0			Ag-110	0	0	0
36	15	na	na	na	None	100 pig	0	1.2
30	30	na	na	nail	Fe-59	20 pig	1.7	0
61	20		Ir-192					
63	20		Ir-192					
3	2	BKG	eb-42084	Sr-90	None	1	2.3	-15.6
4	2	BKG	es-1	Po-210	None	BKG	-1	17.4
5	2	BKG	36-ba-637-7	Cl-36	None	BKG	-1	22
6	4	BKG	14-bd6231	C-14	None	2	0.7	-5.1
26	8	na	5 mci 4/16/90	I-131	None	none	0.2	4.2

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
GNB 1-1	0	0		0	0	direct		3000	
GNB 1-2	0	0		0	0	direct	0	3000	
GNB 1-3	0	0		0	0	direct	0	80	
GNB 1-4	0	0		0	0	direct	0	12000	
GNB 1-5	0	0		0	0	direct	0	3000	
GNB 1-6	0	0		0	0	direct	0	3000	
43	<1	15		0.6	0.4	direct	15M	600K	8
62	3		1	0.5	0.4				2
64	<1		0.7	0.3	0.4				5
65	<	na	<	<	<	direct	5000	3000	125
66	<	na	<	<	<	direct	3000	500	125
67	<	na	<	<	<	direct	200	200	125
68	<	na	<	<	<	direct	100	200	65
69	<	na	<	<	<	direct	100	100	125
70	<1	na	1.5	0.8	0.9				2
71	<1	na	bkg	bkg	bkg	direct	500	100	20
72	<1	na	bkg	bkg	bkg	direct	3000	10000	4
73	2	na	4	1.5	0.7				20
74	180	na	420	130	22				1
75	1000	na	na	na	na				1
76	400	na	na	na	na				1
77	1400	na	na	na	na				1
78	3000	na	na	na	na				1
79	1000	na	na	na	na				1
80	2000	na	na	na	na				1
81	300	na	na	na	na				1
82	1000	na	na	na	na				1
83	1200	na	na	na	na				1
84	2000	na	na	na	na				1
85	<.2	na	bkg	bkg	bkg	direct	<200	500	20
86	<.2	na	bkg	bkg	bkg	direct	35	100	20
87	<.2	na	bkg	bkg	bkg	direct	50	4400	20

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
88	<.2	na	bkg	bkg	bkg	direct	20	800	20
89	<.2	na	bkg	bkg	bkg	direct	40	900	20
90	<.2	na	bkg	bkg	bkg	direct	<25	800	20
91	<.2	na	bkg	bkg	bkg	direct	30	1300	20
92	<.2	na	bkg	bkg	bkg	direct	<20	bkg	40
93	<.2	na	bkg	bkg	bkg	direct	150	1400	20
94	<.2	na	bkg	bkg	bkg	direct	40	800	20
95	<.2	na	bkg	bkg	bkg	direct	132	2800	20
96	<.2	na	bkg	bkg	bkg	direct	27	400	20
97	<.1	na	0.7	0.4	0.3	direct	<25	130000	20
98	<.2	na	bkg	bkg	bkg	direct	100	2000	20
99	<.2	na	bkg	bkg	bkg	direct	105	750	20
100	<.2	na	bkg	bkg	bkg	direct	50	1800	20
101	<.2	na	bkg	bkg	bkg	direct	47	1000	20
102	<.2	na	bkg	bkg	bkg	direct	<20	1300	20
103	<.2	na	bkg	bkg	bkg	direct	95	800	20
104	<.2	na	bkg	bkg	bkg	direct	100	1600	20
105	<.2	na	bkg	bkg	bkg	direct	30	800	20
106	<.2	na	bkg	bkg	bkg	direct	50	400	20
107	<.2	na	bkg	bkg	bkg	direct	30	300	20
108	<.2	na	bkg	bkg	bkg	direct	40	750	20
109	<.2	na	bkg	bkg	bkg	direct	30	bkg	20
110	<.2	na	bkg	bkg	bkg	direct	bkg	450	20
111	<.2	na	bkg	bkg	bkg	direct	bkg	300	20
112	<.2	na	bkg	bkg	bkg	direct	bkg	bkg	20
113	<.2	na	bkg	bkg	bkg	direct	bkg	370	20
114	<.2	na	bkg	bkg	bkg	direct	bkg	300	20
115	<.2	na	bkg	bkg	bkg	direct	bkg	330	20
116									
117									
118									
119									

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
120									
121									
122									
123									
124									
125									
126									
127									
128									
129									
130									
131									
132									
133									
134									
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140									
141									
142									
143									
144									
145									
146									
147									
148									
149									
150									
151									

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
GND-1-6	<1	na	na						1000
Brick	20	na	500	300	80				7000
Melted Source	300	na	40	25	3				5
W5	na	na	n	hole mt'd				100k	
W4	na	na	n						1000
W3	na	na	n	hole mt'd				80 mrad	
W2	na	na	n	hole mt'd				100k	
I-1	na		0.6	0.3	0.1				500
I-2	na		1.6	0.6	0.2				500
I-3	na		0.1	<.1	<.1				7000
I-4	na		0.6	0.4	0.2				50000
I-5	2	na	n						100
I-6	<1	na	n						50000

Drum 1
A-Unstable

	Sources								
1	BKG	BKG		BKG	BKG	direct	2000	3000	4
2	BKG	BKG		BKG	BKG	direct	2000	3000	4
21	0	1.8		0.2	BKG	direct	0	0	5
36	3	0.7		.4@4"	<1	na	na	na	4
30	2	2		0.2	0	na	na	na	20
61	<1		bkg	bkg	bkg	direct	bkg	bkg	20
63	<1		bkg	bkg	bkg	direct	bkg	bkg	20
3	BKG	BKG		BKG	BKG	direct	0	30000	4
4	BKG	BKG		BKG	BKG	direct	0	0	4
5	BKG	BKG		BKG	BKG	direct	0	20000	4
6	BKG	BKG		BKG	BKG	direct	0	30000	2
26	<1	<1		<1	<1	direct	bkg	bkg	10

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
28	<1	<1		<1	<1	direct	bkg	bkg	20
29	<1	<1		<1	<1	direct	bkg	bkg	20
13	0	0		0	0	direct	10	<100	8
14	0	0		0	0	direct	0	0	15
16	0	0		0	0	direct	54	0	1
17	0	0		0	0	direct	0	0	10
41	<1	<1		<1	<1	direct	bkg	bkg	20
33	3	100		2.5	0.2	na	na	na	20
34	3	500		1	0.1	na	na	na	20
35	3	75		2	0.1	na	na	na	20
37	<1	<1		<1	<1	direct	bkg	bkg	20
19	0	0		0	0	direct	50	BKG	10
18	0	0		0	0	direct	5000	20000	10
20	0	17.8		0.6	0	direct	0	0	4
32	2	0.8		0.1	0.1	na	na	na	20
12	0	?		?	?	direct	0	40,000	4
15	0	0		0	0	direct	27	0	15

Drum 2

Biological	A-Unstable								
Rat	na	1.5		0.4	0.1	na	na	na	5000

Drum 3

C- Stable, CNSI I Sources

27	<1	<1		<1	<1	direct	1060	12000	30
7	40	850		18	3	direct	0	0	10
23	2	29.8		0.8	BKG	direct	0	0	10
24	1	7.8		0.3	BKG	direct	0	0	10
8	3	55		1.5	1.2	direct	0	0	10
31	2	110		3.5	0.3	na	na	na	3
22	0	0.8		0.2	BKG	direct	0	0	2

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
11	2	8		0.5	1.1	direct	0	0	4
38	<1	<1		<1	<1	direct	100	10000	30
39	<1	<1		<1	<1	direct	500	5000	30
40	<1	<1		<1	<1	direct	nd	200000	10
44	10	na		na	na	direct		3000	5
45	16	na		na	na	direct		5000	30
46	20	na		na	na	direct		6000	30
47	15	na		na	na	direct		6000	30
48	13	na		na	na	direct		5000	30
49	20	na		na	na	direct		5000	30
50	10	na		na	na	direct		6000	30
51	12	na		na	na	direct		5000	30
52	16	na		na	na	direct		6000	30
53	20	na		na	na	direct		6000	30
54	12	na		na	na	direct		6000	15
55	15	na		na	na	direct		6000	30
56	10	na		na	na	direct		5000	30
57	11	na		na	na	direct		6000	30
58	14	na		na	na	direct		5000	30
59	11	na		na	na	direct		5000	30
60	21	na		na	na	direct		5000	30
9	2	10		0.6	1	direct	0	0	2
10	3	42		1.5	1.2	direct	0	0	5

SET aside Los Alamos Bound if not Accepted by CNSI
Greater than Class C
or Greater than Type A

25	200	0		0	0	direct	0	0	25
42	20	10		1	0	na	na	na	2

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
GNB 1-1								
GNB 1-2								
GNB 1-3								
GNB 1-4								
GNB 1-5								
GNB 1-6								
43	10	na	none	none	none	15	na	na
62	5		none					
64	15		none					
65	100	na	0.004	U-nat				
66	100	na	0.002	U-nat				
67	100	na	0.005	U-nat				
68	60	na	0.01	Th-nat				
69	100	na	0.04	U-nat				
70	3			sr90				
71	20							
72	4			cd109				
73	40							
74	1	400			1 needle			
75	1	6000			5 needles			
76	1	2000			1 needle		5000	200
77	1	14000			20 needles			
78	1	30000			9 needles			
79	1	4000			20 needles		5000	600
80	1	10000	type 3		9 needles		8000	300
81	1	800	2 fatter pins		2 needles			
82	1	4000	10 in bottle		10 needles			
83	1	10000			12 needles		8000	200
84	1	8000			12 needles		15000	400
85	20		none	none	none	<.2	300	4000
86	20		none	none	none	<.2	580	8000
87	20		none	none	L	<.2	250	14000

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
88	23		none	none		<.2	320	7000
89	20		Liquid	none		<.2	450	6000
90	22		Liquid	none		<.2	250	8000
91	22		Liquid	none		<.2	400	8000
92	60		2 bottles liquid	none		<.2	120	8000
93	22		Liquid	none		<.2	290	15000
94	20			none		<.2	40	6000
95	40		Liquid	none		<.2	700	6000
96	20		Liquid	none		<.2	350	3000
97	40		Liquid	none		7	<200	12000
98	40		Liquid	none		0.4	150	bkg
99	38		Liquid	none		0.2		
100	42		I131 10MC 3-7-9	none		0.3	50	1800
101	20		IR192 10-26-87	none		0.2	47	1000
102	42		ITW192 2MCI 2-2	none		<.2	<20	1300
103	53		Liquid	none		<.2	520	9000
104	24		IR192 100MCI 6-	none		<.2		
105	38		IR192 10MCI 5-3	none		<.2		
106	38		IR192 20MCI 2-1	none		<.2		
107	38		IR192 10MCI 5-3	none		<.2		
108	40		IR192 10MCI 5-3	none		<.2		
109	27		IR192 10MCI 8-2	none		<.2		
110	22		IR192 10MCI 1-1	none		<.2		
111	40		IR192 10MCI 11-	none		<.2		
112	23		Liquid	none		<.2		
113	38		Liquid					
114	42		IR192 10MCI 8-2	none		<.2		
115	26		I131 3MCI 4-9-90	none		<.2		
116								
117								
118								
119								

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
120								
121								
122								
123								
124								
125								
126								
127								
128								
129								
130								
131								
132								
133								
134								
135								
136								
137								
138								
139								
140								
141								
142								
143								
144								
145								
146								
147								
148								
149								
150								
151								

Detector #1 ACQ 29-Jan-2002 at 9:55:55 RT = 5.0 LT = 4.3
digiDART USE 1b
SC24

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 4273 Net = 2218 +/- 471
CENTROID: 250.89 = 62.73keV
SHAPE: FWHM = 13.89 FW(1/5)M = 14.65
ID: Pa-234 at 63.20keV
Corrected Rate = 11197775.54 +/- 2377886.51 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 302 Net = 31 +/- 47
CENTROID: 705.00 = 176.34keV
SHAPE: FWHM = 11.01 FW(1/5)M = 11.16
ID: Sb-125 at 176.29keV
Corrected Rate = 80247.23 +/- 121665.15 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 1999 Net = -25 +/- 394
CENTROID: 1223.09 = 305.96keV
SHAPE: FWHM = 0.50 FW(1/5)M = 1.07
ID: Ba-140 at 304.82keV
Corrected Rate = 0.00 +/- 2449654.23 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 650 Net = -130 +/- 156
CENTROID: 1251.00 = 312.94keV
SHAPE: FWHM = 44.59 FW(1/5)M = 45.08
ID: Np-237 at 311.90keV
Corrected Rate = 0.00 +/- 107016.23 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 199 Net = -46 +/- 50
CENTROID: 1457.00 = 364.47keV
SHAPE: FWHM = 6.75 FW(1/5)M = 6.90
ID: J-131 at 364.48keV
Corrected Rate = 0.00 +/- 16297.72 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 906 Net = 192 +/- 189
CENTROID: 1611.10 = 403.02keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.50
ID: Kr-87 at 402.70keV
Corrected Rate = 116767.80 +/- 114943.30 Bq

ROI # 7 RANGE: 1824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 105 Net = 1 +/- 23
CENTROID: 1843.00 = 461.03keV
SHAPE: FWHM = 3.75 FW(1/5)M = 4.25
ID: Cs-138 at 462.79keV
Corrected Rate = 1075.17 +/- 24728.96 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 318 Net = -16 +/- 78
CENTROID: 1914.00 = 478.79keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: W-187 at 479.57keV
Corrected Rate = 0.00 +/- 113597.64 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV

AREA : Gross = 213 Net = 51 +/- 36
CENTROID: 2046.89 = 512.03keV
SHAPE: FWHM = 0.38 FW(1/5)M = 1.28
ID: Rh-106M at 511.80keV
Corrected Rate = 21262.35 +/- 15008.72 Bq

10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 164 Net = -43 +/- 43
CENTROID: 2115.17 = 529.11keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.60
ID: J-133 at 529.50keV
Corrected Rate = 0.00 +/- 18222.29 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 434 Net = 46 +/- 105
CENTROID: 2232.00 = 558.33keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Y-91M at 557.57keV
Corrected Rate = 18743.73 +/- 42784.60 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 60 Net = 1 +/- 15
CENTROID: 2345.47 = 586.71keV
SHAPE: FWHM = 1.05 FW(1/5)M = 1.29
ID: Kr-89 at 585.80keV
Corrected Rate = 2391.68 +/- 35875.15 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 75 Net = 15 +/- 17
CENTROID: 2366.55 = 591.99keV
SHAPE: FWHM = 0.53 FW(1/5)M = 0.79
ID: Eu-154 at 591.70keV
Corrected Rate = 132935.03 +/- 150659.70 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 195 Net = 106 +/- 29
CENTROID: 2437.77 = 609.80keV
SHAPE: FWHM = 1.00 FW(1/5)M = 1.77
ID: Bi-214 at 609.32keV
Corrected Rate = 96137.21 +/- 26301.69 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 592 Net = 175 +/- 138
CENTROID: 2607.00 = 652.13keV
SHAPE: FWHM = 10.81 FW(1/5)M = 11.28
ID: Sr-91 at 652.30keV
Corrected Rate = 2701801.48 +/- 2130563.45 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 570 Net = 315 +/- 114
CENTROID: 2791.86 = 698.37keV
SHAPE: FWHM = 43.68 FW(1/5)M = 44.39
ID: Br-82 at 698.36keV
Corrected Rate = 530345.62 +/- 191934.60 Bq

1 # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 212 Net = -16 +/- 63
CENTROID: 3119.00 = 780.19keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: J-132 at 780.20keV
Corrected Rate = 0.00 +/- 2645584.32 Bq

OI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 361 Net = -4 +/- 108
CENTROID: 3275.00 = 819.20keV
SHAPE: FWHM = 13.07 FW(1/5)M = 13.26
ID: Pa-234 at 819.40keV
Corrected Rate = 0.00 +/- 2644531.77 Bq

:OI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 141 Net = -13 +/- 44
CENTROID: 3415.55 = 854.35keV
SHAPE: FWHM = 0.61 FW(1/5)M = 0.98
ID: J-133 at 856.10keV
Corrected Rate = 0.00 +/- 2009078.29 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV
AREA : Gross = 201 Net = 31 +/- 55
CENTROID: 3534.00 = 883.98keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-134 at 884.08keV
Corrected Rate = 27008.02 +/- 47917.46 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 73 Net = -9 +/- 24
CENTROID: 3620.00 = 905.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-89 at 904.27keV
Corrected Rate = 0.00 +/- 192063.29 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 40 Net = 0 +/- 10
CENTROID: 3640.00 = 910.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 911.07keV
Corrected Rate = 0.00 +/- 20346.88 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 75 Net = -44 +/- 30
CENTROID: 3712.00 = 928.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 926.70keV
Corrected Rate = 0.00 +/- 163295.27 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 71 Net = 8 +/- 18
CENTROID: 3736.12 = 934.53keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.64
ID: Ra-226 at 934.10keV
Corrected Rate = 151186.70 +/- 340170.08 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 298 Net = -65 +/- 107
CENTROID: 3791.00 = 948.25keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Te-131 at 948.54keV
Corrected Rate = 0.00 +/- 2892128.19 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 111 Net = 44 +/- 29
CENTROID: 3979.00 = 995.27keV
SHAPE: FWHM = 16.57 FW(1/5)M = 17.06

ID: U-238 at 996.10keV
Corrected Rate = 683733341.10 +/- 450642429.36 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 75 Net = -13 +/- 23
CENTROID: 4069.00 = 1017.77keV
SHAPE: FWHM = 5.75 FW(1/5)M = 5.90
ID: Rh-106M at 1019.60keV
Corrected Rate = 0.00 +/- 973351.33 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 107 Net = -58 +/- 47
CENTROID: 4186.00 = 1047.03keV
SHAPE: FWHM = 2.00 FW(1/5)M = 2.15
ID: Cs-136 at 1048.07keV
Corrected Rate = 0.00 +/- 39105.48 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 26 Net = -4 +/- 9
CENTROID: 4245.00 = 1061.78keV
SHAPE: FWHM = 1.00 FW(1/5)M = 1.15
ID: Bi-207 at 1063.62keV
Corrected Rate = 0.00 +/- 7879.34 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 44 Net = 2 +/- 15
CENTROID: 4303.00 = 1076.29keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Rb-86 at 1076.63keV
Corrected Rate = 15552.91 +/- 116646.80 Bq

31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 44 Net = 10 +/- 14
CENTROID: 4335.45 = 1084.40keV
SHAPE: FWHM = 5.34 FW(1/5)M = 5.57
ID: Eu-152 at 1085.90keV
Corrected Rate = 68558.15 +/- 95981.41 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 358 Net = 191 +/- 83
CENTROID: 4483.64 = 1121.46keV
SHAPE: FWHM = 1.00 FW(1/5)M = 2.26
ID: Ta-182 at 1121.28keV
Corrected Rate = 384996.68 +/- 167302.22 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 146 Net = 97 +/- 25
CENTROID: 4695.87 = 1174.53keV
SHAPE: FWHM = 0.40 FW(1/5)M = 2.11
ID: Co-56 at 1175.13keV
Corrected Rate = 3125307.67 +/- 805491.67 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 53 Net = 18 +/- 19
CENTROID: 4756.00 = 1189.56keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ta-182 at 1189.05keV
Corrected Rate = 81203.30 +/- 85714.60 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 135 Net = -59 +/- 62

CENTROID: 4953.90 = 1239.05keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.77
ID: Co-56 at 1238.28keV
Corrected Rate = 0.00 +/- 70487.91 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 29 Net = 4 +/- 11
CENTROID: 4988.00 = 1247.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rb-89 at 1248.10keV
Corrected Rate = 7198.17 +/- 19794.97 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 44 Net = -32 +/- 19
Could not properly fit the peak.

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 118 Net = 49 +/- 39
CENTROID: 5078.45 = 1270.19keV
SHAPE: FWHM = 29.34 FW(1/5)M = 29.82
ID: Tb-160 at 1271.88keV
Corrected Rate = 507095.40 +/- 403606.54 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 125 Net = 52 +/- 36
CENTROID: 5335.21 = 1334.39keV
SHAPE: FWHM = 1.38 FW(1/5)M = 2.63
ID: Co-60 at 1332.51keV
Corrected Rate = 42585.88 +/- 29482.53 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 21 Net = -11 +/- 9
Could not properly fit the peak.

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 17 Net = -6 +/- 8
Could not properly fit the peak.

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 111 Net = 70 +/- 29
CENTROID: 5513.70 = 1379.02keV
SHAPE: FWHM = 1.20 FW(1/5)M = 2.55
ID: Bi-214 at 1377.65keV
Corrected Rate = 1467409.14 +/- 607926.64 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 79 Net = 50 +/- 21
CENTROID: 5585.00 = 1396.85keV
SHAPE: FWHM = 12.25 FW(1/5)M = 12.40
ID: Eu-154 at 1397.80keV
Corrected Rate = 2666741.68 +/- 1120031.51 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 43 Net = -29 +/- 25
Could not properly fit the peak.

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 32 Net = 22 +/- 10
CENTROID: 5810.00 = 1453.10keV
SHAPE: FWHM = 10.50 FW(1/5)M = 10.65
ID: Pa-234 at 1452.60keV

Corrected Rate = 1617394.18 +/- 735179.17 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 30 Net = 9 +/- 11
CENTROID: 5899.00 = 1475.35keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Ag-110M at 1475.76keV
Corrected Rate = 201788.47 +/- 246630.35 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 60 Net = 16 +/- 24
CENTROID: 6024.55 = 1506.74keV
SHAPE: FWHM = 5.91 FW(1/5)M = 6.11
ID: Ag-110M at 1505.00keV
Corrected Rate = 111021.96 +/- 166532.94 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 60 Net = 6 +/- 30
CENTROID: 6086.00 = 1522.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: K-42 at 1524.70keV
Corrected Rate = 30837.45 +/- 154187.27 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 19 Net = -1 +/- 8
CENTROID: 6201.00 = 1550.85keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.85
ID: U-238 at 1553.74keV
Corrected Rate = 0.00 +/- 92587642.16 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 24 Net = 24 +/- 4
CENTROID: 6286.00 = 1572.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rh-106M at 1572.10keV
Corrected Rate = 437359.57 +/- 72893.26 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 11 Net = 1 +/- 6
Could not properly fit the peak.

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 14 Net = -3 +/- 8
Could not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 18 Net = -1 +/- 12
CENTROID: 6478.00 = 1620.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-212 at 1620.56keV
Corrected Rate = 0.00 +/- 423215.96 Bq

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 8 Net = 8 +/- 2
Could not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV

AREA : Gross = 22 Net = 2 +/- 13
CENTROID: 6638.00 = 1660.10keV
SHAPE: FWHM = 3.44 FW(1/5)M = 3.62
ID: Bi-214 at 1661.28keV
Corrected Rate = 172339.64 +/- 1120207.64 Bq

57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 6 Net = 6 +/- 2
CENTROID: 6699.00 = 1675.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-135 at 1678.03keV
Corrected Rate = 62974.00 +/- 20991.33 Bq

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 10 Net = 3 +/- 6
CENTROID: 6781.00 = 1695.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 1694.00keV
Corrected Rate = 232580.59 +/- 465161.18 Bq

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 4 Net = -1 +/- 4
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 25 Net = 5 +/- 13
CENTROID: 6923.50 = 1731.47keV
SHAPE: FWHM = 0.59 FW(1/5)M = 0.84
ID: Bi-214 at 1729.60keV
Corrected Rate = 168393.29 +/- 437822.55 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 12 Net = -18 +/- 13
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 138 Net = 108 +/- 19
CENTROID: 7062.19 = 1766.14keV
SHAPE: FWHM = 1.03 FW(1/5)M = 2.77
ID: U-238 at 1765.80keV
Corrected Rate = 1484703615.74 +/- 261197858.32 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 11 Net = 0 +/- 6
Could not properly fit the peak.

ROI # 64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 5 Net = -3 +/- 7
Could not properly fit the peak.

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 16 Net = 6 +/- 9
CENTROID: 7353.00 = 1838.84keV
SHAPE: FWHM = 2.62 FW(1/5)M = 2.85
ID: Rh-106M at 1838.20keV
Corrected Rate = 270465.65 +/- 405698.47 Bq

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV
AREA : Gross = 16 Net = 16 +/- 4
CENTROID: 7396.50 = 1849.71keV
SHAPE: FWHM = 0.46 FW(1/5)M = 0.64

ID: Xe-138 at 1850.86keV
Corrected Rate = 1222839.43 +/- 305709.86 Bq

ROI # 67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 7 Net = -3 +/- 9
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 17 Net = 17 +/- 4
CENTROID: 7612.00 = 1903.58keV
SHAPE: FWHM = 2.00 FW(1/5)M = 2.30
ID: Kr-89 at 1903.40keV
Corrected Rate = 1786682.34 +/- 420395.84 Bq

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 5 Net = 5 +/- 2
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 11 Net = 11 +/- 3
Could not properly fit the peak.

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 5 Net = 5 +/- 2
Could not properly fit the peak.

008 SC24 1-29-2002 9.55.55 AM

Sample description
SC24

Spectrum Filename: C:\GammaVision\008 SC24 1-29-2002 9.55.55 AM.An1

Acquisition information

Start time:	29-Jan-2002 09:55:55
Live time:	4
Real time:	5
Dead time:	13.20 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

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Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.1129

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
29.62	7.17	27.	51.	11.866	23.60	0.733	-	s
489.70	122.22	27.	9.	2.074	88.19	0.408	-	s
754.56	188.45	18.	11.	2.458	62.38	0.259	-	s
774.81	193.51	20.	17.	3.917	49.33	0.720	-	s
930.84	232.58	32.	24.	5.490	39.41	1.048	-	D
938.02	234.37	34.	19.	4.305	50.01	1.048	-	D
1223.16	305.59	38.	19.	4.493	58.15	0.319	-	s
1600.62	399.94	15.	16.	3.687	45.71	0.772	-	s
1665.56	416.16	12.	18.	4.147	38.49	0.628	-	s
1841.96	460.25	16.	20.	4.531	43.77	0.345	-	s
1909.14	477.04	9.	12.	2.688	49.57	0.565	-	s
2043.77	510.68	55.	68.	15.668	26.50	0.401	-	s
2124.98	530.97	6.	9.	2.112	50.94	0.388	-	s
2154.31	538.30	11.	6.	1.459	88.23	0.573	-	s
2439.16	609.47	37.	73.	16.935	22.24	1.068	-	s
2635.45	658.50	6.	18.	4.263	33.79	0.385	-	s
2735.08	683.39	8.	15.	3.456	44.39	0.298	-	s
3103.58	775.19	9.	17.	3.865	35.38	1.270	-	D
3119.49	779.16	16.	12.	2.676	57.37	1.273	-	D
3147.59	786.43	5.	17.	3.994	33.09	0.527	-	s
3737.24	933.67	6.	22.	5.184	29.17	0.372	-	s
3844.15	960.37	4.	10.	2.189	43.51	0.464	-	s
3911.27	977.13	7.	12.	2.842	44.49	0.388	-	s

0

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 16:10:16 Page 3
ORTEC Spectrum name: 008 SC24 1-29-2002 9.55.55 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
4483.73	1120.04	4.	116.	26.690	10.12	1.041	-	s
7062.57	1763.37	0.	128.	29.493	8.84	0.968	-	s

s - Peak fails shape tests.

D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4696.16	1173.06	9.	76.	17.512	13.93	0.416s
CO-60	5333.07	1332.00	7.	67.	15.361	15.07	0.891s

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Nuclide Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	MDA Value Becquerels	Comments
CO-60		5.5214E+04	1332.51	5.460E+04	?(	3.572E+03	G
			1173.23	5.583E+04	(	3.506E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 16:10:16 Page 4
ORTEC Spectrum name: 008 SC24 1-29-2002 9.55.55 AM.An

R - Coincidence Corrected
H - Halflife limit exceeded
C - Coincidence Peak

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total

008 SC24 1-29-2002 9.55.55 AM

CO-60	5.5214E+04	1.026E+01%	1.042E+01%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 5.5213531E+04 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

Detector #1 ACQ 29-Jan-2002 at 9:48:41 RT = 5.0 LT = 4.2
digiDART USE 1b
SC23

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 4810 Net = 3296 +/- 406
CENTROID: 326.66 = 81.69keV
SHAPE: FWHM = 39.22 FW(1/5)M = 39.45
ID: Sb-125 at 81.80keV
Corrected Rate = 49933969.89 +/- 6150847.02 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 377 Net = -43 +/- 58
CENTROID: 737.00 = 184.35keV
SHAPE: FWHM = 2.50 FW(1/5)M = 2.65
ID: U-235 at 185.71keV
Corrected Rate = 0.00 +/- 17388.17 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 2401 Net = -401 +/- 463
CENTROID: 1033.00 = 258.40keV
SHAPE: FWHM = 42.03 FW(1/5)M = 42.18
ID: Xe-138 at 258.31keV
Corrected Rate = 0.00 +/- 303481.17 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 816 Net = 263 +/- 132
CENTROID: 1269.53 = 317.57keV
SHAPE: FWHM = 0.43 FW(1/5)M = 0.62
ID: Np-239 at 315.88keV
Corrected Rate = 3973822.94 +/- 1994466.26 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 275 Net = -5 +/- 54
CENTROID: 1450.00 = 362.72keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-88 at 362.23keV
Corrected Rate = 0.00 +/- 642729.64 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 976 Net = -248 +/- 246
CENTROID: 1741.89 = 435.74keV
SHAPE: FWHM = 11.32 FW(1/5)M = 11.56
ID: Xe-138 at 434.49keV
Corrected Rate = 0.00 +/- 390121.55 Bq

ROI # 7 RANGE: 1824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 141 Net = 11 +/- 26
CENTROID: 1843.00 = 461.03keV
SHAPE: FWHM = 0.42 FW(1/5)M = 1.00
ID: Cs-138 at 462.79keV
Corrected Rate = 12163.20 +/- 28749.39 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 359 Net = -54 +/- 87
CENTROID: 1937.00 = 484.54keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Hf-181 at 482.16keV
Corrected Rate = 0.00 +/- 35618.90 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV

AREA : Gross = 228 Net = -24 +/- 44
CENTROID: 2040.77 = 510.50keV
SHAPE: FWHM = 0.34 FW(1/5)M = 0.81
ID: J-133 at 510.40keV
Corrected Rate = 0.00 +/- 1093603.81 Bq

I # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 196 Net = -42 +/- 46
CENTROID: 2085.00 = 521.56keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 521.00keV
Corrected Rate = 0.00 +/- 1441796.95 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 486 Net = -81 +/- 127
CENTROID: 2169.00 = 542.57keV
SHAPE: FWHM = 7.00 FW(1/5)M = 7.15
ID: U-238 at 543.98keV
Corrected Rate = 0.00 +/- 1376619994.55 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 70 Net = 38 +/- 13
CENTROID: 2325.00 = 581.60keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.48
ID: Tl-208 at 583.14keV
Corrected Rate = 18296.32 +/- 6259.27 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 82 Net = 16 +/- 18
CENTROID: 2358.00 = 589.85keV
SHAPE: FWHM = 6.75 FW(1/5)M = 6.90
ID: Eu-154 at 591.70keV
Corrected Rate = 145829.52 +/- 164058.21 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 242 Net = 35 +/- 43
CENTROID: 2438.43 = 609.97keV
SHAPE: FWHM = 1.11 FW(1/5)M = 1.93
ID: Ru-103 at 610.33keV
Corrected Rate = 284299.68 +/- 349282.46 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 723 Net = 28 +/- 177
CENTROID: 2647.27 = 662.20keV
SHAPE: FWHM = 0.82 FW(1/5)M = 1.63
ID: Cs-137 at 661.60keV
Corrected Rate = 15262.24 +/- 96479.16 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 744 Net = 30 +/- 189
CENTROID: 3013.12 = 753.71keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Pa-234 at 754.80keV
Corrected Rate = 1106456.98 +/- 6970678.96 Bq

17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 250 Net = 60 +/- 58
CENTROID: 3077.24 = 769.74keV
SHAPE: FWHM = 0.57 FW(1/5)M = 1.30
ID: Ra-226 at 768.40keV
Corrected Rate = 632971.04 +/- 611872.00 Bq

ROI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 467 Net = -263 +/- 152
CENTROID: 3333.00 = 833.71keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Mn-54 at 834.81keV
Corrected Rate = 0.00 +/- 85587.07 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 183 Net = 43 +/- 43
CENTROID: 3375.00 = 844.21keV
SHAPE: FWHM = 9.53 FW(1/5)M = 10.20
ID: Kr-87 at 845.60keV
Corrected Rate = 337587.84 +/- 337587.84 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV
AREA : Gross = 229 Net = 41 +/- 58
CENTROID: 3554.86 = 889.20keV
SHAPE: FWHM = 0.33 FW(1/5)M = 0.57
ID: Sc-46 at 889.26keV
Corrected Rate = 24372.64 +/- 34478.36 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 94 Net = 53 +/- 18
CENTROID: 3613.00 = 903.74keV
SHAPE: FWHM = 2.83 FW(1/5)M = 3.08
ID: Kr-89 at 904.27keV
Corrected Rate = 436200.60 +/- 148143.60 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 45 Net = 1 +/- 11
CENTROID: 3638.00 = 909.99keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Ac-228 at 911.07keV
Corrected Rate = 2092.55 +/- 23018.01 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 95 Net = -6 +/- 28
CENTROID: 3675.00 = 919.24keV
SHAPE: FWHM = 8.75 FW(1/5)M = 8.90
ID: Pu-240 at 919.00keV
Corrected Rate = 0.00 +/- 0.00 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 85 Net = 41 +/- 16
CENTROID: 3737.53 = 934.88keV
SHAPE: FWHM = 0.95 FW(1/5)M = 1.18
ID: Ra-226 at 934.10keV
Corrected Rate = 796864.98 +/- 310971.70 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 365 Net = -64 +/- 116
CENTROID: 3787.00 = 947.25keV
SHAPE: FWHM = 29.55 FW(1/5)M = 29.76
ID: Rb-89 at 947.69keV
Corrected Rate = 0.00 +/- 720263.75 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 131 Net = 38 +/- 34
CENTROID: 4004.00 = 1001.52keV
SHAPE: FWHM = 6.00 FW(1/5)M = 6.15

ID: Ta-182 at 1001.68keV
Corrected Rate = 1195355.77 +/- 1069528.85 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 71 Net = -17 +/- 23
CENTROID: 4090.00 = 1023.02keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Sr-91 at 1024.30keV
Corrected Rate = 0.00 +/- 46778.19 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 139 Net = 34 +/- 38
CENTROID: 4187.00 = 1047.28keV
SHAPE: FWHM = 0.29 FW(1/5)M = 1.00
ID: Cs-136 at 1048.07keV
Corrected Rate = 29093.50 +/- 32516.26 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 38 Net = 3 +/- 10
CENTROID: 4245.00 = 1061.78keV
SHAPE: FWHM = 4.50 FW(1/5)M = 4.65
ID: Bi-207 at 1063.62keV
Corrected Rate = 2701.13 +/- 9003.77 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 64 Net = -27 +/- 22
Could not properly fit the peak.

ROI # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 58 Net = -10 +/- 19
Could not properly fit the peak.

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 434 Net = -233 +/- 163
CENTROID: 4483.90 = 1121.52keV
SHAPE: FWHM = 0.90 FW(1/5)M = 1.50
ID: Ta-182 at 1121.28keV
Corrected Rate = 0.00 +/- 337900.24 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 299 Net = 214 +/- 34
CENTROID: 4696.10 = 1174.59keV
SHAPE: FWHM = 1.37 FW(1/5)M = 2.40
ID: Co-56 at 1175.13keV
Corrected Rate = 7091075.26 +/- 1126619.43 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 67 Net = -26 +/- 31
CENTROID: 4752.50 = 1188.69keV
SHAPE: FWHM = 11.48 FW(1/5)M = 11.64
ID: Ta-182 at 1189.05keV
Corrected Rate = 0.00 +/- 143826.91 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 162 Net = -10 +/- 59
CENTROID: 4954.97 = 1239.32keV
SHAPE: FWHM = 1.01 FW(1/5)M = 1.50
ID: Co-56 at 1238.28keV
Corrected Rate = 0.00 +/- 68984.62 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV

AREA : Gross = 26 Net = 1 +/- 11
CENTROID: 5009.00 = 1252.83keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Kr-88 at 1250.67keV
Corrected Rate = 70301.75 +/- 773319.27 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 30 Net = 5 +/- 11
CENTROID: 5032.00 = 1258.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ta-182 at 1257.47keV
Corrected Rate = 264343.99 +/- 581556.77 Bq

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 115 Net = 1 +/- 49
CENTROID: 5187.00 = 1297.33keV
SHAPE: FWHM = 1.00 FW(1/5)M = 1.60
ID: J-133 at 1298.90keV
Corrected Rate = 37646.20 +/- 1844663.86 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 290 Net = 108 +/- 56
CENTROID: 5333.79 = 1334.04keV
SHAPE: FWHM = 1.45 FW(1/5)M = 2.18
ID: Co-60 at 1332.51keV
Corrected Rate = 90962.69 +/- 47165.84 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 23 Net = -9 +/- 10
CENTROID: 5376.00 = 1344.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-138 at 1343.59keV
Corrected Rate = 0.00 +/- 741368.37 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 17 Net = -6 +/- 8
Could not properly fit the peak.

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 116 Net = 75 +/- 29
CENTROID: 5512.40 = 1378.69keV
SHAPE: FWHM = 1.42 FW(1/5)M = 2.21
ID: Bi-214 at 1377.65keV
Corrected Rate = 1616931.87 +/- 625213.66 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 73 Net = 29 +/- 24
CENTROID: 5634.00 = 1409.10keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.48
ID: Eu-152 at 1408.08keV
Corrected Rate = 120758.32 +/- 99937.92 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 43 Net = 33 +/- 11
CENTROID: 5745.00 = 1436.85keV
SHAPE: FWHM = 1.25 FW(1/5)M = 1.48
ID: Sb-124 at 1436.60keV
Corrected Rate = 2745877.17 +/- 915292.39 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 33 Net = 2 +/- 16

CENTROID: 5846.00 = 1462.10keV
SHAPE: FWHM = 1.06 FW(1/5)M = 1.30
ID: K-40 at 1460.70keV
Corrected Rate = 17088.60 +/- 136708.81 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 28 Net = 1 +/- 12
CENTROID: 5879.00 = 1470.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-89 at 1472.76keV
Corrected Rate = 13079.57 +/- 156954.81 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 61 Net = 32 +/- 20
CENTROID: 6043.83 = 1511.56keV
SHAPE: FWHM = 0.40 FW(1/5)M = 0.69
ID: U-238 at 1510.30keV
Corrected Rate = 233325238.11 +/- 145828273.82 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 62 Net = -28 +/- 38
CENTROID: 6099.00 = 1525.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: K-42 at 1524.70keV
Corrected Rate = 0.00 +/- 200857.53 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 17 Net = 7 +/- 6
CENTROID: 6208.00 = 1552.60keV
SHAPE: FWHM = 3.63 FW(1/5)M = 3.85
ID: U-238 at 1553.74keV
Corrected Rate = 83317907.85 +/- 71415349.58 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 35 Net = -23 +/- 24
CENTROID: 6286.00 = 1572.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rh-106M at 1572.10keV
Corrected Rate = 0.00 +/- 449796.34 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 8 Net = -8 +/- 7
Could not properly fit the peak.

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 19 Net = 2 +/- 9
CENTROID: 6373.00 = 1593.85keV
SHAPE: FWHM = 1.87 FW(1/5)M = 2.35
ID: La-140 at 1596.20keV
Corrected Rate = 2062.32 +/- 9280.43 Bq

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 12 Net = -7 +/- 12
Could not properly fit the peak.

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 11 Net = 1 +/- 6
CENTROID: 6513.00 = 1628.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 1630.40keV
Corrected Rate = 51446.62 +/- 308679.72 Bq

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 10 Net = -10 +/- 8
Could not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 23 Net = 23 +/- 4
CENTROID: 6637.00 = 1659.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1661.28keV
Corrected Rate = 2038263.33 +/- 354480.58 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 4 Net = -1 +/- 4
Could not properly fit the peak.

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 7 Net = 7 +/- 2
Could not properly fit the peak.

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 7 Net = 2 +/- 4
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 31 Net = 11 +/- 13
CENTROID: 6921.70 = 1731.02keV
SHAPE: FWHM = 1.30 FW(1/5)M = 2.61
ID: Bi-214 at 1729.60keV
Corrected Rate = 380999.79 +/- 450272.48 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 9 Net = 1 +/- 7
CENTROID: 6962.00 = 1741.10keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: J-134 at 1741.40keV
Corrected Rate = 34245.51 +/- 239718.60 Bq

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 119 Net = 109 +/- 14
CENTROID: 7062.76 = 1766.28keV
SHAPE: FWHM = 1.73 FW(1/5)M = 2.96
ID: U-238 at 1765.80keV
Corrected Rate = 1541060848.83 +/- 197934420.95 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 3 Net = -2 +/- 4
Could not properly fit the peak.

ROI # 64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 2 Net = 2 +/- 1
Could not properly fit the peak.

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 9 Net = 9 +/- 3
CENTROID: 7362.00 = 1841.09keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: Rh-106M at 1838.20keV
Corrected Rate = 417234.92 +/- 139078.31 Bq

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV

AREA : Gross = 19 Net = 11 +/- 7
CENTROID: 7396.45 = 1849.70keV
SHAPE: FWHM = 0.53 FW(1/5)M = 0.79
ID: Xe-138 at 1850.86keV
Corrected Rate = 864608.33 +/- 550205.30 Bq

67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 8 Net = 8 +/- 2
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 14 Net = 3 +/- 10
CENTROID: 7604.00 = 1901.58keV
SHAPE: FWHM = 11.75 FW(1/5)M = 11.90
ID: Kr-89 at 1903.40keV
Corrected Rate = 324262.67 +/- 1080875.57 Bq

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 3 Net = -3 +/- 4
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 6 Net = 6 +/- 2
CENTROID: 8028.00 = 2007.56keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: Rb-89 at 2007.54keV
Corrected Rate = 276332.18 +/- 92110.73 Bq

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 3 Net = 3 +/- 1
Could not properly fit the peak.

Detector #1 ACQ 29-Jan-2002 at 13:11:50 RT = 5.0 LT = 3.5
digiDART USE 1b
SC22-2

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 12015 Net = 7905 +/- 669
CENTROID: 487.88 = 122.02keV
SHAPE: FWHM = 0.91 FW(1/5)M = 1.55
ID: Co-57 at 122.07keV
Corrected Rate = 1677893.11 +/- 142000.06 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 581 Net = -35 +/- 71
CENTROID: 709.00 = 177.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-136 at 176.56keV
Corrected Rate = 0.00 +/- 105038.02 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 4060 Net = 402 +/- 530
CENTROID: 979.24 = 244.95keV
SHAPE: FWHM = 1.04 FW(1/5)M = 1.68
ID: Eu-152 at 244.70keV
Corrected Rate = 1280106.33 +/- 1687702.37 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 2120 Net = 1015 +/- 189
CENTROID: 1377.70 = 344.63keV
SHAPE: FWHM = 1.20 FW(1/5)M = 1.75
ID: Pu-239 at 344.96keV
Corrected Rate = 56292926293.51 +/- 10482131102.93 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 330 Net = 62 +/- 54
CENTROID: 1466.92 = 366.95keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.44
ID: Mo-99 at 366.44keV
Corrected Rate = 1681297.63 +/- 1464356.00 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 1442 Net = 14 +/- 267
CENTROID: 1776.42 = 444.38keV
SHAPE: FWHM = 1.26 FW(1/5)M = 2.09
ID: Eu-152 at 444.00keV
Corrected Rate = 197459.82 +/- 3765840.93 Bq

ROI # 7 RANGE: 1824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 149 Net = -7 +/- 29
CENTROID: 1844.88 = 461.50keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.92
ID: Cs-138 at 462.79keV
Corrected Rate = 0.00 +/- 38443.51 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 476 Net = 43 +/- 90
CENTROID: 1964.00 = 491.30keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ce-143 at 490.20keV
Corrected Rate = 836742.74 +/- 1751322.02 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV

AREA : Gross = 269 Net = 44 +/- 42
CENTROID: 2026.00 = 506.81keV
SHAPE: FWHM = 8.79 FW(1/5)M = 9.62
ID: Pa-234 at 506.80keV
Corrected Rate = 1384181.35 +/- 1321264.01 Bq

I # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 236 Net = 60 +/- 41
CENTROID: 2116.78 = 529.51keV
SHAPE: FWHM = 0.35 FW(1/5)M = 0.88
ID: J-133 at 529.50keV
Corrected Rate = 31349.66 +/- 21422.27 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 711 Net = -65 +/- 149
CENTROID: 2260.00 = 565.34keV
SHAPE: FWHM = 4.50 FW(1/5)M = 4.65
ID: J-134 at 566.00keV
Corrected Rate = 0.00 +/- 5959206.85 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 117 Net = 21 +/- 20
CENTROID: 2344.12 = 586.38keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.64
ID: Kr-89 at 585.80keV
Corrected Rate = 61925.41 +/- 58976.58 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 142 Net = 70 +/- 20
CENTROID: 2367.81 = 592.30keV
SHAPE: FWHM = 0.55 FW(1/5)M = 1.97
ID: Eu-154 at 591.70keV
Corrected Rate = 764879.95 +/- 218537.13 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 233 Net = 26 +/- 43
CENTROID: 2437.92 = 609.84keV
SHAPE: FWHM = 1.29 FW(1/5)M = 1.61
ID: Ru-103 at 610.33keV
Corrected Rate = 253192.86 +/- 418742.04 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 911 Net = -16 +/- 204
CENTROID: 2648.50 = 662.51keV
SHAPE: FWHM = 0.96 FW(1/5)M = 1.16
ID: Cs-137 at 661.60keV
Corrected Rate = 0.00 +/- 133309.23 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 1071 Net = 408 +/- 183
CENTROID: 2894.86 = 724.13keV
SHAPE: FWHM = 1.74 FW(1/5)M = 2.95
ID: Zr-95 at 724.18keV
Corrected Rate = 551492.06 +/- 247360.41 Bq

' # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 590 Net = 248 +/- 80
CENTROID: 3117.49 = 779.81keV
SHAPE: FWHM = 1.15 FW(1/5)M = 2.11
ID: J-132 at 780.20keV
Corrected Rate = 12840437.01 +/- 4142076.45 Bq

ROI # 18. RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 507 Net = -24 +/- 130
CENTROID: 3162.11 = 790.97keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.59
ID: Rh-106M at 792.90keV
Corrected Rate = 0.00 +/- 1305100.93 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 201 Net = 5 +/- 50
CENTROID: 3409.00 = 852.72keV
SHAPE: FWHM = 1.29 FW(1/5)M = 2.13
ID: U-238 at 851.57keV
Corrected Rate = 57209463.47 +/- 572094634.75 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV
AREA : Gross = 361 Net = 97 +/- 69
CENTROID: 3471.25 = 868.28keV
SHAPE: FWHM = 0.76 FW(1/5)M = 1.44
ID: La-140 at 867.86keV
Corrected Rate = 1262763.64 +/- 898254.55 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 105 Net = 15 +/- 25
CENTROID: 3595.00 = 899.23keV
SHAPE: FWHM = 7.54 FW(1/5)M = 7.75
ID: U-238 at 898.67keV
Corrected Rate = 207403904.83 +/- 345673174.71 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 44 Net = 24 +/- 9
CENTROID: 3646.00 = 911.99keV
SHAPE: FWHM = 1.53 FW(1/5)M = 1.69
ID: Th-232 at 911.10keV
Corrected Rate = 67677.89 +/- 25379.21 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 120 Net = 37 +/- 26
CENTROID: 3708.22 = 927.55keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.63
ID: Pa-234 at 926.70keV
Corrected Rate = 248313.97 +/- 174490.90 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 92 Net = 54 +/- 16
CENTROID: 3737.77 = 934.94keV
SHAPE: FWHM = 0.54 FW(1/5)M = 2.01
ID: Ra-226 at 934.10keV
Corrected Rate = 1258242.74 +/- 372812.66 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 607 Net = 211 +/- 113
CENTROID: 3859.42 = 965.36keV
SHAPE: FWHM = 1.45 FW(1/5)M = 2.18
ID: Th-232 at 964.77keV
Corrected Rate = 2931873.79 +/- 1570150.42 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 190 Net = 30 +/- 44
CENTROID: 4022.58 = 1006.16keV
SHAPE: FWHM = 1.43 FW(1/5)M = 2.57

ID: Eu-152 at 1005.30keV
Corrected Rate = 3711436.71 +/- 5443440.51 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 70 Net = -3 +/- 21
CENTROID: 4076.00 = 1019.52keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Rh-106M at 1019.60keV
Corrected Rate = 0.00 +/- 1095741.60 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 141 Net = 36 +/- 38
CENTROID: 4172.86 = 1043.74keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.74
ID: Br-82 at 1044.00keV
Corrected Rate = 105163.81 +/- 111006.25 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 41 Net = 2 +/- 11
CENTROID: 4253.55 = 1063.92keV
SHAPE: FWHM = 2.21 FW(1/5)M = 2.39
ID: Bi-207 at 1063.62keV
Corrected Rate = 2158.86 +/- 11873.72 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 61 Net = 19 +/- 16
CENTROID: 4288.48 = 1072.66keV
SHAPE: FWHM = 0.50 FW(1/5)M = 1.25
ID: J-134 at 1072.53keV
Corrected Rate = 111230.27 +/- 93667.59 Bq

I # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 258 Net = 190 +/- 24
CENTROID: 4347.00 = 1087.29keV
SHAPE: FWHM = 1.31 FW(1/5)M = 2.31
ID: Eu-152 at 1085.90keV
Corrected Rate = 1606052.52 +/- 202869.79 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 588 Net = 213 +/- 124
CENTROID: 4451.65 = 1113.46keV
SHAPE: FWHM = 1.71 FW(1/5)M = 2.51
ID: Xe-138 at 1114.29keV
Corrected Rate = 12502020.03 +/- 7278171.29 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 80 Net = 19 +/- 26
CENTROID: 4726.00 = 1182.06keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-88 at 1179.51keV
Corrected Rate = 1712732.56 +/- 2343739.29 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 93 Net = -35 +/- 36
CENTROID: 4753.50 = 1188.94keV
SHAPE: FWHM = 1.73 FW(1/5)M = 1.89
ID: Ta-182 at 1189.05keV
Corrected Rate = 0.00 +/- 200239.96 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 197 Net = -61 +/- 72

CENTROID: 4859.00 = 1215.32keV
SHAPE: FWHM = 24.62 FW(1/5)M = 25.13
ID: As-76 at 1216.25keV
Corrected Rate = 0.00 +/- 1815597.25 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 40 Net = 3 +/- 13
CENTROID: 5005.00 = 1251.83keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-88 at 1250.67keV
Corrected Rate = 252846.64 +/- 1095668.77 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 29 Net = -28 +/- 16
Could not properly fit the peak.

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 193 Net = 170 +/- 25
CENTROID: 5101.97 = 1276.07keV
SHAPE: FWHM = 1.77 FW(1/5)M = 2.11
ID: Eu-154 at 1274.80keV
Corrected Rate = 465301.82 +/- 68426.74 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 65 Net = -8 +/- 35
CENTROID: 5243.00 = 1311.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Tb-160 at 1312.12keV
Corrected Rate = 0.00 +/- 1173947.05 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 14 Net = 5 +/- 6
CENTROID: 5364.00 = 1341.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-138 at 1343.59keV
Corrected Rate = 444399.79 +/- 533279.75 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 14 Net = 0 +/- 7
CENTROID: 5403.00 = 1351.34keV
SHAPE: FWHM = 0.50 FW(1/5)M = 0.80
ID: U-238 at 1352.90keV
Corrected Rate = 0.00 +/- 325459386.16 Bq

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 102 Net = 19 +/- 40
CENTROID: 5512.00 = 1378.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1377.65keV
Corrected Rate = 491081.81 +/- 1033856.44 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 351 Net = 75 +/- 61
CENTROID: 5636.98 = 1409.84keV
SHAPE: FWHM = 1.63 FW(1/5)M = 2.27
ID: Eu-152 at 1408.08keV
Corrected Rate = 374412.32 +/- 304522.02 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 23 Net = 13 +/- 10
CENTROID: 5734.50 = 1434.22keV

SHAPE: FWHM = 5.96 FW(1/5)M = 6.78
ID: U-238 at 1434.30keV
Corrected Rate = 144486365.79 +/- 111143358.30 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 41 Net = 21 +/- 14
CENTROID: 5828.00 = 1457.60keV
SHAPE: FWHM = 0.33 FW(1/5)M = 1.23
ID: J-135 at 1457.56keV
Corrected Rate = 265251.95 +/- 176834.64 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 17 Net = 3 +/- 9
CENTROID: 5912.00 = 1478.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.88
ID: Ag-110M at 1475.76keV
Corrected Rate = 82932.00 +/- 248796.01 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 50 Net = 21 +/- 20
CENTROID: 5980.00 = 1495.60keV
SHAPE: FWHM = 12.25 FW(1/5)M = 12.40
ID: Ac-228 at 1495.80keV
Corrected Rate = 2231330.83 +/- 2125076.98 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 51 Net = -3 +/- 30
CENTROID: 6161.00 = 1540.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rb-89 at 1538.08keV
Corrected Rate = 0.00 +/- 1225422.48 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 16 Net = 1 +/- 7
CENTROID: 6208.00 = 1552.60keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: U-238 at 1553.74keV
Corrected Rate = 14269544.28 +/- 99886809.98 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 25 Net = 13 +/- 11
CENTROID: 6249.00 = 1562.85keV
SHAPE: FWHM = 9.88 FW(1/5)M = 10.10
ID: Ag-110M at 1562.27keV
Corrected Rate = 1271955.94 +/- 1076270.41 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 9 Net = 4 +/- 5
CENTROID: 6340.00 = 1585.60keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 1587.90keV
Corrected Rate = 126605.61 +/- 158257.01 Bq

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 18 Net = 1 +/- 8
ıld not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 11 Net = 11 +/- 3
Could not properly fit the peak.

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 8 Net = 3 +/- 4
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 7 Net = -3 +/- 6
ld not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 22 Net = -17 +/- 18
CENTROID: 6650.00 = 1663.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1661.28keV
Corrected Rate = 0.00 +/- 1912382.44 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 6 Net = 1 +/- 4
CENTROID: 6710.00 = 1678.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-135 at 1678.03keV
Corrected Rate = 12940.68 +/- 51762.72 Bq

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 9 Net = -5 +/- 8
CENTROID: 6779.00 = 1695.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 1694.00keV
Corrected Rate = 0.00 +/- 764696.79 Bq

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 4 Net = -1 +/- 4
uld not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 18 Net = 8 +/- 9
CENTROID: 6921.45 = 1730.96keV
SHAPE: FWHM = 0.54 FW(1/5)M = 1.82
ID: Bi-214 at 1729.60keV
Corrected Rate = 332194.04 +/- 373718.29 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 5 Net = -3 +/- 6
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 98 Net = 68 +/- 18
CENTROID: 7064.18 = 1766.64keV
SHAPE: FWHM = 0.86 FW(1/5)M = 2.07
ID: U-238 at 1765.80keV
Corrected Rate = 1152582415.50 +/- 305095345.28 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 5 Net = 0 +/- 4
Could not properly fit the peak.

64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 9 Net = 9 +/- 3

Could not properly fit the peak.

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV
AREA : Gross = 20 Net = 20 +/- 4
CENTROID: 7394.00 = 1849.08keV
SHAPE: FWHM = 0.75 FW(1/5)M = 0.90
ID: Bi-214 at 1847.44keV
Corrected Rate = 1262087.04 +/- 252417.41 Bq

ROI # 67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 9 Net = 9 +/- 3
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 9 Net = -12 +/- 13
Could not properly fit the peak.

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 1 Net = 1 +/- 1
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 8 Net = 8 +/- 2
Could not properly fit the peak.

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 1 Net = 1 +/- 1
Could not properly fit the peak.

Detector #1 ACQ 29-Jan-2002 at 13:10:27 RT = 5.0 LT = 2.9
digiDART USE 1b
SC21-2

ROI # 1 RANGE: 22 = 5.27keV to 674 = 168.30keV
AREA : Gross = 10324 Net = 4012 +/- 827
CENTROID: 49.64 = 12.18keV
SHAPE: FWHM = 9.68 FW(1/5)M = 22.12
No close library match.

ROI # 2 RANGE: 697 = 174.05keV to 754 = 188.31keV
AREA : Gross = 1066 Net = 61 +/- 93
CENTROID: 729.10 = 182.08keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.54
No close library match.

ROI # 3 RANGE: 761 = 190.06keV to 1229 = 307.05keV
AREA : Gross = 6924 Net = -502 +/- 756
CENTROID: 1074.00 = 268.31keV
SHAPE: FWHM = 24.50 FW(1/5)M = 24.65
No close library match.

ROI # 4 RANGE: 1239 = 309.55keV to 1435 = 358.54keV
AREA : Gross = 1823 Net = 148 +/- 231
CENTROID: 1389.91 = 347.27keV
SHAPE: FWHM = 9.69 FW(1/5)M = 9.91
No close library match.

ROI # 5 RANGE: 1440 = 359.79keV to 1510 = 377.29keV
AREA : Gross = 585 Net = -78 +/- 84
CENTROID: 1475.00 = 368.54keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 6 RANGE: 1513 = 378.04keV to 1820 = 454.76keV
AREA : Gross = 4462 Net = 2460 +/- 321
CENTROID: 1736.44 = 433.88keV
SHAPE: FWHM = 1.23 FW(1/5)M = 1.89
No close library match.

ROI # 7 RANGE: 1826 = 456.26keV to 1865 = 466.01keV
AREA : Gross = 275 Net = 55 +/- 36
CENTROID: 1829.00 = 457.01keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 8 RANGE: 1888 = 471.75keV to 2005 = 500.99keV
AREA : Gross = 811 Net = 24 +/- 121
CENTROID: 1917.85 = 479.21keV
SHAPE: FWHM = 0.38 FW(1/5)M = 2.66
No close library match.

ROI # 9 RANGE: 2015 = 503.49keV to 2068 = 516.73keV
AREA : Gross = 411 Net = 69 +/- 52
CENTROID: 2042.62 = 510.39keV
SHAPE: FWHM = 0.49 FW(1/5)M = 1.64
No close library match.

ROI # 10 RANGE: 2074 = 518.23keV to 2135 = 533.47keV
AREA : Gross = 404 Net = 22 +/- 59
CENTROID: 2124.53 = 530.86keV
SHAPE: FWHM = 0.43 FW(1/5)M = 0.62
No close library match.

ROI # 11 RANGE: 2141 = 534.97keV to 2319 = 579.45keV
AREA : Gross = 889 Net = 24 +/- 158
CENTROID: 2246.00 = 561.21keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 12 RANGE: 2324 = 580.69keV to 2354 = 588.19keV
AREA : Gross = 133 Net = -1 +/- 23
CENTROID: 2348.00 = 586.69keV
SHAPE: FWHM = 0.75 FW(1/5)M = 0.90
No close library match.

ROI # 13 RANGE: 2358 = 589.19keV to 2453 = 612.92keV
AREA : Gross = 453 Net = -459 +/- 114
Could not properly fit the peak.

ROI # 14 RANGE: 2455 = 613.42keV to 2732 = 682.62keV
AREA : Gross = 2348 Net = -18595 +/- 964
CENTROID: 2458.99 = 614.42keV
SHAPE: FWHM = 0.20 FW(1/5)M = 0.79
No close library match.

ROI # 15 RANGE: 2734 = 683.12keV to 3039 = 759.31keV
AREA : Gross = 2178 Net = 954 +/- 249
CENTROID: 2893.56 = 722.98keV
SHAPE: FWHM = 1.55 FW(1/5)M = 2.17
No close library match.

ROI # 16 RANGE: 3044 = 760.55keV to 3158 = 789.03keV
AREA : Gross = 326 Net = 38 +/- 72
CENTROID: 3151.00 = 787.28keV
SHAPE: FWHM = 0.31 FW(1/5)M = 1.37
No close library match.

ROI # 17 RANGE: 3163 = 790.28keV to 3197 = 798.77keV
AREA : Gross = 116 Net = -42 +/- 26
CENTROID: 3180.00 = 794.52keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 18 RANGE: 3199 = 799.27keV to 3360 = 839.47keV
AREA : Gross = 479 Net = -7 +/- 112
CENTROID: 3299.00 = 824.24keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.44
No close library match.

ROI # 19 RANGE: 3374 = 842.97keV to 3455 = 863.20keV
AREA : Gross = 258 Net = 53 +/- 51
CENTROID: 3403.30 = 850.29keV
SHAPE: FWHM = 0.51 FW(1/5)M = 1.08
No close library match.

ROI # 20 RANGE: 3460 = 864.45keV to 3570 = 891.91keV
AREA : Gross = 385 Net = -59 +/- 87
CENTROID: 3539.00 = 884.17keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.44
No close library match.

ROI # 21 RANGE: 3583 = 895.16keV to 3631 = 907.15keV
AREA : Gross = 144 Net = -28 +/- 34
CENTROID: 3620.00 = 904.40keV
SHAPE: FWHM = 1.25 FW(1/5)M = 1.40
No close library match.

ROI # 22 RANGE: 3636 = 908.40keV to 3658 = 913.89keV
AREA : Gross = 75 Net = -6 +/- 14
CENTROID: 3640.55 = 909.53keV
SHAPE: FWHM = 0.54 FW(1/5)M = 0.82
No close library match.

ROI # 23 RANGE: 3667 = 916.14keV to 3721 = 929.62keV
AREA : Gross = 170 Net = 23 +/- 34
CENTROID: 3715.00 = 928.12keV
SHAPE: 'HM = 0.27 FW(1/5)M = 0.44

No close library match.

ROI # 24 RANGE: 3728 = 931.37keV to 3764 = 940.36keV
AREA : Gross = 154 Net = 37 +/- 25
CENTROID: 3734.00 = 932.87keV
SHAPE: FWHM = 0.61 FW(1/5)M = 0.94
No close library match.

ROI # 25 RANGE: 3775 = 943.10keV to 3971 = 992.04keV
AREA : Gross = 584 Net = -7 +/- 137
CENTROID: 3799.00 = 949.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 26 RANGE: 3976 = 993.29keV to 4054 = 1012.76keV
AREA : Gross = 235 Net = -55 +/- 58
CENTROID: 4039.00 = 1009.02keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 27 RANGE: 4070 = 1016.75keV to 4112 = 1027.24keV
AREA : Gross = 93 Net = 21 +/- 21
CENTROID: 4108.47 = 1026.36keV
SHAPE: FWHM = 0.44 FW(1/5)M = 0.62
No close library match.

ROI # 28 RANGE: 4119 = 1028.99keV to 4207 = 1050.96keV
AREA : Gross = 229 Net = -8 +/- 57
CENTROID: 4193.00 = 1047.46keV
SHAPE: FWHM = 1.36 FW(1/5)M = 2.62
No close library match.

ROI # 29 RANGE: 4246 = 1060.69keV to 4270 = 1066.68keV
AREA : Gross = 67 Net = 4 +/- 14
CENTROID: 4256.17 = 1063.23keV
SHAPE: FWHM = 0.36 FW(1/5)M = 1.09
No close library match.

ROI # 30 RANGE: 4282 = 1069.68keV to 4322 = 1079.66keV
AREA : Gross = 84 Net = -39 +/- 26
CENTROID: 4319.00 = 1078.92keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 31 RANGE: 4335 = 1082.91keV to 4375 = 1092.89keV
AREA : G s = 101 Net = -2 +/- 24

CENTROID: 4340.00 = 1084.16keV
SHAPE: FWHM = 6.49 FW(1/5)M = 6.64
No close library match.

ROI # 32 RANGE: 4388 = 1096.14keV to 4637 = 1158.29keV
AREA : Gross = 550 Net = -117 +/- 164
CENTROID: 4484.08 = 1120.12keV
SHAPE: FWHM = 0.41 FW(1/5)M = 2.04
No close library match.

ROI # 33 RANGE: 4663 = 1164.78keV to 4734 = 1182.50keV
AREA : Gross = 927 Net = 735 +/- 53
CENTROID: 4696.66 = 1173.18keV
SHAPE: FWHM = 1.71 FW(1/5)M = 2.61
No close library match.

ROI # 34 RANGE: 4748 = 1185.99keV to 4816 = 1202.97keV
AREA : Gross = 94 Net = 36 +/- 25
CENTROID: 4757.00 = 1188.24keV
SHAPE: FWHM = 12.06 FW(1/5)M = 13.33
No close library match.

ROI # 35 RANGE: 4843 = 1209.70keV to 4970 = 1241.40keV
AREA : Gross = 150 Net = 43 +/- 47
CENTROID: 4853.00 = 1212.20keV
SHAPE: FWHM = 26.73 FW(1/5)M = 26.95
No close library match.

ROI # 36 RANGE: 4984 = 1244.89keV to 5020 = 1253.88keV
AREA : Gross = 27 Net = -4 +/- 12
CENTROID: 5016.45 = 1252.99keV
SHAPE: FWHM = 0.46 FW(1/5)M = 0.63
No close library match.

ROI # 37 RANGE: 5022 = 1254.37keV to 5059 = 1263.61keV
AREA : Gross = 24 Net = 18 +/- 7
CENTROID: 5034.00 = 1257.37keV
SHAPE: FWHM = 5.37 FW(1/5)M = 5.84
No close library match.

ROI # 38 RANGE: 5079 = 1268.60keV to 5215 = 1302.54keV
AREA : Gross = 96 Net = -64 +/- 58
CENTROID: 5098.00 = 1273.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 39 RANGE: 5240 = 1308.77keV to 5320 = 1328.74keV
AREA : Gross = 58 Net = -37 +/- 33
CENTROID: 5261.00 = 1314.01keV
SHAPE: FWHM = 11.98 FW(1/5)M = 12.13
No close library match.

ROI # 40 RANGE: 5322 = 1329.23keV to 5348 = 1335.72keV
AREA : Gross = 725 Net = 693 +/- 28
CENTROID: 5334.16 = 1332.27keV
SHAPE: FWHM = 1.71 FW(1/5)M = 2.90
No close library match.

ROI # 41 RANGE: 5366 = 1340.21keV to 5393 = 1346.95keV
AREA : Gross = 9 Net = -5 +/- 6
CENTROID: 5377.00 = 1342.96keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 42 RANGE: 5404 = 1349.69keV to 5430 = 1356.18keV
AREA : Gross = 13 Net = -1 +/- 6
Could not properly fit the peak.

ROI # 43 RANGE: 5433 = 1356.93keV to 5556 = 1387.62keV
AREA : Gross = 91 Net = 29 +/- 35
CENTROID: 5516.14 = 1377.67keV
SHAPE: FWHM = 0.32 FW(1/5)M = 0.69
No close library match.

ROI # 44 RANGE: 5567 = 1390.36keV to 5652 = 1411.57keV
AREA : Gross = 67 Net = 38 +/- 20
CENTROID: 5636.83 = 1407.78keV
SHAPE: FWHM = 0.36 FW(1/5)M = 1.49
No close library match.

ROI # 45 RANGE: 5729 = 1430.78keV to 5790 = 1446.00keV
AREA : Gross = 17 Net = -14 +/- 16
Could not properly fit the peak.

ROI # 46 RANGE: 5803 = 1449.24keV to 5863 = 1464.21keV
AREA : Gross = 24 Net = 4 +/- 13
CENTROID: 5849.00 = 1460.71keV
SHAPE: FWHM = 0.31 FW(1/5)M = 1.30
No close library match.

ROI # 47 RANGE: 5883 = 1469.20keV to 5923 = 1479.17keV
AREA : ss = 22 Net = 1 +/- 11

CENTROID: 5892.00 = 1471.44keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 48 RANGE: 5976 = 1492.39keV to 6062 = 1513.85keV
AREA : Gross = 50 Net = 35 +/- 15
CENTROID: 5989.00 = 1495.64keV
SHAPE: FWHM = 0.29 FW(1/5)M = 1.50
No close library match.

ROI # 49 RANGE: 6066 = 1514.84keV to 6173 = 1541.53keV
AREA : Gross = 36 Net = 18 +/- 18
CENTROID: 6070.00 = 1515.84keV
SHAPE: FWHM = 19.21 FW(1/5)M = 19.36
No close library match.

ROI # 50 RANGE: 6208 = 1550.26keV to 6236 = 1557.25keV
AREA : Gross = 7 Net = -3 +/- 5
Could not properly fit the peak.

ROI # 51 RANGE: 6242 = 1558.74keV to 6310 = 1575.70keV
AREA : Gross = 23 Net = -12 +/- 18
CENTROID: 6292.00 = 1571.21keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
No close library match.

ROI # 52 RANGE: 6344 = 1584.18keV to 6375 = 1591.91keV
AREA : Gross = 8 Net = 8 +/- 2
CENTROID: 6349.00 = 1585.43keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 53 RANGE: 6377 = 1592.41keV to 6411 = 1600.89keV
AREA : Gross = 16 Net = 4 +/- 7
CENTROID: 6382.00 = 1593.66keV
SHAPE: FWHM = 5.49 FW(1/5)M = 5.64
No close library match.

ROI # 54 RANGE: 6448 = 1610.12keV to 6505 = 1624.33keV
AREA : Gross = 16 Net = 6 +/- 9
Could not properly fit the peak.

ROI # 55 RANGE: 6514 = 1626.58keV to 6544 = 1634.06keV
AREA : Gross = 8 Net = -13 +/- 8
Could not properly fit the peak.

ROI # 56 RANGE: 6562 = 1638.55keV to 6592 = 1646.03keV
AREA : Gross = 12 Net = 2 +/- 6
CENTROID: 6588.00 = 1645.03keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
No close library match.

ROI # 57 RANGE: 6638 = 1657.50keV to 6697 = 1672.21keV
AREA : Gross = 25 Net = -15 +/- 18
Could not properly fit the peak.

ROI # 58 RANGE: 6705 = 1674.21keV to 6736 = 1681.94keV
AREA : Gross = 7 Net = -4 +/- 6
Could not properly fit the peak.

ROI # 59 RANGE: 6757 = 1687.18keV to 6800 = 1697.90keV
AREA : Gross = 13 Net = 6 +/- 7
CENTROID: 6768.00 = 1689.92keV
SHAPE: FWHM = 2.49 FW(1/5)M = 2.64
No close library match.

ROI # 60 RANGE: 6819 = 1702.64keV to 6850 = 1710.37keV
AREA : Gross = 8 Net = -8 +/- 7
CENTROID: 6833.00 = 1706.13keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 61 RANGE: 6882 = 1718.35keV to 6943 = 1733.56keV
AREA : Gross = 27 Net = 27 +/- 5
CENTROID: 6925.64 = 1729.23keV
SHAPE: FWHM = 1.10 FW(1/5)M = 1.83
No close library match.

ROI # 62 RANGE: 6945 = 1734.05keV to 6990 = 1745.27keV
AREA : Gross = 11 Net = 3 +/- 7
Could not properly fit the peak.

ROI # 63 RANGE: 7051 = 1760.48keV to 7111 = 1775.44keV
AREA : Gross = 97 Net = 77 +/- 16
CENTROID: 7064.72 = 1763.90keV
SHAPE: FWHM = 2.21 FW(1/5)M = 2.79
No close library match.

ROI # 64 RANGE: 7158 = 1787.16keV to 7190 = 1795.14keV
AREA : Gross = 5 Net = 5 +/- 2
CENTROID: 7177.00 = 1791.90keV
SHAPE VHM = 0.25 FW(1/5)M = 0.40

No close library match.

ROI # 65 RANGE: 7221 = 1802.87keV to 7271 = 1815.33keV
AREA : Gross = 3 Net = -6 +/- 7
Could not properly fit the peak.

ROI # 66 RANGE: 7320 = 1827.55keV to 7379 = 1842.26keV
AREA : Gross = 12 Net = 2 +/- 9
CENTROID: 7356.00 = 1836.52keV
SHAPE: FWHM = 0.37 FW(1/5)M = 1.10
No close library match.

ROI # 67 RANGE: 7383 = 1843.25keV to 7430 = 1854.97keV
AREA : Gross = 25 Net = 25 +/- 5
CENTROID: 7398.12 = 1847.02keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.64
No close library match.

ROI # 68 RANGE: 7464 = 1863.45keV to 7526 = 1878.90keV
AREA : Gross = 7 Net = 7 +/- 2
Could not properly fit the peak.

ROI # 69 RANGE: 7607 = 1899.09keV to 7673 = 1915.54keV
AREA : Gross = 3 Net = 3 +/- 1
Could not properly fit the peak.

ROI # 70 RANGE: 7678 = 1916.79keV to 7712 = 1925.26keV
AREA : Gross = 6 Net = 6 +/- 2
Could not properly fit the peak.

ROI # 71 RANGE: 8003 = 1997.79keV to 8093 = 2020.22keV
AREA : Gross = 10 Net = -5 +/- 14
CENTROID: 8070.00 = 2014.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 72 RANGE: 8114 = 2025.46keV to 8172 = 2039.91keV
AREA : Gross = 7 Net = 7 +/- 2
Could not properly fit the peak.

Detector #1 A 29-Jan-2002 at 9:34:48 RT = 5.0 LT = 4.2
digiDART USE 1b
SC20

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 5278 Net = 2898 +/- 507
CENTROID: 288.17 = 72.06keV
SHAPE: FWHM = 0.71 FW(1/5)M = 1.09
ID: W-187 at 72.00keV
Corrected Rate = 3797056.89 +/- 664288.42 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 434 Net = 51 +/- 56
CENTROID: 702.77 = 175.79keV
SHAPE: FWHM = 0.32 FW(1/5)M = 0.57
ID: Sb-125 at 176.29keV
Corrected Rate = 136420.29 +/- 149794.82 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 2782 Net = -176 +/- 476
CENTROID: 770.00 = 192.61keV
SHAPE: FWHM = 54.04 FW(1/5)M = 54.19
ID: Fe-59 at 192.34keV
Corrected Rate = 0.00 +/- 2679731.26 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 902 Net = 349 +/- 133
CENTROID: 1250.00 = 312.69keV
SHAPE: FWHM = 0.31 FW(1/5)M = 1.25
ID: Np-237 at 311.90keV
Corrected Rate = 247395.00 +/- 94279.47 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 320 Net = 75 +/- 51
CENTROID: 1462.39 = 365.82keV
SHAPE: FWHM = 0.48 FW(1/5)M = 0.73
ID: Mo-99 at 366.44keV
Corrected Rate = 1704541.37 +/- 1159088.13 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 1339 Net = 217 +/- 237
CENTROID: 1808.08 = 452.29keV
SHAPE: FWHM = 0.41 FW(1/5)M = 3.12
ID: Te-131 at 452.32keV
Corrected Rate = 399041.78 +/- 435819.83 Bq

ROI # 7 RANG 824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 157 Net = 20 +/- 27
CENTROID: 1858.00 = 464.78keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Sb-125 at 463.51keV
Corrected Rate = 68417.64 +/- 92363.82 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 430 Net = 37 +/- 85
CENTROID: 1889.86 = 472.75keV
SHAPE: FWHM = 23.75 FW(1/5)M = 24.05
ID: Rh-106M at 474.20keV
Corrected Rate = 672152.28 +/- 1544133.61 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV
AREA : Gross = 210 Net = 48 +/- 36
CENTROID: 2046.00 = 511.81keV
SHAPE: FWHM = 0.44 FW(1/5)M = 1.86
ID: Rh-106M at 511.80keV
Corrected Rate = 20678.68 +/- 15509.01 Bq

ROI # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 216 Net = -11 +/- 45
CENTROID: 2083.14 = 521.10keV
SHAPE: FWHM = 0.33 FW(1/5)M = 0.57
ID: Pa-234 at 521.00keV
Corrected Rate = 0.00 +/- 1417169.99 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 468 Net = 199 +/- 89
CENTROID: 2196.18 = 549.37keV
SHAPE: FWHM = 0.33 FW(1/5)M = 1.34
ID: W-187 at 551.52keV
Corrected Rate = 1448547.83 +/- 647843.00 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 79 Net = -28 +/- 20
CENTROID: 2336.00 = 584.35keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Th-232 at 583.17keV
Corrected Rate = 0.00 +/- 28994.06 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 106 Net = 4 +/- 22
CENTROID: 2370.00 = 592.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40

ID: Sb-12 593.00keV
Corrected Rate = 19183.94 +/- 105511.66 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 191 Net = -45 +/- 45
CENTROID: 2437.92 = 609.84keV
SHAPE: FWHM = 0.41 FW(1/5)M = 1.48
ID: Ru-103 at 610.33keV
Corrected Rate = 0.00 +/- 367268.77 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 1390 Net = 973 +/- 140
CENTROID: 2647.64 = 662.30keV
SHAPE: FWHM = 1.19 FW(1/5)M = 1.97
ID: Cs-137 at 661.60keV
Corrected Rate = 532888.39 +/- 76674.59 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 543 Net = -18 +/- 167
CENTROID: 2804.00 = 701.40keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.48
ID: Nb-94 at 702.50keV
Corrected Rate = 0.00 +/- 81471.78 Bq

ROI # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 174 Net = 41 +/- 49
CENTROID: 3073.00 = 768.68keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Ra-226 at 768.40keV
Corrected Rate = 434589.88 +/- 519387.90 Bq

ROI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 305 Net = 239 +/- 48
CENTROID: 3273.00 = 818.70keV
SHAPE: FWHM = 15.92 FW(1/5)M = 17.38
ID: Cs-136 at 818.50keV
Corrected Rate = 132915.78 +/- 26694.38 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 127 Net = -13 +/- 42
CENTROID: 3379.00 = 845.21keV
SHAPE: FWHM = 1.31 FW(1/5)M = 1.55
ID: Kr-87 at 845.60keV
Corrected Rate = 0.00 +/- 331307.13 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV

AREA : ss = 173 Net = 41 +/- 48
CENTROID: 3463.00 = 866.22keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.95
ID: Kr-89 at 867.08keV
Corrected Rate = 396595.89 +/- 464307.38 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 61 Net = 12 +/- 19
CENTROID: 3597.83 = 899.94keV
SHAPE: FWHM = 0.36 FW(1/5)M = 1.24
ID: U-238 at 898.67keV
Corrected Rate = 139059380.00 +/- 220177351.66 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 24 Net = 4 +/- 8
CENTROID: 3637.00 = 909.74keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 911.07keV
Corrected Rate = 8410.05 +/- 16820.09 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 59 Net = 13 +/- 19
CENTROID: 3695.00 = 924.24keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 924.60keV
Corrected Rate = 286697.50 +/- 419019.43 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 62 Net = -14 +/- 19
CENTROID: 3728.00 = 932.50keV
SHAPE: FWHM = 3.38 FW(1/5)M = 4.10
ID: Bi-214 at 934.05keV
Corrected Rate = 0.00 +/- 373950.96 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 228 Net = -36 +/- 91
CENTROID: 3813.00 = 953.75keV
SHAPE: FWHM = 6.50 FW(1/5)M = 6.65
ID: Sb-126 at 954.20keV
Corrected Rate = 0.00 +/- 4123991.34 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 85 Net = 45 +/- 23
CENTROID: 4010.17 = 1003.06keV
SHAPE: FWHM = 0.36 FW(1/5)M = 2.49
ID: Tb-160 at 1002.89keV

Correct ate = 2865341.10 +/- 1464507.67 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 48 Net = 4 +/- 16
CENTROID: 4081.00 = 1020.77keV
SHAPE: FWHM = 4.75 FW(1/5)M = 4.90
ID: Rh-106M at 1019.60keV
Corrected Rate = 174921.11 +/- 699684.43 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 97 Net = 37 +/- 29
CENTROID: 4141.00 = 1035.78keV
SHAPE: FWHM = 13.30 FW(1/5)M = 13.75
ID: Sb-126 at 1034.80keV
Corrected Rate = 2288308.89 +/- 1793539.40 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 32 Net = -16 +/- 11
Could not properly fit the peak.

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 43 Net = 1 +/- 15
CENTROID: 4306.50 = 1077.16keV
SHAPE: FWHM = 0.46 FW(1/5)M = 0.64
ID: Rb-86 at 1076.63keV
Corrected Rate = 8035.67 +/- 120535.02 Bq

ROI # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 31 Net = -17 +/- 16
CENTROID: 4347.00 = 1087.29keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Eu-152 at 1085.90keV
Corrected Rate = 0.00 +/- 113349.47 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 308 Net = 100 +/- 92
CENTROID: 4483.36 = 1121.39keV
SHAPE: FWHM = 1.10 FW(1/5)M = 1.91
ID: Ta-182 at 1121.28keV
Corrected Rate = 208287.91 +/- 191624.87 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 65 Net = -20 +/- 30
CENTROID: 4675.00 = 1169.31keV
SHAPE: FWHM = 0.63 FW(1/5)M = 0.85
ID: Cs-134 at 1167.86keV

Correct ate = 0.00 +/- 1258405.81 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 43 Net = -50 +/- 30
Could not properly fit the peak.

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 157 Net = 92 +/- 37
CENTROID: 4955.21 = 1239.38keV
SHAPE: FWHM = 1.61 FW(1/5)M = 2.56
ID: Co-56 at 1238.28keV
Corrected Rate = 108081.47 +/- 43467.55 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 27 Net = 8 +/- 10
CENTROID: 4982.00 = 1246.07keV
SHAPE: FWHM = 3.38 FW(1/5)M = 3.85
ID: Rb-89 at 1248.10keV
Corrected Rate = 14876.22 +/- 18595.28 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 35 Net = -16 +/- 15
CENTROID: 5041.50 = 1260.95keV
SHAPE: FWHM = 0.48 FW(1/5)M = 0.64
ID: J-135 at 1260.41keV
Corrected Rate = 0.00 +/- 42293.73 Bq

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 101 Net = 78 +/- 24
CENTROID: 5079.00 = 1270.33keV
SHAPE: FWHM = 24.07 FW(1/5)M = 24.88
ID: Tb-160 at 1271.88keV
Corrected Rate = 834120.19 +/- 256652.37 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 71 Net = 53 +/- 19
CENTROID: 5268.00 = 1317.59keV
SHAPE: FWHM = 15.04 FW(1/5)M = 15.50
ID: Br-82 at 1317.43keV
Corrected Rate = 164458.98 +/- 58956.99 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 18 Net = 4 +/- 7
CENTROID: 5363.00 = 1341.34keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.80
ID: Cs-138 at 1343.59keV

Correcte ate = 297959.48 +/- 521429.09 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 15 Net = 1 +/- 7
CENTROID: 5419.00 = 1355.34keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Pa-234 at 1353.00keV
Corrected Rate = 50430.54 +/- 353013.78 Bq

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 105 Net = 43 +/- 35
CENTROID: 5513.39 = 1378.94keV
SHAPE: FWHM = 0.89 FW(1/5)M = 1.69
ID: Bi-214 at 1377.65keV
Corrected Rate = 931455.42 +/- 758161.39 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 80 Net = 7 +/- 31
CENTROID: 5612.00 = 1403.60keV
SHAPE: FWHM = 6.54 FW(1/5)M = 6.75
ID: Bi-214 at 1401.50keV
Corrected Rate = 446373.90 +/- 1976798.68 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 36 Net = 5 +/- 17
CENTROID: 5745.00 = 1436.85keV
SHAPE: FWHM = 8.75 FW(1/5)M = 8.90
ID: Sb-124 at 1436.60keV
Corrected Rate = 418023.15 +/- 1421278.70 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 31 Net = 21 +/- 10
CENTROID: 5802.00 = 1451.10keV
SHAPE: FWHM = 11.63 FW(1/5)M = 11.85
ID: Pa-234 at 1452.60keV
Corrected Rate = 1595338.80 +/- 759685.14 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 19 Net = -2 +/- 10
CENTROID: 5882.00 = 1471.10keV
SHAPE: FWHM = 7.75 FW(1/5)M = 7.90
ID: Kr-89 at 1472.76keV
Corrected Rate = 0.00 +/- 131418.51 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 75 Net = 31 +/- 24

CENTR(6040.62 = 1510.76keV
SHAPE: FWHM = 0.85 FW(1/5)M = 1.18
ID: U-238 at 1510.30keV
Corrected Rate = 227110175.96 +/- 175827233.00 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 55 Net = -53 +/- 42
Could not properly fit the peak.

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 18 Net = -2 +/- 8
Could not properly fit the peak.

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 24 Net = 12 +/- 11
CENTROID: 6268.00 = 1567.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: J-135 at 1566.41keV
Corrected Rate = 907343.70 +/- 831731.73 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 14 Net = 4 +/- 6
Could not properly fit the peak.

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 11 Net = 0 +/- 7
Could not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 15 Net = 15 +/- 3
CENTROID: 6480.00 = 1620.60keV
SHAPE: FWHM = 3.00 FW(1/5)M = 3.15
ID: Bi-212 at 1620.56keV
Corrected Rate = 546653.95 +/- 109330.79 Bq

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 10 Net = -15 +/- 9
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 3 Net = -2 +/- 4
Could not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 26 Net = 6 +/- 13
CENTROID: 6653.17 = 1663.89keV

SHAPE /HM = 0.36 FW(1/5)M = 0.74
ID: Bi-214 at 1661.28keV
Corrected Rate = 534252.87 +/- 1157547.89 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 9 Net = 9 +/- 3
CENTROID: 6712.00 = 1678.60keV
SHAPE: FWHM = 1.37 FW(1/5)M = 1.60
ID: J-135 at 1678.03keV
Corrected Rate = 97609.70 +/- 32536.57 Bq

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 19 Net = -9 +/- 12
Could not properly fit the peak.

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 7 Net = 2 +/- 4
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 36 Net = 6 +/- 16
CENTROID: 6923.95 = 1731.59keV
SHAPE: FWHM = 0.70 FW(1/5)M = 0.88
ID: Bi-214 at 1729.60keV
Corrected Rate = 208807.68 +/- 556820.48 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 6 Net = 6 +/- 2
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 125 Net = 125 +/- 11
CENTROID: 7061.87 = 1766.06keV
SHAPE: FWHM = 1.81 FW(1/5)M = 3.15
ID: U-238 at 1765.80keV
Corrected Rate = 1775687194.75 +/- 156260473.14 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 2 Net = -3 +/- 4
Could not properly fit the peak.

ROI # 64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 4 Net = 4 +/- 2
CENTROID: 7243.00 = 1811.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Mn-56 at 1811.20keV

Correcte ate = 16230.30 +/- 8115.15 Bq

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 8 Net = -2 +/- 9
Could not properly fit the peak.

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV
AREA : Gross = 15 Net = 15 +/- 3
CENTROID: 7396.00 = 1849.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Xe-138 at 1850.86keV
Corrected Rate = 1184625.70 +/- 236925.14 Bq

ROI # 67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 8 Net = -2 +/- 9
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 7 Net = 7 +/- 2
CENTROID: 7652.00 = 1913.57keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: U-238 at 1911.20keV
Corrected Rate = 132698125.11 +/- 37913750.03 Bq

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 9 Net = -13 +/- 9
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 7 Net = -8 +/- 13
Could not properly fit the peak.

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 2 Net = 2 +/- 1
Could not properly fit the peak.

)etector #1 A(29-Jan-2002 at 10:02:16 RT = 5.0 LT = 3.6
digiDART USE 1b
SC18

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 6534 Net = 3397 +/- 582
CENTROID: 238.50 = 59.63keV
SHAPE: FWHM = 0.98 FW(1/5)M = 1.86
ID: W-187 at 59.72keV
Corrected Rate = 8764300.95 +/- 1501567.02 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 479 Net = 78 +/- 58
CENTROID: 713.00 = 178.34keV
SHAPE: FWHM = 3.78 FW(1/5)M = 3.95
ID: Ta-182 at 179.39keV
Corrected Rate = 493095.18 +/- 366660.52 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 3811 Net = -392 +/- 567
CENTROID: 912.92 = 228.36keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.46
ID: Rh-106M at 228.50keV
Corrected Rate = 0.00 +/- 2658952.84 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 1248 Net = -52 +/- 202
CENTROID: 1386.10 = 346.73keV
SHAPE: FWHM = 0.39 FW(1/5)M = 0.78
ID: Hf-181 at 345.95keV
Corrected Rate = 0.00 +/- 441738.51 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 404 Net = -74 +/- 70
CENTROID: 1475.00 = 368.97keV
SHAPE: FWHM = 4.69 FW(1/5)M = 4.88
ID: Am-241 at 368.68keV
Corrected Rate = 0.00 +/- 4731786557.66 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 1567 Net = 88 +/- 272
CENTROID: 1527.00 = 381.98keV
SHAPE: FWHM = 65.29 FW(1/5)M = 65.44
ID: Sb-125 at 380.51keV
Corrected Rate = 2133200.53 +/- 6593528.92 Bq

ROI # 7 RANG 824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 160 Net = 10 +/- 28
CENTROID: 1831.86 = 458.24keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.62
ID: Pa-234 at 458.60keV
Corrected Rate = 265141.16 +/- 742395.24 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 510 Net = -100 +/- 106
CENTROID: 1999.77 = 500.24keV
SHAPE: FWHM = 0.32 FW(1/5)M = 0.57
ID: Kr-89 at 498.60keV
Corrected Rate = 0.00 +/- 3892403.32 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV
AREA : Gross = 267 Net = 114 +/- 36
CENTROID: 2041.00 = 510.56keV
SHAPE: FWHM = 0.45 FW(1/5)M = 2.07
ID: Th-232 at 510.69keV
Corrected Rate = 648685.31 +/- 204847.99 Bq

ROI # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 259 Net = -123 +/- 58
CENTROID: 2091.00 = 523.06keV
SHAPE: FWHM = 3.75 FW(1/5)M = 3.90
ID: J-132 at 522.65keV
Corrected Rate = 0.00 +/- 160151.05 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 755 Net = -80 +/- 154
CENTROID: 2284.47 = 571.46keV
SHAPE: FWHM = 0.44 FW(1/5)M = 0.63
ID: Bi-207 at 569.67keV
Corrected Rate = 0.00 +/- 75186.13 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 135 Net = 28 +/- 22
CENTROID: 2331.00 = 583.10keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Tl-208 at 583.14keV
Corrected Rate = 15891.60 +/- 12486.26 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 141 Net = 3 +/- 26
CENTROID: 2364.00 = 591.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40

ID: Eu-15 591.70keV
Corrected Rate = 32231.17 +/- 279336.85 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 289 Net = 102 +/- 41
CENTROID: 2437.93 = 609.84keV
SHAPE: FWHM = 1.04 FW(1/5)M = 2.20
ID: Ru-103 at 610.33keV
Corrected Rate = 976647.68 +/- 392574.07 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 1232 Net = -621 +/- 288
CENTROID: 2648.00 = 662.39keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.43
ID: Cs-137 at 661.60keV
Corrected Rate = 0.00 +/- 185047.05 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 1217 Net = -160 +/- 262
CENTROID: 2906.00 = 726.92keV
SHAPE: FWHM = 25.32 FW(1/5)M = 25.66
ID: J-132 at 727.00keV
Corrected Rate = 0.00 +/- 7019164.11 Bq

ROI # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 511 Net = -97 +/- 104
CENTROID: 3075.00 = 769.18keV
SHAPE: FWHM = 18.94 FW(1/5)M = 19.13
ID: Ra-226 at 768.40keV
Corrected Rate = 0.00 +/- 1293288.31 Bq

ROI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 853 Net = 57 +/- 160
CENTROID: 3167.00 = 792.19keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rh-106M at 792.90keV
Corrected Rate = 562646.01 +/- 1579357.21 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 368 Net = 4 +/- 68
CENTROID: 3386.00 = 846.96keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-134 at 847.03keV
Corrected Rate = 2799.65 +/- 47594.13 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV

AREA : (s = 491 Net = 58 +/- 88
CENTROID: 3540.00 = 885.48keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ag-110M at 884.67keV
Corrected Rate = 55522.55 +/- 84241.11 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 253 Net = 49 +/- 38
CENTROID: 3607.00 = 902.23keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-89 at 904.27keV
Corrected Rate = 475374.51 +/- 368657.79 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 121 Net = 5 +/- 18
CENTROID: 3640.64 = 910.65keV
SHAPE: FWHM = 0.51 FW(1/5)M = 0.78
ID: Ac-228 at 911.07keV
Corrected Rate = 12333.17 +/- 44399.40 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 266 Net = -9 +/- 47
CENTROID: 3699.00 = 925.24keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: La-140 at 925.25keV
Corrected Rate = 0.00 +/- 492333.00 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 190 Net = -32 +/- 33
CENTROID: 3738.17 = 935.04keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.60
ID: Ra-226 at 934.10keV
Corrected Rate = 0.00 +/- 756039.09 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 992 Net = 200 +/- 159
CENTROID: 3804.00 = 951.50keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Pa-234 at 949.00keV
Corrected Rate = 1899613.92 +/- 1510193.07 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 319 Net = 79 +/- 55
CENTROID: 3995.00 = 999.27keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: U-238 at 1001.03keV

Correcte ıte = 7321014.71 +/- 5096908.97 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 187 Net = -4 +/- 34
CENTROID: 4090.78 = 1023.22keV
SHAPE: FWHM = 0.35 FW(1/5)M = 0.88
ID: Sr-91 at 1024.30keV
Corrected Rate = 0.00 +/- 81512.45 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 323 Net = 53 +/- 61
CENTROID: 4117.00 = 1029.78keV
SHAPE: FWHM = 16.94 FW(1/5)M = 17.20
ID: Rb-89 at 1031.88keV
Corrected Rate = 71521.93 +/- 82317.69 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 97 Net = 10 +/- 17
CENTROID: 4243.53 = 1061.42keV
SHAPE: FWHM = 0.44 FW(1/5)M = 0.63
ID: Bi-207 at 1063.62keV
Corrected Rate = 10613.38 +/- 18042.75 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 132 Net = 34 +/- 24
CENTROID: 4309.89 = 1078.01keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Rb-86 at 1076.63keV
Corrected Rate = 320528.89 +/- 226255.69 Bq

ROI # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 182 Net = 11 +/- 31
CENTROID: 4365.00 = 1091.79keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.45
ID: Eu-152 at 1089.82keV
Corrected Rate = 533718.56 +/- 1504115.94 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 840 Net = -77 +/- 192
CENTROID: 4482.32 = 1121.13keV
SHAPE: FWHM = 0.77 FW(1/5)M = 1.96
ID: Ta-182 at 1121.28keV
Corrected Rate = 0.00 +/- 469171.42 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 1595 Net = 1437 +/- 56

CENTRC 4695.72 = 1174.49keV
SHAPE: FWHM = 1.72 FW(1/5)M = 2.55
ID: Co-56 at 1175.13keV
Corrected Rate = 56128639.30 +/- 2187337.37 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 103 Net = 33 +/- 27
CENTROID: 4760.00 = 1190.56keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.50
ID: Ta-182 at 1189.05keV
Corrected Rate = 180476.99 +/- 147662.99 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 185 Net = -9 +/- 62
CENTROID: 4955.15 = 1239.36keV
SHAPE: FWHM = 1.88 FW(1/5)M = 2.10
ID: Co-56 at 1238.28keV
Corrected Rate = 0.00 +/- 85451.83 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 45 Net = -4 +/- 15
CENTROID: 4993.00 = 1248.83keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rb-89 at 1248.10keV
Corrected Rate = 0.00 +/- 32723.54 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 41 Net = 9 +/- 13
CENTROID: 5027.00 = 1257.33keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ta-182 at 1257.47keV
Corrected Rate = 560881.82 +/- 810162.63 Bq

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 129 Net = -8 +/- 54
CENTROID: 5132.00 = 1283.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Th-232 at 1282.70keV
Corrected Rate = 0.00 +/- 5186619.27 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 1390 Net = 373 +/- 133
CENTROID: 5333.48 = 1333.96keV
SHAPE: FWHM = 1.73 FW(1/5)M = 2.41
ID: Co-60 at 1332.51keV
Corrected Rate = 370320.55 +/- 132044.59 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 10 Net = -4 +/- 6
CENTROID: 5376.00 = 1344.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-138 at 1343.59keV
Corrected Rate = 0.00 +/- 524342.10 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 11 Net = 6 +/- 4
CENTROID: 5410.00 = 1353.09keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 1353.00keV
Corrected Rate = 354985.92 +/- 236657.28 Bq

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 97 Net = 35 +/- 35
CENTROID: 5476.45 = 1369.71keV
SHAPE: FWHM = 10.34 FW(1/5)M = 10.57
ID: Kr-88 at 1369.50keV
Corrected Rate = 2381091.01 +/- 2381091.01 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 70 Net = 70 +/- 8
CENTROID: 5632.83 = 1408.80keV
SHAPE: FWHM = 0.40 FW(1/5)M = 1.94
ID: Eu-152 at 1408.08keV
Corrected Rate = 343594.77 +/- 39267.97 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 31 Net = 0 +/- 17
CENTROID: 5748.00 = 1437.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.80
ID: Sb-124 at 1436.60keV
Corrected Rate = 0.00 +/- 1667421.94 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 33 Net = -18 +/- 21
CENTROID: 5847.00 = 1462.35keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: K-40 at 1460.70keV
Corrected Rate = 0.00 +/- 211507.24 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 18 Net = -16 +/- 13
Could not properly fit the peak.

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 63 Net = 34 +/- 20
CENTROID: 6041.00 = 1510.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: U-238 at 1510.30keV
Corrected Rate = 292226825.80 +/- 171898132.83 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 55 Net = 19 +/- 25
CENTROID: 6108.00 = 1527.60keV
SHAPE: FWHM = 12.63 FW(1/5)M = 12.85
ID: Rh-106M at 1527.40keV
Corrected Rate = 157908.86 +/- 207774.82 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 13 Net = 3 +/- 6
CENTROID: 6207.00 = 1552.35keV
SHAPE: FWHM = 1.75 FW(1/5)M = 2.30
ID: U-238 at 1553.74keV
Corrected Rate = 42091169.73 +/- 84182339.45 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 32 Net = -3 +/- 18
CENTROID: 6236.00 = 1559.60keV
SHAPE: FWHM = 0.75 FW(1/5)M = 0.90
ID: Ag-110M at 1562.27keV
Corrected Rate = 0.00 +/- 1731652.95 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 11 Net = 6 +/- 5
CENTROID: 6340.00 = 1585.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.87
ID: Ac-228 at 1587.90keV
Corrected Rate = 186725.59 +/- 155604.66 Bq

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 13 Net = -4 +/- 8
Could not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 19 Net = -10 +/- 15
CENTROID: 6447.00 = 1612.35keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: J-134 at 1613.70keV
Corrected Rate = 0.00 +/- 439294.01 Bq

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 5 Net = -5 +/- 5
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 14 Net = -6 +/- 8
CENTROID: 6560.00 = 1640.60keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cl-38 at 1642.40keV
Corrected Rate = 0.00 +/- 29011.75 Bq

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 19 Net = 9 +/- 9
CENTROID: 6650.00 = 1663.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1661.28keV
Corrected Rate = 940165.67 +/- 940165.67 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 10 Net = -11 +/- 10
Could not properly fit the peak.

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 37 Net = 7 +/- 16
CENTROID: 6921.00 = 1730.85keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.50
ID: Bi-214 at 1729.60keV
Corrected Rate = 285798.22 +/- 653253.07 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 7 Net = -8 +/- 9
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 103 Net = 103 +/- 10
CENTROID: 7060.96 = 1765.83keV
SHAPE: FWHM = 0.47 FW(1/5)M = 2.32

ID: U-23 1765.80keV
Corrected Rate = 1716563755.19 +/- 166656675.26 Bq

Detector #1 Q 28-Jan-2002 at 10:53:22 RT = 5.0 LT = 1.1
digiDAR I USE 1b
SC7

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	9927	5492	693	13.83	0.70	17.42	Sr-91	14.90	765821239.05	96634034.72
2	174.34	188.10	749	12	78	184.60	0.26	0.42	No close library match.			
3	190.35	306.93	5625	177	647	241.41	0.26	0.43	Ra-226	241.91	1492054.25	5454006.20
4	309.69	358.22	1754	-261	251	353.75	0.34	0.60	Ra-226	351.90	0.00	634866.83
5	359.97	377.23	587	-78	83	370.72	4.69	5.70	Am-241	368.68	0.00	18259779970.69
6	378.23	454.53	2321	-25	342	422.26	0.25	0.40	Pu-239	422.57	0.00	344098602815.49
7	456.28	465.78	271	-48	41	459.91	0.44	0.63	Th-232	463.00	0.00	1215959.07
8	471.79	501.05	842	-181	137	482.04	0.25	0.40	No close library match.			
9	503.55	516.81	390	57	52	506.56	0.25	0.40	J-133	510.40	5435030.16	4958273.13
10	518.06	533.32	430	-14	64	528.62	1.96	2.13	J-133	529.50	0.00	107006.84
11	534.82	579.34	1135	31	178	536.02	14.35	14.90	J-133	529.50	51831.44	297612.76
12	580.59	588.35	190	35	26	584.96	0.47	0.71	Th-232	583.17	193733.03	143915.96
13	589.10	597.85	241	7	34	589.85	0.27	0.43	Th-232	583.17	38746.61	188197.80
14	598.35	612.86	375	80	51	610.21	0.48	1.57	Ra-226	609.30	286197.79	182451.09
15	613.36	682.65	1731	295	255	635.66	0.30	0.54	No close library match.			
16	683.15	759.43	1897	-41	311	697.40	0.25	0.40	U-238	691.30	0.00	732551150.94
17	760.68	788.94	694	-66	116	773.19	0.28	0.45	Ra-226	768.40	0.00	4694727.02
18	790.19	839.71	1218	-76	203	810.20	0.25	0.40	Ra-226	806.10	0.00	33237881.00
19	842.71	863.47	568	22	84	850.76	0.31	0.56	U-238	851.57	805509245.72	3075580756.39
20	864.22	892.23	776	-15	118	890.07	0.51	0.87	Ag-110M	884.67	0.00	367632.39
21	895.23	907.24	374	-26	53	904.74	1.50	1.65	U-238	898.67	0.00	2345046817.24
22	908.24	913.99	179	7	22	909.24	3.50	3.65	Th-232	911.10	63166.03	198521.80
23	915.99	929.49	400	-104	63	922.24	2.50	2.65	U-238	921.70	0.00	1167351073.94
24	931.24	940.50	296	-90	44	932.50	0.25	0.40	Ra-226	934.10	0.00	3280751.44
25	943.00	992.26	1395	-156	222	954.39	25.94	26.13	U-238	945.90	0.00	1727400353.91
26	993.01	1012.77	463	36	72	994.54	0.28	0.47	U-238	996.10	2207159033.3	44414318066.67
27	1016.52	1027.27	253	48	36	1020.05	0.28	0.84	Sr-91	1024.30	374521.38	280891.03
28	1028.78	1051.03	529	109	77	1031.80	16.27	16.44	Sr-91	1024.30	850475.62	600794.71
29	1060.53	1066.79	128	-37	22	1062.28	0.25	0.40	No close library match.			
30	1069.54	1079.79	247	2	38	1077.04	0.25	0.40	No close library match.			
31	1082.79	1092.79	218	54	31	1086.08	0.29	0.52	No close library match.			
32	1096.04	1158.31	1072	239	184	1152.86	0.32	0.64	Th-232	1153.52	490438748.5	1377576275.00
33	1164.81	1182.81	2228	2094	59	1174.27	2.02	3.15	Co-60	1173.23	6069206.82	171004.39
34	1185.81	1203.07	102	-3	33	1188.31	0.31	1.13	U-238	1193.77	0.00	723531606.03
35	1209.57	1241.57	167	-91	72	1210.57	4.00	4.15	No close library match.			
36	1244.82	1253.83	44	32	9	1248.08	2.00	2.15	J-133	1237.50	6157435.94	1731778.86
37	1254.33	1263.58	39	-12	16	1262.58	0.31	0.55	No close library match.			
38	1268.58	1302.58	110	64	32	1287.55	0.33	0.69	Th-232	1282.70	20006030.4	310003015.22
39	1308.83	1335.84	1914	570	153	1333.63	1.91	2.91	Co-60	1332.51	1841764.84	494368.46
40	1340.34	1346.84	19	1	8	1343.09	0.25	0.40	U-238	1352.90	148781433.6	71190251469.38
41	1349.59	1356.34	14	0	7	1354.84	0.38	0.60	U-238	1352.90	0.00	1041470035.70
42	1356.84	1387.59	62	-41	44	1377.34	0.25	0.40	Ag-110M	1384.27	0.00	603294.93

43	1390.09	14	0	34	5	19	1394.34	15.00	15.15	U-238	1393.6045	915.041	724447277.16
44	1430.85	144	6.10	19	-2	13	1433.60	0.25	0.40	U-238	1434.30	0.00	462356370.53
45	1449.10	1464.10		15	-5	13	1453.60	0.38	0.60	No close library match.			
46	1469.35	1479.35		19	12	7	1474.35	4.00	4.15	Ag-110M	1475.76	1061529.63	619225.62
47	1492.35	1513.85		25	10	14	1499.10	12.38	12.60	Ag-110M	1505.00	273770.05	383278.07
48	1514.85	1541.60		35	-37	34	1539.35	0.25	0.40	U-238	1553.74	0.00	1552526417.93
49	1550.10	1557.35		8	3	4	Could not properly fit the peak.						
50	1558.60	1575.60		16	4	11	1561.60	8.00	8.15	Ag-110M	1562.27	1252387.39	3444065.32
51	1584.35	1591.85		10	-11	8	Could not properly fit the peak.						
52	1592.60	1600.85		9	3	5	1593.85	0.25	0.40	Th-232	1588.23	350343.79	583906.31
53	1610.10	1624.10		7	-12	12	Could not properly fit the peak.						
54	1626.85	1634.10		5	0	4	Could not properly fit the peak.						
55	1638.85	1646.10		6	6	2	1643.85	0.25	0.40	Th-232	1630.40	1528490.53	509496.84
56	1657.60	1672.10		22	12	9	1663.35	5.75	5.90	No close library match.			
57	1674.35	1681.60		5	-5	5	Could not properly fit the peak.						
58	1687.35	1697.60		9	-5	8	Could not properly fit the peak.						
59	1702.85	1710.10		7	7	2	Could not properly fit the peak.						
60	1718.60	1733.35		12	-18	15	1731.85	0.25	0.40	U-238	1737.90	0.00	287662174.71
61	1734.10	1745.10		8	0	7	Could not properly fit the peak.						
62	1760.85	1775.34		42	22	14	1765.34	0.29	0.47	U-238	1765.80	1193261794.87	759348414.92

Detector #1] 28-Jan-2002 at 11:06:06 RT = 5.0 LT = 4.1
digiDART USE 1b
SC8

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	5575	2871	540	104.05	0.35	1.14	Gd-153	103.20	2035	458.48
2	174.34	188.10	416	-41	61	178.34	0.25	0.40	No close library match.			
3	190.35	306.93	2802	-311	488	204.11	65.32	65.49	Pu-239	203.52	0.00	16146856709.16
4	309.69	358.22	952	-121	183	330.57	7.03	7.20	Pu-239	332.80	0.00	9317512933.43
5	359.97	377.23	304	24	54	368.22	0.25	0.40	Am-241	368.68	1423	512258.52
6	378.23	454.53	1191	69	237	450.77	0.27	0.43	Pu-239	451.45	1250	4900805.64
7	456.28	465.78	133	9	26	463.78	0.25	0.40	Th-232	463.00	71963.14	207893.53
8	471.79	501.05	462	-89	100	495.05	0.28	0.45	No close library match.			
9	503.55	516.81	210	-6	41	513.01	0.31	0.56	Th-232	510.69	0.00	204708.53
10	518.06	533.32	214	-55	49	529.32	0.25	0.40	J-133	529.50	0.00	22088.19
11	534.82	579.34	574	7	127	568.84	0.28	0.44	U-238	569.30	1790	9327.26
12	580.59	588.35	93	2	19	583.60	2.25	2.40	Th-232	583.17	2984.68	28354.48
13	589.10	597.85	119	-7	24	594.85	0.28	0.44	No close library match.			
14	598.35	612.86	212	64	36	609.94	0.88	1.55	Ra-226	609.30	61728.94	34722.53
15	613.36	682.65	802	-310	223	661.76	0.44	0.63	Cs-137	661.60	0.00	125723.77
16	683.15	759.43	837	-132	219	701.78	0.44	0.63	Ag-110M	706.67	0.00	660342.48
17	760.68	788.94	335	-83	86	769.25	0.89	1.48	Ra-226	768.40	0.00	938389.91
18	790.19	839.71	563	-333	168	803.98	0.43	1.00	Ra-226	806.10	0.00	7416160.06
19	842.71	863.47	201	-23	53	857.72	0.25	0.40	J-133	856.10	0.00	2574243.47
20	864.22	892.23	300	-114	85	870.47	0.25	0.40	J-133	875.30	0.00	1132893.20
21	895.23	907.24	149	-39	36	896.48	0.79	1.00	U-238	898.67	0.00	429448085.29
22	908.24	913.99	67	3	13	909.24	0.25	0.40	Th-232	911.10	7298.60	31627.25
23	915.99	929.49	129	37	28	922.20	5.32	5.58	U-238	921.70	1848	39669.74
24	931.24	940.50	102	13	22	934.33	5.54	5.82	Ra-226	934.10	261334.37	442258.16
25	943.00	992.26	502	7	125	946.86	36.78	36.92	U-238	945.90	1468	4886.42
26	993.01	1012.77	174	67	37	1001.96	1.66	2.64	U-238	1001.03	5448	059.65
27	1016.52	1027.27	78	34	17	1017.52	0.31	0.50	Sr-91	1024.30	71523.18	35761.59
28	1028.78	1051.03	201	-54	59	1030.03	0.25	0.40	Sr-91	1024.30	0.00	124113.75
29	1060.53	1066.79	49	-3	13	1061.78	3.25	3.40	No close library match.			
30	1069.54	1079.79	82	-23	24	1071.54	2.75	2.90	No close library match.			
31	1082.79	1092.79	85	-31	25	1087.54	1.75	1.90	No close library match.			
32	1096.04	1158.31	480	-187	164	1121.24	0.75	1.53	Ra-226	1120.00	0.00	793242.23
33	1164.81	1182.81	552	418	43	1174.27	1.89	2.88	Co-60	1173.23	326636.01	33601.31
34	1185.81	1203.07	75	-7	29	1190.06	7.50	7.65	U-238	1193.77	0.00	171424972.02
35	1209.57	1241.57	136	93	31	1239.51	0.52	1.03	J-133	1237.50	4824	645.35
36	1244.82	1253.83	25	19	7	1247.83	0.25	0.40	J-133	1237.50	985680.23	363145.35
37	1254.33	1263.58	23	-15	13	1255.58	0.25	0.40	No close library match.			
38	1268.58	1302.58	127	36	45	1282.72	17.05	17.57	Th-232	1282.70	3034	002.78
39	1308.83	1335.84	470	306	55	1333.68	1.37	2.35	Co-60	1332.51	266571.23	47913.13
40	1340.34	1346.84	16	-2	7	Could not properly fit the peak.						
41	1349.59	1356.34	17	-2	8	Could not properly fit the peak.						
42	1356.84	1387.59	100	59	29	1378.12	0.81	1.93	Ag-110M	1384.27	218102.95	107203.14

43	1390.09	14	0	83	39	25	1402.65	0.37	0.88	U-238	1393.60954	733.10611	742777.63
44	1430.85	1446.10		35	14	14	1432.10	8.63	8.85	U-238	1434.30134	243742.57	134243742.57
45	1449.10	1464.10		35	-6	19	1450.10	11.38	11.60	No close library match.			
46	1469.35	1479.35		27	-21	16	Could not properly fit the peak.						
47	1492.35	1513.85		62	-40	36	1512.10	0.25	0.40	U-238	1510.30	0.00271	497933.32
48	1514.85	1541.60		50	32	18	1528.10	11.81	12.05	No close library match.			
49	1550.10	1557.35		16	1	7	1551.60	0.25	0.40	U-238	1553.74	12310979.38	86176855.67
50	1558.60	1575.60		18	18	4	1559.85	11.75	11.90	Ag-110M	1562.27	1519440.58	337653.46
51	1584.35	1591.85		15	-1	8	1589.48	0.59	0.84	Th-232	1588.23	0.00251	881.15
52	1592.60	1600.85		18	1	8	1594.35	0.25	0.40	Th-232	1588.23	31485.14	251881.15
53	1610.10	1624.10		18	-1	12	1611.10	10.00	10.15	No close library match.			
54	1626.85	1634.10		10	-5	7	Could not properly fit the peak.						
55	1638.85	1646.10		8	8	2	1645.10	0.37	0.60	Th-232	1630.40	549457.38	137364.34
56	1657.60	1672.10		28	18	10	1662.10	6.87	7.10	No close library match.			
57	1674.35	1681.60		5	5	2	Could not properly fit the peak.						
58	1687.35	1697.60		9	2	6	Could not properly fit the peak.						
59	1702.85	1710.10		8	3	4	Could not properly fit the peak.						
60	1718.60	1733.35		36	26	10	1731.10	0.27	0.43	U-238	1737.90	134430362.69	51703985.65
61	1734.10	1745.10		9	9	3	1742.60	2.00	2.15	U-238	1737.90	46533587.08	15511195.69
62	1760.85	1775.34		131	121	14	1766.01	1.53	2.92	U-238	1765.80	1769420063.47	204726288.34

005 SC9 1-28-2002 11.20.47 AM

Sample description
SC9

Spectrum Filename: C:\GammaVision\005 SC9 1-28-2002 11.20.47 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:20:46
Live time:	4
Real time:	5
Dead time:	15.60 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	005SC9~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.1292

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
346.23	86.68	59.	12.	2.738	98.17	0.727	-	D
352.10	88.15	59.	12.	2.946	92.06	0.728	-	D
440.57	110.19	77.	21.	4.976	73.64	0.632	-	s
517.45	129.42	42.	20.	4.739	50.99	0.577	-	s
540.57	135.20	42.	19.	4.502	55.20	0.273	-	s
738.32	184.68	48.	20.	4.739	59.16	0.313	-	s
897.71	224.55	30.	17.	4.028	56.42	0.525	-	s
916.95	229.33	48.	18.	4.222	59.98	0.856	-	D
923.23	230.90	69.	20.	4.758	62.59	0.858	-	D
969.00	242.39	39.	14.	3.397	71.34	0.700	-	s
1057.74	264.59	61.	30.	7.188	50.27	0.371	-	s
1283.69	321.11	20.	16.	3.791	49.48	0.469	-	s
1312.72	328.38	24.	13.	3.081	65.72	0.528	-	s
1361.83	340.66	30.	16.	3.791	59.62	0.525	-	s
1824.35	456.36	22.	18.	4.344	47.59	0.568	-	s
1916.64	479.45	13.	12.	2.883	51.96	0.403	-	s
2016.79	504.50	20.	13.	3.081	65.72	0.493	-	s
2043.87	511.28	50.	63.	14.929	28.45	0.563	-	s
2157.49	539.70	22.	25.	6.043	40.04	0.453	-	s
2232.70	558.51	7.	10.	2.370	50.17	0.725	-	s
2625.79	656.83	10.	22.	5.213	32.78	0.875	-	sM
3152.08	788.46	2.	16.	3.791	29.32	0.585	-	s
3562.84	891.19	4.	13.	3.081	38.46	0.616	-	s

ORTEC g v - i (63) wan32 G53w2.01 13-FEB-2002 15:00:24 Page 3
ORTEC Spectrum name: 005 SC9 1-28-2002 11.20.47 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
3844.93	961.74	5.	14.	3.397	38.14	0.431	-	s
4163.14	1041.31	8.	23.	5.371	35.77	0.583	-	s
5777.83	1445.06	0.	11.	2.607	30.15	0.313	-	s
7061.15	1765.88	0.	137.	32.464	8.54	0.787	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
M - Peak is close to a library peak.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	125.89	31.45	24.	26.	6.280	44.13	0.445s
CS-137	128.47	32.10	69.	0.	0.000	0.00	0.676
CS-137	146.67	36.65	21.	1.	0.158	601.85	0.262s
CS-137	2646.93	662.12	36.	658.	155.924	4.40	1.436s

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Code	MDA Value Becquerels	Comments
CS-137		3.5802E+05	661.62	3.587E+05	(	4.906E+03	G
			32.19	0.000E+00	%	7.826E+04	G
			31.82	3.291E+05	(	9.337E+04	G
			36.40	0.000E+00	%	1.478E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes: Peak Codes:

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:00:24 Page 4
ORTEC Spectrum name: 005 SC9 1-28-2002 11.20.47 AM.An

T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

005 SC9 1-28-2002 11.20.47 AM

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	3.5802E+05	4.399E+00%	4.772E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 3.5801600E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

Detector #1 A 28-Jan-2002 at 11:20:46 RT = 5.0 LT = 4.2
digiDART USE 1b
SC9

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	5024	1887	581	86.53	0.32	0.60	Np-237	86.49	2167429.08	667343.03
2	174.34	188.10	404	105	50	184.79	0.30	0.59	U-235	185.71	31478.58	14989.80
3	190.35	306.93	2608	-116	457	230.91	0.30	0.50	Ce-143	231.50	0.00	4397559.30
4	309.69	358.22	914	4	169	318.44	0.25	0.40	Nd-147	319.40	44083.54	1862529.47
5	359.97	377.23	282	-45	58	371.76	0.33	0.57	Pa-234	372.20	0.00	1073867.46
6	378.23	454.53	1313	242	231	385.23	0.27	0.43	Ba-133	383.70	793757.57	757677.68
7	456.28	465.78	161	-41	32	458.78	2.81	3.05	Pa-234	458.60	0.00	719776.56
8	471.79	501.05	404	11	85	476.07	19.25	19.41	Cs-134	475.35	262083.34	2025189.45
9	503.55	516.81	210	93	32	510.67	0.61	2.06	Th-232	510.69	448934.25	154472.00
10	518.06	533.32	172	-14	41	520.06	0.28	0.45	Pa-234	520.60	0.00	1284238.70
11	534.82	579.34	456	38	109	550.05	0.33	0.84	W-187	551.52	275296.19	789665.39
12	580.59	588.35	70	17	15	582.85	0.25	0.40	Tl-208	583.14	8185.20	7222.23
13	589.10	597.85	94	-2	21	590.60	6.13	6.35	Eu-154	591.70	0.00	191401.24
14	598.35	612.86	173	55	33	609.50	0.66	2.41	Bi-214	609.32	51300.97	30780.58
15	613.36	682.65	1259	564	179	662.13	1.30	1.93	Cs-137	661.60	307425.13	97569.32
16	683.15	759.43	522	-39	167	702.36	0.36	0.60	Nb-94	702.50	0.00	81085.66
17	760.68	788.94	178	-69	66	769.43	0.28	0.45	Ra-226	768.40	0.00	696268.14
18	790.19	839.71	311	-21	103	805.20	0.33	0.95	Pa-234	805.50	0.00	1704014.87
19	842.71	863.47	123	11	38	848.22	9.00	9.30	J-134	847.03	6531.42	22563.09
20	864.22	892.23	150	-38	57	891.12	0.54	0.82	Sc-46	889.26	0.00	33883.91
21	895.23	907.24	61	-21	23	899.23	5.13	5.35	U-238	898.67	0.00	265267300.71
22	908.24	913.99	31	-5	10	911.74	0.25	0.40	Th-232	911.10	0.00	23521.54
23	915.99	929.49	69	-50	30	927.49	0.25	0.40	Pa-234	926.70	0.00	167938.74
24	931.24	940.50	73	48	13	935.13	0.93	1.21	Ra-226	934.10	932915.10	252664.51
25	943.00	992.26	249	84	73	986.26	0.28	1.45	Kr-88	985.78	4101393.35	3564306.13
26	993.01	1012.77	93	-14	36	994.51	10.00	10.15	U-238	996.10	0.00	575325814.38
27	1016.52	1027.27	45	-21	19	1017.27	2.50	2.65	Rh-106M1	1019.60	0.00	826937.47
28	1028.78	1051.03	95	35	29	1033.78	16.22	16.39	Sb-126	1034.80	2154357.68	1785039.22
29	1060.53	1066.79	20	3	7	1064.78	0.25	0.40	Bi-207	1063.62	2701.13	6302.64
30	1069.54	1079.79	31	10	11	1071.29	2.75	2.90	J-134	1072.53	48831.45	53714.59
31	1082.79	1092.79	31	24	8	1084.29	0.31	1.55	Eu-152	1085.90	169218.40	56406.13
32	1096.04	1158.31	326	34	109	1121.32	1.59	2.35	Ta-182	1121.28	70482.26	225957.83
33	1164.81	1182.81	54	30	17	1170.31	0.25	0.40	Cs-134	1167.86	1252441.80	709717.02
34	1185.81	1203.07	67	-26	31	1186.56	15.50	15.65	Ta-182	1189.05	0.00	143826.91
35	1209.57	1241.57	139	53	42	1238.59	0.33	1.72	Co-56	1238.28	61969.23	49107.69
36	1244.82	1253.83	29	-20	15	1246.32	0.25	0.40	Rb-89	1248.10	0.00	27760.72
37	1254.33	1263.58	19	-6	11	1262.08	0.25	0.40	J-135	1260.41	0.00	30868.41
38	1268.58	1302.58	99	8	44	1283.10	0.73	0.89	Th-232	1282.70	651855.26	3585203.91
39	1308.83	1335.84	67	31	25	1324.34	8.81	9.30	Kr-89	1324.28	831681.15	670710.60
40	1340.34	1346.84	21	-2	8	Could not properly fit the peak.						
41	1349.59	1356.34	11	6	4	1352.09	0.50	0.80	U-238	1352.90	232691341.76	155127561.17
42	1356.84	1387.59	105	-19	49	1378.62	0.43	1.04	Bi-214	1377.65	0.00	1056395.49

43	1390.09	141	71	42	20	1399.85	10.50	11.48	J-132	1398.57	519	75247335.60	
44	1430.85	1446.10	40	-12	21	1444.85	0.31	0.88	J-132	1442.56	0.001333758.30		
45	1449.10	1464.10	30	10	14	1458.10	0.31	0.80	J-135	1457.56	105358.48147501.88		
46	1469.35	1479.35	13	6	6	1472.10	5.38	5.60	Kr-89	1472.76	78477.4078477.40		
47	1492.35	1513.85	66	-7	31	1505.60	6.50	6.65	Ag-110M	1505.00	0.00221221.77		
48	1514.85	1541.60	75	-69	48	1521.85	11.88	12.10	K-42	1524.70	0.00253714.78		
49	1550.10	1557.35	14	4	6	1551.35	2.63	2.85	U-238	1553.74	47610233.06	71415349.58	
50	1558.60	1575.60	38	-54	30	Could not properly fit the peak.							
51	1584.35	1591.85	14	4	6	1586.85	3.12	3.35	Ac-228	1587.90	105604.68158407.02		
52	1592.60	1600.85	14	8	5	1595.85	4.37	4.60	La-140	1596.20	8249.275155.79		
53	1610.10	1624.10	27	17	9	1611.60	12.00	12.15	J-134	1613.70	422360.72223602.73		
54	1626.85	1634.10	7	2	4	Could not properly fit the peak.							
55	1638.85	1646.10	10	-5	7	Could not properly fit the peak.							
56	1657.60	1672.10	20	0	13	1663.35	3.12	3.35	Bi-214	1661.28	0.001152061.88		
57	1674.35	1681.60	5	0	4	1675.35	0.25	0.40	J-135	1678.03	0.0043176.49		
58	1687.35	1697.60	16	2	9	1688.85	5.37	5.60	Sb-124	1691.04	4139.7518628.89		
59	1702.85	1710.10	8	-2	6	Could not properly fit the peak.							
60	1718.60	1733.35	40	20	14	1731.57	0.43	0.75	Bi-214	1729.60	692726.90484908.83		
61	1734.10	1745.10	7	7	2	1734.85	9.50	9.65	U-238	1737.90	34992081.28	9997737.51	
62	1760.85	1775.34	142	122	17	1766.05	1.71	2.76	U-238	1765.80	1724857096.85	240348939.73	
63	1787.34	1795.09	3	3	1	Could not properly fit the peak.							
64	1803.09	1815.09	7	-9	10	1806.59	0.25	0.40	J-134	1806.90	0.00195743.99		
65	1827.84	1842.09	9	-1	9	1839.34	0.25	0.40	Rh-106M	1838.20	0.00417234.92		
66	1843.59	1854.58	21	21	4	1849.30	1.28	1.54	Xe-138	1850.86	1650615.90	314403.03	
67	1863.58	1878.58	13	3	9	Could not properly fit the peak.							
68	1899.58	1915.07	11	-10	13	1908.33	5.50	5.65	U-238	1911.20	0.00245271416.07		
69	1917.07	1925.07	4	4	2	Could not properly fit the peak.							
70	1998.31	2019.80	8	8	2	Could not properly fit the peak.							
71	2025.80	2039.30	3	-15	11	Could not properly fit the peak.							

Detector #1 Q 28-Jan-2002 at 10:01:54 RT = 5.0 LT = 4.4
digiDART USE 1b
5BKG

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	4053	2430	419	11.69	71.27	74.13	Se-75	11.70	27449019.7	74732979.13
2	174.34	188.10	302	31	47	175.34	0.28	0.44	Sb-125	176.29	79514.38	120554.05
3	190.35	306.93	1887	-59	386	195.31	0.32	0.82	Np-237	194.97	0.003	1058975.84
4	309.69	358.22	668	18	143	330.70	0.25	0.40	Pa-231	330.10	308822.8	52453426.00
5	359.97	377.23	210	-58	52	365.97	0.25	0.40	Mo-99	366.44	0.001	133247.60
6	378.23	454.53	853	37	202	386.03	17.50	17.66	U-235	387.82	27448489.0	8149853913.34
7	456.28	465.78	97	32	19	464.12	0.62	1.32	Sb-125	463.51	104969.5	362325.66
8	471.79	501.05	327	-86	87	498.28	0.75	0.99	Kr-89	498.60	0.002	611200.01
9	503.55	516.81	177	15	36	510.86	5.70	5.88	Na-22	511.00	2957.22	7097.34
10	518.06	533.32	163	-13	40	530.32	0.33	0.85	Nd-147	531.00	0.00	109126.95
11	534.82	579.34	401	282	61	543.58	26.56	27.18	U-238	543.98	2945084	777.47
12	580.59	588.35	62	9	15	582.85	0.25	0.40	Tl-208	583.14	4175.0	46958.41
13	589.10	597.85	80	-4	20	592.60	3.75	3.90	Sb-126	593.00	0.009	1977.79
14	598.35	612.86	192	35	37	609.69	1.21	1.72	Bi-214	609.32	31453.5	233250.87
15	613.36	682.65	538	167	130	661.93	1.45	2.37	Cs-137	661.60	87703.1	368271.89
16	683.15	759.43	525	-393	213	690.15	0.25	0.40	U-238	691.30	0.00	126001508.37
17	760.68	788.94	203	127	38	769.15	0.33	1.43	Ra-226	768.40	1290846.6	5386237.58
18	790.19	839.71	305	-93	112	834.75	0.40	1.09	Mn-54	834.81	0.006	0760.44
19	842.71	863.47	118	-22	42	843.46	18.26	18.41	Kr-87	845.60	0.003	17691.77
20	864.22	892.23	154	79	37	865.45	25.08	25.34	Kr-89	867.08	732768.2	1343195.24
21	895.23	907.24	73	-17	25	898.35	0.53	0.79	Pa-234	898.60	0.003	61117.48
22	908.24	913.99	51	11	11	911.60	0.46	0.64	Th-232	911.10	24928.5	424928.54
23	915.99	929.49	70	-13	25	923.74	0.25	0.40	Pa-234	924.60	0.005	28683.49
24	931.24	940.50	66	22	16	934.00	0.25	0.40	Bi-214	934.05	415201.4	9301964.72
25	943.00	992.26	243	-21	91	954.79	10.50	10.65	J-132	954.55	0.003	05970.33
26	993.01	1012.77	109	-24	40	998.52	0.33	0.60	Te-131	997.25	0.007	56342.13
27	1016.52	1027.27	47	10	15	1020.27	5.75	5.90	Rh-106M	1019.60	419331.4	2628997.14
28	1028.78	1051.03	110	-25	43	1032.78	4.06	4.80	Rb-89	1031.88	0.004	7428.64
29	1060.53	1066.79	22	13	6	1063.03	0.31	0.55	Bi-207	1063.62	11277.3	35204.92
30	1069.54	1079.79	58	23	15	1072.65	1.59	2.32	J-134	1072.53	108209.6	070571.48
31	1082.79	1092.79	42	-13	17	Could not properly fit the peak.						
32	1096.04	1158.31	313	-20	116	1121.05	0.47	1.81	Ta-182	1121.28	0.002	31684.63
33	1164.81	1182.81	73	0	28	1174.31	0.29	0.50	Co-56	1175.13	0.008	93911.85
34	1185.81	1203.07	55	8	22	1190.56	10.06	10.55	Ta-182	1189.05	35760.7	698342.10
35	1209.57	1241.57	146	81	37	1239.21	1.47	1.70	Co-56	1238.28	91248.0	541681.21
36	1244.82	1253.83	29	4	11	1250.33	2.88	3.10	Kr-88	1250.67	270934.6	0745070.16
37	1254.33	1263.58	27	21	7	1261.08	0.29	0.50	J-135	1260.41	56777.8	918925.96
38	1268.58	1302.58	107	-7	49	1278.08	20.75	20.90	Bi-214	1280.96	0.002	606688.02
39	1308.83	1335.84	67	-6	35	1327.84	6.25	6.40	Sb-124	1325.53	0.001	909970.74
40	1340.34	1346.84	18	4	7	1344.34	1.38	1.60	Cs-138	1343.59	285714.5	7500000.49
41	1349.59	1356.34	28	0	10	1355.59	0.25	0.40	Pa-234	1353.00	0.004	83580.51
42	1356.84	1387.59	110	-35	53	1378.46	1.22	1.68	Bi-214	1377.65	0.001	100891.88

43	1390.09	14	0	80	65	16	1409.48	0.65	1.00	Eu-152	1408.08	26(		'.8964191.48
44	1430.85	1446.10		40	9	17	1440.85	0.31	1.13	J-132	1442.56	550729.941040267.67		
45	1449.10	1464.10		42	-19	23	1451.35	4.00	4.15	Pa-234	1452.60	0.001675469.97		
46	1469.35	1479.35		16	2	9	1475.10	2.75	2.90	Br-82	1474.86	10671.6448022.39		
47	1492.35	1513.85		59	30	20	1510.55	1.36	2.98	U-238	1510.30210751820.38140501213.59			
48	1514.85	1541.60		59	-31	38	1524.35	15.38	15.60	K-42	1524.70	0.00193520.27		
49	1550.10	1557.35		27	2	10	1556.60	0.38	0.60	U-238	1553.7422935523.23114677616.15			
50	1558.60	1575.60		28	-30	23	1568.60	0.25	0.40	J-135	1566.41	0.001667606.58		
51	1584.35	1591.85		13	-8	8	Could not properly fit the peak.							
52	1592.60	1600.85		20	-8	11	Could not properly fit the peak.							
53	1610.10	1624.10		16	-13	15	1615.35	0.37	0.60	J-134	1613.70	0.00359057.66		
54	1626.85	1634.10		6	1	4	1630.85	0.37	0.60	Ac-228	1630.40	49567.29198269.16		
55	1638.85	1646.10		6	-4	6	1640.85	0.25	0.40	Cl-38	1642.40	0.0017784.60		
56	1657.60	1672.10		30	10	13	1663.10	0.31	0.55	Bi-214	1661.28	853828.791109977.43		
57	1674.35	1681.60		7	-8	7	Could not properly fit the peak.							
58	1687.35	1697.60		15	15	3	1694.35	0.29	0.50	Pa-234	1694.001152282.83230456.57			
59	1702.85	1710.10		10	10	3	1706.10	2.37	2.60	J-135	1706.46	245723.8073717.14		
60	1718.60	1733.35		36	26	10	1730.85	0.63	0.90	Bi-214	1729.60	867648.35333710.90		
61	1734.10	1745.10		13	13	3	1735.35	0.37	0.60	U-238	1737.9062611401.8014448785.03			
62	1760.85	1775.34		118	108	13	1765.75	2.64	3.78	U-238	1765.801471144678.61177082229.83			

Detector #1 @ 28-Jan-2002 at 10:01:54 RT = 5.0 LT = 4.4
digiDART USE 1b
5BKG

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	4053	2430	419	11.69	71.27	74.13	Se-75	11.70	27449019.77	4732979.13
2	174.34	188.10	302	31	47	175.34	0.28	0.44	Sb-125	176.29	79514.38	120554.05
3	190.35	306.93	1887	-59	386	195.31	0.32	0.82	Np-237	194.97	0.003	1058975.84
4	309.69	358.22	668	18	143	330.70	0.25	0.40	Pa-231	330.10	308822.85	2453426.00
5	359.97	377.23	210	-58	52	365.97	0.25	0.40	Mo-99	366.44	0.00	1133247.60
6	378.23	454.53	853	37	202	386.03	17.50	17.66	U-235	387.82	27448489.08	149853913.34
7	456.28	465.78	97	32	19	464.12	0.62	1.32	Sb-125	463.51	104969.53	62325.66
8	471.79	501.05	327	-86	87	498.28	0.75	0.99	Kr-89	498.60	0.00	2611200.01
9	503.55	516.81	177	15	36	510.86	5.70	5.88	Na-22	511.00	2957.22	7097.34
10	518.06	533.32	163	-13	40	530.32	0.33	0.85	Nd-147	531.00	0.00	109126.95
11	534.82	579.34	401	282	61	543.58	26.56	27.18	U-238	543.98	2945084777.47	637057345.48
12	580.59	588.35	62	9	15	582.85	0.25	0.40	Tl-208	583.14	4175.04	6958.41
13	589.10	597.85	80	-4	20	592.60	3.75	3.90	Sb-126	593.00	0.00	91977.79
14	598.35	612.86	192	35	37	609.69	1.21	1.72	Bi-214	609.32	31453.52	33250.87
15	613.36	682.65	538	167	130	661.93	1.45	2.37	Cs-137	661.60	87703.13	68271.89
16	683.15	759.43	525	-393	213	690.15	0.25	0.40	U-238	691.30	0.00	126001508.37
17	760.68	788.94	203	127	38	769.15	0.33	1.43	Ra-226	768.40	1290846.65	386237.58
18	790.19	839.71	305	-93	112	834.75	0.40	1.09	Mn-54	834.81	0.00	60760.44
19	842.71	863.47	118	-22	42	843.46	18.26	18.41	Kr-87	845.60	0.00	317691.77
20	864.22	892.23	154	79	37	865.45	25.08	25.34	Kr-89	867.08	732768.21	343195.24
21	895.23	907.24	73	-17	25	898.35	0.53	0.79	Pa-234	898.60	0.00	361117.48
22	908.24	913.99	51	11	11	911.60	0.46	0.64	Th-232	911.10	24928.54	24928.54
23	915.99	929.49	70	-13	25	923.74	0.25	0.40	Pa-234	924.60	0.00	528683.49
24	931.24	940.50	66	22	16	934.00	0.25	0.40	Bi-214	934.05	415201.49	301964.72
25	943.00	992.26	243	-21	91	954.79	10.50	10.65	J-132	954.55	0.00	305970.33
26	993.01	1012.77	109	-24	40	998.52	0.33	0.60	Te-131	997.25	0.00	756342.13
27	1016.52	1027.27	47	10	15	1020.27	5.75	5.90	Rh-106M	1019.60	419331.42	628997.14
28	1028.78	1051.03	110	-25	43	1032.78	4.06	4.80	Rb-89	1031.88	0.00	47428.64
29	1060.53	1066.79	22	13	6	1063.03	0.31	0.55	Bi-207	1063.62	11277.33	5204.92
30	1069.54	1079.79	58	23	15	1072.65	1.59	2.32	J-134	1072.53	108209.60	70571.48
31	1082.79	1092.79	42	-13	17	Could not properly fit the peak.						
32	1096.04	1158.31	313	-20	116	1121.05	0.47	1.81	Ta-182	1121.28	0.00	231684.63
33	1164.81	1182.81	73	0	28	1174.31	0.29	0.50	Co-56	1175.13	0.00	893911.85
34	1185.81	1203.07	55	8	22	1190.56	10.06	10.55	Ta-182	1189.05	35760.76	98342.10
35	1209.57	1241.57	146	81	37	1239.21	1.47	1.70	Co-56	1238.28	91248.05	41681.21
36	1244.82	1253.83	29	4	11	1250.33	2.88	3.10	Kr-88	1250.67	270934.60	745070.16
37	1254.33	1263.58	27	21	7	1261.08	0.29	0.50	J-135	1260.41	56777.89	18925.96
38	1268.58	1302.58	107	-7	49	1278.08	20.75	20.90	Bi-214	1280.96	0.00	2606688.02
39	1308.83	1335.84	67	-6	35	1327.84	6.25	6.40	Sb-124	1325.53	0.00	1909970.74
40	1340.34	1346.84	18	4	7	1344.34	1.38	1.60	Cs-138	1343.59	285714.57	500000.49
41	1349.59	1356.34	28	0	10	1355.59	0.25	0.40	Pa-234	1353.00	0.00	483580.51
42	1356.84	1387.59	110	-35	53	1378.46	1.22	1.68	Bi-214	1377.65	0.00	1100891.88

43	1390.09	14	0	80	65	16	1409.48	0.65	1.00	Eu-152	1408.08	26(	.8964191.48
44	1430.85	1446.10		40	9	17	1440.85	0.31	1.13	J-132	1442.56	550729.941040267.67	
45	1449.10	1464.10		42	-19	23	1451.35	4.00	4.15	Pa-234	1452.60	0.001675469.97	
46	1469.35	1479.35		16	2	9	1475.10	2.75	2.90	Br-82	1474.88	10671.6448022.39	
47	1492.35	1513.85		59	30	20	1510.55	1.36	2.98	U-238	1510.30210751820.38140501213.59		
48	1514.85	1541.60		59	-31	38	1524.35	15.38	15.60	K-42	1524.70	0.00193520.27	
49	1550.10	1557.35		27	2	10	1556.60	0.38	0.60	U-238	1553.7422935523.23114677616.15		
50	1558.60	1575.60		28	-30	23	1568.60	0.25	0.40	J-135	1566.41	0.001667606.58	
51	1584.35	1591.85		13	-8	8	Could not properly fit the peak.						
52	1592.60	1600.85		20	-8	11	Could not properly fit the peak.						
53	1610.10	1624.10		16	-13	15	1615.35	0.37	0.60	J-134	1613.70	0.00359057.66	
54	1626.85	1634.10		6	1	4	1630.85	0.37	0.60	Ac-228	1630.40	49567.29198269.16	
55	1638.85	1646.10		6	-4	6	1640.85	0.25	0.40	Cl-38	1642.40	0.0017784.60	
56	1657.60	1672.10		30	10	13	1663.10	0.31	0.55	Bi-214	1661.28	853828.791109977.43	
57	1674.35	1681.60		7	-8	7	Could not properly fit the peak.						
58	1687.35	1697.60		15	15	3	1694.35	0.29	0.50	Pa-234	1694.001152282.83230456.57		
59	1702.85	1710.10		10	10	3	1706.10	2.37	2.60	J-135	1706.46	245723.8073717.14	
60	1718.60	1733.35		36	26	10	1730.85	0.63	0.90	Bi-214	1729.60	867648.35333710.90	
61	1734.10	1745.10		13	13	3	1735.35	0.37	0.60	U-238	1737.9062611401.8014448785.03		
62	1760.85	1775.34		118	108	13	1765.75	2.64	3.78	U-238	1765.801471144678.61177082229.83		

007 SC11 1-28-2002 11.39.10 AM

Sample description
SC11

Spectrum Filename: C:\GammaVision\007 SC11 1-28-2002 11.39.10 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:39:10
Live time:	4
Real time:	5
Dead time:	14.80 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	007SC1~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

007 SC11 1-28-2002 11.39.10 AM

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.4090

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.63	6.87	25.	36.	8.451	28.15	0.433	-	s
152.41	38.09	43.	15.	3.443	77.81	0.643	-	s
217.03	54.26	60.	26.	6.103	55.20	0.661	-	s
265.92	66.49	38.	13.	3.052	72.57	0.437	-	s
330.58	82.67	42.	15.	3.521	66.33	0.407	-	s
359.25	89.84	43.	12.	2.817	82.50	0.322	-	s
487.47	121.92	67.	22.	5.243	63.34	0.462	-	s
499.79	125.06	41.	25.	5.895	41.17	0.762	-	D
510.28	127.69	66.	16.	3.841	74.26	0.764	-	D
668.42	167.19	30.	14.	3.208	65.20	0.314	-	s
713.97	178.59	32.	13.	3.052	67.50	0.301	-	s
828.03	207.12	30.	17.	3.912	54.46	0.363	-	s
901.10	225.40	36.	20.	4.695	52.44	0.534	-	s
1349.36	337.54	17.	9.	2.191	67.67	0.255	-	s
1393.61	348.61	22.	25.	5.869	38.16	0.339	-	s
1458.21	364.77	17.	12.	2.817	56.52	0.316	-	s
1655.87	414.22	16.	10.	2.269	69.44	0.460	-	s
1676.50	419.38	20.	25.	5.869	35.40	0.876	-	s
2028.30	507.38	25.	22.	5.282	48.74	0.419	-	s
2277.92	569.82	10.	6.	1.526	83.21	0.256	-	s
2457.04	614.62	8.	12.	2.934	44.72	0.305	-	s
2811.28	703.22	5.	12.	2.817	41.94	0.430	-	s
3384.62	846.62	4.	12.	2.895	38.65	0.344	-	s

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:18:52 Page 3
ORTEC Spectrum name: 007 SC11 1-28-2002 11.39.10 AM.A

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
3624.92	906.72	5.	19.	4.460	31.80	0.515	-	s
3703.62	926.40	6.	20.	4.695	33.17	0.639	-	s
4483.39	1121.40	4.	113.	26.487	10.27	1.085	-	s
4872.27	1218.64	1.	9.	2.034	39.60	0.356	-	s

007 SC11 1-28-2002 11.39.10 AM

5098.00	1275.08	0.	7.	1.643	37.80	0.625	-	s
5546.76	1387.29	0.	20.	4.695	22.36	0.552	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	127.71	31.91	31.	8.	1.761	116.05	0.247s
CS-137	128.75	32.17	39.	0.	0.000	0.00	0.676
CS-137	146.44	36.60	37.	0.	0.000	0.00	0.680
CS-137	2646.94	662.12	37.	554.	130.125	4.74	1.278

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Code	MDA Value Becquerels	Comments
CS-137		2.9933E+05	661.62	2.993E+05	(	4.902E+03	G
			32.19	0.000E+00	%	5.911E+04	G
			31.82	0.000E+00	%	1.150E+05	G
			36.40	0.000E+00	%	1.861E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

0

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:18:52 Page 4
ORTEC Spectrum name: 007 SC11 1-28-2002 11.39.10 AM.A

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

007 SC11 1-28-2002 11.39.10 AM

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	2.9933E+05	4.745E+00%	5.092E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (2.5 to 2000.6 keV) 2.9932656E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

006 SC10 1-28-2002 11.30.40 AM

Sample description
SC10

Spectrum Filename: C:\GammaVision\006 SC10 1-28-2002 11.30.40 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:30:41
Live time:	4
Real time:	5
Dead time:	23.20 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	006SC1~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

0

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.4671

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
26.68	6.63	26.	23.	6.076	38.08	0.359	-	s
45.40	11.32	110.	47.	12.240	58.73	0.544	-	s
92.81	23.18	55.	16.	4.210	71.86	0.490	-	s
105.66	26.39	66.	29.	7.552	48.03	0.577	-	
401.06	100.30	32.	26.	6.901	44.69	0.719	-	s
423.03	105.80	94.	26.	6.901	61.17	0.646	-	s
444.04	111.09	116.	27.	7.005	59.84	0.749	-	D
448.75	112.26	87.	28.	7.373	50.16	0.750	-	D
516.61	129.21	47.	18.	4.688	58.79	0.469	-	s
535.65	133.98	69.	13.	3.429	96.76	0.565	-	s
576.00	144.07	80.	18.	4.688	79.48	0.353	-	s
607.31	151.90	44.	15.	3.906	67.66	0.283	-	s
639.22	159.89	47.	26.	6.858	44.16	0.550	-	s
792.00	198.01	79.	24.	6.132	57.36	0.828	-	D
855.11	213.90	71.	36.	9.505	42.36	0.391	-	s
955.32	238.97	23.	8.	1.997	89.00	0.222	-	s
977.39	244.49	58.	52.	13.542	28.91	0.375	-	s
1343.78	336.15	70.	22.	5.729	69.23	0.667	-	s
1449.70	362.44	47.	22.	5.841	47.93	0.974	-	D
1462.55	365.65	78.	22.	5.656	61.48	0.977	-	D
1496.40	374.33	35.	18.	4.688	53.82	0.654	-	s
1541.22	385.54	61.	28.	7.378	53.59	0.309	-	s
1644.86	411.46	82.	42.	10.894	45.15	0.423	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1692.20	423.31	53.	33.	8.550	41.25	0.339	-	s
1725.44	431.55	57.	24.	6.294	48.49	1.033	-	D
1731.75	433.12	80.	25.	6.419	55.23	1.035	-	D
1739.10	434.96	88.	28.	7.293	51.00	1.036	-	D

1843.38	461.12	44.	19.	4.861	57.38	0.371	-	s
2259.80	565.29	17.	17.	4.340	50.75	0.742	-	s
2289.40	572.69	9.	10.	2.604	52.92	0.469	-	s
2437.57	609.75	37.	61.	15.929	23.26	0.543	-	s
3355.99	839.46	2.	18.	4.644	27.87	0.577	-	s
3830.89	958.22	1.	5.	1.259	56.13	0.292	-	s
3853.55	963.89	5.	13.	3.299	44.81	0.450	-	s
4483.72	1121.48	13.	64.	16.797	18.26	0.895	-	s
5250.67	1313.25	0.	13.	3.385	27.74	0.688	-	s
7062.24	1766.15	0.	108.	28.125	9.62	0.592	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	127.35	31.82	97.	4.	1.156	316.58	0.676D
CS-137	128.83	32.19	89.	10.	2.708	131.74	0.676D
CS-137	143.17	35.78	76.	16.	4.297	87.35	0.314s
CS-137	2647.23	662.19	67.	2322.	604.557	2.24	1.315

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Code	MDA Value Becquerels	Comments
CS-137		1.3907E+06	661.62	1.391E+06	(	7.266E+03	G
			32.19	0.000E+00	%	1.023E+05	G
			31.82	0.000E+00	%	2.009E+05	G
			36.40	3.748E+05	&	3.214E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.

$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation

Peak Codes:
G - Gamma Ray
X - X-Ray

006 SC10 1-28-2002 11.30.40 AM

I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	1.3907E+06	2.235E+00%	2.901E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 1.3906612E+06 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

004 SC8 1-28-2002 11.06.07 AM

Sample description
SC8

Spectrum Filename: C:\GammaVision\004 SC8 1-28-2002 11.06.07 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:06:06
Live time:	4
Real time:	5
Dead time:	18.40 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.3700

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.74	6.57	33.	30.	7.371	32.57	1.007	-	D
37.81	9.09	79.	21.	5.103	64.30	1.008	-	D
192.35	47.87	45.	15.	3.676	75.28	0.665	-	s
289.38	72.13	41.	16.	3.962	63.27	0.252	-	s
444.84	111.01	47.	14.	3.513	74.96	0.635	-	s
462.63	115.45	108.	26.	6.291	74.81	0.351	-	s
509.78	127.25	85.	17.	4.167	91.82	0.275	-	s
634.51	158.43	44.	16.	3.922	68.08	0.720	-	s
701.16	175.09	83.	46.	11.356	40.35	0.238	-	s
783.02	195.56	24.	19.	4.779	43.69	0.726	-	s
842.37	210.40	50.	18.	4.412	68.34	0.477	-	s
925.19	231.09	40.	29.	7.126	35.90	1.047	-	D
1259.71	314.73	24.	30.	7.394	32.76	1.055	-	s
1599.30	399.61	30.	14.	3.350	76.65	0.293	-	s
1697.17	424.06	27.	36.	8.946	31.57	0.725	-	s
1803.07	450.53	22.	23.	5.637	40.16	0.297	-	s
1933.62	483.15	20.	15.	3.676	55.11	0.459	-	s
2109.63	527.20	30.	14.	3.481	60.49	1.146	-	D
2162.59	540.37	12.	10.	2.533	57.75	0.604	-	s
2339.99	584.69	9.	10.	2.369	56.56	0.508	-	s
2437.25	608.99	37.	76.	18.750	21.49	0.951	-	s
2575.21	643.46	15.	10.	2.451	68.92	0.812	-	s
2646.48	661.26	45.	44.	10.907	35.48	0.561	-	s

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 14:40:59 Page 3
ORTEC Spectrum name: 004 SC8 1-28-2002 11.06.07 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
3085.06	770.81	4.	10.	2.328	43.51	0.732	-	s
3114.51	778.16	16.	12.	3.064	61.58	0.653	-	s
3212.71	802.69	12.	29.	7.108	27.80	0.862	-	s
3298.53	824.06	16.	13.	3.144	52.39	1.299	-	D

3307.32	826.25	18.	25.	6.025	31.88	1.300	-	D
3437.29	858.78	4.	8.	1.961	50.00	0.443	-	s
4005.21	1000.58	7.	10.	2.451	50.17	0.356	-	s
4216.56	1053.34	8.	24.	5.882	30.43	0.767	-	s
4375.47	1093.01	13.	8.	1.838	85.63	0.289	-	s
4431.91	1107.10	4.	31.	7.680	22.21	0.354	-	s
4482.35	1119.69	19.	93.	22.876	15.12	1.270	-	
4535.50	1132.96	12.	6.	1.471	97.18	0.427	-	s
4954.76	1237.59	11.	25.	6.046	33.46	0.541	-	s
5567.83	1390.57	0.	6.	1.471	40.82	0.312	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4694.73	1172.70	14.	491.	120.343	4.86	1.753s
CO-60	5332.63	1331.89	13.	383.	93.995	5.76	1.331

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	MDA Value Becquerels	Comments
CO-60		3.5887E+05	1332.51	3.341E+05	(	4.983E+03	G
			1173.23	3.837E+05	@(	4.544E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.

= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line

004 SC8 1-28-2002 11.06.07 AM

M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded
A - Not in Average
C - Coincidence Peak

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	3.5887E+05	3.770E+00%	4.199E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 3.5886772E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

003 SC7 1-28-2002 10.53.21 AM

Sample description
SC7

Spectrum Filename: C:\GammaVision\003 SC7 1-28-2002 10.53.21 AM.An1

Acquisition information

Start time:	28-Jan-2002 10:53:22
Live time:	1
Real time:	5
Dead time:	78.00 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	003SC7~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

D

003 SC7 1-28-2002 10.53.21 AM

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 1.0000

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.32	6.79	51.	44.	40.303	28.76	0.799	-	sM
55.89	13.94	70.	36.	32.727	52.04	0.429	-	sM
148.34	37.07	38.	45.	41.364	32.51	0.986	-	sM
258.70	64.68	42.	33.	30.000	42.96	0.894	-	sM
312.73	78.20	67.	76.	69.545	27.66	0.664	-	sM
337.98	84.52	76.	51.	46.364	40.71	0.676	-	sM
352.25	88.09	84.	28.	25.455	68.14	0.549	-	M
366.97	91.77	66.	33.	30.000	52.22	0.527	-	sM
482.42	120.57	123.	22.	20.204	73.56	0.758	-	D
493.51	123.35	150.	40.	36.794	45.53	0.760	-	D
573.21	143.34	144.	22.	19.983	80.10	0.779	-	D
578.39	144.64	132.	28.	25.338	61.32	0.780	-	D
800.98	200.36	123.	39.	35.606	50.24	0.299	-	sM
815.77	204.06	94.	23.	21.364	68.58	0.253	-	sM
891.09	222.90	156.	34.	30.909	67.58	0.372	-	sM
925.10	231.41	136.	41.	37.727	52.45	0.780	-	sM
967.85	242.10	141.	53.	48.333	42.02	0.271	-	sM
995.24	248.95	70.	18.	16.364	72.36	0.336	-	sM
1067.75	267.09	71.	26.	23.939	52.51	0.726	-	M
1112.12	278.15	62.	17.	15.370	70.26	0.900	-	D
1118.31	279.69	90.	26.	23.829	54.73	0.901	-	D
1311.01	327.95	37.	38.	34.848	30.43	0.517	-	sM
1650.78	412.95	62.	28.	25.455	52.25	0.643	-	sM

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 12:44:44 Page 3
ORTEC Spectrum name: 003 SC7 1-28-2002 10.53.21 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1726.26	431.83	46.	37.	33.636	35.75	0.564	-	sM
1838.65	459.94	49.	22.	20.455	56.70	0.451	-	sM
2052.48	513.43	37.	16.	14.242	64.71	0.616	-	sM
2269.00	567.59	48.	23.	20.909	56.19	0.293	-	sM

2305.00	576.60	45.	22.	20.230	47.50	1.156	-	D
2312.01	578.35	63.	25.	23.155	48.17	1.157	-	D
2559.57	640.35	55.	12.	10.833	92.72	1.208	-	D
2765.16	691.69	40.	24.	21.818	50.00	0.541	-	SM
2815.88	704.38	69.	36.	32.424	47.74	0.353	-	SM
2864.75	716.60	40.	46.	42.121	30.40	0.333	-	SM
2934.97	734.16	48.	24.	22.121	54.41	0.498	-	SM
3091.54	773.32	42.	14.	12.727	77.92	0.382	-	SM
3114.36	779.03	31.	10.	9.545	84.52	0.254	-	SM
3139.28	785.26	36.	15.	13.636	68.31	0.598	-	SM
3176.18	794.49	26.	13.	12.121	62.27	0.514	-	SM
3237.81	809.90	53.	61.	55.152	28.16	0.261	-	SM
3401.21	850.77	29.	16.	14.545	53.76	0.368	-	SM
3484.50	871.60	93.	46.	41.515	46.46	0.647	-	SM
3593.17	898.78	62.	26.	23.636	56.00	0.574	-	SM
3815.96	954.49	105.	37.	33.788	56.38	0.382	-	SM
3978.81	995.22	65.	74.	67.121	26.71	0.322	-	SM
4062.54	1016.16	22.	12.	10.758	65.38	0.514	-	SM
4175.17	1044.32	54.	31.	28.333	49.45	0.260	-	SM
4333.57	1083.79	50.	18.	16.179	61.09	1.551	-	D
4342.55	1086.04	74.	15.	13.690	84.77	1.553	-	D
4374.18	1094.09	45.	29.	26.364	47.09	0.325	-	SM
4417.13	1104.83	60.	46.	41.818	38.03	0.261	-	SM
4695.15	1174.26	479.	1585.	1441.104	3.18	1.616	-	D
4718.86	1180.19	32.	21.	19.068	43.96	1.621	-	D
5016.08	1254.60	1.	7.	6.212	44.77	0.678	-	s
5333.64	1334.07	466.	1386.	1260.032	3.47	1.728	-	D

s - Peak fails shape tests.
D - Peak area deconvoluted.
M - Peak is close to a library peak.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4690.68	1173.23	1647.	322.	293.040	18.65	1.615D
CO-60	5327.69	1332.51	1266.	512.	465.190	10.78	1.727D

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Nuclide Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		1.6534E+06	1332.51	1.653E+06	(	1.642E+05	G
			1173.23	9.343E+05	-	1.833E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.

003 SC7 1-28-2002 10.53.21 AM

@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	1.6534E+06	1.078E+01%	1.094E+01%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 12:44:44 Page 5
ORTEC Spectrum name: 003 SC7 1-28-2002 10.53.21 AM.An

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 1.6534166E+06 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

009 SC18 1-29-2002 10.02.15 AM

Sample description
SC18

Spectrum Filename: C:\GammaVision\009 SC18 1-29-2002 10.02.15 AM.An1

Acquisition information

Start time:	29-Jan-2002 10:02:16
Live time:	4
Real time:	5
Dead time:	28.40 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.2219

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
40.18	9.81	132.	34.	9.637	64.70	0.342	-	s
167.33	41.61	35.	26.	7.356	39.32	0.932	-	s
238.65	59.45	137.	103.	28.734	22.41	0.948	-	
340.29	84.86	73.	38.	10.521	40.54	0.755	-	s
378.40	94.39	90.	31.	8.706	54.23	0.515	-	s
504.55	125.94	106.	27.	7.495	71.01	0.551	-	s
640.03	159.81	66.	16.	4.469	84.09	0.532	-	s
768.28	191.78	113.	16.	4.403	98.73	1.038	-	D
798.03	199.31	113.	39.	10.801	56.25	0.564	-	s
894.85	223.52	61.	18.	5.168	70.94	0.389	-	s
914.14	228.34	68.	36.	9.963	41.39	0.336	-	s
1031.42	257.66	55.	29.	8.101	45.70	0.335	-	s
1105.60	276.20	43.	28.	7.961	41.11	0.932	-	s
1140.46	284.92	96.	46.	12.849	45.08	0.565	-	s
1197.35	299.14	33.	19.	5.400	49.10	0.744	-	s
1220.94	305.04	56.	45.	12.477	33.44	0.554	-	s
1386.26	346.36	77.	67.	18.715	30.35	0.541	-	s
1439.25	359.60	28.	12.	3.352	73.28	0.271	-	s
1599.07	399.55	33.	24.	6.704	45.17	0.358	-	s
1668.91	417.00	42.	13.	3.585	89.63	0.505	-	s
1752.67	437.93	30.	18.	5.028	53.58	0.569	-	s
1870.92	467.48	33.	17.	4.749	61.83	0.646	-	s
1938.67	484.42	52.	35.	9.916	46.44	0.309	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1975.71	493.67	17.	12.	3.259	61.88	0.385	-	s
2001.26	500.06	35.	23.	6.455	41.70	1.135	-	D
2089.97	522.22	27.	32.	9.078	34.91	0.270	-	s
2193.19	548.01	20.	13.	3.678	56.91	0.329	-	s

2234.25	558.27	27.	20.	5.726	48.39	0.781	-	s
2438.72	609.36	37.	89.	24.953	17.64	1.081	-	s
2529.16	631.95	16.	15.	4.330	48.60	0.573	-	s
2646.99	661.34	58.	39.	10.799	32.24	1.209	-	D
2663.32	665.42	56.	14.	3.791	82.85	1.211	-	D
2671.27	667.41	49.	12.	3.456	84.62	1.212	-	D
3005.23	750.87	26.	22.	6.145	45.45	0.434	-	s
3115.83	778.75	34.	23.	6.389	41.49	1.272	-	D
3125.86	781.26	47.	14.	3.804	76.17	1.274	-	D
3414.61	853.11	17.	19.	5.214	41.19	0.592	-	s
3444.65	860.61	37.	27.	7.449	46.10	0.513	-	s
3478.25	869.00	31.	19.	5.261	54.96	0.324	-	s
3642.38	909.99	43.	28.	7.728	46.41	0.668	-	s
3999.22	999.08	11.	6.	1.676	88.19	0.306	-	s
4065.87	1015.72	32.	28.	7.961	41.85	0.684	-	s
4089.48	1021.62	31.	42.	11.685	30.36	0.640	-	s
4241.53	1059.58	28.	34.	9.404	35.43	0.566	-	s
4307.01	1075.92	20.	42.	11.778	25.78	0.372	-	s
4483.06	1119.87	64.	122.	34.032	19.43	1.649	-	
4521.75	1129.52	17.	17.	4.888	50.71	0.491	-	s
4571.22	1141.87	14.	26.	7.263	32.79	0.353	-	s
4605.41	1150.41	7.	7.	1.955	67.26	0.695	-	s
4631.17	1156.83	14.	13.	3.631	57.05	0.458	-	s
4840.88	1209.17	4.	31.	8.752	22.21	0.731	-	s
6340.29	1583.26	0.	7.	1.955	37.80	0.312	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4695.63	1172.92	28.	1483.	414.153	2.76	1.693
CO-60	5333.47	1332.10	9.	1319.	368.343	2.81	1.811

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		1.3148E+06	1332.51	1.309E+06	(	4.814E+03	G
			1173.23	1.320E+06	(	7.164E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide

failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	1.3148E+06	1.968E+00%	2.700E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:46:01 Page 5
ORTEC Spectrum name: 009 SC18 1-29-2002 10.02.15 AM.A

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 1.3147980E+06 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

004 SC20 1-29-2002 9.34.49 AM

Sample description
SC20

Spectrum Filename: C:\GammaVision\004 SC20 1-29-2002 9.34.49 AM.An1

Acquisition information

Start time:	29-Jan-2002 09:34:48
Live time:	4
Real time:	5
Dead time:	16.00 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.2872

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
28.95	7.00	34.	54.	12.857	23.13	0.717	-	s
233.05	58.05	77.	42.	10.119	41.68	0.416	-	s
287.85	71.75	53.	22.	5.159	55.79	0.324	-	s
359.87	89.76	90.	51.	12.143	37.51	0.465	-	s
382.20	95.34	55.	17.	4.087	67.93	0.547	-	s
478.77	119.48	82.	21.	5.062	63.93	1.024	-	D
484.16	120.82	123.	23.	5.502	70.95	1.024	-	D
520.53	129.93	49.	18.	4.206	65.22	0.433	-	s
556.91	139.03	80.	30.	7.143	54.77	0.669	-	s
636.30	158.88	39.	33.	7.857	34.62	0.563	-	s
889.29	222.13	67.	31.	7.500	51.95	0.482	-	s
997.68	249.23	22.	12.	2.817	65.38	0.260	-	s
1024.21	255.86	23.	14.	3.254	58.64	0.699	-	s
1060.24	264.87	19.	13.	3.175	55.00	0.596	-	s
1202.50	300.43	17.	13.	3.016	57.53	0.687	-	s
1452.91	362.92	40.	14.	3.232	71.58	1.085	-	D
1462.15	365.23	45.	28.	6.733	38.37	1.086	-	D
1479.32	369.62	21.	12.	2.857	63.19	0.723	-	s
1552.66	388.01	35.	14.	3.317	66.06	1.093	-	D
1613.90	403.25	37.	31.	7.302	42.21	0.283	-	s
1672.82	417.98	45.	30.	7.143	45.64	0.400	-	s
1820.73	454.94	22.	18.	4.405	46.73	0.677	-	s
1907.03	476.51	11.	10.	2.381	56.57	0.448	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1966.50	491.37	32.	21.	5.000	56.01	0.593	-	s
2196.46	548.83	28.	38.	9.048	33.70	0.371	-	s
4481.74	1119.54	8.	107.	25.476	11.33	1.054	-	s
4583.44	1144.92	1.	6.	1.389	49.57	0.662	-	s

4889.70	1221.36	0.	22.	5.238	21.32	0.499	-	s
6922.80	1728.52	0.	35.	8.333	16.90	0.698	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	126.19	31.32	42.	21.	5.079	53.95	0.980
CS-137	129.66	32.19	59.	0.	0.000	0.00	1.010
CS-137	146.12	36.31	64.	15.	3.571	95.92	0.192s
CS-137	2647.53	661.52	54.	781.	185.952	4.20	1.112

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Nuclide Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CS-137		4.2775E+05	661.62	4.277E+05	(	5.972E+03	G
			32.19	0.000E+00	%	7.296E+04	G
			31.82	2.662E+05	-	1.464E+05	G
			36.40	3.116E+05	-	2.717E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

0

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

004 SC20 1-29-2002 9.34.49 AM

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	4.2775E+05	4.204E+00%	4.592E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 4.2774569E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

007 SC23 1-29-2002 9.48.40 AM

Sample description
SC23

Spectrum Filename: C:\GammaVision\007 SC23 1-29-2002 9.48.40 AM.An1

Acquisition information

Start time:	29-Jan-2002 09:48:41
Live time:	4
Real time:	5
Dead time:	15.60 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.2421

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
74.65	18.43	43.	28.	6.754	41.11	0.625	-	s
96.46	23.89	41.	42.	9.913	31.37	0.709	-	s
124.03	30.78	31.	13.	3.160	69.10	0.795	-	s
182.93	45.51	30.	9.	2.133	92.30	0.303	-	s
260.98	65.03	56.	29.	6.793	50.20	0.248	-	s
327.13	81.57	63.	28.	6.556	50.67	0.444	-	s
473.81	118.25	93.	38.	8.926	49.58	0.647	-	s
511.67	127.72	34.	13.	3.081	69.23	0.689	-	s
631.76	157.72	74.	21.	4.869	63.36	1.031	-	D
638.95	159.51	88.	29.	6.859	49.48	1.031	-	D
664.42	165.91	47.	35.	8.373	39.10	0.714	-	s
866.66	216.55	70.	17.	3.926	75.73	1.044	-	D
872.46	218.00	56.	12.	2.738	96.55	1.044	-	D
1033.09	258.08	24.	15.	3.673	53.43	0.339	-	s
1102.56	275.44	36.	18.	4.265	62.36	0.483	-	s
1676.09	418.80	22.	16.	3.791	55.32	0.845	-	s
1735.58	433.69	35.	17.	4.023	54.94	1.109	-	D
1741.66	435.21	40.	17.	4.062	57.41	1.110	-	D
1746.16	436.33	30.	13.	2.986	67.99	1.110	-	D
2063.96	515.72	13.	12.	2.962	54.41	0.479	-	s
2635.56	658.88	10.	9.	2.171	58.61	1.207	-	D
2647.39	661.83	30.	42.	9.966	24.01	1.209	-	D
2770.03	692.12	13.	17.	4.068	42.62	0.645	-	s

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 15:26:44 Page 3
ORTEC Spectrum name: 007 SC23 1-29-2002 9.48.40 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
2943.13	735.36	11.	10.	2.449	57.43	0.512	-	s
3296.12	823.52	28.	50.	11.848	28.89	0.487	-	s
3333.32	832.81	6.	13.	3.120	38.58	0.284	-	s
3839.84	959.29	8.	9.	2.093	58.31	0.447	-	s

3872.33	967.40	5.	6.	1.422	66.67	0.591	-	s
3930.60	981.95	9.	24.	5.687	32.27	0.677	-	s
4483.81	1120.05	7.	94.	22.275	11.92	0.832	-	s
7062.80	1763.43	0.	116.	27.488	9.28	1.667	-	

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4695.64	1172.93	4.	243.	57.504	6.72	1.262
CO-60	5333.19	1332.03	12.	228.	54.107	7.69	1.428

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		1.8783E+05	1332.51	1.923E+05	(	4.511E+03	G
			1173.23	1.833E+05	(	2.634E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:
T - Thermal Neutron Activation

Peak Codes:
G - Gamma Ray

D

F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

007 SC23 1-29-2002 9.48.40 AM

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	1.8783E+05	5.104E+00%	5.429E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 1.8782680E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

002 SC22-2 1-29-2002 1.11.50 PM

Sample description
SC22-2

Spectrum Filename: C:\GammaVision\002 SC22-2 1-29-2002 1.11.50 PM.An1

Acquisition information

Start time:	29-Jan-2002 13:11:50
Live time:	4
Real time:	5
Dead time:	29.60 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	002SC2~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

0

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.1921

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
26.96	6.78	97.	96.	27.250	17.76	0.652	-	D
33.17	8.33	192.	80.	22.683	26.98	0.654	-	D
170.85	42.64	167.	79.	22.408	25.77	0.686	-	D
194.79	48.75	93.	53.	15.004	29.28	0.691	-	D
209.92	52.48	70.	28.	7.955	52.33	0.767	-	
265.69	66.43	79.	24.	6.960	60.99	0.320	-	s
313.88	78.49	110.	34.	9.659	54.68	0.325	-	s
353.01	88.26	77.	27.	7.768	49.25	0.728	-	D
358.64	89.67	121.	30.	8.607	54.41	0.729	-	D
389.03	97.29	116.	34.	9.659	51.34	0.768	-	
494.44	123.44	743.	249.	70.849	16.70	0.761	-	D
505.21	126.14	112.	18.	5.182	85.24	0.763	-	D
535.14	133.85	58.	12.	3.409	94.28	0.550	-	s
625.90	156.55	88.	21.	5.871	77.45	0.479	-	s
650.24	162.64	88.	22.	6.392	69.39	0.302	-	s
733.96	183.59	49.	24.	6.818	47.54	0.694	-	s
803.86	201.08	43.	12.	3.409	82.50	0.312	-	s
934.15	233.67	61.	30.	8.617	49.17	0.223	-	s
972.44	243.01	59.	21.	5.933	56.47	0.869	-	D
993.54	248.53	74.	60.	17.140	28.40	0.543	-	s
1021.03	255.41	47.	18.	5.208	59.61	0.396	-	s
1041.54	260.54	40.	14.	3.977	74.00	0.252	-	s
1123.07	280.93	42.	27.	7.765	43.05	0.400	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1185.50	296.55	68.	54.	15.341	32.85	0.464	-	s
1281.51	320.57	31.	10.	2.936	87.57	0.395	-	s
1692.88	423.48	20.	16.	4.545	49.48	0.307	-	s
1745.20	436.56	15.	10.	2.794	66.45	0.336	-	s

1804.84	451.48	15.	11.	3.078	61.02	0.524	-	s
1844.42	461.38	27.	21.	6.108	46.38	0.345	-	s
2082.97	521.06	13.	17.	4.972	40.91	0.719	-	s
2161.28	540.64	18.	9.	2.557	81.65	0.464	-	s
2478.02	619.87	25.	38.	10.701	31.77	0.362	-	s
2576.81	644.58	12.	16.	4.545	42.39	0.658	-	s
2617.56	654.77	14.	9.	2.557	69.68	0.607	-	s
2649.17	662.68	33.	54.	15.341	26.71	1.042	-	
2766.12	691.93	12.	8.	2.367	69.57	0.429	-	s
2938.41	735.02	13.	19.	5.540	37.42	0.484	-	s
3014.50	754.05	5.	11.	3.030	45.07	0.441	-	s
3117.69	779.87	38.	266.	75.492	6.96	1.320	-	D
3367.54	842.35	13.	10.	2.888	60.61	0.431	-	s
3471.90	868.54	41.	75.	21.165	16.84	1.389	-	D
3859.48	965.31	29.	246.	69.793	7.10	1.463	-	D
4076.15	1019.56	7.	18.	5.114	35.72	0.344	-	s
4346.85	1087.22	35.	166.	47.053	9.28	1.553	-	D
4451.55	1113.34	28.	188.	53.314	8.33	1.573	-	D
4485.97	1122.04	15.	89.	25.426	15.20	0.979	-	s
4868.67	1217.74	15.	13.	3.780	49.11	1.647	-	D
5636.89	1409.76	14.	288.	81.882	6.17	1.779	-	D
7063.55	1766.48	0.	91.	25.852	10.48	1.071	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
EU-152	158.12	39.52	335.	97.	27.466	28.65	0.683D
EU-152	160.52	40.12	272.	163.	46.206	16.35	0.684D
EU-152	181.63	45.40	141.	109.	31.055	18.08	0.688D
EU-152	186.42	46.60	169.	61.	17.285	32.84	0.689D
EU-152	486.91	121.78	317.	1531.	435.053	3.04	0.759D
EU-152	978.11	244.67	123.	361.	102.582	6.82	0.870D
EU-152	1377.67	344.63	61.	1122.	318.655	3.27	1.215s
EU-152	1643.67	411.17	71.	99.	28.172	21.75	1.020
EU-152	1776.69	444.44	48.	122.	34.659	14.15	1.219s
EU-152	3113.85	778.90	296.	4.	1.217	569.87	1.319D
EU-152	3467.67	867.39	96.	1.	0.317	1245.91	1.388D
EU-152	3853.98	964.00	245.	7.	2.011	314.98	1.462D
EU-152	4341.04	1085.80	177.	11.	3.253	166.72	1.552D
EU-152	4357.11	1089.82	109.	2.	0.553	762.08	1.555D

0

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 12:23:09 Page 4
ORTEC Spectrum name: 002 SC22-2 1-29-2002 1.11.50 PM.

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
EU-152	4446.09	1112.07	195.	9.	2.421	234.55	1.572D
EU-152	4849.28	1212.89	25.	15.	4.326	52.85	1.644D
EU-152	5193.00	1298.83	1.	0.	0.000	0.00	0.083s
EU-152	5629.94	1408.08	263.	8.	2.190	299.79	1.778D

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide -		Average	Peak			
Name	Code	Activity	Energy	Activity	Code	MDA Value

	Becquerels	keV	Becquerels		Becquerels	Comments
EU-152	1.3641E+05	40.12	1.307E+05	(	1.916E+04	G
		121.78	9.513E+05	+	3.808E+04	G
		344.30	1.288E+06	+	5.643E+04	G
		1408.08	0.000E+00	%	1.187E+05	G
		39.52	1.471E+05	(	4.017E+04	G
		964.00	0.000E+00	%	1.202E+05	G
		1112.07	0.000E+00	%	1.317E+05	G
		778.90	0.000E+00	%	1.224E+05	G
		1085.80	0.000E+00	%	1.636E+05	G
		45.40	2.716E+05	+	5.681E+04	G
		244.67	1.132E+06	+	9.914E+04	G
		867.39	0.000E+00	%	2.411E+05	G
		444.00	1.691E+06	+	2.626E+05	G
		411.09	1.614E+06	+	3.084E+05	G
		46.60	6.386E+05	+	2.304E+05	G
		1089.82	0.000E+00	%	7.603E+05	G
		1299.19	0.000E+00	?	1.158E+05	G
		1212.89	9.796E+05	+	6.084E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 12:23:09 Page 5
ORTEC Spectrum name: 002 SC22-2 1-29-2002 1.11.50 PM.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total

002 SC22-2 1-29-2002 1.11.50 PM

EU-152	1.3641E+05	1.635E+01%	1.646E+01%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 1.3640727E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

001 SC21-2 1-29-2002 1.10.27 PM

Sample description
SC21-2

Spectrum Filename: C:\GammaVision\001 SC21-2 1-29-2002 1.10.27 PM.An1

Acquisition information

Start time:	29-Jan-2002 13:10:27
Live time:	3
Real time:	5
Dead time:	42.00 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

001 SC21-2 1-29-2002 1.10.27 PM

Random error:	1.0000000E+00
Systematic error:	1.0000000E+00
Fraction Limit:	0.000%
Background width:	best method (based on spectrum).

Half lives decay limit:	12.000
Activity range factor:	2.000
Min. step backg. energy	0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.0978

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.98	6.76	67.	54.	18.736	28.04	0.495	-	s
49.06	12.03	138.	32.	10.920	63.20	0.293	-	s
126.37	31.37	101.	27.	9.195	60.83	0.485	-	s
143.23	35.58	158.	38.	13.046	61.35	0.627	-	s
176.32	43.79	179.	36.	12.259	55.76	1.012	-	D
210.22	52.34	136.	47.	16.207	45.38	0.284	-	s
231.52	57.66	87.	32.	11.149	47.37	0.765	-	s
251.43	62.64	105.	21.	7.241	80.18	0.394	-	s
314.79	78.49	173.	75.	25.747	33.44	0.238	-	s
512.36	127.89	62.	13.	4.655	83.83	0.384	-	s
564.58	140.95	162.	42.	14.483	54.71	0.315	-	s
729.72	182.23	217.	36.	12.529	73.98	0.322	-	s
842.24	210.37	189.	50.	17.241	52.15	0.890	-	s
881.38	220.10	189.	63.	21.620	33.51	1.044	-	D
896.59	223.91	153.	51.	17.484	37.21	1.045	-	D
1066.61	266.40	106.	20.	6.934	75.76	1.056	-	D
1115.99	278.77	117.	19.	6.385	85.93	1.060	-	D
1157.39	289.09	79.	28.	9.763	48.13	1.062	-	D
1164.05	290.75	116.	22.	7.576	72.54	1.063	-	D
1193.86	298.27	46.	12.	4.138	84.98	0.414	-	s
1231.49	307.67	88.	23.	7.931	71.75	0.492	-	s
1427.28	356.37	59.	33.	11.319	37.46	1.083	-	D
1439.25	359.37	71.	32.	10.884	41.84	1.084	-	D

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 11:37:32 Page 3
ORTEC Spectrum name: 001 SC21-2 1-29-2002 1.10.27 PM.

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1468.50	366.91	55.	19.	6.724	64.51	0.555	-	s
1582.97	395.52	88.	45.	15.517	42.61	0.355	-	s
1682.94	420.51	67.	21.	7.356	66.14	0.698	-	s
1736.53	433.90	213.	1806.	622.828	2.85	1.200	-	

1813.98	453.26	56.	27.	9.195	53.70	0.771	-	s
1893.16	473.04	31.	21.	7.414	46.57	0.838	-	s
2125.76	531.16	91.	48.	16.552	44.56	0.474	-	s
2221.56	555.10	45.	30.	10.517	43.32	0.573	-	s
2262.49	565.33	57.	38.	13.218	43.95	0.306	-	s
2458.46	614.29	112.	1400.	482.759	3.16	1.371	-	
2495.95	623.65	18.	14.	4.713	57.87	0.331	-	s
2763.16	690.41	7.	6.	2.184	68.01	0.318	-	s
2785.98	696.11	18.	18.	6.207	47.14	0.462	-	s
2893.69	723.01	53.	1252.	431.609	3.08	1.562	-	s
3721.94	929.86	25.	10.	3.320	79.84	1.366	-	D
3741.10	934.64	56.	24.	8.116	49.64	1.370	-	D
3787.19	946.15	12.	9.	3.103	63.83	0.411	-	s
4108.20	1026.29	15.	29.	10.000	32.53	0.504	-	s
4309.35	1076.51	6.	7.	2.471	62.10	0.236	-	s
4359.92	1089.13	6.	6.	2.126	70.32	0.662	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4696.65	1173.18	36.	813.	280.287	3.96	1.612s
CO-60	5334.47	1332.35	19.	711.	245.057	4.04	1.394

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		8.8230E+05	1332.51	8.710E+05	(	8.259E+03	G
			1173.23	8.936E+05	@(	9.916E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.

@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes: Peak Codes:

001 SC21-2 1-29-2002 1.10.27 PM

T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	8.8230E+05	2.828E+00%	3.378E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 8.8230350E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

USEcology
FS-TX-02-01
Source Log

Date 2-9-02

BKG	mR/hr
1"	<0.1
12"	<0.1
36"	0-2

CREDO

Container #	22	21	7	RAT	26
External on pig in mR/hr					<1
External on pig Neutron mR/hr					<1
Contact open pig mR/hr					<1
Beta on open pig mR/hr O/W					<1

Table Readings

Source mR/hr @ 1 inch				105	<1
Source mR/hr @ 12 inches				0.4	<1
Source mR/hr @ 36 inches				0-3	<1
Smear DPM per 100 cm^2 Alpha					BKG
Smear DPM per 100 cm^2 Beta					BKG
Size of source in cc's				5000	10
Weight in grams				2000	8

CPM Alpha					
Direct Beta/Gamma					

Info on source:

					I131 5 mci 4/16/90

Information on pig:

	59 79 120 180 129 338 331 346 948 775 975 1085 1387 240	428 598 716-720 1173 1339 Co60	Co60	Cs137 661 428 small 203 small	

26
CAUTION

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **2/11/02** **Time** 1105

Location Source Survey #26 - # 41

Survey #

MDA Alpha DPM	MDA Beta DPM
9.8	66.5

BKG Alpha CPM	BKG Beta CPM
0.45	73

Alpha Eff 0.33

	2 Min CPM	DPM
26	1	0.2
27	3	3.2
28	1	0.2
29	0	-1.4
30	2	1.7
31	0	-1.4
32	1	0.2
33	36	53.2
34	42	62.3
35	13	18.3
36	0	-1.4
37	1	0.2
38		-1.4
39	13	18.3
40	7	9.2
41	6	7.7
42		-1.4
43		-1.4
44		-1.4
45		-1.4
46		-1.4
47		-1.4
48		-1.4
49		-1.4
50		-1.4

Beta/Gamma Eff 0.33

	2 Min CPM	DPM
26	148	4.2
27	132	-20.0
28	138	-10.9
29	138	-10.9
30	144	-1.8
31	150	7.3
32	141	-6.4
33	146	1.2
34	227	123.9
35	179	51.2
36	146	1.2
37	136	-13.9
38		-220.0
39	132	-20.0
40	161	23.9
41	129	-24.5
42		-220.0
43		-220.0
44		-220.0
45		-220.0
46		-220.0
47		-220.0
48		-220.0
49		-220.0
50		-220.0

USEcology
FS-TX-02-01
Source Log

Date 2·9·02

BKG	mR/hr
1"	
12"	
36"	

Container #	27	28	29	30	31
External on pig in mR/hr	<1	<1	<1	2	
External on pig Neutron mR/hr	<1	<1	<1	<1	SAME
Contact open pig mR/hr	<1	<1	<1	10	
Beta on open pig mR/hr O/W	2	<1	<1	20	

Table Readings

Source mR/hr @ 1 inch	<1	BKG.	BKG	2	110
Source mR/hr @ 12 inches	<1			0.2	3.5
Source mR/hr @ 36 inches	<1			~~0.4~~ 0.2	0.5
DIRECT Smear DPM per 100 cm^2 Alpha	1060			N/A	N/A
RECT Smear DPM per 100 cm^2 Beta	12000			N/A	N/A
Size of source in cc's	30	20mL	20 mL	20	3
Weight in grams	1 Lb.	8	5	30	1

CPM Alpha	3.2	0.2	-1.4	1.7	-1.4
Direct Beta/Gamma	-20.0	-10.9	-10.9	-1.8	7.3

Info on source:

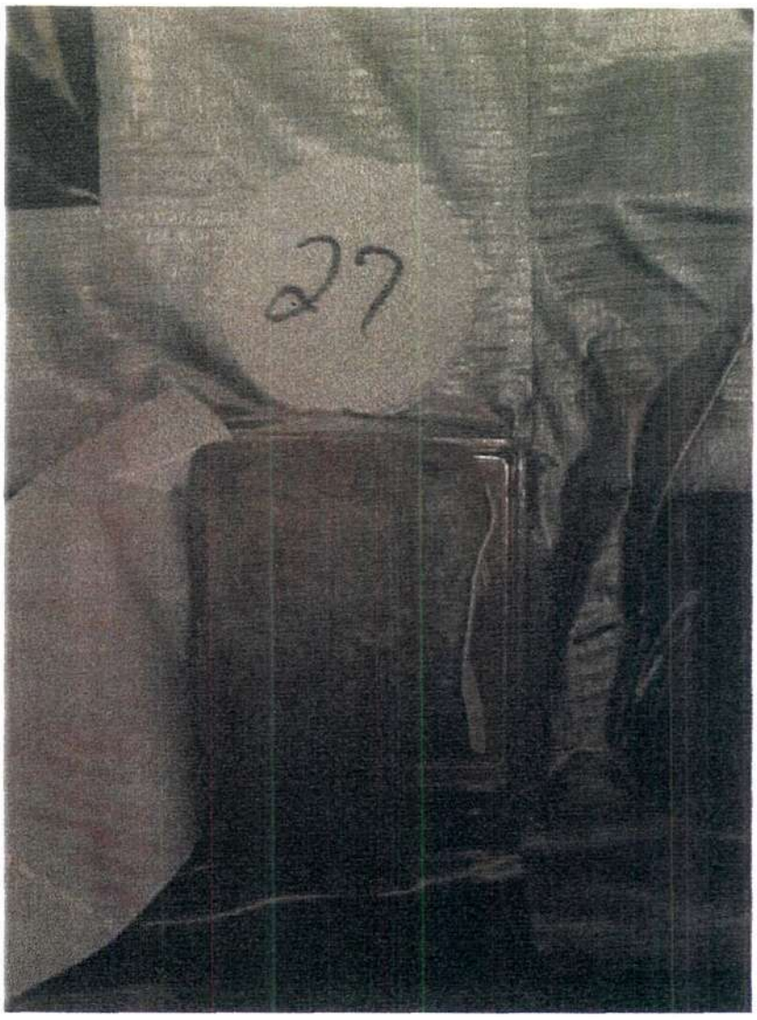
	Cs 137 ~~Cs 60~~	~~[illegible]~~ 131 10 mci 4-27-90	I-131 10 mci 4-27-90	NAIL	BULBS

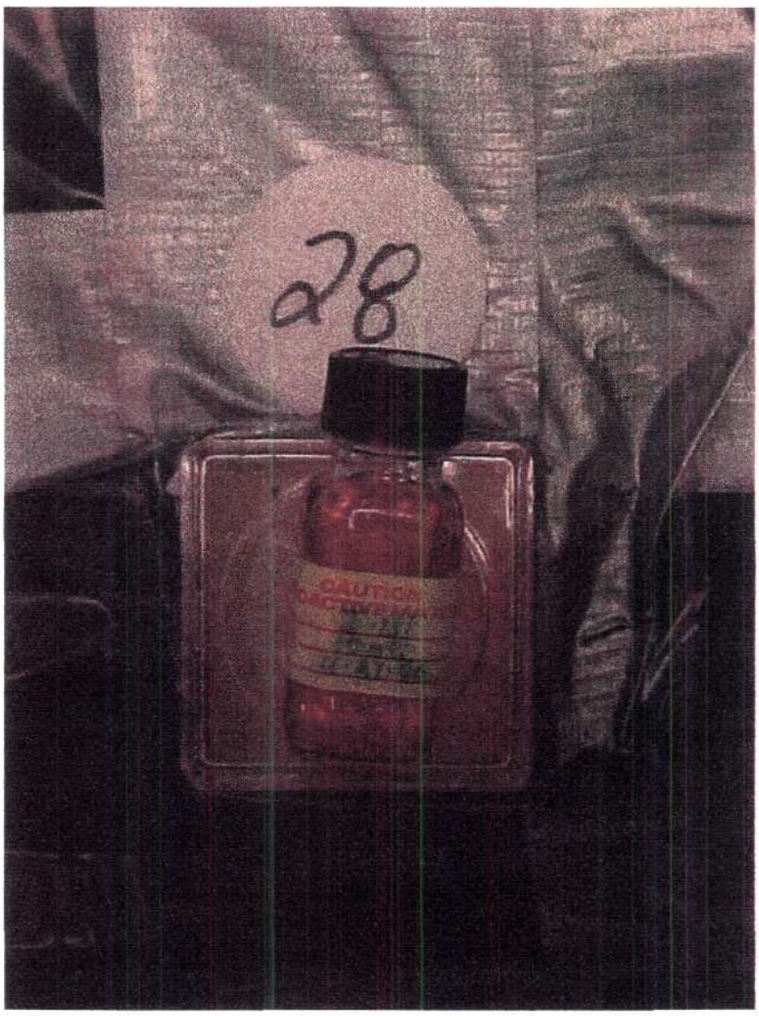
Information on pig:

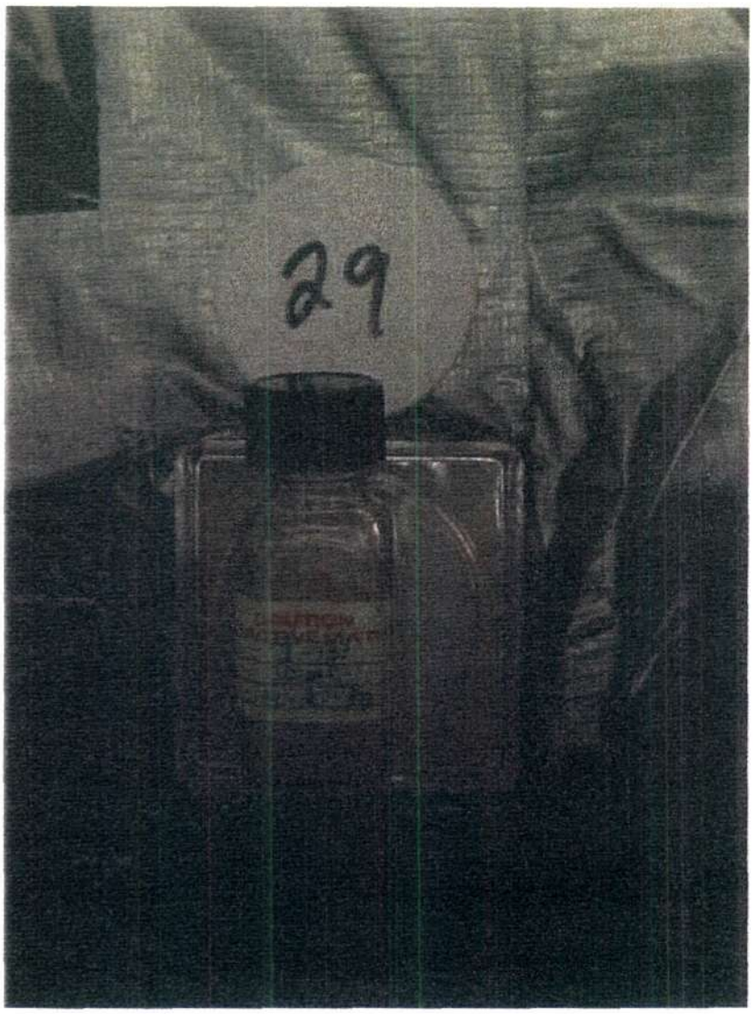
	Cs137 .25mC 2·6·76			EMPTY 59	EMTPY 59
	Cs137 661			Cs137 1173 1332 Co 60	1173 1332 Co 60

Using Cs only for Conservat Tommy 2/11/02

Directional
w/ Lead
still Reads Cs-137
=> 0.25 mR
@ 2/6/76




28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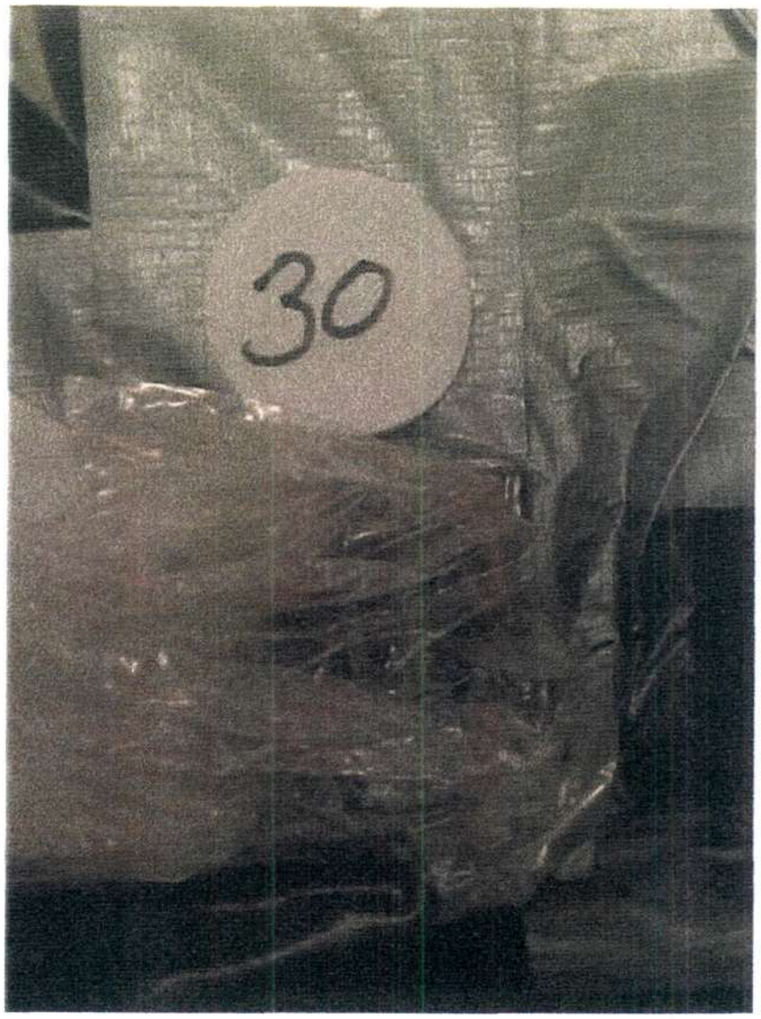
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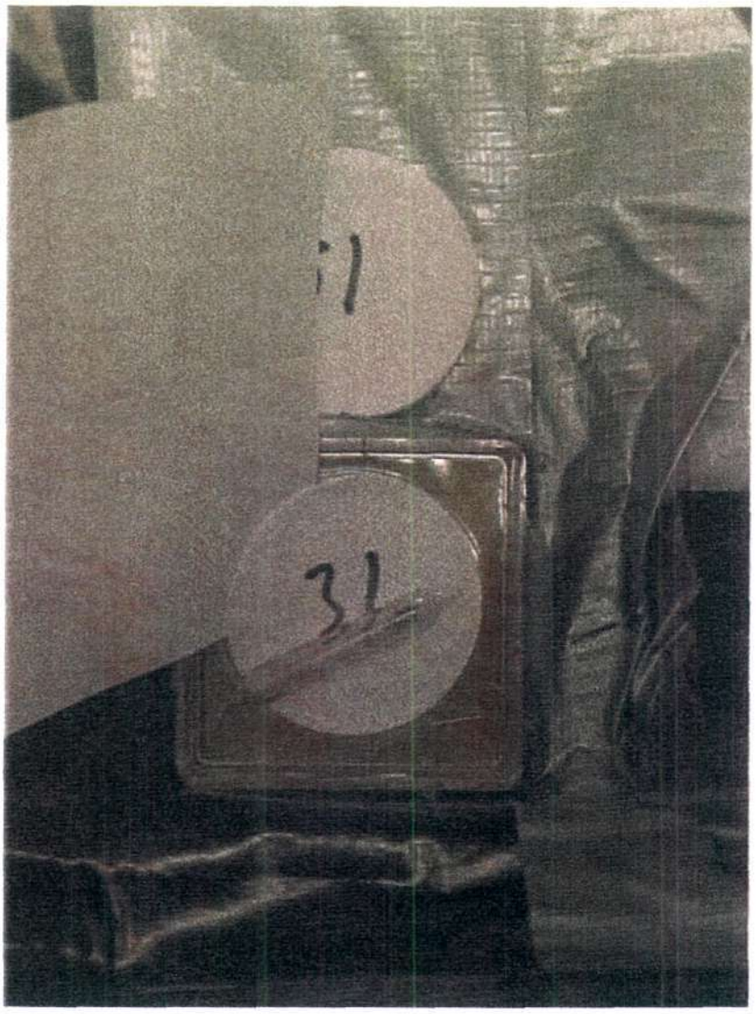

31

SAM 935 #

USEcology
FS-TX-02-01
Source Log

Date 2-9-02

BKG	mR/hr
1"	
12"	
36"	

Container #	32	33	34	35	36
External on pig in mR/hr		3			
External on pig Neutron mR/hr	SAME	<1	SAME	SAME	Same
Contact open pig mR/hr	AS	25	AS	AS	as
Beta on open pig mR/hr O/W	LAST	100	LAST	LAST	last

Table Readings

Source mR/hr @ 1 inch	0.8	100	500	75	0.7	
4" 0.2 Source mR/hr @ 12 inches	0.1	2.5	1	2	<.2	4" 0.4
Source mR/hr @ 36 inches	0.3	0.4	0.3	0.3	.2	
Smear DPM per 100 cm^2 Alpha	N/A	N/A	N/A	N/A		
Smear DPM per 100 cm^2 Beta						
Size of source in cc's	20	20	20	20	~~40~~	
Weight in grams	30	20	20	20	15	

Alpha DPM/100cm²	0.2 ←	53.2	62.3	18.3	<1.4
Direct Beta/Gamma DPM/100cm²	← -6.4	<1.2	124	51.2	<1.2

Info on source:

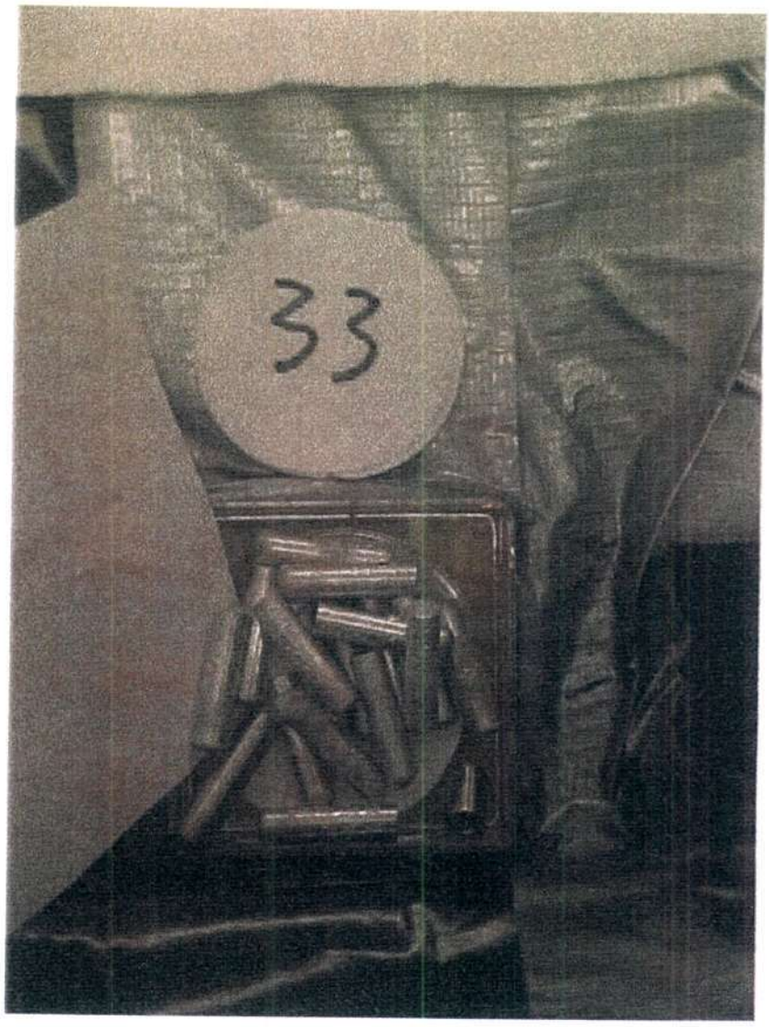
	EMPTY 59 NAILS				

Information on pig:

		? 156 154 Eu 152	← Poss.	← Poss.	
Eu 152 possible for # 33 34 35 36	Co 60 1173 1332 (Cs 137 Poss.)	1404 1099 988 798 → ← 716 346 354 240 120 129 975 1277	115 124 253 338 346 598 716 → ← 798 948 975 1099 1277 1402	1420 1277 1099 988 871 774 354 338 253 129 120	1420 1261 1099 975 786 751 354

RAT #

37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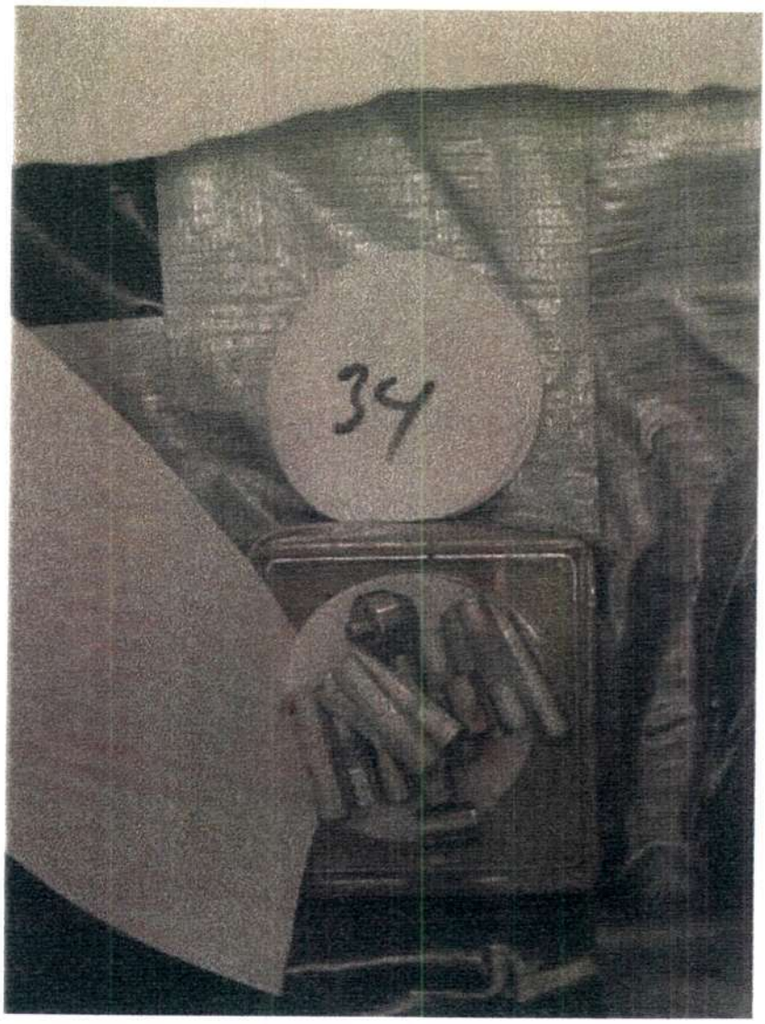
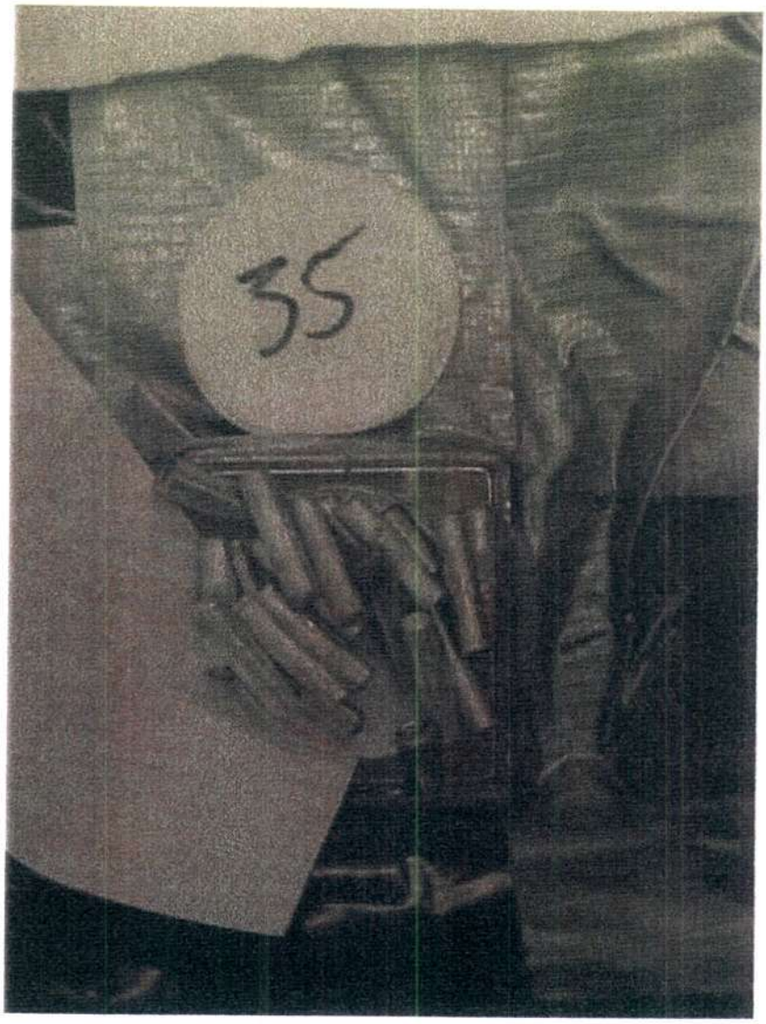

34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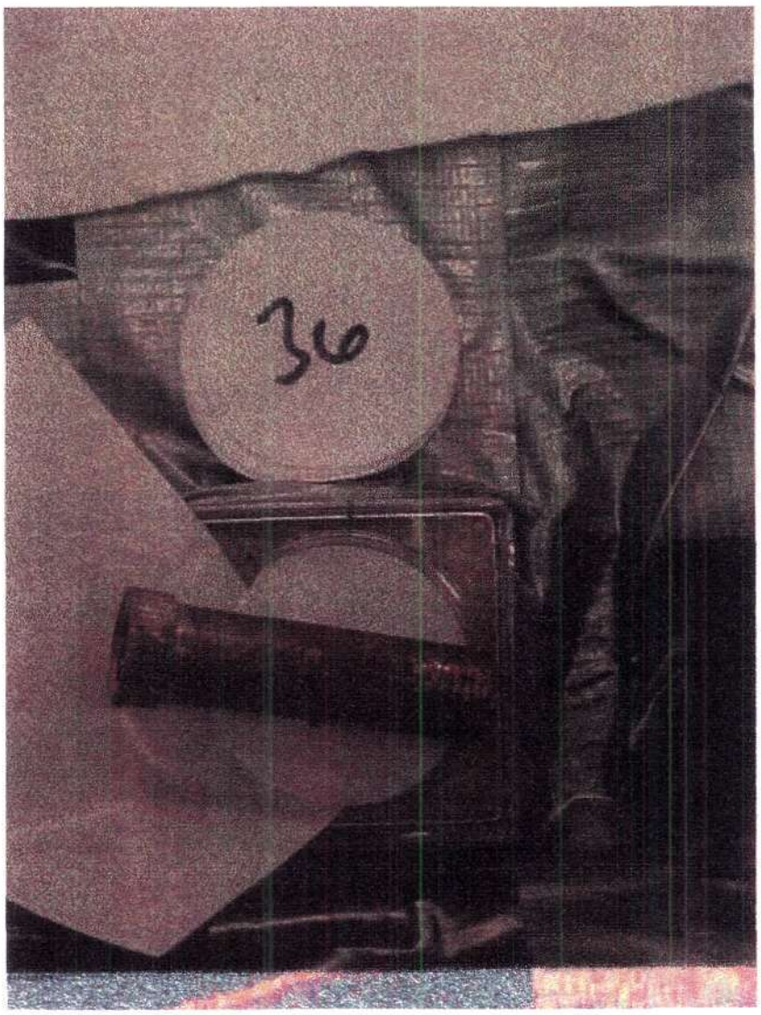

36

SAM 935

USEcology
FS-TX-02-01
Source Log

Date 2-9-02

BKG	mR/hr
1"	
12"	
36"	

<0.2

Container #	37	38	39	40	41
External on pig in mR/hr	<.2	<.2	[illegible]	<.2	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<.2	<.2	<1
Beta on open pig mR/hr O/W	<.2	10	10	10	<1

Liquid

Table Readings

Source mR/hr @ 1 inch	<.2	<.1	<	0.1	<
Source mR/hr @ 12 inches	<.2	<.2	<	<	<
Source mR/hr @ 36 inches	~~N/A~~ <.04	<.03	<	<	<
Smear DPM per 100 cm^2 Alpha	N/A	800			
Smear DPM per 100 cm^2 Beta	N/A	<1000			
Size of source in cc's	20 µL	30	30	10	20
Weight in grams	~~[illegible]~~ 25 grams	10	10	10	5

[illegible] Alpha DPM/100 cm²	0.2 <	~~0~~ 100	~~600~~ 18.3	~~ND~~ 9.2	~~ND~~ < 7.7
[illegible] Beta/Gamma DPM/100 cm²	-13.9 <	10,000	~~5000~~ -20.0	~~900,000~~ 23.9	~~BKG~~ < -24.5

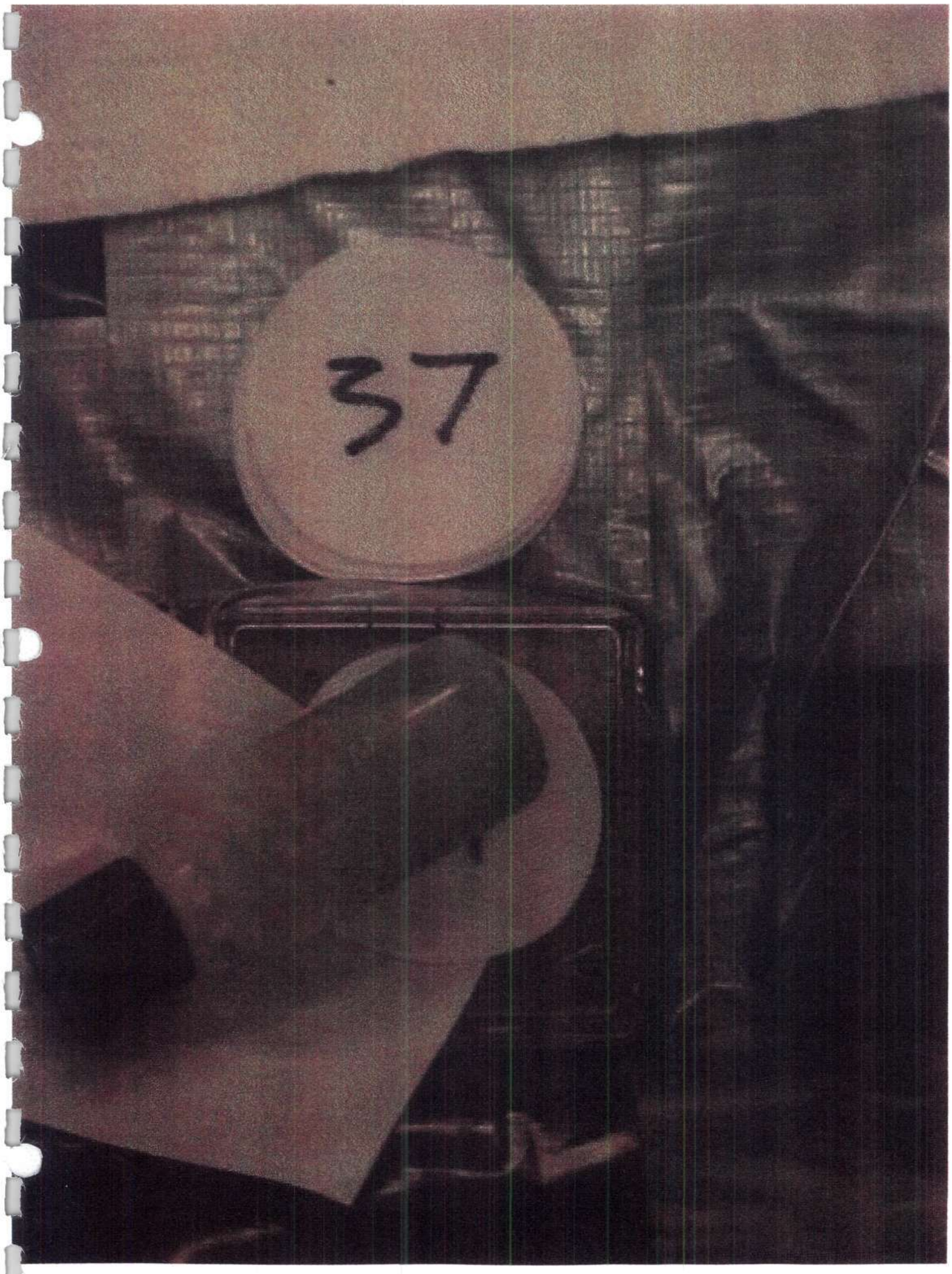
Info on source:

	None				

Information on pig:

	None				IR 192 5 mCi
	~~1453~~ 1453 672	1453 672	1453 672	1453 672	1453 672

CPA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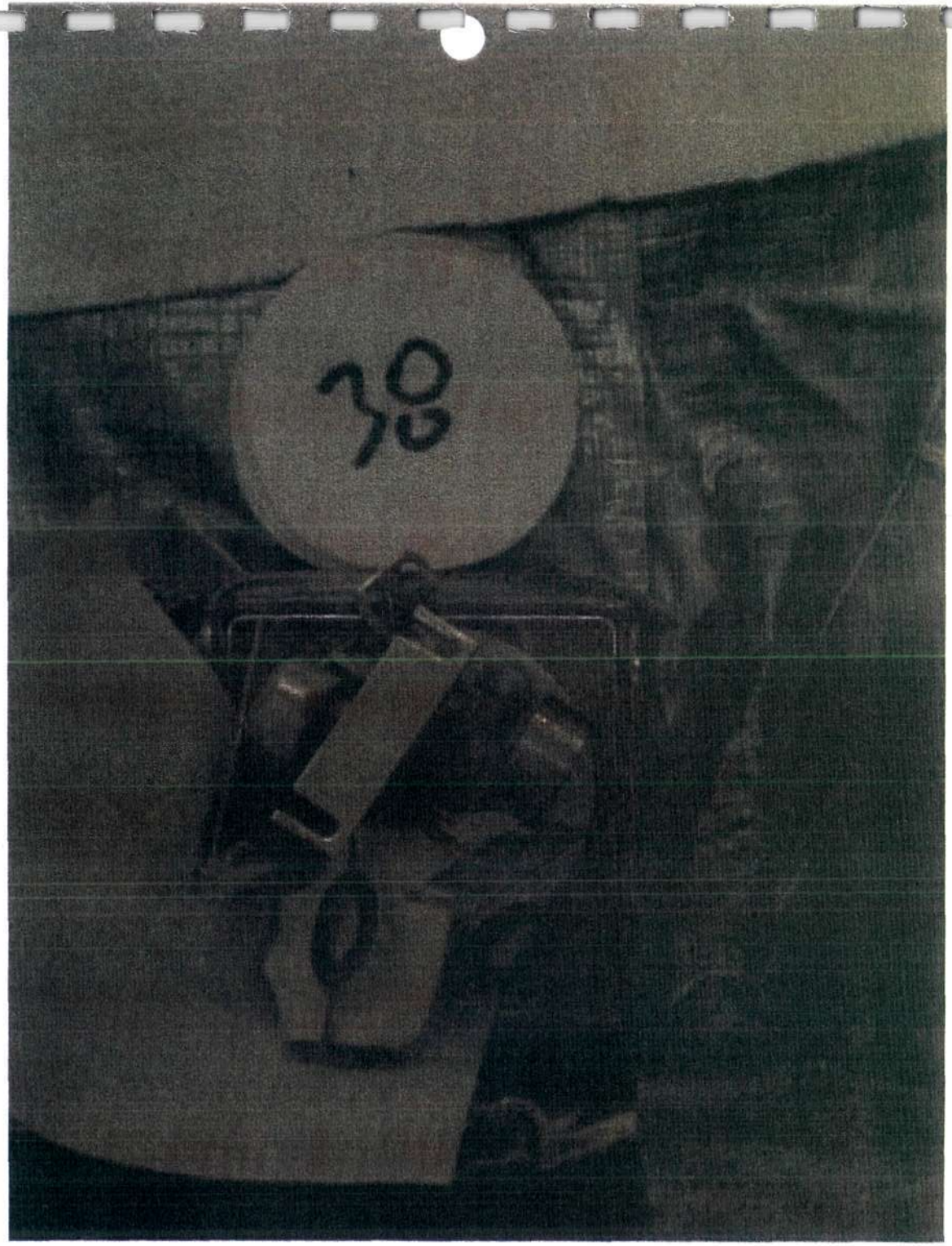
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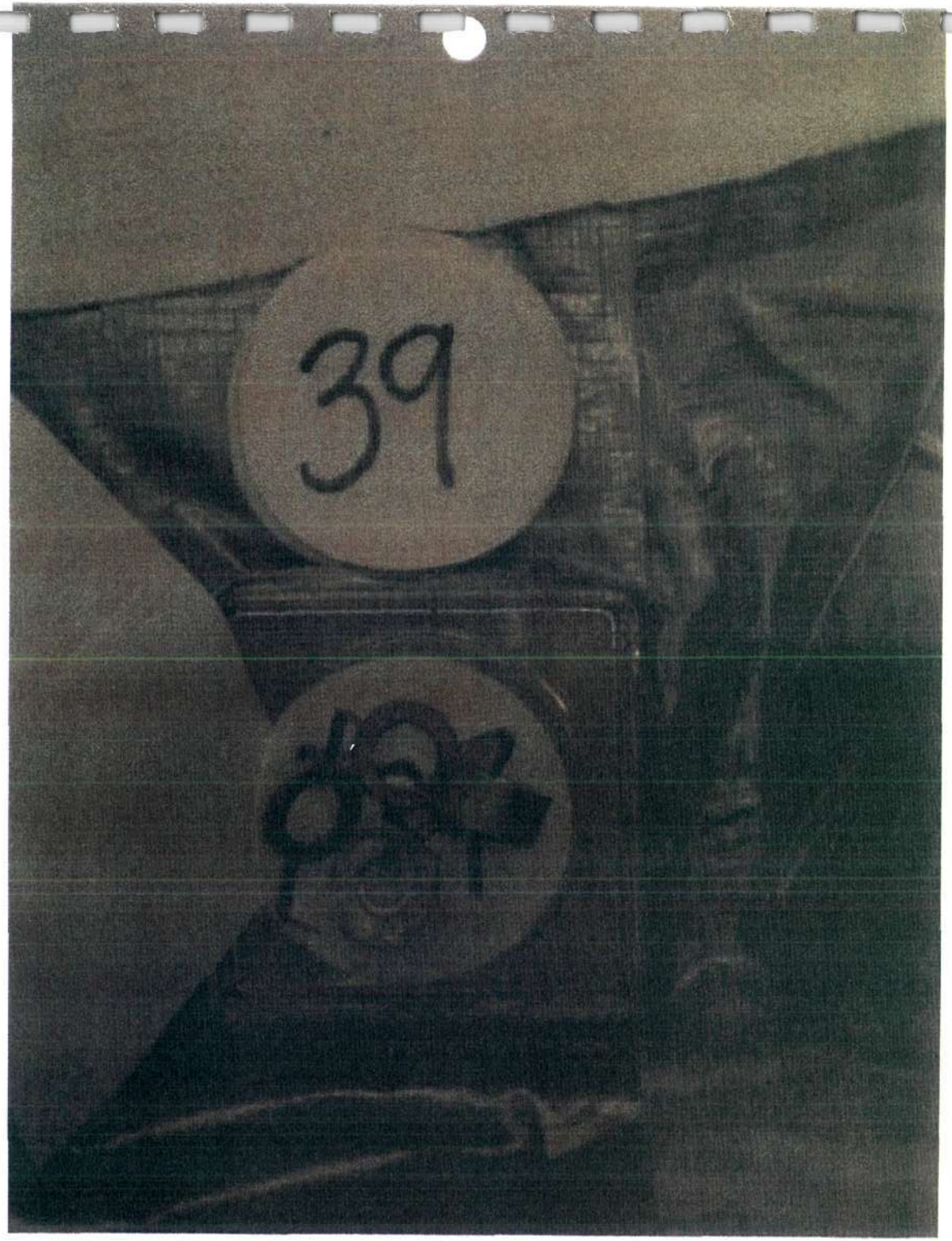
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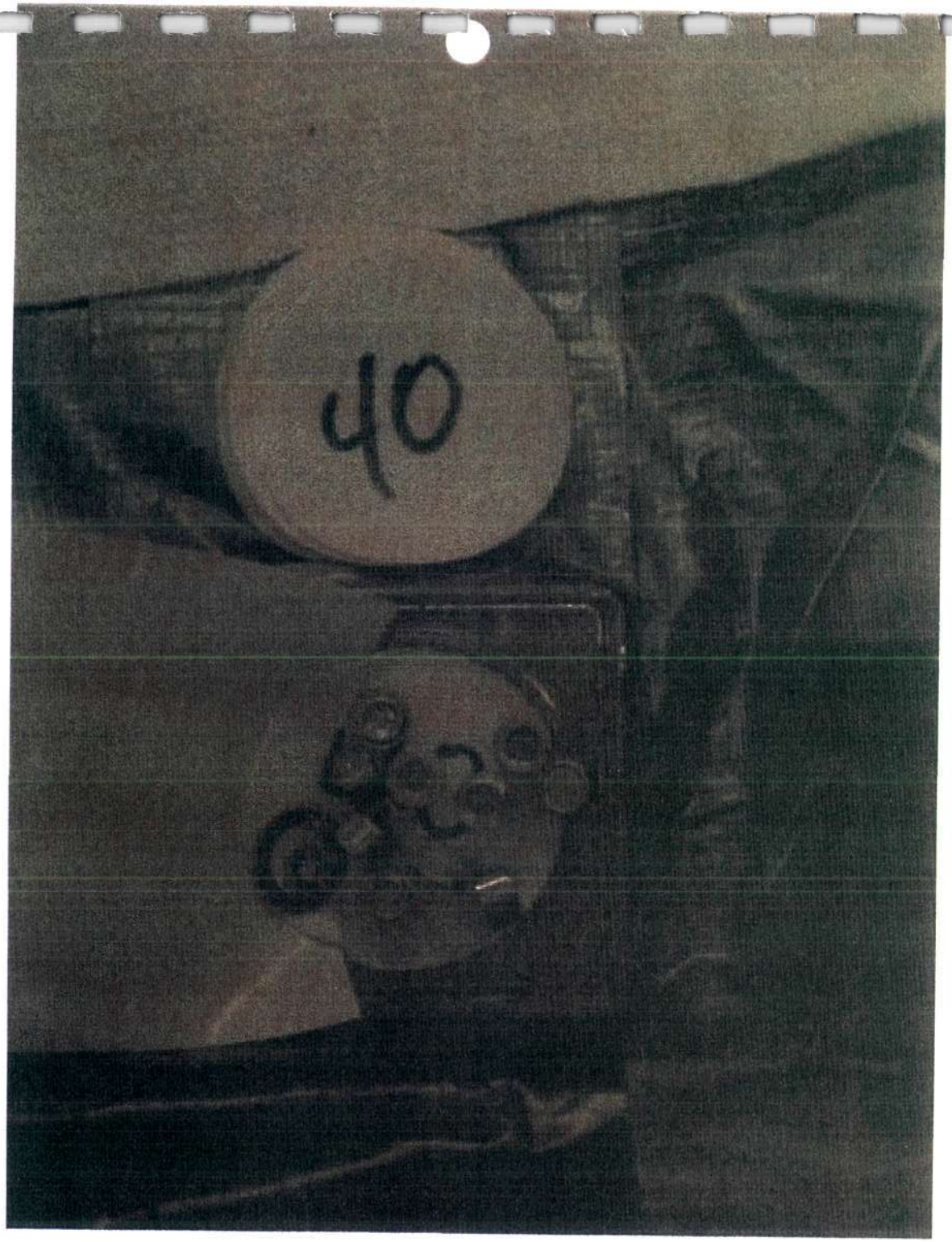
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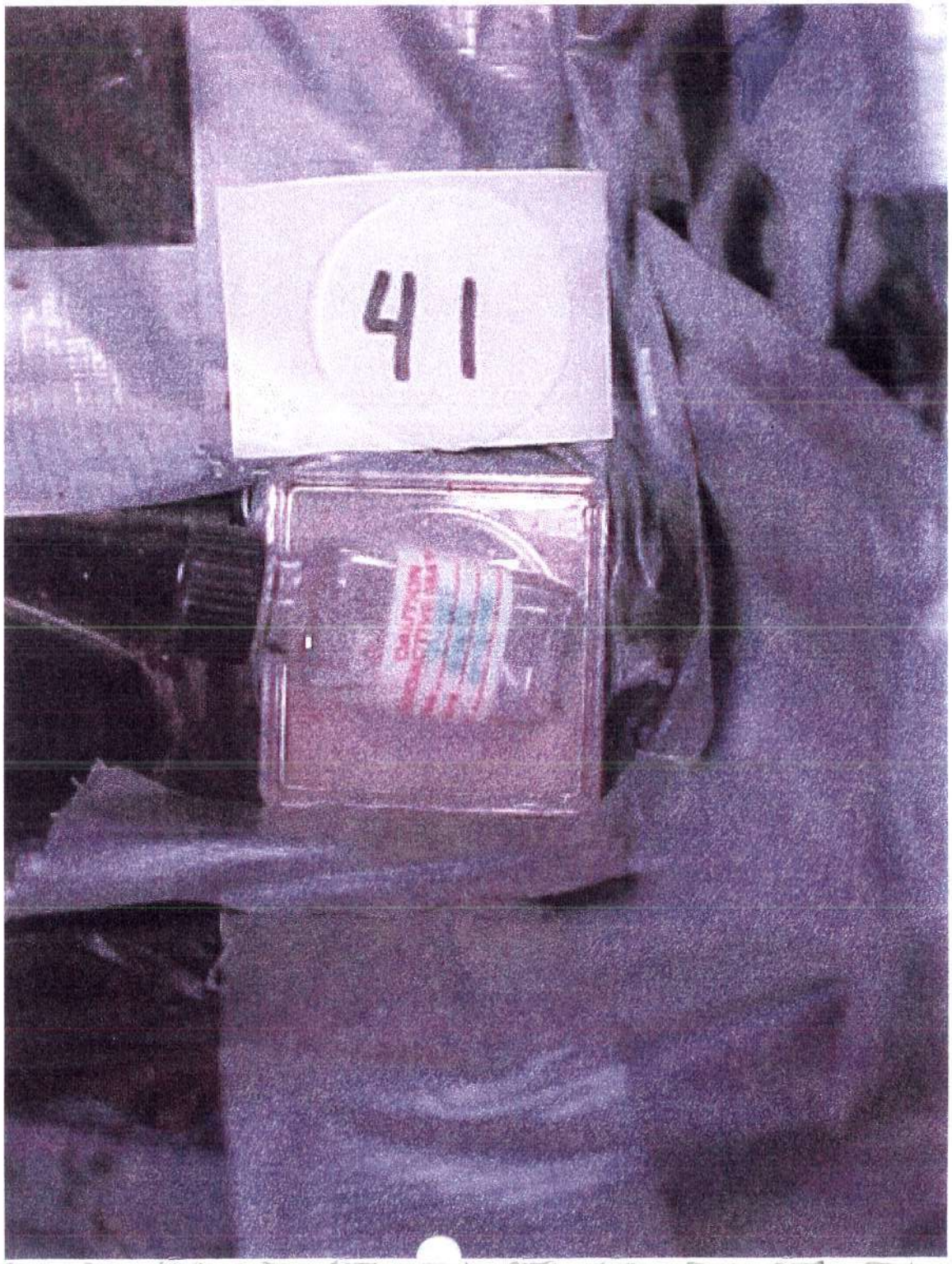
C-30


41

USEcology
FS-TX-02-01
Source Log

Date 2/9/02

BKG	mR/hr
1"	
12"	
36"	

	~~42~~ A/B	~~43~~ A/B	~~44~~ A/B	~~45~~ A/B	
Container #	42	43	44	45	46
External on pig in mR/hr	21				
External on pig Neutron mR/hr	Ø				
Contact open pig mR/hr	~~10~~ 20				
Beta on open pig mR/hr O/W	1500				

Table Readings

Source mR/hr @ 1 inch	10				
Source mR/hr @ 12 inches	1				
Source mR/hr @ 36 inches	0.2				
Smear DPM per 100 cm^2 Alpha	1,200				
Smear DPM per 100 cm^2 Beta	BKG				
Size of source in cc's	2				
Weight in grams	2				
Pic	✓				
CPM Alpha					
Direct Beta/Gamma					

Info on source:

	~~3.0 Rad per second~~ 25000(a) @ 4" inches				

~~[illegible]~~ 25,000 OW @ 4"

Information on pig:

	3.6 Rad per second * 162 mCi				

42

USEcology
FS-TX-02-01
Source Log

Date 2-12-02

BKG	mR/hr
1"	0.2
12"	0.2
36"	0.2

Container #	43				
External on pig in mR/hr	<1				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	5				
Beta on open pig mR/hr O/W	15				

Picture	✓				

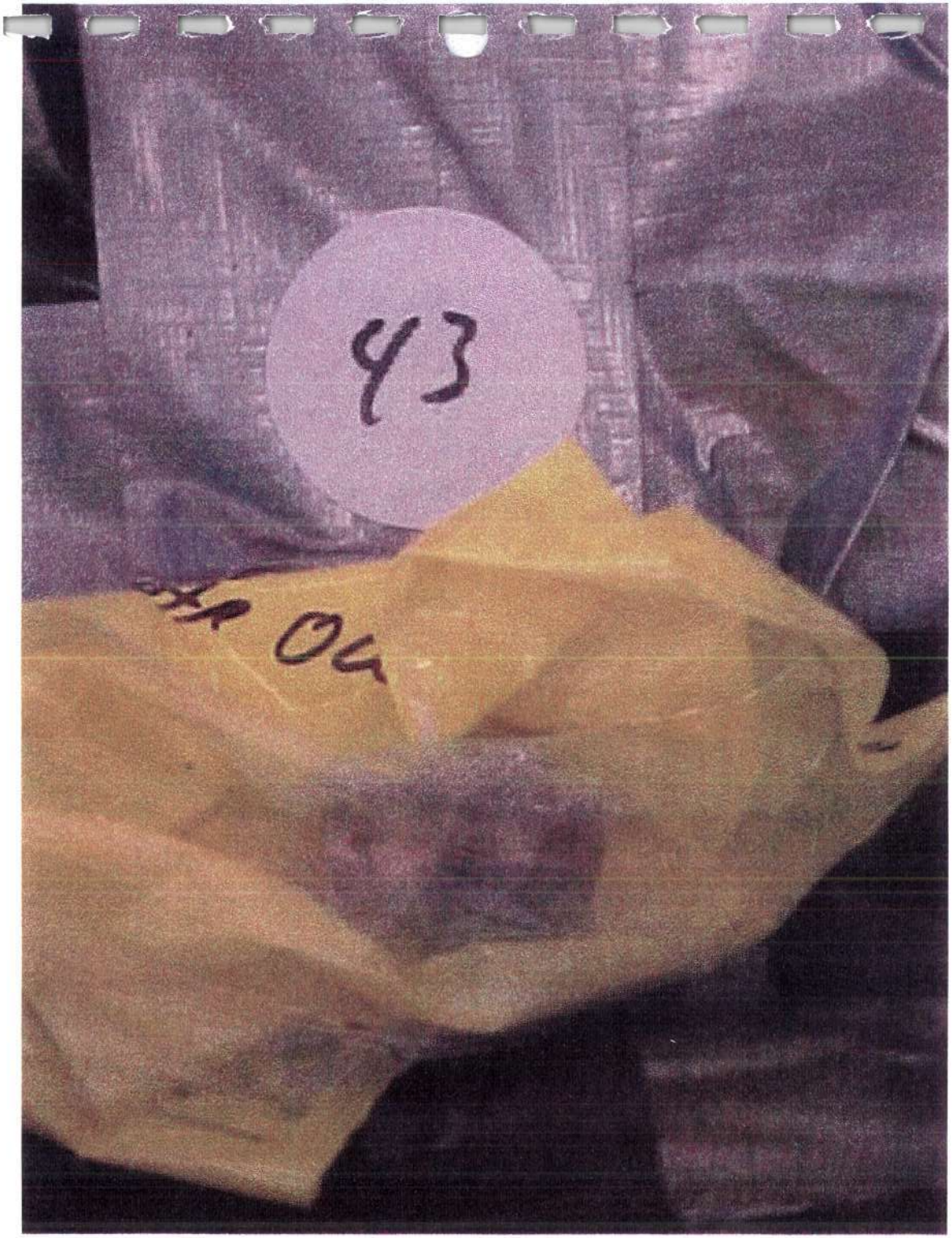
Table Readings

Source mR/hr @ 1 inch	15				
Source mR/hr @ 12 inches	0.6				
Source mR/hr @ 36 inches	0.4				
Size of source in cc's	8				
Weight in grams	10				

CPM Alpha	15,000,000	@ 3/4"			
Direct Beta/Gamma	600,000				

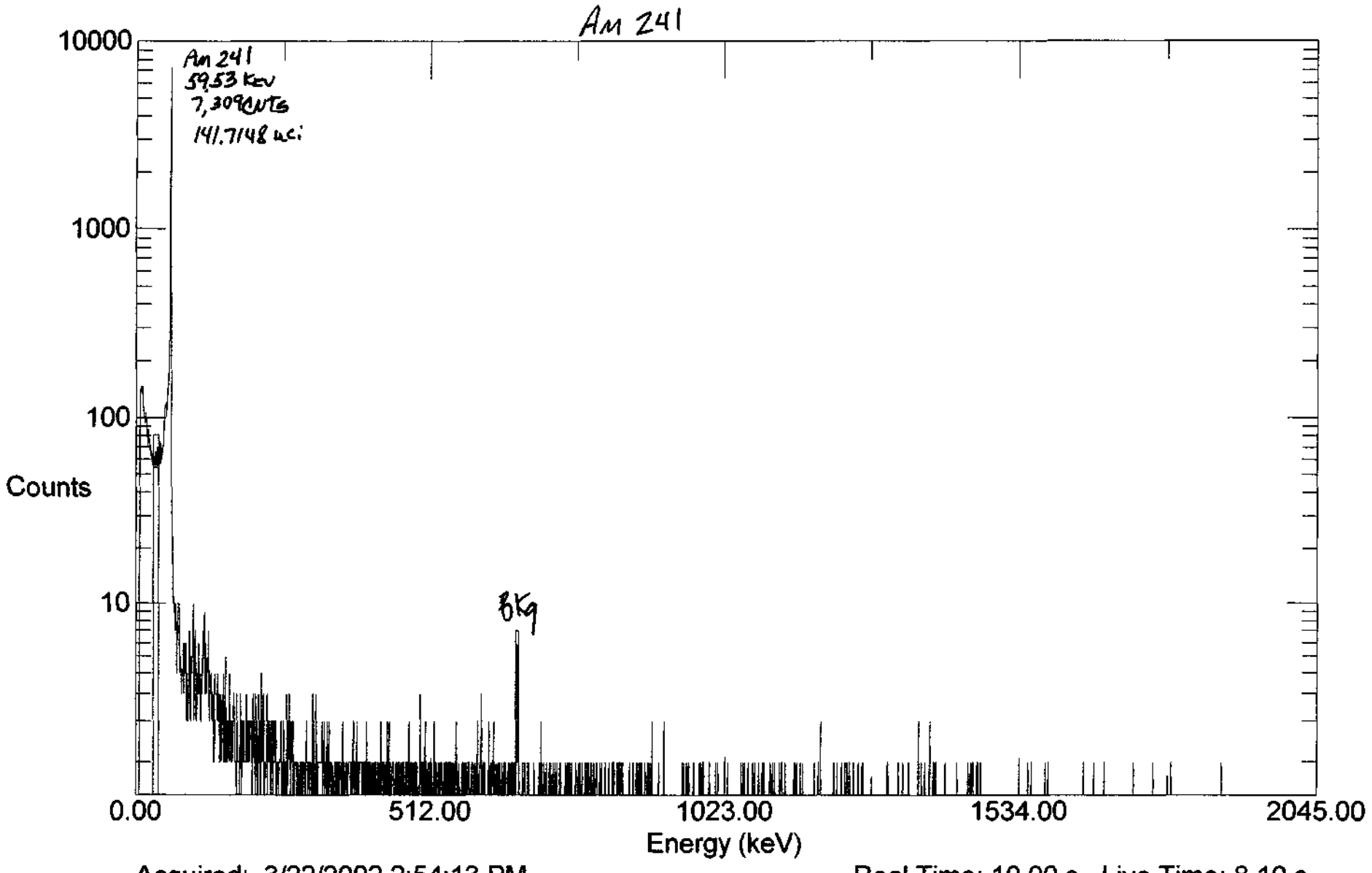
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha	1,500,000				
Smear DPM per 100 cm^2 Beta	60,000				
	AM241				


43

015 1SC-43-2 3-22-2002 2.54.13 PM

1SC-43-2



Acquired: 3/22/2002 2:54:13 PM Real Time: 10.00 s. Live Time: 8.10 s.

File: C:\User\GNIWEB~1\015 1SC-43-2 3-22-2002 2.54.13 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 2-16-02

BKG	mR/hr
6"	N/A
12"	
36"	

Container #	44	45	46	47	48
External on pig in mR/hr					
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact on pig mR/hr	10	16	20	15	13
Beta on pig mR/hr O/W	3000	5000	6000	6000	5000

Picture	✓	✓	✓	✓	✓

Table Readings

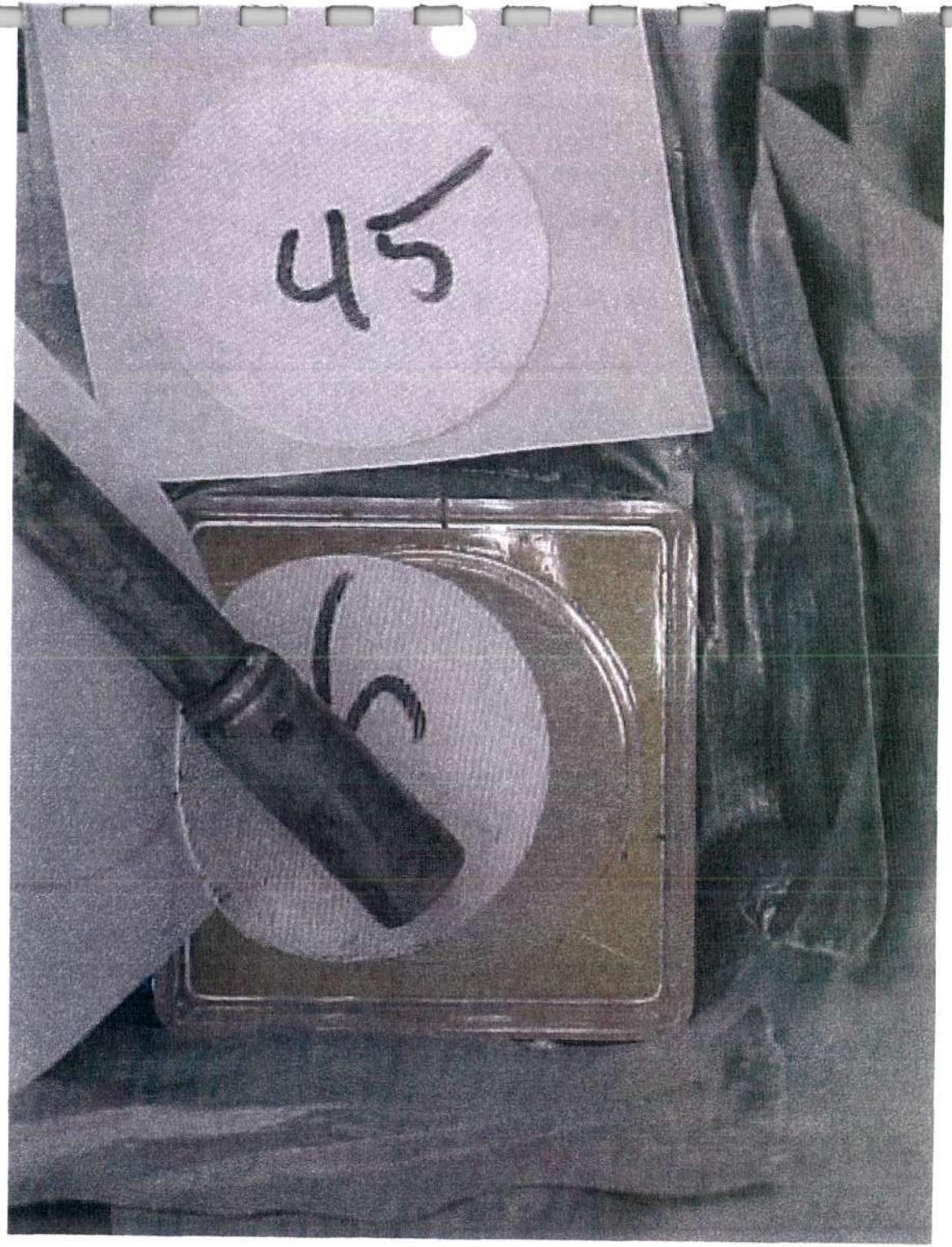
Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	N/A
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	~~20~~ 5	30	30	30	30
Weight in grams	50	300	300	300	300

Direct Alpha DPM/100cm2	25.7	11.4	33	42	4.3
Direct Beta/Gamma DPM/100cm2	14.54	88.8	25.2	19.1	<6.7

Info on source:	15 mCI SR90 FEB'73	15 mCI SR90 DEC'72	15 mCI SR90 DEC'67	15 mCI SR90 JUL '68	15 mCI SR90 JUL '68
	3FIR	3FIR	~~3FIR~~	3FIR	3FIR

Information on pig: 3M	10138 3M	10144	3M1071 3DIG	3M1085	3M1083
~~Smear DPM per 100 cm^2 Alpha~~					
~~Smear DPM per 100 cm^2 Beta~~					

44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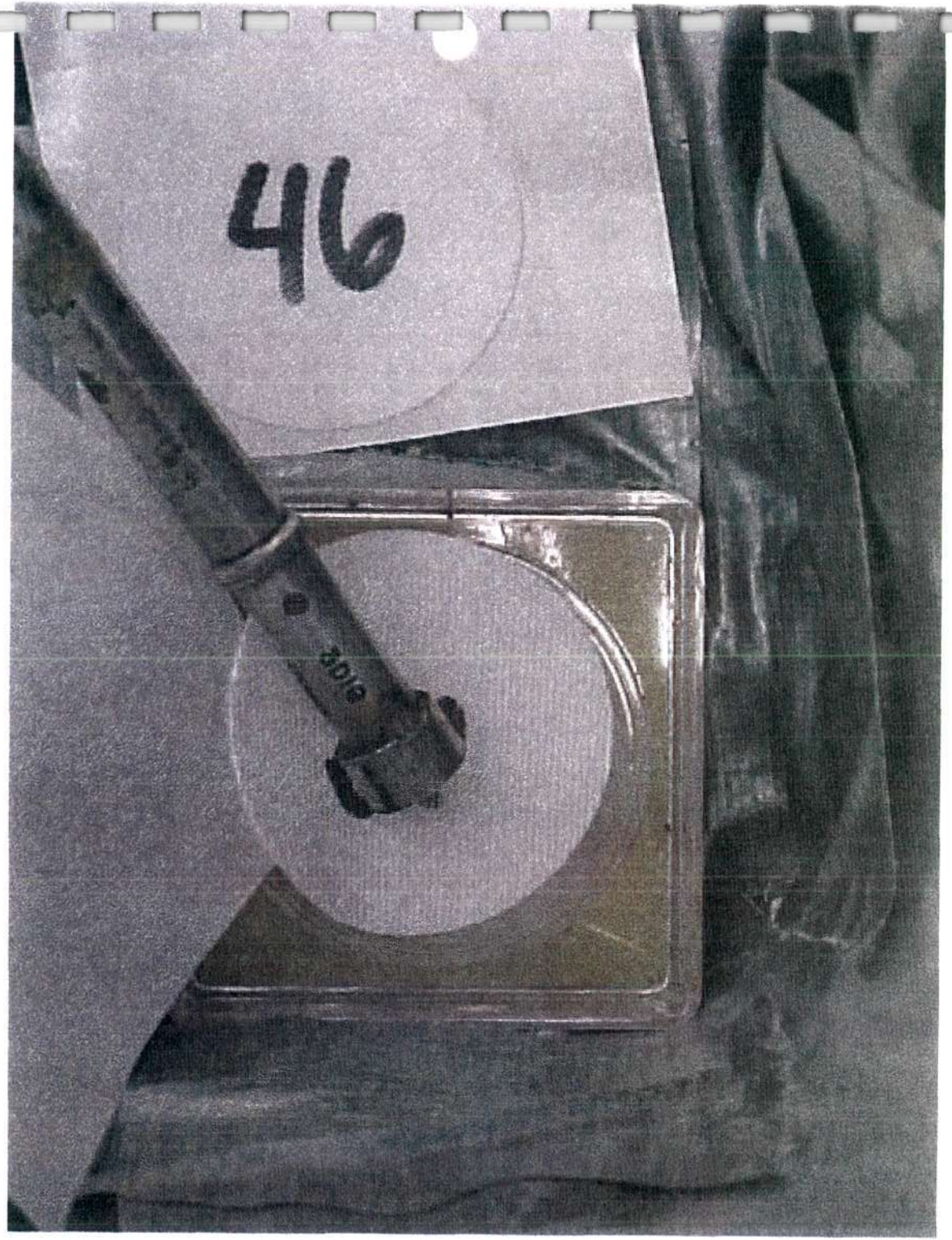
6


46

47
47

48

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **2/16/02** **Time** 1415

Location Source Leak Rate

Survey #

MDA Alpha DPM	MDA Beta DPM
10	67.2

BKG Alpha CPM	BKG Beta CPM
0.3	74

Alpha Eff 0.28

	2 Min CPM	DPM
44	15	25.7
45	7	11.4
46	19	32.9
47	24	41.8
48	3	4.3
49	2	2.5
50	3	4.3
51	4	6.1
52	0	-1.1
53	0	-1.1
54	0	-1.1
55	36	63.2
56	1	0.7
57	2	2.5
58	1	0.7
59	0	-1.1
60	3	4.3
61		-1.1
62		-1.1
63		-1.1
64		-1.1
65		-1.1
66		-1.1
67		-1.1
68		-1.1

Beta/Gamma Eff 0.33

	2 Min CPM	DPM
44	158	14.5
45	207	88.8
46	165	25.2
47	161	19.1
48	144	-6.7
49	168	29.7
50	134	-21.8
51	188	60.0
52	167	28.2
53	151	3.9
54	164	23.6
55	174	38.8
56	165	25.2
57	150	2.4
58	163	22.1
59	150	2.4
60	209	91.8
61		-224.8
62		-224.8
63		-224.8
64		-224.8
65		-224.8
66		-224.8
67		-224.8
68		-224.8

USEcology
FS-TX-02-01
Source Log

Date 2-16-02

BKG	mR/hr
6"	N/A
12"	
36"	

Container #	49	50	51	52	53
External on pig in mR/hr	N/A				
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	20	10	12	16	20
Beta on open pig mR/hr O/W	5000	6000	5000	6000	6000

Picture	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	N/A
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	30	30	30	30	30
Weight in grams	300	300	300	300	300

DPM Alpha DPM/100cm²	2.5	4.3	6.1	<-1.1	<-1.1
Direct Beta/Gamma DPM/100cm²	30	<-21.8	60.0	28.2	<3.9

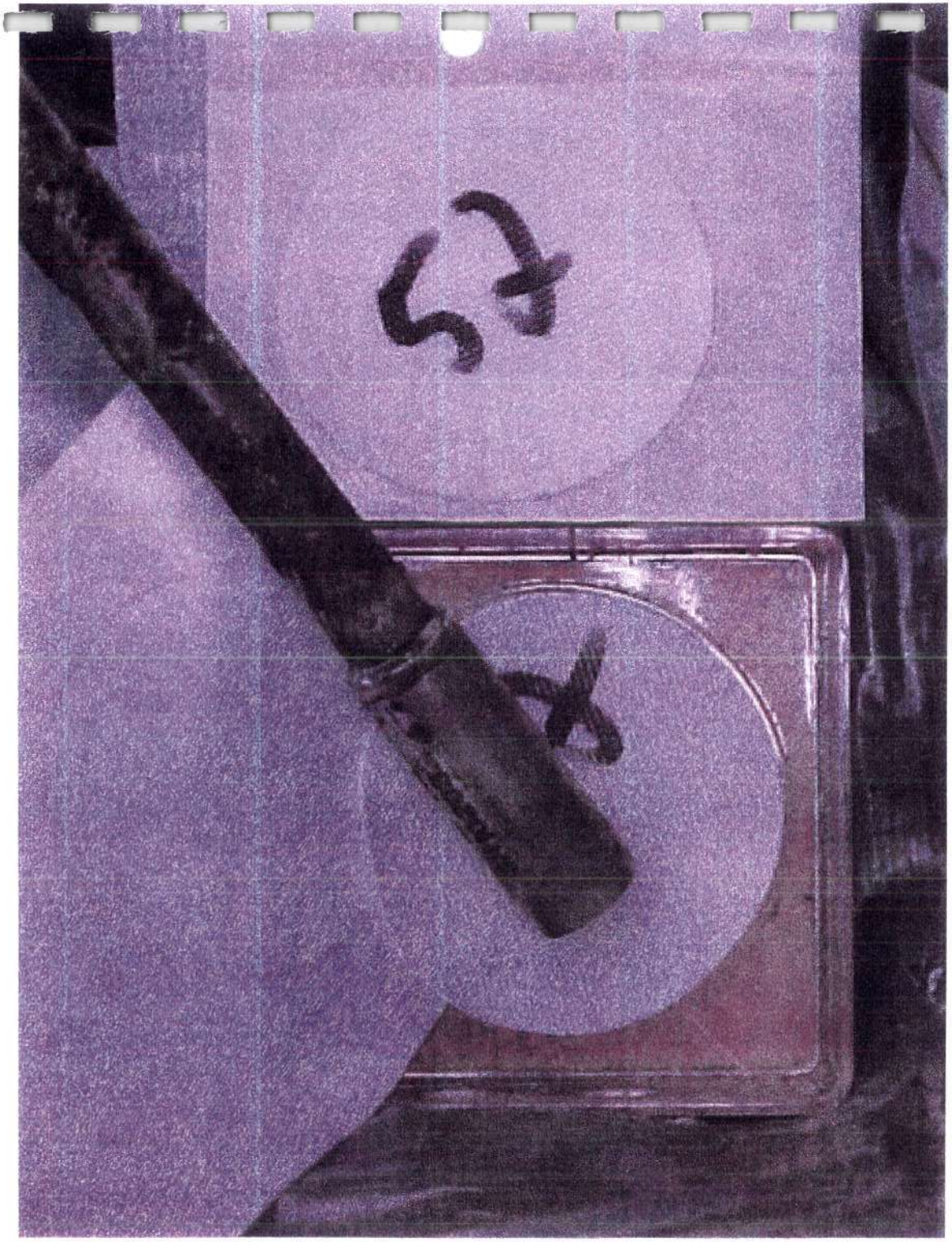
Info on source:	15 mCi Sr 90 DEC	15 mCi Sr 90 MAY '70	15 mCi Sr 90 APRIL '69	15 mCi Sr 90 OCT '79	15 mCi Sr 90 OCT '79
	3DIG	~~3FIR~~?	3FIR	3FIR	3FIR

Information on pig:	3M1075	3M10115	3M1088	3M10209 3M10203	3M10204
~~Smear DPM per 100 cm^2 Alpha~~					
Smear DPM per 100 cm^2 Beta					

49
49

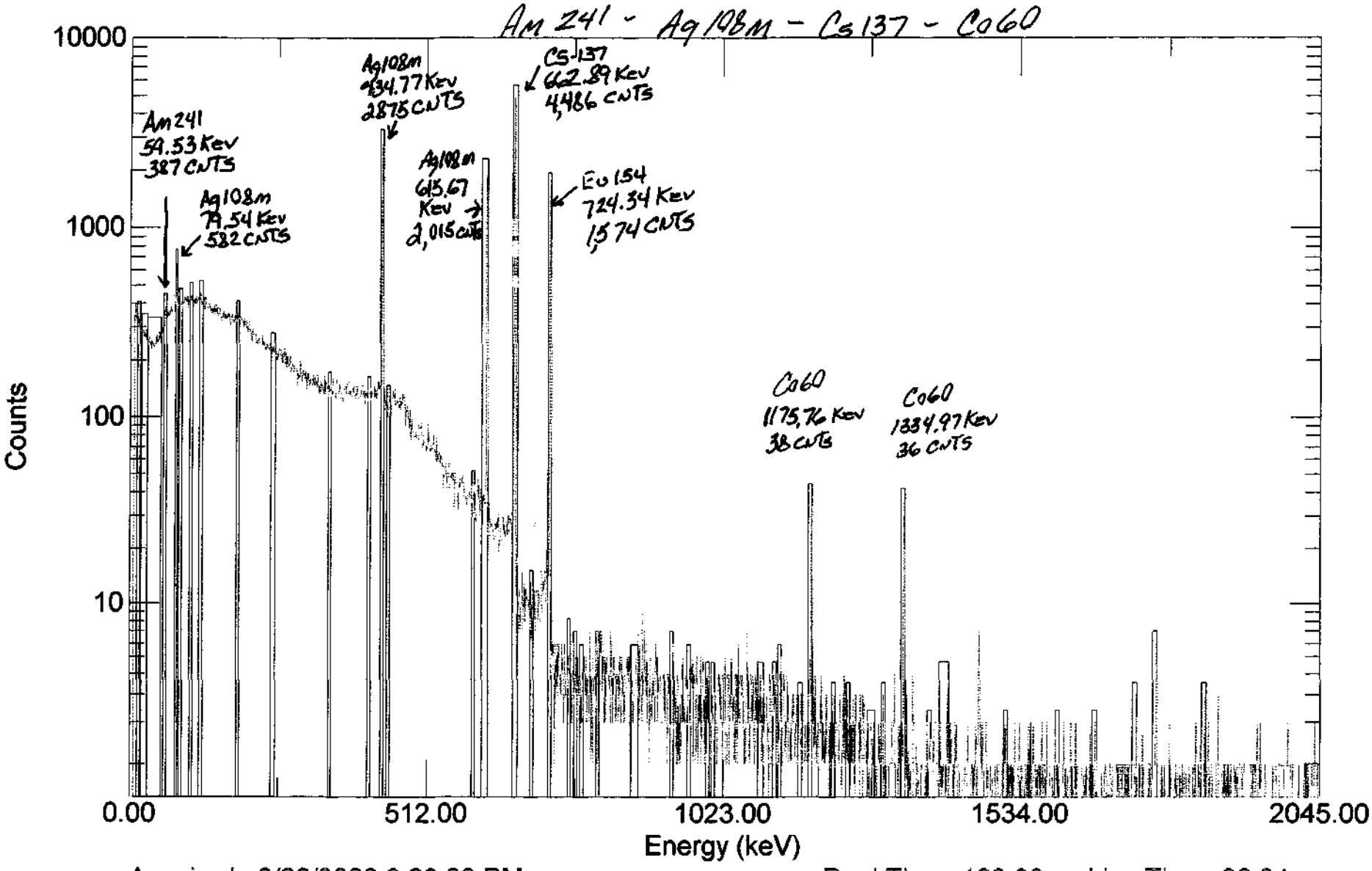
50
50

51


57
4

038 ITEM52 3-26-2002 3.29.06 PM

ITEM52



Acquired: 3/26/2002 3:29:06 PM Real Time: 120.00 s. Live Time: 96.94 s.

File: C:\User\GNIWEB~1\038 ITEM52 3-26-2002 3.29.06 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

53
53

USEcology
FS-TX-02-01
Source Log

Date 2/16/02

BKG	mR/hr
18"	
12" N/A	
36"	

Container #	54	55	56	57	58 ✓
External on pig in mR/hr N/A					
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	12	15	10	11	14
Beta on open pig mR/hr O/W	6000	6000	5000	6000	5000

Picture	✓	✓	✓	✓	✓

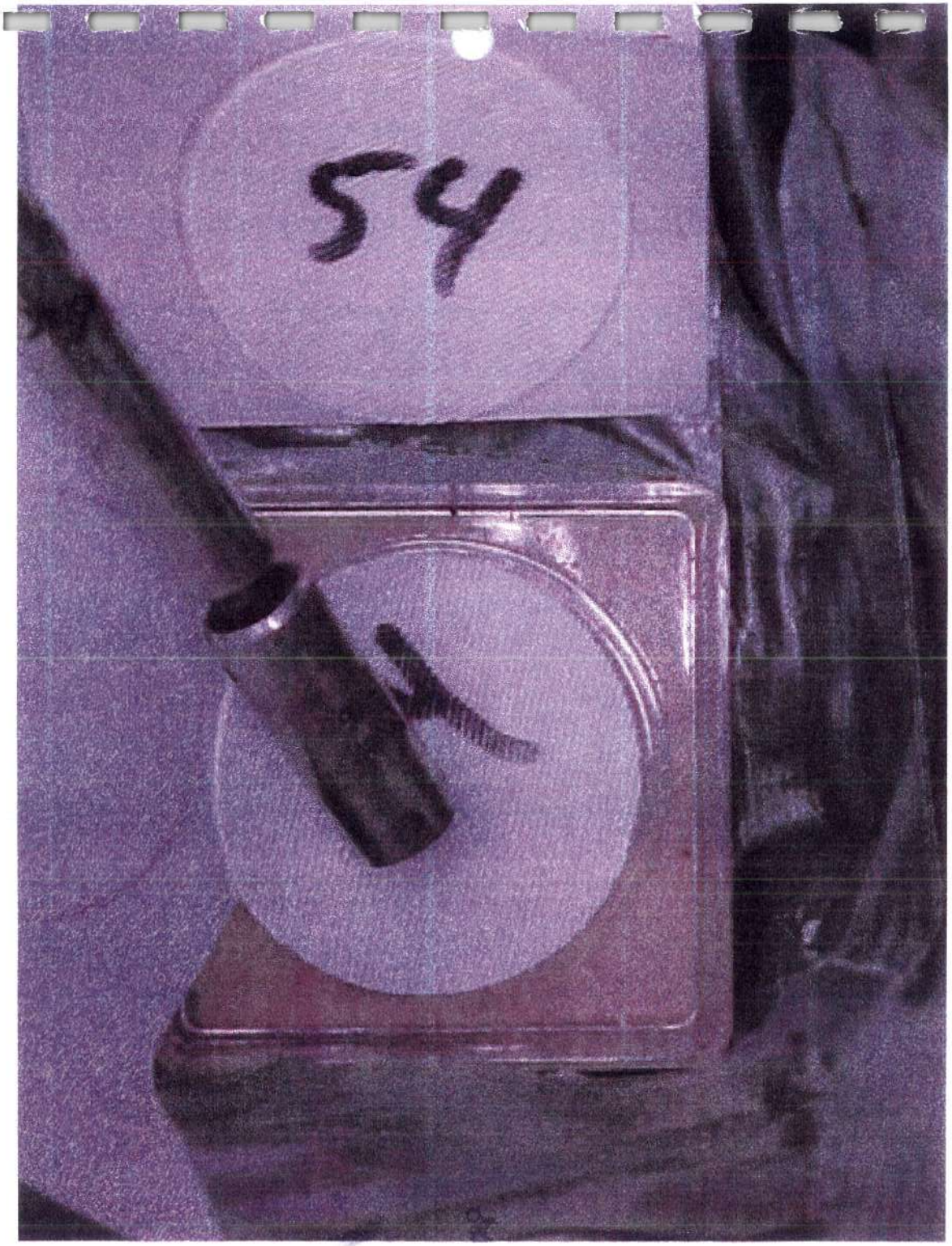
Table Readings

Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	N/A
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	15	30	30	30	30
Weight in grams	200	300	300	300	300

DPM Alpha DPM/100 cm²	-1.1	63.2	0.7	32.5	+0.7
DPM Beta/Gamma DPM/100 cm²	74 23.6	40 38.8	75.2	32.4	22.1

Info on source:	15 mCi Sr 90 DEC '72	15 mCi Sr 90 OCT 79	15 mCi Sr 90 FEB 73	15 mCi Sr 90 MAY 70	15 mCi Sr 90 DEC 72
	3FIR	3FIR	3FIR	3FIR	

Information on pig:	3m10145	3m10198	3m10153	3m10114	3m10143
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					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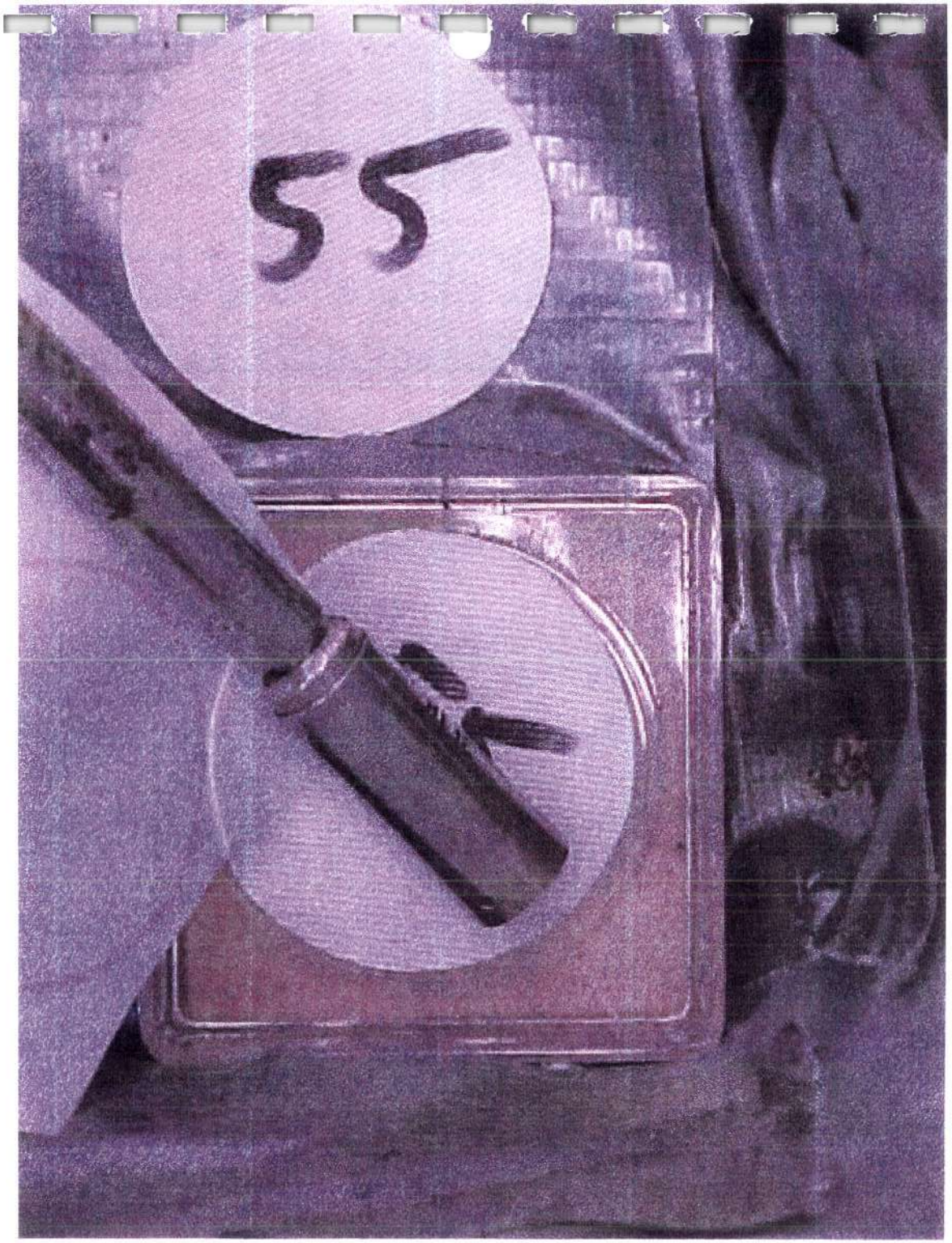
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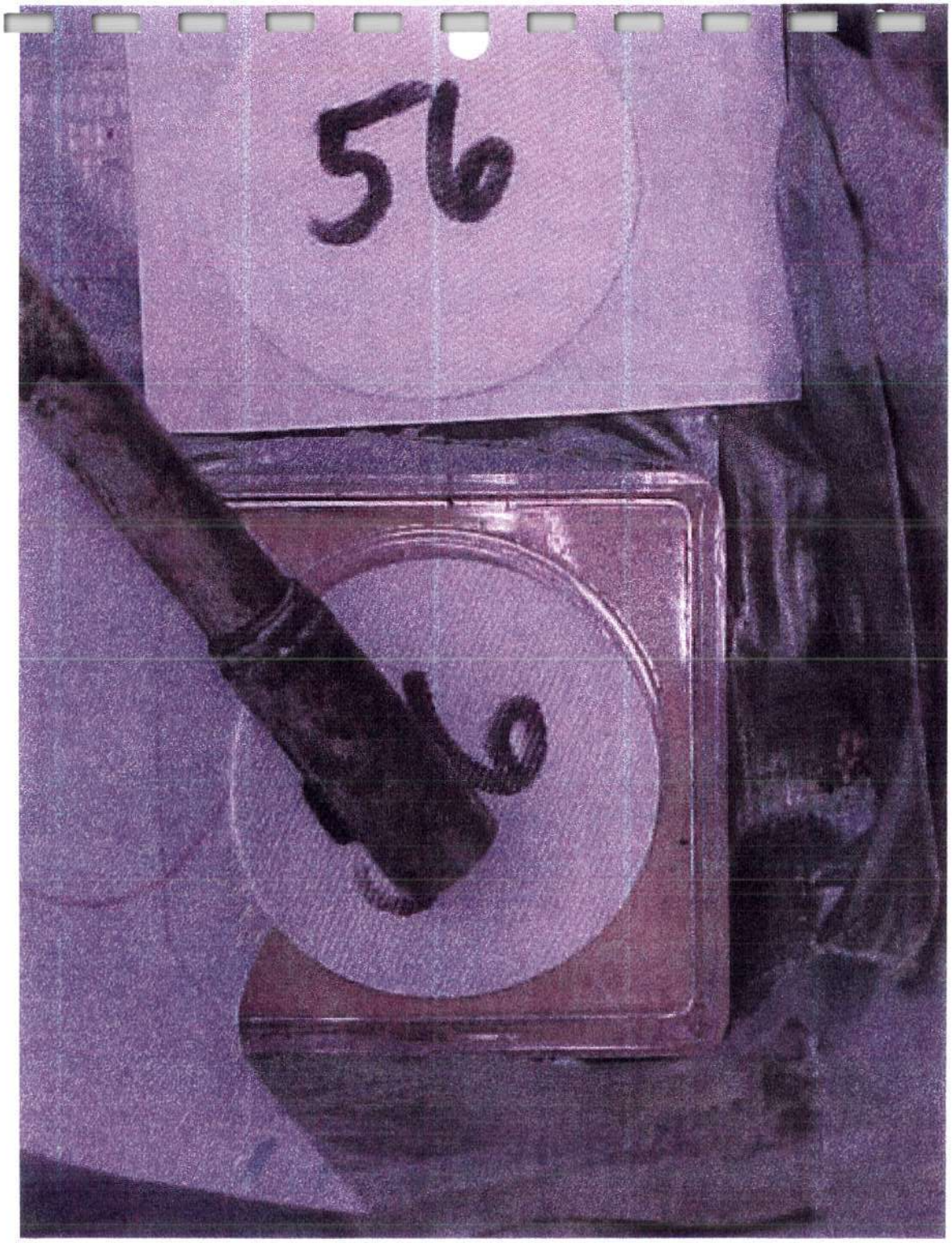
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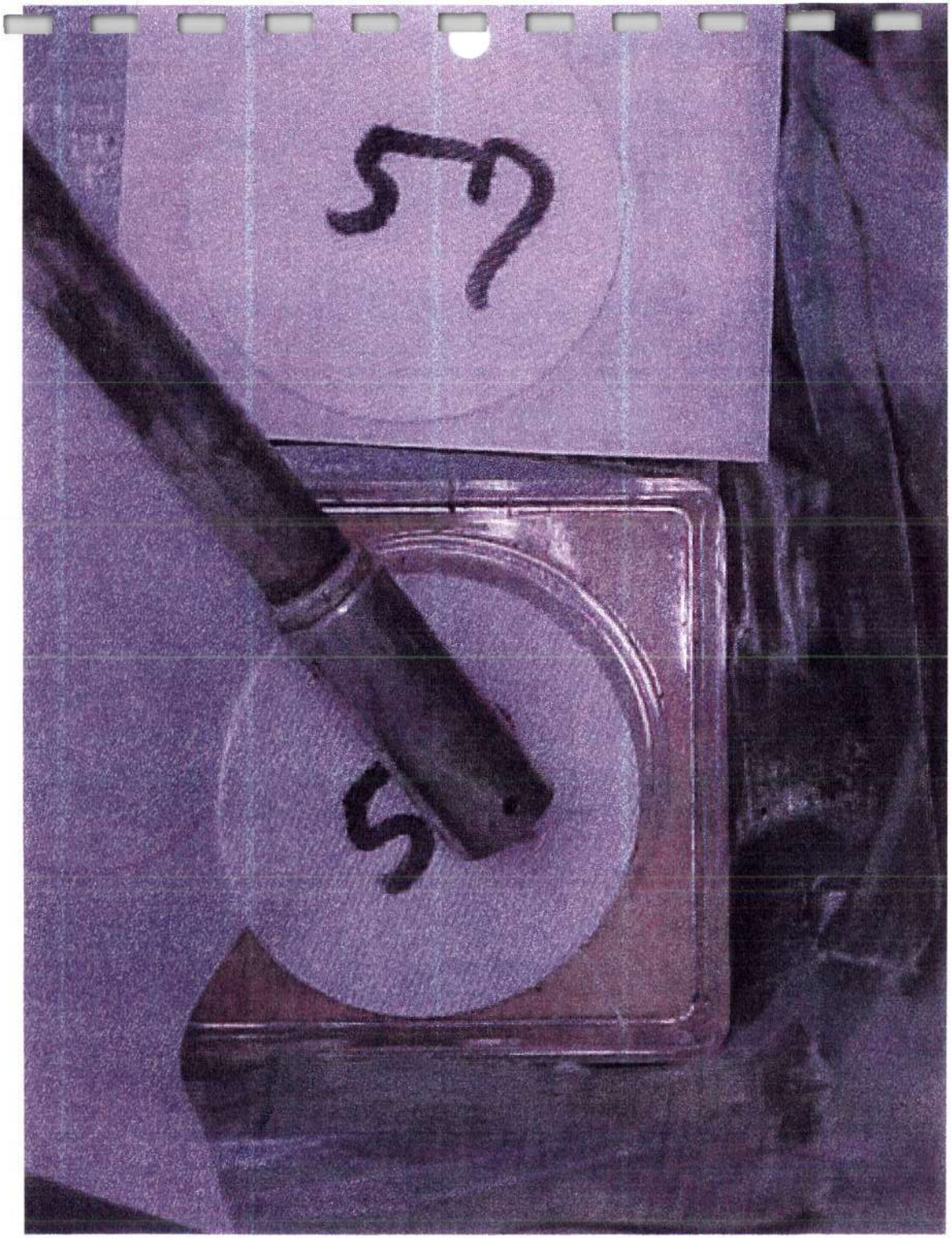
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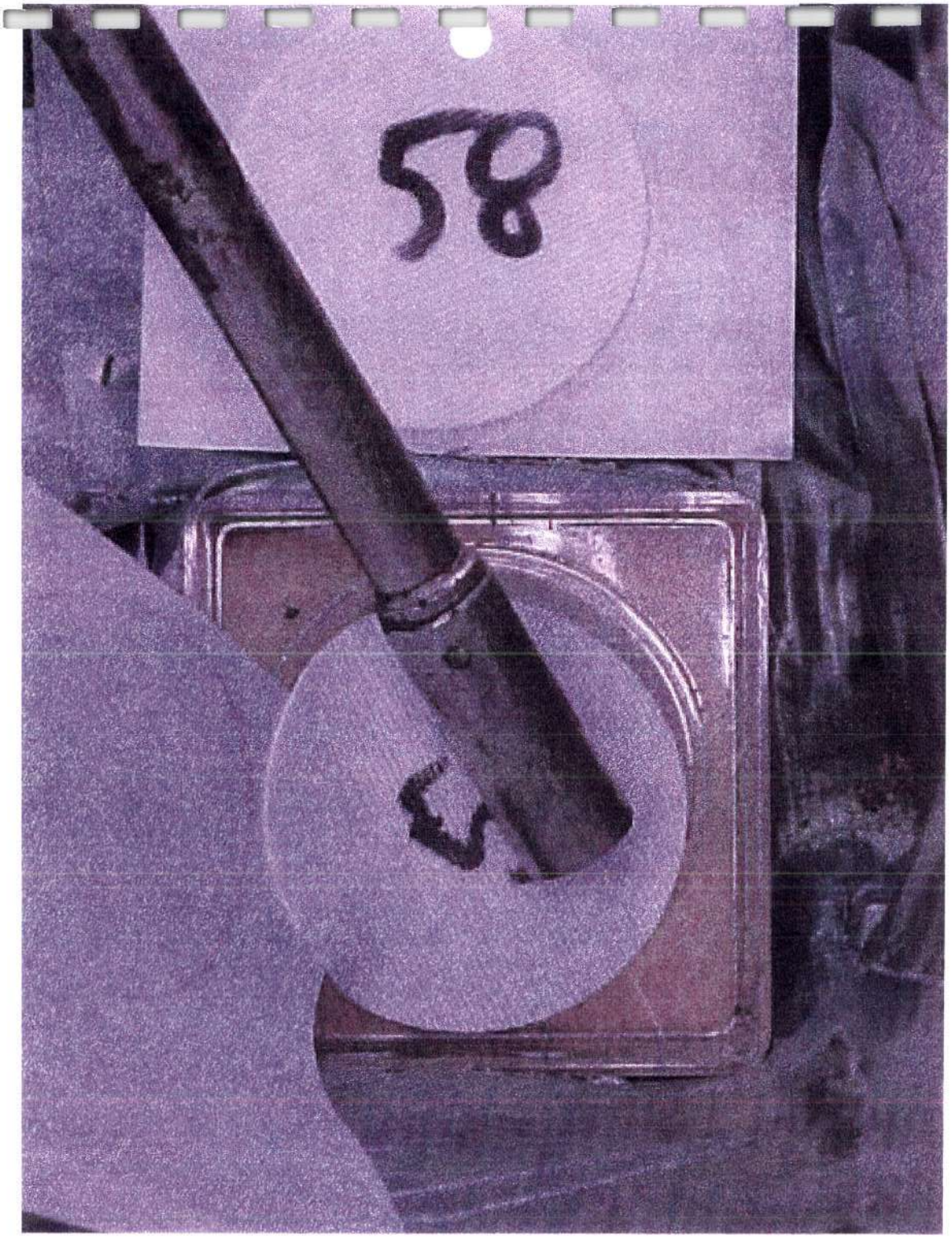

58

USEcology
FS-TX-02-01
Source Log

Date 2/16/02

BKG	mR/hr
6"	
12"	N/A
36"	

Container #	59	60			
External on pig in mR/hr N/A	~~[illegible]~~	~~[illegible]~~			
External on pig Neutron mR/hr	<1	<1			
Contact open pig mR/hr	11	21			
Beta on open pig mR/hr O/W	5000	5000			

Picture	✓	✓			

Table Readings

Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	30	30			
Weight in grams	300	300			

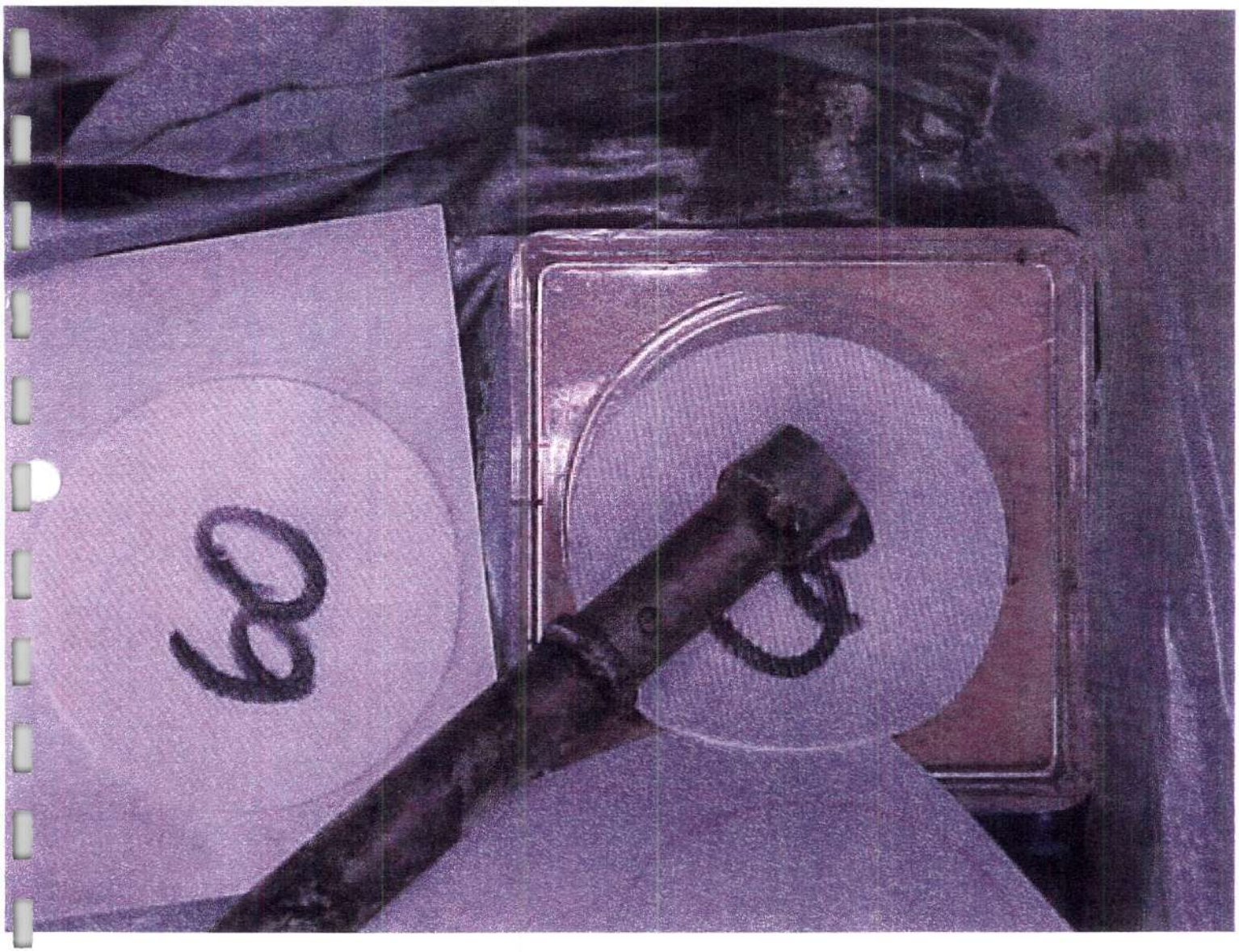
DPM Alpha DPM/100cm²	-1.1	4.3			
Direct Beta/Gamma DPM/100cm²	24	92			

Info on source:	15 mCi Sr 90 April '69	~~15 mCi Sr 90~~ 1017			

3DIG

Information on pig:	3M 1089				
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

59
5


8
8

USEcology
FS-TX-02-01
Source Log

Date 3-6-02

BKG	mR/hr
6"	.1
12"	.2
36"	.4

Container #	25	61	62	63	64
External on pig in mR/hr	N/A	<1	3	<1	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	N/A	<1	2	<1	2
Beta on open pig mR/hr O/W		<1	7	<1	10

Picture	N/A	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	N/A	Bkg	1.0	Bkg	0.7
Source mR/hr @ 12 inches		Bkg	0.5	Bkg	0.3
Source mR/hr @ 36 inches		Bkg	0.4	Bkg	0.4
Size of source in cc's		20 ml	2cc	20 ml	5ml
Weight in grams		20 gr	5gr	20 gr 7.5	15gr

CPM Alpha	N/A	~~Bkg~~ 31	N/A 75	~~Bkg 8~~	-1.4 N/A
Direct Beta/Gamma		~~Bkg~~ 12	5	~~Bkg 19~~ 18.5	~~[illegible]~~ -205.8

Info on source:	HALE	Liquid Id 131 7-18-90 15mci	None	Same	None

Information on pig:	All	I&W-131 15mci ~~178~~ 7-18-90	NONE	I+W-131 I 131 15 mci *7-18-90	None
Smear DPM per 100 cm^2 Alpha		31	75	8	4500K
Smear DPM per 100 cm^2 Beta		12	5	19	60K
	Tyre	Liquid		Liquid	Hole in AM241 SOURCE

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **3/6/02** **Time** 1635

Location Sources

Survey # N/A

MDA Alpha DPM	MDA Beta DPM
10.4	64.5

BKG Alpha CPM	BKG Beta CPM
0.4	68

Alpha Eff 0.26

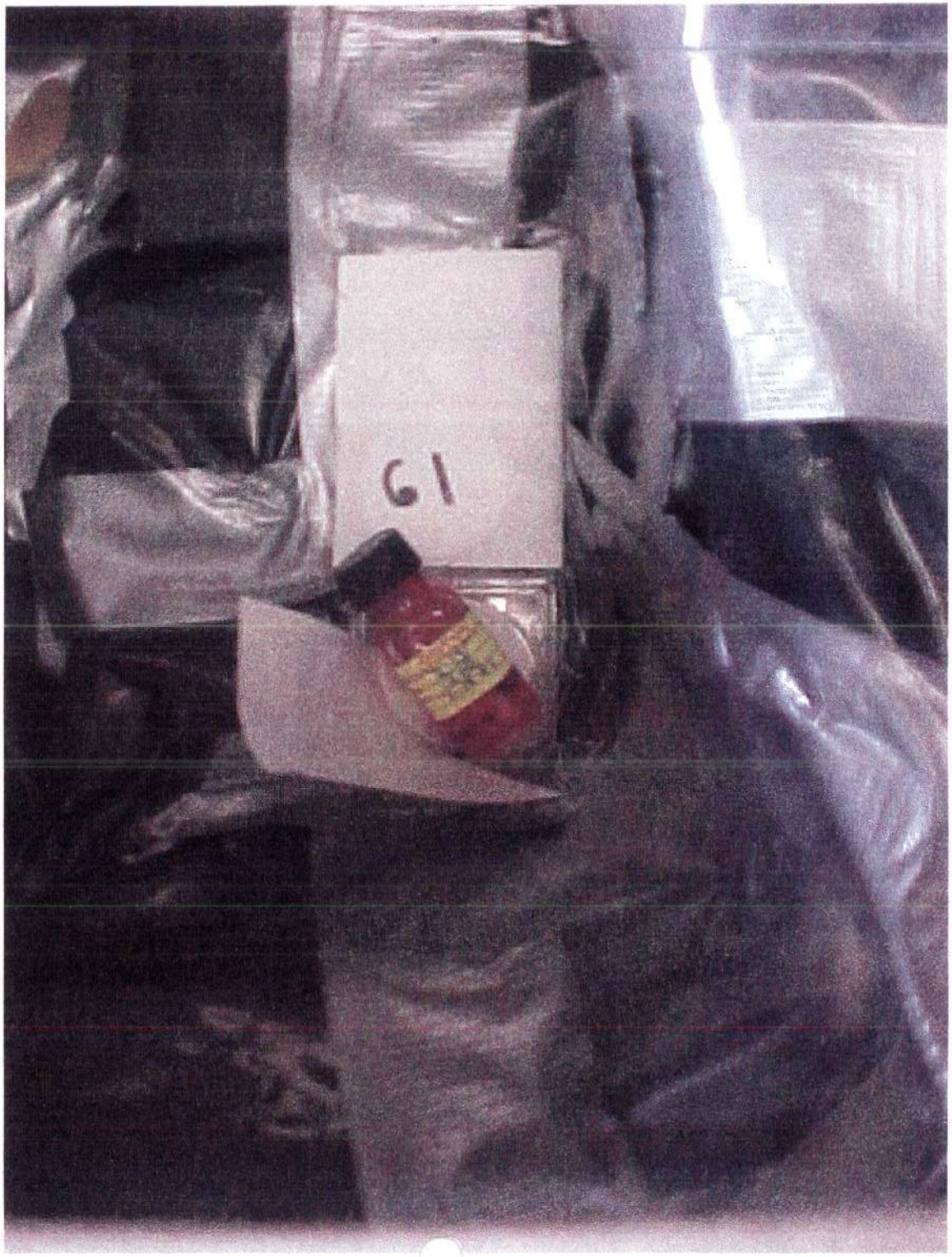
	2 Min CPM	DPM
61	18	30.7
62	43	75.4
63	5	7.5
64		-1.4
65		-1.4
66	46	80.7
67	3	3.9
68	2	2.1
69	2	2.1
70	102	180.7
71	7	11.1
72	5	7.5
73		-1.4
74	105	186.1
*75	1	0.4
*76	15	25.4
77		-1.4
78		-1.4
79		-1.4
80		-1.4
81		-1.4
82		-1.4
83		-1.4
84		-1.4
85		-1.4

Beta/Gamma Eff 0.33

	2 Min CPM	DPM
61	144	12.4
62	139	4.8
63	148	18.5
64		-205.8
65		-205.8
66	176	60.9
67	142	9.4
68	162	39.7
69	141	7.9
70	165	44.2
71	146	15.5
72	148	18.5
73		-205.8
74	171	53.3
75	163	41.2
76	180	67.0
77		-205.8
78		-205.8
79		-205.8
80		-205.8
81		-205.8
82		-205.8
83		-205.8
84		-205.8
85		-205.8

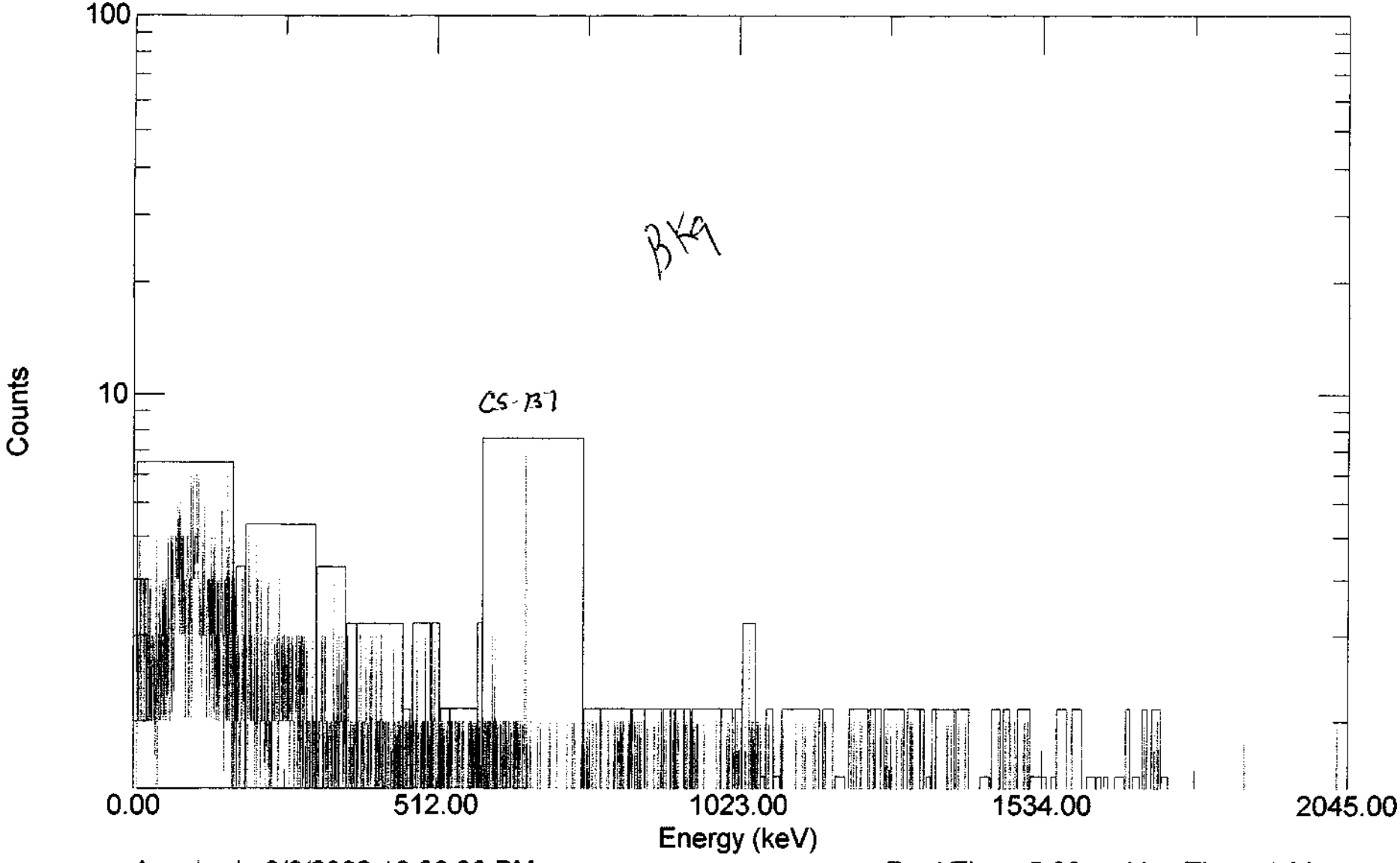
* Brick

* Source


61

009 1SC-61 3-6-2002 12.08.29 PM

SC-61



Acquired: 3/6/2002 12:08:30 PM Real Time: 5.00 s. Live Time: 4.92 s.

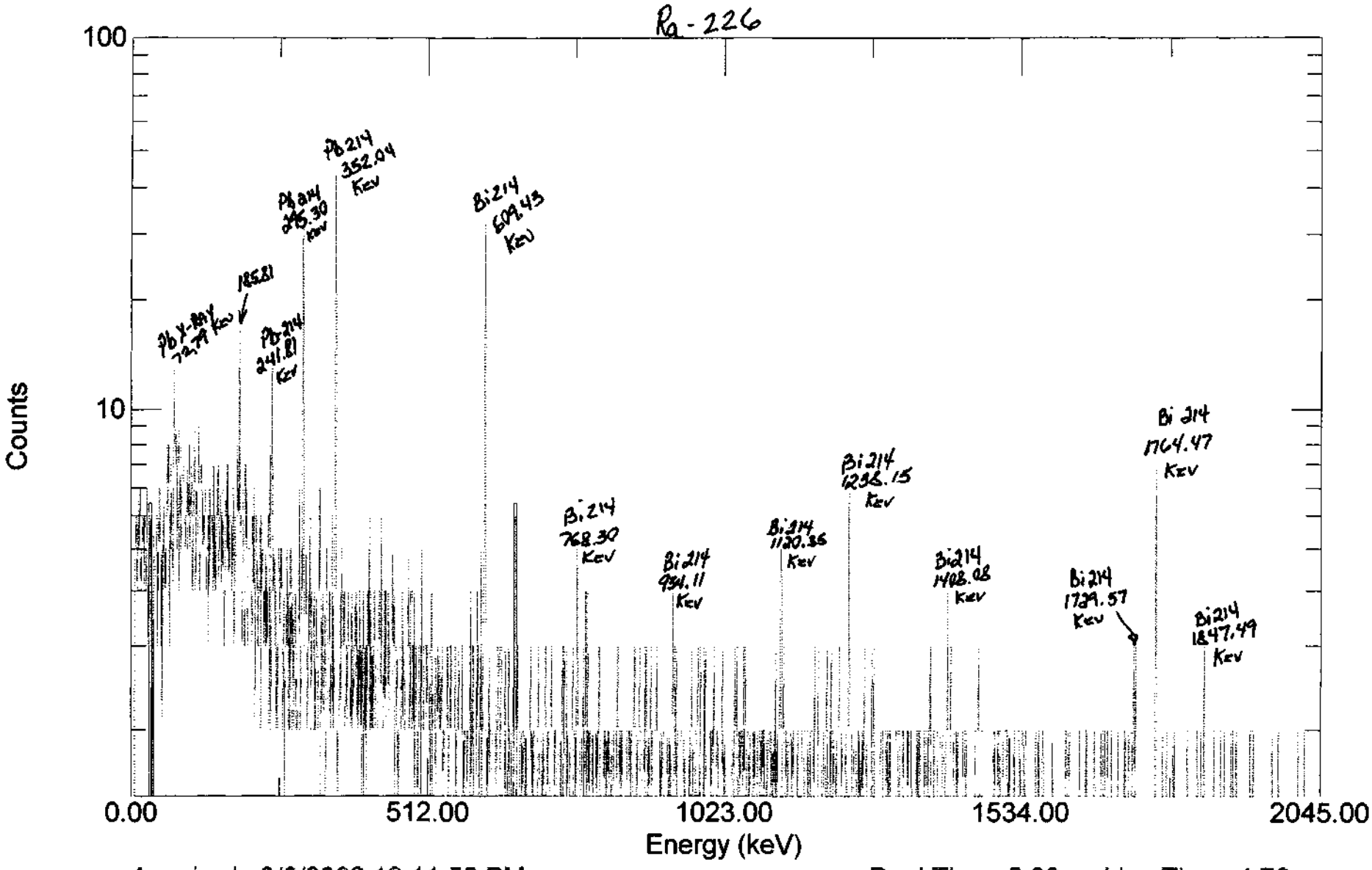
File: C:\User\GNIWEB~1\GNISOU~1\009 1SC-61 3-6-2002 12.08.29 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

62
63

0101 SC-62 3-6-2002 12.11.55 PM

SC-62



Acquired: 3/6/2002 12:11:55 PM Real Time: 5.00 s. Live Time: 4.78 s.

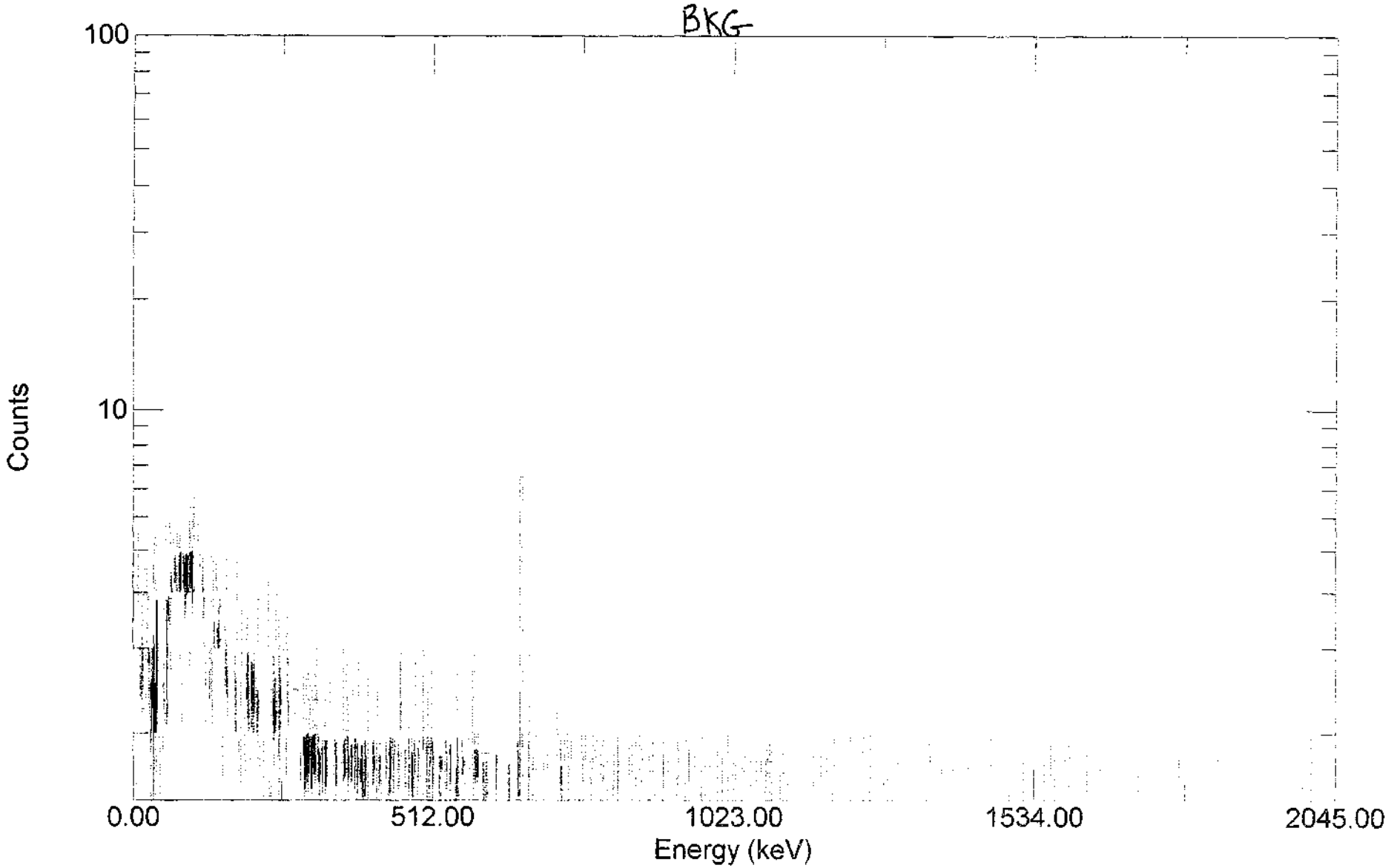
File: C:\User\GNIWEB~1\GNISOU~1\0101 SC-62 3-6-2002 12.11.55 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

63

011 1SC-63 3-6-2002 12.15.44 PM

SC-63



Acquired: 3/6/2002 12:15:44 PM Real Time: 5.00 s. Live Time: 4.92 s.

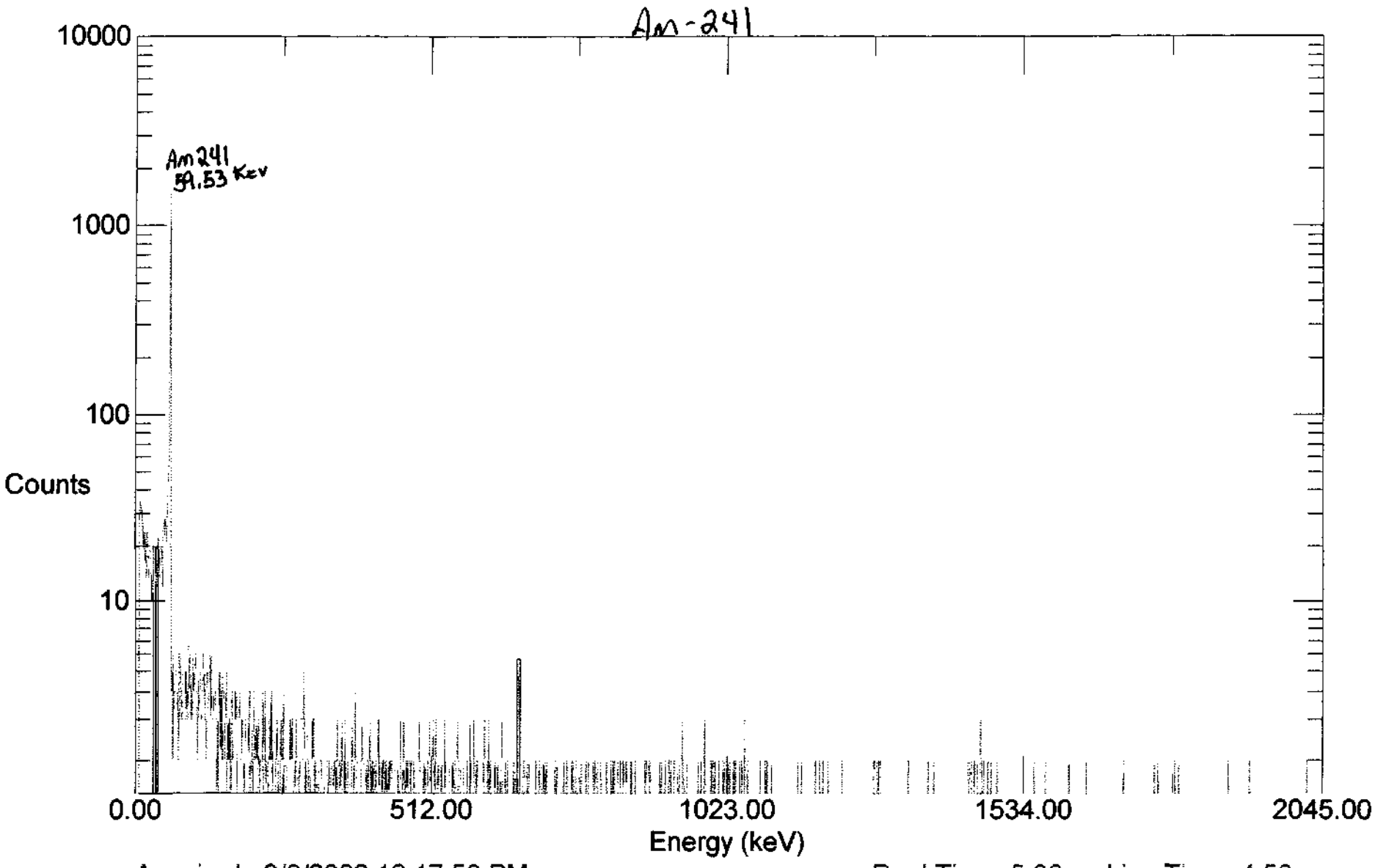
File: C:\User\GNIWEB~1\GNISOU~1\011 1SC-63 3-6-2002 12.15.44 PM.Spc. Channels: 8192

Detector: #1 digiDART USE 1b

H9

012 1 SC-64 3-6-2002 12.17.56 PM

SC-64



Acquired: 3/6/2002 12:17:56 PM Real Time: 5.00 s. Live Time: 4.56 s.

File: C:\User\GNIWEB~1\GNISOU~1\012 1 SC-64 3-6-2002 12.17.56 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-6-02

BKG	mR/hr
6"	.1
12"	.2
36"	.4

Container #	65	66	67	68	69
External on pig in mR/hr	<1	<1	<1	<1	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<1	<1	<1	<1	<1
Beta on open pig mR/hr O/W	<1	<1	<1	<1	<1

Picture	✓	✓	✓	✓	✓
Digi Dart	✓	✓	✓	✓	✓

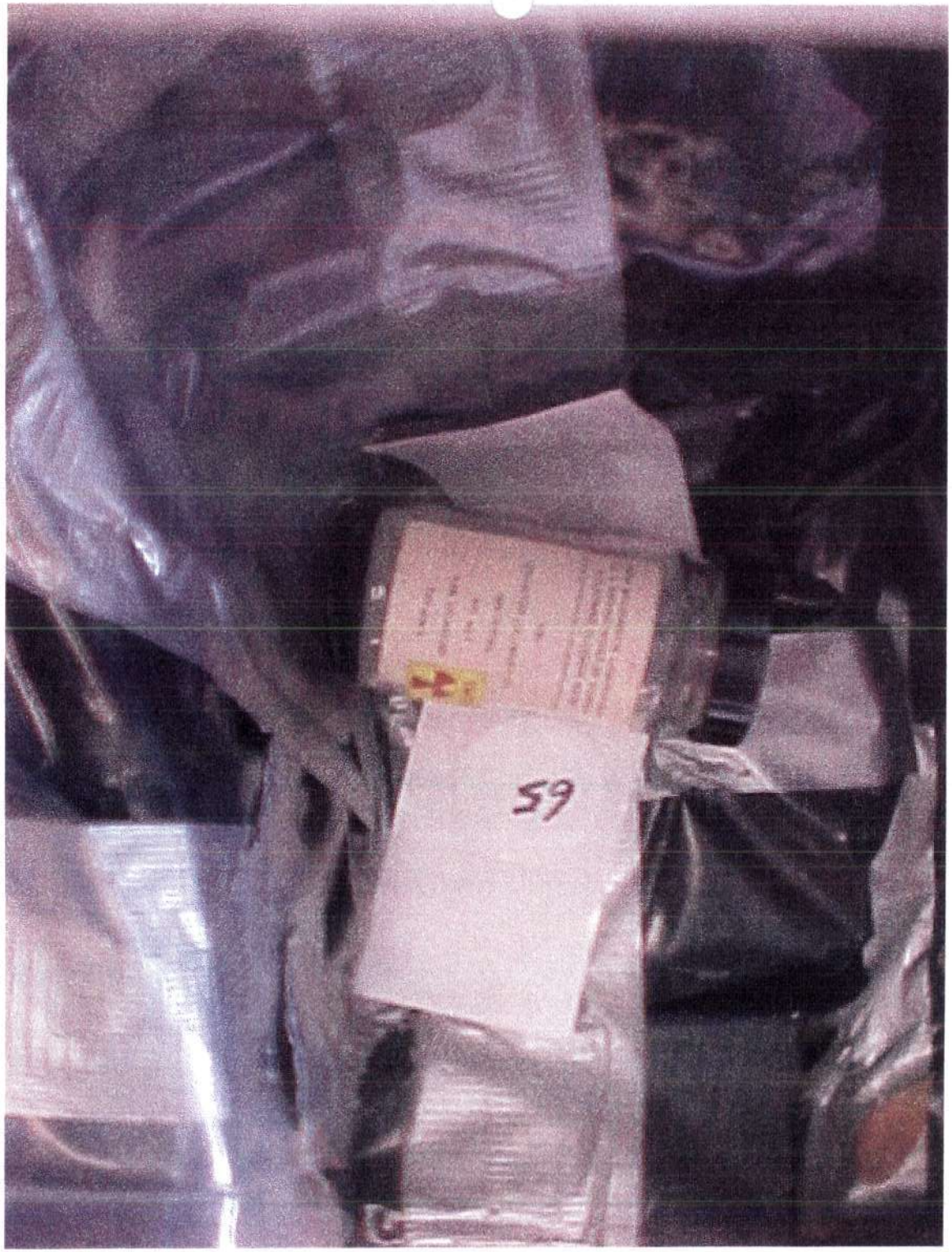
Table Readings

Source mR/hr @ 6 inchs	.2	BKg	BKg	BKg	BKg
Source mR/hr @ 12 inches	BKg	BKg	BKg	BKg	BKg
Source mR/hr @ 36 inches	BKg	BKg	BKg	BKg	BKg
Size of source in cc's	125	125	125	65	125
Weight in grams	100	100	100	60	100

CPM Alpha	~~5000-1+~~	~~3000~~	200	100	100
Direct Beta/Gamma	~~3000~~ ~~205.8~~	500	200	200	100

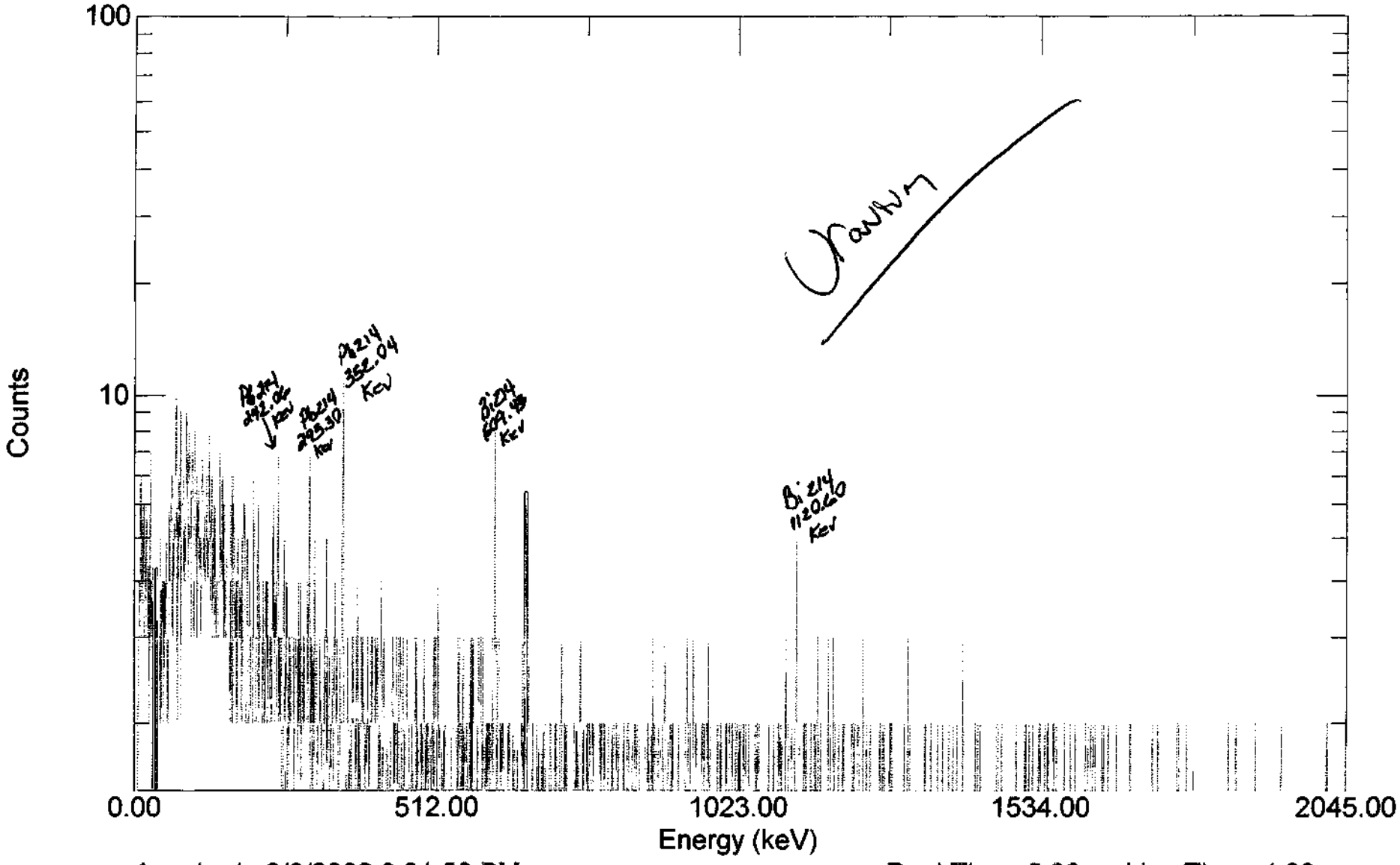
Info on source:	Uranium 4% 100 grams	Uranium 2% 42-2	.5% Uranium 42-4	106-8 1% Thorium 0.04 Uranium 60 grams	42-3 4% Uranium 100 grams

Information on pig:	None	~~2% Uranium~~ ~~42-2~~ UKD	None	None	None
Smear DPM per 100 cm^2 Alpha	2000	80.7	4	2.1	2.1
Smear DPM per 100 cm^2 Beta	300	61.	9.4	40	8


59

013 1SC-65 3-6-2002 2.31.56 PM

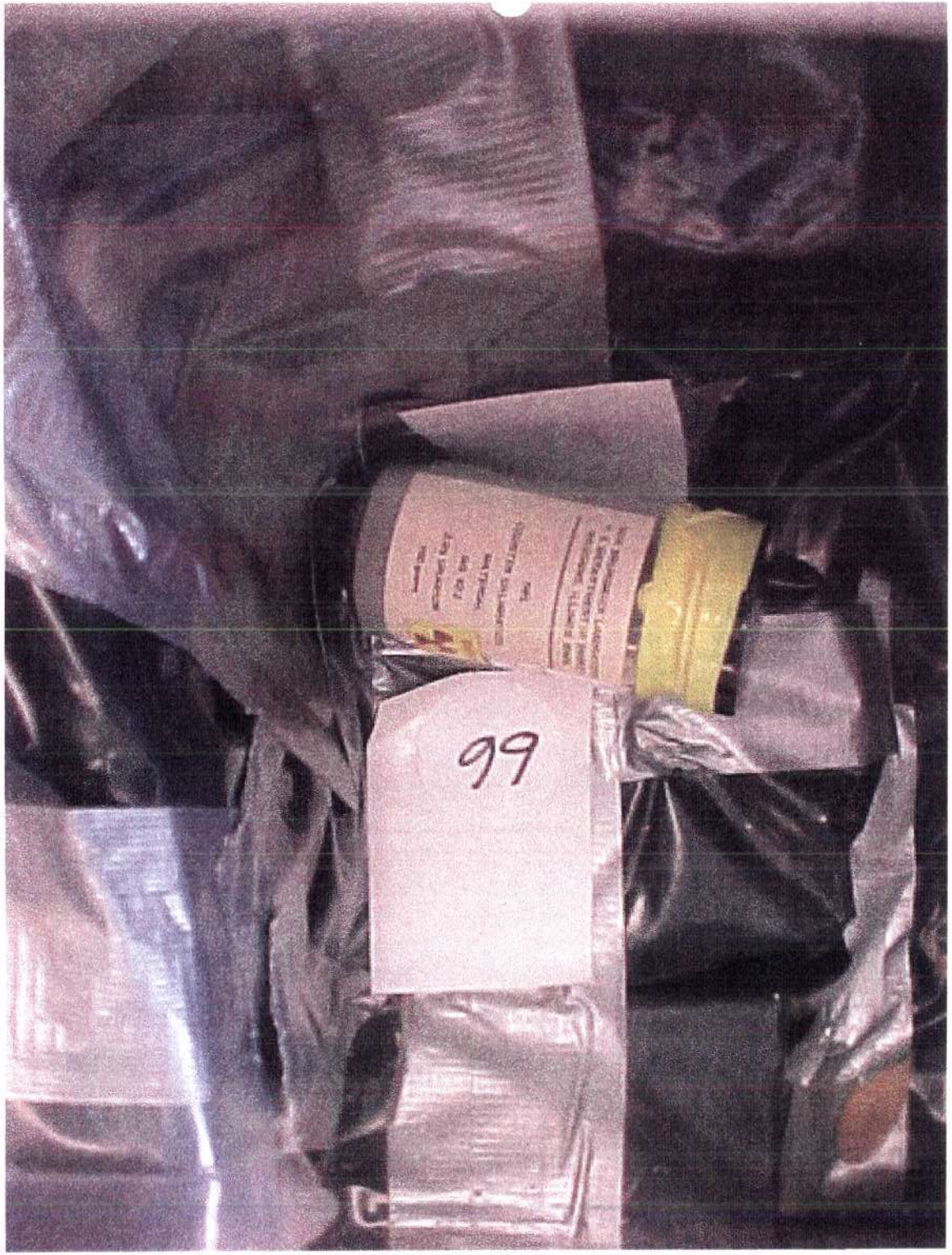
SC-65



Acquired: 3/6/2002 2:31:56 PM Real Time: 5.00 s. Live Time: 4.88 s.

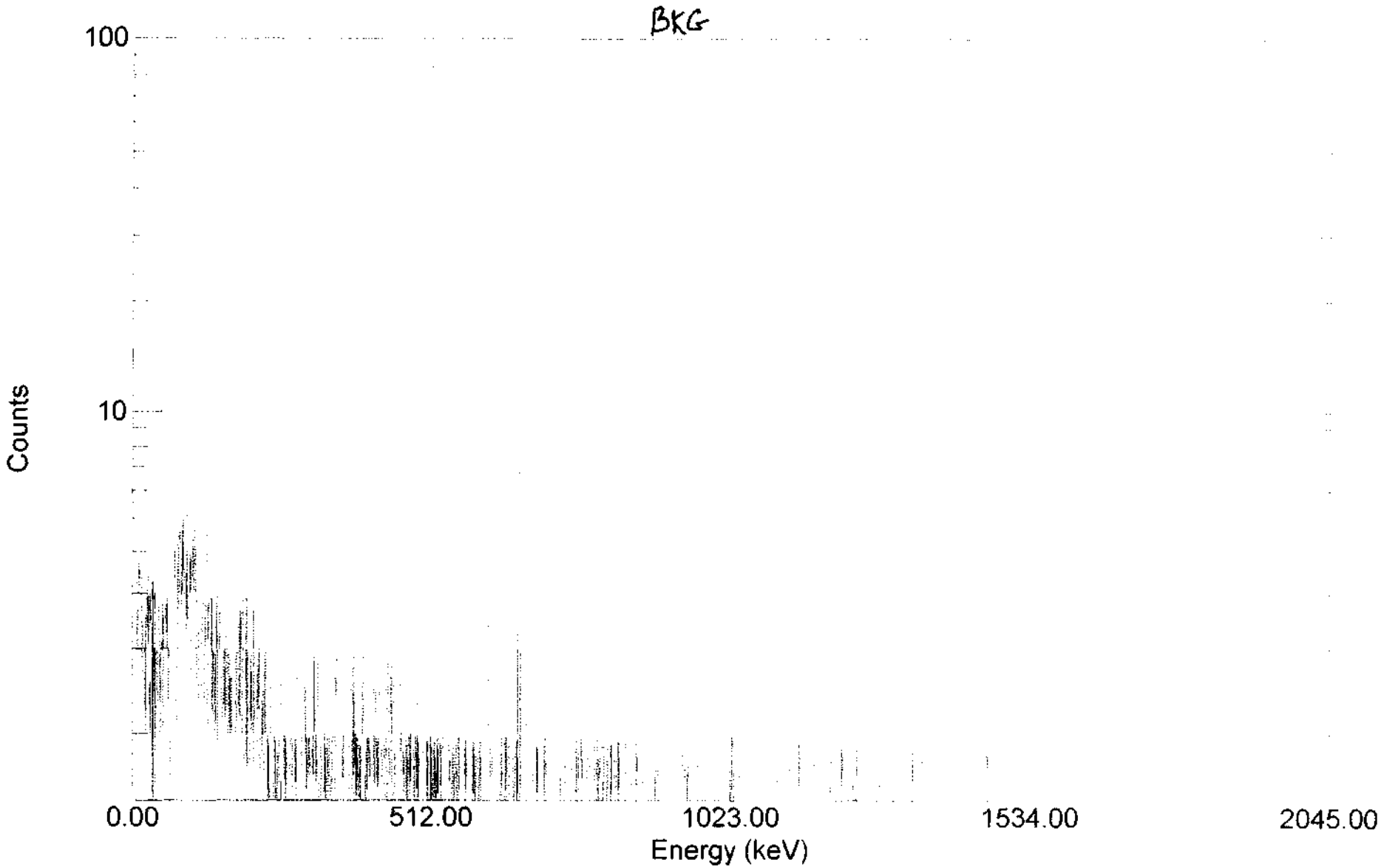
File: C:\User\GNIWEB~1\GNISOU~1\013 1SC-65 3-6-2002 2.31.56 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


99

014 ISC-66 3 6 2002 2 36 00 PM

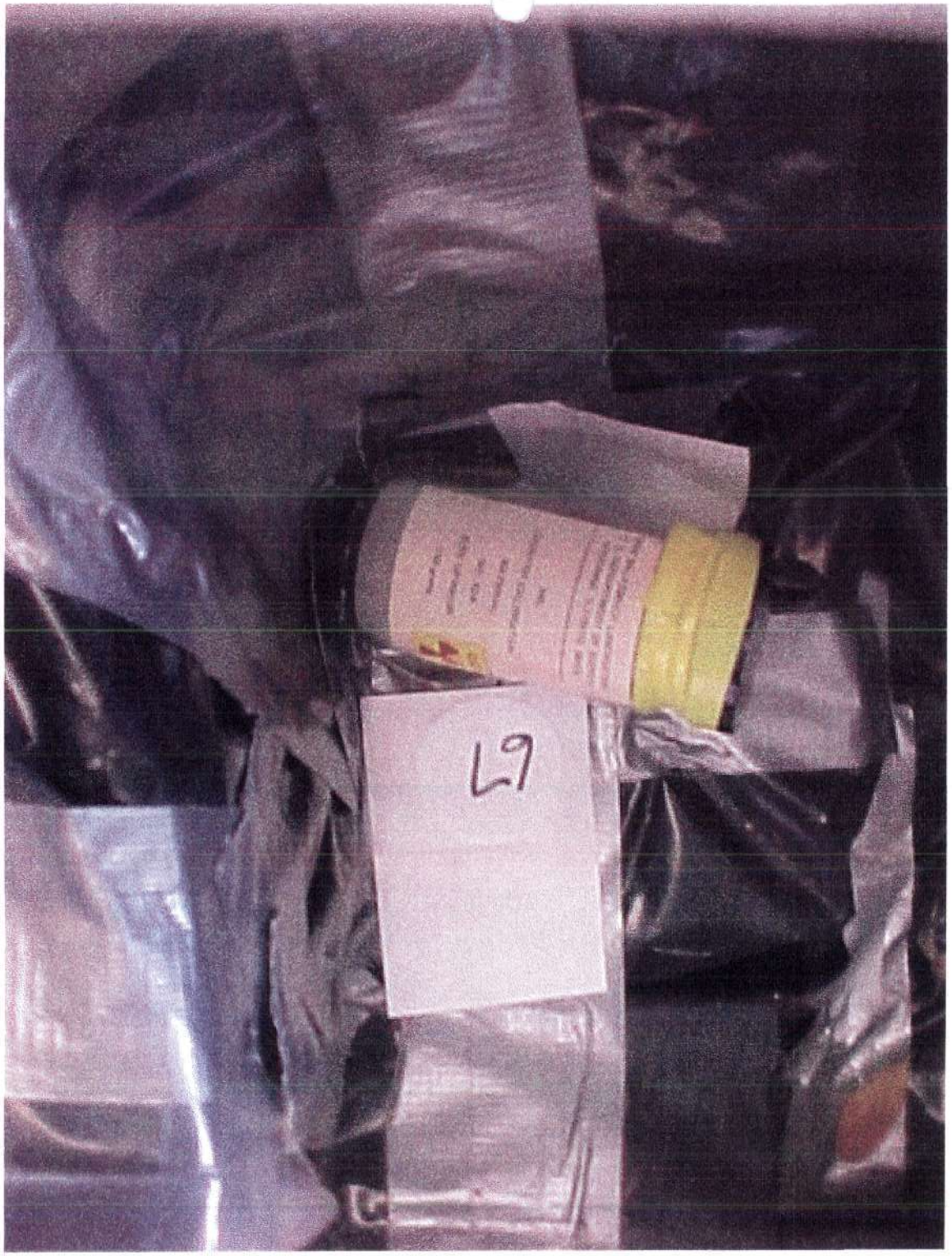
ISC-66



Acquired 3/6/2002 2 36.00 PM

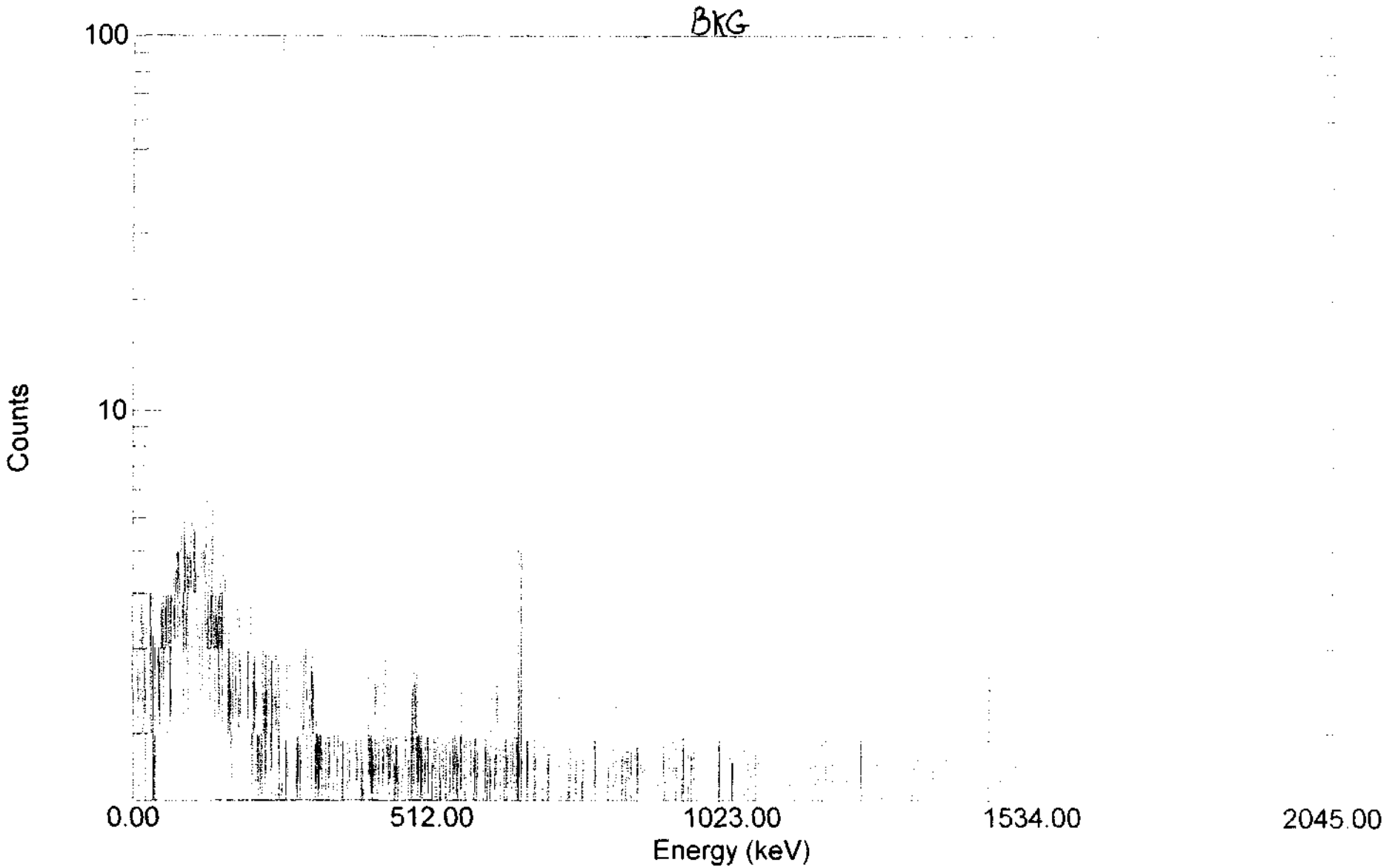
File C:\User\GNIWT B-1\GNISOU-1\014 ISC 66 3 6 2002 2 36 00 PM.spe

Detector #1 digiDART USE 1b


L9

015 ISC 67 3 6 2002 2 38 44 PM

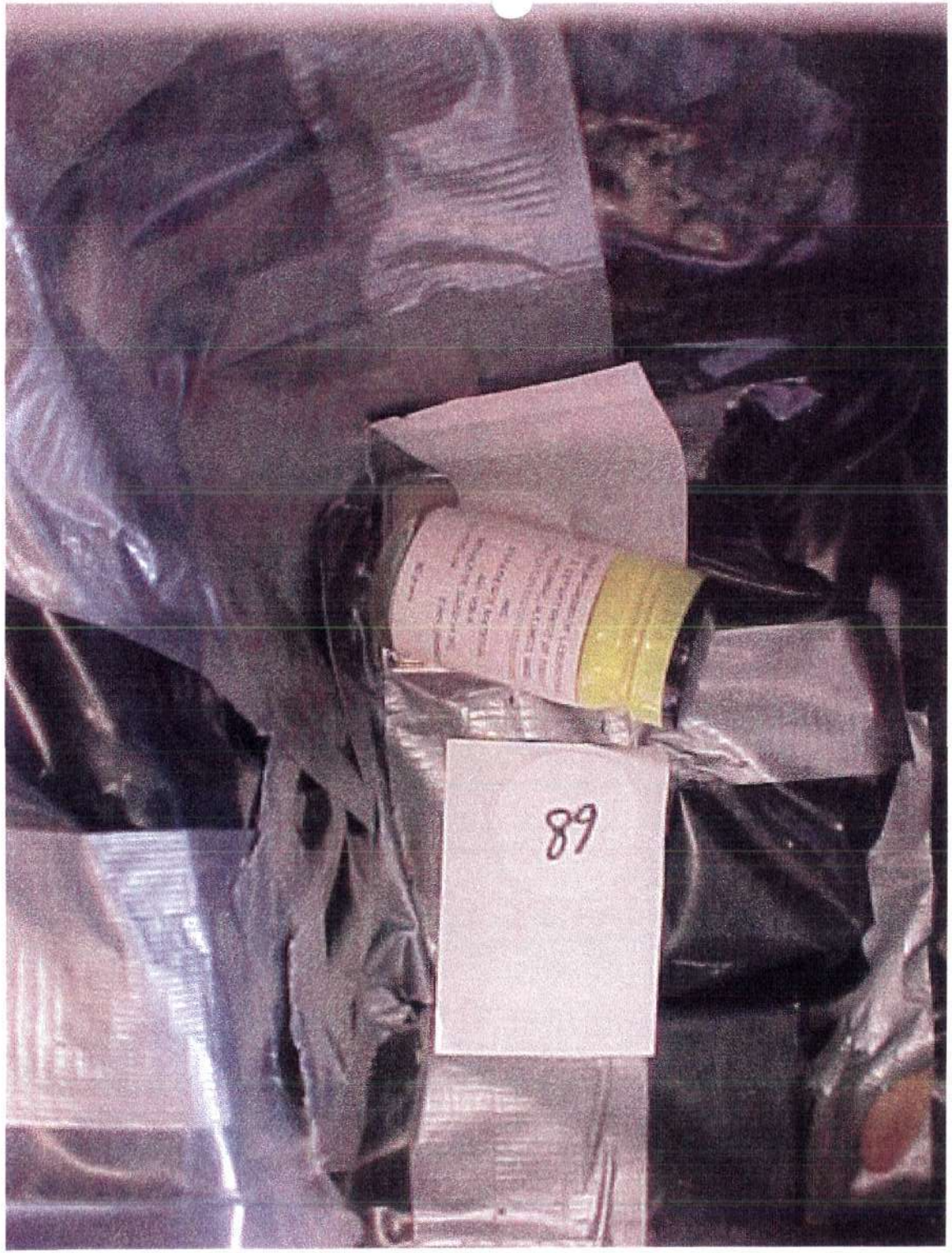
SC-67



Acquired 3/6/2002 2 38 44 PM Real Time 5 00 s Live Time 4 [illegible] s

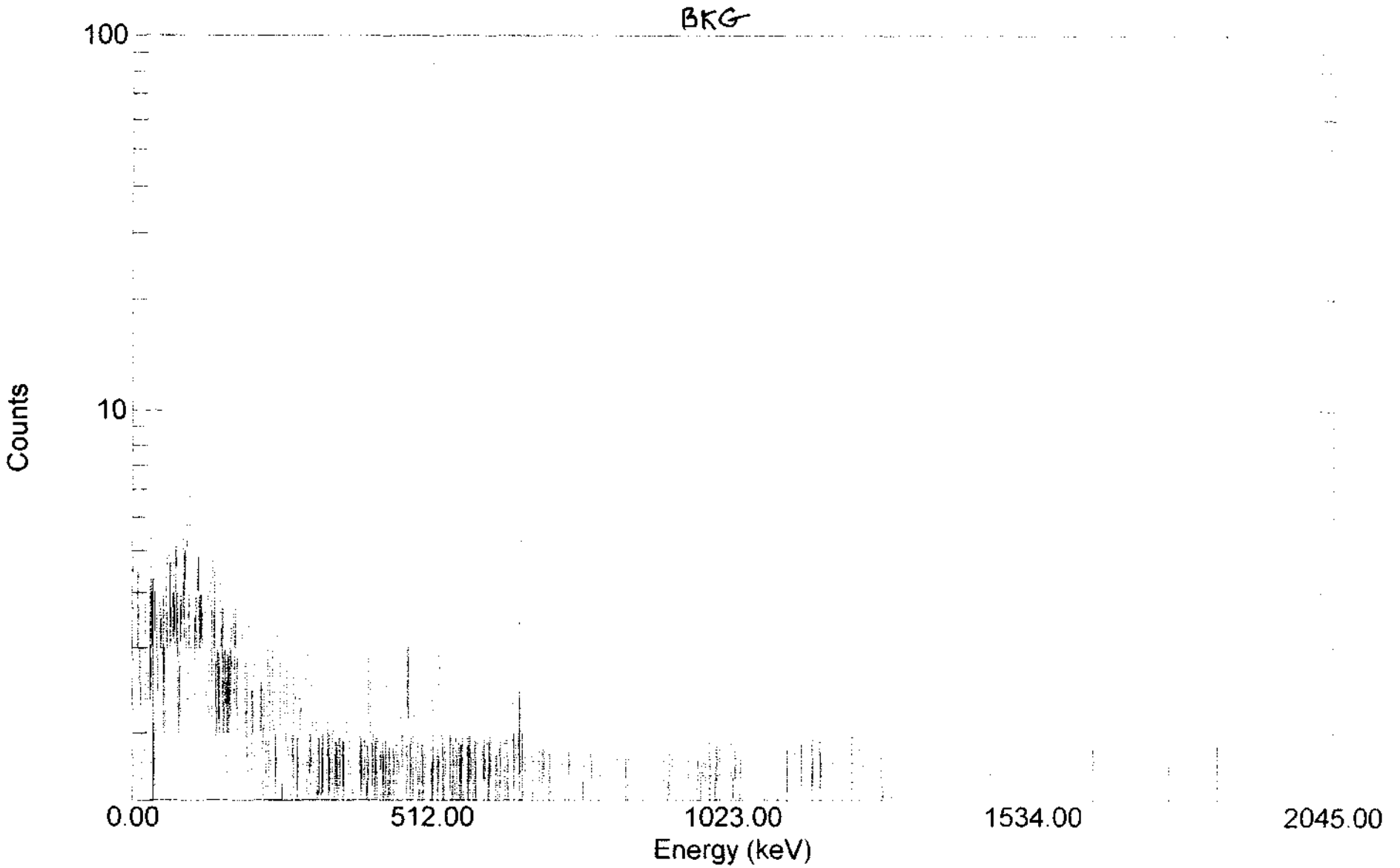
File C:\User\GNIWEB~1\GNISOU~1\015 ISC 67 3 6 2002 2 38 44 PM Spe [illegible]

Detector #1 digiDART USE 1b


89

016 1SC 68 3-6 2002 2 41 52 PM

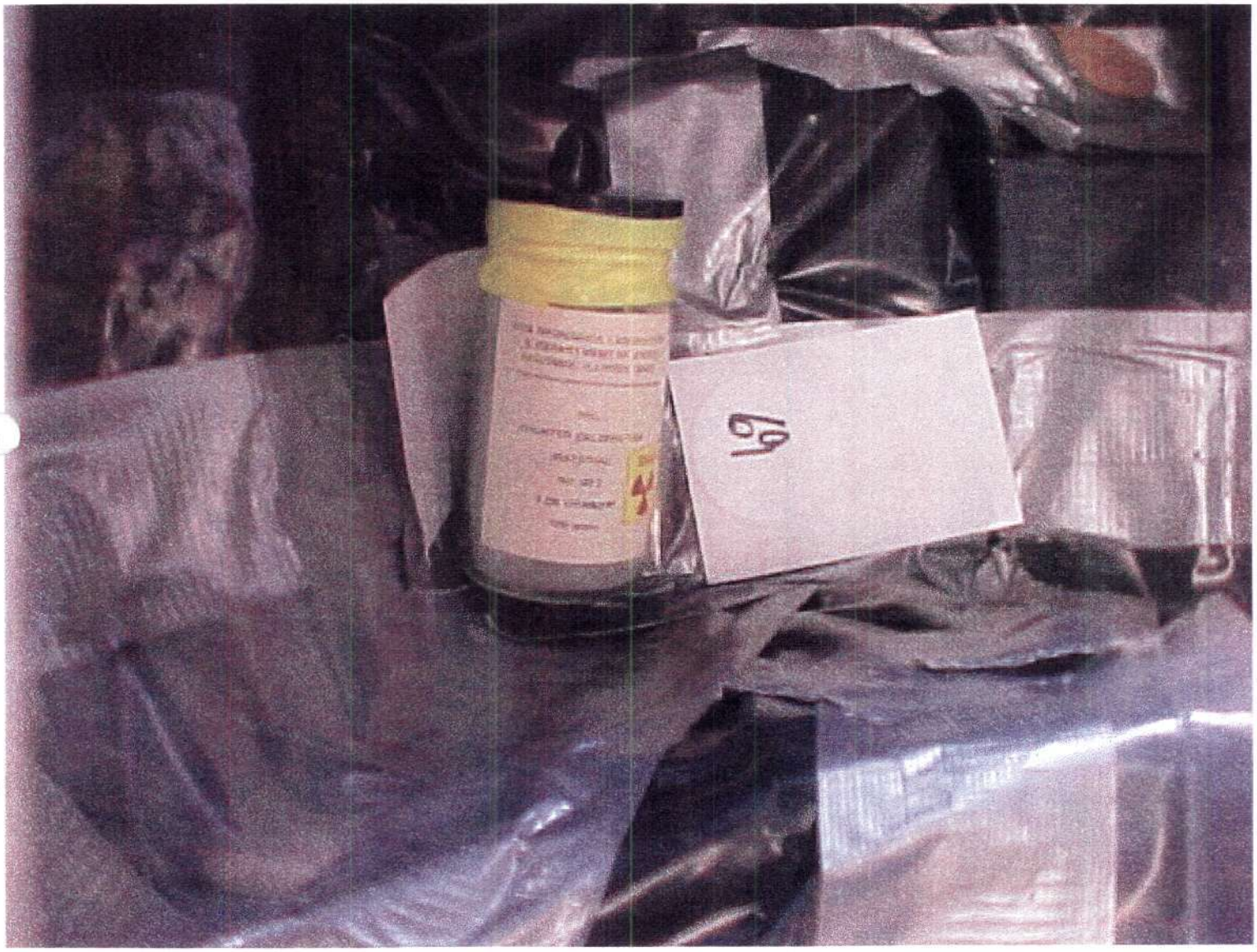
SC-68



Acquired: 3/6/2002 2 41 52 PM

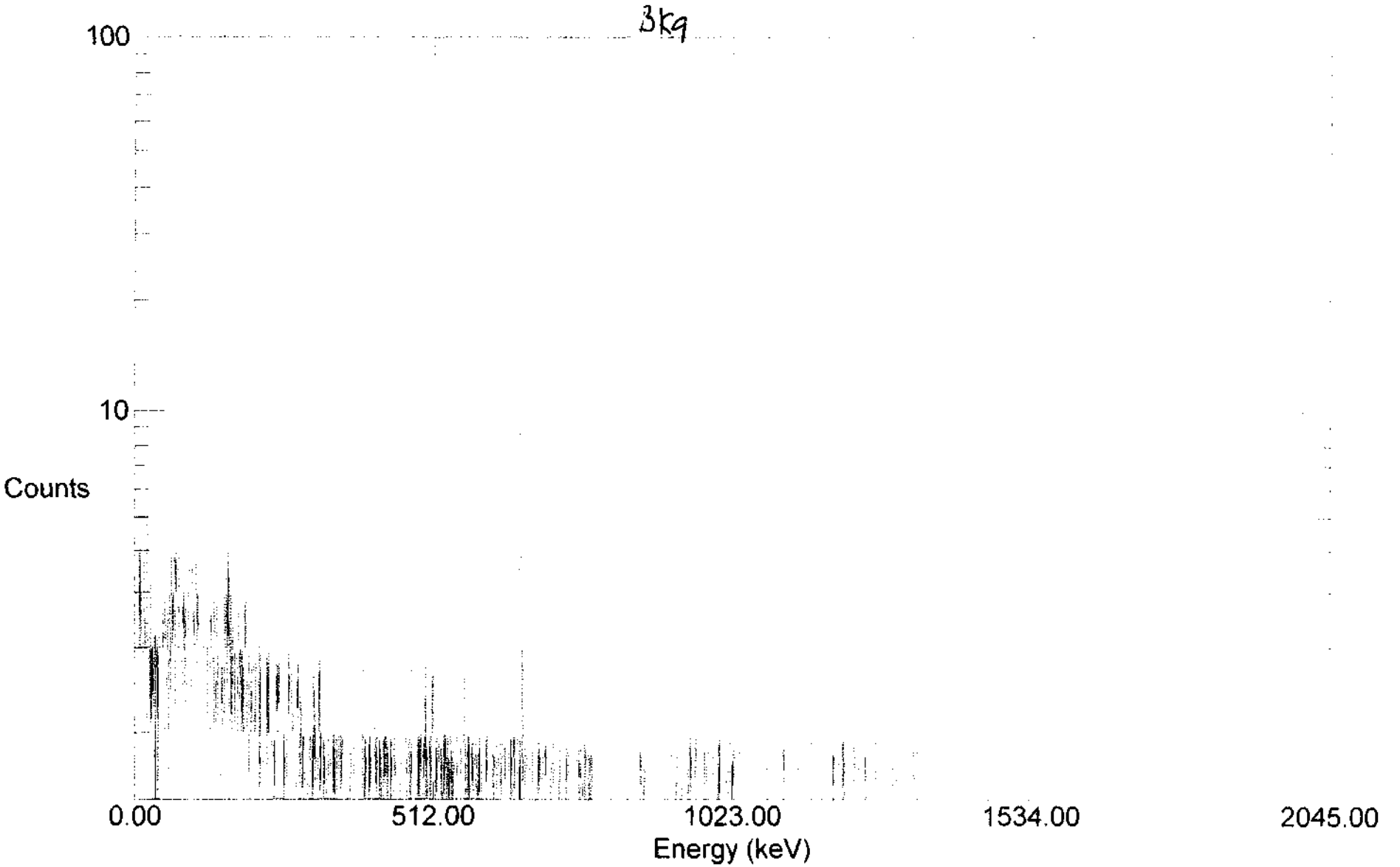
File: C:\User\GNIWFB~1\GNISOU~1\016 1SC 68 3 6 2002 2 41 52 PM Spe

Detector: #1 digiDART USE 1b


4
69

017 1SC 69 3 6 2002 2:43:39 PM

SC-69



Acquired: 3/6/2002 2:43:39 PM

File: C:\User\GNIWEB~1\GNISOU~1\017 1SC 69 3 6 2002 2:43:39 PM.Spe

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-6-02

BKG	mR/hr
6"	.1
12"	.2
36"	.4

Container #	70	71	72	73	74
External on pig in mR/hr	<1	<1	<1	2	180
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<1	<1	<1	5	400
Beta on open pig mR/hr O/W	<1	<1	<1	20	2000

Picture	✓	✓	✓	✓	✓
Digi Dart	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	1.5	BKg	BKg	4mr	~~[illegible]~~ 420
Source mR/hr @ 12 inches	0.8	BKg	BKg	1.5	~~[illegible]~~ 130
Source mR/hr @ 36 inches	0.9	BKg	BKg	0.7	~~[illegible]~~ 22
Size of source in cc's	2cm	20	2grams each	20	1
Weight in grams	3grams	20	2grams each	40	1

CPM Alpha		500	100		
Direct Beta/Gamma		3000	10,000		~~[illegible]~~

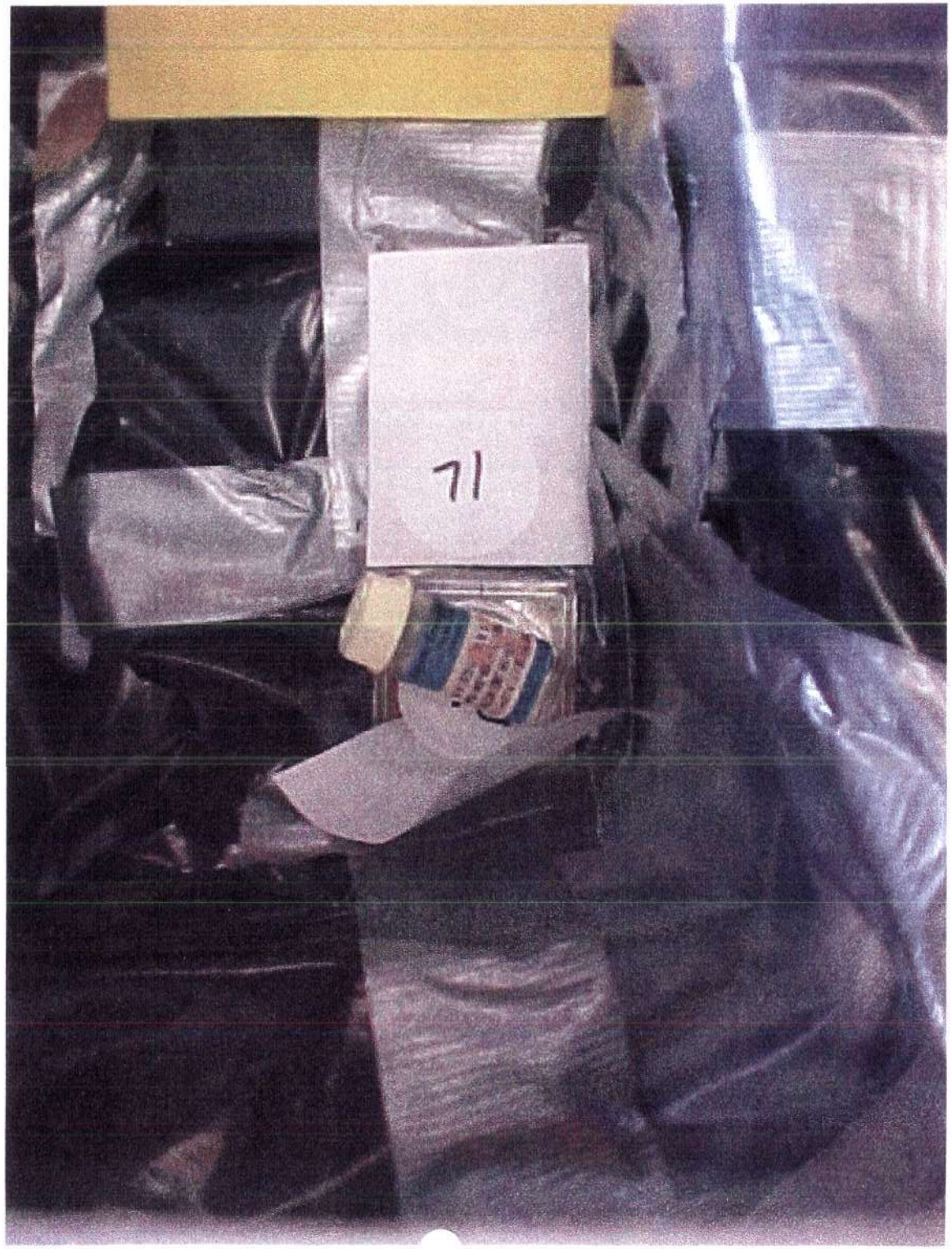
Info on source:		53MCI ~~None~~ Liquid Chloride	~~8.8 MCI~~ ~~CB109~~	None	

Information on pig:	SR90 39.7 Rad per second 9-18-89	None	8.8 MCI CB109	None	None
Smear DPM per 100 cm^2 Alpha	181	11.1	7.5	50,000	86.1
Smear DPM per 100 cm^2 Beta	44	15.5	19	BKg	53.3
Comments	20,000 OW 500 CW	Liquid	2 pieces	8 pieces	

70, β^- source

39.3 Rad/second

20 R/HR at 6"

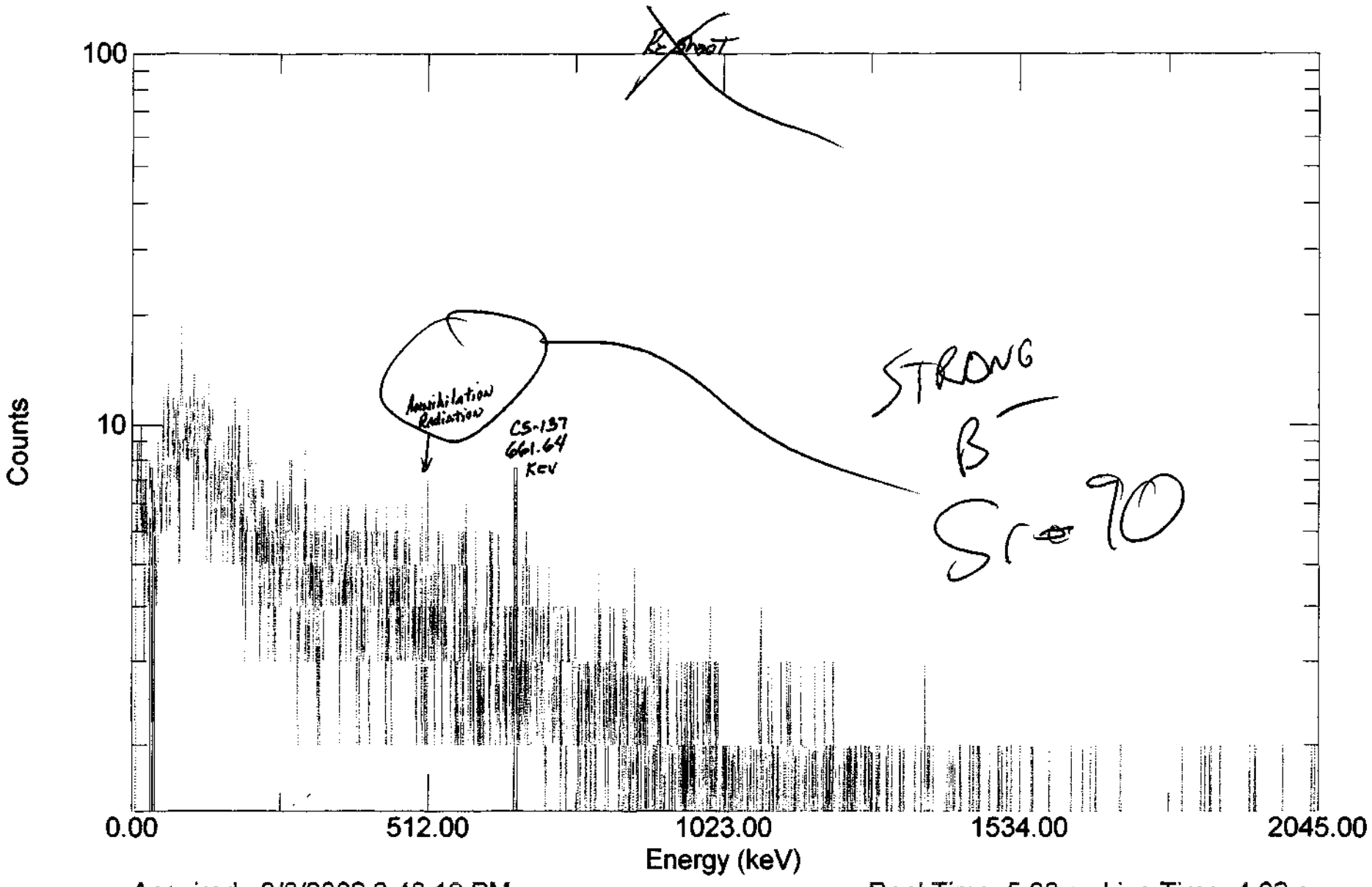

71

72
12
100

73

018 1SC-70 3-6-2002 2.48.18 PM

SC-70



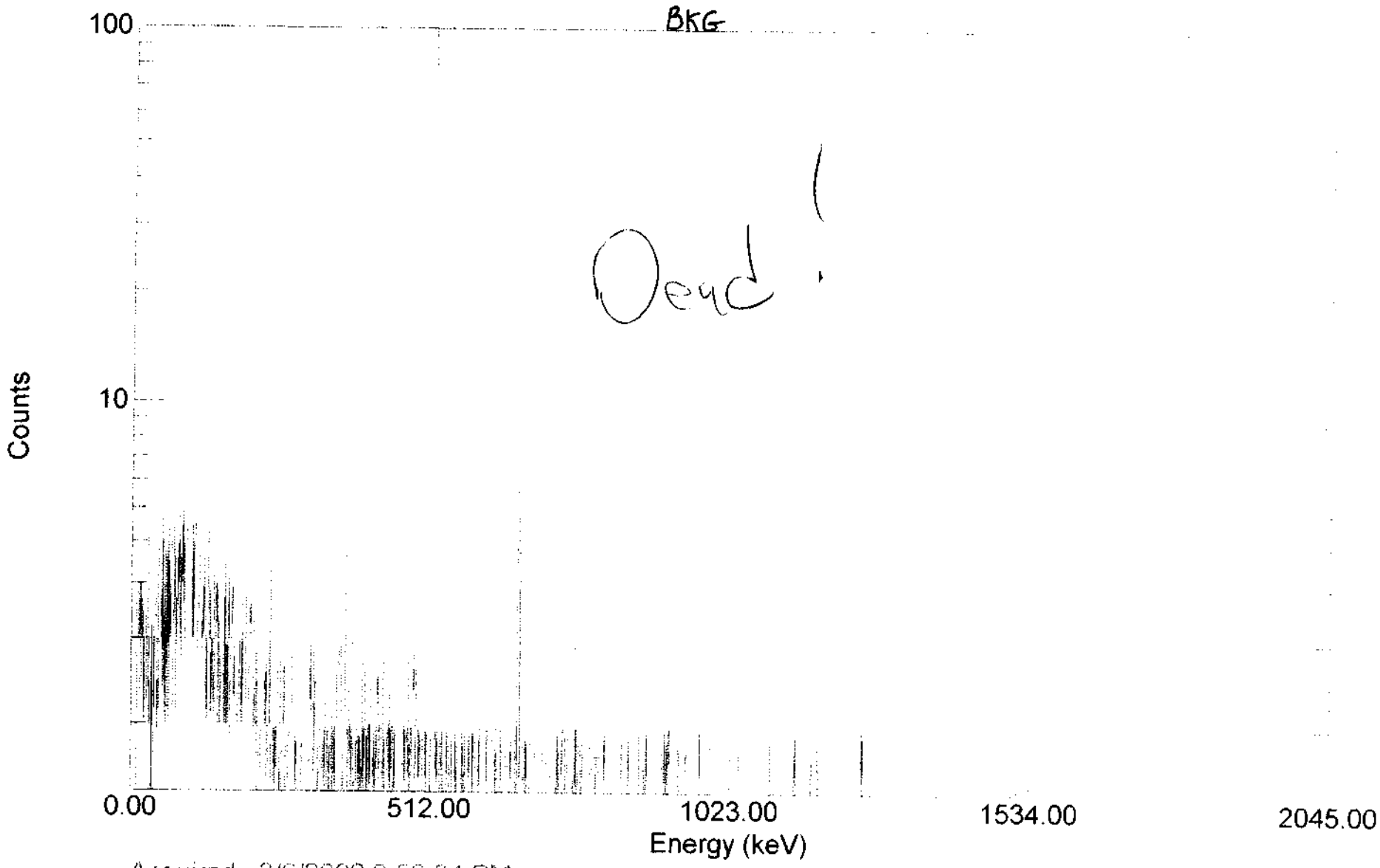
Acquired: 3/6/2002 2:48:19 PM Real Time: 5.00 s. Live Time: 4.62 s.

File: C:\User\GNIWEB~1\GNISOU~1\018 1SC-70 3-6-2002 2.48.18 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

019 ISC 71 3-2002 2:56:04 PM

SC 71



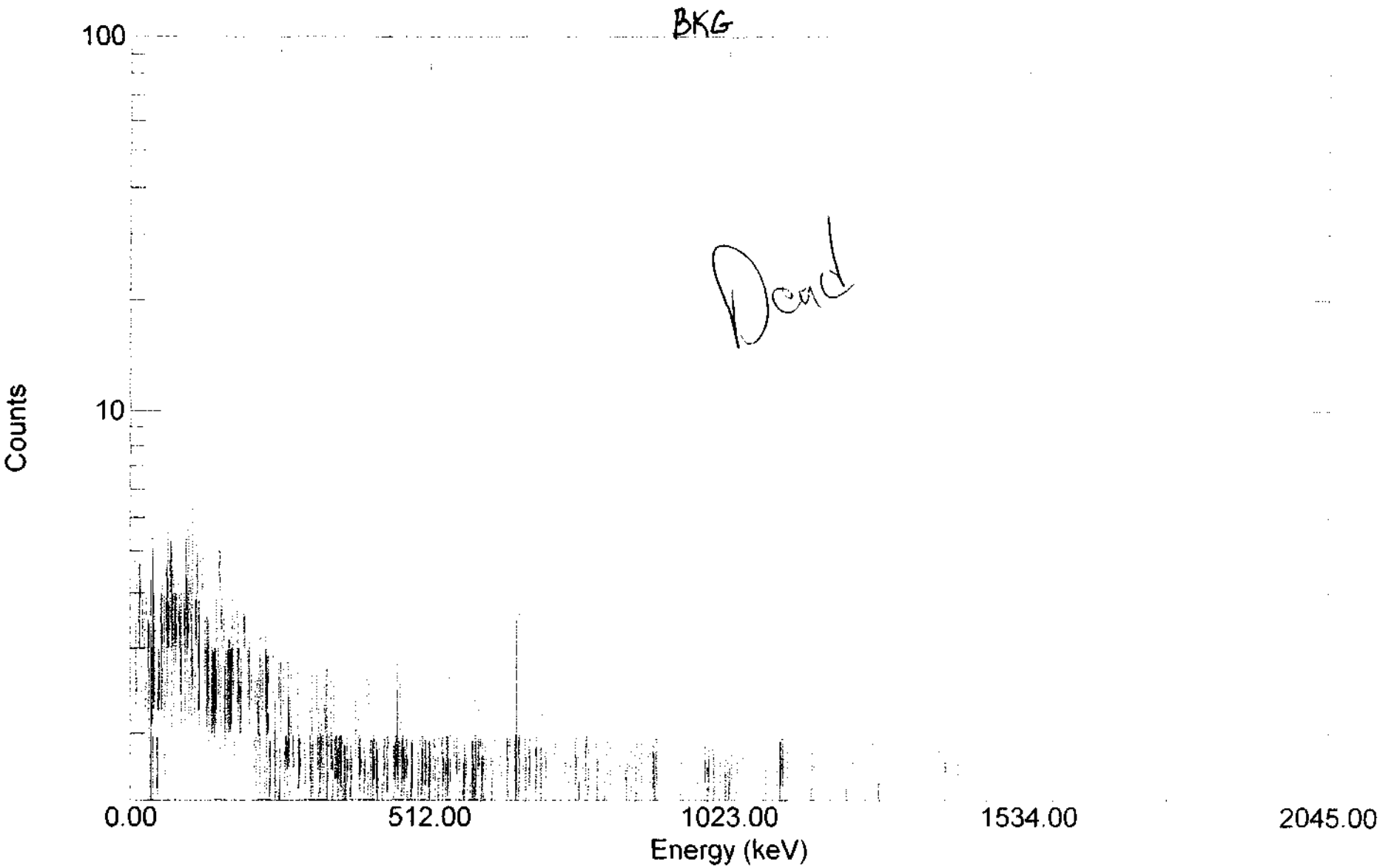
Acquired 3/6/2002 2:56:04 PM

File C:\User\GNIWI B~1\GNISOU~1\019 ISC 71 3 6 2002 2 56 04 PM Sp

Detector #1 digiDART USF 1b

020 ISC 72 3 6 2002 3 02 52 PM

ISC-72



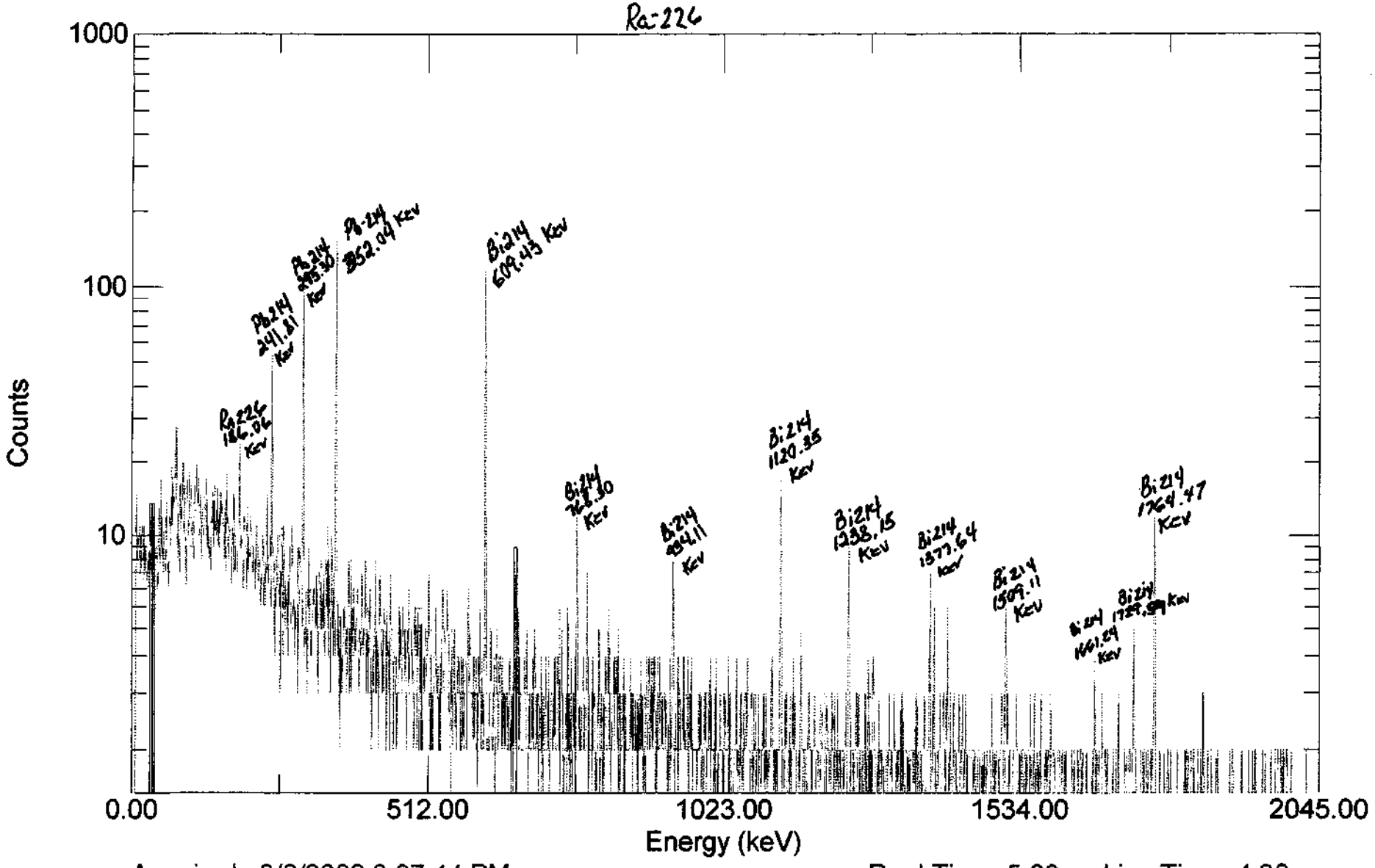
Acquired: 3/6/2002 3:02 51 PM Real Time: 5:00 s Live Time: 4:92 s

File: C:\User\GNIWEB~1\GNISOU~1\020 ISC 72 3 6 2002 3 02 52 PM.Spe Channels: 8192

Detector: #1 digiDART USE 1b

021 1SC-73 3-6-2002 3.07.43 PM

SC-73

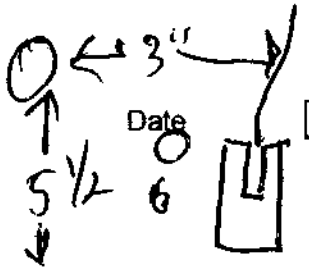


Acquired: 3/6/2002 3:07:44 PM Real Time: 5.00 s. Live Time: 4.36 s.

File: C:\User\GNIWEB~1\GNISOU~1\021 1SC-73 3-6-2002 3.07.43 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log



Date

BKG	mR/hr
6"	
12"	
36"	

Container #	74				
External on pig in mR/hr					
External on pig Neutron mR/hr					
Contact open pig mR/hr					
Beta on open pig mR/hr O/W					

Picture					

Table Readings

Source mR/hr @ 6 inchs	1/4	24				
Source mR/hr @ 12 inches	1/8	15				
Source mR/hr @ 36 inches	1/2	7				
Size of source in cc's						
Weight in grams						

CPM Alpha					
Direct Beta/Gamma					

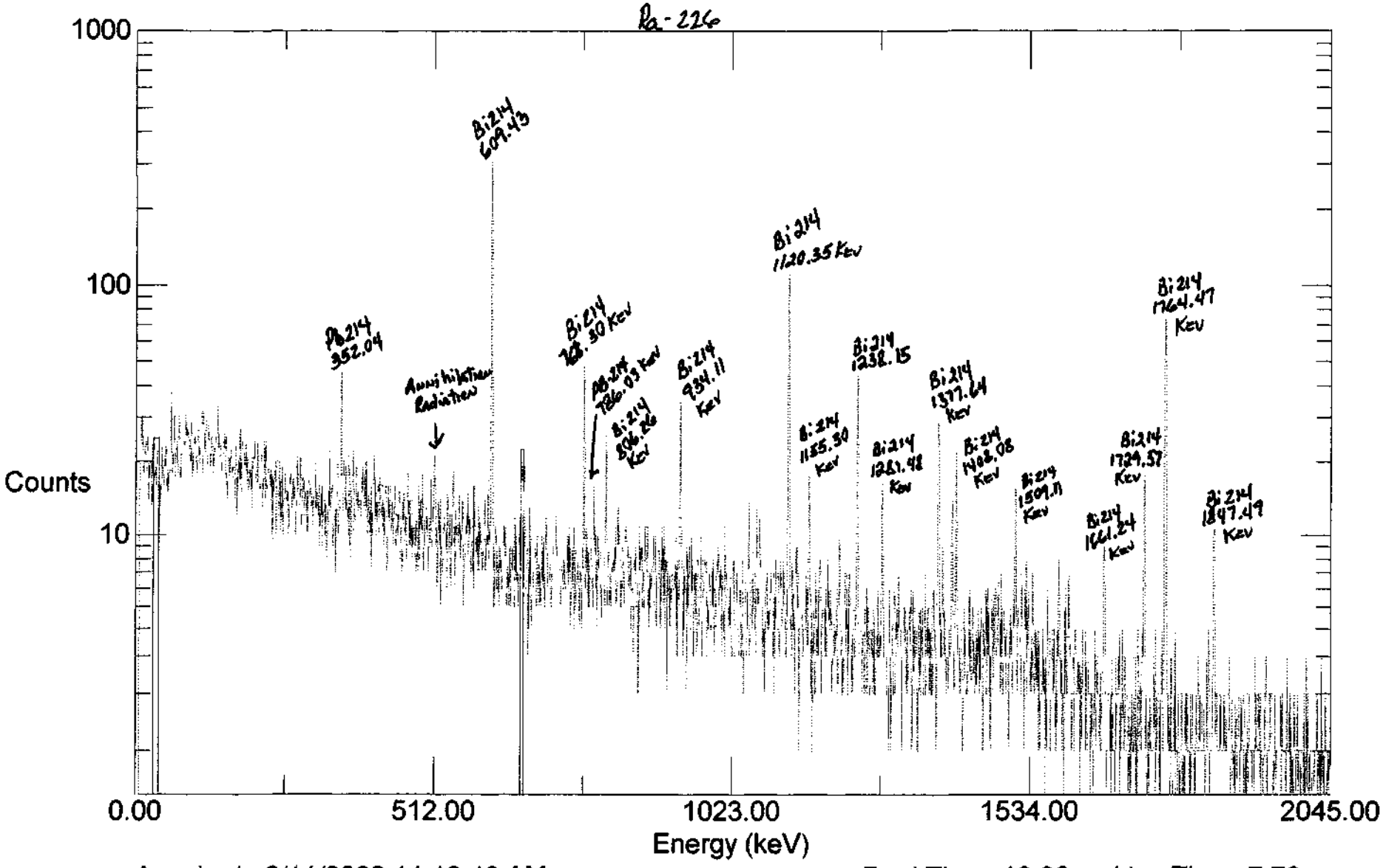
Info on source:	IN TYPE 4 P16				

Information on pig:					
Smear DPM per 100 cm^2 Alpha	86.1				
Smear DPM per 100 cm^2 Beta	53.3				

74
74

004 1SC-74-2 3-11-2002 11.10.46 AM

SC-74



Acquired: 3/11/2002 11:10:46 AM Real Time: 10.00 s. Live Time: 7.78 s.

File: C:\User\GNIWEB~1\004 1SC-74-2 3-11-2002 11.10.46 AM.Spc Channels: 8192

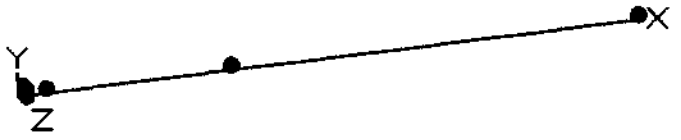
Detector: #1 digiDART USE 1b

MicroShield v5.01 (5.01-00036)
U.S. Ecology

Page : 1
I S File: Case1
F ~ Date: February 16, 2002
R Time: 3:07:00 PM
I ration: 00:00:15

File Ref: _____
Date: 2/16/02
By: TM
Checked: _____

Case Title: gni sc~~3~~ 74
Description: eu-152 small sources
Geometry: 13 - Rectangular Volume



Source Dimensions

Length	1.27 cm	0.5 in
Width	2.54 cm	1.0 in
Height	2.54 cm	1.0 in

Dose Points

	X	Y	Z
# 1	3.81 cm	1.27 cm	1.27 cm
	1.5 in	0.5 in	0.5 in
# 2	31.75 cm	1.27 cm	1.27 cm
	1 ft 0.5 in	0.5 in	0.5 in
# 3	92.71 cm	1.27 cm	1.27 cm
	3 ft 0.5 in	0.5 in	0.5 in

Shields

Shield Name	Dimension	Material	Density
Source	.5 in³	Water	1
Air Gap		Air	0.00122

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Excluded
Library : Grove

Nuclide	curies	becquerels	µCi/cm³	Bq/cm³
Eu-152	8.5000e-004	3.1450e+007	1.0374e+002	3.8384e+006

Buildup
The material reference is : Source

Integration Parameters

X Direction	10
Y Direction	20
Z Direction	20

Results - Dose Point # 1 - (1.5,0.5,0.5) in

Energy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.04	1.861e+07	4.775e+03	6.017e+03	2.112e+01	2.661e+01
0.05	4.653e+06	1.522e+03	1.920e+03	4.054e+00	5.114e+00
0.1	8.942e+06	6.007e+03	7.110e+03	9.191e+00	1.088e+01
0.2	2.357e+06	3.223e+03	3.573e+03	5.689e+00	6.305e+00
.3	8.504e+06	1.762e+04	1.903e+04	3.343e+01	3.609e+01
0.4	1.976e+06	5.500e+03	5.852e+03	1.072e+01	1.140e+01

I S File: Case1
Run Date: February 16, 2002
Run Time: 3:07:00 PM
I ration: 00:00:15

ergy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.5	1.774e+05	6.203e+02	6.539e+02	1.218e+00	1.283e+00
0.6	1.334e+06	5.619e+03	5.884e+03	1.097e+01	1.149e+01
0.8	5.600e+06	3.166e+04	3.285e+04	6.021e+01	6.248e+01
1.0	1.346e+07	9.553e+04	9.859e+04	1.761e+02	1.817e+02
1.5	7.296e+06	7.828e+04	8.010e+04	1.317e+02	1.348e+02
OTALS:	7.290e+07	2.504e+05	2.616e+05	4.644e+02	4.882e+02

Results - Dose Point # 2 - (12.5,0.5,0.5) in

nergy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.04	1.861e+07	5.204e+01	6.756e+01	2.301e-01	2.988e-01
0.05	4.653e+06	1.663e+01	2.160e+01	4.431e-02	5.755e-02
0.1	8.942e+06	6.589e+01	7.966e+01	1.008e-01	1.219e-01
0.2	2.357e+06	3.543e+01	3.979e+01	6.254e-02	7.024e-02
0.3	8.504e+06	1.940e+02	2.115e+02	3.680e-01	4.012e-01
0.4	1.976e+06	6.060e+01	6.500e+01	1.181e-01	1.266e-01
0.5	1.774e+05	6.840e+00	7.258e+00	1.343e-02	1.425e-02
0.6	1.334e+06	6.199e+01	6.530e+01	1.210e-01	1.275e-01
0.8	5.600e+06	3.495e+02	3.644e+02	6.648e-01	6.931e-01
1.0	1.346e+07	1.055e+03	1.094e+03	1.945e+00	2.016e+00
.5	7.296e+06	8.656e+02	8.883e+02	1.456e+00	1.495e+00
TOTALS:	7.290e+07	2.764e+03	2.904e+03	5.125e+00	5.421e+00

Results - Dose Point # 3 - (36.5,0.5,0.5) in

Energy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.04	1.861e+07	5.837e+00	7.806e+00	2.581e-02	3.452e-02
0.05	4.653e+06	1.871e+00	2.502e+00	4.983e-03	6.665e-03
0.1	8.942e+06	7.438e+00	9.183e+00	1.138e-02	1.405e-02
0.2	2.357e+06	4.009e+00	4.561e+00	7.076e-03	8.050e-03
0.3	8.504e+06	2.198e+01	2.419e+01	4.169e-02	4.589e-02
0.4	1.976e+06	6.871e+00	7.428e+00	1.339e-02	1.447e-02
0.5	1.774e+05	7.761e-01	8.290e-01	1.523e-03	1.627e-03
0.6	1.334e+06	7.038e+00	7.456e+00	1.374e-02	1.455e-02
0.8	5.600e+06	3.971e+01	4.159e+01	7.553e-02	7.911e-02
1.0	1.346e+07	1.200e+02	1.248e+02	2.212e-01	2.301e-01
1.5	7.296e+06	9.850e+01	1.014e+02	1.657e-01	1.706e-01
OTALS:	7.290e+07	3.140e+02	3.317e+02	5.820e-01	6.196e-01

USEcology
FS-TX-02-01
Source Log
Date: 1-24-02

	AU	AU	AU	AU	AU
Container #	1	2	3	4	5
External on pig in mR/hr	BKG	BKG	BKG	BKG	BKG

Table Readings

Source mR/hr @ 1 inch	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 36 inches	BKG	BKG	BKG	BKG	BKG
Smear ~~DPM~~ per ~~100 cm~~^2 Alpha	~~none~~ 2K	2K	~~2K~~ None	None	None
Smear DPM per 10~~0 cm~~^2 Beta	~~20K~~ 5K	3K	~~3K~~ 30K	~~3K~~ BKG	~~2K~~ ~~None~~ 20K
Size of source in cc's	4 cc	4	4	4	4
Weight in grams	2	2	2	2	2

Loaded Pig mR/hr	BKG	BKG	BKG	BKG	BKG

Info on source:

	Th-230 C-7519	Th-230 C-7518	Sr-90 BAIRD ATOMIC EB-4 2084	Po210 BAIRD ATOMIC ALPHA ES-1	Cl-36 BAIRD ATOMIC 36 BA 637-7

Information on pig:

	None	None	None	None	None
OW Ro2 mRem/HR	<1	<1	1 MR/HR	<1	<1

Dig A Dart Info:

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **1/25/02** **Time** 0900

Location Source Smears **MDA Alpha** **MDA Beta**

Survey #

BKG Alpha 0.3 **BKG Beta** 76

Alpha Eff 0.30414 **Beta/Gamma Eff** 0.33

	2 Min CPM	DPM
1	3	3.9
2	2	2.3
3	2	2.3
4	0	-1.0
5	0	-1.0
6		-1.0
7		-1.0
8		-1.0
9		-1.0
10		-1.0
11		-1.0
12		-1.0
13		-1.0
14		-1.0
15		-1.0
16		-1.0
17		-1.0
18		-1.0
19		-1.0
20		-1.0
21		-1.0
22		-1.0
23		-1.0
24		-1.0
25		-1.0

	2 Min CPM	DPM
1	143.00	-12.6
2	135	-24.7
3	141	-15.6
4	163	17.4
5	166	22.0
6		-227.7
7		-227.7
8		-227.7
9		-227.7
10		-227.7
11		-227.7
12		-227.7
13		-227.7
14		-227.7
15		-227.7
16		-227.7
17		-227.7
18		-227.7
19		-227.7
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23		-227.7
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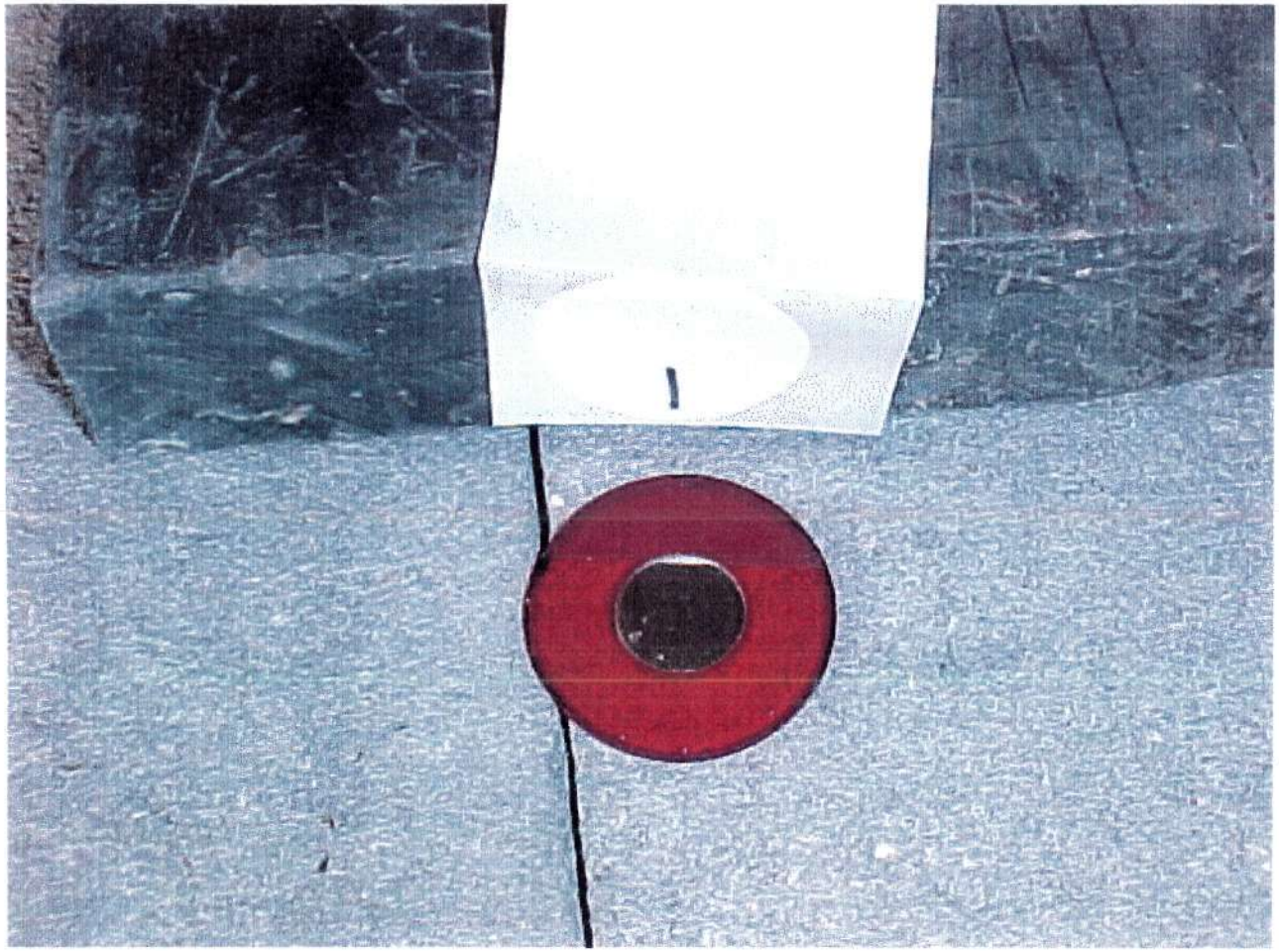
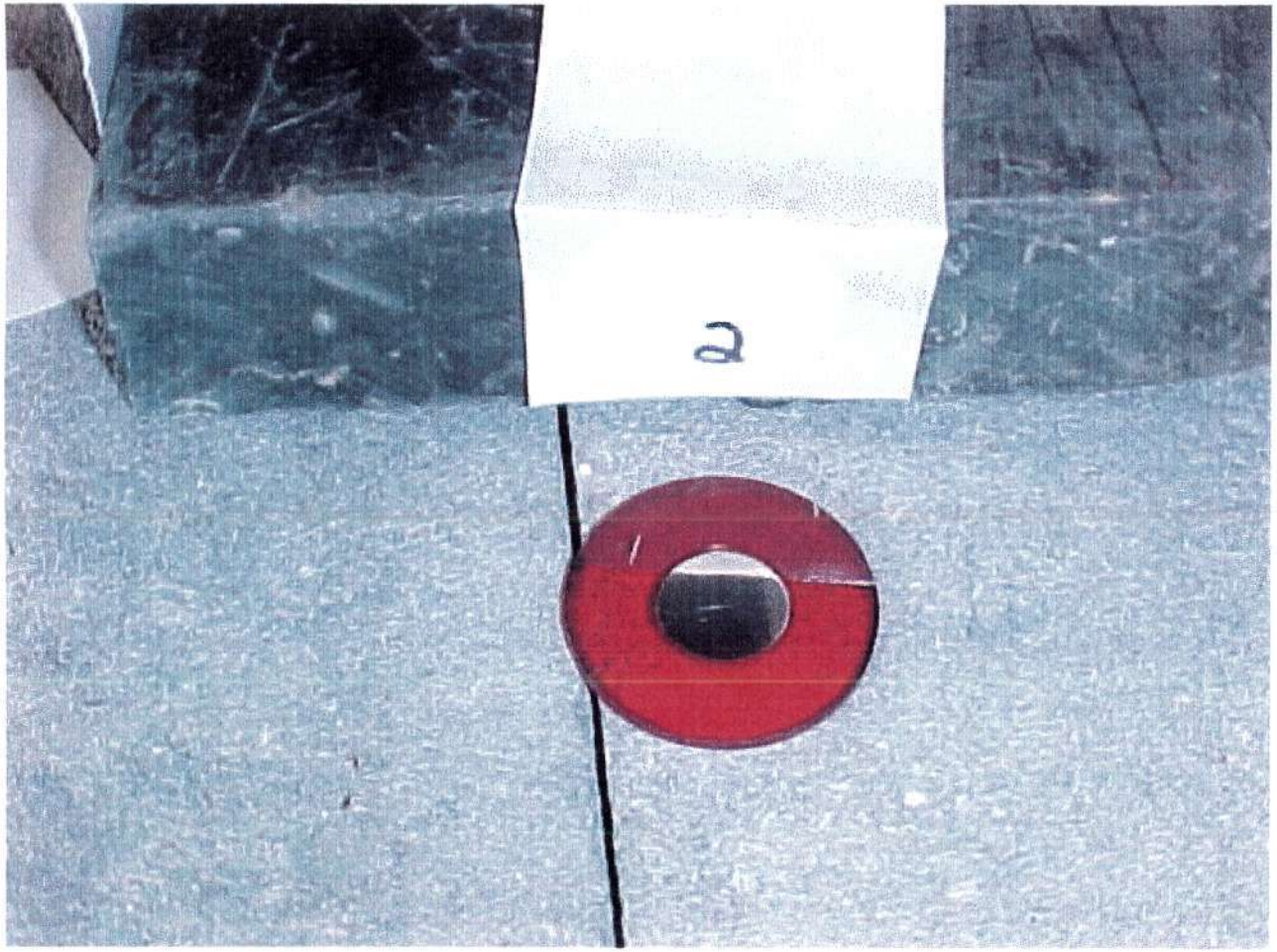
25		-227.7

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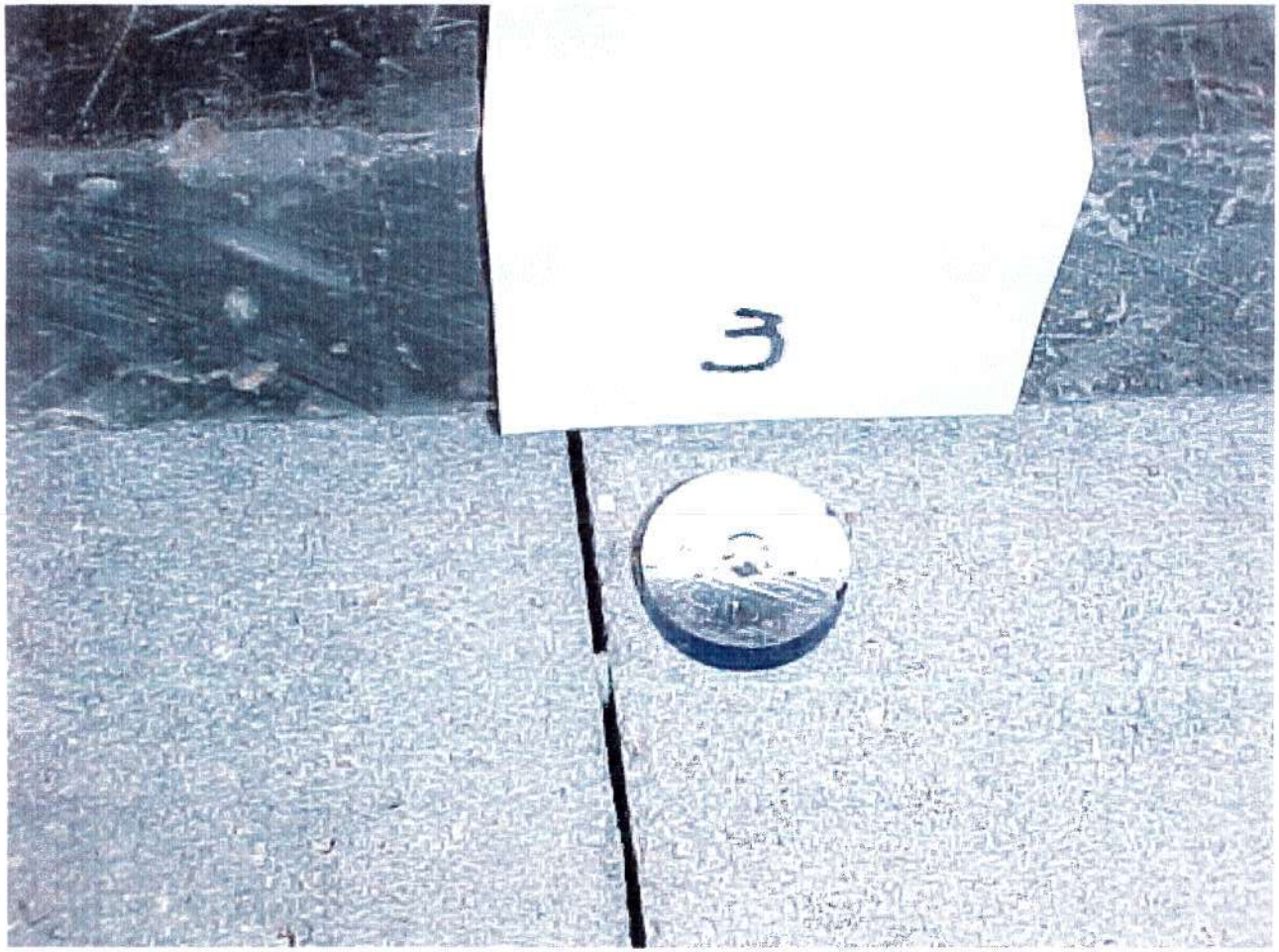
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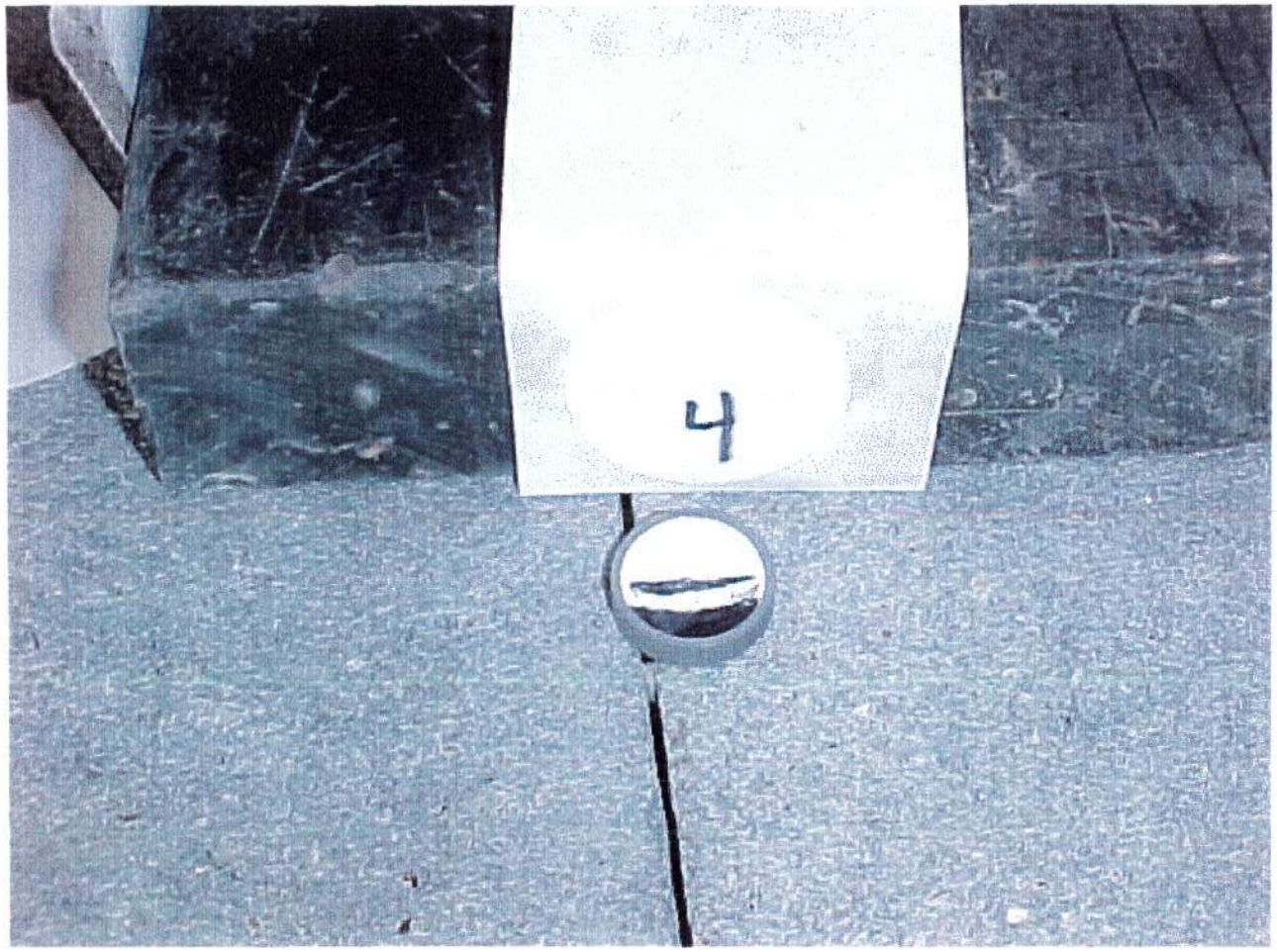
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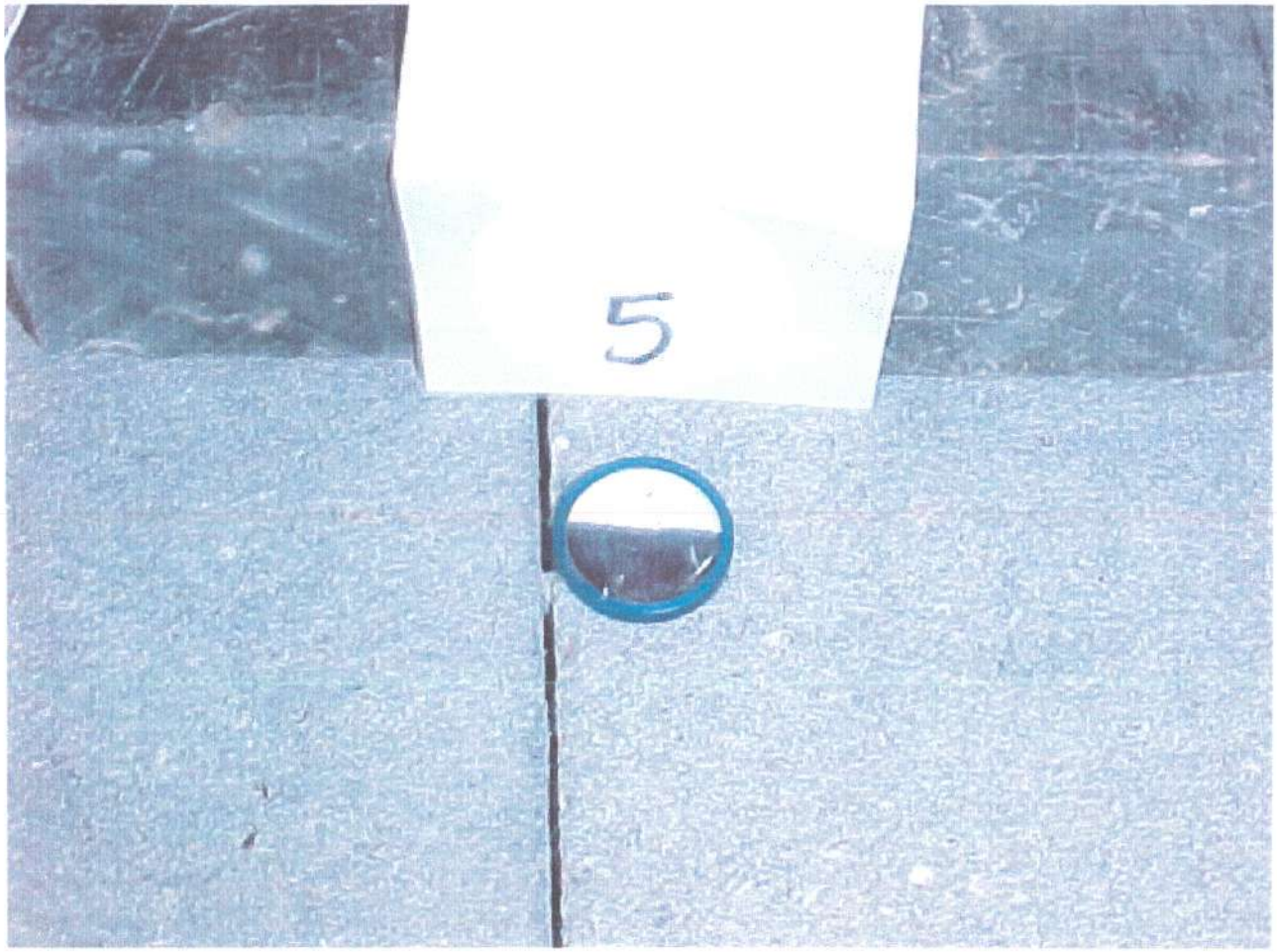
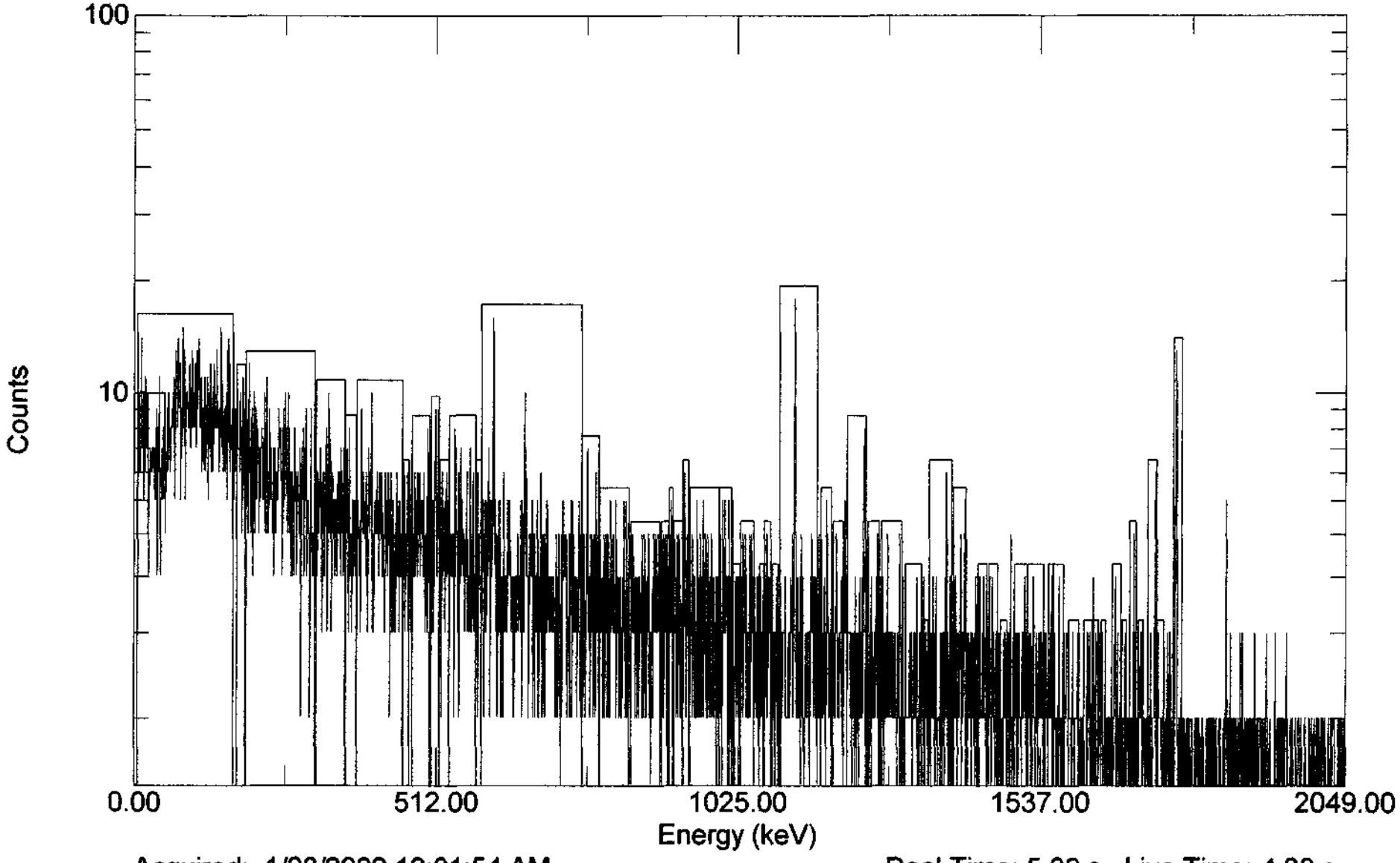

5

002 5BKG 1-28-2002 10.01.54 AM

5BKG



Acquired: 1/28/2002 10:01:54 AM
File: C:\GAMMAV~1\002 5BKG 1-28-2002 10.01.54 AM.Spc
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.38 s.
Channels: 8192

USEcology
FS-TX-02-01
Source Log
Date: 1-25-02

AM

Container #	6				
External on pig in mR/hr	BKG				

Table Readings

Source mR/hr @ 1 inch	BKG				
Source mR/hr @ 12 inches	BKG				
Source mR/hr @ 36 inches	BKG				
CPM Smear ~~DPM~~ per 1~~00 cm~~^2 Alpha	0				
CPM Smear ~~DPM~~ per 1~~00 cm~~^2 Beta	30K				
Size of source in cc's	2				
Weight in grams	4				

Loaded Pig mR/hr	BKG				

Info on source:

	C-14 BAIRD ATOMIC 14B0 6231				

Information on pig:

	None				
mR/HR ON	2				

Dig A Dart Info:

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **1/25/02** **Time** 0900

Location SOURCE # 6 SMEAR **MDA Alpha** **MDA Beta**

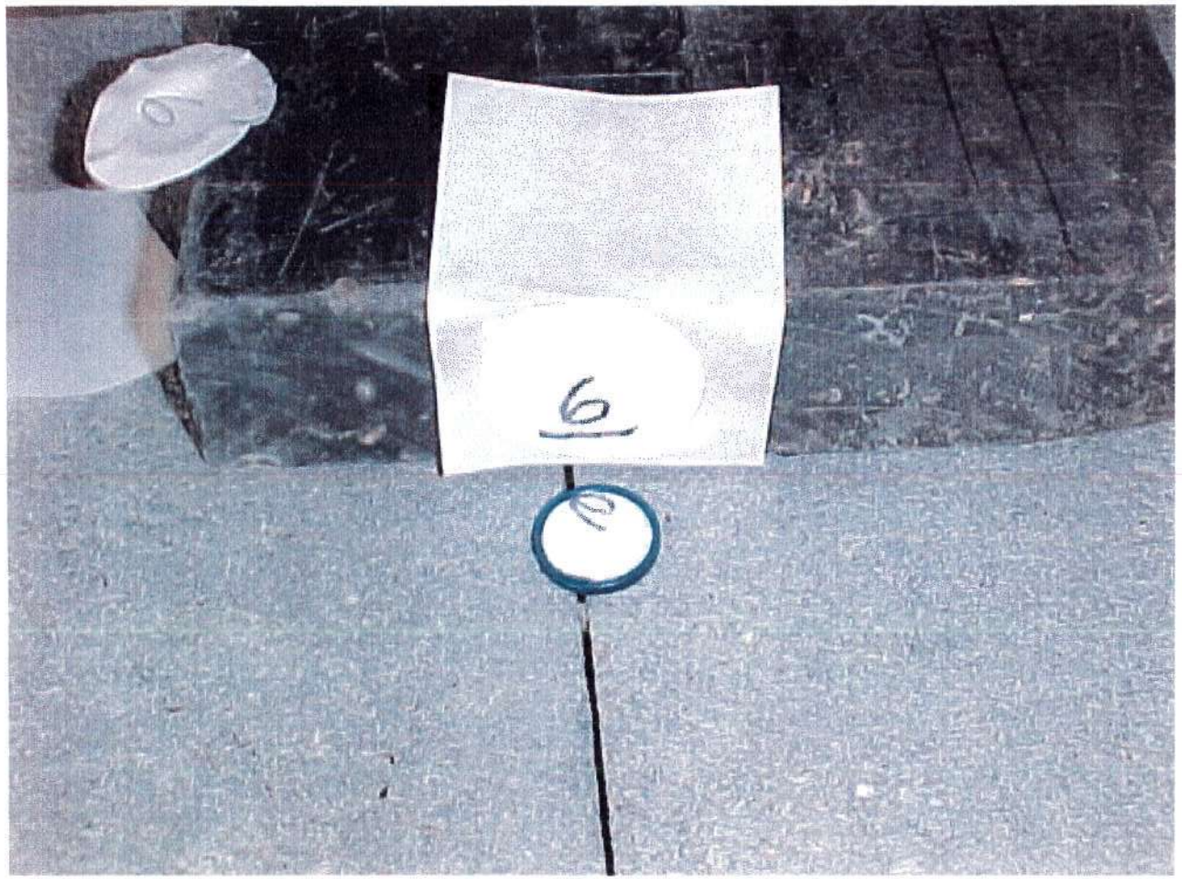
Survey #

BKG Alpha 0.3 **BKG Beta** 76

Alpha Eff 0.30414 **Beta/Gamma Eff** 0.33

	2 Min CPM	DPM
1	1	0.7
2		-1.0
3		-1.0
4		-1.0
5		-1.0
6		-1.0
7		-1.0
8		-1.0
9		-1.0
10		-1.0
11		-1.0
12		-1.0
13		-1.0
14		-1.0
15		-1.0
16		-1.0
17		-1.0
18		-1.0
19		-1.0
20		-1.0
21		-1.0
22		-1.0
23		-1.0
24		-1.0
25		-1.0

	2 Min CPM	DPM
1	148.00	-5.1
2		-227.7
3		-227.7
4		-227.7
5		-227.7
6		-227.7
7		-227.7
8		-227.7
9		-227.7
10		-227.7
11		-227.7
12		-227.7
13		-227.7
14		-227.7
15		-227.7
16		-227.7
17		-227.7
18		-227.7
19		-227.7
20		-227.7
21		-227.7
22		-227.7
23		-227.7
24		-227.7
25		-227.7


6

36" 14C: 0.9 mR/hr
1" BKg. 773: <.2
12" R020: 0.3

USEcology
FS-TX-02-01
Source Log
Date: 1-28-02

Container #	7	8	9	10	11
External on pig in mR/hr	40	3	2	3	2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	100	6	2	10	2
Beta on open pig mR/hr O/W	100	6	5	150	5

Table Readings

Source mR/hr @ 1 inch +ELE	850	55	10	42	8
Source mR/hr @ 12 inches R020	18	1.3	0.6	1.5	0.5
Source mR/hr @ 36 inches 14C	3	1.2	1	1.2	1.1
Smear DPM per 100 cm^2 Alpha	<100	<	<	<	<
Smear DPM per 100 cm^2 Beta	<	<	<	<	<
Size of source in cc's	10	10	2	5	4
Weight in grams	7	6	2	2	4

Loaded Pig mR/hr	<10	3	NA	NA	NA

Info on source:

	AG110	None	None	CO137	

Information on pig:

	SILVER WIRE 110 1/4"	CO 60 WIRE 10 UCI	CS-137 1 10 uCi EA 12-20-84	CS-137 210 uCi EA 10-25-85	CS-137 20UCi EA 12-20-84

Dig A Dart Info:

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **01/28/2002** **16:02**

Location Source Leak Rate Test

Survey #

MDA Alpha DPM	MDA Beta DPM
7	68

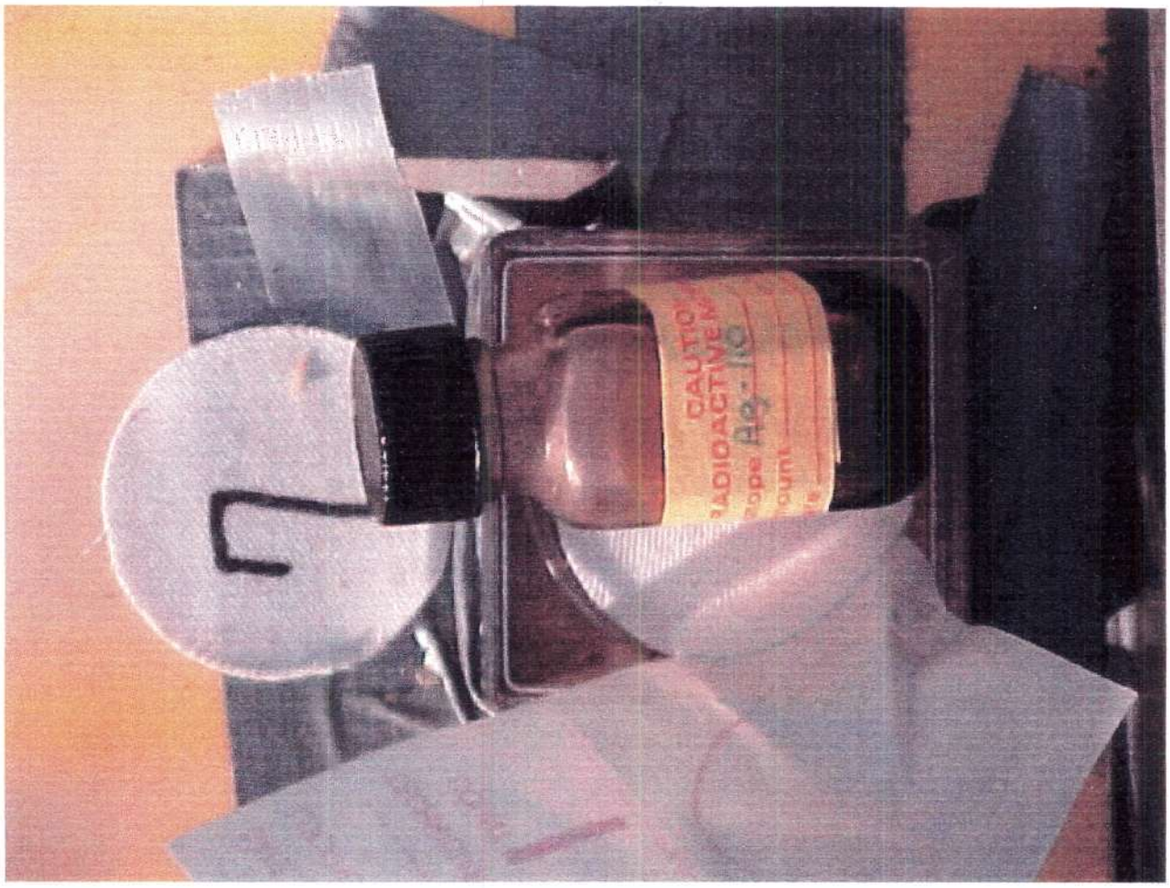
BKG Alpha CPM	BKG Beta CPM
0.05	74

Alpha Eff 0.33

	2 Min CPM	DPM
1		
2		
3		
4		
5		
6		
7	3	4.39
8	2	2.88
9	1	1.36
10	4	5.91
11	3	4.39
12	0	-0.15
13	3	4.39
14	0	-0.15
15	18	27.12
16	36	54.39
17	2	2.88
18		
19	26	39.24
20		
21		
22		
23		
24		
25		

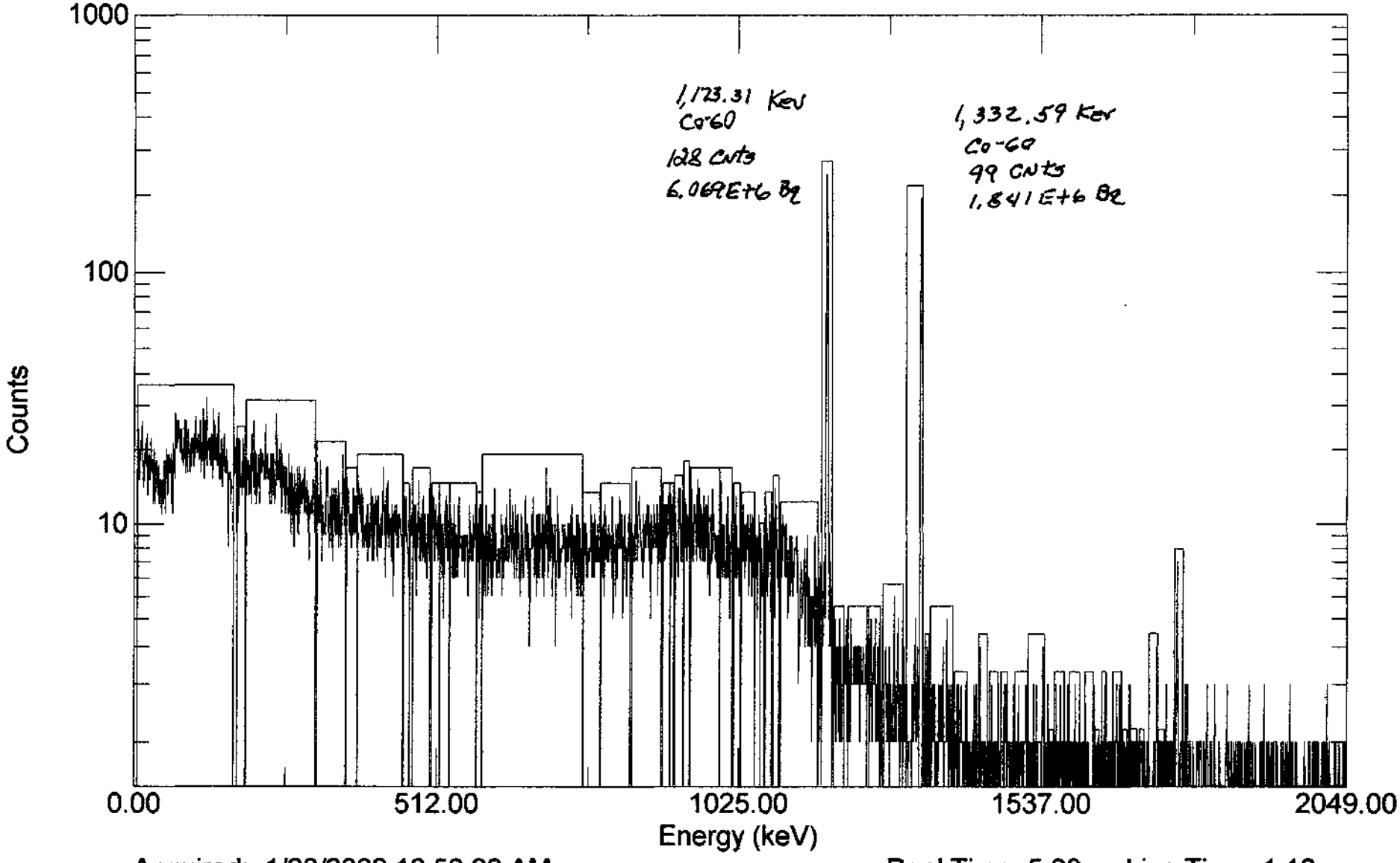
Beta/Gamma Eff 0.33

	2 Min CPM	DPM
1		
2		
3		
4		
5		
6		
7	142	-9.1
8	150	3.0
9	134	-21.2
10	134	-21.2
11	136	-18.2
12	108	-60.6
13	144	-6.1
14	142	-9.1
15	156	12.1
16	144	-6.1
17	158	15.2
18		
19	149	1.5
20		
21		
22		
23		
24		
25		


C
CAUTIO
RADIOACTIVE M
Ag-110

003 SC7 1-28-2002 10.53.21 AM

SC7



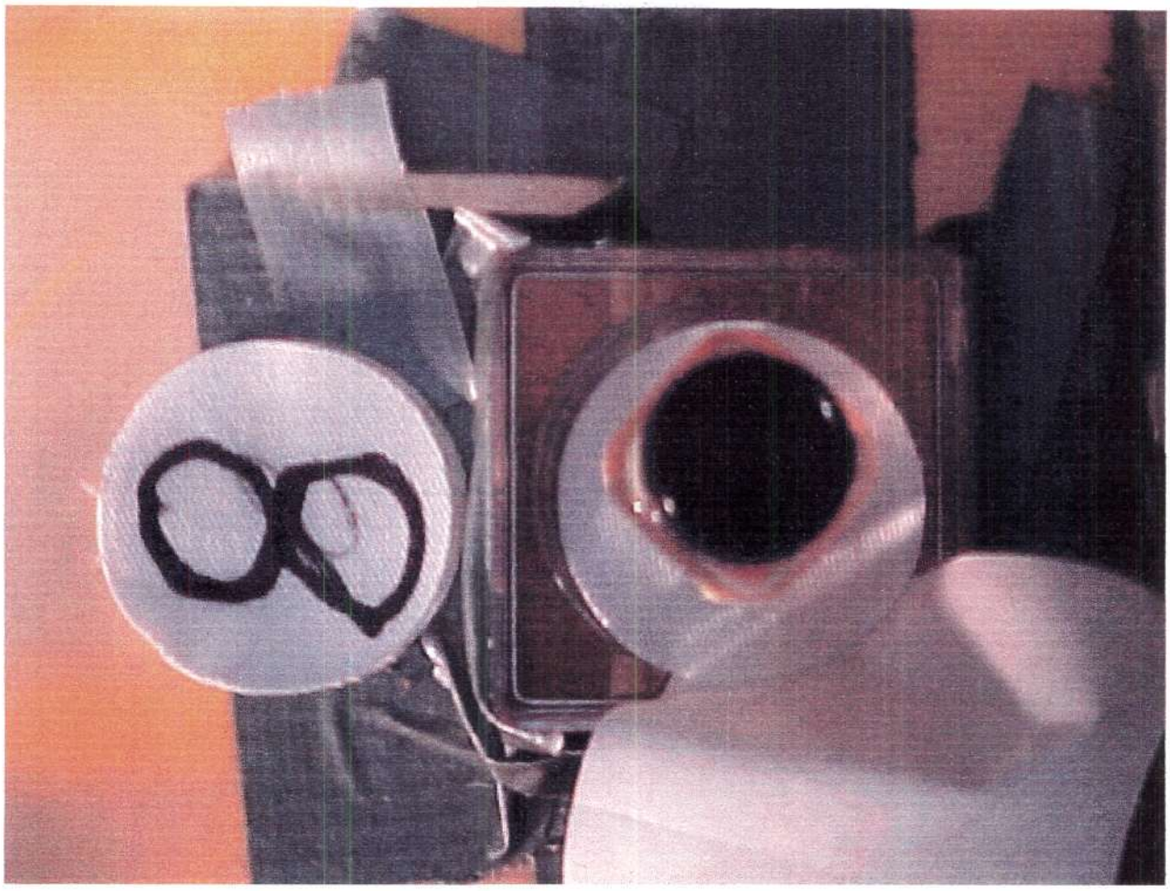
Acquired: 1/28/2002 10:53:22 AM

File: C:\GAMMAV~1\003 SC7 1-28-2002 10.53.21 AM.Spc

Detector: #1 digiDART USE 1b

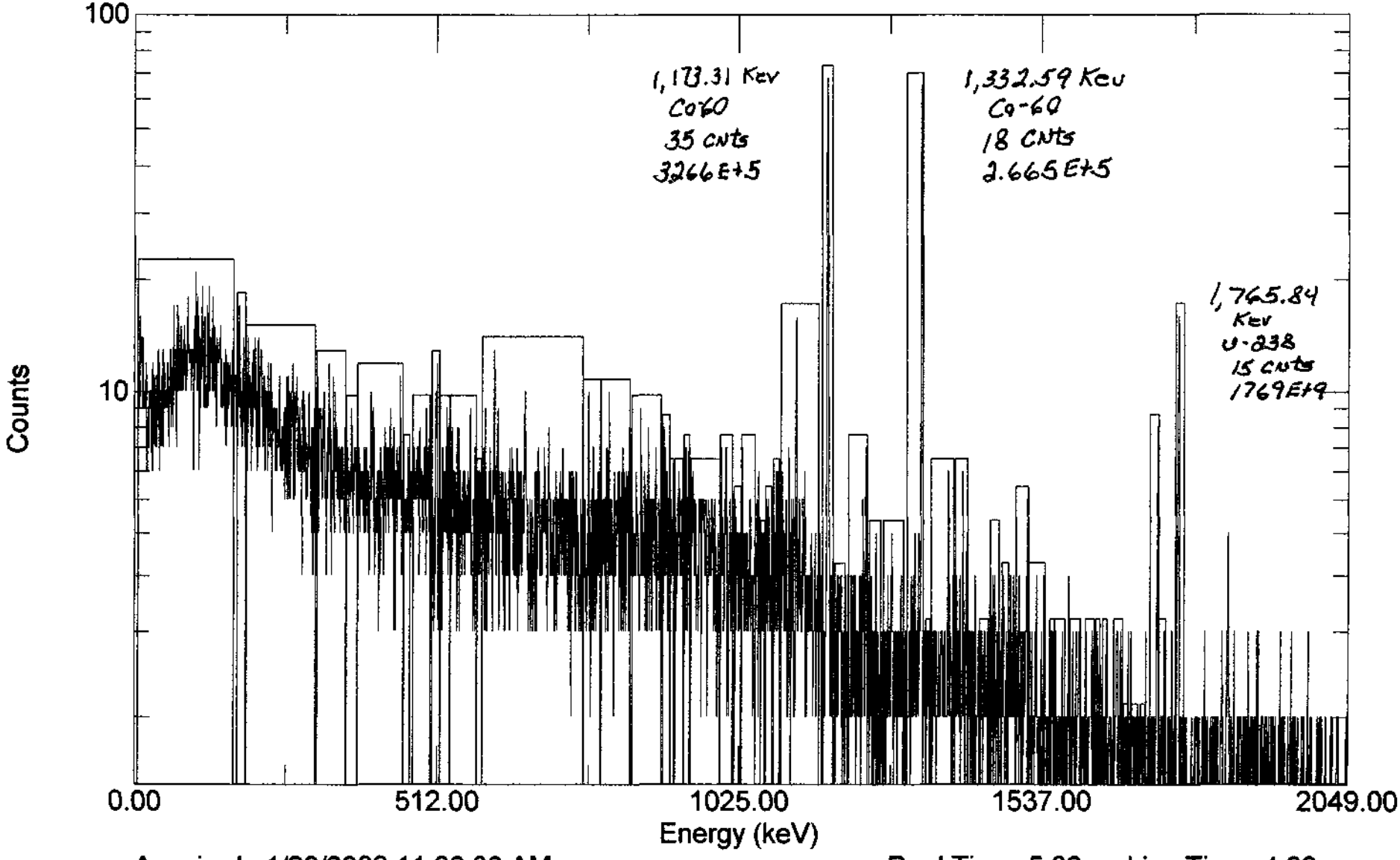
Real Time: 5.00 s. Live Time: 1.10 s.

Channels: 8192



004 SC8 1-28-2002 11.06.07 AM

SC8



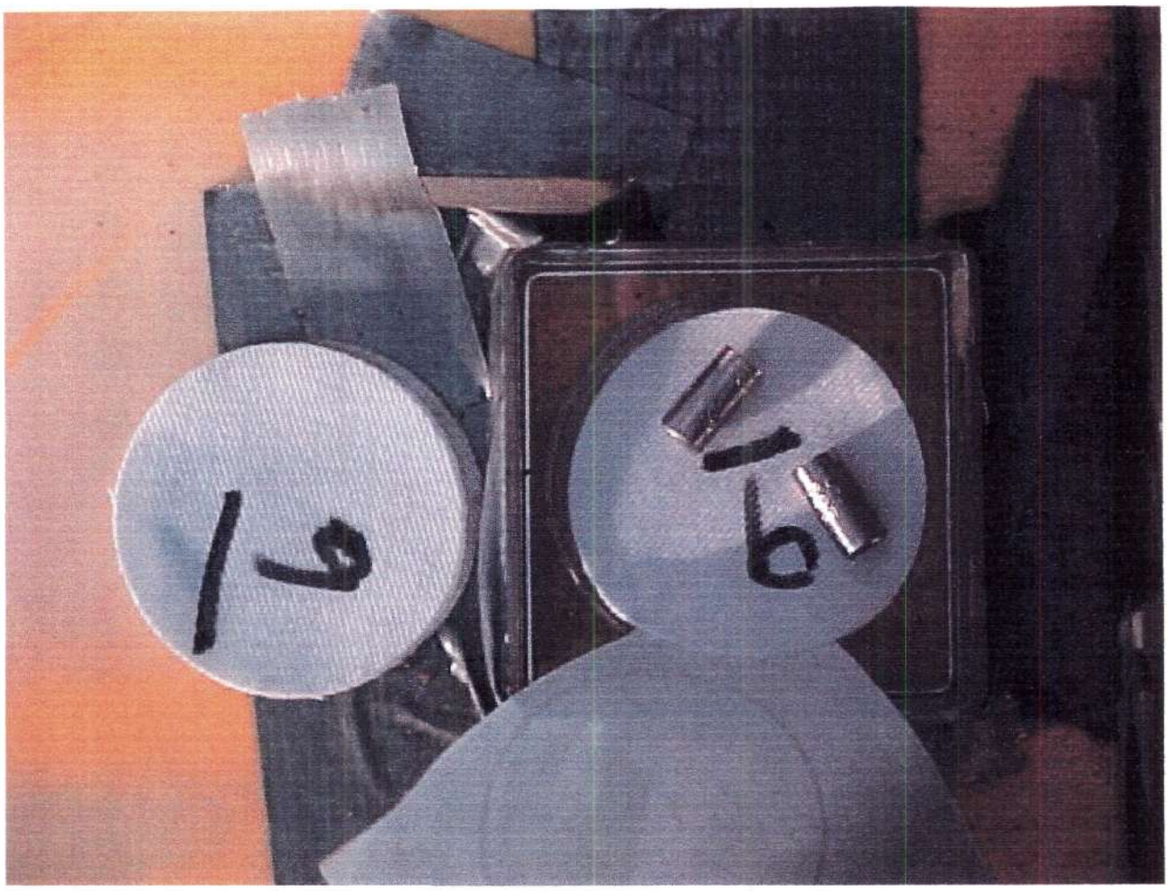
Acquired: 1/28/2002 11:06:06 AM

Real Time: 5.00 s. Live Time: 4.08 s.

File: C:\GAMMAV~1\004 SC8 1-28-2002 11.06.07 AM.Spc

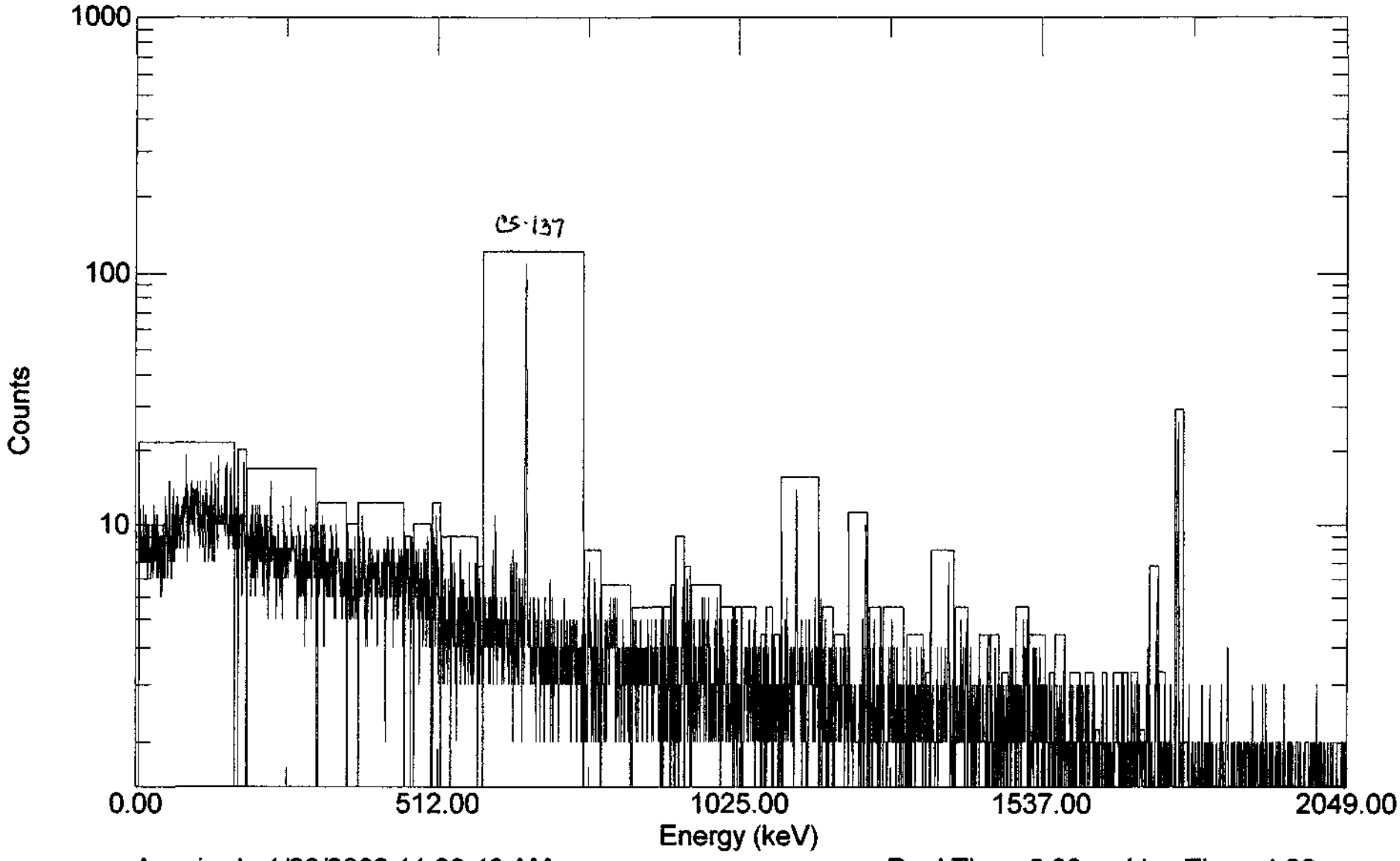
Channels: 8192

Detector: #1 digiDART USE 1b


13
6

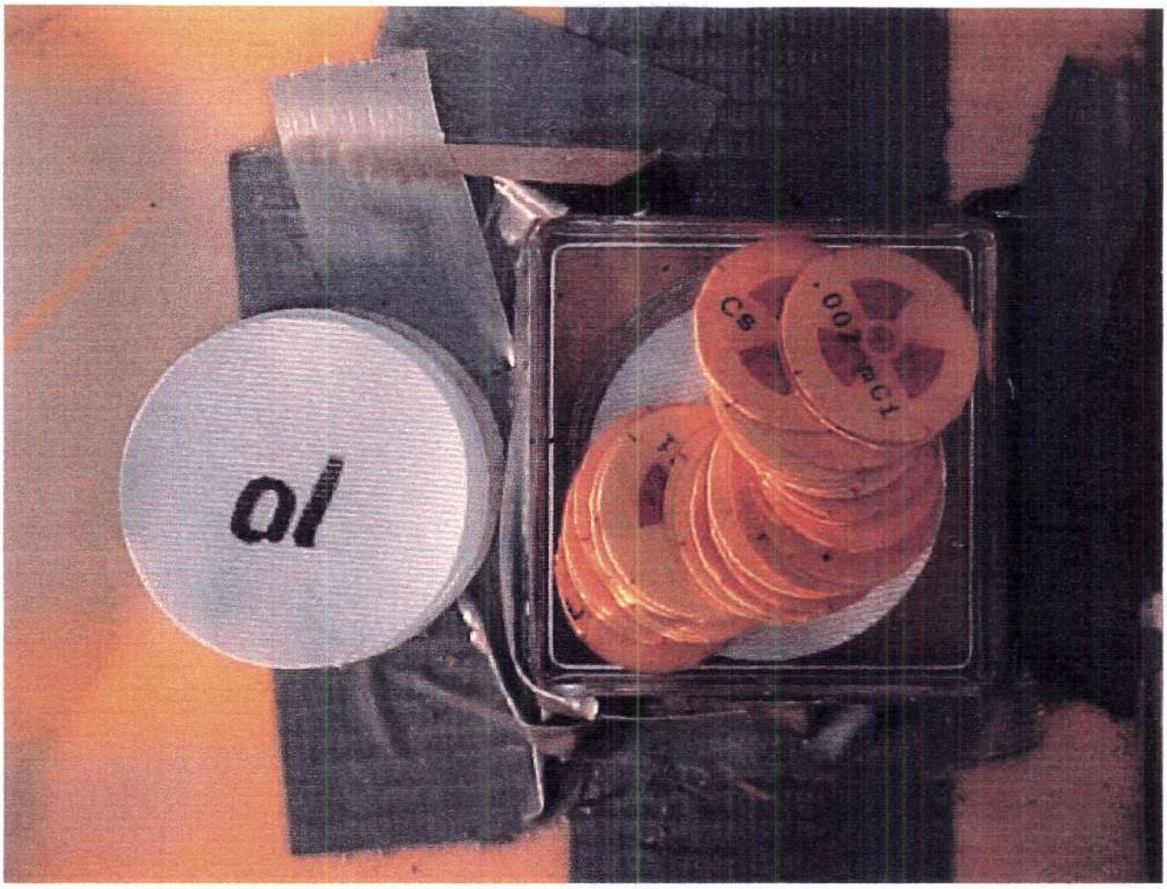
005 SC9 1-28-2002 11.20.47 AM

SC9



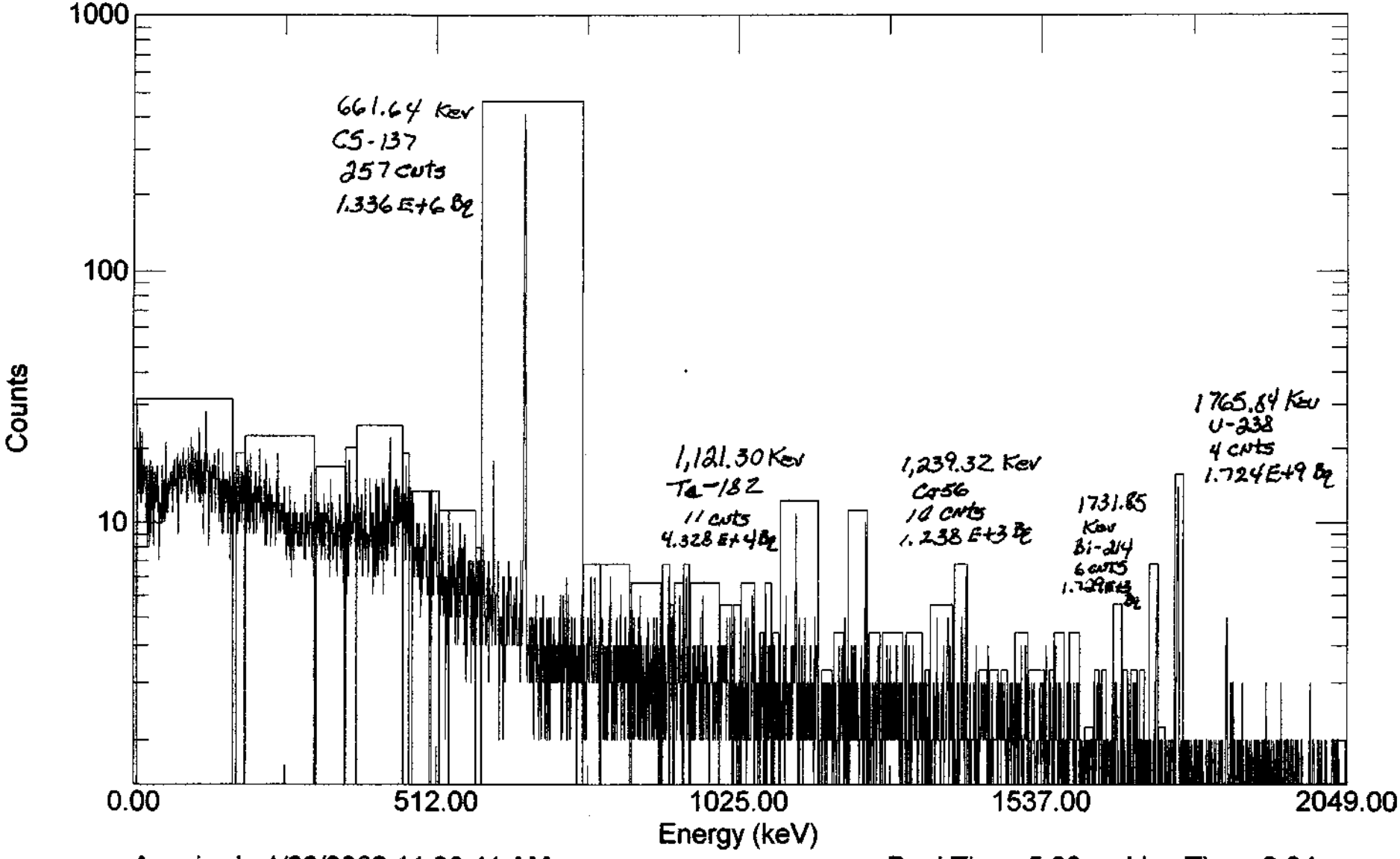
Acquired: 1/28/2002 11:20:46 AM
File: C:\GAMMAV~1\005 SC9 1-28-2002 11.20.47 AM.Spc
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.22 s.
Channels: 8192


.002 mCi
Cs
ol

006 SC10 1-28-2002 11.30.40 AM

SC10



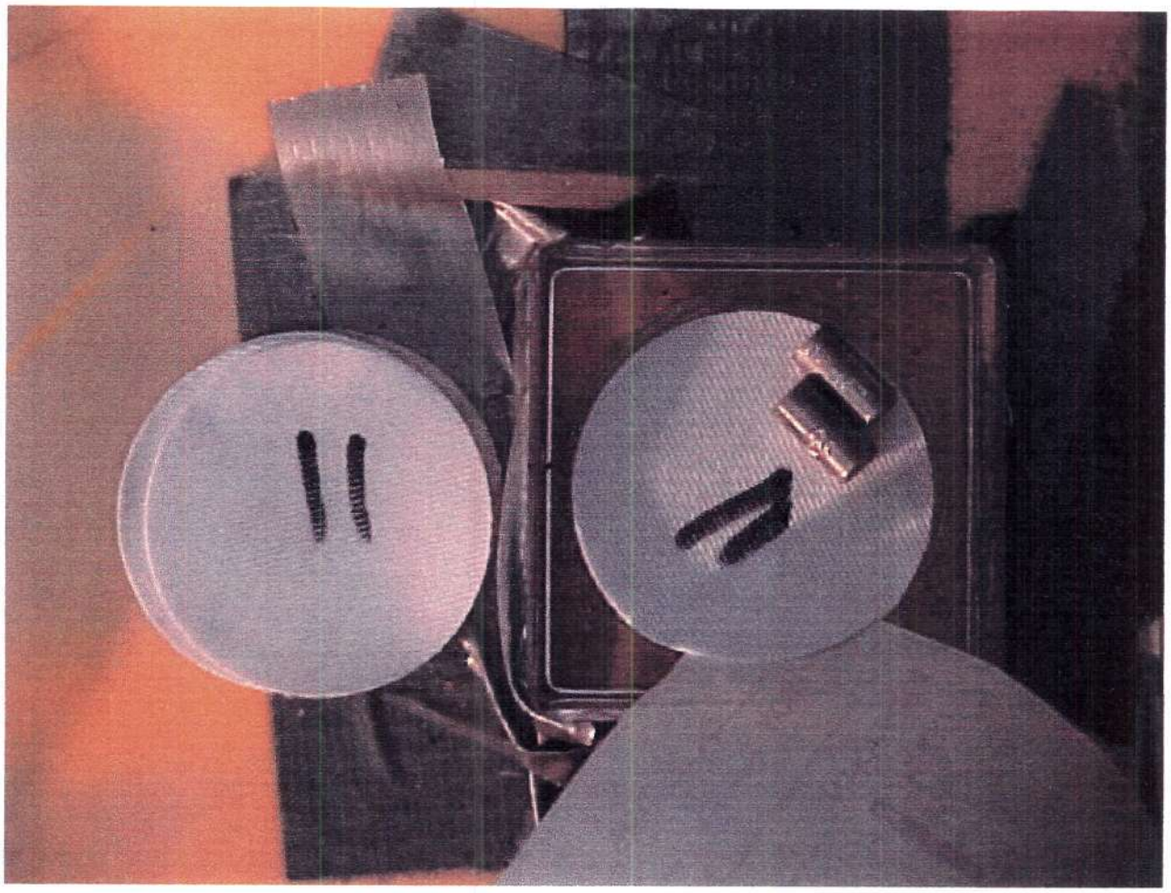
Acquired: 1/28/2002 11:30:41 AM

Real Time: 5.00 s. Live Time: 3.84 s.

File: C:\GAMMAV~1\006 SC10 1-28-2002 11.30.40 AM.Spc

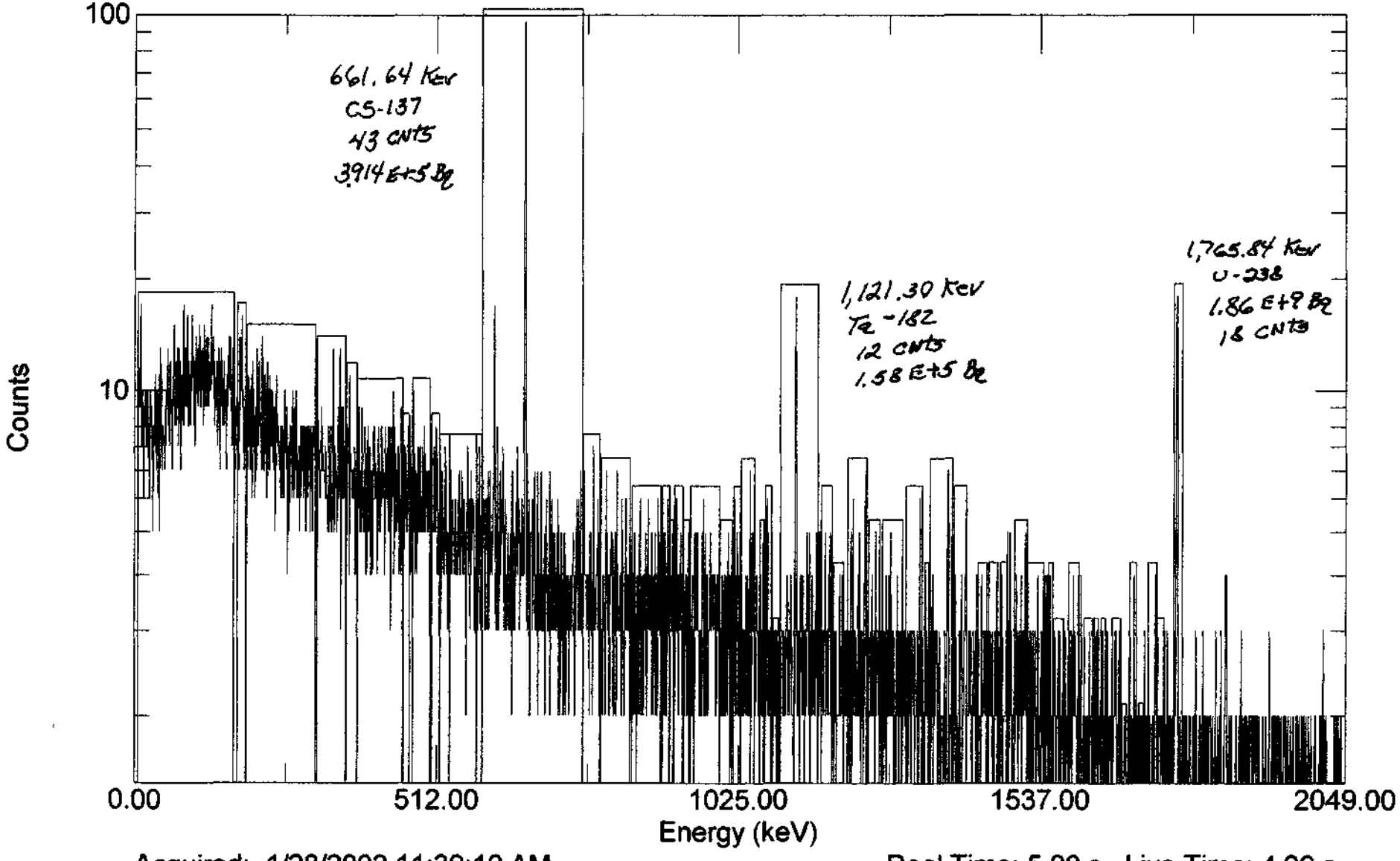
Channels: 8192

Detector: #1 digiDART USE 1b



007 SC11 1-2o-2002 11.39.10 AM

SC11



Acquired: 1/28/2002 11:39:10 AM Real Time: 5.00 s. Live Time: 4.26 s.

File: C:\GAMMAV~1\007 SC11 1-28-2002 11.39.10 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log
Date:

Container #	12	13	14	15	16
External on pig in mR/hr	<1	<1	<1	<1	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<1	<1	<1	<1	<1
Beta on open pig mR/hr O/W	<1	<1	<1	<1	<1
Table Readings CPM α	8	10	8	1,028	36
Table Readings CPM β	40K	<100	10K	5K	4500
Source mR/hr @ 1 inch					
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Smear [redacted] per 100 cm^2 Alpha	<	<	<	27	54
Smear [redacted] per 100 cm^2 Beta	<	<	<	<	<
Size of source in cc's	4	8	15	15	1
Weight in grams	2	12	25	25	1

Loaded Pig mR/hr					

Info on [redacted]: Pig

[redacted] VAD	TH228 9.28 uCI 12-1-81	~~100 uCI~~ ~~CS 137~~ ~~[redacted]~~ Nothing	Ga-153	TH228 20 uCI 7-1-87	Nothing

Information on [redacted] Source

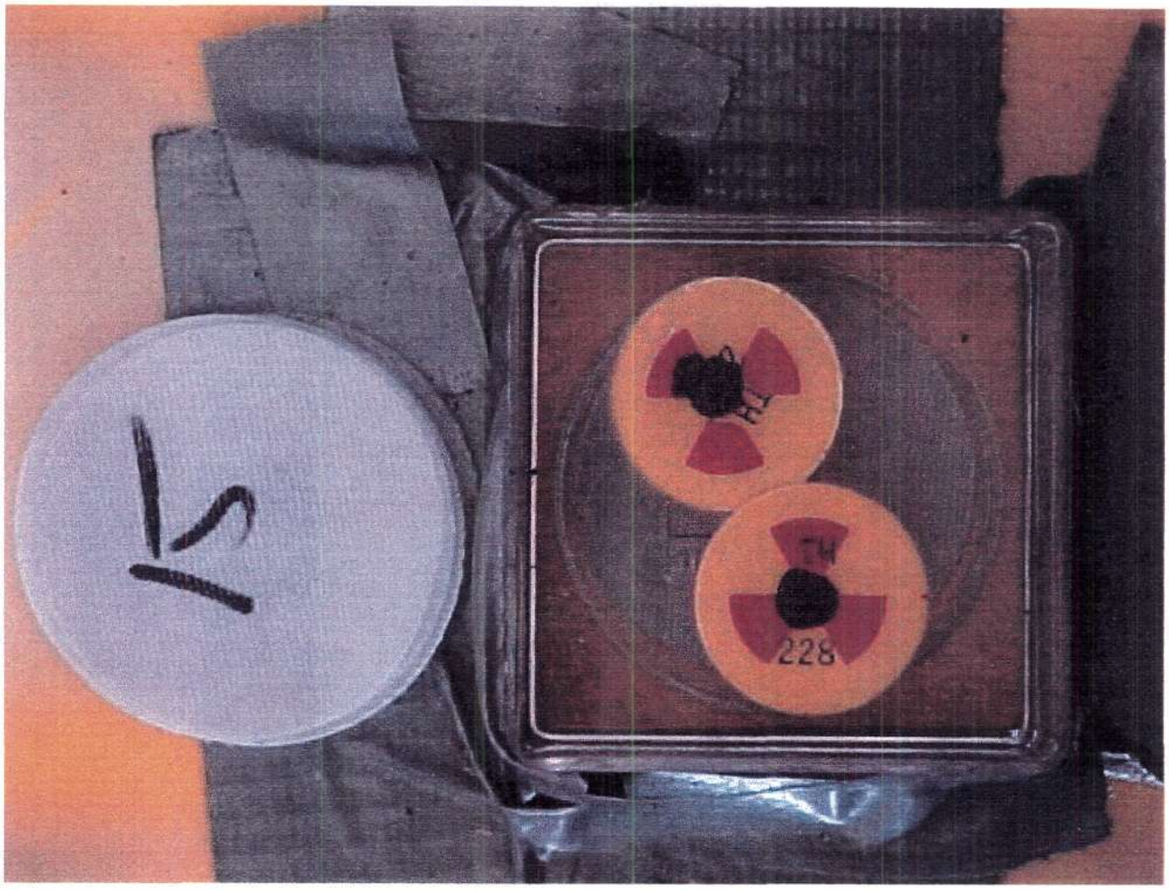
	TH228 9.28 uCI 12-1-81	2 sources	CO 1356 1CI 1386	TH228 ~~20 uCI~~ 20 uCI 7-1-87	GD ~~531~~ 153 9-5-86

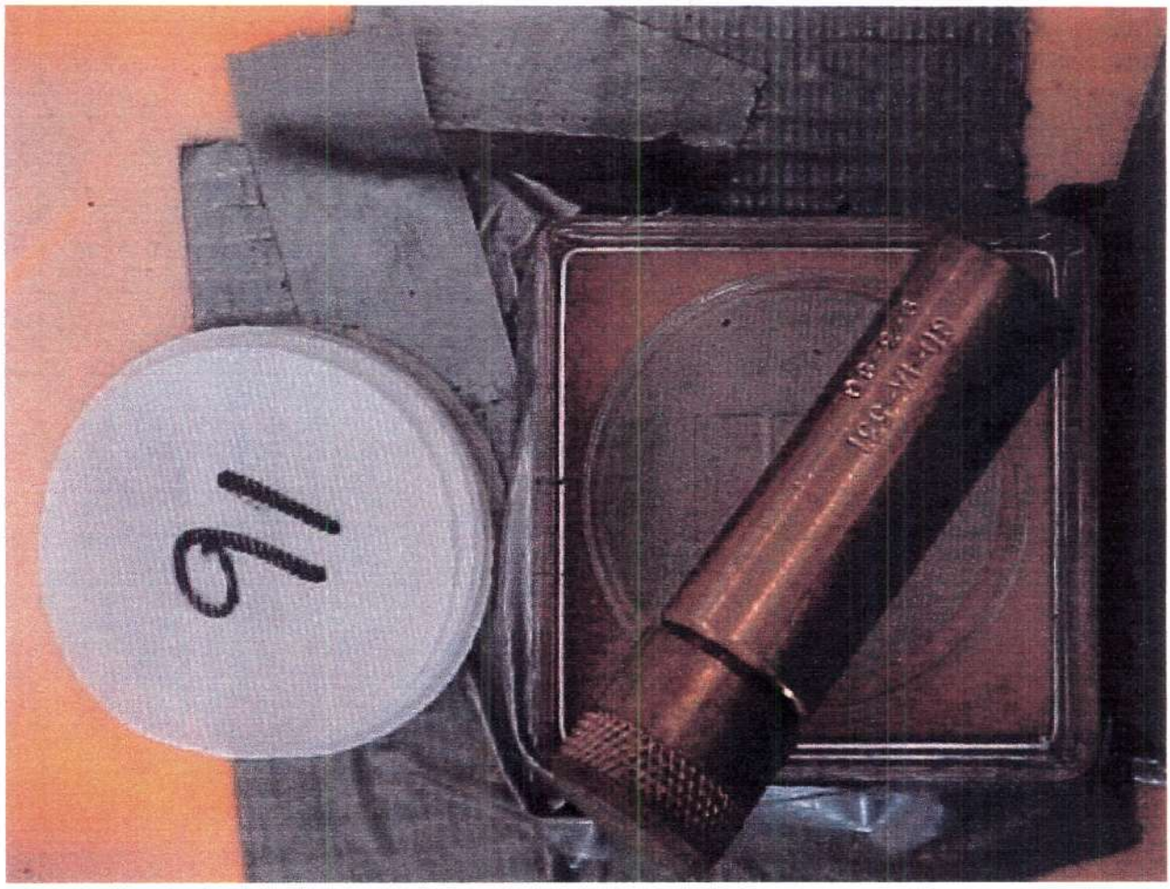
Dig A Dart Info:

ISOTOPE PRODUCTS
LABORATORIES

13

5


1
228


16

USEcology
FS-TX-02-01
Source Log
Date:

Container #		17	18	19	20	~~21~~
External on pig in mR/hr		<1	<1	<1	<1	
External on pig Neutron mR/hr		<1	<1	<1	<1	
Contact open pig mR/hr		<1	<1	<1	<1	
Beta on open pig mR/hr O/W		<1	<1	<1	<1	
Table Readings	CPM α	10	5,000	50	NA	
	CPM β+	Bkg	20,000	Bkg		
Source mR/hr @ 1 inch						
Source mR/hr @ 12 inches						
Source mR/hr @ 36 inches						
Smear DPM per 100 cm^2 Alpha		<	25,000	39	NA	
Smear DPM per 100 cm^2 Beta		<	10,000	<		
Size of source in cc's		10	10	10		
Weight in grams		12gr	2	4		

Loaded Pig mR/hr					

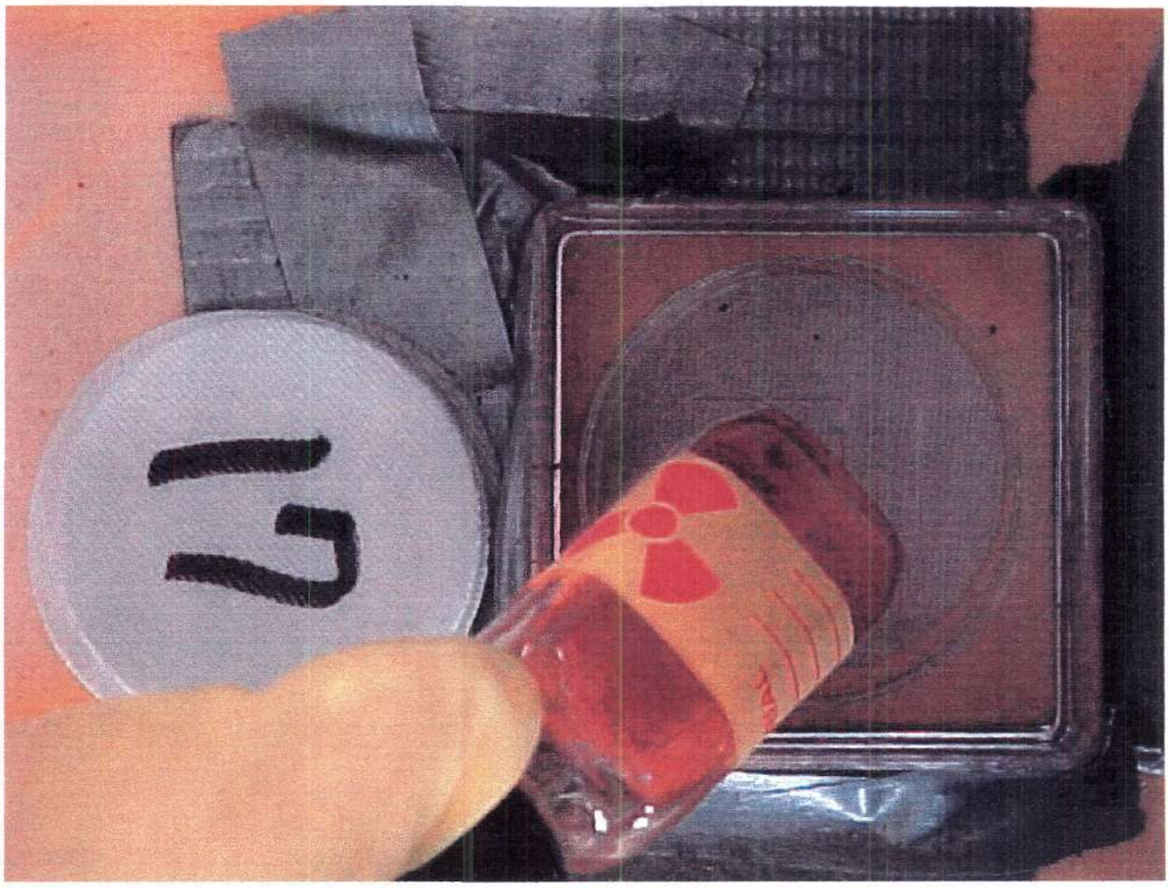
Info on source:

	Liquid Source	[redacted] Nothing	[redacted] I131 10mCI 2-26-89	Ag 110m	

Information on pig:

	ITW 192 IR 192 6 mci [redacted] IR 1-3-87 Amonium IR	Nothing [redacted]	Nothing [redacted]	Ag 110 M 10 mCI ea 8588	

Dig A Dart Info: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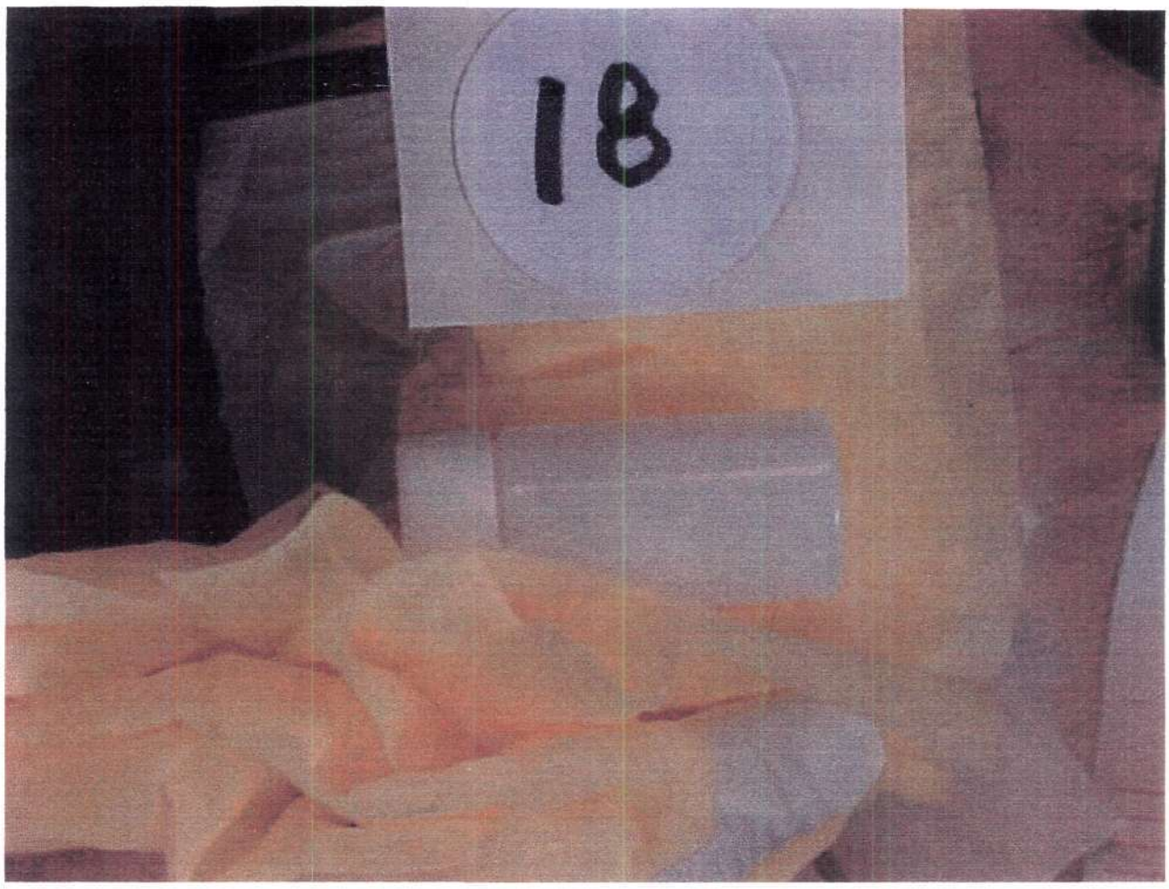
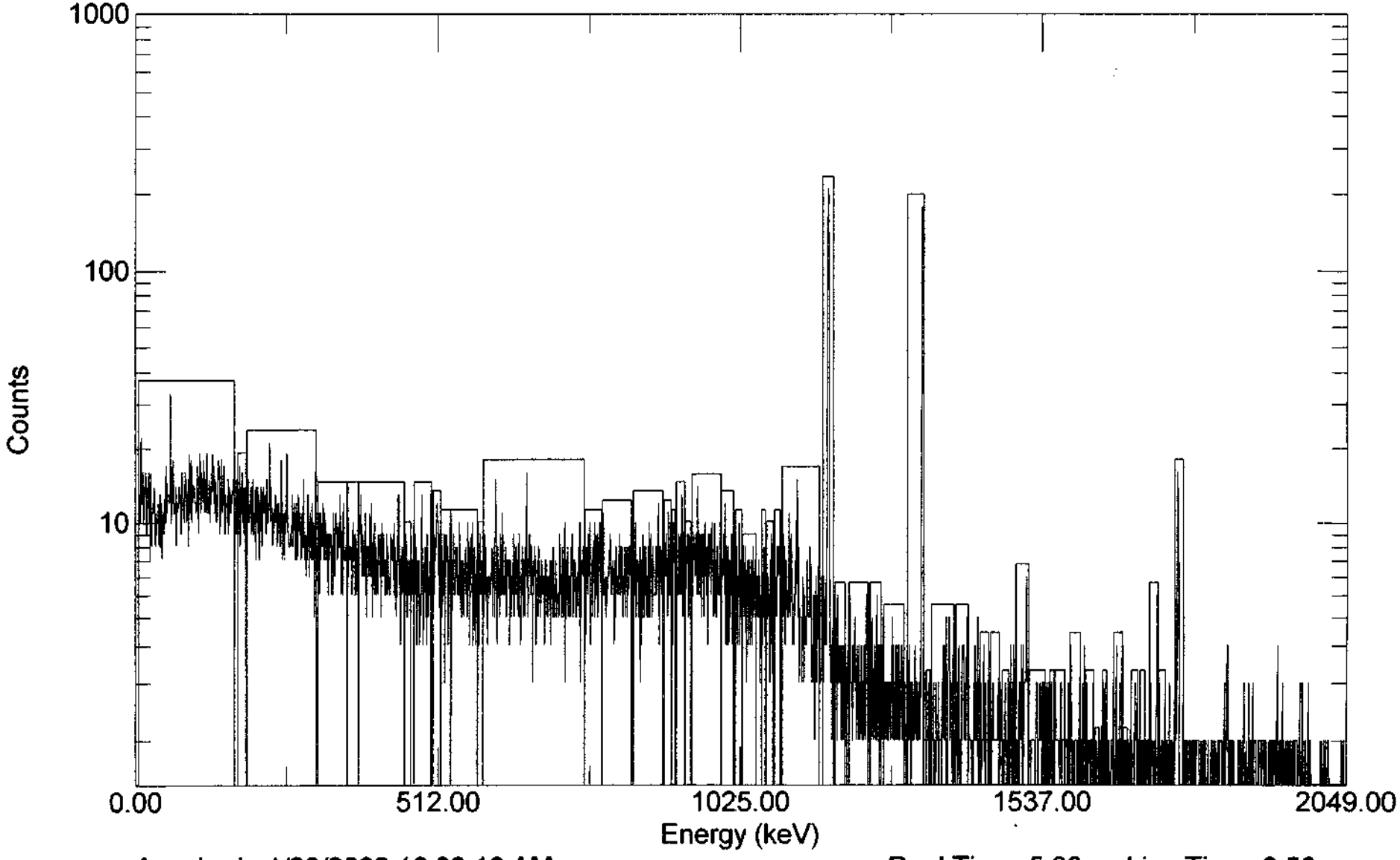

18

009 SC18 1-29-2002 10.02.15 AM

SC18



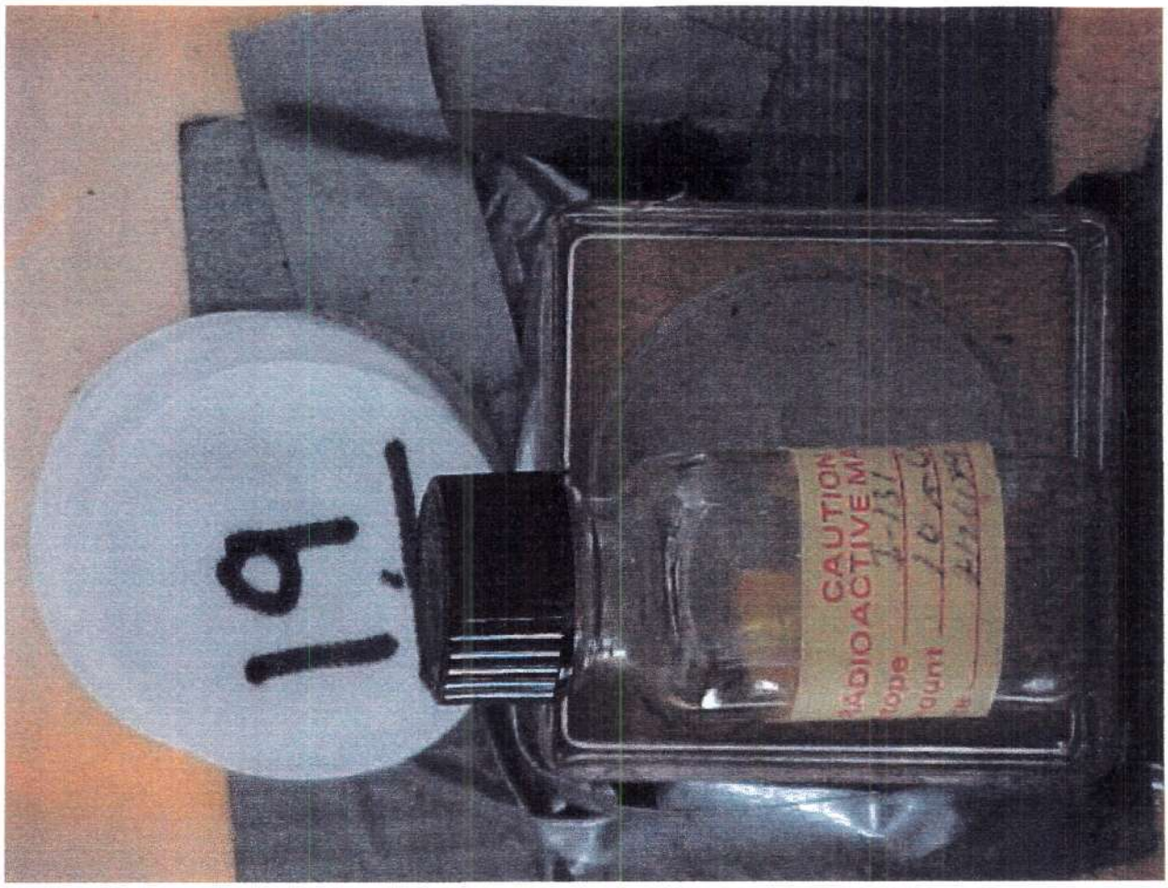
Acquired: 1/29/2002 10:02:16 AM

File: C:\GAMMAV~1\009 SC18 1-29-2002 10.02.15 AM.Spc

Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 3.58 s.

Channels: 8192


19
CAUTION
RADIOACTIVE M
I-131

1-29-02 BKG

	mR/Hr
1"	0.2
12"	0.2
36"	0.9

USEcology
FS-TX-02-01
Source Log
Date:

Container #	20	21	22	23	24
External on pig in mR/hr	<1	<1	<1	2	1
External on pig Neutron mR/hr	<1	<	<	<	<
Contact open pig mR/hr	<1	<	1	3	3
Beta on open pig mR/hr O/W	<1	<	2	4	~~2~~ 4 JEW 1-29-02

Table Readings

Source mR/hr @ 1 inch	18	2	1	30	8
Source mR/hr @ 12 inches	.8	.4	.4	1	.5
Source mR/hr @ 36 inches	.9	BKG	BKG	BKG	BKG
Smear DPM per 100 cm^2 Alpha	<	<	<	<	<
Smear DPM per 100 cm^2 Beta	<	<	<	<	<
Size of source in cc's	4	10	2	10	10
Weight in grams	6g	5 cc	3	5	5

Loaded Pig mR/hr					

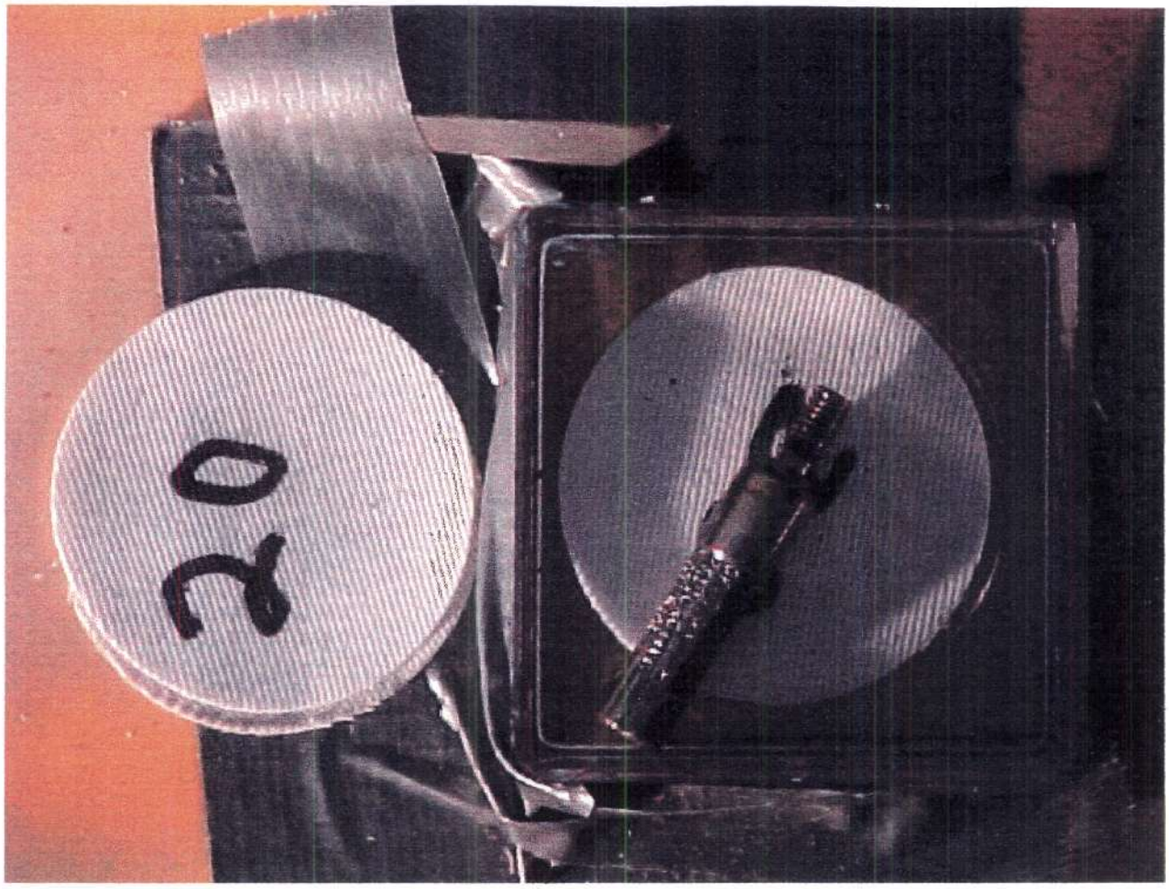
Info on ~~source~~: PIG

	100uCi CS137	Ag110 10uCi 8-5-85	N/A	N/A	CO 60 .00185g 0.2 TRANSPORT INDEX

Information on ~~pig~~ SOURCE

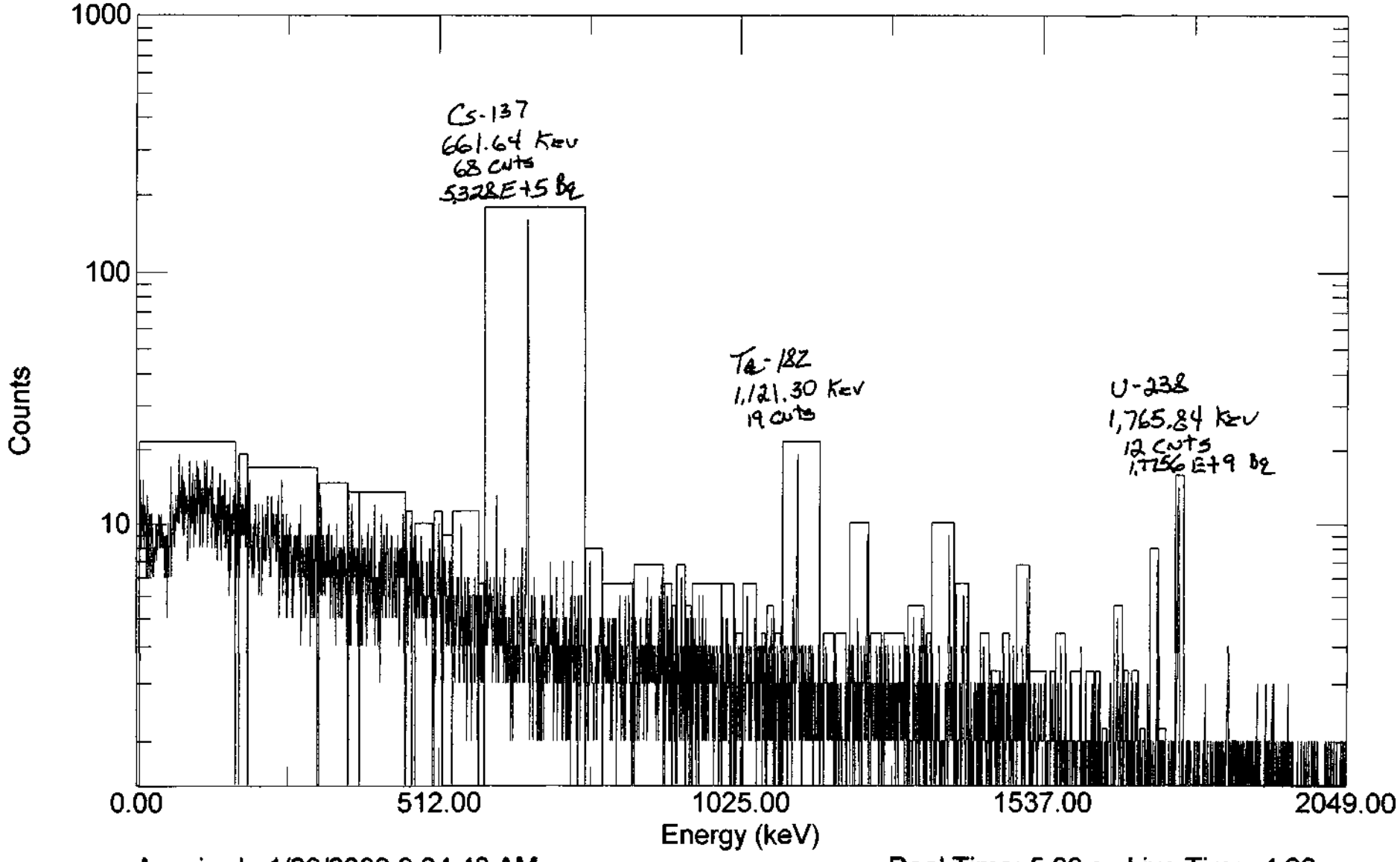
					CO 60 50uCi 91488

Dig A Dart Info:


20

004 SC20 1-29-2002 9.34.49 AM

SC20



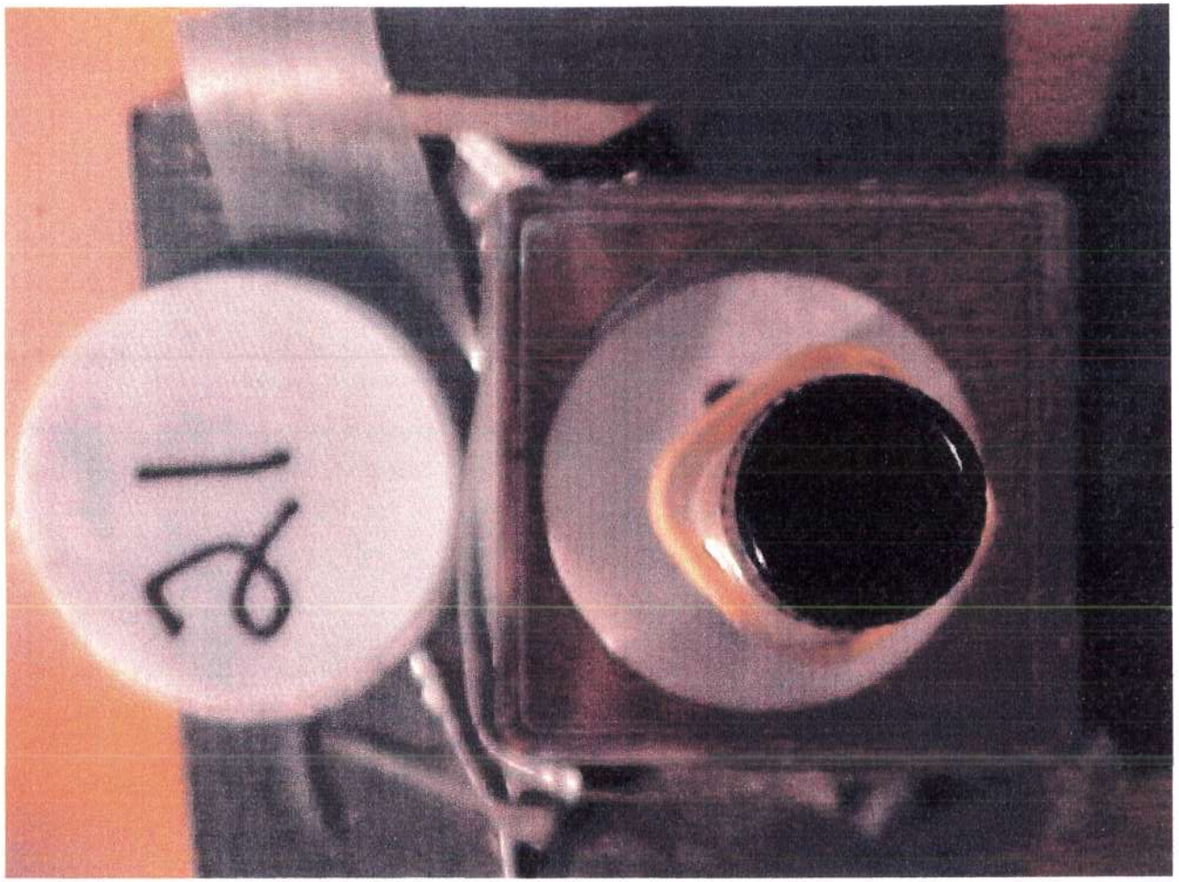
Acquired: 1/29/2002 9:34:48 AM

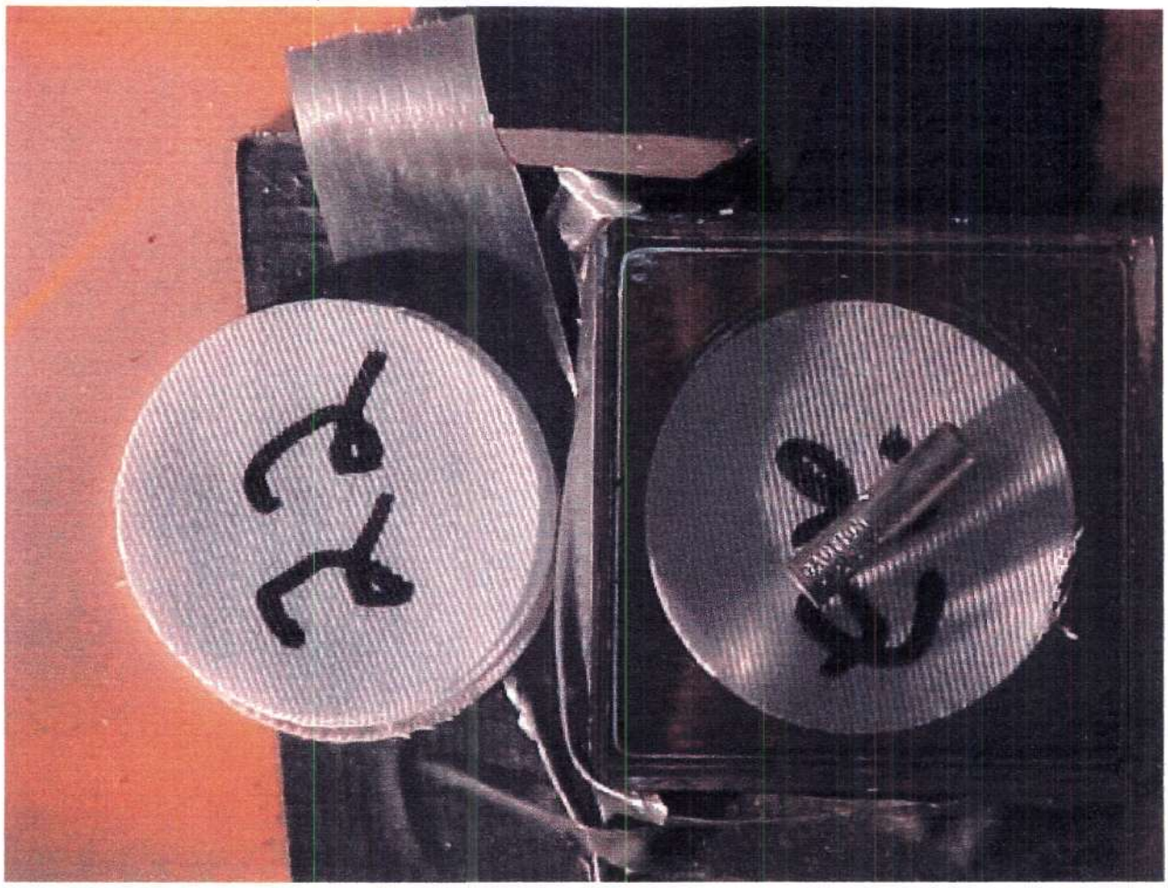
File: C:\GAMMAV~1\004 SC20 1-29-2002 9.34.49 AM.Spc

Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.20 s.

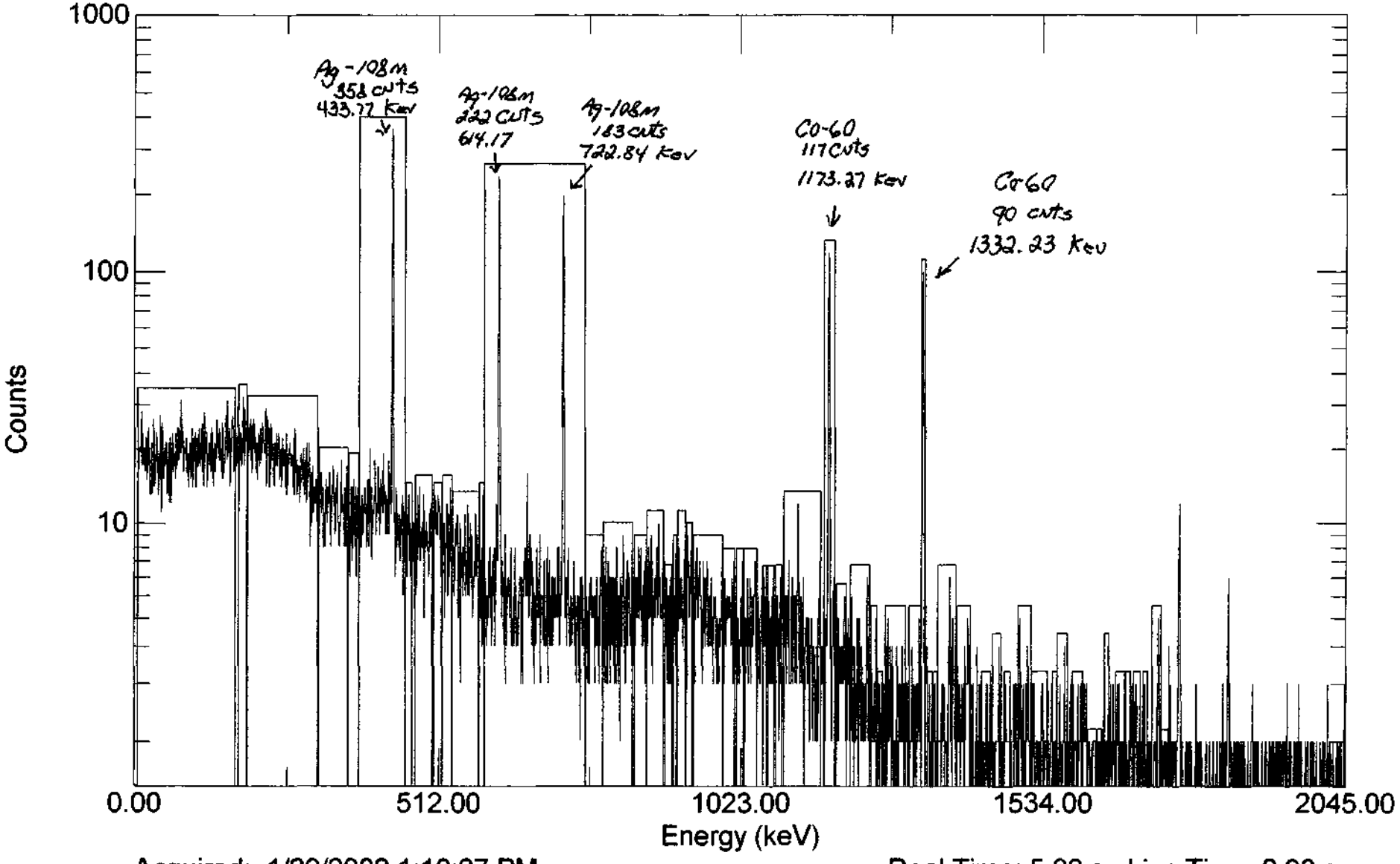
Channels: 8192


18



001 SC21-2 1-29-2002 1.10.27 PM

SC21-2



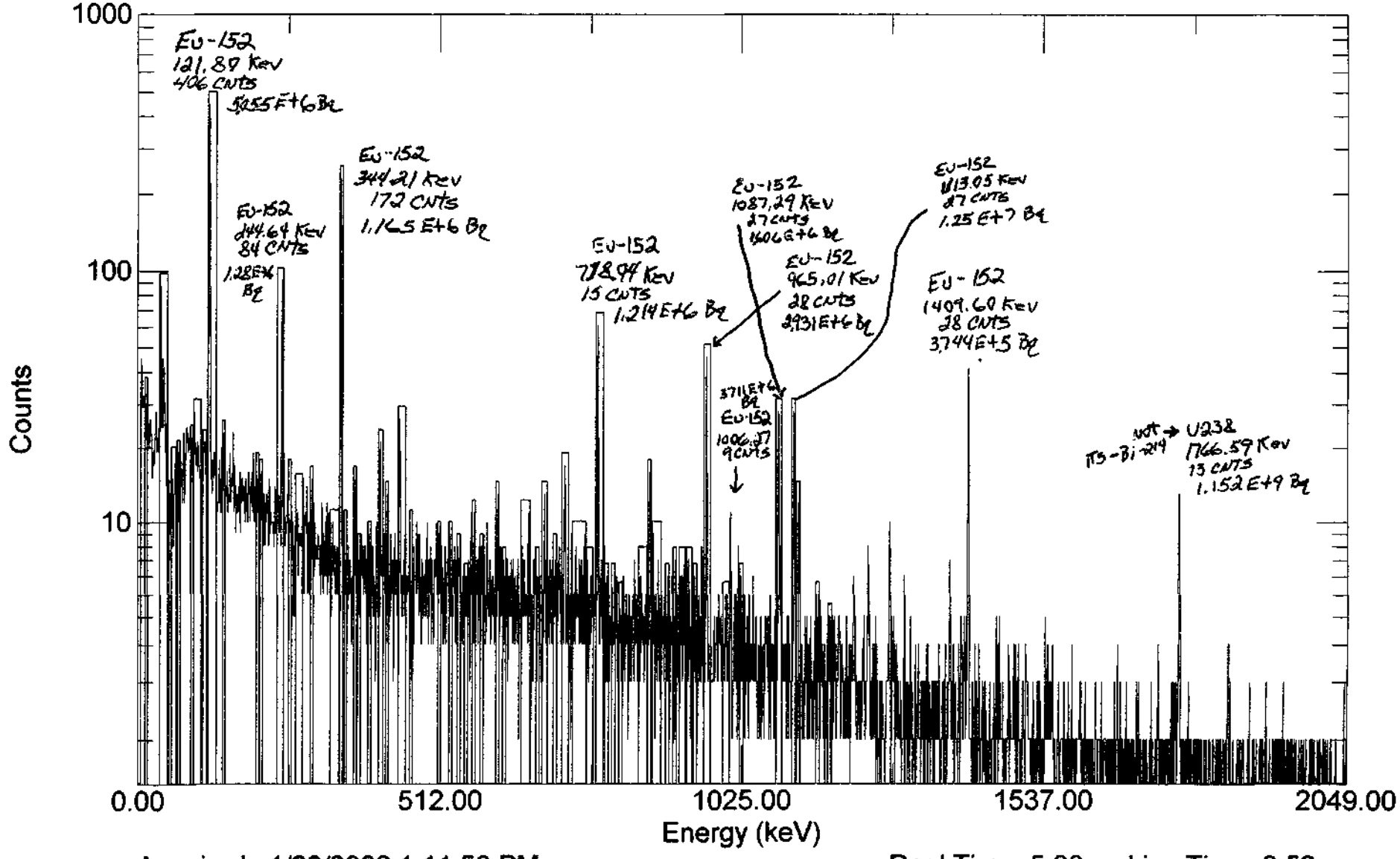
Acquired: 1/29/2002 1:10:27 PM Real Time: 5.00 s. Live Time: 2.90 s.

File: C:\GAMMAV~1\001 SC21-2 1-29-2002 1.10.27 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

002 SC22-2 1-29-2002 1.11.50 PM

SC22-2



Acquired: 1/29/2002 1:11:50 PM Real Time: 5.00 s. Live Time: 3.52 s.

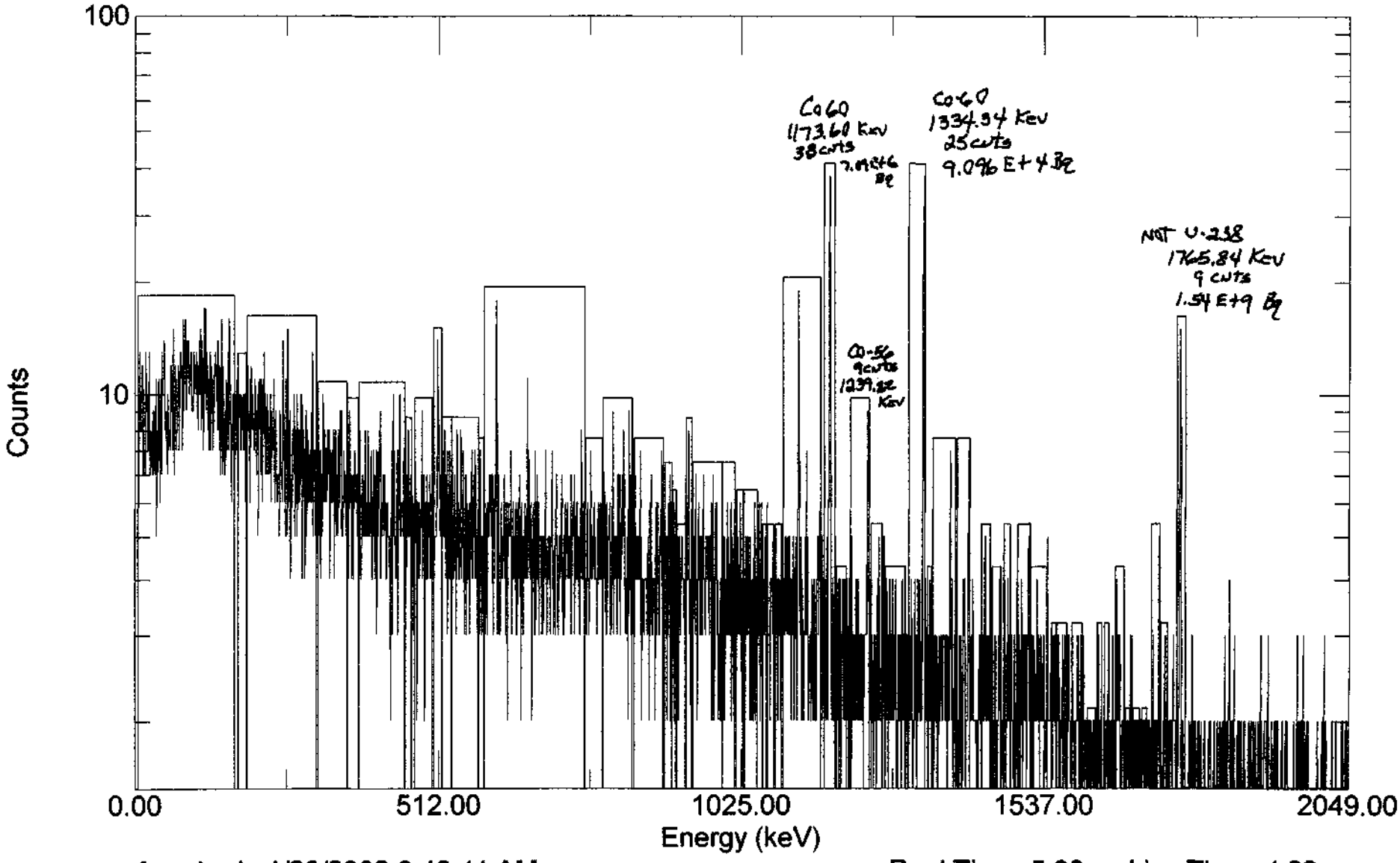
File: C:\GAMMAV~1\002 SC22-2 1-29-2002 1.11.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

23
RADIOA
Isotope
Amount
Date

007 SC23 1-29-2002 9.48.40 AM

SC23



Acquired: 1/29/2002 9:48:41 AM

File: C:\GAMMAV~1\007 SC23 1-29-2002 9.48.40 AM.Spc

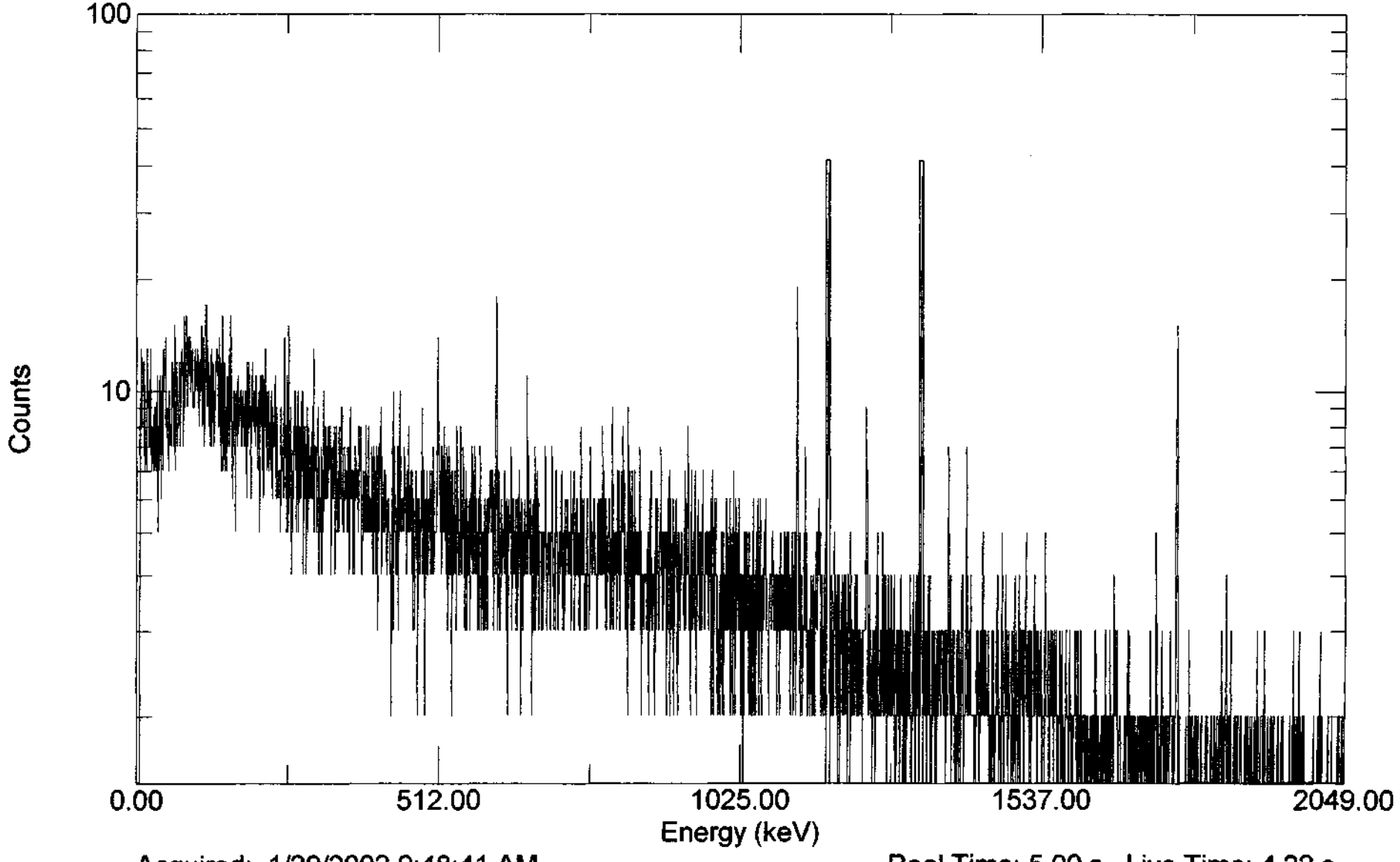
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.22 s.

Channels: 8192

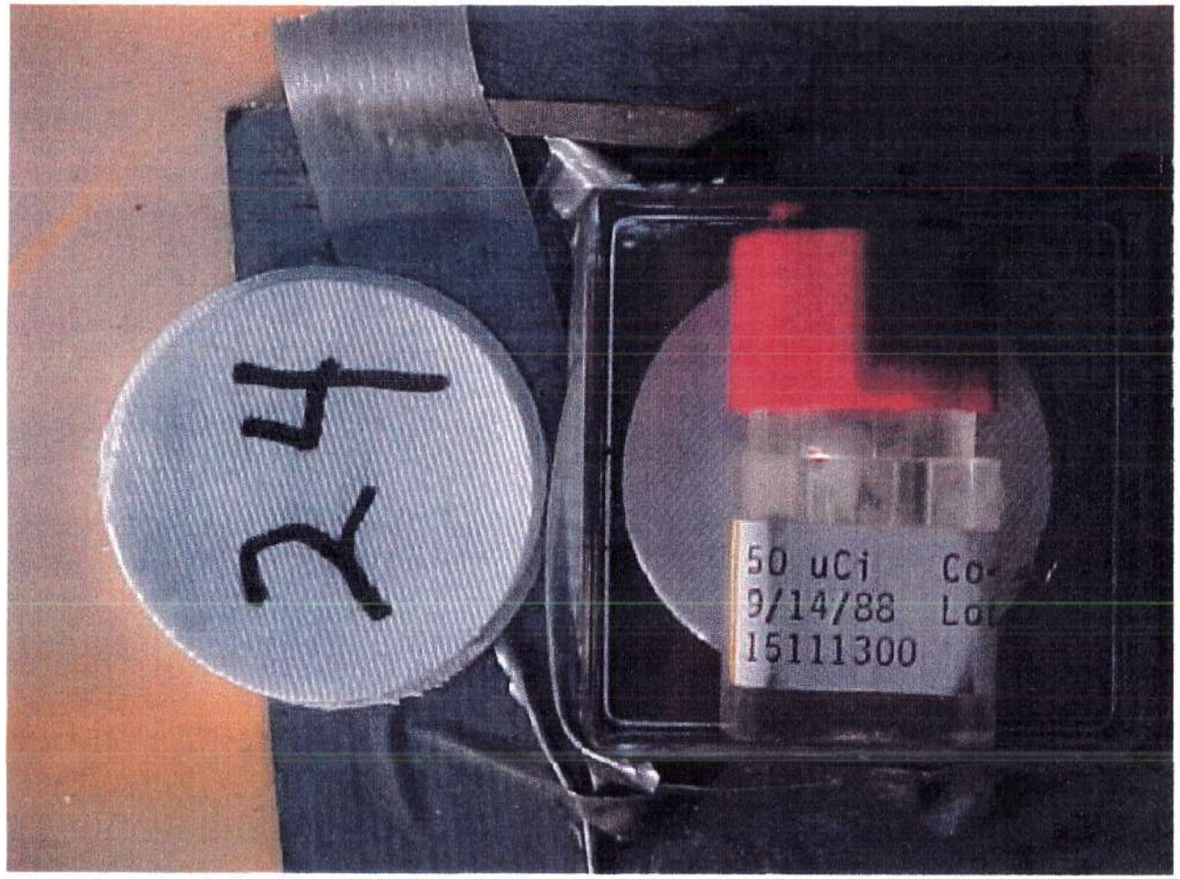
007 SC23 1-29-2002 9.48.40 AM

SC23



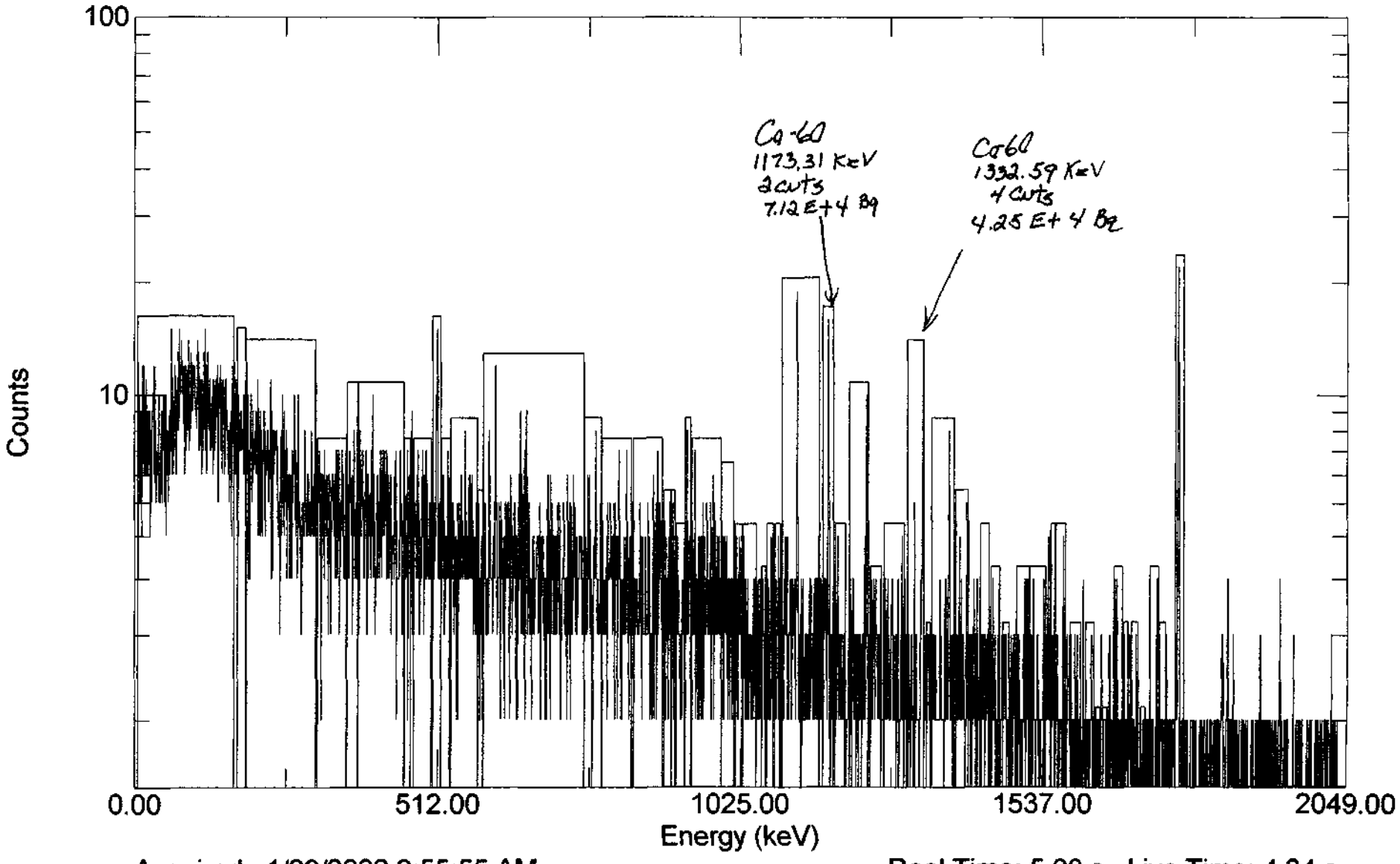
Acquired: 1/29/2002 9:48:41 AM
File: C:\GAMMAV~1\007 SC23 1-29-2002 9.48.40 AM.Spc
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.22 s.
Channels: 8192


24
50 uCi
9/14/88
15111300

008 SC24 1-29-2002 9.55.55 AM

SC24



Acquired: 1/29/2002 9:55:55 AM

File: C:\GAMMAV~1\008 SC24 1-29-2002 9.55.55 AM.Spc

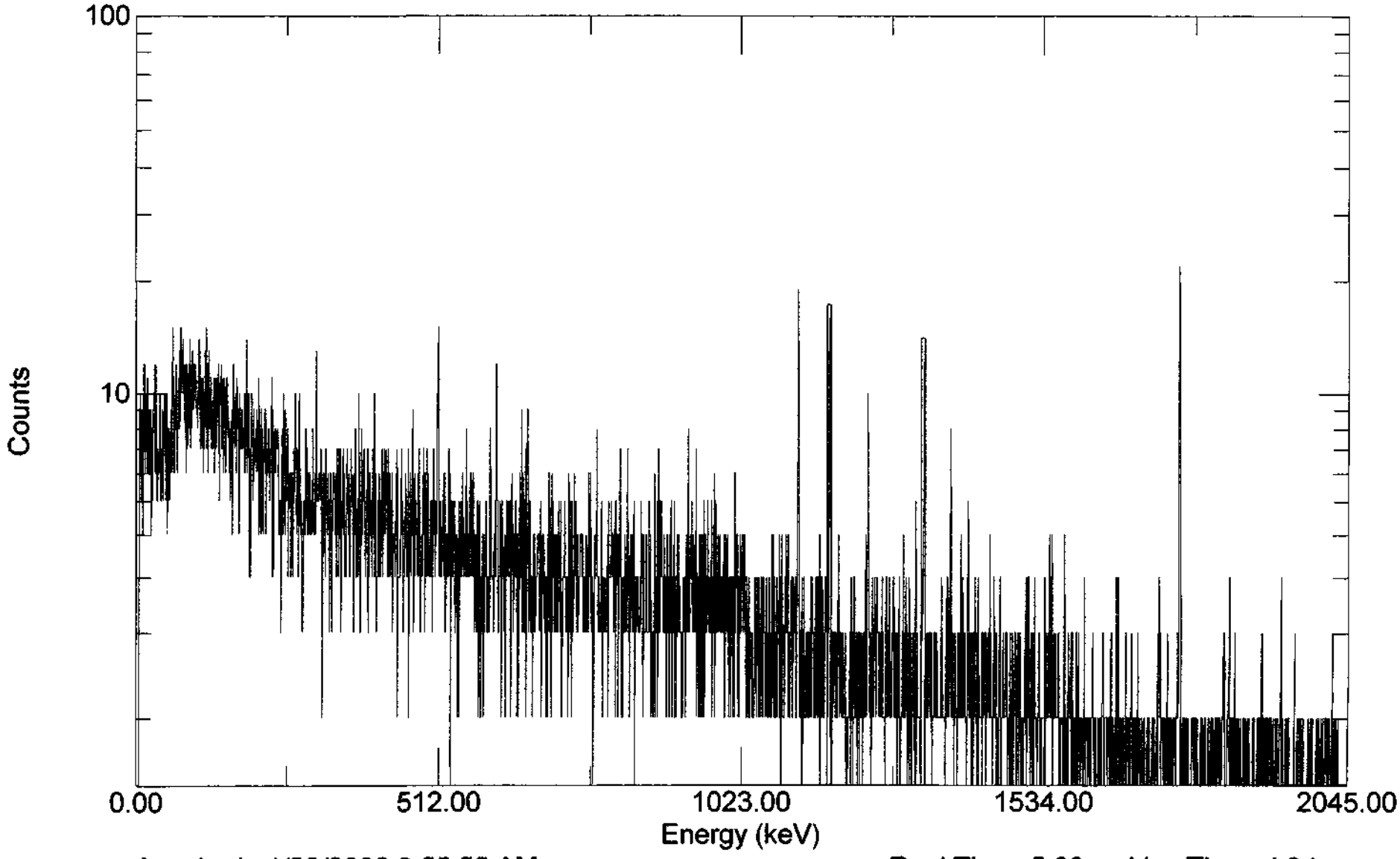
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.34 s.

Channels: 8192

008 SC24 1-29-2002 9.55.55 AM

SC24



Acquired: 1/29/2002 9:55:55 AM
File: C:\GAMMAV~1\008 SC24 1-29-2002 9.55.55 AM.An1
Detector: #1 digiDART USE 1b

Real Time: 5.00 s. Live Time: 4.34 s.
Channels: 8192

USEcology
FS-TX-02-01
Source Log

Date 1-31-02

BKG	mR/hr
1"	
12"	
36"	

Container #	25				
External on pig in mR/hr	200				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr					
Beta on open pig mR/hr O/W					

Table Readings

Source mR/hr @ 1 inch					
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Smear DPM per 100 cm^2 Alpha	42				
Smear DPM per 100 cm^2 Beta	24				
Size of source in cc's					
Weight in grams					

CPM Alpha					
Direct Beta/Gamma					

Info on source:

Information on pig:

	CS137 18 CI				

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **01/31/2002** **1105**

Location Warehouse/Sources

Survey #

MDA Alpha DPM	MDA Beta DPM
10.7	65.4

BKG Alpha CPM	BKG Beta CPM
0.6	70

Alpha Eff 0.31

	2 Min CPM	DPM
1		-1.9
2		-1.9
3		-1.9
4		-1.9
5		-1.9
6		-1.9
7		-1.9
8		-1.9
9		-1.9
10		-1.9
11		-1.9
12		-1.9
13	N/A	-1.9
14		-1.9
15		-1.9
16		-1.9
17		-1.9
18		-1.9
19		-1.9
20		-1.9
21		-1.9
22		-1.9
23		-1.9
24		-1.9
25	27	41.6

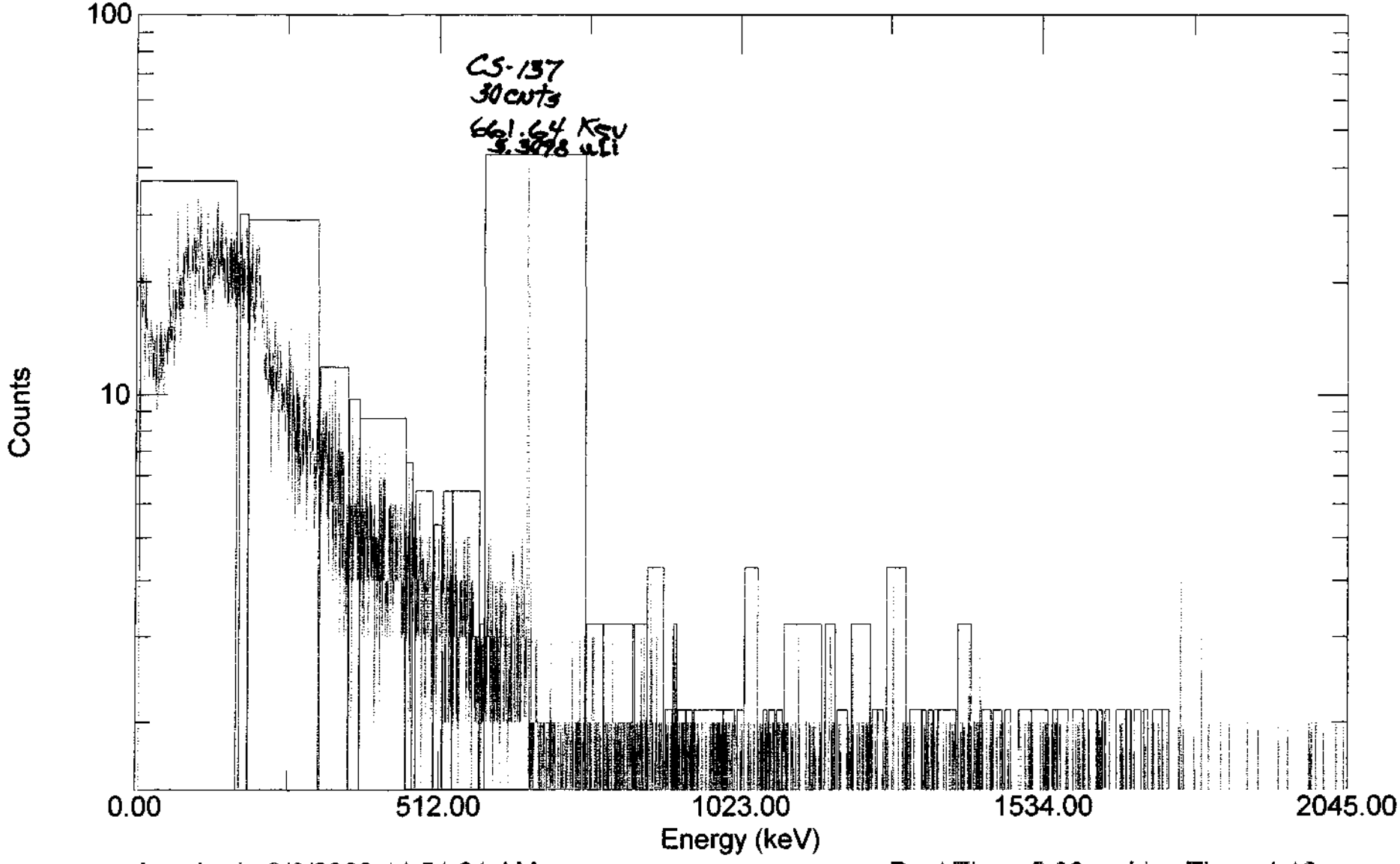
Beta/Gamma Eff 0.33

	2 Min CPM	DPM
1		-212.1
2		-212.1
3		-212.1
4		-212.1
5		-212.1
6		-212.1
7		-212.1
8		-212.1
9		-212.1
10		-212.1
11		-212.1
12	N/A	-212.1
13		-212.1
14		-212.1
15		-212.1
16		-212.1
17		-212.1
18		-212.1
19		-212.1
20		-212.1
21		-212.1
22		-212.1
23		-212.1
24		-212.1
25	156	24.2

25

0081SC-25 3-6 2002 11.51.30 AM

SC-25



Acquired: 3/6/2002 11:51:31 AM Real Time: 5.00 s. Live Time: 4.18 s.

File: C:\User\GNIWEB~1\GNISOU~1\0081SC-25 3-6-2002 11.51.30 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
28	8.11E+04	1.35E+04	0.00E+00	A Unstable						
29	8.11E+04	1.35E+04	0.00E+00	A Unstable						
13			0.00E+00	#VALUE!						
14			0.00E+00	#VALUE!						
16			0.00E+00	#VALUE!						
17			0.00E+00	#VALUE!						
41	2.43E+04	2.43E+04	0.00E+00	#VALUE!	A unstable					
33	2.43E+04	2.43E+04	8.23E-09	0.01	a unstable					
34	2.43E+04	2.43E+04	3.50E-08	0.0425	a unstable					
35	2.43E+04	2.43E+04	6.17E-09	0.0075	a unstable					
37	2.43E+04	2.43E+04	0.00E+00	0	a unstable					
19			0.00E+00	#VALUE!						
18	1.08E+04	1.08E+04	8.34E-09	0.009009	a-unstable					
20			0.00E+00	0.0375	a-unstable					
32	1.08E+04	1.08E+04	1.16E-07	0.0625	a unstable					
12	8.11E+03	1.08E+01	8.59E-04	na	a unstable					
15	8.11E+03	1.08E+01	1.85E-03	na	a unstable					
	Total Type Fractions		2.72E-03							

Drum 2
Biological

Rat	5.41E+04	1.35E+04	1.19E-05	0.032	A Unstable					

Drum 3
C- Stable, CNSI I

27	5.41E+04	1.35E+04	1.14E-05	5.120167	same for cs	0.116367	B Stable			
7	1.08E+04	1.08E+04	1.20E-04	130	1.86E-01	A-Stable				
23	1.08E+04	1.08E+04	4.63E-06	5	7.14E-03	a stable				
24	1.08E+04	1.08E+04	1.16E-06	1.25	1.79E-03	a stable				
8	1.08E+04	1.08E+04	9.26E-06	10	1.43E-02	astable				
31	1.08E+04	1.08E+04	1.85E-05	66.66667	2.86E-01	a stable				
22	2.43E+04	2.43E+04	1.65E-07	2	a stable					

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
GND-1-6										
Brick										
Melted Source										
W5										
W4	5.41E+03	2.70E+03	9.63E-02	6500	na	1.73E+00	0.037143	Class c		
W3										
W2										
I-1										
I-2										
I-3										
I-4										
I-5										
I-6										

Drum 1	2	18	500	83	7506	40	138	5520	1986
A-Unstable									
1	54100	5.41	2.50E-06	0.003378	A Unstable				
2	54100	5.41	2.50E-06	0.003378	A Unstable				
21	1.08E+04	1.08E+04	4.63E-10	0.001	a unstable				
36	2.43E+04	2.43E+04	6.17E-11	0.000375	a unstable				
30	5.41E+04	1.35E+04	3.70E-07	0.25	a- unstable				
61									
63									
3	5.41E+03	2.70E+03	5.01E-08	0.844595	3.38E-02	A-Unstable			
4	1.62E+04	2.43E+02	0.00E+00	A Unstable	A Unstable				
5	5.41E+05	1.35E+04	6.67E-09	0.022523	A Unstable				
6	1.08E+06	5.41E+04	1.25E-08	0.422297	A Unstable				
26	8.11E+04	1.35E+04	0.00E+00	A Unstable	A Unstable				

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
120										
121										
122										
123										
124										
125										
126										
127										
128										
129										
130										
131										
132										
133										
134										
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136										
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142										
143										
144										
145										
146										
147										
148										
149										
150										
151										

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
88										
89										
90										
91										
92										
93										
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100										
101										
102										
103										
104										
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107										
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109										
110										
111										
112										
113										
114										
115										
116										
117										
118										
119										

Source Number	mCi A1 Value mCi	mCi A2 Value mCi	IS IT Type A yes if <1	is it AU yes if <1	is it AS yes if <1	is it BS yes if <1	is it CS yes if <1			
GNB 1-1			#DIV/0!	#DIV/0!						
GNB 1-2			#DIV/0!	#DIV/0!						
GNB 1-3			#DIV/0!	#DIV/0!						
GNB 1-4			#DIV/0!	#DIV/0!						
GNB 1-5			#DIV/0!	#DIV/0!						
GNB 1-6			#DIV/0!	#DIV/0!						
43										
62										
64										
65										
66										
67										
68										
69										
70										
71										
72										
73										
74										
75										
76										
77										
78										
79										
80										
81										
82										
83										
84										
85										
86										
87										

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
11	Digidart	Cs-137	Same as 9	2.00E-02	1	1	44	4600
38	SAM-935	Sr-90	Beta Conversion	0.015	0.04	NA	150	7000
39	SAM-935	Sr-90	Beta Conversion	0.015	0.04	NA	150	7000
40	SAM-935	Sr-90	Beta Conversion	0.015	0.04	NA	150	7000
44	On source	Sr-90	Beta Conv.	5.4	0.04	NA	150	7000
45	On source	Sr-90	Beta Conv.	8.6	0.04	NA	150	7000
46	On source	Sr-90	Beta Conv.	10.7	0.04	NA	150	7000
47	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
48	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
49	On source	Sr-90	Beta Conv.	10.7	0.04	NA	150	7000
50	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
51	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
52	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
53	On source	Sr-90	Beta Conv.	10.7	0.04	NA	150	7000
54	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
55	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
56	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
57	On source	Sr-90	Beta Conv.	9	0.04	NA	150	7000
58	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
59	On source	Sr-90	Beta Conv.	7.5	0.04	NA	150	7000
60	On source	Sr-90	Beta Conv.	11.25	0.04	NA	150	7000
9	Digidart	Cs-137	ON SOURCE	2.00E-02	1	1	44	4600
10	Digidart	Cs-137	MICRO SHIELD	3.00E-01	1	1	44	4600

SET aside
Greater than Clas
or Greater than T

25	On Source	Cs-137	micro shield	18,000	1	1	44	4600
42	Strong Beta	Sr-90	Beta Conversion	162	0.04	NA	150	7000

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
28	On Source	I-131	on Source w/ t 1/2	0	1			
29	On Source	I-131	on Source w/ t 1/2	0	1			
13	Dead	na	na	na	AU			
14	Dead	Gd-153			AU			
16	Dead	Gd-153			AU			
17	Dead	Ir-192			AU			
41	SAM-935	Sr-90		dead	0.04	NA	150	7000
33	SAM-935	Eu-152	1/5 sc 34	2.00E-04	1	none	na	na
34	SAM-935	Eu-152	MICRO SHIELD	8.50E-04	1	none	na	na
35	SAM-935	Eu-152	3/4 sc 33	1.50E-04	1	none	na	na
37	SAM-935	Eu-152	dead	0	1	none	na	na
19	Dead	I-131			AU			
18	Digidart	Co-60	direct reading	9.01E-05	1	700	na	na
20	Digidart	Cs-137	MICRO SHIELD	1.50E-04	1	1	44	4600
32	SAM-935	C0-60	1/10 sc24	1.25E-03	1	700	NA	NA
12	On Source	Th-228	ON SOURCE	9.28E-03	1	na	na	na
15	On Source	Th-228	ON SOURCE	2.00E-02	1	na	na	na

Drum 2
Biological

Rat	SAM-935	Cs-137	Micro Shield	1.60E-01	1	1	44	4600

Drum 3
C- Stable, CNSI I

27	SAM-935	Cs-137	on Source w/ t 1/2	0.153605023	1	1	44	4600
7	DigiDart	Co-60	Micro Shield	1.30E+00	1	700	NA	NA
23	Digidart	Co-60	1/2 of sc8	5.00E-02	1	700	na	na
24	Digidart	Co-60	1/4 of sc23	1.25E-02	1	700	na	na
8	Digidart	Co-60	MICRO SHIELD	1.00E-01	1	700	na	na
31	SAM-935	Co-60	2x sc8	2.00E-01	1	700	NA	NA
22	Digidart	Eu-152	MICRO SHIELD	4.00E-03	1	none	na	na

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
GND-1-6								
Brick								
Melted Source								
W5	in intermodal							
W4	Guess	Sr-90	Beta Conver.	260	0.04	NA	150	7000
W3	in intermodal							
W2	in intermodal							
I-1								
I-2								
I-3								
I-4								
I-5								
I-6								

Drum 1 3 3
A-Unstable

1	On Source	Th-230	Direct Reading	1.35E-05	1	NA	NA	NA
2	On Source	Th-230	Direct Reading	1.35E-05	1	NA	NA	NA
21	Digidart	Co-60, Ag-108m	microshield	5.00E-06	1	1	700	na
36	SAM-935	Eu-152		1.50E-06	1	none	na	na
30	SAM-935	Cs-137	1/4 sc11	5.00E-03	1	1	44	4600
61	Dead	Class AU						
63	Dead	Class AU						
3	On Source	Sr-90	Direct Reading	1.35E-04	0.04	1	150	7000
4	On Source	Po-210	Dead	0.00E+00	1			
5	On Source	Cl-36	Direct Reading	9.01E-05	1			
6	On Source	C-14	Direct Reading	6.76E-04	0.8	NA	NA	8
26	On Source	I-131	on Source w/ t 1/2	0	1			

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
120								
121								
122								
123								
124								
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126								
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149								
150								
151								

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
88								
89								
90								
91								
92								
93								
94								
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117								
118								
119								

Source Number	Basis of Radionuclide	Radionuclide Isotope	Basis of activity	Activity mCi	uCi/cc Class AU Limit uCi/cc	Class AS Limit uCi/cc	Class BS Limit uCi/cc	Class CS Limit uCi/cc
GNB 1-1					1			
GNB 1-2					1			
GNB 1-3					1			
GNB 1-4					1			
GNB 1-5					1			
GNB 1-6					1			
43								
62								
64								
65	On source	U-nat	Weight	0.000284				
66	On source	U-nat	Weight	0.000142				
67	On source	U-nat	Weight	0.000355				
68	On source	Th-nat	Weight	0.000132				
69	On source	U-nat	Weight	0.00284				
70	On source	Sr-90	Beta Conversion	268				
71	dead au							
72	dead au							
73								
74	Digidart	Ra-226	Micro Shield					
75	Digidart	Ra-226	Micro Shield					
76	Digidart	Ra-226	Micro Shield					
77	Digidart	Ra-226	Micro Shield					
78	Digidart	Ra-226	Micro Shield					
79	Digidart	Ra-226	Micro Shield					
80	Digidart	Ra-226	Micro Shield					
81	Digidart	Ra-226	Micro Shield					
82	Digidart	Ra-226	Micro Shield					
83	Digidart	Ra-226	Micro Shield					
84	Digidart	Ra-226	Micro Shield					
85								
86								
87								

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
11	4	0		Cs-137	12/20/84	0	4.39	-18.2
38	10	na	na	na	None	10	800	<1000
39	10	na	na	na	None	10	18.3	0
40	10	na	na	na	None	10	9.2	23.9
44	50	na	10138	Sr-90				
45	300	na	10144	Sr-90				
46	300	na	3m1071 3dig	Sr-90				
47	300	na	3m1085	Sr-90				
48	300	na	3m1083	Sr-90				
49	300	na	3m1075	Sr-90				
50	300	na	3m10115	Sr-90				
51	300	na	3m1088	Sr-90				
52	300	na	3m10209	Sr-90				
53	300	na	3m10204	Sr-90				
54	200	na	3m10145	Sr-90				
55	300	na	3m10198	Sr-90				
56	300	na	3m10153	Sr-90				
57	300	na	3m10114	Sr-90				
58	300	na	3m10143	Sr-90				
59	300	na	3m1089	Sr-90				
60	300	na	1017 3dig	Sr-90				
9	2	0	none	Cs-137	12/20/84	0	1.36	-21.2
10	2	0		Cs-137	10/25/85	0	5.91	-21.2

SET aside
Greater than Clas
or Greater than T

25	40	0			Cs-137	0	41.6	24.2
42	2	na	na	na	3.6 Rad/sec	25000@4"	1200	bkg

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
28	8	na	10 mCi 4/27/90	I-131	None	none	0.2	0
29	5	na	10 mCi 4/27/90	I-131	None	none	0	0
13	12	0		2 sources		0	4.39	-6.1
14	25	0	cd1356		Gd-153	0	-0.15	-9.1
16	1	0	Gd-153	Gd-153		0	54.39	-6.1
17	12	0	Liquid		Am/Ir 1-3-87	0	2.88	15.2
41	5	na	na	na	Ir-192 5 mci	none	7.7	0
33	20	na	na	na	None	100 pig	53.2	1.2
34	20	na	na	na	None	100 pig	62.3	123.9
35	20	na	na	na	None	100 pig	18.3	51.2
37	25	na	na	na	None	none	0.2	0
19	4	0	10 mCi	I-131	none	0	39.24	1.5
18	2	0						
20	6	0			Cs-137	0	0	0
32	30	na	na	na	Fe-59	20 pig	0.2	0
12	2	0	9.28 uCi	TH-228	12/1/81	0	-0.15	-60.6
15	25	0	20 uCi	TH-228	7/1/87	0	27.12	12.1

Drum 2
Biological

Rat	2000	na	na	na	None	none	na	na

Drum 3
C- Stable, CNSI I

27	454	na	Cs-137 .25mCi 2/	Cs-137	None	none	3.2	0
7	7	40		Ag-110	Silver Wire	0	4.39	-9.1
23	5	0				0	0	0
24	5	0	50 uCi	Co-60		0	0	0
8	6	3		Co-60	Wire		2.88	3
31	1	na	na	bulbs	Fe-59	20 pig	0	7.3
22	3	0				0	. 0	0

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
GND-1-6	22700							
Brick	27240							
Melted Source	10							
W5								
W4	1000				80 mr/hr cw at 6"	6k at 6"		
W3								
W2								
I-1	1000		item 1					
I-2	400		item 2					
I-3	5448		item 3					
I-4	3178		item 3					
I-5	300		item 5					
I-6	22700							

Drum 1
A-Unstable

1	2	BKG	c-7519	Th-230	None	BKG	3.9	-12.6
2	2	BKG	c-7519	Th-230	None	BKG	3.9	-12.6
21	10	0			Ag-110	0	0	0
36	15	na	na	na	None	100 pig	0	1.2
30	30	na	na	nail	Fe-59	20 pig	1.7	0
61	20		Ir-192					
63	20		Ir-192					
3	2	BKG	eb-42084	Sr-90	None	1	2.3	-15.6
4	2	BKG	es-1	Po-210	None	BKG	-1	17.4
5	2	BKG	36-ba-637-7	Cl-36	None	BKG	-1	22
6	4	BKG	14-bd6231	C-14	None	2	0.7	-5.1
26	8	na	5 mci 4/16/90	I-131	None	none	0.2	4.2

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
GNB 1-1	0	0		0	0	direct		3000	
GNB 1-2	0	0		0	0	direct	0	3000	
GNB 1-3	0	0		0	0	direct	0	80	
GNB 1-4	0	0		0	0	direct	0	12000	
GNB 1-5	0	0		0	0	direct	0	3000	
GNB 1-6	0	0		0	0	direct	0	3000	
43	<1	15		0.6	0.4	direct	15M	600K	8
62	3		1	0.5	0.4				2
64	<1		0.7	0.3	0.4				5
65	<	na	<	<	<	direct	5000	3000	125
66	<	na	<	<	<	direct	3000	500	125
67	<	na	<	<	<	direct	200	200	125
68	<	na	<	<	<	direct	100	200	65
69	<	na	<	<	<	direct	100	100	125
70	<1	na	1.5	0.8	0.9				2
71	<1	na	bkg	bkg	bkg	direct	500	100	20
72	<1	na	bkg	bkg	bkg	direct	3000	10000	4
73	2	na	4	1.5	0.7				20
74	180	na	420	130	22				1
75	1000	na	na	na	na				1
76	400	na	na	na	na				1
77	1400	na	na	na	na				1
78	3000	na	na	na	na				1
79	1000	na	na	na	na				1
80	2000	na	na	na	na				1
81	300	na	na	na	na				1
82	1000	na	na	na	na				1
83	1200	na	na	na	na				1
84	2000	na	na	na	na				1
85	<.2	na	bkg	bkg	bkg	direct	<200	500	20
86	<.2	na	bkg	bkg	bkg	direct	35	100	20
87	<.2	na	bkg	bkg	bkg	direct	50	4400	20

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
88	<.2	na	bkg	bkg	bkg	direct	20	800	20
89	<.2	na	bkg	bkg	bkg	direct	40	900	20
90	<.2	na	bkg	bkg	bkg	direct	<25	800	20
91	<.2	na	bkg	bkg	bkg	direct	30	1300	20
92	<.2	na	bkg	bkg	bkg	direct	<20	bkg	40
93	<.2	na	bkg	bkg	bkg	direct	150	1400	20
94	<.2	na	bkg	bkg	bkg	direct	40	800	20
95	<.2	na	bkg	bkg	bkg	direct	132	2800	20
96	<.2	na	bkg	bkg	bkg	direct	27	400	20
97	<.1	na	0.7	0.4	0.3	direct	<25	130000	20
98	<.2	na	bkg	bkg	bkg	direct	100	2000	20
99	<.2	na	bkg	bkg	bkg	direct	105	750	20
100	<.2	na	bkg	bkg	bkg	direct	50	1800	20
101	<.2	na	bkg	bkg	bkg	direct	47	1000	20
102	<.2	na	bkg	bkg	bkg	direct	<20	1300	20
103	<.2	na	bkg	bkg	bkg	direct	95	800	20
104	<.2	na	bkg	bkg	bkg	direct	100	1600	20
105	<.2	na	bkg	bkg	bkg	direct	30	800	20
106	<.2	na	bkg	bkg	bkg	direct	50	400	20
107	<.2	na	bkg	bkg	bkg	direct	30	300	20
108	<.2	na	bkg	bkg	bkg	direct	40	750	20
109	<.2	na	bkg	bkg	bkg	direct	30	bkg	20
110	<.2	na	bkg	bkg	bkg	direct	bkg	450	20
111	<.2	na	bkg	bkg	bkg	direct	bkg	300	20
112	<.2	na	bkg	bkg	bkg	direct	bkg	bkg	20
113	<.2	na	bkg	bkg	bkg	direct	bkg	370	20
114	<.2	na	bkg	bkg	bkg	direct	bkg	300	20
115	<.2	na	bkg	bkg	bkg	direct	bkg	330	20
116									
117									
118									
119									

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
120									
121									
122									
123									
124									
125									
126									
127									
128									
129									
130									
131									
132									
133									
134									
135									
136									
137									
138									
139									
140									
141									
142									
143									
144									
145									
146									
147									
148									
149									
150									
151									

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
GND-1-6	<1	na	na						1000
Brick	20	na	500	300	80				7000
Melted Source	300	na	40	25	3				5
W5	na	na	n	hole mt'd				100k	
W4	na	na	n						1000
W3	na	na	n	hole mt'd				80 mrad	
W2	na	na	n	hole mt'd				100k	
I-1	na		0.6	0.3	0.1				500
I-2	na		1.6	0.6	0.2				500
I-3	na		0.1	<.1	<.1				7000
I-4	na		0.6	0.4	0.2				50000
I-5	2	na	n						100
I-6	<1	na	n						50000

Drum 1
A-Unstable

	Sources								
1	BKG	BKG		BKG	BKG	direct	2000	3000	4
2	BKG	BKG		BKG	BKG	direct	2000	3000	4
21	0	1.8		0.2	BKG	direct	0	0	5
36	3	0.7		.4@4"	<1	na	na	na	4
30	2	2		0.2	0	na	na	na	20
61	<1		bkg	bkg	bkg	direct	bkg	bkg	20
63	<1		bkg	bkg	bkg	direct	bkg	bkg	20
3	BKG	BKG		BKG	BKG	direct	0	30000	4
4	BKG	BKG		BKG	BKG	direct	0	0	4
5	BKG	BKG		BKG	BKG	direct	0	20000	4
6	BKG	BKG		BKG	BKG	direct	0	30000	2
26	<1	<1		<1	<1	direct	bkg	bkg	10

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
28	<1	<1		<1	<1	direct	bkg	bkg	20
29	<1	<1		<1	<1	direct	bkg	bkg	20
13	0	0		0	0	direct	10	<100	8
14	0	0		0	0	direct	0	0	15
16	0	0		0	0	direct	54	0	1
17	0	0		0	0	direct	0	0	10
41	<1	<1		<1	<1	direct	bkg	bkg	20
33	3	100		2.5	0.2	na	na	na	20
34	3	500		1	0.1	na	na	na	20
35	3	75		2	0.1	na	na	na	20
37	<1	<1		<1	<1	direct	bkg	bkg	20
19	0	0		0	0	direct	50	BKG	10
18	0	0		0	0	direct	5000	20000	10
20	0	17.8		0.6	0	direct	0	0	4
32	2	0.8		0.1	0.1	na	na	na	20
12	0	?		?	?	direct	0	40,000	4
15	0	0		0	0	direct	27	0	15

Drum 2

Biological	A-Unstable								
Rat	na	1.5		0.4	0.1	na	na	na	5000

Drum 3

C- Stable, CNSI I Sources

27	<1	<1		<1	<1	direct	1060	12000	30
7	40	850		18	3	direct	0	0	10
23	2	29.8		0.8	BKG	direct	0	0	10
24	1	7.8		0.3	BKG	direct	0	0	10
8	3	55		1.5	1.2	direct	0	0	10
31	2	110		3.5	0.3	na	na	na	3
22	0	0.8		0.2	BKG	direct	0	0	2

Source Number	pig external dose rate mr/hr	TABLE READINGS DOSE RATE 1" mr/hr	6" mr/hr	12" mr/hr	36" mr/hr	type reading	TABLE READINGS COUNT RATE alpha CPM	beta/gamma CPM	SIZE cc
11	2	8		0.5	1.1	direct	0	0	4
38	<1	<1		<1	<1	direct	100	10000	30
39	<1	<1		<1	<1	direct	500	5000	30
40	<1	<1		<1	<1	direct	nd	200000	10
44	10	na		na	na	direct		3000	5
45	16	na		na	na	direct		5000	30
46	20	na		na	na	direct		6000	30
47	15	na		na	na	direct		6000	30
48	13	na		na	na	direct		5000	30
49	20	na		na	na	direct		5000	30
50	10	na		na	na	direct		6000	30
51	12	na		na	na	direct		5000	30
52	16	na		na	na	direct		6000	30
53	20	na		na	na	direct		6000	30
54	12	na		na	na	direct		6000	15
55	15	na		na	na	direct		6000	30
56	10	na		na	na	direct		5000	30
57	11	na		na	na	direct		6000	30
58	14	na		na	na	direct		5000	30
59	11	na		na	na	direct		5000	30
60	21	na		na	na	direct		5000	30
9	2	10		0.6	1	direct	0	0	2
10	3	42		1.5	1.2	direct	0	0	5

SET aside Los Alamos Bound if not Accepted by CNSI
Greater than Class C
or Greater than Type A

25	200	0		0	0	direct	0	0	25
42	20	10		1	0	na	na	na	2

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
GNB 1-1								
GNB 1-2								
GNB 1-3								
GNB 1-4								
GNB 1-5								
GNB 1-6								
43	10	na	none	none	none	15	na	na
62	5		none					
64	15		none					
65	100	na	0.004	U-nat				
66	100	na	0.002	U-nat				
67	100	na	0.005	U-nat				
68	60	na	0.01	Th-nat				
69	100	na	0.04	U-nat				
70	3			sr90				
71	20							
72	4			cd109				
73	40							
74	1	400			1 needle			
75	1	6000			5 needles			
76	1	2000			1 needle		5000	200
77	1	14000			20 needles			
78	1	30000			9 needles			
79	1	4000			20 needles		5000	600
80	1	10000	type 3		9 needles		8000	300
81	1	800	2 fatter pins		2 needles			
82	1	4000	10 in bottle		10 needles			
83	1	10000			12 needles		8000	200
84	1	8000			12 needles		15000	400
85	20		none	none	none	<.2	300	4000
86	20		none	none	none	<.2	580	8000
87	20		none	none	L	<.2	250	14000

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
88	23		none	none		<.2	320	7000
89	20		Liquid	none		<.2	450	6000
90	22		Liquid	none		<.2	250	8000
91	22		Liquid	none		<.2	400	8000
92	60		2 bottles liquid	none		<.2	120	8000
93	22		Liquid	none		<.2	290	15000
94	20			none		<.2	40	6000
95	40		Liquid	none		<.2	700	6000
96	20		Liquid	none		<.2	350	3000
97	40		Liquid	none		7	<200	12000
98	40		Liquid	none		0.4	150	bkg
99	38		Liquid	none		0.2		
100	42		I131 10MC 3-7-9	none		0.3	50	1800
101	20		IR192 10-26-87	none		0.2	47	1000
102	42		ITW192 2MCI 2-2	none		<.2	<20	1300
103	53		Liquid	none		<.2	520	9000
104	24		IR192 100MCI 6-	none		<.2		
105	38		IR192 10MCI 5-3	none		<.2		
106	38		IR192 20MCI 2-1	none		<.2		
107	38		IR192 10MCI 5-3	none		<.2		
108	40		IR192 10MCI 5-3	none		<.2		
109	27		IR192 10MCI 8-2	none		<.2		
110	22		IR192 10MCI 1-1	none		<.2		
111	40		IR192 10MCI 11-	none		<.2		
112	23		Liquid	none		<.2		
113	38		Liquid					
114	42		IR192 10MCI 8-2	none		<.2		
115	26		I131 3MCI 4-9-90	none		<.2		
116								
117								
118								
119								

Source Number	WEIGHT gm	LOADED pig mr/hr	Information on source SN	Radionucle Source	Info on PIG	OW RO2 mR/hr	2929 Date Alpl loose DPM/smear	2929 Date Beta loose DPM
120								
121								
122								
123								
124								
125								
126								
127								
128								
129								
130								
131								
132								
133								
134								
135								
136								
137								
138								
139								
140								
141								
142								
143								
144								
145								
146								
147								
148								
149								
150								
151								

Detector #1 ACQ 29-Jan-2002 at 9:55:55 RT = 5.0 LT = 4.3
digiDART USE 1b
SC24

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 4273 Net = 2218 +/- 471
CENTROID: 250.89 = 62.73keV
SHAPE: FWHM = 13.89 FW(1/5)M = 14.65
ID: Pa-234 at 63.20keV
Corrected Rate = 11197775.54 +/- 2377886.51 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 302 Net = 31 +/- 47
CENTROID: 705.00 = 176.34keV
SHAPE: FWHM = 11.01 FW(1/5)M = 11.16
ID: Sb-125 at 176.29keV
Corrected Rate = 80247.23 +/- 121665.15 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 1999 Net = -25 +/- 394
CENTROID: 1223.09 = 305.96keV
SHAPE: FWHM = 0.50 FW(1/5)M = 1.07
ID: Ba-140 at 304.82keV
Corrected Rate = 0.00 +/- 2449654.23 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 650 Net = -130 +/- 156
CENTROID: 1251.00 = 312.94keV
SHAPE: FWHM = 44.59 FW(1/5)M = 45.08
ID: Np-237 at 311.90keV
Corrected Rate = 0.00 +/- 107016.23 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 199 Net = -46 +/- 50
CENTROID: 1457.00 = 364.47keV
SHAPE: FWHM = 6.75 FW(1/5)M = 6.90
ID: J-131 at 364.48keV
Corrected Rate = 0.00 +/- 16297.72 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 906 Net = 192 +/- 189
CENTROID: 1611.10 = 403.02keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.50
ID: Kr-87 at 402.70keV
Corrected Rate = 116767.80 +/- 114943.30 Bq

ROI # 7 RANGE: 1824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 105 Net = 1 +/- 23
CENTROID: 1843.00 = 461.03keV
SHAPE: FWHM = 3.75 FW(1/5)M = 4.25
ID: Cs-138 at 462.79keV
Corrected Rate = 1075.17 +/- 24728.96 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 318 Net = -16 +/- 78
CENTROID: 1914.00 = 478.79keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: W-187 at 479.57keV
Corrected Rate = 0.00 +/- 113597.64 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV

AREA : Gross = 213 Net = 51 +/- 36
CENTROID: 2046.89 = 512.03keV
SHAPE: FWHM = 0.38 FW(1/5)M = 1.28
ID: Rh-106M at 511.80keV
Corrected Rate = 21262.35 +/- 15008.72 Bq

10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 164 Net = -43 +/- 43
CENTROID: 2115.17 = 529.11keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.60
ID: J-133 at 529.50keV
Corrected Rate = 0.00 +/- 18222.29 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 434 Net = 46 +/- 105
CENTROID: 2232.00 = 558.33keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Y-91M at 557.57keV
Corrected Rate = 18743.73 +/- 42784.60 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 60 Net = 1 +/- 15
CENTROID: 2345.47 = 586.71keV
SHAPE: FWHM = 1.05 FW(1/5)M = 1.29
ID: Kr-89 at 585.80keV
Corrected Rate = 2391.68 +/- 35875.15 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 75 Net = 15 +/- 17
CENTROID: 2366.55 = 591.99keV
SHAPE: FWHM = 0.53 FW(1/5)M = 0.79
ID: Eu-154 at 591.70keV
Corrected Rate = 132935.03 +/- 150659.70 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 195 Net = 106 +/- 29
CENTROID: 2437.77 = 609.80keV
SHAPE: FWHM = 1.00 FW(1/5)M = 1.77
ID: Bi-214 at 609.32keV
Corrected Rate = 96137.21 +/- 26301.69 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 592 Net = 175 +/- 138
CENTROID: 2607.00 = 652.13keV
SHAPE: FWHM = 10.81 FW(1/5)M = 11.28
ID: Sr-91 at 652.30keV
Corrected Rate = 2701801.48 +/- 2130563.45 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 570 Net = 315 +/- 114
CENTROID: 2791.86 = 698.37keV
SHAPE: FWHM = 43.68 FW(1/5)M = 44.39
ID: Br-82 at 698.36keV
Corrected Rate = 530345.62 +/- 191934.60 Bq

1 # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 212 Net = -16 +/- 63
CENTROID: 3119.00 = 780.19keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: J-132 at 780.20keV
Corrected Rate = 0.00 +/- 2645584.32 Bq

OI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 361 Net = -4 +/- 108
CENTROID: 3275.00 = 819.20keV
SHAPE: FWHM = 13.07 FW(1/5)M = 13.26
ID: Pa-234 at 819.40keV
Corrected Rate = 0.00 +/- 2644531.77 Bq

:OI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 141 Net = -13 +/- 44
CENTROID: 3415.55 = 854.35keV
SHAPE: FWHM = 0.61 FW(1/5)M = 0.98
ID: J-133 at 856.10keV
Corrected Rate = 0.00 +/- 2009078.29 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV
AREA : Gross = 201 Net = 31 +/- 55
CENTROID: 3534.00 = 883.98keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-134 at 884.08keV
Corrected Rate = 27008.02 +/- 47917.46 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 73 Net = -9 +/- 24
CENTROID: 3620.00 = 905.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-89 at 904.27keV
Corrected Rate = 0.00 +/- 192063.29 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 40 Net = 0 +/- 10
CENTROID: 3640.00 = 910.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 911.07keV
Corrected Rate = 0.00 +/- 20346.88 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 75 Net = -44 +/- 30
CENTROID: 3712.00 = 928.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 926.70keV
Corrected Rate = 0.00 +/- 163295.27 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 71 Net = 8 +/- 18
CENTROID: 3736.12 = 934.53keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.64
ID: Ra-226 at 934.10keV
Corrected Rate = 151186.70 +/- 340170.08 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 298 Net = -65 +/- 107
CENTROID: 3791.00 = 948.25keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Te-131 at 948.54keV
Corrected Rate = 0.00 +/- 2892128.19 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 111 Net = 44 +/- 29
CENTROID: 3979.00 = 995.27keV
SHAPE: FWHM = 16.57 FW(1/5)M = 17.06

ID: U-238 at 996.10keV
Corrected Rate = 683733341.10 +/- 450642429.36 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 75 Net = -13 +/- 23
CENTROID: 4069.00 = 1017.77keV
SHAPE: FWHM = 5.75 FW(1/5)M = 5.90
ID: Rh-106M at 1019.60keV
Corrected Rate = 0.00 +/- 973351.33 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 107 Net = -58 +/- 47
CENTROID: 4186.00 = 1047.03keV
SHAPE: FWHM = 2.00 FW(1/5)M = 2.15
ID: Cs-136 at 1048.07keV
Corrected Rate = 0.00 +/- 39105.48 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 26 Net = -4 +/- 9
CENTROID: 4245.00 = 1061.78keV
SHAPE: FWHM = 1.00 FW(1/5)M = 1.15
ID: Bi-207 at 1063.62keV
Corrected Rate = 0.00 +/- 7879.34 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 44 Net = 2 +/- 15
CENTROID: 4303.00 = 1076.29keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Rb-86 at 1076.63keV
Corrected Rate = 15552.91 +/- 116646.80 Bq

31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 44 Net = 10 +/- 14
CENTROID: 4335.45 = 1084.40keV
SHAPE: FWHM = 5.34 FW(1/5)M = 5.57
ID: Eu-152 at 1085.90keV
Corrected Rate = 68558.15 +/- 95981.41 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 358 Net = 191 +/- 83
CENTROID: 4483.64 = 1121.46keV
SHAPE: FWHM = 1.00 FW(1/5)M = 2.26
ID: Ta-182 at 1121.28keV
Corrected Rate = 384996.68 +/- 167302.22 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 146 Net = 97 +/- 25
CENTROID: 4695.87 = 1174.53keV
SHAPE: FWHM = 0.40 FW(1/5)M = 2.11
ID: Co-56 at 1175.13keV
Corrected Rate = 3125307.67 +/- 805491.67 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 53 Net = 18 +/- 19
CENTROID: 4756.00 = 1189.56keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ta-182 at 1189.05keV
Corrected Rate = 81203.30 +/- 85714.60 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 135 Net = -59 +/- 62

CENTROID: 4953.90 = 1239.05keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.77
ID: Co-56 at 1238.28keV
Corrected Rate = 0.00 +/- 70487.91 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 29 Net = 4 +/- 11
CENTROID: 4988.00 = 1247.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rb-89 at 1248.10keV
Corrected Rate = 7198.17 +/- 19794.97 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 44 Net = -32 +/- 19
Could not properly fit the peak.

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 118 Net = 49 +/- 39
CENTROID: 5078.45 = 1270.19keV
SHAPE: FWHM = 29.34 FW(1/5)M = 29.82
ID: Tb-160 at 1271.88keV
Corrected Rate = 507095.40 +/- 403606.54 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 125 Net = 52 +/- 36
CENTROID: 5335.21 = 1334.39keV
SHAPE: FWHM = 1.38 FW(1/5)M = 2.63
ID: Co-60 at 1332.51keV
Corrected Rate = 42585.88 +/- 29482.53 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 21 Net = -11 +/- 9
Could not properly fit the peak.

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 17 Net = -6 +/- 8
Could not properly fit the peak.

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 111 Net = 70 +/- 29
CENTROID: 5513.70 = 1379.02keV
SHAPE: FWHM = 1.20 FW(1/5)M = 2.55
ID: Bi-214 at 1377.65keV
Corrected Rate = 1467409.14 +/- 607926.64 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 79 Net = 50 +/- 21
CENTROID: 5585.00 = 1396.85keV
SHAPE: FWHM = 12.25 FW(1/5)M = 12.40
ID: Eu-154 at 1397.80keV
Corrected Rate = 2666741.68 +/- 1120031.51 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 43 Net = -29 +/- 25
Could not properly fit the peak.

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 32 Net = 22 +/- 10
CENTROID: 5810.00 = 1453.10keV
SHAPE: FWHM = 10.50 FW(1/5)M = 10.65
ID: Pa-234 at 1452.60keV

Corrected Rate = 1617394.18 +/- 735179.17 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 30 Net = 9 +/- 11
CENTROID: 5899.00 = 1475.35keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Ag-110M at 1475.76keV
Corrected Rate = 201788.47 +/- 246630.35 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 60 Net = 16 +/- 24
CENTROID: 6024.55 = 1506.74keV
SHAPE: FWHM = 5.91 FW(1/5)M = 6.11
ID: Ag-110M at 1505.00keV
Corrected Rate = 111021.96 +/- 166532.94 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 60 Net = 6 +/- 30
CENTROID: 6086.00 = 1522.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: K-42 at 1524.70keV
Corrected Rate = 30837.45 +/- 154187.27 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 19 Net = -1 +/- 8
CENTROID: 6201.00 = 1550.85keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.85
ID: U-238 at 1553.74keV
Corrected Rate = 0.00 +/- 92587642.16 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 24 Net = 24 +/- 4
CENTROID: 6286.00 = 1572.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rh-106M at 1572.10keV
Corrected Rate = 437359.57 +/- 72893.26 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 11 Net = 1 +/- 6
Could not properly fit the peak.

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 14 Net = -3 +/- 8
Could not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 18 Net = -1 +/- 12
CENTROID: 6478.00 = 1620.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-212 at 1620.56keV
Corrected Rate = 0.00 +/- 423215.96 Bq

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 8 Net = 8 +/- 2
Could not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV

AREA : Gross = 22 Net = 2 +/- 13
CENTROID: 6638.00 = 1660.10keV
SHAPE: FWHM = 3.44 FW(1/5)M = 3.62
ID: Bi-214 at 1661.28keV
Corrected Rate = 172339.64 +/- 1120207.64 Bq

57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 6 Net = 6 +/- 2
CENTROID: 6699.00 = 1675.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-135 at 1678.03keV
Corrected Rate = 62974.00 +/- 20991.33 Bq

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 10 Net = 3 +/- 6
CENTROID: 6781.00 = 1695.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 1694.00keV
Corrected Rate = 232580.59 +/- 465161.18 Bq

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 4 Net = -1 +/- 4
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 25 Net = 5 +/- 13
CENTROID: 6923.50 = 1731.47keV
SHAPE: FWHM = 0.59 FW(1/5)M = 0.84
ID: Bi-214 at 1729.60keV
Corrected Rate = 168393.29 +/- 437822.55 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 12 Net = -18 +/- 13
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 138 Net = 108 +/- 19
CENTROID: 7062.19 = 1766.14keV
SHAPE: FWHM = 1.03 FW(1/5)M = 2.77
ID: U-238 at 1765.80keV
Corrected Rate = 1484703615.74 +/- 261197858.32 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 11 Net = 0 +/- 6
Could not properly fit the peak.

ROI # 64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 5 Net = -3 +/- 7
Could not properly fit the peak.

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 16 Net = 6 +/- 9
CENTROID: 7353.00 = 1838.84keV
SHAPE: FWHM = 2.62 FW(1/5)M = 2.85
ID: Rh-106M at 1838.20keV
Corrected Rate = 270465.65 +/- 405698.47 Bq

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV
AREA : Gross = 16 Net = 16 +/- 4
CENTROID: 7396.50 = 1849.71keV
SHAPE: FWHM = 0.46 FW(1/5)M = 0.64

ID: Xe-138 at 1850.86keV
Corrected Rate = 1222839.43 +/- 305709.86 Bq

ROI # 67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 7 Net = -3 +/- 9
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 17 Net = 17 +/- 4
CENTROID: 7612.00 = 1903.58keV
SHAPE: FWHM = 2.00 FW(1/5)M = 2.30
ID: Kr-89 at 1903.40keV
Corrected Rate = 1786682.34 +/- 420395.84 Bq

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 5 Net = 5 +/- 2
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 11 Net = 11 +/- 3
Could not properly fit the peak.

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 5 Net = 5 +/- 2
Could not properly fit the peak.

008 SC24 1-29-2002 9.55.55 AM

Sample description
SC24

Spectrum Filename: C:\GammaVision\008 SC24 1-29-2002 9.55.55 AM.An1

Acquisition information

Start time:	29-Jan-2002 09:55:55
Live time:	4
Real time:	5
Dead time:	13.20 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

008 SC24 1-29-2002 9.55.55 AM

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.1129

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
29.62	7.17	27.	51.	11.866	23.60	0.733	-	s
489.70	122.22	27.	9.	2.074	88.19	0.408	-	s
754.56	188.45	18.	11.	2.458	62.38	0.259	-	s
774.81	193.51	20.	17.	3.917	49.33	0.720	-	s
930.84	232.58	32.	24.	5.490	39.41	1.048	-	D
938.02	234.37	34.	19.	4.305	50.01	1.048	-	D
1223.16	305.59	38.	19.	4.493	58.15	0.319	-	s
1600.62	399.94	15.	16.	3.687	45.71	0.772	-	s
1665.56	416.16	12.	18.	4.147	38.49	0.628	-	s
1841.96	460.25	16.	20.	4.531	43.77	0.345	-	s
1909.14	477.04	9.	12.	2.688	49.57	0.565	-	s
2043.77	510.68	55.	68.	15.668	26.50	0.401	-	s
2124.98	530.97	6.	9.	2.112	50.94	0.388	-	s
2154.31	538.30	11.	6.	1.459	88.23	0.573	-	s
2439.16	609.47	37.	73.	16.935	22.24	1.068	-	s
2635.45	658.50	6.	18.	4.263	33.79	0.385	-	s
2735.08	683.39	8.	15.	3.456	44.39	0.298	-	s
3103.58	775.19	9.	17.	3.865	35.38	1.270	-	D
3119.49	779.16	16.	12.	2.676	57.37	1.273	-	D
3147.59	786.43	5.	17.	3.994	33.09	0.527	-	s
3737.24	933.67	6.	22.	5.184	29.17	0.372	-	s
3844.15	960.37	4.	10.	2.189	43.51	0.464	-	s
3911.27	977.13	7.	12.	2.842	44.49	0.388	-	s

0

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 16:10:16 Page 3
ORTEC Spectrum name: 008 SC24 1-29-2002 9.55.55 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
4483.73	1120.04	4.	116.	26.690	10.12	1.041	-	s
7062.57	1763.37	0.	128.	29.493	8.84	0.968	-	s

s - Peak fails shape tests.

D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4696.16	1173.06	9.	76.	17.512	13.93	0.416s
CO-60	5333.07	1332.00	7.	67.	15.361	15.07	0.891s

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Nuclide Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	MDA Value Becquerels	Comments
CO-60		5.5214E+04	1332.51	5.460E+04	?(	3.572E+03	G
			1173.23	5.583E+04	(	3.506E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 16:10:16 Page 4
ORTEC Spectrum name: 008 SC24 1-29-2002 9.55.55 AM.An

R - Coincidence Corrected
H - Halflife limit exceeded
C - Coincidence Peak

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total

008 SC24 1-29-2002 9.55.55 AM

CO-60	5.5214E+04	1.026E+01%	1.042E+01%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 5.5213531E+04 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

Detector #1 ACQ 29-Jan-2002 at 9:48:41 RT = 5.0 LT = 4.2
digiDART USE 1b
SC23

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 4810 Net = 3296 +/- 406
CENTROID: 326.66 = 81.69keV
SHAPE: FWHM = 39.22 FW(1/5)M = 39.45
ID: Sb-125 at 81.80keV
Corrected Rate = 49933969.89 +/- 6150847.02 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 377 Net = -43 +/- 58
CENTROID: 737.00 = 184.35keV
SHAPE: FWHM = 2.50 FW(1/5)M = 2.65
ID: U-235 at 185.71keV
Corrected Rate = 0.00 +/- 17388.17 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 2401 Net = -401 +/- 463
CENTROID: 1033.00 = 258.40keV
SHAPE: FWHM = 42.03 FW(1/5)M = 42.18
ID: Xe-138 at 258.31keV
Corrected Rate = 0.00 +/- 303481.17 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 816 Net = 263 +/- 132
CENTROID: 1269.53 = 317.57keV
SHAPE: FWHM = 0.43 FW(1/5)M = 0.62
ID: Np-239 at 315.88keV
Corrected Rate = 3973822.94 +/- 1994466.26 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 275 Net = -5 +/- 54
CENTROID: 1450.00 = 362.72keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-88 at 362.23keV
Corrected Rate = 0.00 +/- 642729.64 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 976 Net = -248 +/- 246
CENTROID: 1741.89 = 435.74keV
SHAPE: FWHM = 11.32 FW(1/5)M = 11.56
ID: Xe-138 at 434.49keV
Corrected Rate = 0.00 +/- 390121.55 Bq

ROI # 7 RANGE: 1824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 141 Net = 11 +/- 26
CENTROID: 1843.00 = 461.03keV
SHAPE: FWHM = 0.42 FW(1/5)M = 1.00
ID: Cs-138 at 462.79keV
Corrected Rate = 12163.20 +/- 28749.39 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 359 Net = -54 +/- 87
CENTROID: 1937.00 = 484.54keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Hf-181 at 482.16keV
Corrected Rate = 0.00 +/- 35618.90 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV

AREA : Gross = 228 Net = -24 +/- 44
CENTROID: 2040.77 = 510.50keV
SHAPE: FWHM = 0.34 FW(1/5)M = 0.81
ID: J-133 at 510.40keV
Corrected Rate = 0.00 +/- 1093603.81 Bq

I # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 196 Net = -42 +/- 46
CENTROID: 2085.00 = 521.56keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 521.00keV
Corrected Rate = 0.00 +/- 1441796.95 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 486 Net = -81 +/- 127
CENTROID: 2169.00 = 542.57keV
SHAPE: FWHM = 7.00 FW(1/5)M = 7.15
ID: U-238 at 543.98keV
Corrected Rate = 0.00 +/- 1376619994.55 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 70 Net = 38 +/- 13
CENTROID: 2325.00 = 581.60keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.48
ID: Tl-208 at 583.14keV
Corrected Rate = 18296.32 +/- 6259.27 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 82 Net = 16 +/- 18
CENTROID: 2358.00 = 589.85keV
SHAPE: FWHM = 6.75 FW(1/5)M = 6.90
ID: Eu-154 at 591.70keV
Corrected Rate = 145829.52 +/- 164058.21 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 242 Net = 35 +/- 43
CENTROID: 2438.43 = 609.97keV
SHAPE: FWHM = 1.11 FW(1/5)M = 1.93
ID: Ru-103 at 610.33keV
Corrected Rate = 284299.68 +/- 349282.46 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 723 Net = 28 +/- 177
CENTROID: 2647.27 = 662.20keV
SHAPE: FWHM = 0.82 FW(1/5)M = 1.63
ID: Cs-137 at 661.60keV
Corrected Rate = 15262.24 +/- 96479.16 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 744 Net = 30 +/- 189
CENTROID: 3013.12 = 753.71keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Pa-234 at 754.80keV
Corrected Rate = 1106456.98 +/- 6970678.96 Bq

17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 250 Net = 60 +/- 58
CENTROID: 3077.24 = 769.74keV
SHAPE: FWHM = 0.57 FW(1/5)M = 1.30
ID: Ra-226 at 768.40keV
Corrected Rate = 632971.04 +/- 611872.00 Bq

ROI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 467 Net = -263 +/- 152
CENTROID: 3333.00 = 833.71keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Mn-54 at 834.81keV
Corrected Rate = 0.00 +/- 85587.07 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 183 Net = 43 +/- 43
CENTROID: 3375.00 = 844.21keV
SHAPE: FWHM = 9.53 FW(1/5)M = 10.20
ID: Kr-87 at 845.60keV
Corrected Rate = 337587.84 +/- 337587.84 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV
AREA : Gross = 229 Net = 41 +/- 58
CENTROID: 3554.86 = 889.20keV
SHAPE: FWHM = 0.33 FW(1/5)M = 0.57
ID: Sc-46 at 889.26keV
Corrected Rate = 24372.64 +/- 34478.36 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 94 Net = 53 +/- 18
CENTROID: 3613.00 = 903.74keV
SHAPE: FWHM = 2.83 FW(1/5)M = 3.08
ID: Kr-89 at 904.27keV
Corrected Rate = 436200.60 +/- 148143.60 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 45 Net = 1 +/- 11
CENTROID: 3638.00 = 909.99keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Ac-228 at 911.07keV
Corrected Rate = 2092.55 +/- 23018.01 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 95 Net = -6 +/- 28
CENTROID: 3675.00 = 919.24keV
SHAPE: FWHM = 8.75 FW(1/5)M = 8.90
ID: Pu-240 at 919.00keV
Corrected Rate = 0.00 +/- 0.00 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 85 Net = 41 +/- 16
CENTROID: 3737.53 = 934.88keV
SHAPE: FWHM = 0.95 FW(1/5)M = 1.18
ID: Ra-226 at 934.10keV
Corrected Rate = 796864.98 +/- 310971.70 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 365 Net = -64 +/- 116
CENTROID: 3787.00 = 947.25keV
SHAPE: FWHM = 29.55 FW(1/5)M = 29.76
ID: Rb-89 at 947.69keV
Corrected Rate = 0.00 +/- 720263.75 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 131 Net = 38 +/- 34
CENTROID: 4004.00 = 1001.52keV
SHAPE: FWHM = 6.00 FW(1/5)M = 6.15

ID: Ta-182 at 1001.68keV
Corrected Rate = 1195355.77 +/- 1069528.85 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 71 Net = -17 +/- 23
CENTROID: 4090.00 = 1023.02keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Sr-91 at 1024.30keV
Corrected Rate = 0.00 +/- 46778.19 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 139 Net = 34 +/- 38
CENTROID: 4187.00 = 1047.28keV
SHAPE: FWHM = 0.29 FW(1/5)M = 1.00
ID: Cs-136 at 1048.07keV
Corrected Rate = 29093.50 +/- 32516.26 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 38 Net = 3 +/- 10
CENTROID: 4245.00 = 1061.78keV
SHAPE: FWHM = 4.50 FW(1/5)M = 4.65
ID: Bi-207 at 1063.62keV
Corrected Rate = 2701.13 +/- 9003.77 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 64 Net = -27 +/- 22
Could not properly fit the peak.

ROI # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 58 Net = -10 +/- 19
Could not properly fit the peak.

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 434 Net = -233 +/- 163
CENTROID: 4483.90 = 1121.52keV
SHAPE: FWHM = 0.90 FW(1/5)M = 1.50
ID: Ta-182 at 1121.28keV
Corrected Rate = 0.00 +/- 337900.24 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 299 Net = 214 +/- 34
CENTROID: 4696.10 = 1174.59keV
SHAPE: FWHM = 1.37 FW(1/5)M = 2.40
ID: Co-56 at 1175.13keV
Corrected Rate = 7091075.26 +/- 1126619.43 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 67 Net = -26 +/- 31
CENTROID: 4752.50 = 1188.69keV
SHAPE: FWHM = 11.48 FW(1/5)M = 11.64
ID: Ta-182 at 1189.05keV
Corrected Rate = 0.00 +/- 143826.91 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 162 Net = -10 +/- 59
CENTROID: 4954.97 = 1239.32keV
SHAPE: FWHM = 1.01 FW(1/5)M = 1.50
ID: Co-56 at 1238.28keV
Corrected Rate = 0.00 +/- 68984.62 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV

AREA : Gross = 26 Net = 1 +/- 11
CENTROID: 5009.00 = 1252.83keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Kr-88 at 1250.67keV
Corrected Rate = 70301.75 +/- 773319.27 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 30 Net = 5 +/- 11
CENTROID: 5032.00 = 1258.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ta-182 at 1257.47keV
Corrected Rate = 264343.99 +/- 581556.77 Bq

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 115 Net = 1 +/- 49
CENTROID: 5187.00 = 1297.33keV
SHAPE: FWHM = 1.00 FW(1/5)M = 1.60
ID: J-133 at 1298.90keV
Corrected Rate = 37646.20 +/- 1844663.86 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 290 Net = 108 +/- 56
CENTROID: 5333.79 = 1334.04keV
SHAPE: FWHM = 1.45 FW(1/5)M = 2.18
ID: Co-60 at 1332.51keV
Corrected Rate = 90962.69 +/- 47165.84 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 23 Net = -9 +/- 10
CENTROID: 5376.00 = 1344.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-138 at 1343.59keV
Corrected Rate = 0.00 +/- 741368.37 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 17 Net = -6 +/- 8
Could not properly fit the peak.

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 116 Net = 75 +/- 29
CENTROID: 5512.40 = 1378.69keV
SHAPE: FWHM = 1.42 FW(1/5)M = 2.21
ID: Bi-214 at 1377.65keV
Corrected Rate = 1616931.87 +/- 625213.66 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 73 Net = 29 +/- 24
CENTROID: 5634.00 = 1409.10keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.48
ID: Eu-152 at 1408.08keV
Corrected Rate = 120758.32 +/- 99937.92 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 43 Net = 33 +/- 11
CENTROID: 5745.00 = 1436.85keV
SHAPE: FWHM = 1.25 FW(1/5)M = 1.48
ID: Sb-124 at 1436.60keV
Corrected Rate = 2745877.17 +/- 915292.39 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 33 Net = 2 +/- 16

CENTROID: 5846.00 = 1462.10keV
SHAPE: FWHM = 1.06 FW(1/5)M = 1.30
ID: K-40 at 1460.70keV
Corrected Rate = 17088.60 +/- 136708.81 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 28 Net = 1 +/- 12
CENTROID: 5879.00 = 1470.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-89 at 1472.76keV
Corrected Rate = 13079.57 +/- 156954.81 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 61 Net = 32 +/- 20
CENTROID: 6043.83 = 1511.56keV
SHAPE: FWHM = 0.40 FW(1/5)M = 0.69
ID: U-238 at 1510.30keV
Corrected Rate = 233325238.11 +/- 145828273.82 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 62 Net = -28 +/- 38
CENTROID: 6099.00 = 1525.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: K-42 at 1524.70keV
Corrected Rate = 0.00 +/- 200857.53 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 17 Net = 7 +/- 6
CENTROID: 6208.00 = 1552.60keV
SHAPE: FWHM = 3.63 FW(1/5)M = 3.85
ID: U-238 at 1553.74keV
Corrected Rate = 83317907.85 +/- 71415349.58 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 35 Net = -23 +/- 24
CENTROID: 6286.00 = 1572.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rh-106M at 1572.10keV
Corrected Rate = 0.00 +/- 449796.34 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 8 Net = -8 +/- 7
Could not properly fit the peak.

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 19 Net = 2 +/- 9
CENTROID: 6373.00 = 1593.85keV
SHAPE: FWHM = 1.87 FW(1/5)M = 2.35
ID: La-140 at 1596.20keV
Corrected Rate = 2062.32 +/- 9280.43 Bq

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 12 Net = -7 +/- 12
Could not properly fit the peak.

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 11 Net = 1 +/- 6
CENTROID: 6513.00 = 1628.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 1630.40keV
Corrected Rate = 51446.62 +/- 308679.72 Bq

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 10 Net = -10 +/- 8
Could not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 23 Net = 23 +/- 4
CENTROID: 6637.00 = 1659.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1661.28keV
Corrected Rate = 2038263.33 +/- 354480.58 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 4 Net = -1 +/- 4
Could not properly fit the peak.

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 7 Net = 7 +/- 2
Could not properly fit the peak.

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 7 Net = 2 +/- 4
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 31 Net = 11 +/- 13
CENTROID: 6921.70 = 1731.02keV
SHAPE: FWHM = 1.30 FW(1/5)M = 2.61
ID: Bi-214 at 1729.60keV
Corrected Rate = 380999.79 +/- 450272.48 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 9 Net = 1 +/- 7
CENTROID: 6962.00 = 1741.10keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: J-134 at 1741.40keV
Corrected Rate = 34245.51 +/- 239718.60 Bq

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 119 Net = 109 +/- 14
CENTROID: 7062.76 = 1766.28keV
SHAPE: FWHM = 1.73 FW(1/5)M = 2.96
ID: U-238 at 1765.80keV
Corrected Rate = 1541060848.83 +/- 197934420.95 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 3 Net = -2 +/- 4
Could not properly fit the peak.

ROI # 64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 2 Net = 2 +/- 1
Could not properly fit the peak.

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 9 Net = 9 +/- 3
CENTROID: 7362.00 = 1841.09keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: Rh-106M at 1838.20keV
Corrected Rate = 417234.92 +/- 139078.31 Bq

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV

AREA : Gross = 19 Net = 11 +/- 7
CENTROID: 7396.45 = 1849.70keV
SHAPE: FWHM = 0.53 FW(1/5)M = 0.79
ID: Xe-138 at 1850.86keV
Corrected Rate = 864608.33 +/- 550205.30 Bq

67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 8 Net = 8 +/- 2
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 14 Net = 3 +/- 10
CENTROID: 7604.00 = 1901.58keV
SHAPE: FWHM = 11.75 FW(1/5)M = 11.90
ID: Kr-89 at 1903.40keV
Corrected Rate = 324262.67 +/- 1080875.57 Bq

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 3 Net = -3 +/- 4
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 6 Net = 6 +/- 2
CENTROID: 8028.00 = 2007.56keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: Rb-89 at 2007.54keV
Corrected Rate = 276332.18 +/- 92110.73 Bq

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 3 Net = 3 +/- 1
Could not properly fit the peak.

Detector #1 ACQ 29-Jan-2002 at 13:11:50 RT = 5.0 LT = 3.5
digiDART USE 1b
SC22-2

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 12015 Net = 7905 +/- 669
CENTROID: 487.88 = 122.02keV
SHAPE: FWHM = 0.91 FW(1/5)M = 1.55
ID: Co-57 at 122.07keV
Corrected Rate = 1677893.11 +/- 142000.06 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 581 Net = -35 +/- 71
CENTROID: 709.00 = 177.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-136 at 176.56keV
Corrected Rate = 0.00 +/- 105038.02 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 4060 Net = 402 +/- 530
CENTROID: 979.24 = 244.95keV
SHAPE: FWHM = 1.04 FW(1/5)M = 1.68
ID: Eu-152 at 244.70keV
Corrected Rate = 1280106.33 +/- 1687702.37 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 2120 Net = 1015 +/- 189
CENTROID: 1377.70 = 344.63keV
SHAPE: FWHM = 1.20 FW(1/5)M = 1.75
ID: Pu-239 at 344.96keV
Corrected Rate = 56292926293.51 +/- 10482131102.93 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 330 Net = 62 +/- 54
CENTROID: 1466.92 = 366.95keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.44
ID: Mo-99 at 366.44keV
Corrected Rate = 1681297.63 +/- 1464356.00 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 1442 Net = 14 +/- 267
CENTROID: 1776.42 = 444.38keV
SHAPE: FWHM = 1.26 FW(1/5)M = 2.09
ID: Eu-152 at 444.00keV
Corrected Rate = 197459.82 +/- 3765840.93 Bq

ROI # 7 RANGE: 1824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 149 Net = -7 +/- 29
CENTROID: 1844.88 = 461.50keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.92
ID: Cs-138 at 462.79keV
Corrected Rate = 0.00 +/- 38443.51 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 476 Net = 43 +/- 90
CENTROID: 1964.00 = 491.30keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ce-143 at 490.20keV
Corrected Rate = 836742.74 +/- 1751322.02 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV

AREA : Gross = 269 Net = 44 +/- 42
CENTROID: 2026.00 = 506.81keV
SHAPE: FWHM = 8.79 FW(1/5)M = 9.62
ID: Pa-234 at 506.80keV
Corrected Rate = 1384181.35 +/- 1321264.01 Bq

I # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 236 Net = 60 +/- 41
CENTROID: 2116.78 = 529.51keV
SHAPE: FWHM = 0.35 FW(1/5)M = 0.88
ID: J-133 at 529.50keV
Corrected Rate = 31349.66 +/- 21422.27 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 711 Net = -65 +/- 149
CENTROID: 2260.00 = 565.34keV
SHAPE: FWHM = 4.50 FW(1/5)M = 4.65
ID: J-134 at 566.00keV
Corrected Rate = 0.00 +/- 5959206.85 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 117 Net = 21 +/- 20
CENTROID: 2344.12 = 586.38keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.64
ID: Kr-89 at 585.80keV
Corrected Rate = 61925.41 +/- 58976.58 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 142 Net = 70 +/- 20
CENTROID: 2367.81 = 592.30keV
SHAPE: FWHM = 0.55 FW(1/5)M = 1.97
ID: Eu-154 at 591.70keV
Corrected Rate = 764879.95 +/- 218537.13 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 233 Net = 26 +/- 43
CENTROID: 2437.92 = 609.84keV
SHAPE: FWHM = 1.29 FW(1/5)M = 1.61
ID: Ru-103 at 610.33keV
Corrected Rate = 253192.86 +/- 418742.04 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 911 Net = -16 +/- 204
CENTROID: 2648.50 = 662.51keV
SHAPE: FWHM = 0.96 FW(1/5)M = 1.16
ID: Cs-137 at 661.60keV
Corrected Rate = 0.00 +/- 133309.23 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 1071 Net = 408 +/- 183
CENTROID: 2894.86 = 724.13keV
SHAPE: FWHM = 1.74 FW(1/5)M = 2.95
ID: Zr-95 at 724.18keV
Corrected Rate = 551492.06 +/- 247360.41 Bq

' # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 590 Net = 248 +/- 80
CENTROID: 3117.49 = 779.81keV
SHAPE: FWHM = 1.15 FW(1/5)M = 2.11
ID: J-132 at 780.20keV
Corrected Rate = 12840437.01 +/- 4142076.45 Bq

ROI # 18. RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 507 Net = -24 +/- 130
CENTROID: 3162.11 = 790.97keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.59
ID: Rh-106M at 792.90keV
Corrected Rate = 0.00 +/- 1305100.93 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 201 Net = 5 +/- 50
CENTROID: 3409.00 = 852.72keV
SHAPE: FWHM = 1.29 FW(1/5)M = 2.13
ID: U-238 at 851.57keV
Corrected Rate = 57209463.47 +/- 572094634.75 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV
AREA : Gross = 361 Net = 97 +/- 69
CENTROID: 3471.25 = 868.28keV
SHAPE: FWHM = 0.76 FW(1/5)M = 1.44
ID: La-140 at 867.86keV
Corrected Rate = 1262763.64 +/- 898254.55 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 105 Net = 15 +/- 25
CENTROID: 3595.00 = 899.23keV
SHAPE: FWHM = 7.54 FW(1/5)M = 7.75
ID: U-238 at 898.67keV
Corrected Rate = 207403904.83 +/- 345673174.71 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 44 Net = 24 +/- 9
CENTROID: 3646.00 = 911.99keV
SHAPE: FWHM = 1.53 FW(1/5)M = 1.69
ID: Th-232 at 911.10keV
Corrected Rate = 67677.89 +/- 25379.21 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 120 Net = 37 +/- 26
CENTROID: 3708.22 = 927.55keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.63
ID: Pa-234 at 926.70keV
Corrected Rate = 248313.97 +/- 174490.90 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 92 Net = 54 +/- 16
CENTROID: 3737.77 = 934.94keV
SHAPE: FWHM = 0.54 FW(1/5)M = 2.01
ID: Ra-226 at 934.10keV
Corrected Rate = 1258242.74 +/- 372812.66 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 607 Net = 211 +/- 113
CENTROID: 3859.42 = 965.36keV
SHAPE: FWHM = 1.45 FW(1/5)M = 2.18
ID: Th-232 at 964.77keV
Corrected Rate = 2931873.79 +/- 1570150.42 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 190 Net = 30 +/- 44
CENTROID: 4022.58 = 1006.16keV
SHAPE: FWHM = 1.43 FW(1/5)M = 2.57

ID: Eu-152 at 1005.30keV
Corrected Rate = 3711436.71 +/- 5443440.51 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 70 Net = -3 +/- 21
CENTROID: 4076.00 = 1019.52keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Rh-106M at 1019.60keV
Corrected Rate = 0.00 +/- 1095741.60 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 141 Net = 36 +/- 38
CENTROID: 4172.86 = 1043.74keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.74
ID: Br-82 at 1044.00keV
Corrected Rate = 105163.81 +/- 111006.25 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 41 Net = 2 +/- 11
CENTROID: 4253.55 = 1063.92keV
SHAPE: FWHM = 2.21 FW(1/5)M = 2.39
ID: Bi-207 at 1063.62keV
Corrected Rate = 2158.86 +/- 11873.72 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 61 Net = 19 +/- 16
CENTROID: 4288.48 = 1072.66keV
SHAPE: FWHM = 0.50 FW(1/5)M = 1.25
ID: J-134 at 1072.53keV
Corrected Rate = 111230.27 +/- 93667.59 Bq

I # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 258 Net = 190 +/- 24
CENTROID: 4347.00 = 1087.29keV
SHAPE: FWHM = 1.31 FW(1/5)M = 2.31
ID: Eu-152 at 1085.90keV
Corrected Rate = 1606052.52 +/- 202869.79 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 588 Net = 213 +/- 124
CENTROID: 4451.65 = 1113.46keV
SHAPE: FWHM = 1.71 FW(1/5)M = 2.51
ID: Xe-138 at 1114.29keV
Corrected Rate = 12502020.03 +/- 7278171.29 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 80 Net = 19 +/- 26
CENTROID: 4726.00 = 1182.06keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-88 at 1179.51keV
Corrected Rate = 1712732.56 +/- 2343739.29 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 93 Net = -35 +/- 36
CENTROID: 4753.50 = 1188.94keV
SHAPE: FWHM = 1.73 FW(1/5)M = 1.89
ID: Ta-182 at 1189.05keV
Corrected Rate = 0.00 +/- 200239.96 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 197 Net = -61 +/- 72

CENTROID: 4859.00 = 1215.32keV
SHAPE: FWHM = 24.62 FW(1/5)M = 25.13
ID: As-76 at 1216.25keV
Corrected Rate = 0.00 +/- 1815597.25 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 40 Net = 3 +/- 13
CENTROID: 5005.00 = 1251.83keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-88 at 1250.67keV
Corrected Rate = 252846.64 +/- 1095668.77 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 29 Net = -28 +/- 16
Could not properly fit the peak.

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 193 Net = 170 +/- 25
CENTROID: 5101.97 = 1276.07keV
SHAPE: FWHM = 1.77 FW(1/5)M = 2.11
ID: Eu-154 at 1274.80keV
Corrected Rate = 465301.82 +/- 68426.74 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 65 Net = -8 +/- 35
CENTROID: 5243.00 = 1311.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Tb-160 at 1312.12keV
Corrected Rate = 0.00 +/- 1173947.05 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 14 Net = 5 +/- 6
CENTROID: 5364.00 = 1341.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-138 at 1343.59keV
Corrected Rate = 444399.79 +/- 533279.75 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 14 Net = 0 +/- 7
CENTROID: 5403.00 = 1351.34keV
SHAPE: FWHM = 0.50 FW(1/5)M = 0.80
ID: U-238 at 1352.90keV
Corrected Rate = 0.00 +/- 325459386.16 Bq

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 102 Net = 19 +/- 40
CENTROID: 5512.00 = 1378.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1377.65keV
Corrected Rate = 491081.81 +/- 1033856.44 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 351 Net = 75 +/- 61
CENTROID: 5636.98 = 1409.84keV
SHAPE: FWHM = 1.63 FW(1/5)M = 2.27
ID: Eu-152 at 1408.08keV
Corrected Rate = 374412.32 +/- 304522.02 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 23 Net = 13 +/- 10
CENTROID: 5734.50 = 1434.22keV

SHAPE: FWHM = 5.96 FW(1/5)M = 6.78
ID: U-238 at 1434.30keV
Corrected Rate = 144486365.79 +/- 111143358.30 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 41 Net = 21 +/- 14
CENTROID: 5828.00 = 1457.60keV
SHAPE: FWHM = 0.33 FW(1/5)M = 1.23
ID: J-135 at 1457.56keV
Corrected Rate = 265251.95 +/- 176834.64 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 17 Net = 3 +/- 9
CENTROID: 5912.00 = 1478.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.88
ID: Ag-110M at 1475.76keV
Corrected Rate = 82932.00 +/- 248796.01 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 50 Net = 21 +/- 20
CENTROID: 5980.00 = 1495.60keV
SHAPE: FWHM = 12.25 FW(1/5)M = 12.40
ID: Ac-228 at 1495.80keV
Corrected Rate = 2231330.83 +/- 2125076.98 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 51 Net = -3 +/- 30
CENTROID: 6161.00 = 1540.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rb-89 at 1538.08keV
Corrected Rate = 0.00 +/- 1225422.48 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 16 Net = 1 +/- 7
CENTROID: 6208.00 = 1552.60keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: U-238 at 1553.74keV
Corrected Rate = 14269544.28 +/- 99886809.98 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 25 Net = 13 +/- 11
CENTROID: 6249.00 = 1562.85keV
SHAPE: FWHM = 9.88 FW(1/5)M = 10.10
ID: Ag-110M at 1562.27keV
Corrected Rate = 1271955.94 +/- 1076270.41 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 9 Net = 4 +/- 5
CENTROID: 6340.00 = 1585.60keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 1587.90keV
Corrected Rate = 126605.61 +/- 158257.01 Bq

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 18 Net = 1 +/- 8
ıld not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 11 Net = 11 +/- 3
Could not properly fit the peak.

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 8 Net = 3 +/- 4
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 7 Net = -3 +/- 6
ld not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 22 Net = -17 +/- 18
CENTROID: 6650.00 = 1663.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1661.28keV
Corrected Rate = 0.00 +/- 1912382.44 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 6 Net = 1 +/- 4
CENTROID: 6710.00 = 1678.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-135 at 1678.03keV
Corrected Rate = 12940.68 +/- 51762.72 Bq

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 9 Net = -5 +/- 8
CENTROID: 6779.00 = 1695.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 1694.00keV
Corrected Rate = 0.00 +/- 764696.79 Bq

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 4 Net = -1 +/- 4
uld not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 18 Net = 8 +/- 9
CENTROID: 6921.45 = 1730.96keV
SHAPE: FWHM = 0.54 FW(1/5)M = 1.82
ID: Bi-214 at 1729.60keV
Corrected Rate = 332194.04 +/- 373718.29 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 5 Net = -3 +/- 6
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 98 Net = 68 +/- 18
CENTROID: 7064.18 = 1766.64keV
SHAPE: FWHM = 0.86 FW(1/5)M = 2.07
ID: U-238 at 1765.80keV
Corrected Rate = 1152582415.50 +/- 305095345.28 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 5 Net = 0 +/- 4
Could not properly fit the peak.

64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 9 Net = 9 +/- 3

Could not properly fit the peak.

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV
AREA : Gross = 20 Net = 20 +/- 4
CENTROID: 7394.00 = 1849.08keV
SHAPE: FWHM = 0.75 FW(1/5)M = 0.90
ID: Bi-214 at 1847.44keV
Corrected Rate = 1262087.04 +/- 252417.41 Bq

ROI # 67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 9 Net = 9 +/- 3
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 9 Net = -12 +/- 13
Could not properly fit the peak.

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 1 Net = 1 +/- 1
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 8 Net = 8 +/- 2
Could not properly fit the peak.

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 1 Net = 1 +/- 1
Could not properly fit the peak.

Detector #1 ACQ 29-Jan-2002 at 13:10:27 RT = 5.0 LT = 2.9
digiDART USE 1b
SC21-2

ROI # 1 RANGE: 22 = 5.27keV to 674 = 168.30keV
AREA : Gross = 10324 Net = 4012 +/- 827
CENTROID: 49.64 = 12.18keV
SHAPE: FWHM = 9.68 FW(1/5)M = 22.12
No close library match.

ROI # 2 RANGE: 697 = 174.05keV to 754 = 188.31keV
AREA : Gross = 1066 Net = 61 +/- 93
CENTROID: 729.10 = 182.08keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.54
No close library match.

ROI # 3 RANGE: 761 = 190.06keV to 1229 = 307.05keV
AREA : Gross = 6924 Net = -502 +/- 756
CENTROID: 1074.00 = 268.31keV
SHAPE: FWHM = 24.50 FW(1/5)M = 24.65
No close library match.

ROI # 4 RANGE: 1239 = 309.55keV to 1435 = 358.54keV
AREA : Gross = 1823 Net = 148 +/- 231
CENTROID: 1389.91 = 347.27keV
SHAPE: FWHM = 9.69 FW(1/5)M = 9.91
No close library match.

ROI # 5 RANGE: 1440 = 359.79keV to 1510 = 377.29keV
AREA : Gross = 585 Net = -78 +/- 84
CENTROID: 1475.00 = 368.54keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 6 RANGE: 1513 = 378.04keV to 1820 = 454.76keV
AREA : Gross = 4462 Net = 2460 +/- 321
CENTROID: 1736.44 = 433.88keV
SHAPE: FWHM = 1.23 FW(1/5)M = 1.89
No close library match.

ROI # 7 RANGE: 1826 = 456.26keV to 1865 = 466.01keV
AREA : Gross = 275 Net = 55 +/- 36
CENTROID: 1829.00 = 457.01keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 8 RANGE: 1888 = 471.75keV to 2005 = 500.99keV
AREA : Gross = 811 Net = 24 +/- 121
CENTROID: 1917.85 = 479.21keV
SHAPE: FWHM = 0.38 FW(1/5)M = 2.66
No close library match.

ROI # 9 RANGE: 2015 = 503.49keV to 2068 = 516.73keV
AREA : Gross = 411 Net = 69 +/- 52
CENTROID: 2042.62 = 510.39keV
SHAPE: FWHM = 0.49 FW(1/5)M = 1.64
No close library match.

ROI # 10 RANGE: 2074 = 518.23keV to 2135 = 533.47keV
AREA : Gross = 404 Net = 22 +/- 59
CENTROID: 2124.53 = 530.86keV
SHAPE: FWHM = 0.43 FW(1/5)M = 0.62
No close library match.

ROI # 11 RANGE: 2141 = 534.97keV to 2319 = 579.45keV
AREA : Gross = 889 Net = 24 +/- 158
CENTROID: 2246.00 = 561.21keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 12 RANGE: 2324 = 580.69keV to 2354 = 588.19keV
AREA : Gross = 133 Net = -1 +/- 23
CENTROID: 2348.00 = 586.69keV
SHAPE: FWHM = 0.75 FW(1/5)M = 0.90
No close library match.

ROI # 13 RANGE: 2358 = 589.19keV to 2453 = 612.92keV
AREA : Gross = 453 Net = -459 +/- 114
Could not properly fit the peak.

ROI # 14 RANGE: 2455 = 613.42keV to 2732 = 682.62keV
AREA : Gross = 2348 Net = -18595 +/- 964
CENTROID: 2458.99 = 614.42keV
SHAPE: FWHM = 0.20 FW(1/5)M = 0.79
No close library match.

ROI # 15 RANGE: 2734 = 683.12keV to 3039 = 759.31keV
AREA : Gross = 2178 Net = 954 +/- 249
CENTROID: 2893.56 = 722.98keV
SHAPE: FWHM = 1.55 FW(1/5)M = 2.17
No close library match.

ROI # 16 RANGE: 3044 = 760.55keV to 3158 = 789.03keV
AREA : Gross = 326 Net = 38 +/- 72
CENTROID: 3151.00 = 787.28keV
SHAPE: FWHM = 0.31 FW(1/5)M = 1.37
No close library match.

ROI # 17 RANGE: 3163 = 790.28keV to 3197 = 798.77keV
AREA : Gross = 116 Net = -42 +/- 26
CENTROID: 3180.00 = 794.52keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 18 RANGE: 3199 = 799.27keV to 3360 = 839.47keV
AREA : Gross = 479 Net = -7 +/- 112
CENTROID: 3299.00 = 824.24keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.44
No close library match.

ROI # 19 RANGE: 3374 = 842.97keV to 3455 = 863.20keV
AREA : Gross = 258 Net = 53 +/- 51
CENTROID: 3403.30 = 850.29keV
SHAPE: FWHM = 0.51 FW(1/5)M = 1.08
No close library match.

ROI # 20 RANGE: 3460 = 864.45keV to 3570 = 891.91keV
AREA : Gross = 385 Net = -59 +/- 87
CENTROID: 3539.00 = 884.17keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.44
No close library match.

ROI # 21 RANGE: 3583 = 895.16keV to 3631 = 907.15keV
AREA : Gross = 144 Net = -28 +/- 34
CENTROID: 3620.00 = 904.40keV
SHAPE: FWHM = 1.25 FW(1/5)M = 1.40
No close library match.

ROI # 22 RANGE: 3636 = 908.40keV to 3658 = 913.89keV
AREA : Gross = 75 Net = -6 +/- 14
CENTROID: 3640.55 = 909.53keV
SHAPE: FWHM = 0.54 FW(1/5)M = 0.82
No close library match.

ROI # 23 RANGE: 3667 = 916.14keV to 3721 = 929.62keV
AREA : Gross = 170 Net = 23 +/- 34
CENTROID: 3715.00 = 928.12keV
SHAPE: 'HM = 0.27 FW(1/5)M = 0.44

No close library match.

ROI # 24 RANGE: 3728 = 931.37keV to 3764 = 940.36keV
AREA : Gross = 154 Net = 37 +/- 25
CENTROID: 3734.00 = 932.87keV
SHAPE: FWHM = 0.61 FW(1/5)M = 0.94
No close library match.

ROI # 25 RANGE: 3775 = 943.10keV to 3971 = 992.04keV
AREA : Gross = 584 Net = -7 +/- 137
CENTROID: 3799.00 = 949.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 26 RANGE: 3976 = 993.29keV to 4054 = 1012.76keV
AREA : Gross = 235 Net = -55 +/- 58
CENTROID: 4039.00 = 1009.02keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 27 RANGE: 4070 = 1016.75keV to 4112 = 1027.24keV
AREA : Gross = 93 Net = 21 +/- 21
CENTROID: 4108.47 = 1026.36keV
SHAPE: FWHM = 0.44 FW(1/5)M = 0.62
No close library match.

ROI # 28 RANGE: 4119 = 1028.99keV to 4207 = 1050.96keV
AREA : Gross = 229 Net = -8 +/- 57
CENTROID: 4193.00 = 1047.46keV
SHAPE: FWHM = 1.36 FW(1/5)M = 2.62
No close library match.

ROI # 29 RANGE: 4246 = 1060.69keV to 4270 = 1066.68keV
AREA : Gross = 67 Net = 4 +/- 14
CENTROID: 4256.17 = 1063.23keV
SHAPE: FWHM = 0.36 FW(1/5)M = 1.09
No close library match.

ROI # 30 RANGE: 4282 = 1069.68keV to 4322 = 1079.66keV
AREA : Gross = 84 Net = -39 +/- 26
CENTROID: 4319.00 = 1078.92keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 31 RANGE: 4335 = 1082.91keV to 4375 = 1092.89keV
AREA : G s = 101 Net = -2 +/- 24

CENTROID: 4340.00 = 1084.16keV
SHAPE: FWHM = 6.49 FW(1/5)M = 6.64
No close library match.

ROI # 32 RANGE: 4388 = 1096.14keV to 4637 = 1158.29keV
AREA : Gross = 550 Net = -117 +/- 164
CENTROID: 4484.08 = 1120.12keV
SHAPE: FWHM = 0.41 FW(1/5)M = 2.04
No close library match.

ROI # 33 RANGE: 4663 = 1164.78keV to 4734 = 1182.50keV
AREA : Gross = 927 Net = 735 +/- 53
CENTROID: 4696.66 = 1173.18keV
SHAPE: FWHM = 1.71 FW(1/5)M = 2.61
No close library match.

ROI # 34 RANGE: 4748 = 1185.99keV to 4816 = 1202.97keV
AREA : Gross = 94 Net = 36 +/- 25
CENTROID: 4757.00 = 1188.24keV
SHAPE: FWHM = 12.06 FW(1/5)M = 13.33
No close library match.

ROI # 35 RANGE: 4843 = 1209.70keV to 4970 = 1241.40keV
AREA : Gross = 150 Net = 43 +/- 47
CENTROID: 4853.00 = 1212.20keV
SHAPE: FWHM = 26.73 FW(1/5)M = 26.95
No close library match.

ROI # 36 RANGE: 4984 = 1244.89keV to 5020 = 1253.88keV
AREA : Gross = 27 Net = -4 +/- 12
CENTROID: 5016.45 = 1252.99keV
SHAPE: FWHM = 0.46 FW(1/5)M = 0.63
No close library match.

ROI # 37 RANGE: 5022 = 1254.37keV to 5059 = 1263.61keV
AREA : Gross = 24 Net = 18 +/- 7
CENTROID: 5034.00 = 1257.37keV
SHAPE: FWHM = 5.37 FW(1/5)M = 5.84
No close library match.

ROI # 38 RANGE: 5079 = 1268.60keV to 5215 = 1302.54keV
AREA : Gross = 96 Net = -64 +/- 58
CENTROID: 5098.00 = 1273.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 39 RANGE: 5240 = 1308.77keV to 5320 = 1328.74keV
AREA : Gross = 58 Net = -37 +/- 33
CENTROID: 5261.00 = 1314.01keV
SHAPE: FWHM = 11.98 FW(1/5)M = 12.13
No close library match.

ROI # 40 RANGE: 5322 = 1329.23keV to 5348 = 1335.72keV
AREA : Gross = 725 Net = 693 +/- 28
CENTROID: 5334.16 = 1332.27keV
SHAPE: FWHM = 1.71 FW(1/5)M = 2.90
No close library match.

ROI # 41 RANGE: 5366 = 1340.21keV to 5393 = 1346.95keV
AREA : Gross = 9 Net = -5 +/- 6
CENTROID: 5377.00 = 1342.96keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 42 RANGE: 5404 = 1349.69keV to 5430 = 1356.18keV
AREA : Gross = 13 Net = -1 +/- 6
Could not properly fit the peak.

ROI # 43 RANGE: 5433 = 1356.93keV to 5556 = 1387.62keV
AREA : Gross = 91 Net = 29 +/- 35
CENTROID: 5516.14 = 1377.67keV
SHAPE: FWHM = 0.32 FW(1/5)M = 0.69
No close library match.

ROI # 44 RANGE: 5567 = 1390.36keV to 5652 = 1411.57keV
AREA : Gross = 67 Net = 38 +/- 20
CENTROID: 5636.83 = 1407.78keV
SHAPE: FWHM = 0.36 FW(1/5)M = 1.49
No close library match.

ROI # 45 RANGE: 5729 = 1430.78keV to 5790 = 1446.00keV
AREA : Gross = 17 Net = -14 +/- 16
Could not properly fit the peak.

ROI # 46 RANGE: 5803 = 1449.24keV to 5863 = 1464.21keV
AREA : Gross = 24 Net = 4 +/- 13
CENTROID: 5849.00 = 1460.71keV
SHAPE: FWHM = 0.31 FW(1/5)M = 1.30
No close library match.

ROI # 47 RANGE: 5883 = 1469.20keV to 5923 = 1479.17keV
AREA : ss = 22 Net = 1 +/- 11

CENTROID: 5892.00 = 1471.44keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 48 RANGE: 5976 = 1492.39keV to 6062 = 1513.85keV
AREA : Gross = 50 Net = 35 +/- 15
CENTROID: 5989.00 = 1495.64keV
SHAPE: FWHM = 0.29 FW(1/5)M = 1.50
No close library match.

ROI # 49 RANGE: 6066 = 1514.84keV to 6173 = 1541.53keV
AREA : Gross = 36 Net = 18 +/- 18
CENTROID: 6070.00 = 1515.84keV
SHAPE: FWHM = 19.21 FW(1/5)M = 19.36
No close library match.

ROI # 50 RANGE: 6208 = 1550.26keV to 6236 = 1557.25keV
AREA : Gross = 7 Net = -3 +/- 5
Could not properly fit the peak.

ROI # 51 RANGE: 6242 = 1558.74keV to 6310 = 1575.70keV
AREA : Gross = 23 Net = -12 +/- 18
CENTROID: 6292.00 = 1571.21keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
No close library match.

ROI # 52 RANGE: 6344 = 1584.18keV to 6375 = 1591.91keV
AREA : Gross = 8 Net = 8 +/- 2
CENTROID: 6349.00 = 1585.43keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 53 RANGE: 6377 = 1592.41keV to 6411 = 1600.89keV
AREA : Gross = 16 Net = 4 +/- 7
CENTROID: 6382.00 = 1593.66keV
SHAPE: FWHM = 5.49 FW(1/5)M = 5.64
No close library match.

ROI # 54 RANGE: 6448 = 1610.12keV to 6505 = 1624.33keV
AREA : Gross = 16 Net = 6 +/- 9
Could not properly fit the peak.

ROI # 55 RANGE: 6514 = 1626.58keV to 6544 = 1634.06keV
AREA : Gross = 8 Net = -13 +/- 8
Could not properly fit the peak.

ROI # 56 RANGE: 6562 = 1638.55keV to 6592 = 1646.03keV
AREA : Gross = 12 Net = 2 +/- 6
CENTROID: 6588.00 = 1645.03keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
No close library match.

ROI # 57 RANGE: 6638 = 1657.50keV to 6697 = 1672.21keV
AREA : Gross = 25 Net = -15 +/- 18
Could not properly fit the peak.

ROI # 58 RANGE: 6705 = 1674.21keV to 6736 = 1681.94keV
AREA : Gross = 7 Net = -4 +/- 6
Could not properly fit the peak.

ROI # 59 RANGE: 6757 = 1687.18keV to 6800 = 1697.90keV
AREA : Gross = 13 Net = 6 +/- 7
CENTROID: 6768.00 = 1689.92keV
SHAPE: FWHM = 2.49 FW(1/5)M = 2.64
No close library match.

ROI # 60 RANGE: 6819 = 1702.64keV to 6850 = 1710.37keV
AREA : Gross = 8 Net = -8 +/- 7
CENTROID: 6833.00 = 1706.13keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 61 RANGE: 6882 = 1718.35keV to 6943 = 1733.56keV
AREA : Gross = 27 Net = 27 +/- 5
CENTROID: 6925.64 = 1729.23keV
SHAPE: FWHM = 1.10 FW(1/5)M = 1.83
No close library match.

ROI # 62 RANGE: 6945 = 1734.05keV to 6990 = 1745.27keV
AREA : Gross = 11 Net = 3 +/- 7
Could not properly fit the peak.

ROI # 63 RANGE: 7051 = 1760.48keV to 7111 = 1775.44keV
AREA : Gross = 97 Net = 77 +/- 16
CENTROID: 7064.72 = 1763.90keV
SHAPE: FWHM = 2.21 FW(1/5)M = 2.79
No close library match.

ROI # 64 RANGE: 7158 = 1787.16keV to 7190 = 1795.14keV
AREA : Gross = 5 Net = 5 +/- 2
CENTROID: 7177.00 = 1791.90keV
SHAPE VHM = 0.25 FW(1/5)M = 0.40

No close library match.

ROI # 65 RANGE: 7221 = 1802.87keV to 7271 = 1815.33keV
AREA : Gross = 3 Net = -6 +/- 7
Could not properly fit the peak.

ROI # 66 RANGE: 7320 = 1827.55keV to 7379 = 1842.26keV
AREA : Gross = 12 Net = 2 +/- 9
CENTROID: 7356.00 = 1836.52keV
SHAPE: FWHM = 0.37 FW(1/5)M = 1.10
No close library match.

ROI # 67 RANGE: 7383 = 1843.25keV to 7430 = 1854.97keV
AREA : Gross = 25 Net = 25 +/- 5
CENTROID: 7398.12 = 1847.02keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.64
No close library match.

ROI # 68 RANGE: 7464 = 1863.45keV to 7526 = 1878.90keV
AREA : Gross = 7 Net = 7 +/- 2
Could not properly fit the peak.

ROI # 69 RANGE: 7607 = 1899.09keV to 7673 = 1915.54keV
AREA : Gross = 3 Net = 3 +/- 1
Could not properly fit the peak.

ROI # 70 RANGE: 7678 = 1916.79keV to 7712 = 1925.26keV
AREA : Gross = 6 Net = 6 +/- 2
Could not properly fit the peak.

ROI # 71 RANGE: 8003 = 1997.79keV to 8093 = 2020.22keV
AREA : Gross = 10 Net = -5 +/- 14
CENTROID: 8070.00 = 2014.49keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
No close library match.

ROI # 72 RANGE: 8114 = 2025.46keV to 8172 = 2039.91keV
AREA : Gross = 7 Net = 7 +/- 2
Could not properly fit the peak.

Detector #1 A 29-Jan-2002 at 9:34:48 RT = 5.0 LT = 4.2
digiDART USE 1b
SC20

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 5278 Net = 2898 +/- 507
CENTROID: 288.17 = 72.06keV
SHAPE: FWHM = 0.71 FW(1/5)M = 1.09
ID: W-187 at 72.00keV
Corrected Rate = 3797056.89 +/- 664288.42 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 434 Net = 51 +/- 56
CENTROID: 702.77 = 175.79keV
SHAPE: FWHM = 0.32 FW(1/5)M = 0.57
ID: Sb-125 at 176.29keV
Corrected Rate = 136420.29 +/- 149794.82 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 2782 Net = -176 +/- 476
CENTROID: 770.00 = 192.61keV
SHAPE: FWHM = 54.04 FW(1/5)M = 54.19
ID: Fe-59 at 192.34keV
Corrected Rate = 0.00 +/- 2679731.26 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 902 Net = 349 +/- 133
CENTROID: 1250.00 = 312.69keV
SHAPE: FWHM = 0.31 FW(1/5)M = 1.25
ID: Np-237 at 311.90keV
Corrected Rate = 247395.00 +/- 94279.47 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 320 Net = 75 +/- 51
CENTROID: 1462.39 = 365.82keV
SHAPE: FWHM = 0.48 FW(1/5)M = 0.73
ID: Mo-99 at 366.44keV
Corrected Rate = 1704541.37 +/- 1159088.13 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 1339 Net = 217 +/- 237
CENTROID: 1808.08 = 452.29keV
SHAPE: FWHM = 0.41 FW(1/5)M = 3.12
ID: Te-131 at 452.32keV
Corrected Rate = 399041.78 +/- 435819.83 Bq

ROI # 7 RANG 824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 157 Net = 20 +/- 27
CENTROID: 1858.00 = 464.78keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Sb-125 at 463.51keV
Corrected Rate = 68417.64 +/- 92363.82 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 430 Net = 37 +/- 85
CENTROID: 1889.86 = 472.75keV
SHAPE: FWHM = 23.75 FW(1/5)M = 24.05
ID: Rh-106M at 474.20keV
Corrected Rate = 672152.28 +/- 1544133.61 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV
AREA : Gross = 210 Net = 48 +/- 36
CENTROID: 2046.00 = 511.81keV
SHAPE: FWHM = 0.44 FW(1/5)M = 1.86
ID: Rh-106M at 511.80keV
Corrected Rate = 20678.68 +/- 15509.01 Bq

ROI # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 216 Net = -11 +/- 45
CENTROID: 2083.14 = 521.10keV
SHAPE: FWHM = 0.33 FW(1/5)M = 0.57
ID: Pa-234 at 521.00keV
Corrected Rate = 0.00 +/- 1417169.99 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 468 Net = 199 +/- 89
CENTROID: 2196.18 = 549.37keV
SHAPE: FWHM = 0.33 FW(1/5)M = 1.34
ID: W-187 at 551.52keV
Corrected Rate = 1448547.83 +/- 647843.00 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 79 Net = -28 +/- 20
CENTROID: 2336.00 = 584.35keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Th-232 at 583.17keV
Corrected Rate = 0.00 +/- 28994.06 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 106 Net = 4 +/- 22
CENTROID: 2370.00 = 592.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40

ID: Sb-12 593.00keV
Corrected Rate = 19183.94 +/- 105511.66 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 191 Net = -45 +/- 45
CENTROID: 2437.92 = 609.84keV
SHAPE: FWHM = 0.41 FW(1/5)M = 1.48
ID: Ru-103 at 610.33keV
Corrected Rate = 0.00 +/- 367268.77 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 1390 Net = 973 +/- 140
CENTROID: 2647.64 = 662.30keV
SHAPE: FWHM = 1.19 FW(1/5)M = 1.97
ID: Cs-137 at 661.60keV
Corrected Rate = 532888.39 +/- 76674.59 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 543 Net = -18 +/- 167
CENTROID: 2804.00 = 701.40keV
SHAPE: FWHM = 0.30 FW(1/5)M = 0.48
ID: Nb-94 at 702.50keV
Corrected Rate = 0.00 +/- 81471.78 Bq

ROI # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 174 Net = 41 +/- 49
CENTROID: 3073.00 = 768.68keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Ra-226 at 768.40keV
Corrected Rate = 434589.88 +/- 519387.90 Bq

ROI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 305 Net = 239 +/- 48
CENTROID: 3273.00 = 818.70keV
SHAPE: FWHM = 15.92 FW(1/5)M = 17.38
ID: Cs-136 at 818.50keV
Corrected Rate = 132915.78 +/- 26694.38 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 127 Net = -13 +/- 42
CENTROID: 3379.00 = 845.21keV
SHAPE: FWHM = 1.31 FW(1/5)M = 1.55
ID: Kr-87 at 845.60keV
Corrected Rate = 0.00 +/- 331307.13 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV

AREA : ss = 173 Net = 41 +/- 48
CENTROID: 3463.00 = 866.22keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.95
ID: Kr-89 at 867.08keV
Corrected Rate = 396595.89 +/- 464307.38 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 61 Net = 12 +/- 19
CENTROID: 3597.83 = 899.94keV
SHAPE: FWHM = 0.36 FW(1/5)M = 1.24
ID: U-238 at 898.67keV
Corrected Rate = 139059380.00 +/- 220177351.66 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 24 Net = 4 +/- 8
CENTROID: 3637.00 = 909.74keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ac-228 at 911.07keV
Corrected Rate = 8410.05 +/- 16820.09 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 59 Net = 13 +/- 19
CENTROID: 3695.00 = 924.24keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 924.60keV
Corrected Rate = 286697.50 +/- 419019.43 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 62 Net = -14 +/- 19
CENTROID: 3728.00 = 932.50keV
SHAPE: FWHM = 3.38 FW(1/5)M = 4.10
ID: Bi-214 at 934.05keV
Corrected Rate = 0.00 +/- 373950.96 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 228 Net = -36 +/- 91
CENTROID: 3813.00 = 953.75keV
SHAPE: FWHM = 6.50 FW(1/5)M = 6.65
ID: Sb-126 at 954.20keV
Corrected Rate = 0.00 +/- 4123991.34 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 85 Net = 45 +/- 23
CENTROID: 4010.17 = 1003.06keV
SHAPE: FWHM = 0.36 FW(1/5)M = 2.49
ID: Tb-160 at 1002.89keV

Correct ate = 2865341.10 +/- 1464507.67 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 48 Net = 4 +/- 16
CENTROID: 4081.00 = 1020.77keV
SHAPE: FWHM = 4.75 FW(1/5)M = 4.90
ID: Rh-106M at 1019.60keV
Corrected Rate = 174921.11 +/- 699684.43 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 97 Net = 37 +/- 29
CENTROID: 4141.00 = 1035.78keV
SHAPE: FWHM = 13.30 FW(1/5)M = 13.75
ID: Sb-126 at 1034.80keV
Corrected Rate = 2288308.89 +/- 1793539.40 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 32 Net = -16 +/- 11
Could not properly fit the peak.

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 43 Net = 1 +/- 15
CENTROID: 4306.50 = 1077.16keV
SHAPE: FWHM = 0.46 FW(1/5)M = 0.64
ID: Rb-86 at 1076.63keV
Corrected Rate = 8035.67 +/- 120535.02 Bq

ROI # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 31 Net = -17 +/- 16
CENTROID: 4347.00 = 1087.29keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Eu-152 at 1085.90keV
Corrected Rate = 0.00 +/- 113349.47 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 308 Net = 100 +/- 92
CENTROID: 4483.36 = 1121.39keV
SHAPE: FWHM = 1.10 FW(1/5)M = 1.91
ID: Ta-182 at 1121.28keV
Corrected Rate = 208287.91 +/- 191624.87 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 65 Net = -20 +/- 30
CENTROID: 4675.00 = 1169.31keV
SHAPE: FWHM = 0.63 FW(1/5)M = 0.85
ID: Cs-134 at 1167.86keV

Correct ate = 0.00 +/- 1258405.81 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 43 Net = -50 +/- 30
Could not properly fit the peak.

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 157 Net = 92 +/- 37
CENTROID: 4955.21 = 1239.38keV
SHAPE: FWHM = 1.61 FW(1/5)M = 2.56
ID: Co-56 at 1238.28keV
Corrected Rate = 108081.47 +/- 43467.55 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 27 Net = 8 +/- 10
CENTROID: 4982.00 = 1246.07keV
SHAPE: FWHM = 3.38 FW(1/5)M = 3.85
ID: Rb-89 at 1248.10keV
Corrected Rate = 14876.22 +/- 18595.28 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 35 Net = -16 +/- 15
CENTROID: 5041.50 = 1260.95keV
SHAPE: FWHM = 0.48 FW(1/5)M = 0.64
ID: J-135 at 1260.41keV
Corrected Rate = 0.00 +/- 42293.73 Bq

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 101 Net = 78 +/- 24
CENTROID: 5079.00 = 1270.33keV
SHAPE: FWHM = 24.07 FW(1/5)M = 24.88
ID: Tb-160 at 1271.88keV
Corrected Rate = 834120.19 +/- 256652.37 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 71 Net = 53 +/- 19
CENTROID: 5268.00 = 1317.59keV
SHAPE: FWHM = 15.04 FW(1/5)M = 15.50
ID: Br-82 at 1317.43keV
Corrected Rate = 164458.98 +/- 58956.99 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 18 Net = 4 +/- 7
CENTROID: 5363.00 = 1341.34keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.80
ID: Cs-138 at 1343.59keV

Correcte ate = 297959.48 +/- 521429.09 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 15 Net = 1 +/- 7
CENTROID: 5419.00 = 1355.34keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: Pa-234 at 1353.00keV
Corrected Rate = 50430.54 +/- 353013.78 Bq

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 105 Net = 43 +/- 35
CENTROID: 5513.39 = 1378.94keV
SHAPE: FWHM = 0.89 FW(1/5)M = 1.69
ID: Bi-214 at 1377.65keV
Corrected Rate = 931455.42 +/- 758161.39 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 80 Net = 7 +/- 31
CENTROID: 5612.00 = 1403.60keV
SHAPE: FWHM = 6.54 FW(1/5)M = 6.75
ID: Bi-214 at 1401.50keV
Corrected Rate = 446373.90 +/- 1976798.68 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 36 Net = 5 +/- 17
CENTROID: 5745.00 = 1436.85keV
SHAPE: FWHM = 8.75 FW(1/5)M = 8.90
ID: Sb-124 at 1436.60keV
Corrected Rate = 418023.15 +/- 1421278.70 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 31 Net = 21 +/- 10
CENTROID: 5802.00 = 1451.10keV
SHAPE: FWHM = 11.63 FW(1/5)M = 11.85
ID: Pa-234 at 1452.60keV
Corrected Rate = 1595338.80 +/- 759685.14 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 19 Net = -2 +/- 10
CENTROID: 5882.00 = 1471.10keV
SHAPE: FWHM = 7.75 FW(1/5)M = 7.90
ID: Kr-89 at 1472.76keV
Corrected Rate = 0.00 +/- 131418.51 Bq

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 75 Net = 31 +/- 24

CENTR(6040.62 = 1510.76keV
SHAPE: FWHM = 0.85 FW(1/5)M = 1.18
ID: U-238 at 1510.30keV
Corrected Rate = 227110175.96 +/- 175827233.00 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 55 Net = -53 +/- 42
Could not properly fit the peak.

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 18 Net = -2 +/- 8
Could not properly fit the peak.

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 24 Net = 12 +/- 11
CENTROID: 6268.00 = 1567.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: J-135 at 1566.41keV
Corrected Rate = 907343.70 +/- 831731.73 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 14 Net = 4 +/- 6
Could not properly fit the peak.

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 11 Net = 0 +/- 7
Could not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 15 Net = 15 +/- 3
CENTROID: 6480.00 = 1620.60keV
SHAPE: FWHM = 3.00 FW(1/5)M = 3.15
ID: Bi-212 at 1620.56keV
Corrected Rate = 546653.95 +/- 109330.79 Bq

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 10 Net = -15 +/- 9
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 3 Net = -2 +/- 4
Could not properly fit the peak.

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 26 Net = 6 +/- 13
CENTROID: 6653.17 = 1663.89keV

SHAPE /HM = 0.36 FW(1/5)M = 0.74
ID: Bi-214 at 1661.28keV
Corrected Rate = 534252.87 +/- 1157547.89 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 9 Net = 9 +/- 3
CENTROID: 6712.00 = 1678.60keV
SHAPE: FWHM = 1.37 FW(1/5)M = 1.60
ID: J-135 at 1678.03keV
Corrected Rate = 97609.70 +/- 32536.57 Bq

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 19 Net = -9 +/- 12
Could not properly fit the peak.

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 7 Net = 2 +/- 4
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 36 Net = 6 +/- 16
CENTROID: 6923.95 = 1731.59keV
SHAPE: FWHM = 0.70 FW(1/5)M = 0.88
ID: Bi-214 at 1729.60keV
Corrected Rate = 208807.68 +/- 556820.48 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 6 Net = 6 +/- 2
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 125 Net = 125 +/- 11
CENTROID: 7061.87 = 1766.06keV
SHAPE: FWHM = 1.81 FW(1/5)M = 3.15
ID: U-238 at 1765.80keV
Corrected Rate = 1775687194.75 +/- 156260473.14 Bq

ROI # 63 RANGE: 7147 = 1787.34keV to 7178 = 1795.09keV
AREA : Gross = 2 Net = -3 +/- 4
Could not properly fit the peak.

ROI # 64 RANGE: 7210 = 1803.09keV to 7258 = 1815.09keV
AREA : Gross = 4 Net = 4 +/- 2
CENTROID: 7243.00 = 1811.34keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Mn-56 at 1811.20keV

Correcte ate = 16230.30 +/- 8115.15 Bq

ROI # 65 RANGE: 7309 = 1827.84keV to 7366 = 1842.09keV
AREA : Gross = 8 Net = -2 +/- 9
Could not properly fit the peak.

ROI # 66 RANGE: 7372 = 1843.59keV to 7416 = 1854.58keV
AREA : Gross = 15 Net = 15 +/- 3
CENTROID: 7396.00 = 1849.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Xe-138 at 1850.86keV
Corrected Rate = 1184625.70 +/- 236925.14 Bq

ROI # 67 RANGE: 7452 = 1863.58keV to 7512 = 1878.58keV
AREA : Gross = 8 Net = -2 +/- 9
Could not properly fit the peak.

ROI # 68 RANGE: 7596 = 1899.58keV to 7658 = 1915.07keV
AREA : Gross = 7 Net = 7 +/- 2
CENTROID: 7652.00 = 1913.57keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: U-238 at 1911.20keV
Corrected Rate = 132698125.11 +/- 37913750.03 Bq

ROI # 69 RANGE: 7666 = 1917.07keV to 7698 = 1925.07keV
AREA : Gross = 9 Net = -13 +/- 9
Could not properly fit the peak.

ROI # 70 RANGE: 7991 = 1998.31keV to 8077 = 2019.80keV
AREA : Gross = 7 Net = -8 +/- 13
Could not properly fit the peak.

ROI # 71 RANGE: 8101 = 2025.80keV to 8155 = 2039.30keV
AREA : Gross = 2 Net = 2 +/- 1
Could not properly fit the peak.

)etector #1 A(29-Jan-2002 at 10:02:16 RT = 5.0 LT = 3.6
digiDART USE 1b
SC18

ROI # 1 RANGE: 23 = 5.71keV to 671 = 167.84keV
AREA : Gross = 6534 Net = 3397 +/- 582
CENTROID: 238.50 = 59.63keV
SHAPE: FWHM = 0.98 FW(1/5)M = 1.86
ID: W-187 at 59.72keV
Corrected Rate = 8764300.95 +/- 1501567.02 Bq

ROI # 2 RANGE: 697 = 174.34keV to 752 = 188.10keV
AREA : Gross = 479 Net = 78 +/- 58
CENTROID: 713.00 = 178.34keV
SHAPE: FWHM = 3.78 FW(1/5)M = 3.95
ID: Ta-182 at 179.39keV
Corrected Rate = 493095.18 +/- 366660.52 Bq

ROI # 3 RANGE: 761 = 190.35keV to 1227 = 306.93keV
AREA : Gross = 3811 Net = -392 +/- 567
CENTROID: 912.92 = 228.36keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.46
ID: Rh-106M at 228.50keV
Corrected Rate = 0.00 +/- 2658952.84 Bq

ROI # 4 RANGE: 1238 = 309.69keV to 1432 = 358.22keV
AREA : Gross = 1248 Net = -52 +/- 202
CENTROID: 1386.10 = 346.73keV
SHAPE: FWHM = 0.39 FW(1/5)M = 0.78
ID: Hf-181 at 345.95keV
Corrected Rate = 0.00 +/- 441738.51 Bq

ROI # 5 RANGE: 1439 = 359.97keV to 1508 = 377.23keV
AREA : Gross = 404 Net = -74 +/- 70
CENTROID: 1475.00 = 368.97keV
SHAPE: FWHM = 4.69 FW(1/5)M = 4.88
ID: Am-241 at 368.68keV
Corrected Rate = 0.00 +/- 4731786557.66 Bq

ROI # 6 RANGE: 1512 = 378.23keV to 1817 = 454.53keV
AREA : Gross = 1567 Net = 88 +/- 272
CENTROID: 1527.00 = 381.98keV
SHAPE: FWHM = 65.29 FW(1/5)M = 65.44
ID: Sb-125 at 380.51keV
Corrected Rate = 2133200.53 +/- 6593528.92 Bq

ROI # 7 RANG 824 = 456.28keV to 1862 = 465.78keV
AREA : Gross = 160 Net = 10 +/- 28
CENTROID: 1831.86 = 458.24keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.62
ID: Pa-234 at 458.60keV
Corrected Rate = 265141.16 +/- 742395.24 Bq

ROI # 8 RANGE: 1886 = 471.79keV to 2003 = 501.05keV
AREA : Gross = 510 Net = -100 +/- 106
CENTROID: 1999.77 = 500.24keV
SHAPE: FWHM = 0.32 FW(1/5)M = 0.57
ID: Kr-89 at 498.60keV
Corrected Rate = 0.00 +/- 3892403.32 Bq

ROI # 9 RANGE: 2013 = 503.55keV to 2066 = 516.81keV
AREA : Gross = 267 Net = 114 +/- 36
CENTROID: 2041.00 = 510.56keV
SHAPE: FWHM = 0.45 FW(1/5)M = 2.07
ID: Th-232 at 510.69keV
Corrected Rate = 648685.31 +/- 204847.99 Bq

ROI # 10 RANGE: 2071 = 518.06keV to 2132 = 533.32keV
AREA : Gross = 259 Net = -123 +/- 58
CENTROID: 2091.00 = 523.06keV
SHAPE: FWHM = 3.75 FW(1/5)M = 3.90
ID: J-132 at 522.65keV
Corrected Rate = 0.00 +/- 160151.05 Bq

ROI # 11 RANGE: 2138 = 534.82keV to 2316 = 579.34keV
AREA : Gross = 755 Net = -80 +/- 154
CENTROID: 2284.47 = 571.46keV
SHAPE: FWHM = 0.44 FW(1/5)M = 0.63
ID: Bi-207 at 569.67keV
Corrected Rate = 0.00 +/- 75186.13 Bq

ROI # 12 RANGE: 2321 = 580.59keV to 2352 = 588.35keV
AREA : Gross = 135 Net = 28 +/- 22
CENTROID: 2331.00 = 583.10keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Tl-208 at 583.14keV
Corrected Rate = 15891.60 +/- 12486.26 Bq

ROI # 13 RANGE: 2355 = 589.10keV to 2390 = 597.85keV
AREA : Gross = 141 Net = 3 +/- 26
CENTROID: 2364.00 = 591.35keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40

ID: Eu-15 591.70keV
Corrected Rate = 32231.17 +/- 279336.85 Bq

ROI # 14 RANGE: 2392 = 598.35keV to 2450 = 612.86keV
AREA : Gross = 289 Net = 102 +/- 41
CENTROID: 2437.93 = 609.84keV
SHAPE: FWHM = 1.04 FW(1/5)M = 2.20
ID: Ru-103 at 610.33keV
Corrected Rate = 976647.68 +/- 392574.07 Bq

ROI # 15 RANGE: 2452 = 613.36keV to 2729 = 682.65keV
AREA : Gross = 1232 Net = -621 +/- 288
CENTROID: 2648.00 = 662.39keV
SHAPE: FWHM = 0.27 FW(1/5)M = 0.43
ID: Cs-137 at 661.60keV
Corrected Rate = 0.00 +/- 185047.05 Bq

ROI # 16 RANGE: 2731 = 683.15keV to 3036 = 759.43keV
AREA : Gross = 1217 Net = -160 +/- 262
CENTROID: 2906.00 = 726.92keV
SHAPE: FWHM = 25.32 FW(1/5)M = 25.66
ID: J-132 at 727.00keV
Corrected Rate = 0.00 +/- 7019164.11 Bq

ROI # 17 RANGE: 3041 = 760.68keV to 3154 = 788.94keV
AREA : Gross = 511 Net = -97 +/- 104
CENTROID: 3075.00 = 769.18keV
SHAPE: FWHM = 18.94 FW(1/5)M = 19.13
ID: Ra-226 at 768.40keV
Corrected Rate = 0.00 +/- 1293288.31 Bq

ROI # 18 RANGE: 3159 = 790.19keV to 3357 = 839.71keV
AREA : Gross = 853 Net = 57 +/- 160
CENTROID: 3167.00 = 792.19keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rh-106M at 792.90keV
Corrected Rate = 562646.01 +/- 1579357.21 Bq

ROI # 19 RANGE: 3369 = 842.71keV to 3452 = 863.47keV
AREA : Gross = 368 Net = 4 +/- 68
CENTROID: 3386.00 = 846.96keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: J-134 at 847.03keV
Corrected Rate = 2799.65 +/- 47594.13 Bq

ROI # 20 RANGE: 3455 = 864.22keV to 3567 = 892.23keV

AREA : (s = 491 Net = 58 +/- 88
CENTROID: 3540.00 = 885.48keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ag-110M at 884.67keV
Corrected Rate = 55522.55 +/- 84241.11 Bq

ROI # 21 RANGE: 3579 = 895.23keV to 3627 = 907.24keV
AREA : Gross = 253 Net = 49 +/- 38
CENTROID: 3607.00 = 902.23keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Kr-89 at 904.27keV
Corrected Rate = 475374.51 +/- 368657.79 Bq

ROI # 22 RANGE: 3631 = 908.24keV to 3654 = 913.99keV
AREA : Gross = 121 Net = 5 +/- 18
CENTROID: 3640.64 = 910.65keV
SHAPE: FWHM = 0.51 FW(1/5)M = 0.78
ID: Ac-228 at 911.07keV
Corrected Rate = 12333.17 +/- 44399.40 Bq

ROI # 23 RANGE: 3662 = 915.99keV to 3716 = 929.49keV
AREA : Gross = 266 Net = -9 +/- 47
CENTROID: 3699.00 = 925.24keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: La-140 at 925.25keV
Corrected Rate = 0.00 +/- 492333.00 Bq

ROI # 24 RANGE: 3723 = 931.24keV to 3760 = 940.50keV
AREA : Gross = 190 Net = -32 +/- 33
CENTROID: 3738.17 = 935.04keV
SHAPE: FWHM = 0.36 FW(1/5)M = 0.60
ID: Ra-226 at 934.10keV
Corrected Rate = 0.00 +/- 756039.09 Bq

ROI # 25 RANGE: 3770 = 943.00keV to 3967 = 992.26keV
AREA : Gross = 992 Net = 200 +/- 159
CENTROID: 3804.00 = 951.50keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.44
ID: Pa-234 at 949.00keV
Corrected Rate = 1899613.92 +/- 1510193.07 Bq

ROI # 26 RANGE: 3970 = 993.01keV to 4049 = 1012.77keV
AREA : Gross = 319 Net = 79 +/- 55
CENTROID: 3995.00 = 999.27keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: U-238 at 1001.03keV

Correcte ıte = 7321014.71 +/- 5096908.97 Bq

ROI # 27 RANGE: 4064 = 1016.52keV to 4107 = 1027.27keV
AREA : Gross = 187 Net = -4 +/- 34
CENTROID: 4090.78 = 1023.22keV
SHAPE: FWHM = 0.35 FW(1/5)M = 0.88
ID: Sr-91 at 1024.30keV
Corrected Rate = 0.00 +/- 81512.45 Bq

ROI # 28 RANGE: 4113 = 1028.78keV to 4202 = 1051.03keV
AREA : Gross = 323 Net = 53 +/- 61
CENTROID: 4117.00 = 1029.78keV
SHAPE: FWHM = 16.94 FW(1/5)M = 17.20
ID: Rb-89 at 1031.88keV
Corrected Rate = 71521.93 +/- 82317.69 Bq

ROI # 29 RANGE: 4240 = 1060.53keV to 4265 = 1066.79keV
AREA : Gross = 97 Net = 10 +/- 17
CENTROID: 4243.53 = 1061.42keV
SHAPE: FWHM = 0.44 FW(1/5)M = 0.63
ID: Bi-207 at 1063.62keV
Corrected Rate = 10613.38 +/- 18042.75 Bq

ROI # 30 RANGE: 4276 = 1069.54keV to 4317 = 1079.79keV
AREA : Gross = 132 Net = 34 +/- 24
CENTROID: 4309.89 = 1078.01keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.55
ID: Rb-86 at 1076.63keV
Corrected Rate = 320528.89 +/- 226255.69 Bq

ROI # 31 RANGE: 4329 = 1082.79keV to 4369 = 1092.79keV
AREA : Gross = 182 Net = 11 +/- 31
CENTROID: 4365.00 = 1091.79keV
SHAPE: FWHM = 0.28 FW(1/5)M = 0.45
ID: Eu-152 at 1089.82keV
Corrected Rate = 533718.56 +/- 1504115.94 Bq

ROI # 32 RANGE: 4382 = 1096.04keV to 4631 = 1158.31keV
AREA : Gross = 840 Net = -77 +/- 192
CENTROID: 4482.32 = 1121.13keV
SHAPE: FWHM = 0.77 FW(1/5)M = 1.96
ID: Ta-182 at 1121.28keV
Corrected Rate = 0.00 +/- 469171.42 Bq

ROI # 33 RANGE: 4657 = 1164.81keV to 4729 = 1182.81keV
AREA : Gross = 1595 Net = 1437 +/- 56

CENTRC 4695.72 = 1174.49keV
SHAPE: FWHM = 1.72 FW(1/5)M = 2.55
ID: Co-56 at 1175.13keV
Corrected Rate = 56128639.30 +/- 2187337.37 Bq

ROI # 34 RANGE: 4741 = 1185.81keV to 4810 = 1203.07keV
AREA : Gross = 103 Net = 33 +/- 27
CENTROID: 4760.00 = 1190.56keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.50
ID: Ta-182 at 1189.05keV
Corrected Rate = 180476.99 +/- 147662.99 Bq

ROI # 35 RANGE: 4836 = 1209.57keV to 4964 = 1241.57keV
AREA : Gross = 185 Net = -9 +/- 62
CENTROID: 4955.15 = 1239.36keV
SHAPE: FWHM = 1.88 FW(1/5)M = 2.10
ID: Co-56 at 1238.28keV
Corrected Rate = 0.00 +/- 85451.83 Bq

ROI # 36 RANGE: 4977 = 1244.82keV to 5013 = 1253.83keV
AREA : Gross = 45 Net = -4 +/- 15
CENTROID: 4993.00 = 1248.83keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Rb-89 at 1248.10keV
Corrected Rate = 0.00 +/- 32723.54 Bq

ROI # 37 RANGE: 5015 = 1254.33keV to 5052 = 1263.58keV
AREA : Gross = 41 Net = 9 +/- 13
CENTROID: 5027.00 = 1257.33keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Ta-182 at 1257.47keV
Corrected Rate = 560881.82 +/- 810162.63 Bq

ROI # 38 RANGE: 5072 = 1268.58keV to 5208 = 1302.58keV
AREA : Gross = 129 Net = -8 +/- 54
CENTROID: 5132.00 = 1283.58keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Th-232 at 1282.70keV
Corrected Rate = 0.00 +/- 5186619.27 Bq

ROI # 39 RANGE: 5233 = 1308.83keV to 5341 = 1335.84keV
AREA : Gross = 1390 Net = 373 +/- 133
CENTROID: 5333.48 = 1333.96keV
SHAPE: FWHM = 1.73 FW(1/5)M = 2.41
ID: Co-60 at 1332.51keV
Corrected Rate = 370320.55 +/- 132044.59 Bq

ROI # 40 RANGE: 5359 = 1340.34keV to 5385 = 1346.84keV
AREA : Gross = 10 Net = -4 +/- 6
CENTROID: 5376.00 = 1344.59keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cs-138 at 1343.59keV
Corrected Rate = 0.00 +/- 524342.10 Bq

ROI # 41 RANGE: 5396 = 1349.59keV to 5423 = 1356.34keV
AREA : Gross = 11 Net = 6 +/- 4
CENTROID: 5410.00 = 1353.09keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Pa-234 at 1353.00keV
Corrected Rate = 354985.92 +/- 236657.28 Bq

ROI # 42 RANGE: 5425 = 1356.84keV to 5548 = 1387.59keV
AREA : Gross = 97 Net = 35 +/- 35
CENTROID: 5476.45 = 1369.71keV
SHAPE: FWHM = 10.34 FW(1/5)M = 10.57
ID: Kr-88 at 1369.50keV
Corrected Rate = 2381091.01 +/- 2381091.01 Bq

ROI # 43 RANGE: 5558 = 1390.09keV to 5644 = 1411.60keV
AREA : Gross = 70 Net = 70 +/- 8
CENTROID: 5632.83 = 1408.80keV
SHAPE: FWHM = 0.40 FW(1/5)M = 1.94
ID: Eu-152 at 1408.08keV
Corrected Rate = 343594.77 +/- 39267.97 Bq

ROI # 44 RANGE: 5721 = 1430.85keV to 5782 = 1446.10keV
AREA : Gross = 31 Net = 0 +/- 17
CENTROID: 5748.00 = 1437.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.80
ID: Sb-124 at 1436.60keV
Corrected Rate = 0.00 +/- 1667421.94 Bq

ROI # 45 RANGE: 5794 = 1449.10keV to 5854 = 1464.10keV
AREA : Gross = 33 Net = -18 +/- 21
CENTROID: 5847.00 = 1462.35keV
SHAPE: FWHM = 0.38 FW(1/5)M = 0.60
ID: K-40 at 1460.70keV
Corrected Rate = 0.00 +/- 211507.24 Bq

ROI # 46 RANGE: 5875 = 1469.35keV to 5915 = 1479.35keV
AREA : Gross = 18 Net = -16 +/- 13
Could not properly fit the peak.

ROI # 47 RANGE: 5967 = 1492.35keV to 6053 = 1513.85keV
AREA : Gross = 63 Net = 34 +/- 20
CENTROID: 6041.00 = 1510.85keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: U-238 at 1510.30keV
Corrected Rate = 292226825.80 +/- 171898132.83 Bq

ROI # 48 RANGE: 6057 = 1514.85keV to 6164 = 1541.60keV
AREA : Gross = 55 Net = 19 +/- 25
CENTROID: 6108.00 = 1527.60keV
SHAPE: FWHM = 12.63 FW(1/5)M = 12.85
ID: Rh-106M at 1527.40keV
Corrected Rate = 157908.86 +/- 207774.82 Bq

ROI # 49 RANGE: 6198 = 1550.10keV to 6227 = 1557.35keV
AREA : Gross = 13 Net = 3 +/- 6
CENTROID: 6207.00 = 1552.35keV
SHAPE: FWHM = 1.75 FW(1/5)M = 2.30
ID: U-238 at 1553.74keV
Corrected Rate = 42091169.73 +/- 84182339.45 Bq

ROI # 50 RANGE: 6232 = 1558.60keV to 6300 = 1575.60keV
AREA : Gross = 32 Net = -3 +/- 18
CENTROID: 6236.00 = 1559.60keV
SHAPE: FWHM = 0.75 FW(1/5)M = 0.90
ID: Ag-110M at 1562.27keV
Corrected Rate = 0.00 +/- 1731652.95 Bq

ROI # 51 RANGE: 6335 = 1584.35keV to 6365 = 1591.85keV
AREA : Gross = 11 Net = 6 +/- 5
CENTROID: 6340.00 = 1585.60keV
SHAPE: FWHM = 0.31 FW(1/5)M = 0.87
ID: Ac-228 at 1587.90keV
Corrected Rate = 186725.59 +/- 155604.66 Bq

ROI # 52 RANGE: 6368 = 1592.60keV to 6401 = 1600.85keV
AREA : Gross = 13 Net = -4 +/- 8
Could not properly fit the peak.

ROI # 53 RANGE: 6438 = 1610.10keV to 6494 = 1624.10keV
AREA : Gross = 19 Net = -10 +/- 15
CENTROID: 6447.00 = 1612.35keV
SHAPE: FWHM = 0.37 FW(1/5)M = 0.60
ID: J-134 at 1613.70keV
Corrected Rate = 0.00 +/- 439294.01 Bq

ROI # 54 RANGE: 6505 = 1626.85keV to 6534 = 1634.10keV
AREA : Gross = 5 Net = -5 +/- 5
Could not properly fit the peak.

ROI # 55 RANGE: 6553 = 1638.85keV to 6582 = 1646.10keV
AREA : Gross = 14 Net = -6 +/- 8
CENTROID: 6560.00 = 1640.60keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Cl-38 at 1642.40keV
Corrected Rate = 0.00 +/- 29011.75 Bq

ROI # 56 RANGE: 6628 = 1657.60keV to 6686 = 1672.10keV
AREA : Gross = 19 Net = 9 +/- 9
CENTROID: 6650.00 = 1663.10keV
SHAPE: FWHM = 0.25 FW(1/5)M = 0.40
ID: Bi-214 at 1661.28keV
Corrected Rate = 940165.67 +/- 940165.67 Bq

ROI # 57 RANGE: 6695 = 1674.35keV to 6724 = 1681.60keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 58 RANGE: 6747 = 1687.35keV to 6788 = 1697.60keV
AREA : Gross = 10 Net = -11 +/- 10
Could not properly fit the peak.

ROI # 59 RANGE: 6809 = 1702.85keV to 6838 = 1710.10keV
AREA : Gross = 4 Net = 4 +/- 2
Could not properly fit the peak.

ROI # 60 RANGE: 6872 = 1718.60keV to 6931 = 1733.35keV
AREA : Gross = 37 Net = 7 +/- 16
CENTROID: 6921.00 = 1730.85keV
SHAPE: FWHM = 0.29 FW(1/5)M = 0.50
ID: Bi-214 at 1729.60keV
Corrected Rate = 285798.22 +/- 653253.07 Bq

ROI # 61 RANGE: 6934 = 1734.10keV to 6978 = 1745.10keV
AREA : Gross = 7 Net = -8 +/- 9
Could not properly fit the peak.

ROI # 62 RANGE: 7041 = 1760.85keV to 7099 = 1775.34keV
AREA : Gross = 103 Net = 103 +/- 10
CENTROID: 7060.96 = 1765.83keV
SHAPE: FWHM = 0.47 FW(1/5)M = 2.32

ID: U-23 1765.80keV
Corrected Rate = 1716563755.19 +/- 166656675.26 Bq

Detector #1 Q 28-Jan-2002 at 10:53:22 RT = 5.0 LT = 1.1
digiDAR I USE 1b
SC7

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	9927	5492	693	13.83	0.70	17.42	Sr-91	14.90	765821239.05	96634034.72
2	174.34	188.10	749	12	78	184.60	0.26	0.42	No close library match.			
3	190.35	306.93	5625	177	647	241.41	0.26	0.43	Ra-226	241.91	1492054.25	5454006.20
4	309.69	358.22	1754	-261	251	353.75	0.34	0.60	Ra-226	351.90	0.00	634866.83
5	359.97	377.23	587	-78	83	370.72	4.69	5.70	Am-241	368.68	0.00	18259779970.69
6	378.23	454.53	2321	-25	342	422.26	0.25	0.40	Pu-239	422.57	0.00	344098602815.49
7	456.28	465.78	271	-48	41	459.91	0.44	0.63	Th-232	463.00	0.00	1215959.07
8	471.79	501.05	842	-181	137	482.04	0.25	0.40	No close library match.			
9	503.55	516.81	390	57	52	506.56	0.25	0.40	J-133	510.40	5435030.16	4958273.13
10	518.06	533.32	430	-14	64	528.62	1.96	2.13	J-133	529.50	0.00	107006.84
11	534.82	579.34	1135	31	178	536.02	14.35	14.90	J-133	529.50	51831.44	297612.76
12	580.59	588.35	190	35	26	584.96	0.47	0.71	Th-232	583.17	193733.03	143915.96
13	589.10	597.85	241	7	34	589.85	0.27	0.43	Th-232	583.17	38746.61	188197.80
14	598.35	612.86	375	80	51	610.21	0.48	1.57	Ra-226	609.30	286197.79	182451.09
15	613.36	682.65	1731	295	255	635.66	0.30	0.54	No close library match.			
16	683.15	759.43	1897	-41	311	697.40	0.25	0.40	U-238	691.30	0.00	732551150.94
17	760.68	788.94	694	-66	116	773.19	0.28	0.45	Ra-226	768.40	0.00	4694727.02
18	790.19	839.71	1218	-76	203	810.20	0.25	0.40	Ra-226	806.10	0.00	33237881.00
19	842.71	863.47	568	22	84	850.76	0.31	0.56	U-238	851.57	805509245.72	3075580756.39
20	864.22	892.23	776	-15	118	890.07	0.51	0.87	Ag-110M	884.67	0.00	367632.39
21	895.23	907.24	374	-26	53	904.74	1.50	1.65	U-238	898.67	0.00	2345046817.24
22	908.24	913.99	179	7	22	909.24	3.50	3.65	Th-232	911.10	63166.03	198521.80
23	915.99	929.49	400	-104	63	922.24	2.50	2.65	U-238	921.70	0.00	1167351073.94
24	931.24	940.50	296	-90	44	932.50	0.25	0.40	Ra-226	934.10	0.00	3280751.44
25	943.00	992.26	1395	-156	222	954.39	25.94	26.13	U-238	945.90	0.00	1727400353.91
26	993.01	1012.77	463	36	72	994.54	0.28	0.47	U-238	996.10	2207159033.3	44414318066.67
27	1016.52	1027.27	253	48	36	1020.05	0.28	0.84	Sr-91	1024.30	374521.38	280891.03
28	1028.78	1051.03	529	109	77	1031.80	16.27	16.44	Sr-91	1024.30	850475.62	600794.71
29	1060.53	1066.79	128	-37	22	1062.28	0.25	0.40	No close library match.			
30	1069.54	1079.79	247	2	38	1077.04	0.25	0.40	No close library match.			
31	1082.79	1092.79	218	54	31	1086.08	0.29	0.52	No close library match.			
32	1096.04	1158.31	1072	239	184	1152.86	0.32	0.64	Th-232	1153.52	490438748.5	1377576275.00
33	1164.81	1182.81	2228	2094	59	1174.27	2.02	3.15	Co-60	1173.23	6069206.82	171004.39
34	1185.81	1203.07	102	-3	33	1188.31	0.31	1.13	U-238	1193.77	0.00	723531606.03
35	1209.57	1241.57	167	-91	72	1210.57	4.00	4.15	No close library match.			
36	1244.82	1253.83	44	32	9	1248.08	2.00	2.15	J-133	1237.50	6157435.94	1731778.86
37	1254.33	1263.58	39	-12	16	1262.58	0.31	0.55	No close library match.			
38	1268.58	1302.58	110	64	32	1287.55	0.33	0.69	Th-232	1282.70	20006030.4	310003015.22
39	1308.83	1335.84	1914	570	153	1333.63	1.91	2.91	Co-60	1332.51	1841764.84	494368.46
40	1340.34	1346.84	19	1	8	1343.09	0.25	0.40	U-238	1352.90	148781433.6	71190251469.38
41	1349.59	1356.34	14	0	7	1354.84	0.38	0.60	U-238	1352.90	0.00	1041470035.70
42	1356.84	1387.59	62	-41	44	1377.34	0.25	0.40	Ag-110M	1384.27	0.00	603294.93

43	1390.09	14	0	34	5	19	1394.34	15.00	15.15	U-238	1393.6045	915.041	724447277.16
44	1430.85	144	6.10	19	-2	13	1433.60	0.25	0.40	U-238	1434.30	0.00	462356370.53
45	1449.10	1464.10		15	-5	13	1453.60	0.38	0.60	No close library match.			
46	1469.35	1479.35		19	12	7	1474.35	4.00	4.15	Ag-110M	1475.76	1061529.63	619225.62
47	1492.35	1513.85		25	10	14	1499.10	12.38	12.60	Ag-110M	1505.00	273770.05	383278.07
48	1514.85	1541.60		35	-37	34	1539.35	0.25	0.40	U-238	1553.74	0.00	1552526417.93
49	1550.10	1557.35		8	3	4	Could not properly fit the peak.						
50	1558.60	1575.60		16	4	11	1561.60	8.00	8.15	Ag-110M	1562.27	1252387.39	3444065.32
51	1584.35	1591.85		10	-11	8	Could not properly fit the peak.						
52	1592.60	1600.85		9	3	5	1593.85	0.25	0.40	Th-232	1588.23	350343.79	583906.31
53	1610.10	1624.10		7	-12	12	Could not properly fit the peak.						
54	1626.85	1634.10		5	0	4	Could not properly fit the peak.						
55	1638.85	1646.10		6	6	2	1643.85	0.25	0.40	Th-232	1630.40	1528490.53	509496.84
56	1657.60	1672.10		22	12	9	1663.35	5.75	5.90	No close library match.			
57	1674.35	1681.60		5	-5	5	Could not properly fit the peak.						
58	1687.35	1697.60		9	-5	8	Could not properly fit the peak.						
59	1702.85	1710.10		7	7	2	Could not properly fit the peak.						
60	1718.60	1733.35		12	-18	15	1731.85	0.25	0.40	U-238	1737.90	0.00	287662174.71
61	1734.10	1745.10		8	0	7	Could not properly fit the peak.						
62	1760.85	1775.34		42	22	14	1765.34	0.29	0.47	U-238	1765.80	1193261794.87	759348414.92

Detector #1] 28-Jan-2002 at 11:06:06 RT = 5.0 LT = 4.1
digiDART USE 1b
SC8

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	5575	2871	540	104.05	0.35	1.14	Gd-153	103.20	2035	458.48
2	174.34	188.10	416	-41	61	178.34	0.25	0.40	No close library match.			
3	190.35	306.93	2802	-311	488	204.11	65.32	65.49	Pu-239	203.52	0.00	16146856709.16
4	309.69	358.22	952	-121	183	330.57	7.03	7.20	Pu-239	332.80	0.00	9317512933.43
5	359.97	377.23	304	24	54	368.22	0.25	0.40	Am-241	368.68	1423	512258.52
6	378.23	454.53	1191	69	237	450.77	0.27	0.43	Pu-239	451.45	1250	4900805.64
7	456.28	465.78	133	9	26	463.78	0.25	0.40	Th-232	463.00	71963.14	207893.53
8	471.79	501.05	462	-89	100	495.05	0.28	0.45	No close library match.			
9	503.55	516.81	210	-6	41	513.01	0.31	0.56	Th-232	510.69	0.00	204708.53
10	518.06	533.32	214	-55	49	529.32	0.25	0.40	J-133	529.50	0.00	22088.19
11	534.82	579.34	574	7	127	568.84	0.28	0.44	U-238	569.30	1790	9327.26
12	580.59	588.35	93	2	19	583.60	2.25	2.40	Th-232	583.17	2984.68	28354.48
13	589.10	597.85	119	-7	24	594.85	0.28	0.44	No close library match.			
14	598.35	612.86	212	64	36	609.94	0.88	1.55	Ra-226	609.30	61728.94	34722.53
15	613.36	682.65	802	-310	223	661.76	0.44	0.63	Cs-137	661.60	0.00	125723.77
16	683.15	759.43	837	-132	219	701.78	0.44	0.63	Ag-110M	706.67	0.00	660342.48
17	760.68	788.94	335	-83	86	769.25	0.89	1.48	Ra-226	768.40	0.00	938389.91
18	790.19	839.71	563	-333	168	803.98	0.43	1.00	Ra-226	806.10	0.00	7416160.06
19	842.71	863.47	201	-23	53	857.72	0.25	0.40	J-133	856.10	0.00	2574243.47
20	864.22	892.23	300	-114	85	870.47	0.25	0.40	J-133	875.30	0.00	1132893.20
21	895.23	907.24	149	-39	36	896.48	0.79	1.00	U-238	898.67	0.00	429448085.29
22	908.24	913.99	67	3	13	909.24	0.25	0.40	Th-232	911.10	7298.60	31627.25
23	915.99	929.49	129	37	28	922.20	5.32	5.58	U-238	921.70	1848	39669.74
24	931.24	940.50	102	13	22	934.33	5.54	5.82	Ra-226	934.10	261334.37	442258.16
25	943.00	992.26	502	7	125	946.86	36.78	36.92	U-238	945.90	1468	4886.42
26	993.01	1012.77	174	67	37	1001.96	1.66	2.64	U-238	1001.03	5448	059.65
27	1016.52	1027.27	78	34	17	1017.52	0.31	0.50	Sr-91	1024.30	71523.18	35761.59
28	1028.78	1051.03	201	-54	59	1030.03	0.25	0.40	Sr-91	1024.30	0.00	124113.75
29	1060.53	1066.79	49	-3	13	1061.78	3.25	3.40	No close library match.			
30	1069.54	1079.79	82	-23	24	1071.54	2.75	2.90	No close library match.			
31	1082.79	1092.79	85	-31	25	1087.54	1.75	1.90	No close library match.			
32	1096.04	1158.31	480	-187	164	1121.24	0.75	1.53	Ra-226	1120.00	0.00	793242.23
33	1164.81	1182.81	552	418	43	1174.27	1.89	2.88	Co-60	1173.23	326636.01	33601.31
34	1185.81	1203.07	75	-7	29	1190.06	7.50	7.65	U-238	1193.77	0.00	171424972.02
35	1209.57	1241.57	136	93	31	1239.51	0.52	1.03	J-133	1237.50	4824	645.35
36	1244.82	1253.83	25	19	7	1247.83	0.25	0.40	J-133	1237.50	985680.23	363145.35
37	1254.33	1263.58	23	-15	13	1255.58	0.25	0.40	No close library match.			
38	1268.58	1302.58	127	36	45	1282.72	17.05	17.57	Th-232	1282.70	3034	002.78
39	1308.83	1335.84	470	306	55	1333.68	1.37	2.35	Co-60	1332.51	266571.23	47913.13
40	1340.34	1346.84	16	-2	7	Could not properly fit the peak.						
41	1349.59	1356.34	17	-2	8	Could not properly fit the peak.						
42	1356.84	1387.59	100	59	29	1378.12	0.81	1.93	Ag-110M	1384.27	218102.95	107203.14

43	1390.09	14	0	83	39	25	1402.65	0.37	0.88	U-238	1393.60954	733.10611	742777.63
44	1430.85	1446.10		35	14	14	1432.10	8.63	8.85	U-238	1434.30134	243742.57	134243742.57
45	1449.10	1464.10		35	-6	19	1450.10	11.38	11.60	No close library match.			
46	1469.35	1479.35		27	-21	16	Could not properly fit the peak.						
47	1492.35	1513.85		62	-40	36	1512.10	0.25	0.40	U-238	1510.30	0.00271	497933.32
48	1514.85	1541.60		50	32	18	1528.10	11.81	12.05	No close library match.			
49	1550.10	1557.35		16	1	7	1551.60	0.25	0.40	U-238	1553.74	12310979.38	86176855.67
50	1558.60	1575.60		18	18	4	1559.85	11.75	11.90	Ag-110M	1562.27	1519440.58	337653.46
51	1584.35	1591.85		15	-1	8	1589.48	0.59	0.84	Th-232	1588.23	0.00251	881.15
52	1592.60	1600.85		18	1	8	1594.35	0.25	0.40	Th-232	1588.23	31485.14	251881.15
53	1610.10	1624.10		18	-1	12	1611.10	10.00	10.15	No close library match.			
54	1626.85	1634.10		10	-5	7	Could not properly fit the peak.						
55	1638.85	1646.10		8	8	2	1645.10	0.37	0.60	Th-232	1630.40	549457.38	137364.34
56	1657.60	1672.10		28	18	10	1662.10	6.87	7.10	No close library match.			
57	1674.35	1681.60		5	5	2	Could not properly fit the peak.						
58	1687.35	1697.60		9	2	6	Could not properly fit the peak.						
59	1702.85	1710.10		8	3	4	Could not properly fit the peak.						
60	1718.60	1733.35		36	26	10	1731.10	0.27	0.43	U-238	1737.90	134430362.69	51703985.65
61	1734.10	1745.10		9	9	3	1742.60	2.00	2.15	U-238	1737.90	46533587.08	15511195.69
62	1760.85	1775.34		131	121	14	1766.01	1.53	2.92	U-238	1765.80	1769420063.47	204726288.34

005 SC9 1-28-2002 11.20.47 AM

Sample description
SC9

Spectrum Filename: C:\GammaVision\005 SC9 1-28-2002 11.20.47 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:20:46
Live time:	4
Real time:	5
Dead time:	15.60 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	005SC9~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.1292

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
346.23	86.68	59.	12.	2.738	98.17	0.727	-	D
352.10	88.15	59.	12.	2.946	92.06	0.728	-	D
440.57	110.19	77.	21.	4.976	73.64	0.632	-	s
517.45	129.42	42.	20.	4.739	50.99	0.577	-	s
540.57	135.20	42.	19.	4.502	55.20	0.273	-	s
738.32	184.68	48.	20.	4.739	59.16	0.313	-	s
897.71	224.55	30.	17.	4.028	56.42	0.525	-	s
916.95	229.33	48.	18.	4.222	59.98	0.856	-	D
923.23	230.90	69.	20.	4.758	62.59	0.858	-	D
969.00	242.39	39.	14.	3.397	71.34	0.700	-	s
1057.74	264.59	61.	30.	7.188	50.27	0.371	-	s
1283.69	321.11	20.	16.	3.791	49.48	0.469	-	s
1312.72	328.38	24.	13.	3.081	65.72	0.528	-	s
1361.83	340.66	30.	16.	3.791	59.62	0.525	-	s
1824.35	456.36	22.	18.	4.344	47.59	0.568	-	s
1916.64	479.45	13.	12.	2.883	51.96	0.403	-	s
2016.79	504.50	20.	13.	3.081	65.72	0.493	-	s
2043.87	511.28	50.	63.	14.929	28.45	0.563	-	s
2157.49	539.70	22.	25.	6.043	40.04	0.453	-	s
2232.70	558.51	7.	10.	2.370	50.17	0.725	-	s
2625.79	656.83	10.	22.	5.213	32.78	0.875	-	sM
3152.08	788.46	2.	16.	3.791	29.32	0.585	-	s
3562.84	891.19	4.	13.	3.081	38.46	0.616	-	s

ORTEC g v - i (63) wan32 G53w2.01 13-FEB-2002 15:00:24 Page 3
ORTEC Spectrum name: 005 SC9 1-28-2002 11.20.47 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
3844.93	961.74	5.	14.	3.397	38.14	0.431	-	s
4163.14	1041.31	8.	23.	5.371	35.77	0.583	-	s
5777.83	1445.06	0.	11.	2.607	30.15	0.313	-	s
7061.15	1765.88	0.	137.	32.464	8.54	0.787	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.
M - Peak is close to a library peak.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	125.89	31.45	24.	26.	6.280	44.13	0.445s
CS-137	128.47	32.10	69.	0.	0.000	0.00	0.676
CS-137	146.67	36.65	21.	1.	0.158	601.85	0.262s
CS-137	2646.93	662.12	36.	658.	155.924	4.40	1.436s

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Code	MDA Value Becquerels	Comments
CS-137		3.5802E+05	661.62	3.587E+05	(	4.906E+03	G
			32.19	0.000E+00	%	7.826E+04	G
			31.82	3.291E+05	(	9.337E+04	G
			36.40	0.000E+00	%	1.478E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes: Peak Codes:

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:00:24 Page 4
ORTEC Spectrum name: 005 SC9 1-28-2002 11.20.47 AM.An

T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

005 SC9 1-28-2002 11.20.47 AM

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	3.5802E+05	4.399E+00%	4.772E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 3.5801600E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

Detector #1 A 28-Jan-2002 at 11:20:46 RT = 5.0 LT = 4.2
digiDART USE 1b
SC9

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	5024	1887	581	86.53	0.32	0.60	Np-237	86.49	2167429.08	667343.03
2	174.34	188.10	404	105	50	184.79	0.30	0.59	U-235	185.71	31478.58	14989.80
3	190.35	306.93	2608	-116	457	230.91	0.30	0.50	Ce-143	231.50	0.00	4397559.30
4	309.69	358.22	914	4	169	318.44	0.25	0.40	Nd-147	319.40	44083.54	1862529.47
5	359.97	377.23	282	-45	58	371.76	0.33	0.57	Pa-234	372.20	0.00	1073867.46
6	378.23	454.53	1313	242	231	385.23	0.27	0.43	Ba-133	383.70	793757.57	757677.68
7	456.28	465.78	161	-41	32	458.78	2.81	3.05	Pa-234	458.60	0.00	719776.56
8	471.79	501.05	404	11	85	476.07	19.25	19.41	Cs-134	475.35	262083.34	2025189.45
9	503.55	516.81	210	93	32	510.67	0.61	2.06	Th-232	510.69	448934.25	154472.00
10	518.06	533.32	172	-14	41	520.06	0.28	0.45	Pa-234	520.60	0.00	1284238.70
11	534.82	579.34	456	38	109	550.05	0.33	0.84	W-187	551.52	275296.19	789665.39
12	580.59	588.35	70	17	15	582.85	0.25	0.40	Tl-208	583.14	8185.20	7222.23
13	589.10	597.85	94	-2	21	590.60	6.13	6.35	Eu-154	591.70	0.00	191401.24
14	598.35	612.86	173	55	33	609.50	0.66	2.41	Bi-214	609.32	51300.97	30780.58
15	613.36	682.65	1259	564	179	662.13	1.30	1.93	Cs-137	661.60	307425.13	97569.32
16	683.15	759.43	522	-39	167	702.36	0.36	0.60	Nb-94	702.50	0.00	81085.66
17	760.68	788.94	178	-69	66	769.43	0.28	0.45	Ra-226	768.40	0.00	696268.14
18	790.19	839.71	311	-21	103	805.20	0.33	0.95	Pa-234	805.50	0.00	1704014.87
19	842.71	863.47	123	11	38	848.22	9.00	9.30	J-134	847.03	6531.42	22563.09
20	864.22	892.23	150	-38	57	891.12	0.54	0.82	Sc-46	889.26	0.00	33883.91
21	895.23	907.24	61	-21	23	899.23	5.13	5.35	U-238	898.67	0.00	265267300.71
22	908.24	913.99	31	-5	10	911.74	0.25	0.40	Th-232	911.10	0.00	23521.54
23	915.99	929.49	69	-50	30	927.49	0.25	0.40	Pa-234	926.70	0.00	167938.74
24	931.24	940.50	73	48	13	935.13	0.93	1.21	Ra-226	934.10	932915.10	252664.51
25	943.00	992.26	249	84	73	986.26	0.28	1.45	Kr-88	985.78	4101393.35	3564306.13
26	993.01	1012.77	93	-14	36	994.51	10.00	10.15	U-238	996.10	0.00	575325814.38
27	1016.52	1027.27	45	-21	19	1017.27	2.50	2.65	Rh-106M1	1019.60	0.00	826937.47
28	1028.78	1051.03	95	35	29	1033.78	16.22	16.39	Sb-126	1034.80	2154357.68	1785039.22
29	1060.53	1066.79	20	3	7	1064.78	0.25	0.40	Bi-207	1063.62	2701.13	6302.64
30	1069.54	1079.79	31	10	11	1071.29	2.75	2.90	J-134	1072.53	48831.45	53714.59
31	1082.79	1092.79	31	24	8	1084.29	0.31	1.55	Eu-152	1085.90	169218.40	56406.13
32	1096.04	1158.31	326	34	109	1121.32	1.59	2.35	Ta-182	1121.28	70482.26	225957.83
33	1164.81	1182.81	54	30	17	1170.31	0.25	0.40	Cs-134	1167.86	1252441.80	709717.02
34	1185.81	1203.07	67	-26	31	1186.56	15.50	15.65	Ta-182	1189.05	0.00	143826.91
35	1209.57	1241.57	139	53	42	1238.59	0.33	1.72	Co-56	1238.28	61969.23	49107.69
36	1244.82	1253.83	29	-20	15	1246.32	0.25	0.40	Rb-89	1248.10	0.00	27760.72
37	1254.33	1263.58	19	-6	11	1262.08	0.25	0.40	J-135	1260.41	0.00	30868.41
38	1268.58	1302.58	99	8	44	1283.10	0.73	0.89	Th-232	1282.70	651855.26	3585203.91
39	1308.83	1335.84	67	31	25	1324.34	8.81	9.30	Kr-89	1324.28	831681.15	670710.60
40	1340.34	1346.84	21	-2	8	Could not properly fit the peak.						
41	1349.59	1356.34	11	6	4	1352.09	0.50	0.80	U-238	1352.90	232691341.76	155127561.17
42	1356.84	1387.59	105	-19	49	1378.62	0.43	1.04	Bi-214	1377.65	0.00	1056395.49

43	1390.09	141	71	42	20	1399.85	10.50	11.48	J-132	1398.57	519	75247335.60	
44	1430.85	1446.10	40	-12	21	1444.85	0.31	0.88	J-132	1442.56	0.001333758.30		
45	1449.10	1464.10	30	10	14	1458.10	0.31	0.80	J-135	1457.56	105358.48147501.88		
46	1469.35	1479.35	13	6	6	1472.10	5.38	5.60	Kr-89	1472.76	78477.4078477.40		
47	1492.35	1513.85	66	-7	31	1505.60	6.50	6.65	Ag-110M	1505.00	0.00221221.77		
48	1514.85	1541.60	75	-69	48	1521.85	11.88	12.10	K-42	1524.70	0.00253714.78		
49	1550.10	1557.35	14	4	6	1551.35	2.63	2.85	U-238	1553.74	47610233.06	71415349.58	
50	1558.60	1575.60	38	-54	30	Could not properly fit the peak.							
51	1584.35	1591.85	14	4	6	1586.85	3.12	3.35	Ac-228	1587.90	105604.68158407.02		
52	1592.60	1600.85	14	8	5	1595.85	4.37	4.60	La-140	1596.20	8249.275155.79		
53	1610.10	1624.10	27	17	9	1611.60	12.00	12.15	J-134	1613.70	422360.72223602.73		
54	1626.85	1634.10	7	2	4	Could not properly fit the peak.							
55	1638.85	1646.10	10	-5	7	Could not properly fit the peak.							
56	1657.60	1672.10	20	0	13	1663.35	3.12	3.35	Bi-214	1661.28	0.001152061.88		
57	1674.35	1681.60	5	0	4	1675.35	0.25	0.40	J-135	1678.03	0.0043176.49		
58	1687.35	1697.60	16	2	9	1688.85	5.37	5.60	Sb-124	1691.04	4139.7518628.89		
59	1702.85	1710.10	8	-2	6	Could not properly fit the peak.							
60	1718.60	1733.35	40	20	14	1731.57	0.43	0.75	Bi-214	1729.60	692726.90484908.83		
61	1734.10	1745.10	7	7	2	1734.85	9.50	9.65	U-238	1737.90	34992081.28	9997737.51	
62	1760.85	1775.34	142	122	17	1766.05	1.71	2.76	U-238	1765.80	1724857096.85	240348939.73	
63	1787.34	1795.09	3	3	1	Could not properly fit the peak.							
64	1803.09	1815.09	7	-9	10	1806.59	0.25	0.40	J-134	1806.90	0.00195743.99		
65	1827.84	1842.09	9	-1	9	1839.34	0.25	0.40	Rh-106M	1838.20	0.00417234.92		
66	1843.59	1854.58	21	21	4	1849.30	1.28	1.54	Xe-138	1850.86	1650615.90	314403.03	
67	1863.58	1878.58	13	3	9	Could not properly fit the peak.							
68	1899.58	1915.07	11	-10	13	1908.33	5.50	5.65	U-238	1911.20	0.00245271416.07		
69	1917.07	1925.07	4	4	2	Could not properly fit the peak.							
70	1998.31	2019.80	8	8	2	Could not properly fit the peak.							
71	2025.80	2039.30	3	-15	11	Could not properly fit the peak.							

Detector #1 Q 28-Jan-2002 at 10:01:54 RT = 5.0 LT = 4.4
digiDART USE 1b
5BKG

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	4053	2430	419	11.69	71.27	74.13	Se-75	11.70	27449019.7	74732979.13
2	174.34	188.10	302	31	47	175.34	0.28	0.44	Sb-125	176.29	79514.38	120554.05
3	190.35	306.93	1887	-59	386	195.31	0.32	0.82	Np-237	194.97	0.003	1058975.84
4	309.69	358.22	668	18	143	330.70	0.25	0.40	Pa-231	330.10	308822.8	52453426.00
5	359.97	377.23	210	-58	52	365.97	0.25	0.40	Mo-99	366.44	0.001	133247.60
6	378.23	454.53	853	37	202	386.03	17.50	17.66	U-235	387.82	27448489.0	8149853913.34
7	456.28	465.78	97	32	19	464.12	0.62	1.32	Sb-125	463.51	104969.5	362325.66
8	471.79	501.05	327	-86	87	498.28	0.75	0.99	Kr-89	498.60	0.002	611200.01
9	503.55	516.81	177	15	36	510.86	5.70	5.88	Na-22	511.00	2957.22	7097.34
10	518.06	533.32	163	-13	40	530.32	0.33	0.85	Nd-147	531.00	0.00	109126.95
11	534.82	579.34	401	282	61	543.58	26.56	27.18	U-238	543.98	2945084	777.47
12	580.59	588.35	62	9	15	582.85	0.25	0.40	Tl-208	583.14	4175.0	46958.41
13	589.10	597.85	80	-4	20	592.60	3.75	3.90	Sb-126	593.00	0.009	1977.79
14	598.35	612.86	192	35	37	609.69	1.21	1.72	Bi-214	609.32	31453.5	233250.87
15	613.36	682.65	538	167	130	661.93	1.45	2.37	Cs-137	661.60	87703.1	368271.89
16	683.15	759.43	525	-393	213	690.15	0.25	0.40	U-238	691.30	0.00	126001508.37
17	760.68	788.94	203	127	38	769.15	0.33	1.43	Ra-226	768.40	1290846.6	5386237.58
18	790.19	839.71	305	-93	112	834.75	0.40	1.09	Mn-54	834.81	0.006	0760.44
19	842.71	863.47	118	-22	42	843.46	18.26	18.41	Kr-87	845.60	0.003	17691.77
20	864.22	892.23	154	79	37	865.45	25.08	25.34	Kr-89	867.08	732768.2	1343195.24
21	895.23	907.24	73	-17	25	898.35	0.53	0.79	Pa-234	898.60	0.003	61117.48
22	908.24	913.99	51	11	11	911.60	0.46	0.64	Th-232	911.10	24928.5	424928.54
23	915.99	929.49	70	-13	25	923.74	0.25	0.40	Pa-234	924.60	0.005	28683.49
24	931.24	940.50	66	22	16	934.00	0.25	0.40	Bi-214	934.05	415201.4	9301964.72
25	943.00	992.26	243	-21	91	954.79	10.50	10.65	J-132	954.55	0.003	05970.33
26	993.01	1012.77	109	-24	40	998.52	0.33	0.60	Te-131	997.25	0.007	56342.13
27	1016.52	1027.27	47	10	15	1020.27	5.75	5.90	Rh-106M	1019.60	419331.4	2628997.14
28	1028.78	1051.03	110	-25	43	1032.78	4.06	4.80	Rb-89	1031.88	0.004	7428.64
29	1060.53	1066.79	22	13	6	1063.03	0.31	0.55	Bi-207	1063.62	11277.3	35204.92
30	1069.54	1079.79	58	23	15	1072.65	1.59	2.32	J-134	1072.53	108209.6	070571.48
31	1082.79	1092.79	42	-13	17	Could not properly fit the peak.						
32	1096.04	1158.31	313	-20	116	1121.05	0.47	1.81	Ta-182	1121.28	0.002	31684.63
33	1164.81	1182.81	73	0	28	1174.31	0.29	0.50	Co-56	1175.13	0.008	93911.85
34	1185.81	1203.07	55	8	22	1190.56	10.06	10.55	Ta-182	1189.05	35760.7	698342.10
35	1209.57	1241.57	146	81	37	1239.21	1.47	1.70	Co-56	1238.28	91248.0	541681.21
36	1244.82	1253.83	29	4	11	1250.33	2.88	3.10	Kr-88	1250.67	270934.6	0745070.16
37	1254.33	1263.58	27	21	7	1261.08	0.29	0.50	J-135	1260.41	56777.8	918925.96
38	1268.58	1302.58	107	-7	49	1278.08	20.75	20.90	Bi-214	1280.96	0.002	606688.02
39	1308.83	1335.84	67	-6	35	1327.84	6.25	6.40	Sb-124	1325.53	0.001	909970.74
40	1340.34	1346.84	18	4	7	1344.34	1.38	1.60	Cs-138	1343.59	285714.5	7500000.49
41	1349.59	1356.34	28	0	10	1355.59	0.25	0.40	Pa-234	1353.00	0.004	83580.51
42	1356.84	1387.59	110	-35	53	1378.46	1.22	1.68	Bi-214	1377.65	0.001	100891.88

43	1390.09	14	0	80	65	16	1409.48	0.65	1.00	Eu-152	1408.08	26(		'.8964191.48
44	1430.85	1446.10		40	9	17	1440.85	0.31	1.13	J-132	1442.56	550729.941040267.67		
45	1449.10	1464.10		42	-19	23	1451.35	4.00	4.15	Pa-234	1452.60	0.001675469.97		
46	1469.35	1479.35		16	2	9	1475.10	2.75	2.90	Br-82	1474.86	10671.6448022.39		
47	1492.35	1513.85		59	30	20	1510.55	1.36	2.98	U-238	1510.30210751820.38140501213.59			
48	1514.85	1541.60		59	-31	38	1524.35	15.38	15.60	K-42	1524.70	0.00193520.27		
49	1550.10	1557.35		27	2	10	1556.60	0.38	0.60	U-238	1553.7422935523.23114677616.15			
50	1558.60	1575.60		28	-30	23	1568.60	0.25	0.40	J-135	1566.41	0.001667606.58		
51	1584.35	1591.85		13	-8	8	Could not properly fit the peak.							
52	1592.60	1600.85		20	-8	11	Could not properly fit the peak.							
53	1610.10	1624.10		16	-13	15	1615.35	0.37	0.60	J-134	1613.70	0.00359057.66		
54	1626.85	1634.10		6	1	4	1630.85	0.37	0.60	Ac-228	1630.40	49567.29198269.16		
55	1638.85	1646.10		6	-4	6	1640.85	0.25	0.40	Cl-38	1642.40	0.0017784.60		
56	1657.60	1672.10		30	10	13	1663.10	0.31	0.55	Bi-214	1661.28	853828.791109977.43		
57	1674.35	1681.60		7	-8	7	Could not properly fit the peak.							
58	1687.35	1697.60		15	15	3	1694.35	0.29	0.50	Pa-234	1694.001152282.83230456.57			
59	1702.85	1710.10		10	10	3	1706.10	2.37	2.60	J-135	1706.46	245723.8073717.14		
60	1718.60	1733.35		36	26	10	1730.85	0.63	0.90	Bi-214	1729.60	867648.35333710.90		
61	1734.10	1745.10		13	13	3	1735.35	0.37	0.60	U-238	1737.9062611401.8014448785.03			
62	1760.85	1775.34		118	108	13	1765.75	2.64	3.78	U-238	1765.801471144678.61177082229.83			

Detector #1 @ 28-Jan-2002 at 10:01:54 RT = 5.0 LT = 4.4
digiDART USE 1b
5BKG

ROI#	RANGE(keV)		GROSS	NET	+/-	CENTROID	FWHM	FW(1/5)M	LIBRARY (keV)		Bq	+/-
1	5.71	167.84	4053	2430	419	11.69	71.27	74.13	Se-75	11.70	27449019.77	4732979.13
2	174.34	188.10	302	31	47	175.34	0.28	0.44	Sb-125	176.29	79514.38	120554.05
3	190.35	306.93	1887	-59	386	195.31	0.32	0.82	Np-237	194.97	0.003	1058975.84
4	309.69	358.22	668	18	143	330.70	0.25	0.40	Pa-231	330.10	308822.85	2453426.00
5	359.97	377.23	210	-58	52	365.97	0.25	0.40	Mo-99	366.44	0.00	1133247.60
6	378.23	454.53	853	37	202	386.03	17.50	17.66	U-235	387.82	27448489.08	149853913.34
7	456.28	465.78	97	32	19	464.12	0.62	1.32	Sb-125	463.51	104969.53	62325.66
8	471.79	501.05	327	-86	87	498.28	0.75	0.99	Kr-89	498.60	0.00	2611200.01
9	503.55	516.81	177	15	36	510.86	5.70	5.88	Na-22	511.00	2957.22	7097.34
10	518.06	533.32	163	-13	40	530.32	0.33	0.85	Nd-147	531.00	0.00	109126.95
11	534.82	579.34	401	282	61	543.58	26.56	27.18	U-238	543.98	2945084777.47	637057345.48
12	580.59	588.35	62	9	15	582.85	0.25	0.40	Tl-208	583.14	4175.04	6958.41
13	589.10	597.85	80	-4	20	592.60	3.75	3.90	Sb-126	593.00	0.00	91977.79
14	598.35	612.86	192	35	37	609.69	1.21	1.72	Bi-214	609.32	31453.52	33250.87
15	613.36	682.65	538	167	130	661.93	1.45	2.37	Cs-137	661.60	87703.13	68271.89
16	683.15	759.43	525	-393	213	690.15	0.25	0.40	U-238	691.30	0.00	126001508.37
17	760.68	788.94	203	127	38	769.15	0.33	1.43	Ra-226	768.40	1290846.65	386237.58
18	790.19	839.71	305	-93	112	834.75	0.40	1.09	Mn-54	834.81	0.00	60760.44
19	842.71	863.47	118	-22	42	843.46	18.26	18.41	Kr-87	845.60	0.00	317691.77
20	864.22	892.23	154	79	37	865.45	25.08	25.34	Kr-89	867.08	732768.21	343195.24
21	895.23	907.24	73	-17	25	898.35	0.53	0.79	Pa-234	898.60	0.00	361117.48
22	908.24	913.99	51	11	11	911.60	0.46	0.64	Th-232	911.10	24928.54	24928.54
23	915.99	929.49	70	-13	25	923.74	0.25	0.40	Pa-234	924.60	0.00	528683.49
24	931.24	940.50	66	22	16	934.00	0.25	0.40	Bi-214	934.05	415201.49	301964.72
25	943.00	992.26	243	-21	91	954.79	10.50	10.65	J-132	954.55	0.00	305970.33
26	993.01	1012.77	109	-24	40	998.52	0.33	0.60	Te-131	997.25	0.00	756342.13
27	1016.52	1027.27	47	10	15	1020.27	5.75	5.90	Rh-106M	1019.60	419331.42	628997.14
28	1028.78	1051.03	110	-25	43	1032.78	4.06	4.80	Rb-89	1031.88	0.00	47428.64
29	1060.53	1066.79	22	13	6	1063.03	0.31	0.55	Bi-207	1063.62	11277.33	5204.92
30	1069.54	1079.79	58	23	15	1072.65	1.59	2.32	J-134	1072.53	108209.60	70571.48
31	1082.79	1092.79	42	-13	17	Could not properly fit the peak.						
32	1096.04	1158.31	313	-20	116	1121.05	0.47	1.81	Ta-182	1121.28	0.00	231684.63
33	1164.81	1182.81	73	0	28	1174.31	0.29	0.50	Co-56	1175.13	0.00	893911.85
34	1185.81	1203.07	55	8	22	1190.56	10.06	10.55	Ta-182	1189.05	35760.76	98342.10
35	1209.57	1241.57	146	81	37	1239.21	1.47	1.70	Co-56	1238.28	91248.05	41681.21
36	1244.82	1253.83	29	4	11	1250.33	2.88	3.10	Kr-88	1250.67	270934.60	745070.16
37	1254.33	1263.58	27	21	7	1261.08	0.29	0.50	J-135	1260.41	56777.89	18925.96
38	1268.58	1302.58	107	-7	49	1278.08	20.75	20.90	Bi-214	1280.96	0.00	2606688.02
39	1308.83	1335.84	67	-6	35	1327.84	6.25	6.40	Sb-124	1325.53	0.00	1909970.74
40	1340.34	1346.84	18	4	7	1344.34	1.38	1.60	Cs-138	1343.59	285714.57	500000.49
41	1349.59	1356.34	28	0	10	1355.59	0.25	0.40	Pa-234	1353.00	0.00	483580.51
42	1356.84	1387.59	110	-35	53	1378.46	1.22	1.68	Bi-214	1377.65	0.00	1100891.88

43	1390.09	14	0	80	65	16	1409.48	0.65	1.00	Eu-152	1408.08	26(	.8964191.48
44	1430.85	1446.10		40	9	17	1440.85	0.31	1.13	J-132	1442.56	550729.941040267.67	
45	1449.10	1464.10		42	-19	23	1451.35	4.00	4.15	Pa-234	1452.60	0.001675469.97	
46	1469.35	1479.35		16	2	9	1475.10	2.75	2.90	Br-82	1474.88	10671.6448022.39	
47	1492.35	1513.85		59	30	20	1510.55	1.36	2.98	U-238	1510.30210751820.38140501213.59		
48	1514.85	1541.60		59	-31	38	1524.35	15.38	15.60	K-42	1524.70	0.00193520.27	
49	1550.10	1557.35		27	2	10	1556.60	0.38	0.60	U-238	1553.7422935523.23114677616.15		
50	1558.60	1575.60		28	-30	23	1568.60	0.25	0.40	J-135	1566.41	0.001667606.58	
51	1584.35	1591.85		13	-8	8	Could not properly fit the peak.						
52	1592.60	1600.85		20	-8	11	Could not properly fit the peak.						
53	1610.10	1624.10		16	-13	15	1615.35	0.37	0.60	J-134	1613.70	0.00359057.66	
54	1626.85	1634.10		6	1	4	1630.85	0.37	0.60	Ac-228	1630.40	49567.29198269.16	
55	1638.85	1646.10		6	-4	6	1640.85	0.25	0.40	Cl-38	1642.40	0.0017784.60	
56	1657.60	1672.10		30	10	13	1663.10	0.31	0.55	Bi-214	1661.28	853828.791109977.43	
57	1674.35	1681.60		7	-8	7	Could not properly fit the peak.						
58	1687.35	1697.60		15	15	3	1694.35	0.29	0.50	Pa-234	1694.001152282.83230456.57		
59	1702.85	1710.10		10	10	3	1706.10	2.37	2.60	J-135	1706.46	245723.8073717.14	
60	1718.60	1733.35		36	26	10	1730.85	0.63	0.90	Bi-214	1729.60	867648.35333710.90	
61	1734.10	1745.10		13	13	3	1735.35	0.37	0.60	U-238	1737.9062611401.8014448785.03		
62	1760.85	1775.34		118	108	13	1765.75	2.64	3.78	U-238	1765.801471144678.61177082229.83		

007 SC11 1-28-2002 11.39.10 AM

Sample description
SC11

Spectrum Filename: C:\GammaVision\007 SC11 1-28-2002 11.39.10 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:39:10
Live time:	4
Real time:	5
Dead time:	14.80 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	007SC1~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

007 SC11 1-28-2002 11.39.10 AM

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.4090

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.63	6.87	25.	36.	8.451	28.15	0.433	-	s
152.41	38.09	43.	15.	3.443	77.81	0.643	-	s
217.03	54.26	60.	26.	6.103	55.20	0.661	-	s
265.92	66.49	38.	13.	3.052	72.57	0.437	-	s
330.58	82.67	42.	15.	3.521	66.33	0.407	-	s
359.25	89.84	43.	12.	2.817	82.50	0.322	-	s
487.47	121.92	67.	22.	5.243	63.34	0.462	-	s
499.79	125.06	41.	25.	5.895	41.17	0.762	-	D
510.28	127.69	66.	16.	3.841	74.26	0.764	-	D
668.42	167.19	30.	14.	3.208	65.20	0.314	-	s
713.97	178.59	32.	13.	3.052	67.50	0.301	-	s
828.03	207.12	30.	17.	3.912	54.46	0.363	-	s
901.10	225.40	36.	20.	4.695	52.44	0.534	-	s
1349.36	337.54	17.	9.	2.191	67.67	0.255	-	s
1393.61	348.61	22.	25.	5.869	38.16	0.339	-	s
1458.21	364.77	17.	12.	2.817	56.52	0.316	-	s
1655.87	414.22	16.	10.	2.269	69.44	0.460	-	s
1676.50	419.38	20.	25.	5.869	35.40	0.876	-	s
2028.30	507.38	25.	22.	5.282	48.74	0.419	-	s
2277.92	569.82	10.	6.	1.526	83.21	0.256	-	s
2457.04	614.62	8.	12.	2.934	44.72	0.305	-	s
2811.28	703.22	5.	12.	2.817	41.94	0.430	-	s
3384.62	846.62	4.	12.	2.895	38.65	0.344	-	s

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:18:52 Page 3
ORTEC Spectrum name: 007 SC11 1-28-2002 11.39.10 AM.A

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
3624.92	906.72	5.	19.	4.460	31.80	0.515	-	s
3703.62	926.40	6.	20.	4.695	33.17	0.639	-	s
4483.39	1121.40	4.	113.	26.487	10.27	1.085	-	s
4872.27	1218.64	1.	9.	2.034	39.60	0.356	-	s

007 SC11 1-28-2002 11.39.10 AM

5098.00	1275.08	0.	7.	1.643	37.80	0.625	-	s
5546.76	1387.29	0.	20.	4.695	22.36	0.552	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	127.71	31.91	31.	8.	1.761	116.05	0.247s
CS-137	128.75	32.17	39.	0.	0.000	0.00	0.676
CS-137	146.44	36.60	37.	0.	0.000	0.00	0.680
CS-137	2646.94	662.12	37.	554.	130.125	4.74	1.278

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Code	MDA Value Becquerels	Comments
CS-137		2.9933E+05	661.62	2.993E+05	(	4.902E+03	G
			32.19	0.000E+00	%	5.911E+04	G
			31.82	0.000E+00	%	1.150E+05	G
			36.40	0.000E+00	%	1.861E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

0

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:18:52 Page 4
ORTEC Spectrum name: 007 SC11 1-28-2002 11.39.10 AM.A

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

007 SC11 1-28-2002 11.39.10 AM

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	2.9933E+05	4.745E+00%	5.092E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

S U M M A R Y

Total Activity (2.5 to 2000.6 keV) 2.9932656E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

006 SC10 1-28-2002 11.30.40 AM

Sample description
SC10

Spectrum Filename: C:\GammaVision\006 SC10 1-28-2002 11.30.40 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:30:41
Live time:	4
Real time:	5
Dead time:	23.20 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	006SC1~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

0

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.4671

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
26.68	6.63	26.	23.	6.076	38.08	0.359	-	s
45.40	11.32	110.	47.	12.240	58.73	0.544	-	s
92.81	23.18	55.	16.	4.210	71.86	0.490	-	s
105.66	26.39	66.	29.	7.552	48.03	0.577	-	
401.06	100.30	32.	26.	6.901	44.69	0.719	-	s
423.03	105.80	94.	26.	6.901	61.17	0.646	-	s
444.04	111.09	116.	27.	7.005	59.84	0.749	-	D
448.75	112.26	87.	28.	7.373	50.16	0.750	-	D
516.61	129.21	47.	18.	4.688	58.79	0.469	-	s
535.65	133.98	69.	13.	3.429	96.76	0.565	-	s
576.00	144.07	80.	18.	4.688	79.48	0.353	-	s
607.31	151.90	44.	15.	3.906	67.66	0.283	-	s
639.22	159.89	47.	26.	6.858	44.16	0.550	-	s
792.00	198.01	79.	24.	6.132	57.36	0.828	-	D
855.11	213.90	71.	36.	9.505	42.36	0.391	-	s
955.32	238.97	23.	8.	1.997	89.00	0.222	-	s
977.39	244.49	58.	52.	13.542	28.91	0.375	-	s
1343.78	336.15	70.	22.	5.729	69.23	0.667	-	s
1449.70	362.44	47.	22.	5.841	47.93	0.974	-	D
1462.55	365.65	78.	22.	5.656	61.48	0.977	-	D
1496.40	374.33	35.	18.	4.688	53.82	0.654	-	s
1541.22	385.54	61.	28.	7.378	53.59	0.309	-	s
1644.86	411.46	82.	42.	10.894	45.15	0.423	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1692.20	423.31	53.	33.	8.550	41.25	0.339	-	s
1725.44	431.55	57.	24.	6.294	48.49	1.033	-	D
1731.75	433.12	80.	25.	6.419	55.23	1.035	-	D
1739.10	434.96	88.	28.	7.293	51.00	1.036	-	D

1843.38	461.12	44.	19.	4.861	57.38	0.371	-	s
2259.80	565.29	17.	17.	4.340	50.75	0.742	-	s
2289.40	572.69	9.	10.	2.604	52.92	0.469	-	s
2437.57	609.75	37.	61.	15.929	23.26	0.543	-	s
3355.99	839.46	2.	18.	4.644	27.87	0.577	-	s
3830.89	958.22	1.	5.	1.259	56.13	0.292	-	s
3853.55	963.89	5.	13.	3.299	44.81	0.450	-	s
4483.72	1121.48	13.	64.	16.797	18.26	0.895	-	s
5250.67	1313.25	0.	13.	3.385	27.74	0.688	-	s
7062.24	1766.15	0.	108.	28.125	9.62	0.592	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	127.35	31.82	97.	4.	1.156	316.58	0.676D
CS-137	128.83	32.19	89.	10.	2.708	131.74	0.676D
CS-137	143.17	35.78	76.	16.	4.297	87.35	0.314s
CS-137	2647.23	662.19	67.	2322.	604.557	2.24	1.315

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Code	MDA Value Becquerels	Comments
CS-137		1.3907E+06	661.62	1.391E+06	(	7.266E+03	G
			32.19	0.000E+00	%	1.023E+05	G
			31.82	0.000E+00	%	2.009E+05	G
			36.40	3.748E+05	&	3.214E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.

$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation

Peak Codes:
G - Gamma Ray
X - X-Ray

006 SC10 1-28-2002 11.30.40 AM

I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	1.3907E+06	2.235E+00%	2.901E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 1.3906612E+06 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

004 SC8 1-28-2002 11.06.07 AM

Sample description
SC8

Spectrum Filename: C:\GammaVision\004 SC8 1-28-2002 11.06.07 AM.An1

Acquisition information

Start time:	28-Jan-2002 11:06:06
Live time:	4
Real time:	5
Dead time:	18.40 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.3700

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.74	6.57	33.	30.	7.371	32.57	1.007	-	D
37.81	9.09	79.	21.	5.103	64.30	1.008	-	D
192.35	47.87	45.	15.	3.676	75.28	0.665	-	s
289.38	72.13	41.	16.	3.962	63.27	0.252	-	s
444.84	111.01	47.	14.	3.513	74.96	0.635	-	s
462.63	115.45	108.	26.	6.291	74.81	0.351	-	s
509.78	127.25	85.	17.	4.167	91.82	0.275	-	s
634.51	158.43	44.	16.	3.922	68.08	0.720	-	s
701.16	175.09	83.	46.	11.356	40.35	0.238	-	s
783.02	195.56	24.	19.	4.779	43.69	0.726	-	s
842.37	210.40	50.	18.	4.412	68.34	0.477	-	s
925.19	231.09	40.	29.	7.126	35.90	1.047	-	D
1259.71	314.73	24.	30.	7.394	32.76	1.055	-	s
1599.30	399.61	30.	14.	3.350	76.65	0.293	-	s
1697.17	424.06	27.	36.	8.946	31.57	0.725	-	s
1803.07	450.53	22.	23.	5.637	40.16	0.297	-	s
1933.62	483.15	20.	15.	3.676	55.11	0.459	-	s
2109.63	527.20	30.	14.	3.481	60.49	1.146	-	D
2162.59	540.37	12.	10.	2.533	57.75	0.604	-	s
2339.99	584.69	9.	10.	2.369	56.56	0.508	-	s
2437.25	608.99	37.	76.	18.750	21.49	0.951	-	s
2575.21	643.46	15.	10.	2.451	68.92	0.812	-	s
2646.48	661.26	45.	44.	10.907	35.48	0.561	-	s

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 14:40:59 Page 3
ORTEC Spectrum name: 004 SC8 1-28-2002 11.06.07 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
3085.06	770.81	4.	10.	2.328	43.51	0.732	-	s
3114.51	778.16	16.	12.	3.064	61.58	0.653	-	s
3212.71	802.69	12.	29.	7.108	27.80	0.862	-	s
3298.53	824.06	16.	13.	3.144	52.39	1.299	-	D

3307.32	826.25	18.	25.	6.025	31.88	1.300	-	D
3437.29	858.78	4.	8.	1.961	50.00	0.443	-	s
4005.21	1000.58	7.	10.	2.451	50.17	0.356	-	s
4216.56	1053.34	8.	24.	5.882	30.43	0.767	-	s
4375.47	1093.01	13.	8.	1.838	85.63	0.289	-	s
4431.91	1107.10	4.	31.	7.680	22.21	0.354	-	s
4482.35	1119.69	19.	93.	22.876	15.12	1.270	-	
4535.50	1132.96	12.	6.	1.471	97.18	0.427	-	s
4954.76	1237.59	11.	25.	6.046	33.46	0.541	-	s
5567.83	1390.57	0.	6.	1.471	40.82	0.312	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4694.73	1172.70	14.	491.	120.343	4.86	1.753s
CO-60	5332.63	1331.89	13.	383.	93.995	5.76	1.331

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	MDA Value Becquerels	Comments
CO-60		3.5887E+05	1332.51	3.341E+05	(	4.983E+03	G
			1173.23	3.837E+05	@(	4.544E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.

= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line

004 SC8 1-28-2002 11.06.07 AM

M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded
A - Not in Average
C - Coincidence Peak

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	3.5887E+05	3.770E+00%	4.199E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 3.5886772E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

003 SC7 1-28-2002 10.53.21 AM

Sample description
SC7

Spectrum Filename: C:\GammaVision\003 SC7 1-28-2002 10.53.21 AM.An1

Acquisition information

Start time:	28-Jan-2002 10:53:22
Live time:	1
Real time:	5
Dead time:	78.00 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	003SC7~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

D

003 SC7 1-28-2002 10.53.21 AM

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 1.0000

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.32	6.79	51.	44.	40.303	28.76	0.799	-	sM
55.89	13.94	70.	36.	32.727	52.04	0.429	-	sM
148.34	37.07	38.	45.	41.364	32.51	0.986	-	sM
258.70	64.68	42.	33.	30.000	42.96	0.894	-	sM
312.73	78.20	67.	76.	69.545	27.66	0.664	-	sM
337.98	84.52	76.	51.	46.364	40.71	0.676	-	sM
352.25	88.09	84.	28.	25.455	68.14	0.549	-	M
366.97	91.77	66.	33.	30.000	52.22	0.527	-	sM
482.42	120.57	123.	22.	20.204	73.56	0.758	-	D
493.51	123.35	150.	40.	36.794	45.53	0.760	-	D
573.21	143.34	144.	22.	19.983	80.10	0.779	-	D
578.39	144.64	132.	28.	25.338	61.32	0.780	-	D
800.98	200.36	123.	39.	35.606	50.24	0.299	-	sM
815.77	204.06	94.	23.	21.364	68.58	0.253	-	sM
891.09	222.90	156.	34.	30.909	67.58	0.372	-	sM
925.10	231.41	136.	41.	37.727	52.45	0.780	-	sM
967.85	242.10	141.	53.	48.333	42.02	0.271	-	sM
995.24	248.95	70.	18.	16.364	72.36	0.336	-	sM
1067.75	267.09	71.	26.	23.939	52.51	0.726	-	M
1112.12	278.15	62.	17.	15.370	70.26	0.900	-	D
1118.31	279.69	90.	26.	23.829	54.73	0.901	-	D
1311.01	327.95	37.	38.	34.848	30.43	0.517	-	sM
1650.78	412.95	62.	28.	25.455	52.25	0.643	-	sM

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 12:44:44 Page 3
ORTEC Spectrum name: 003 SC7 1-28-2002 10.53.21 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1726.26	431.83	46.	37.	33.636	35.75	0.564	-	sM
1838.65	459.94	49.	22.	20.455	56.70	0.451	-	sM
2052.48	513.43	37.	16.	14.242	64.71	0.616	-	sM
2269.00	567.59	48.	23.	20.909	56.19	0.293	-	sM

2305.00	576.60	45.	22.	20.230	47.50	1.156	-	D
2312.01	578.35	63.	25.	23.155	48.17	1.157	-	D
2559.57	640.35	55.	12.	10.833	92.72	1.208	-	D
2765.16	691.69	40.	24.	21.818	50.00	0.541	-	SM
2815.88	704.38	69.	36.	32.424	47.74	0.353	-	SM
2864.75	716.60	40.	46.	42.121	30.40	0.333	-	SM
2934.97	734.16	48.	24.	22.121	54.41	0.498	-	SM
3091.54	773.32	42.	14.	12.727	77.92	0.382	-	SM
3114.36	779.03	31.	10.	9.545	84.52	0.254	-	SM
3139.28	785.26	36.	15.	13.636	68.31	0.598	-	SM
3176.18	794.49	26.	13.	12.121	62.27	0.514	-	SM
3237.81	809.90	53.	61.	55.152	28.16	0.261	-	SM
3401.21	850.77	29.	16.	14.545	53.76	0.368	-	SM
3484.50	871.60	93.	46.	41.515	46.46	0.647	-	SM
3593.17	898.78	62.	26.	23.636	56.00	0.574	-	SM
3815.96	954.49	105.	37.	33.788	56.38	0.382	-	SM
3978.81	995.22	65.	74.	67.121	26.71	0.322	-	SM
4062.54	1016.16	22.	12.	10.758	65.38	0.514	-	SM
4175.17	1044.32	54.	31.	28.333	49.45	0.260	-	SM
4333.57	1083.79	50.	18.	16.179	61.09	1.551	-	D
4342.55	1086.04	74.	15.	13.690	84.77	1.553	-	D
4374.18	1094.09	45.	29.	26.364	47.09	0.325	-	SM
4417.13	1104.83	60.	46.	41.818	38.03	0.261	-	SM
4695.15	1174.26	479.	1585.	1441.104	3.18	1.616	-	D
4718.86	1180.19	32.	21.	19.068	43.96	1.621	-	D
5016.08	1254.60	1.	7.	6.212	44.77	0.678	-	s
5333.64	1334.07	466.	1386.	1260.032	3.47	1.728	-	D

s - Peak fails shape tests.
D - Peak area deconvoluted.
M - Peak is close to a library peak.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4690.68	1173.23	1647.	322.	293.040	18.65	1.615D
CO-60	5327.69	1332.51	1266.	512.	465.190	10.78	1.727D

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Nuclide Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		1.6534E+06	1332.51	1.653E+06	(	1.642E+05	G
			1173.23	9.343E+05	-	1.833E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.

003 SC7 1-28-2002 10.53.21 AM

@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	1.6534E+06	1.078E+01%	1.094E+01%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 12:44:44 Page 5
ORTEC Spectrum name: 003 SC7 1-28-2002 10.53.21 AM.An

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 1.6534166E+06 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

009 SC18 1-29-2002 10.02.15 AM

Sample description
SC18

Spectrum Filename: C:\GammaVision\009 SC18 1-29-2002 10.02.15 AM.An1

Acquisition information

Start time:	29-Jan-2002 10:02:16
Live time:	4
Real time:	5
Dead time:	28.40 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.2219

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
40.18	9.81	132.	34.	9.637	64.70	0.342	-	s
167.33	41.61	35.	26.	7.356	39.32	0.932	-	s
238.65	59.45	137.	103.	28.734	22.41	0.948	-	
340.29	84.86	73.	38.	10.521	40.54	0.755	-	s
378.40	94.39	90.	31.	8.706	54.23	0.515	-	s
504.55	125.94	106.	27.	7.495	71.01	0.551	-	s
640.03	159.81	66.	16.	4.469	84.09	0.532	-	s
768.28	191.78	113.	16.	4.403	98.73	1.038	-	D
798.03	199.31	113.	39.	10.801	56.25	0.564	-	s
894.85	223.52	61.	18.	5.168	70.94	0.389	-	s
914.14	228.34	68.	36.	9.963	41.39	0.336	-	s
1031.42	257.66	55.	29.	8.101	45.70	0.335	-	s
1105.60	276.20	43.	28.	7.961	41.11	0.932	-	s
1140.46	284.92	96.	46.	12.849	45.08	0.565	-	s
1197.35	299.14	33.	19.	5.400	49.10	0.744	-	s
1220.94	305.04	56.	45.	12.477	33.44	0.554	-	s
1386.26	346.36	77.	67.	18.715	30.35	0.541	-	s
1439.25	359.60	28.	12.	3.352	73.28	0.271	-	s
1599.07	399.55	33.	24.	6.704	45.17	0.358	-	s
1668.91	417.00	42.	13.	3.585	89.63	0.505	-	s
1752.67	437.93	30.	18.	5.028	53.58	0.569	-	s
1870.92	467.48	33.	17.	4.749	61.83	0.646	-	s
1938.67	484.42	52.	35.	9.916	46.44	0.309	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1975.71	493.67	17.	12.	3.259	61.88	0.385	-	s
2001.26	500.06	35.	23.	6.455	41.70	1.135	-	D
2089.97	522.22	27.	32.	9.078	34.91	0.270	-	s
2193.19	548.01	20.	13.	3.678	56.91	0.329	-	s

2234.25	558.27	27.	20.	5.726	48.39	0.781	-	s
2438.72	609.36	37.	89.	24.953	17.64	1.081	-	s
2529.16	631.95	16.	15.	4.330	48.60	0.573	-	s
2646.99	661.34	58.	39.	10.799	32.24	1.209	-	D
2663.32	665.42	56.	14.	3.791	82.85	1.211	-	D
2671.27	667.41	49.	12.	3.456	84.62	1.212	-	D
3005.23	750.87	26.	22.	6.145	45.45	0.434	-	s
3115.83	778.75	34.	23.	6.389	41.49	1.272	-	D
3125.86	781.26	47.	14.	3.804	76.17	1.274	-	D
3414.61	853.11	17.	19.	5.214	41.19	0.592	-	s
3444.65	860.61	37.	27.	7.449	46.10	0.513	-	s
3478.25	869.00	31.	19.	5.261	54.96	0.324	-	s
3642.38	909.99	43.	28.	7.728	46.41	0.668	-	s
3999.22	999.08	11.	6.	1.676	88.19	0.306	-	s
4065.87	1015.72	32.	28.	7.961	41.85	0.684	-	s
4089.48	1021.62	31.	42.	11.685	30.36	0.640	-	s
4241.53	1059.58	28.	34.	9.404	35.43	0.566	-	s
4307.01	1075.92	20.	42.	11.778	25.78	0.372	-	s
4483.06	1119.87	64.	122.	34.032	19.43	1.649	-	
4521.75	1129.52	17.	17.	4.888	50.71	0.491	-	s
4571.22	1141.87	14.	26.	7.263	32.79	0.353	-	s
4605.41	1150.41	7.	7.	1.955	67.26	0.695	-	s
4631.17	1156.83	14.	13.	3.631	57.05	0.458	-	s
4840.88	1209.17	4.	31.	8.752	22.21	0.731	-	s
6340.29	1583.26	0.	7.	1.955	37.80	0.312	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4695.63	1172.92	28.	1483.	414.153	2.76	1.693
CO-60	5333.47	1332.10	9.	1319.	368.343	2.81	1.811

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		1.3148E+06	1332.51	1.309E+06	(	4.814E+03	G
			1173.23	1.320E+06	(	7.164E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide

failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:	Peak Codes:
T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	1.3148E+06	1.968E+00%	2.700E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

ORTEC g v - i (63) wan32 G53W2.01 13-FEB-2002 15:46:01 Page 5
ORTEC Spectrum name: 009 SC18 1-29-2002 10.02.15 AM.A

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 1.3147980E+06 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

004 SC20 1-29-2002 9.34.49 AM

Sample description
SC20

Spectrum Filename: C:\GammaVision\004 SC20 1-29-2002 9.34.49 AM.An1

Acquisition information

Start time:	29-Jan-2002 09:34:48
Live time:	4
Real time:	5
Dead time:	16.00 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.2872

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
28.95	7.00	34.	54.	12.857	23.13	0.717	-	s
233.05	58.05	77.	42.	10.119	41.68	0.416	-	s
287.85	71.75	53.	22.	5.159	55.79	0.324	-	s
359.87	89.76	90.	51.	12.143	37.51	0.465	-	s
382.20	95.34	55.	17.	4.087	67.93	0.547	-	s
478.77	119.48	82.	21.	5.062	63.93	1.024	-	D
484.16	120.82	123.	23.	5.502	70.95	1.024	-	D
520.53	129.93	49.	18.	4.206	65.22	0.433	-	s
556.91	139.03	80.	30.	7.143	54.77	0.669	-	s
636.30	158.88	39.	33.	7.857	34.62	0.563	-	s
889.29	222.13	67.	31.	7.500	51.95	0.482	-	s
997.68	249.23	22.	12.	2.817	65.38	0.260	-	s
1024.21	255.86	23.	14.	3.254	58.64	0.699	-	s
1060.24	264.87	19.	13.	3.175	55.00	0.596	-	s
1202.50	300.43	17.	13.	3.016	57.53	0.687	-	s
1452.91	362.92	40.	14.	3.232	71.58	1.085	-	D
1462.15	365.23	45.	28.	6.733	38.37	1.086	-	D
1479.32	369.62	21.	12.	2.857	63.19	0.723	-	s
1552.66	388.01	35.	14.	3.317	66.06	1.093	-	D
1613.90	403.25	37.	31.	7.302	42.21	0.283	-	s
1672.82	417.98	45.	30.	7.143	45.64	0.400	-	s
1820.73	454.94	22.	18.	4.405	46.73	0.677	-	s
1907.03	476.51	11.	10.	2.381	56.57	0.448	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1966.50	491.37	32.	21.	5.000	56.01	0.593	-	s
2196.46	548.83	28.	38.	9.048	33.70	0.371	-	s
4481.74	1119.54	8.	107.	25.476	11.33	1.054	-	s
4583.44	1144.92	1.	6.	1.389	49.57	0.662	-	s

4889.70	1221.36	0.	22.	5.238	21.32	0.499	-	s
6922.80	1728.52	0.	35.	8.333	16.90	0.698	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CS-137	126.19	31.32	42.	21.	5.079	53.95	0.980
CS-137	129.66	32.19	59.	0.	0.000	0.00	1.010
CS-137	146.12	36.31	64.	15.	3.571	95.92	0.192s
CS-137	2647.53	661.52	54.	781.	185.952	4.20	1.112

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

Nuclide Name	Nuclide Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CS-137		4.2775E+05	661.62	4.277E+05	(	5.972E+03	G
			32.19	0.000E+00	%	7.296E+04	G
			31.82	2.662E+05	-	1.464E+05	G
			36.40	3.116E+05	-	2.717E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

0

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

004 SC20 1-29-2002 9.34.49 AM

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CS-137	4.2775E+05	4.204E+00%	4.592E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 4.2774569E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

007 SC23 1-29-2002 9.48.40 AM

Sample description
SC23

Spectrum Filename: C:\GammaVision\007 SC23 1-29-2002 9.48.40 AM.An1

Acquisition information

Start time:	29-Jan-2002 09:48:41
Live time:	4
Real time:	5
Dead time:	15.60 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.2421

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
74.65	18.43	43.	28.	6.754	41.11	0.625	-	s
96.46	23.89	41.	42.	9.913	31.37	0.709	-	s
124.03	30.78	31.	13.	3.160	69.10	0.795	-	s
182.93	45.51	30.	9.	2.133	92.30	0.303	-	s
260.98	65.03	56.	29.	6.793	50.20	0.248	-	s
327.13	81.57	63.	28.	6.556	50.67	0.444	-	s
473.81	118.25	93.	38.	8.926	49.58	0.647	-	s
511.67	127.72	34.	13.	3.081	69.23	0.689	-	s
631.76	157.72	74.	21.	4.869	63.36	1.031	-	D
638.95	159.51	88.	29.	6.859	49.48	1.031	-	D
664.42	165.91	47.	35.	8.373	39.10	0.714	-	s
866.66	216.55	70.	17.	3.926	75.73	1.044	-	D
872.46	218.00	56.	12.	2.738	96.55	1.044	-	D
1033.09	258.08	24.	15.	3.673	53.43	0.339	-	s
1102.56	275.44	36.	18.	4.265	62.36	0.483	-	s
1676.09	418.80	22.	16.	3.791	55.32	0.845	-	s
1735.58	433.69	35.	17.	4.023	54.94	1.109	-	D
1741.66	435.21	40.	17.	4.062	57.41	1.110	-	D
1746.16	436.33	30.	13.	2.986	67.99	1.110	-	D
2063.96	515.72	13.	12.	2.962	54.41	0.479	-	s
2635.56	658.88	10.	9.	2.171	58.61	1.207	-	D
2647.39	661.83	30.	42.	9.966	24.01	1.209	-	D
2770.03	692.12	13.	17.	4.068	42.62	0.645	-	s

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 15:26:44 Page 3
ORTEC Spectrum name: 007 SC23 1-29-2002 9.48.40 AM.An

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
2943.13	735.36	11.	10.	2.449	57.43	0.512	-	s
3296.12	823.52	28.	50.	11.848	28.89	0.487	-	s
3333.32	832.81	6.	13.	3.120	38.58	0.284	-	s
3839.84	959.29	8.	9.	2.093	58.31	0.447	-	s

3872.33	967.40	5.	6.	1.422	66.67	0.591	-	s
3930.60	981.95	9.	24.	5.687	32.27	0.677	-	s
4483.81	1120.05	7.	94.	22.275	11.92	0.832	-	s
7062.80	1763.43	0.	116.	27.488	9.28	1.667	-	

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4695.64	1172.93	4.	243.	57.504	6.72	1.262
CO-60	5333.19	1332.03	12.	228.	54.107	7.69	1.428

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		1.8783E+05	1332.51	1.923E+05	(	4.511E+03	G
			1173.23	1.833E+05	(	2.634E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes:
T - Thermal Neutron Activation

Peak Codes:
G - Gamma Ray

D

F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

- -

007 SC23 1-29-2002 9.48.40 AM

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	1.8783E+05	5.104E+00%	5.429E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 1.8782680E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

002 SC22-2 1-29-2002 1.11.50 PM

Sample description
SC22-2

Spectrum Filename: C:\GammaVision\002 SC22-2 1-29-2002 1.11.50 PM.An1

Acquisition information

Start time:	29-Jan-2002 13:11:50
Live time:	4
Real time:	5
Dead time:	29.60 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	002SC2~1.SPC

Energy Calibration

Created:	08-Aug-2001 07:19:08
Zero offset:	-0.043 keV
Gain:	0.250 keV/channel
Quadratic:	-1.621E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.46keV)
Stop channel:	8000 (2000.56keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

0

Random error: 1.0000000E+00
Systematic error: 1.0000000E+00
Fraction Limit: 0.000%
Background width: best method (based on spectrum).

Half lives decay limit: 12.000
Activity range factor: 2.000
Min. step backg. energy 0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.1921

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
26.96	6.78	97.	96.	27.250	17.76	0.652	-	D
33.17	8.33	192.	80.	22.683	26.98	0.654	-	D
170.85	42.64	167.	79.	22.408	25.77	0.686	-	D
194.79	48.75	93.	53.	15.004	29.28	0.691	-	D
209.92	52.48	70.	28.	7.955	52.33	0.767	-	
265.69	66.43	79.	24.	6.960	60.99	0.320	-	s
313.88	78.49	110.	34.	9.659	54.68	0.325	-	s
353.01	88.26	77.	27.	7.768	49.25	0.728	-	D
358.64	89.67	121.	30.	8.607	54.41	0.729	-	D
389.03	97.29	116.	34.	9.659	51.34	0.768	-	
494.44	123.44	743.	249.	70.849	16.70	0.761	-	D
505.21	126.14	112.	18.	5.182	85.24	0.763	-	D
535.14	133.85	58.	12.	3.409	94.28	0.550	-	s
625.90	156.55	88.	21.	5.871	77.45	0.479	-	s
650.24	162.64	88.	22.	6.392	69.39	0.302	-	s
733.96	183.59	49.	24.	6.818	47.54	0.694	-	s
803.86	201.08	43.	12.	3.409	82.50	0.312	-	s
934.15	233.67	61.	30.	8.617	49.17	0.223	-	s
972.44	243.01	59.	21.	5.933	56.47	0.869	-	D
993.54	248.53	74.	60.	17.140	28.40	0.543	-	s
1021.03	255.41	47.	18.	5.208	59.61	0.396	-	s
1041.54	260.54	40.	14.	3.977	74.00	0.252	-	s
1123.07	280.93	42.	27.	7.765	43.05	0.400	-	s

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1185.50	296.55	68.	54.	15.341	32.85	0.464	-	s
1281.51	320.57	31.	10.	2.936	87.57	0.395	-	s
1692.88	423.48	20.	16.	4.545	49.48	0.307	-	s
1745.20	436.56	15.	10.	2.794	66.45	0.336	-	s

1804.84	451.48	15.	11.	3.078	61.02	0.524	-	s
1844.42	461.38	27.	21.	6.108	46.38	0.345	-	s
2082.97	521.06	13.	17.	4.972	40.91	0.719	-	s
2161.28	540.64	18.	9.	2.557	81.65	0.464	-	s
2478.02	619.87	25.	38.	10.701	31.77	0.362	-	s
2576.81	644.58	12.	16.	4.545	42.39	0.658	-	s
2617.56	654.77	14.	9.	2.557	69.68	0.607	-	s
2649.17	662.68	33.	54.	15.341	26.71	1.042	-	
2766.12	691.93	12.	8.	2.367	69.57	0.429	-	s
2938.41	735.02	13.	19.	5.540	37.42	0.484	-	s
3014.50	754.05	5.	11.	3.030	45.07	0.441	-	s
3117.69	779.87	38.	266.	75.492	6.96	1.320	-	D
3367.54	842.35	13.	10.	2.888	60.61	0.431	-	s
3471.90	868.54	41.	75.	21.165	16.84	1.389	-	D
3859.48	965.31	29.	246.	69.793	7.10	1.463	-	D
4076.15	1019.56	7.	18.	5.114	35.72	0.344	-	s
4346.85	1087.22	35.	166.	47.053	9.28	1.553	-	D
4451.55	1113.34	28.	188.	53.314	8.33	1.573	-	D
4485.97	1122.04	15.	89.	25.426	15.20	0.979	-	s
4868.67	1217.74	15.	13.	3.780	49.11	1.647	-	D
5636.89	1409.76	14.	288.	81.882	6.17	1.779	-	D
7063.55	1766.48	0.	91.	25.852	10.48	1.071	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
EU-152	158.12	39.52	335.	97.	27.466	28.65	0.683D
EU-152	160.52	40.12	272.	163.	46.206	16.35	0.684D
EU-152	181.63	45.40	141.	109.	31.055	18.08	0.688D
EU-152	186.42	46.60	169.	61.	17.285	32.84	0.689D
EU-152	486.91	121.78	317.	1531.	435.053	3.04	0.759D
EU-152	978.11	244.67	123.	361.	102.582	6.82	0.870D
EU-152	1377.67	344.63	61.	1122.	318.655	3.27	1.215s
EU-152	1643.67	411.17	71.	99.	28.172	21.75	1.020
EU-152	1776.69	444.44	48.	122.	34.659	14.15	1.219s
EU-152	3113.85	778.90	296.	4.	1.217	569.87	1.319D
EU-152	3467.67	867.39	96.	1.	0.317	1245.91	1.388D
EU-152	3853.98	964.00	245.	7.	2.011	314.98	1.462D
EU-152	4341.04	1085.80	177.	11.	3.253	166.72	1.552D
EU-152	4357.11	1089.82	109.	2.	0.553	762.08	1.555D

0

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 12:23:09 Page 4
ORTEC Spectrum name: 002 SC22-2 1-29-2002 1.11.50 PM.

Nuclide	Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM
EU-152	4446.09	1112.07	195.	9.	2.421	234.55	1.572D
EU-152	4849.28	1212.89	25.	15.	4.326	52.85	1.644D
EU-152	5193.00	1298.83	1.	0.	0.000	0.00	0.083s
EU-152	5629.94	1408.08	263.	8.	2.190	299.79	1.778D

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide -		Average	Peak			
Name	Code	Activity	Energy	Activity	Code	MDA Value

	Becquerels	keV	Becquerels		Becquerels	Comments
EU-152	1.3641E+05	40.12	1.307E+05	(	1.916E+04	G
		121.78	9.513E+05	+	3.808E+04	G
		344.30	1.288E+06	+	5.643E+04	G
		1408.08	0.000E+00	%	1.187E+05	G
		39.52	1.471E+05	(	4.017E+04	G
		964.00	0.000E+00	%	1.202E+05	G
		1112.07	0.000E+00	%	1.317E+05	G
		778.90	0.000E+00	%	1.224E+05	G
		1085.80	0.000E+00	%	1.636E+05	G
		45.40	2.716E+05	+	5.681E+04	G
		244.67	1.132E+06	+	9.914E+04	G
		867.39	0.000E+00	%	2.411E+05	G
		444.00	1.691E+06	+	2.626E+05	G
		411.09	1.614E+06	+	3.084E+05	G
		46.60	6.386E+05	+	2.304E+05	G
		1089.82	0.000E+00	%	7.603E+05	G
		1299.19	0.000E+00	?	1.158E+05	G
		1212.89	9.796E+05	+	6.084E+05	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.
@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
\+ - Peak activity higher than counting uncertainty range.
\- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 12:23:09 Page 5
ORTEC Spectrum name: 002 SC22-2 1-29-2002 1.11.50 PM.

Nuclide Codes:
T - Thermal Neutron Activation
F - Fast Neutron Activation
I - Fission Product
N - Naturally Occurring Isotope
P - Photon Reaction
C - Charged Particle Reaction
M - No MDA Calculation
R - Coincidence Corrected
H - Halflife limit exceeded

Peak Codes:
G - Gamma Ray
X - X-Ray
P - Positron Decay
S - Single-Escape
D - Double-Escape
K - Key Line
A - Not in Average
C - Coincidence Peak

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total

002 SC22-2 1-29-2002 1.11.50 PM

EU-152	1.3641E+05	1.635E+01%	1.646E+01%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.5 to 2000.6 keV) 1.3640727E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

001 SC21-2 1-29-2002 1.10.27 PM

Sample description
SC21-2

Spectrum Filename: C:\GammaVision\001 SC21-2 1-29-2002 1.10.27 PM.An1

Acquisition information

Start time:	29-Jan-2002 13:10:27
Live time:	3
Real time:	5
Dead time:	42.00 %
Detector ID:	1

Detector system
digiDART USE 1b

Calibration

Filename:	neweucal.clb

Energy Calibration

Created:	05-Feb-2002 10:54:19
Zero offset:	-0.236 keV
Gain:	0.250 keV/channel
Quadratic:	-5.467E-08 keV/channel^2

Efficiency Calibration

Created:	08-Aug-2001 07:20:04
Knee Energy:	375.00 keV
Above the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-2.276424E+00 + (-7.758607E-01*Log(E)) + (-6.125830E-03*Log(E)^2)
Below the Knee:	Quadratic Uncertainty = 0.00 %
Log(Eff):	-1.403153E+01 + (3.295674E+00*Log(E)) + (-3.579787E-01*Log(E)^2)

Library Files

Main analysis library:	Houston.Lib
Library Match Width:	0.500

Analysis parameters

Analysis engine:	wan32 G53W2.01
Start channel:	10 (2.26keV)
Stop channel:	8000 (1997.05keV)
Peak rejection level:	100.000%
Peak search sensitivity:	1
Sample Size:	1.0000E+00
Activity scaling factor:	1.0000E+00/(1.0000E+00* 1.0000E+00) = 1.0000E+00
Detection limit method:	Traditional ORTEC method

001 SC21-2 1-29-2002 1.10.27 PM

Random error:	1.0000000E+00
Systematic error:	1.0000000E+00
Fraction Limit:	0.000%
Background width:	best method (based on spectrum).

Half lives decay limit:	12.000
Activity range factor:	2.000
Min. step backg. energy	0.000

Corrections	Status	Comments
Decay correct to date:	NO	
Decay during acquisition:	NO	
Decay during collection:	NO	
True coincidence correction:	NO	
Peaked background correction:	NO	
Absorption (Internal):	NO	
Geometry correction:	NO	
Random summing:	NO	

Energy Calibration
Normalized diff: 0.0978

********** U N I D E N T I F I E D P E A K S U M M A R Y **********

Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV	Suspected Nuclide	
27.98	6.76	67.	54.	18.736	28.04	0.495	-	s
49.06	12.03	138.	32.	10.920	63.20	0.293	-	s
126.37	31.37	101.	27.	9.195	60.83	0.485	-	s
143.23	35.58	158.	38.	13.046	61.35	0.627	-	s
176.32	43.79	179.	36.	12.259	55.76	1.012	-	D
210.22	52.34	136.	47.	16.207	45.38	0.284	-	s
231.52	57.66	87.	32.	11.149	47.37	0.765	-	s
251.43	62.64	105.	21.	7.241	80.18	0.394	-	s
314.79	78.49	173.	75.	25.747	33.44	0.238	-	s
512.36	127.89	62.	13.	4.655	83.83	0.384	-	s
564.58	140.95	162.	42.	14.483	54.71	0.315	-	s
729.72	182.23	217.	36.	12.529	73.98	0.322	-	s
842.24	210.37	189.	50.	17.241	52.15	0.890	-	s
881.38	220.10	189.	63.	21.620	33.51	1.044	-	D
896.59	223.91	153.	51.	17.484	37.21	1.045	-	D
1066.61	266.40	106.	20.	6.934	75.76	1.056	-	D
1115.99	278.77	117.	19.	6.385	85.93	1.060	-	D
1157.39	289.09	79.	28.	9.763	48.13	1.062	-	D
1164.05	290.75	116.	22.	7.576	72.54	1.063	-	D
1193.86	298.27	46.	12.	4.138	84.98	0.414	-	s
1231.49	307.67	88.	23.	7.931	71.75	0.492	-	s
1427.28	356.37	59.	33.	11.319	37.46	1.083	-	D
1439.25	359.37	71.	32.	10.884	41.84	1.084	-	D

ORTEC g v - i (63) wan32 G53W2.01 15-FEB-2002 11:37:32 Page 3
ORTEC Spectrum name: 001 SC21-2 1-29-2002 1.10.27 PM.

Channel	Energy	Background	Net area	Cnts/sec	Uncert	FWHM	Suspected	
1468.50	366.91	55.	19.	6.724	64.51	0.555	-	s
1582.97	395.52	88.	45.	15.517	42.61	0.355	-	s
1682.94	420.51	67.	21.	7.356	66.14	0.698	-	s
1736.53	433.90	213.	1806.	622.828	2.85	1.200	-	

1813.98	453.26	56.	27.	9.195	53.70	0.771	-	s
1893.16	473.04	31.	21.	7.414	46.57	0.838	-	s
2125.76	531.16	91.	48.	16.552	44.56	0.474	-	s
2221.56	555.10	45.	30.	10.517	43.32	0.573	-	s
2262.49	565.33	57.	38.	13.218	43.95	0.306	-	s
2458.46	614.29	112.	1400.	482.759	3.16	1.371	-	
2495.95	623.65	18.	14.	4.713	57.87	0.331	-	s
2763.16	690.41	7.	6.	2.184	68.01	0.318	-	s
2785.98	696.11	18.	18.	6.207	47.14	0.462	-	s
2893.69	723.01	53.	1252.	431.609	3.08	1.562	-	s
3721.94	929.86	25.	10.	3.320	79.84	1.366	-	D
3741.10	934.64	56.	24.	8.116	49.64	1.370	-	D
3787.19	946.15	12.	9.	3.103	63.83	0.411	-	s
4108.20	1026.29	15.	29.	10.000	32.53	0.504	-	s
4309.35	1076.51	6.	7.	2.471	62.10	0.236	-	s
4359.92	1089.13	6.	6.	2.126	70.32	0.662	-	s

s - Peak fails shape tests.
D - Peak area deconvoluted.

********** I D E N T I F I E D P E A K S U M M A R Y **********

Nuclide	Peak Channel	Centroid Energy	Background Counts	Net Area Counts	Intensity Cts/Sec	Uncert 1 Sigma %	FWHM keV
CO-60	4696.65	1173.18	36.	813.	280.287	3.96	1.612s
CO-60	5334.47	1332.35	19.	711.	245.057	4.04	1.394

s - Peak fails shape tests.
D - Peak area deconvoluted.

***** S U M M A R Y O F L I B R A R Y P E A K U S A G E *****

- Nuclide - Name	Code	Average Activity Becquerels	Peak Energy keV	Peak Activity Becquerels	Peak Code	Peak MDA Value Becquerels	Comments
CO-60		8.8230E+05	1332.51	8.710E+05	(	8.259E+03	G
			1173.23	8.936E+05	@(	9.916E+03	G

(- This peak used in the nuclide activity average.

* - Peak is too wide, but only one peak in library.
! - Peak is part of a multiplet and this area went negative during deconvolution.
? - Peak is too narrow.

@ - Peak is too wide at FW25M, but ok at FWHM.
% - Peak fails sensitivity test.
$ - Peak identified, but first peak of this nuclide failed one or more qualification tests.
+ - Peak activity higher than counting uncertainty range.
- - Peak activity lower than counting uncertainty range.
= - Peak outside analysis energy range.
& - Calculated peak centroid is not close enough to the library energy centroid for positive identification.
P - Peakbackground subtraction

Nuclide Codes: Peak Codes:

001 SC21-2 1-29-2002 1.10.27 PM

T - Thermal Neutron Activation	G - Gamma Ray
F - Fast Neutron Activation	X - X-Ray
I - Fission Product	P - Positron Decay
N - Naturally Occurring Isotope	S - Single-Escape
P - Photon Reaction	D - Double-Escape
C - Charged Particle Reaction	K - Key Line
M - No MDA Calculation	A - Not in Average
R - Coincidence Corrected	C - Coincidence Peak
H - Halflife limit exceeded	

- -

***** S U M M A R Y O F N U C L I D E S I N S A M P L E *****

Nuclide	Time of Count Activity Bq/Kg	Uncertainty Counting	1 Sigma Total
CO-60	8.8230E+05	2.828E+00%	3.378E+00%

< - MDA value printed.
A - Activity printed, but activity < MDA.
B - Activity < MDA and failed test.
C - Area < Critical level.
F - Failed fraction or key line test.
H - Halflife limit exceeded

---------- S U M M A R Y ----------

Total Activity (2.3 to 1997.0 keV) 8.8230350E+05 Bq/Kg

Analyzed by: _____
U.S. Ecology

Reviewed by: _____
Supervisor

Laboratory: ORTEC

USEcology
FS-TX-02-01
Source Log

Date 2-9-02

BKG	mR/hr
1"	<0.1
12"	<0.1
36"	0-2

CREDO

Container #	22	21	7	RAT	26
External on pig in mR/hr					<1
External on pig Neutron mR/hr					<1
Contact open pig mR/hr					<1
Beta on open pig mR/hr O/W					<1

Table Readings

Source mR/hr @ 1 inch				105	<1
Source mR/hr @ 12 inches				0.4	<1
Source mR/hr @ 36 inches				0-3	<1
Smear DPM per 100 cm^2 Alpha					BKG
Smear DPM per 100 cm^2 Beta					BKG
Size of source in cc's				5000	10
Weight in grams				2000	8

CPM Alpha					
Direct Beta/Gamma					

Info on source:

					I131 5 mci 4/16/90

Information on pig:

	59 79 120 180 129 338 331 346 948 775 975 1085 1387 240	428 598 716-720 1173 1339 Co60	Co60	Cs137 661 428 small 203 small	

26
CAUTION

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **2/11/02** **Time** 1105

Location Source Survey #26 - # 41

Survey #

MDA Alpha DPM	MDA Beta DPM
9.8	66.5

BKG Alpha CPM	BKG Beta CPM
0.45	73

Alpha Eff 0.33

	2 Min CPM	DPM
26	1	0.2
27	3	3.2
28	1	0.2
29	0	-1.4
30	2	1.7
31	0	-1.4
32	1	0.2
33	36	53.2
34	42	62.3
35	13	18.3
36	0	-1.4
37	1	0.2
38		-1.4
39	13	18.3
40	7	9.2
41	6	7.7
42		-1.4
43		-1.4
44		-1.4
45		-1.4
46		-1.4
47		-1.4
48		-1.4
49		-1.4
50		-1.4

Beta/Gamma Eff 0.33

	2 Min CPM	DPM
26	148	4.2
27	132	-20.0
28	138	-10.9
29	138	-10.9
30	144	-1.8
31	150	7.3
32	141	-6.4
33	146	1.2
34	227	123.9
35	179	51.2
36	146	1.2
37	136	-13.9
38		-220.0
39	132	-20.0
40	161	23.9
41	129	-24.5
42		-220.0
43		-220.0
44		-220.0
45		-220.0
46		-220.0
47		-220.0
48		-220.0
49		-220.0
50		-220.0

USEcology
FS-TX-02-01
Source Log

Date 2·9·02

BKG	mR/hr
1"	
12"	
36"	

Container #	27	28	29	30	31
External on pig in mR/hr	<1	<1	<1	2	
External on pig Neutron mR/hr	<1	<1	<1	<1	SAME
Contact open pig mR/hr	<1	<1	<1	10	
Beta on open pig mR/hr O/W	2	<1	<1	20	

Table Readings

Source mR/hr @ 1 inch	<1	BKG.	BKG	2	110
Source mR/hr @ 12 inches	<1			0.2	3.5
Source mR/hr @ 36 inches	<1			~~0.4~~ 0.2	0.5
DIRECT Smear DPM per 100 cm^2 Alpha	1060			N/A	N/A
RECT Smear DPM per 100 cm^2 Beta	12000			N/A	N/A
Size of source in cc's	30	20mL	20 mL	20	3
Weight in grams	1 Lb.	8	5	30	1

CPM Alpha	3.2	0.2	-1.4	1.7	-1.4
Direct Beta/Gamma	-20.0	-10.9	-10.9	-1.8	7.3

Info on source:

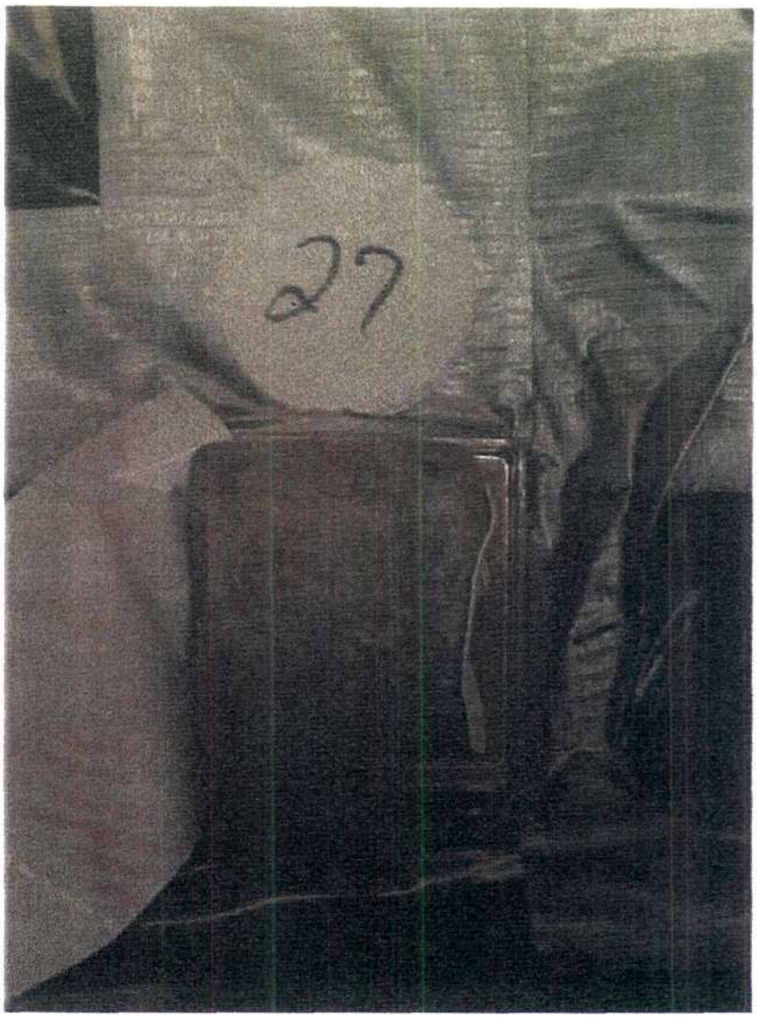
	Cs 137 ~~Cs 60~~	~~[illegible]~~ 131 10 mci 4-27-90	I-131 10 mci 4-27-90	NAIL	BULBS

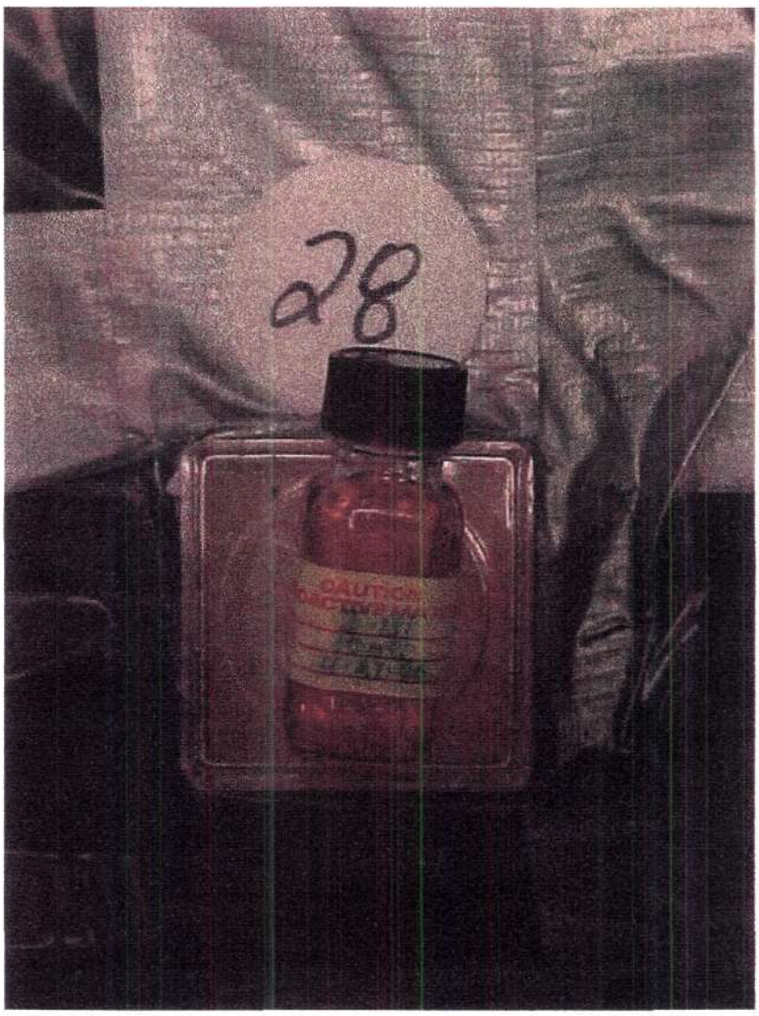
Information on pig:

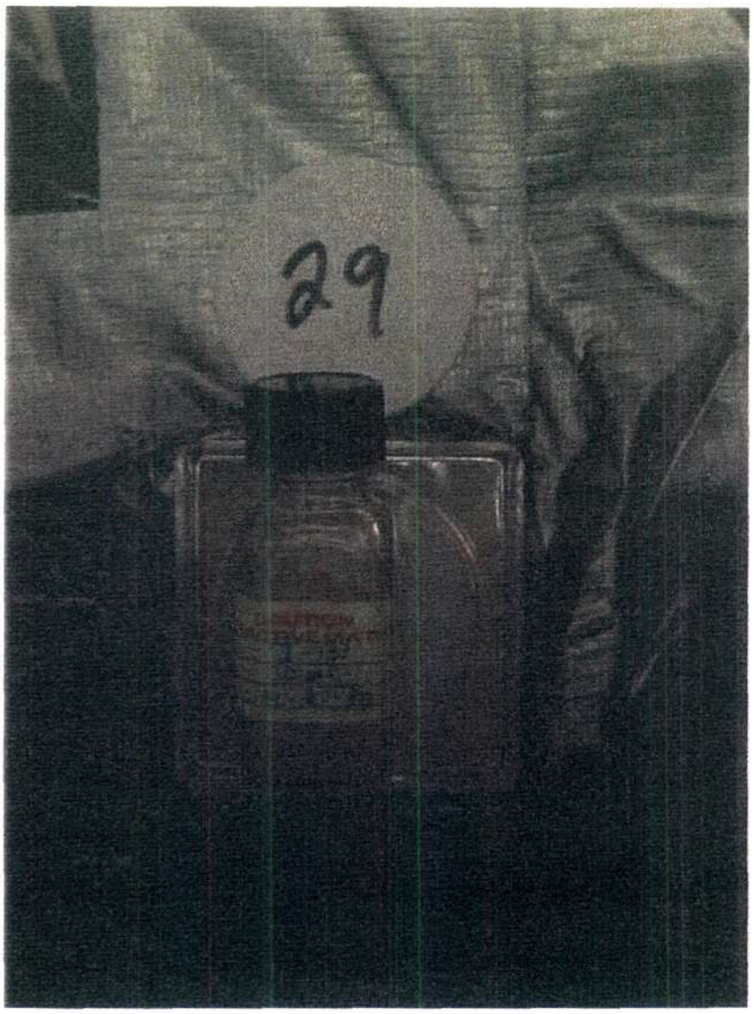
	Cs137 .25mC 2·6·76			EMPTY 59	EMTPY 59
	Cs137 661			Cs137 1173 1332 Co 60	1173 1332 Co 60

Using Cs only for Conservat Tommy 2/11/02

Directional
w/ Lead
still Reads Cs-137
=> 0.25 mR
@ 2/6/76




28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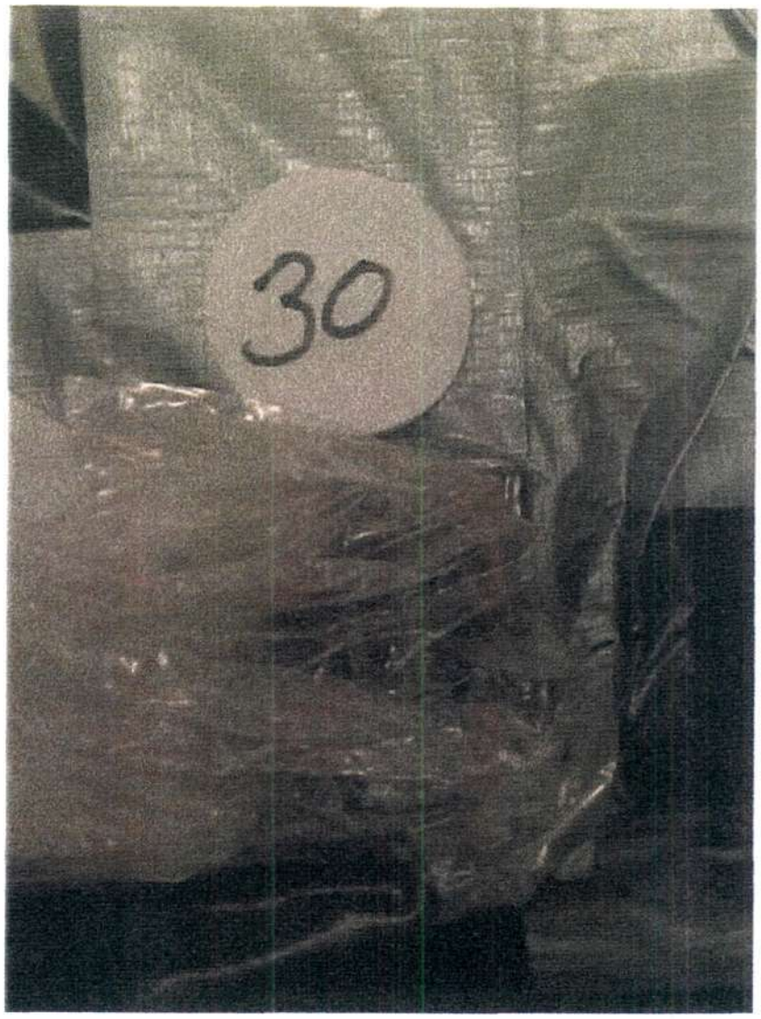
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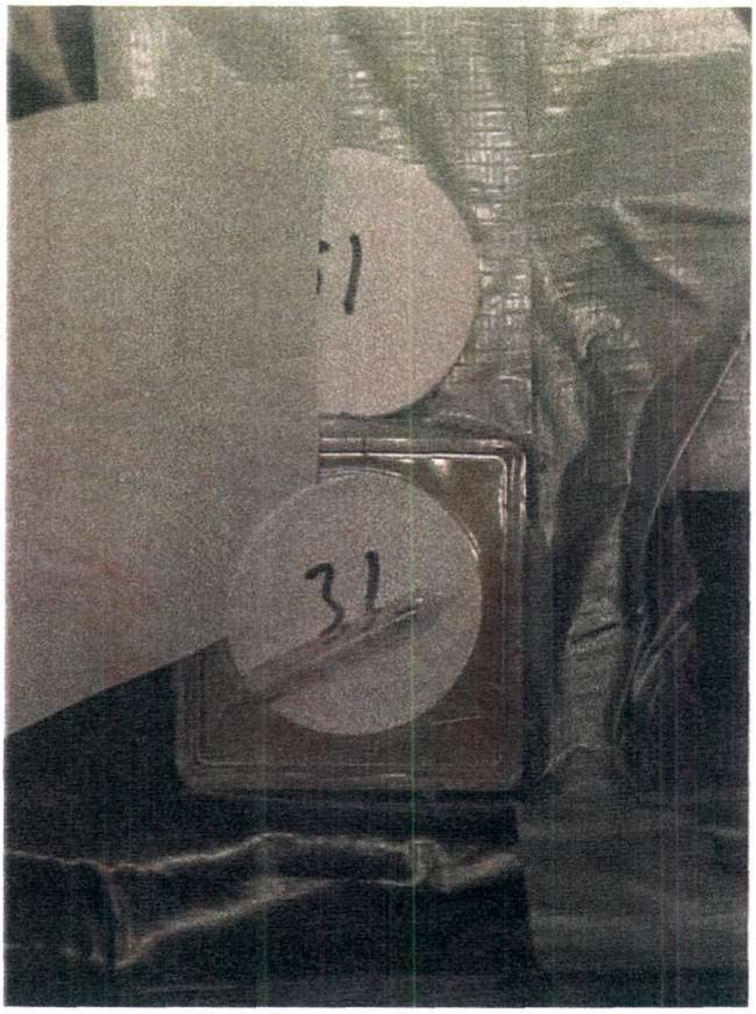

31

SAM 935 #

USEcology
FS-TX-02-01
Source Log

Date 2-9-02

BKG	mR/hr
1"	
12"	
36"	

Container #	32	33	34	35	36
External on pig in mR/hr		3			
External on pig Neutron mR/hr	SAME	<1	SAME	SAME	Same
Contact open pig mR/hr	AS	25	AS	AS	as
Beta on open pig mR/hr O/W	LAST	100	LAST	LAST	last

Table Readings

Source mR/hr @ 1 inch	0.8	100	500	75	0.7	
4" 0.2 Source mR/hr @ 12 inches	0.1	2.5	1	2	<.2	4" 0.4
Source mR/hr @ 36 inches	0.3	0.4	0.3	0.3	.2	
Smear DPM per 100 cm^2 Alpha	N/A	N/A	N/A	N/A		
Smear DPM per 100 cm^2 Beta						
Size of source in cc's	20	20	20	20	~~40~~	
Weight in grams	30	20	20	20	15	

Alpha DPM/100cm²	0.2 ←	53.2	62.3	18.3	<1.4
Direct Beta/Gamma DPM/100cm²	← -6.4	<1.2	124	51.2	<1.2

Info on source:

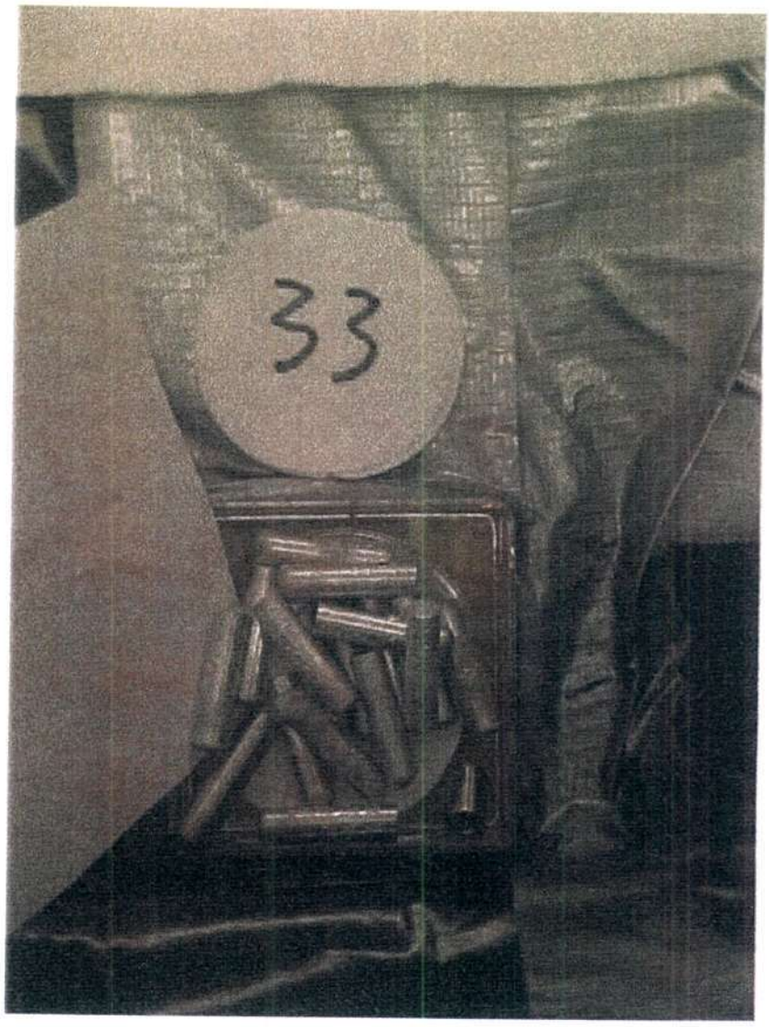
	EMPTY 59 NAILS				

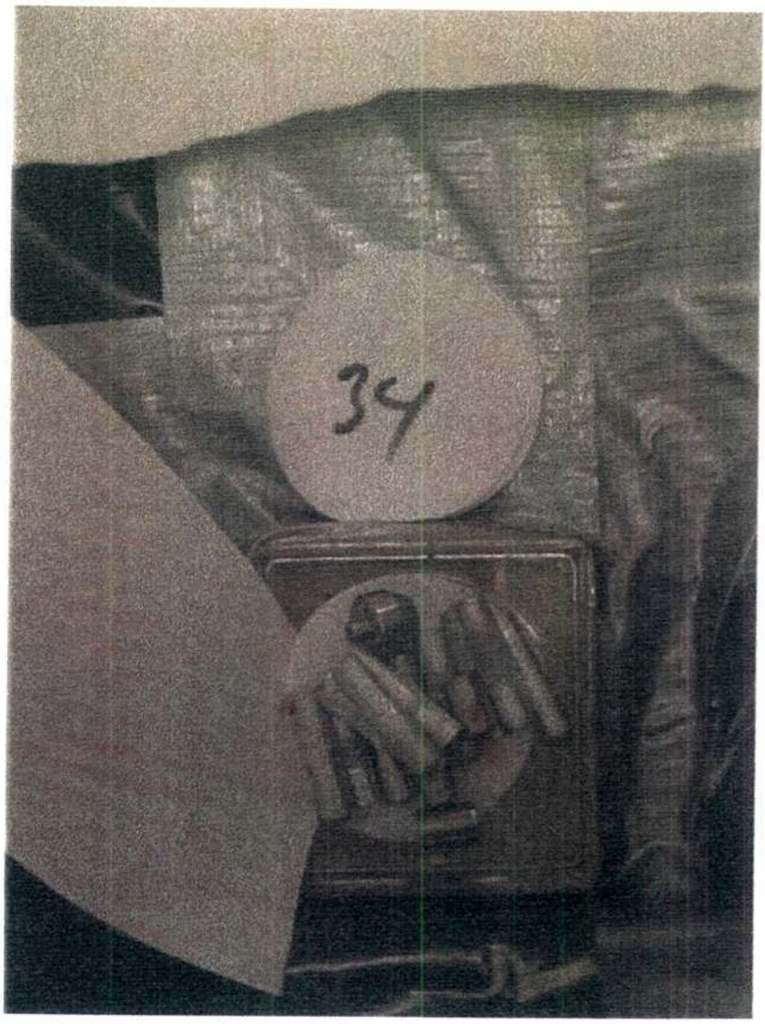
Information on pig:

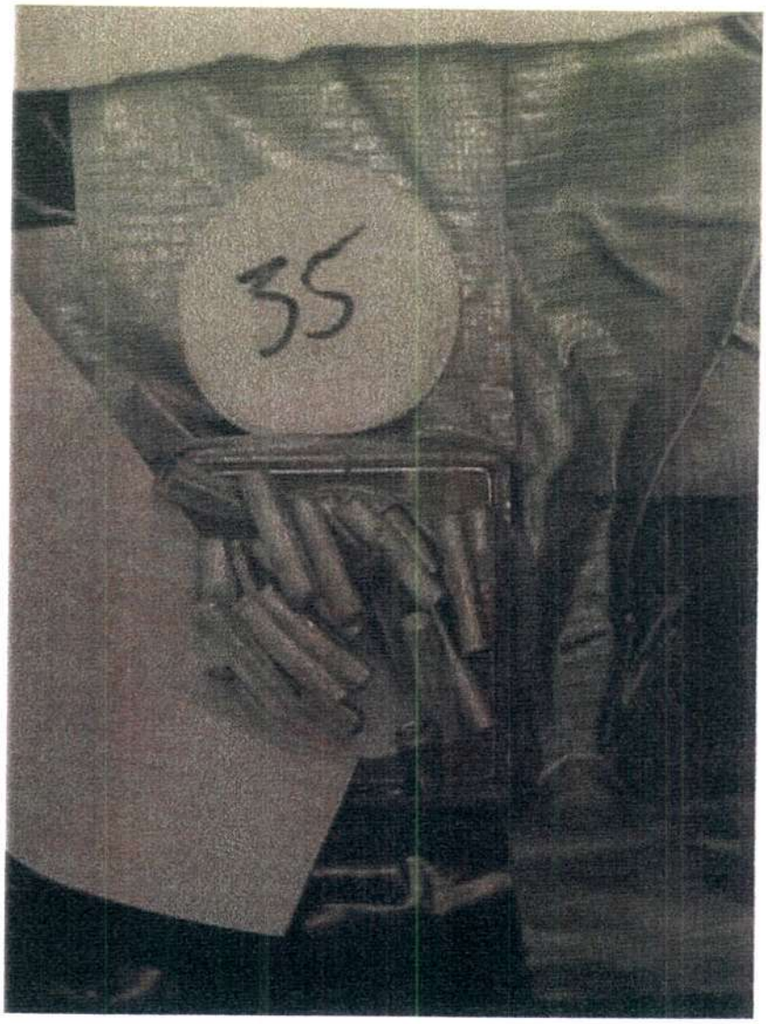
		? 156 154 Eu 152	← Poss.	← Poss.	
Eu 152 possible for # 33 34 35 36	Co 60 1173 1332 (Cs 137 Poss.)	1404 1099 988 798 → ← 716 346 354 240 120 129 975 1277	115 124 253 338 346 598 716 → ← 798 948 975 1099 1277 1402	1420 1277 1099 988 871 774 354 338 253 129 120	1420 1261 1099 975 786 751 354

RAT #

37


33


34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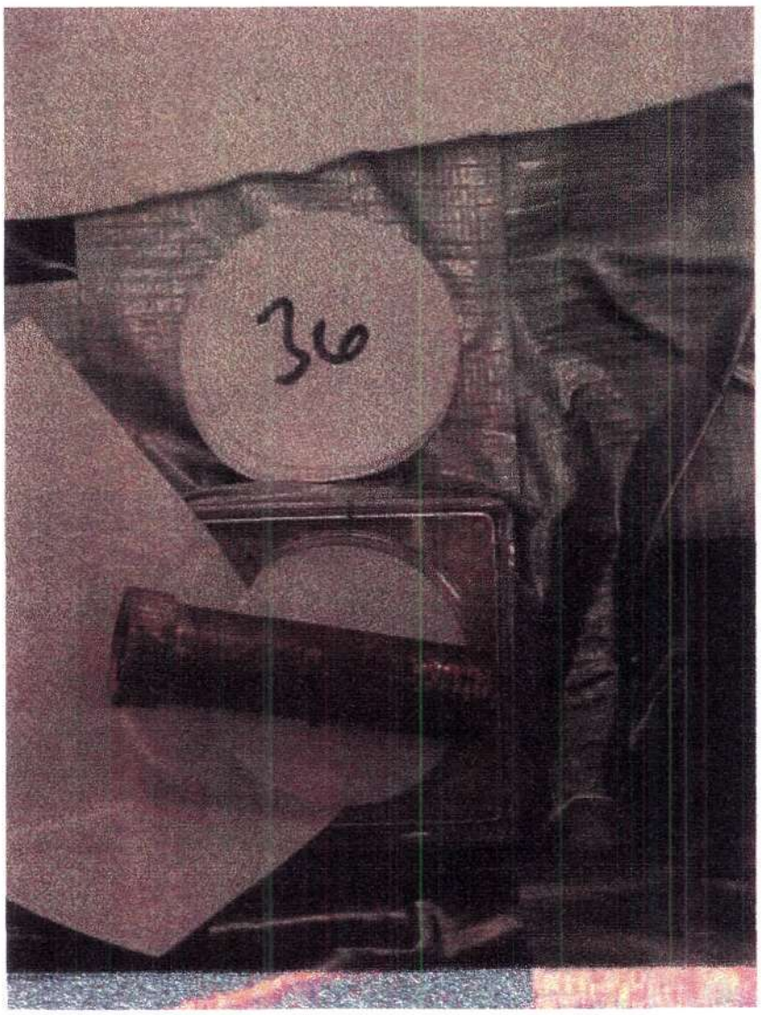

36

SAM 935

USEcology
FS-TX-02-01
Source Log

Date 2-9-02

BKG	mR/hr
1"	
12"	
36"	

<0.2

Container #	37	38	39	40	41
External on pig in mR/hr	<.2	<.2	[illegible]	<.2	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<.2	<.2	<1
Beta on open pig mR/hr O/W	<.2	10	10	10	<1

Liquid

Table Readings

Source mR/hr @ 1 inch	<.2	<.1	<	0.1	<
Source mR/hr @ 12 inches	<.2	<.2	<	<	<
Source mR/hr @ 36 inches	~~N/A~~ <.04	<.03	<	<	<
Smear DPM per 100 cm^2 Alpha	N/A	800			
Smear DPM per 100 cm^2 Beta	N/A	<1000			
Size of source in cc's	20 µL	30	30	10	20
Weight in grams	~~[illegible]~~ 25 grams	10	10	10	5

[illegible] Alpha DPM/100 cm²	0.2 <	~~0~~ 100	~~600~~ 18.3	~~ND~~ 9.2	~~ND~~ < 7.7
[illegible] Beta/Gamma DPM/100 cm²	-13.9 <	10,000	~~5000~~ -20.0	~~900,000~~ 23.9	~~BKG~~ < -24.5

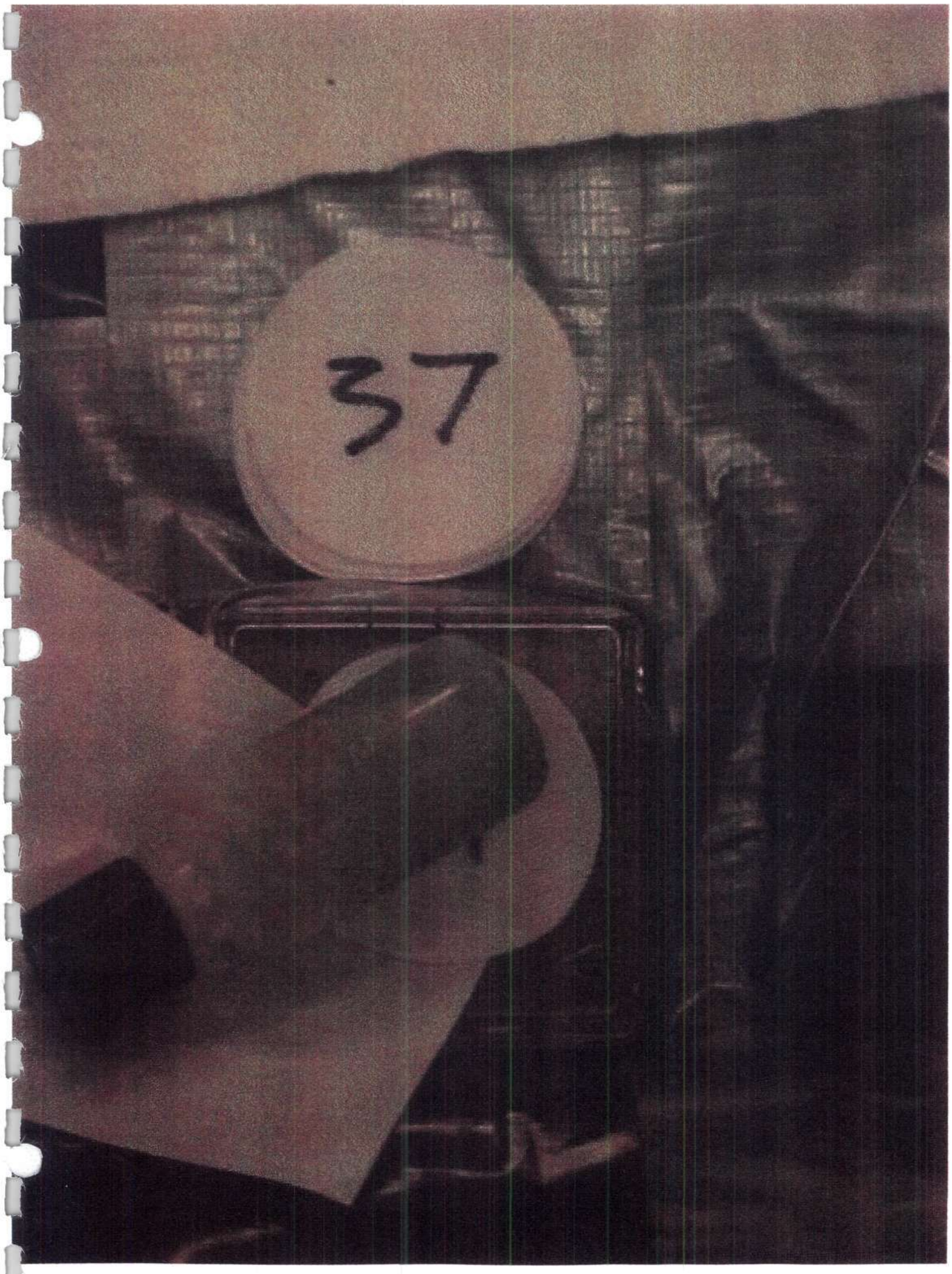
Info on source:

	None				

Information on pig:

	None				IR 192 5 mCi
	~~1453~~ 1453 672	1453 672	1453 672	1453 672	1453 672

CPA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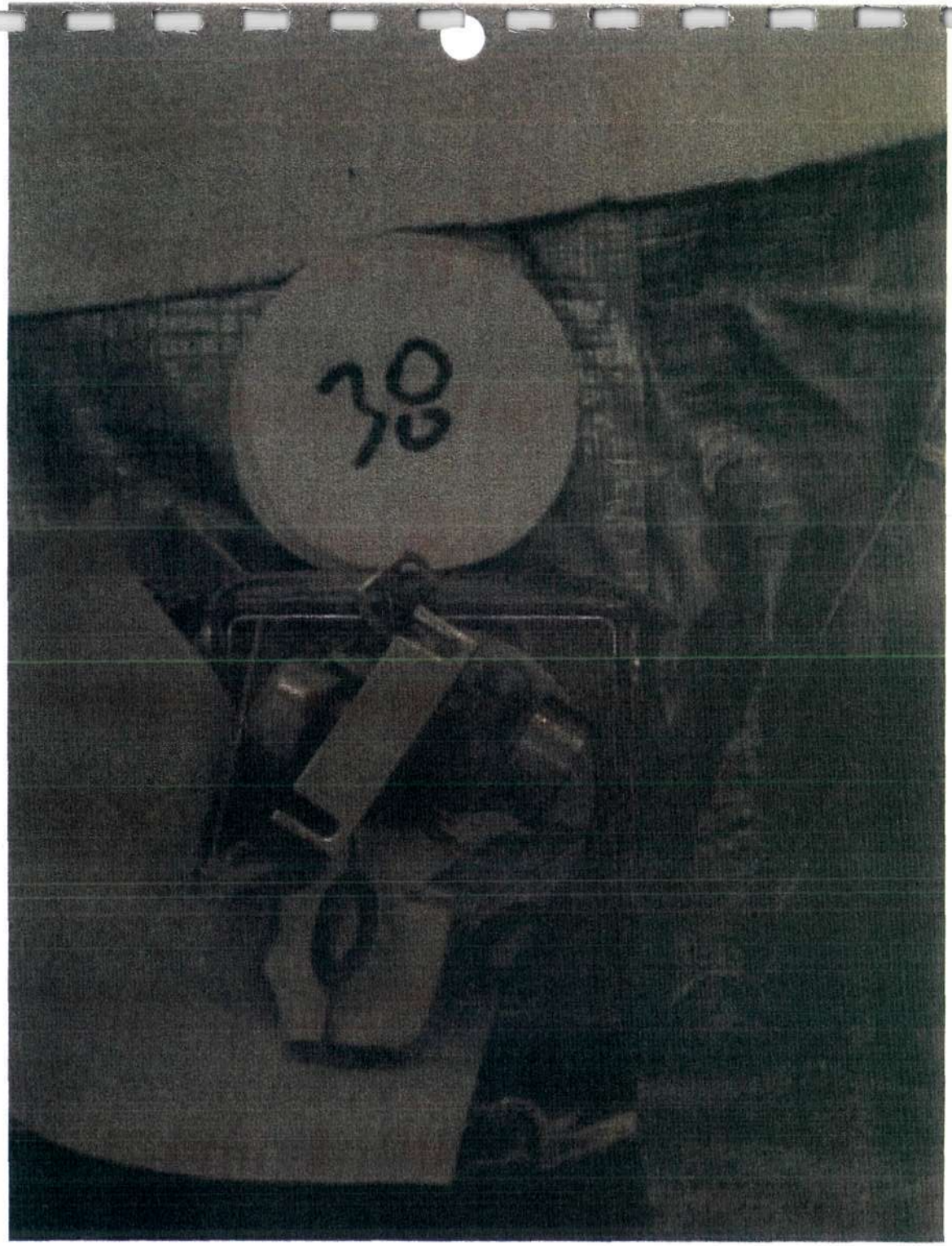
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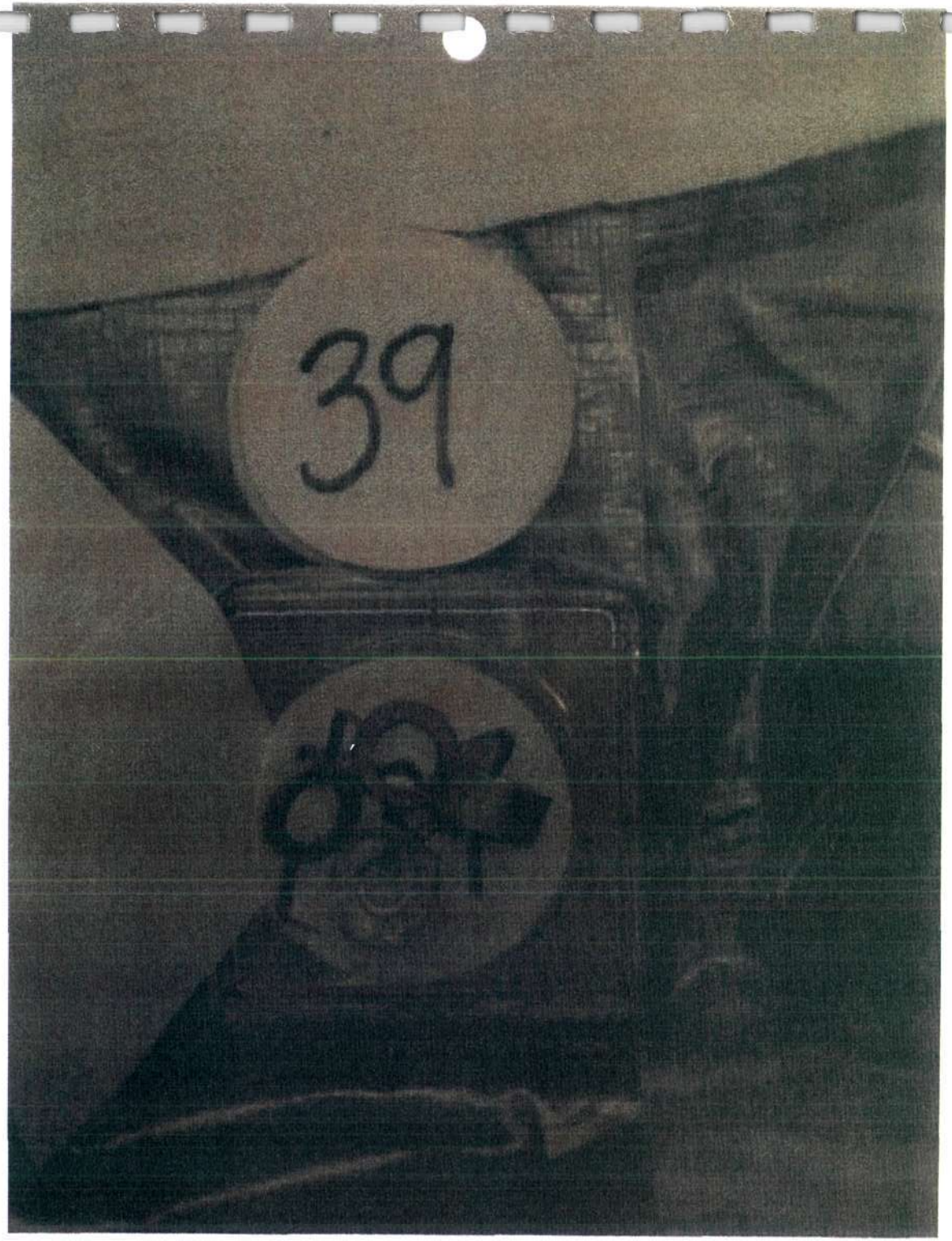
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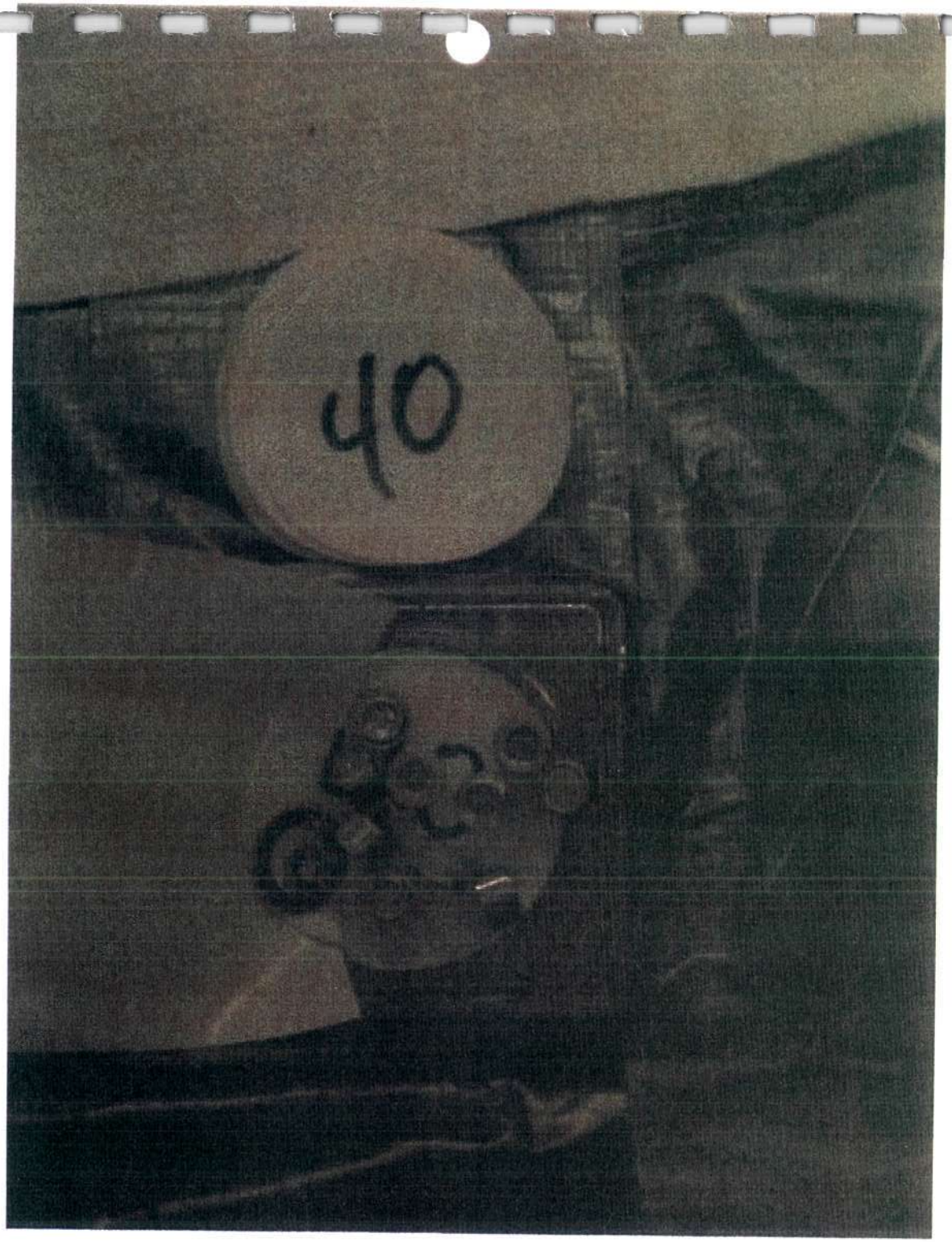
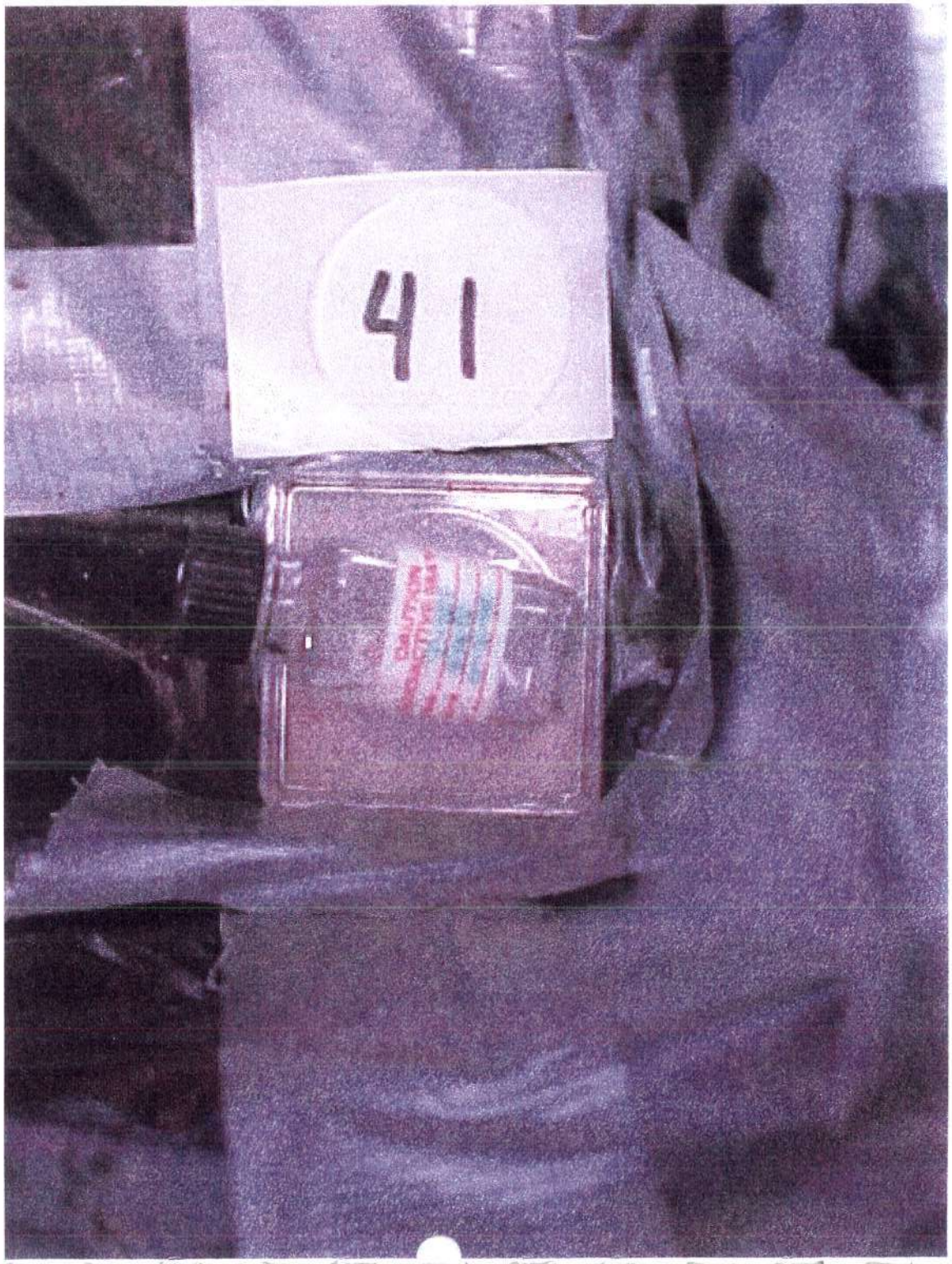

40
C-30


41

USEcology
FS-TX-02-01
Source Log

Date 2/9/02

BKG	mR/hr
1"	
12"	
36"	

	~~42~~ A/B	~~43~~ A/B	~~44~~ A/B	~~45~~ A/B	
Container #	42	43	44	45	46
External on pig in mR/hr	21				
External on pig Neutron mR/hr	Ø				
Contact open pig mR/hr	~~10~~ 20				
Beta on open pig mR/hr O/W	1500				

Table Readings

Source mR/hr @ 1 inch	10				
Source mR/hr @ 12 inches	1				
Source mR/hr @ 36 inches	0.2				
Smear DPM per 100 cm^2 Alpha	1,200				
Smear DPM per 100 cm^2 Beta	BKG				
Size of source in cc's	2				
Weight in grams	2				
Pic	✓				
CPM Alpha					
Direct Beta/Gamma					

Info on source:

	~~3.0 Rad per second~~ 25000(a) @ 4" inches				

~~[illegible]~~ 25,000 OW @ 4"

Information on pig:

	3.6 Rad per second * 162 mCi				

42

USEcology
FS-TX-02-01
Source Log

Date 2-12-02

BKG	mR/hr
1"	0.2
12"	0.2
36"	0.2

Container #	43				
External on pig in mR/hr	<1				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	5				
Beta on open pig mR/hr O/W	15				

Picture	✓				

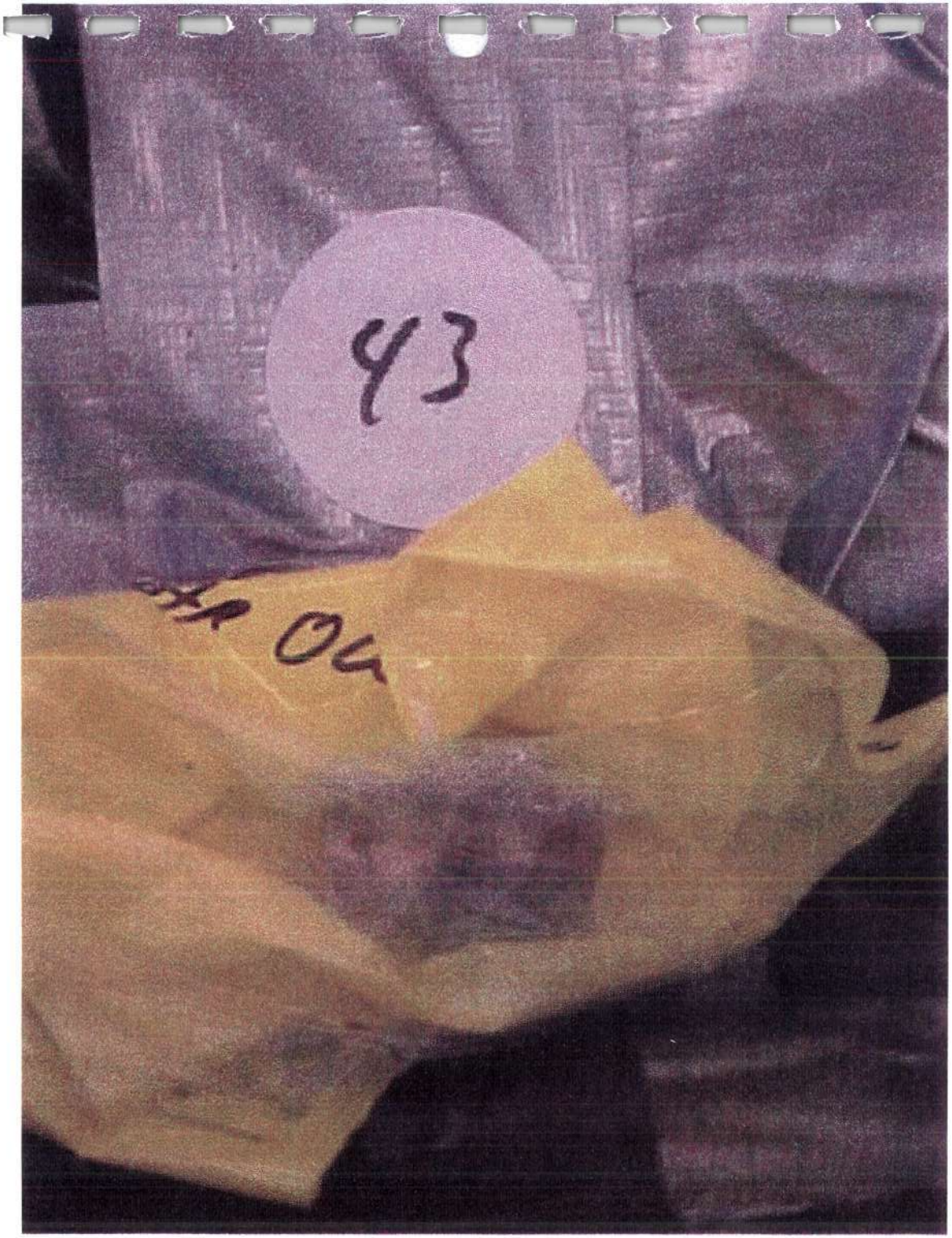
Table Readings

Source mR/hr @ 1 inch	15				
Source mR/hr @ 12 inches	0.6				
Source mR/hr @ 36 inches	0.4				
Size of source in cc's	8				
Weight in grams	10				

CPM Alpha	15,000,000	@ 3/4"			
Direct Beta/Gamma	600,000				

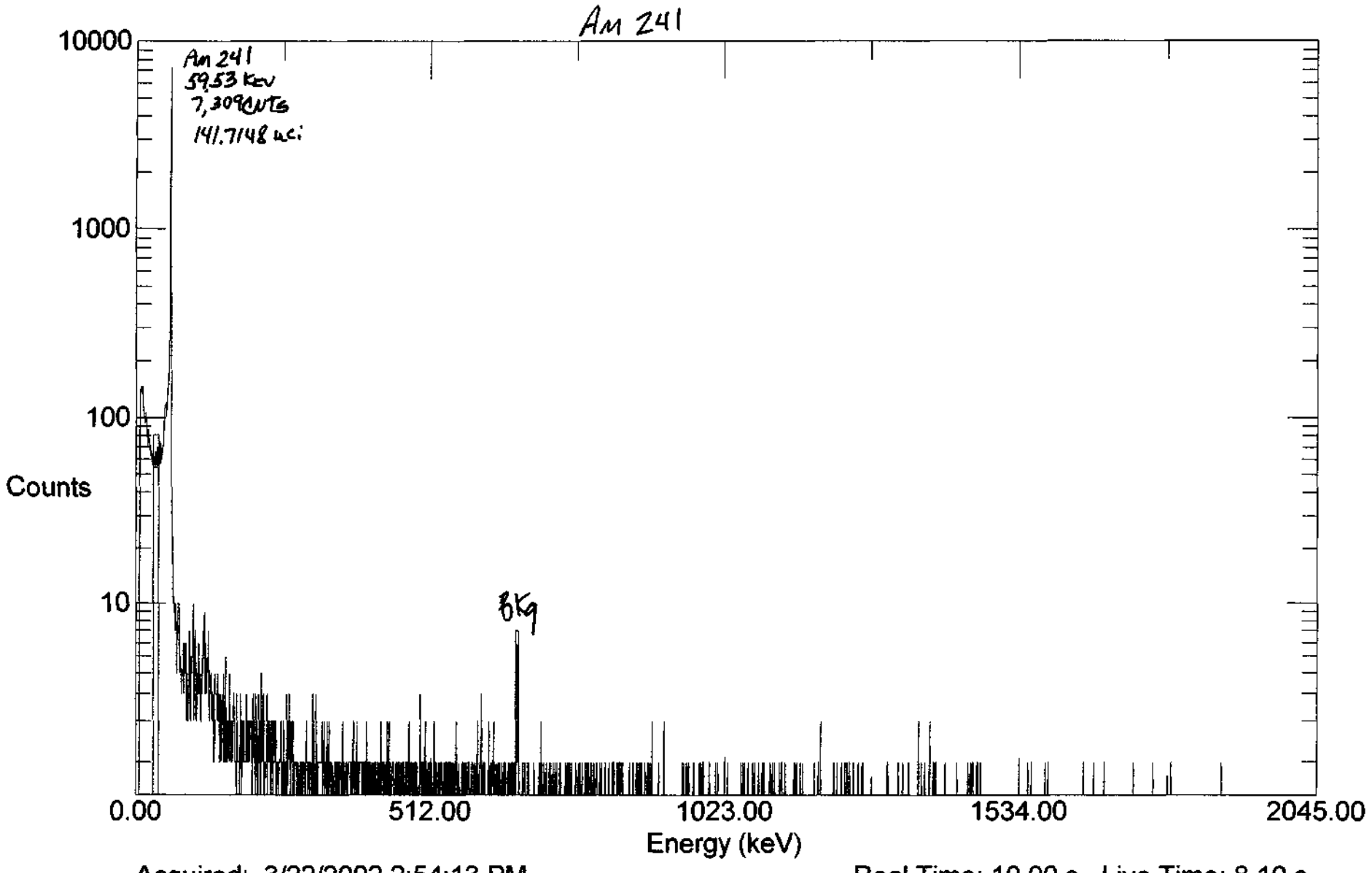
Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha	1,500,000				
Smear DPM per 100 cm^2 Beta	60,000				
	AM241				


43

015 1SC-43-2 3-22-2002 2.54.13 PM

1SC-43-2



Acquired: 3/22/2002 2:54:13 PM Real Time: 10.00 s. Live Time: 8.10 s.

File: C:\User\GNIWEB~1\015 1SC-43-2 3-22-2002 2.54.13 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 2-16-02

BKG	mR/hr
6"	N/A
12"	
36"	

Container #	44	45	46	47	48
External on pig in mR/hr					
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact on pig mR/hr	10	16	20	15	13
Beta on pig mR/hr O/W	3000	5000	6000	6000	5000

Picture	✓	✓	✓	✓	✓

Table Readings

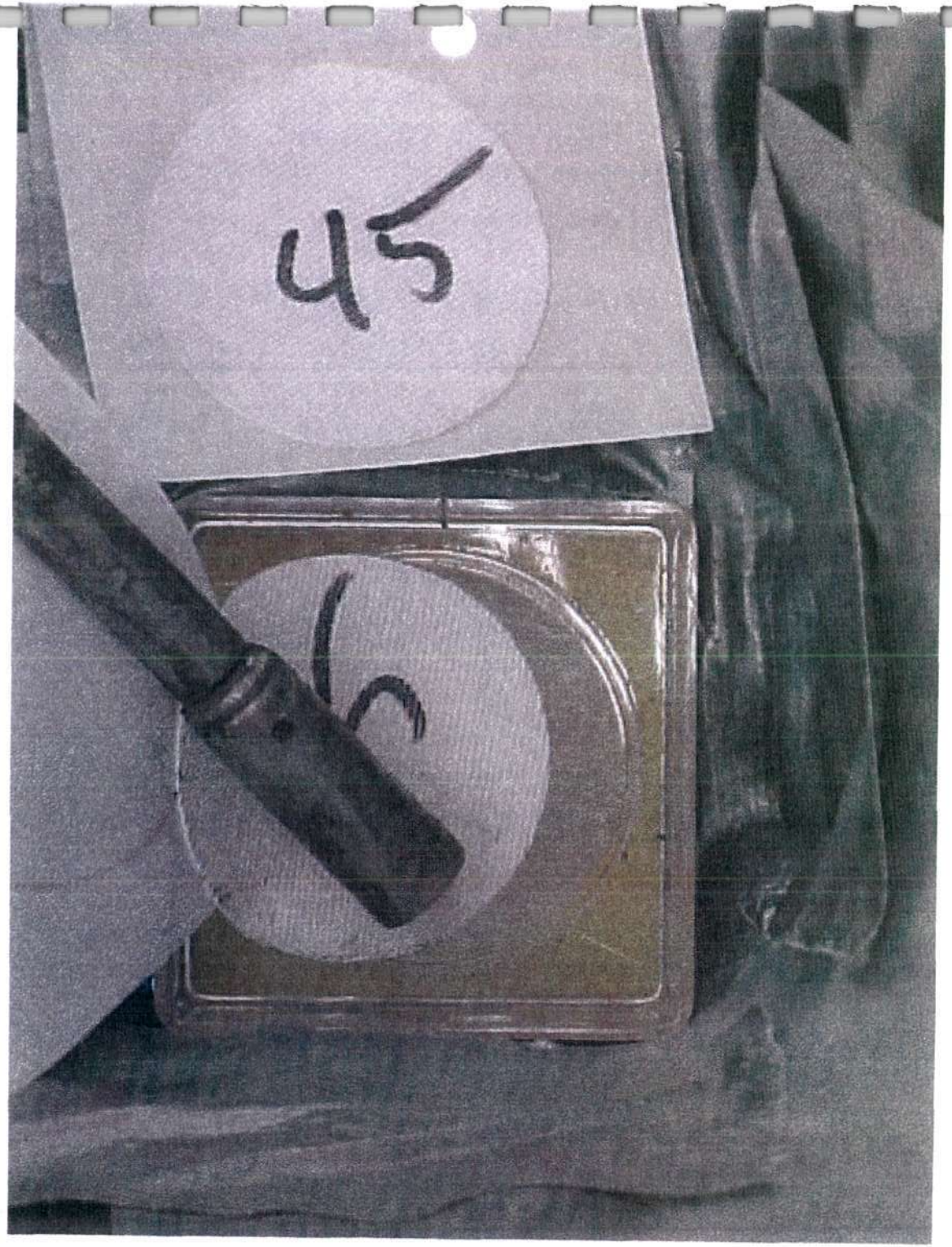
Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	N/A
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	~~20~~ 5	30	30	30	30
Weight in grams	50	300	300	300	300

Direct Alpha DPM/100cm2	25.7	11.4	33	42	4.3
Direct Beta/Gamma DPM/100cm2	14.54	88.8	25.2	19.1	<6.7

Info on source:	15 mCI SR90 FEB'73	15 mCI SR90 DEC'72	15 mCI SR90 DEC'67	15 mCI SR90 JUL '68	15 mCI SR90 JUL '68
	3FIR	3FIR	~~3FIR~~	3FIR	3FIR

Information on pig: 3M	10138 3M	10144	3M1071 3DIG	3M1085	3M1083
~~Smear DPM per 100 cm^2 Alpha~~					
~~Smear DPM per 100 cm^2 Beta~~					

44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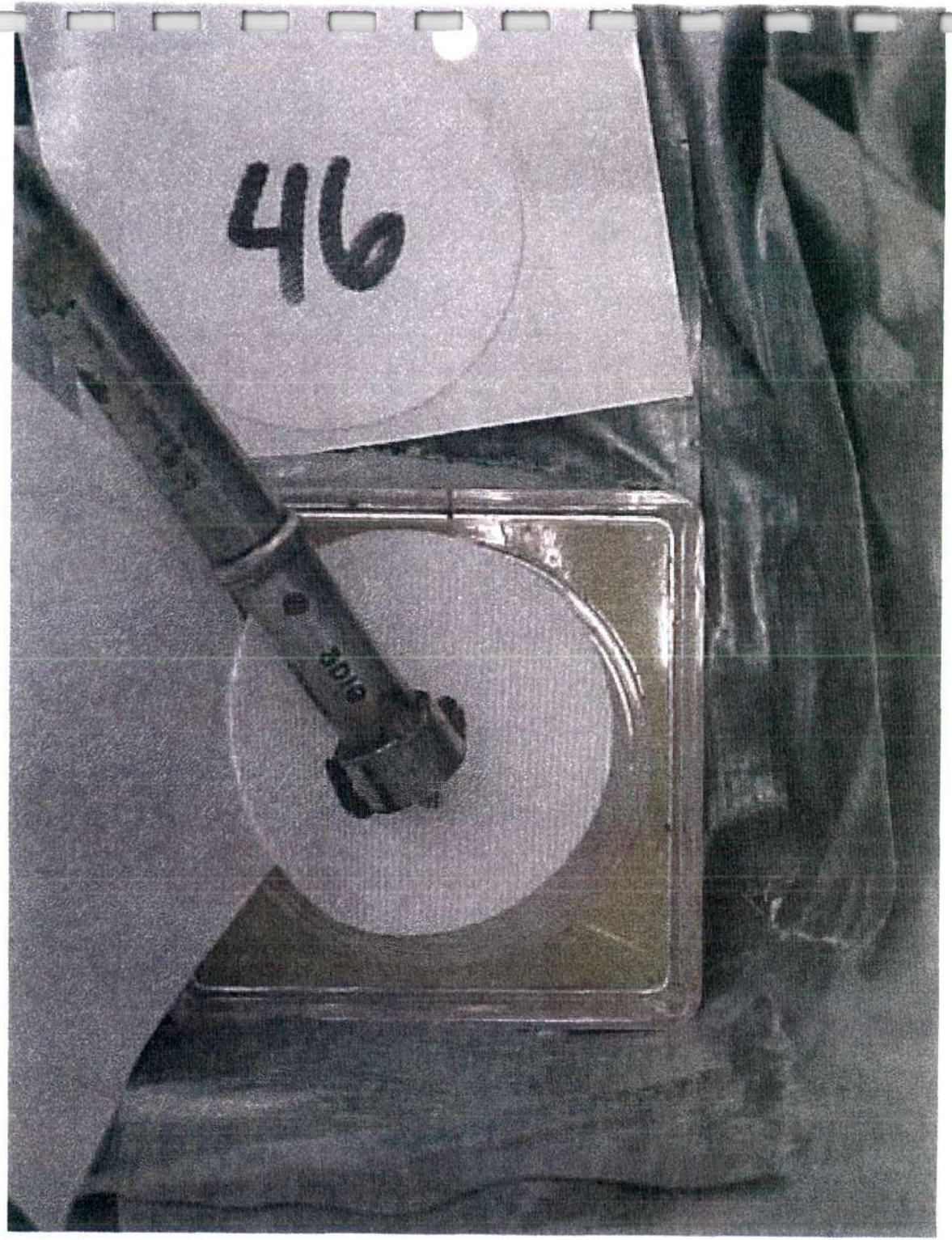
6


46

47
47

48

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **2/16/02** **Time** 1415

Location Source Leak Rate

Survey #

MDA Alpha DPM	MDA Beta DPM
10	67.2

BKG Alpha CPM	BKG Beta CPM
0.3	74

Alpha Eff 0.28

	2 Min CPM	DPM
44	15	25.7
45	7	11.4
46	19	32.9
47	24	41.8
48	3	4.3
49	2	2.5
50	3	4.3
51	4	6.1
52	0	-1.1
53	0	-1.1
54	0	-1.1
55	36	63.2
56	1	0.7
57	2	2.5
58	1	0.7
59	0	-1.1
60	3	4.3
61		-1.1
62		-1.1
63		-1.1
64		-1.1
65		-1.1
66		-1.1
67		-1.1
68		-1.1

Beta/Gamma Eff 0.33

	2 Min CPM	DPM
44	158	14.5
45	207	88.8
46	165	25.2
47	161	19.1
48	144	-6.7
49	168	29.7
50	134	-21.8
51	188	60.0
52	167	28.2
53	151	3.9
54	164	23.6
55	174	38.8
56	165	25.2
57	150	2.4
58	163	22.1
59	150	2.4
60	209	91.8
61		-224.8
62		-224.8
63		-224.8
64		-224.8
65		-224.8
66		-224.8
67		-224.8
68		-224.8

USEcology
FS-TX-02-01
Source Log

Date 2-16-02

BKG	mR/hr
6"	N/A
12"	
36"	

Container #	49	50	51	52	53
External on pig in mR/hr	N/A				
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	20	10	12	16	20
Beta on open pig mR/hr O/W	5000	6000	5000	6000	6000

Picture	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	N/A
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	30	30	30	30	30
Weight in grams	300	300	300	300	300

DPM Alpha DPM/100cm²	2.5	4.3	6.1	<-1.1	<-1.1
Direct Beta/Gamma DPM/100cm²	30	<-21.8	60.0	28.2	<3.9

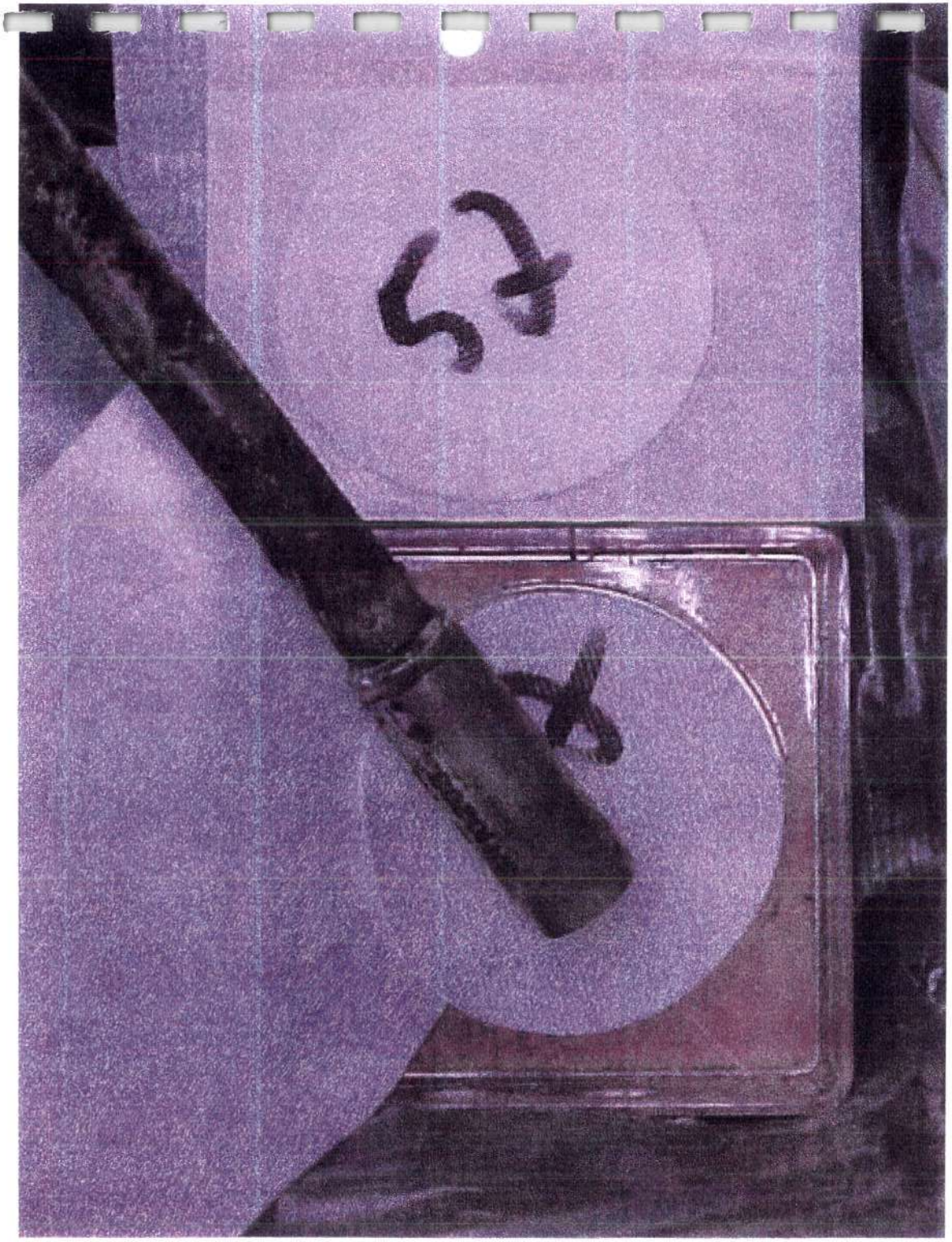
Info on source:	15 mCi Sr 90 DEC	15 mCi Sr 90 MAY '70	15 mCi Sr 90 APRIL '69	15 mCi Sr 90 OCT '79	15 mCi Sr 90 OCT '79
	3DIG	~~3FIR~~?	3FIR	3FIR	3FIR

Information on pig:	3M1075	3M10115	3M1088	3M10209 3M10203	3M10204
~~Smear DPM per 100 cm^2 Alpha~~					
Smear DPM per 100 cm^2 Beta					

49
49

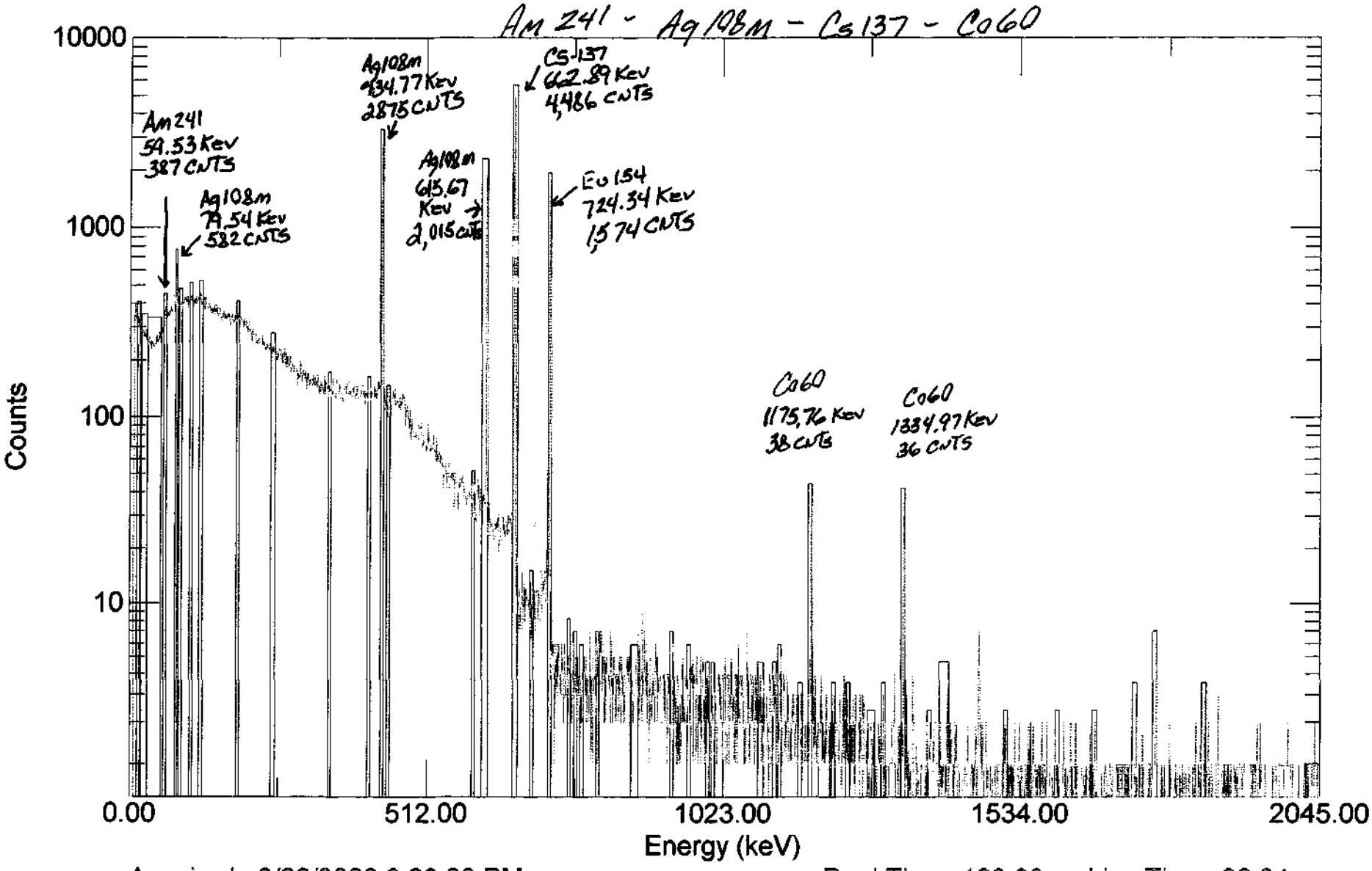
50
50

51


57
4

038 ITEM52 3-26-2002 3.29.06 PM

ITEM52



Acquired: 3/26/2002 3:29:06 PM Real Time: 120.00 s. Live Time: 96.94 s.

File: C:\User\GNIWEB~1\038 ITEM52 3-26-2002 3.29.06 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

53
53

USEcology
FS-TX-02-01
Source Log

Date 2/16/02

BKG	mR/hr
18"	
12" N/A	
36"	

Container #	54	55	56	57	58 ✓
External on pig in mR/hr N/A					
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	12	15	10	11	14
Beta on open pig mR/hr O/W	6000	6000	5000	6000	5000

Picture	✓	✓	✓	✓	✓

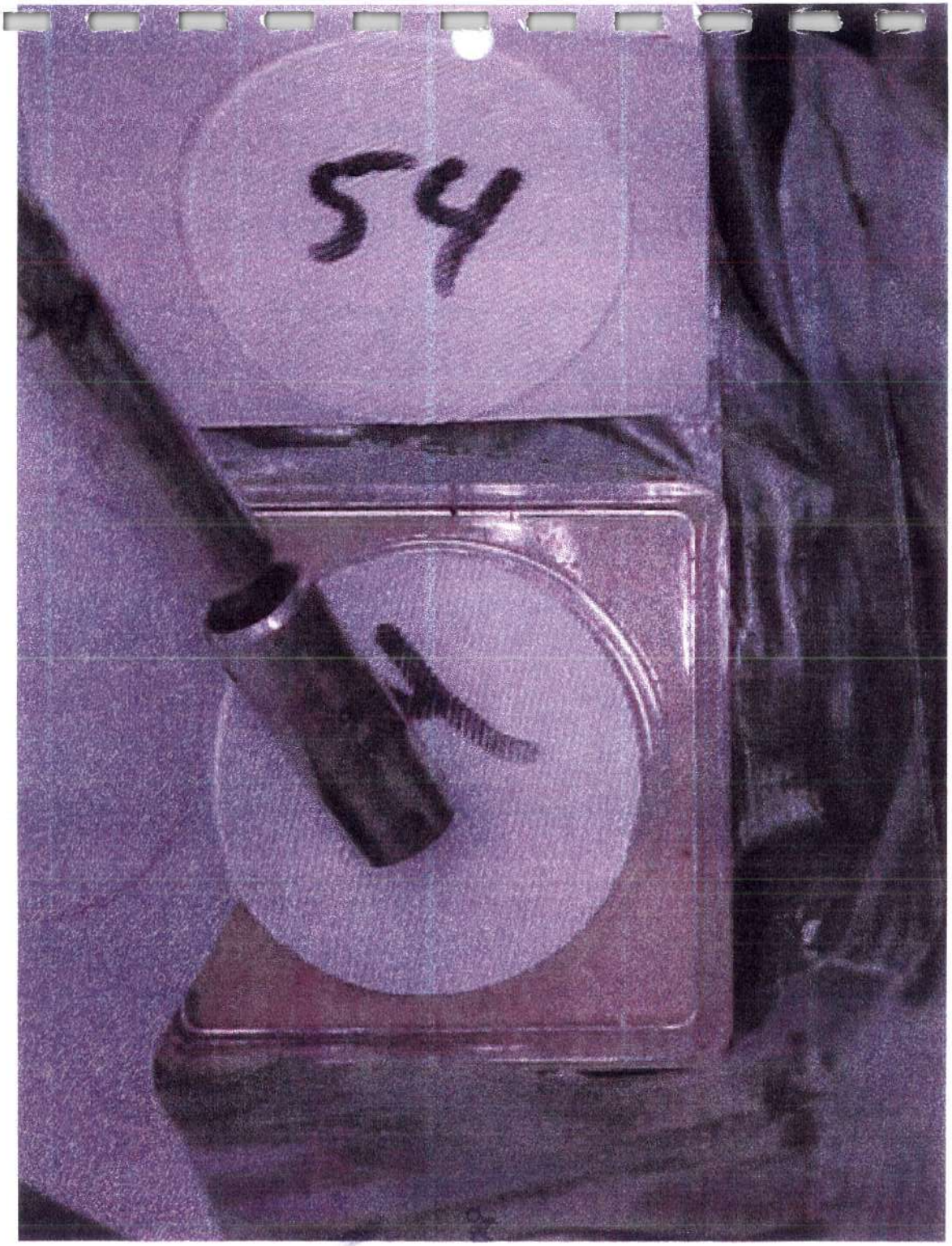
Table Readings

Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	N/A
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	15	30	30	30	30
Weight in grams	200	300	300	300	300

DPM Alpha DPM/100 cm²	-1.1	63.2	0.7	32.5	+0.7
DPM Beta/Gamma DPM/100 cm²	74 23.6	40 38.8	75.2	32.4	22.1

Info on source:	15 mCi Sr 90 DEC '72	15 mCi Sr 90 OCT 79	15 mCi Sr 90 FEB 73	15 mCi Sr 90 MAY 70	15 mCi Sr 90 DEC 72
	3FIR	3FIR	3FIR	3FIR	

Information on pig:	3m10145	3m10198	3m10153	3m10114	3m10143
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					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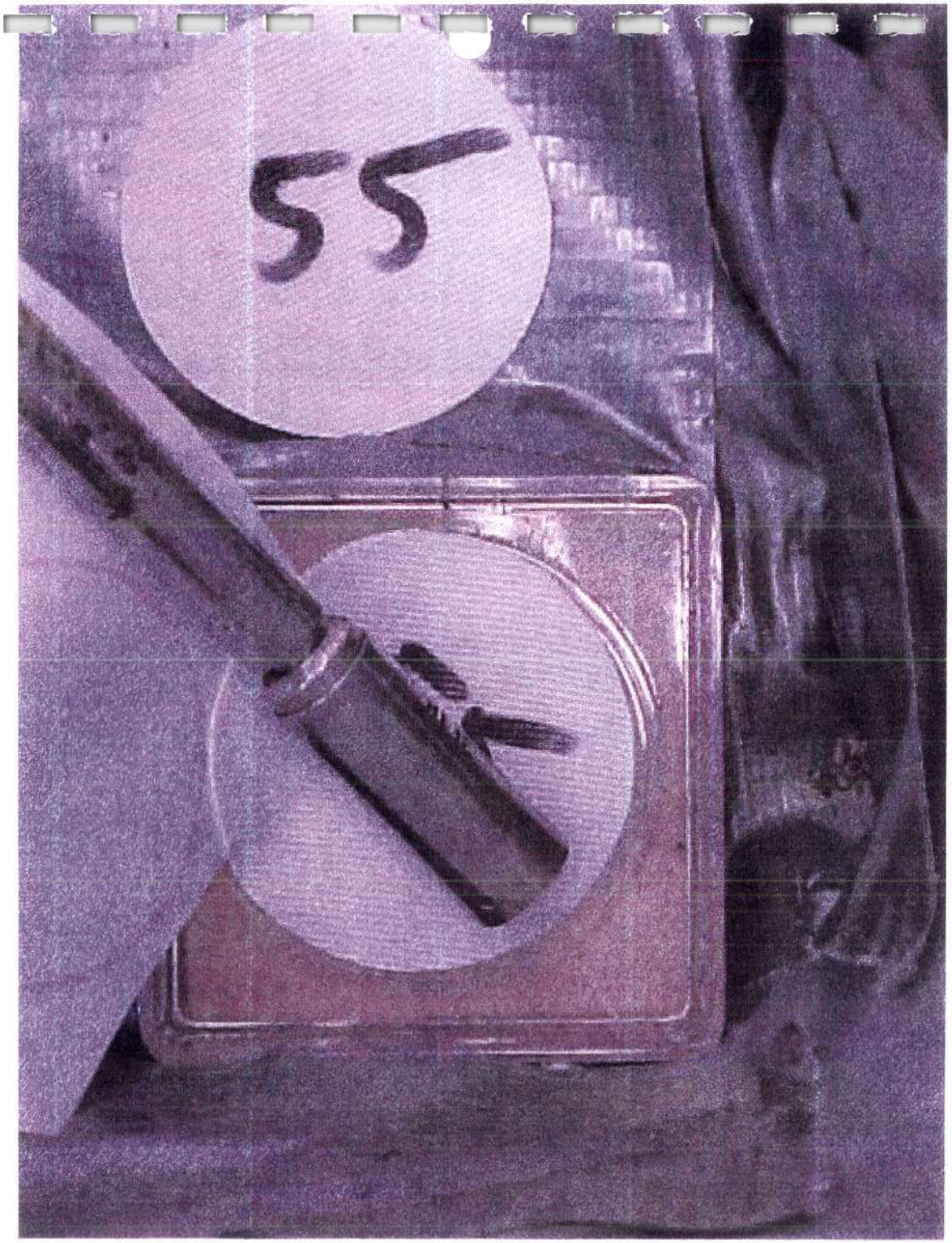
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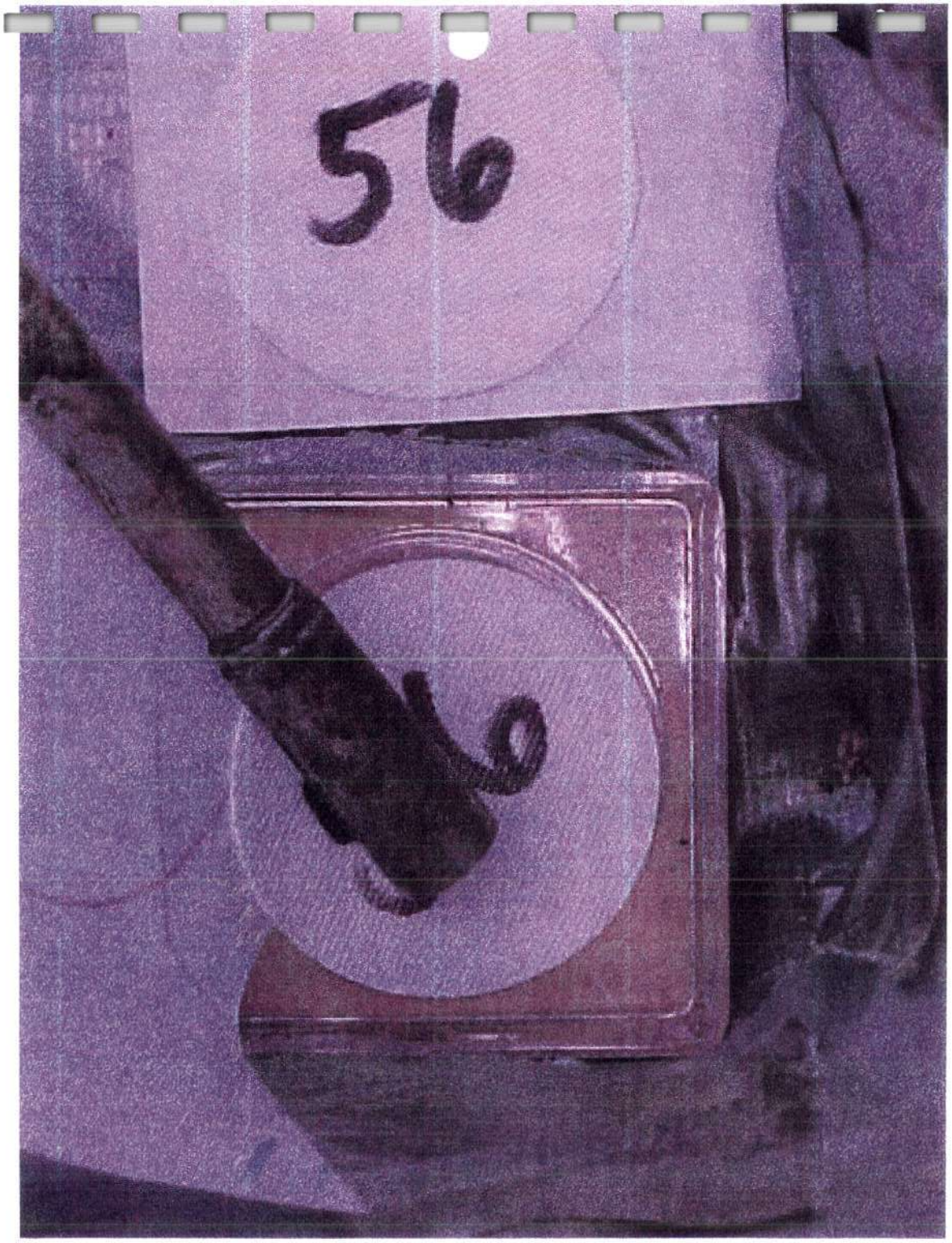
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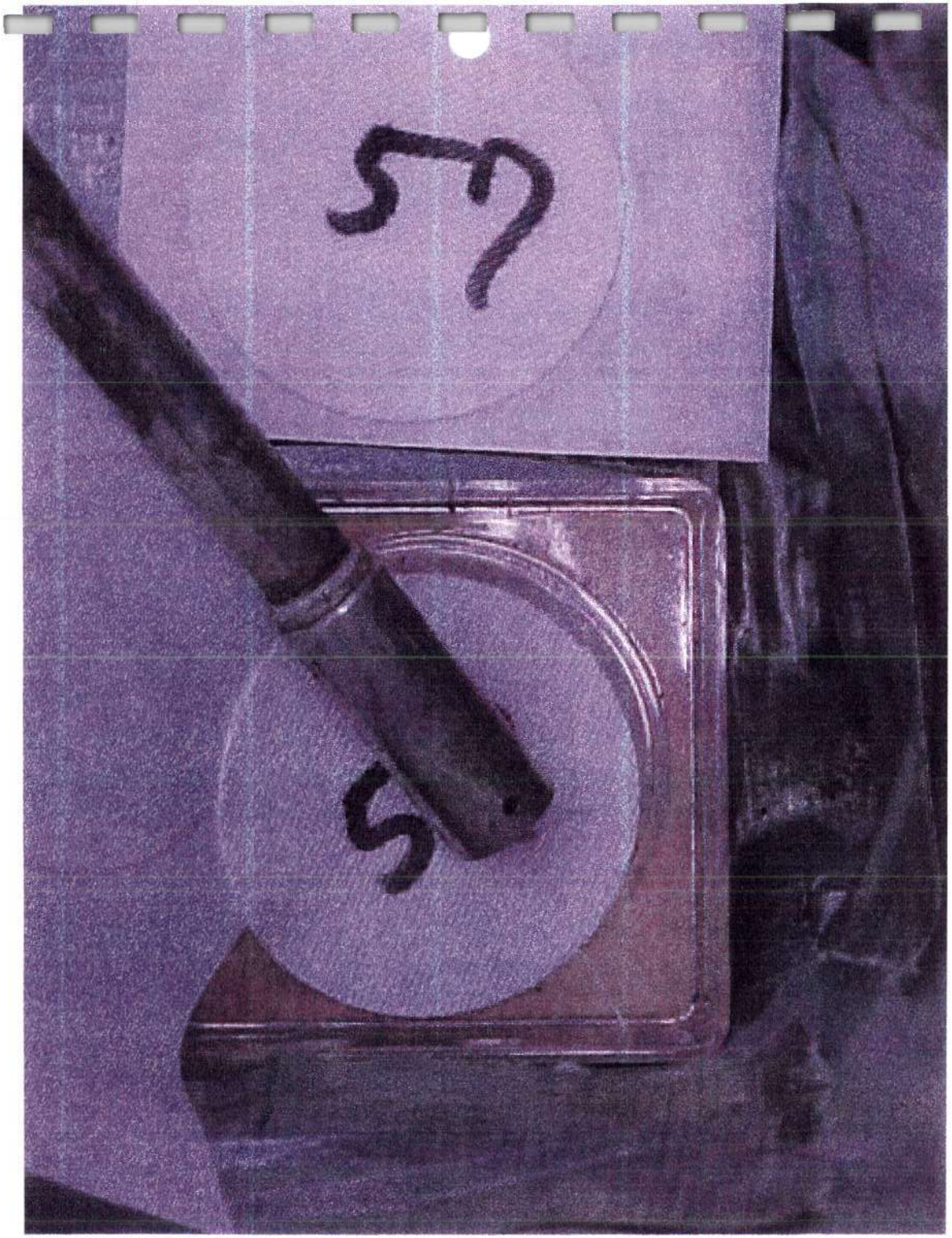
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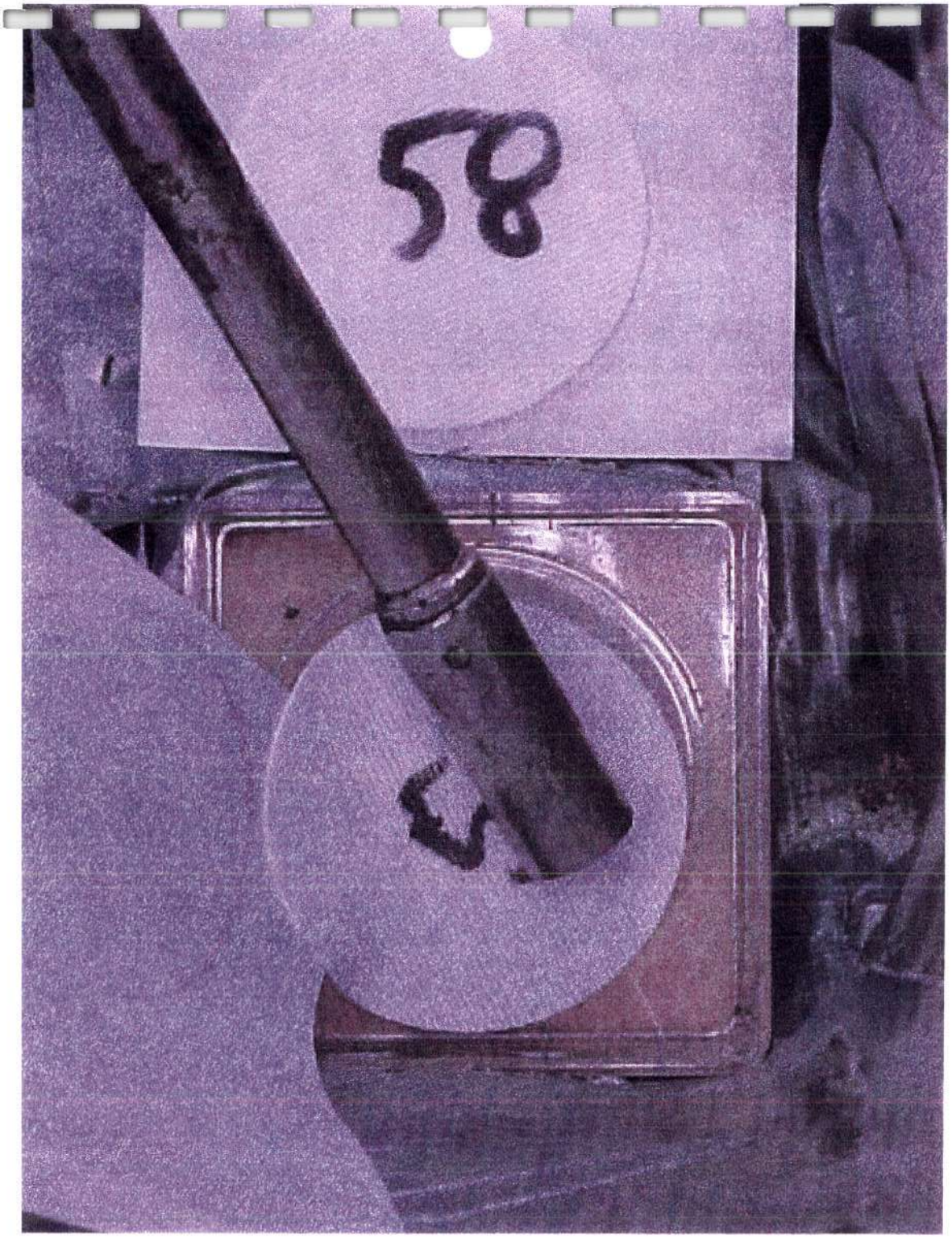

58

USEcology
FS-TX-02-01
Source Log

Date 2/16/02

BKG	mR/hr
6"	
12"	N/A
36"	

Container #	59	60			
External on pig in mR/hr N/A	~~[illegible]~~	~~[illegible]~~			
External on pig Neutron mR/hr	<1	<1			
Contact open pig mR/hr	11	21			
Beta on open pig mR/hr O/W	5000	5000			

Picture	✓	✓			

Table Readings

Source mR/hr @ 6 inch	N/A	N/A	N/A	N/A	
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's	30	30			
Weight in grams	300	300			

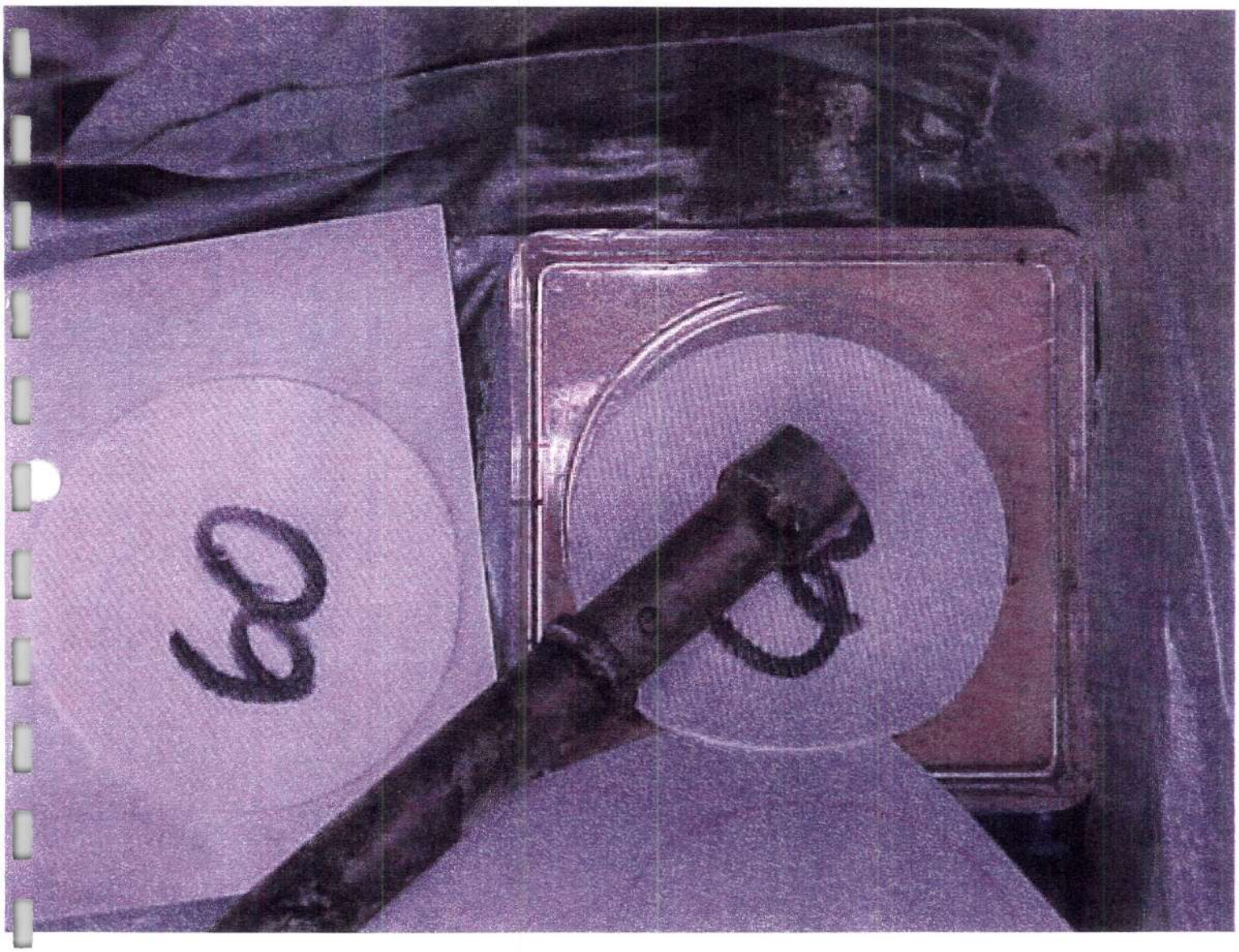
DPM Alpha DPM/100cm²	-1.1	4.3			
Direct Beta/Gamma DPM/100cm²	24	92			

Info on source:	15 mCi Sr 90 April '69	~~15 mCi Sr 90~~ 1017			

3DIG

Information on pig:	3M 1089				
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

59
5


8
8

USEcology
FS-TX-02-01
Source Log

Date 3-6-02

BKG	mR/hr
6"	.1
12"	.2
36"	.4

Container #	25	61	62	63	64
External on pig in mR/hr	N/A	<1	3	<1	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	N/A	<1	2	<1	2
Beta on open pig mR/hr O/W		<1	7	<1	10

Picture	N/A	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	N/A	Bkg	1.0	Bkg	0.7
Source mR/hr @ 12 inches		Bkg	0.5	Bkg	0.3
Source mR/hr @ 36 inches		Bkg	0.4	Bkg	0.4
Size of source in cc's		20 ml	2cc	20 ml	5ml
Weight in grams		20 gr	5gr	20 gr 7.5	15gr

CPM Alpha	N/A	~~Bkg~~ 31	N/A 75	~~Bkg 8~~	-1.4 N/A
Direct Beta/Gamma		~~Bkg~~ 12	5	~~Bkg 19~~ 18.5	~~[illegible]~~ -205.8

Info on source:	HALE	Liquid Id 131 7-18-90 15mci	None	Same	None

Information on pig:	All	I&W-131 15mci ~~178~~ 7-18-90	NONE	I+W-131 I 131 15 mci *7-18-90	None
Smear DPM per 100 cm^2 Alpha		31	75	8	4500K
Smear DPM per 100 cm^2 Beta		12	5	19	60K
	Tyre	Liquid		Liquid	Hole in AM241 SOURCE

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **3/6/02** **Time** 1635

Location Sources

Survey # N/A

MDA Alpha DPM	MDA Beta DPM
10.4	64.5

BKG Alpha CPM	BKG Beta CPM
0.4	68

Alpha Eff 0.26

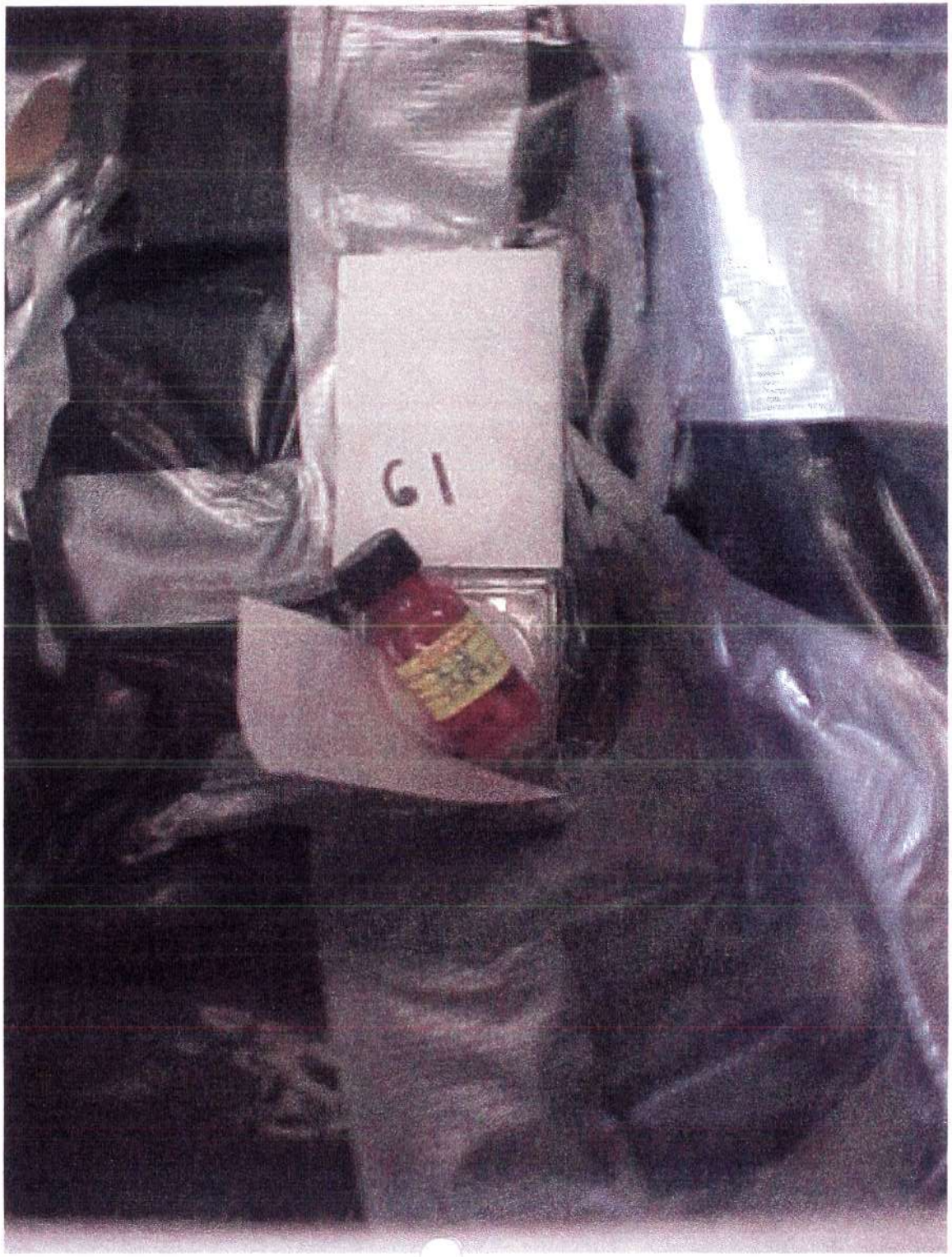
	2 Min CPM	DPM
61	18	30.7
62	43	75.4
63	5	7.5
64		-1.4
65		-1.4
66	46	80.7
67	3	3.9
68	2	2.1
69	2	2.1
70	102	180.7
71	7	11.1
72	5	7.5
73		-1.4
74	105	186.1
*75	1	0.4
*76	15	25.4
77		-1.4
78		-1.4
79		-1.4
80		-1.4
81		-1.4
82		-1.4
83		-1.4
84		-1.4
85		-1.4

Beta/Gamma Eff 0.33

	2 Min CPM	DPM
61	144	12.4
62	139	4.8
63	148	18.5
64		-205.8
65		-205.8
66	176	60.9
67	142	9.4
68	162	39.7
69	141	7.9
70	165	44.2
71	146	15.5
72	148	18.5
73		-205.8
74	171	53.3
75	163	41.2
76	180	67.0
77		-205.8
78		-205.8
79		-205.8
80		-205.8
81		-205.8
82		-205.8
83		-205.8
84		-205.8
85		-205.8

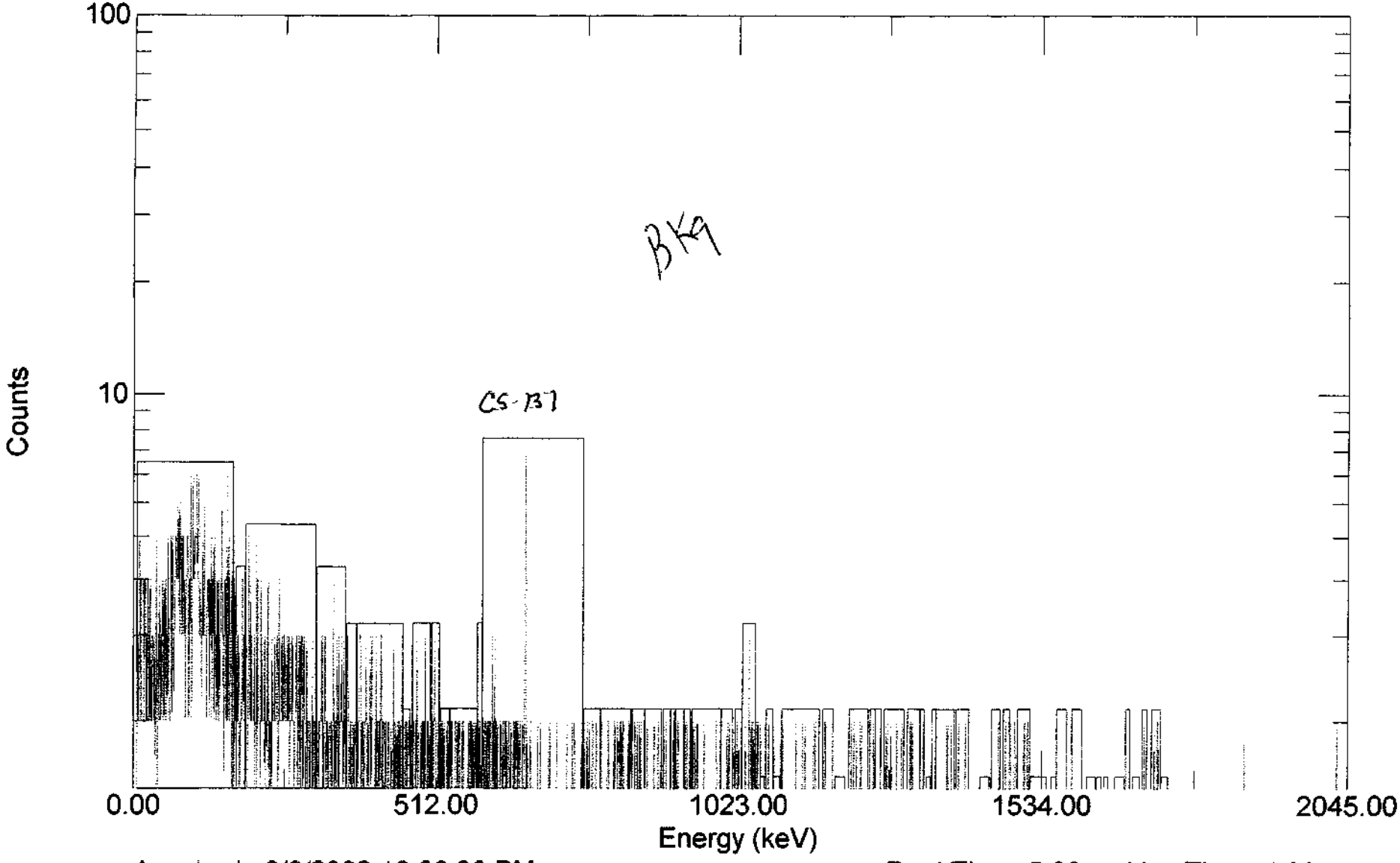
* Brick

* Source


61

009 1SC-61 3-6-2002 12.08.29 PM

SC-61



Acquired: 3/6/2002 12:08:30 PM Real Time: 5.00 s. Live Time: 4.92 s.

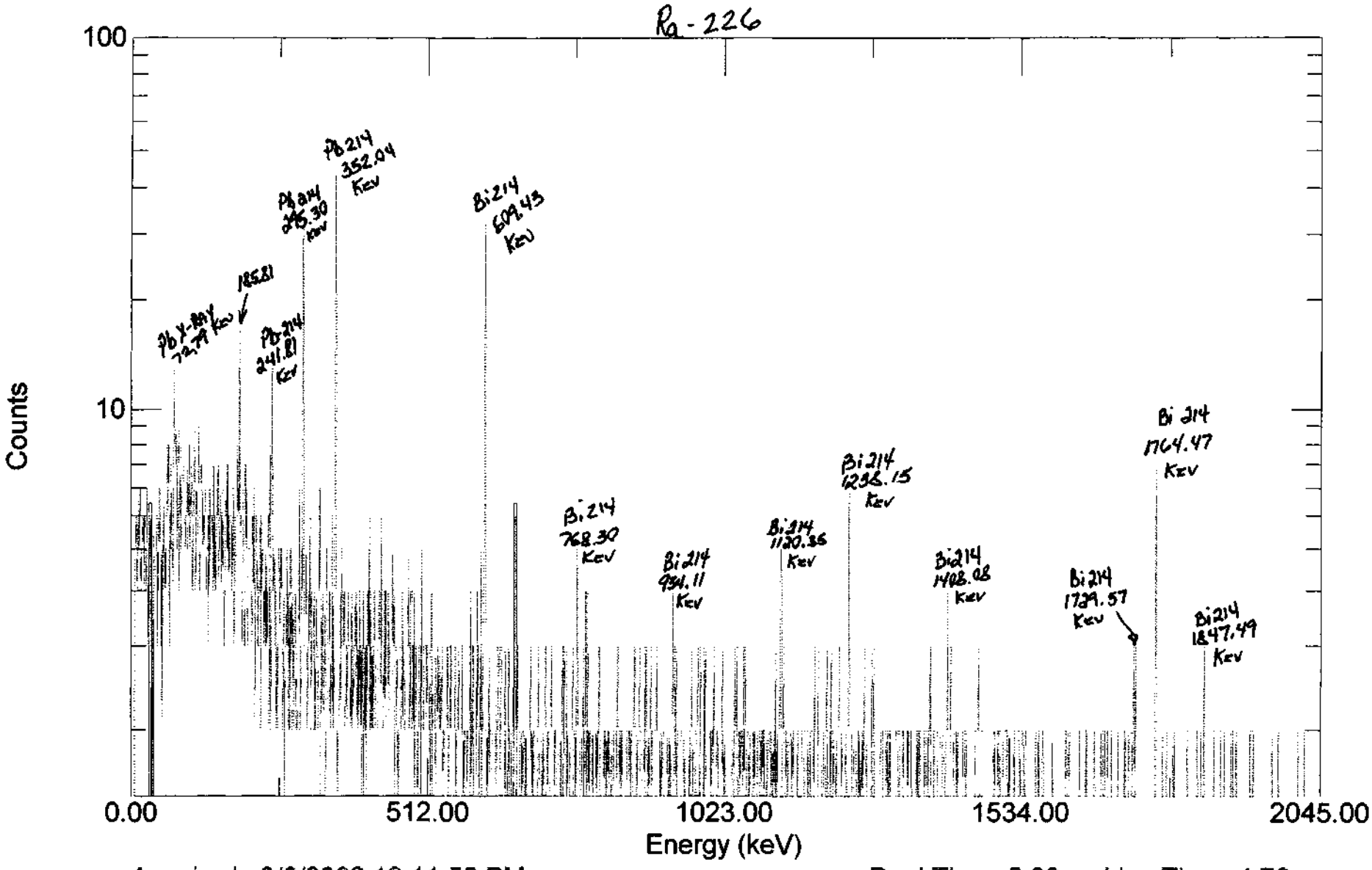
File: C:\User\GNIWEB~1\GNISOU~1\009 1SC-61 3-6-2002 12.08.29 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

62
63

0101 SC-62 3-6-2002 12.11.55 PM

SC-62



Acquired: 3/6/2002 12:11:55 PM Real Time: 5.00 s. Live Time: 4.78 s.

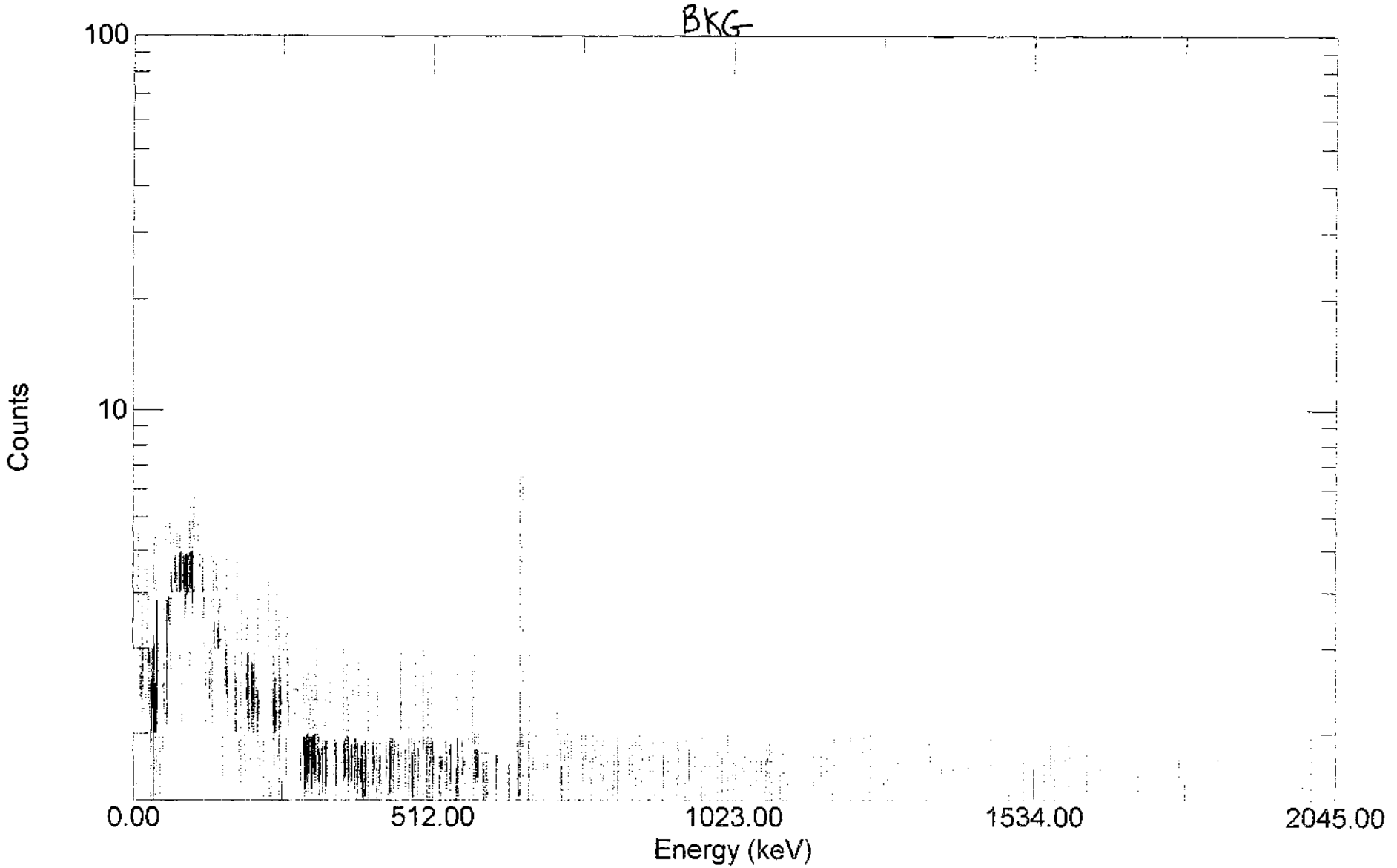
File: C:\User\GNIWEB~1\GNISOU~1\0101 SC-62 3-6-2002 12.11.55 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

63

011 1SC-63 3-6-2002 12.15.44 PM

SC-63



Acquired: 3/6/2002 12:15:44 PM Real Time: 5.00 s. Live Time: 4.92 s.

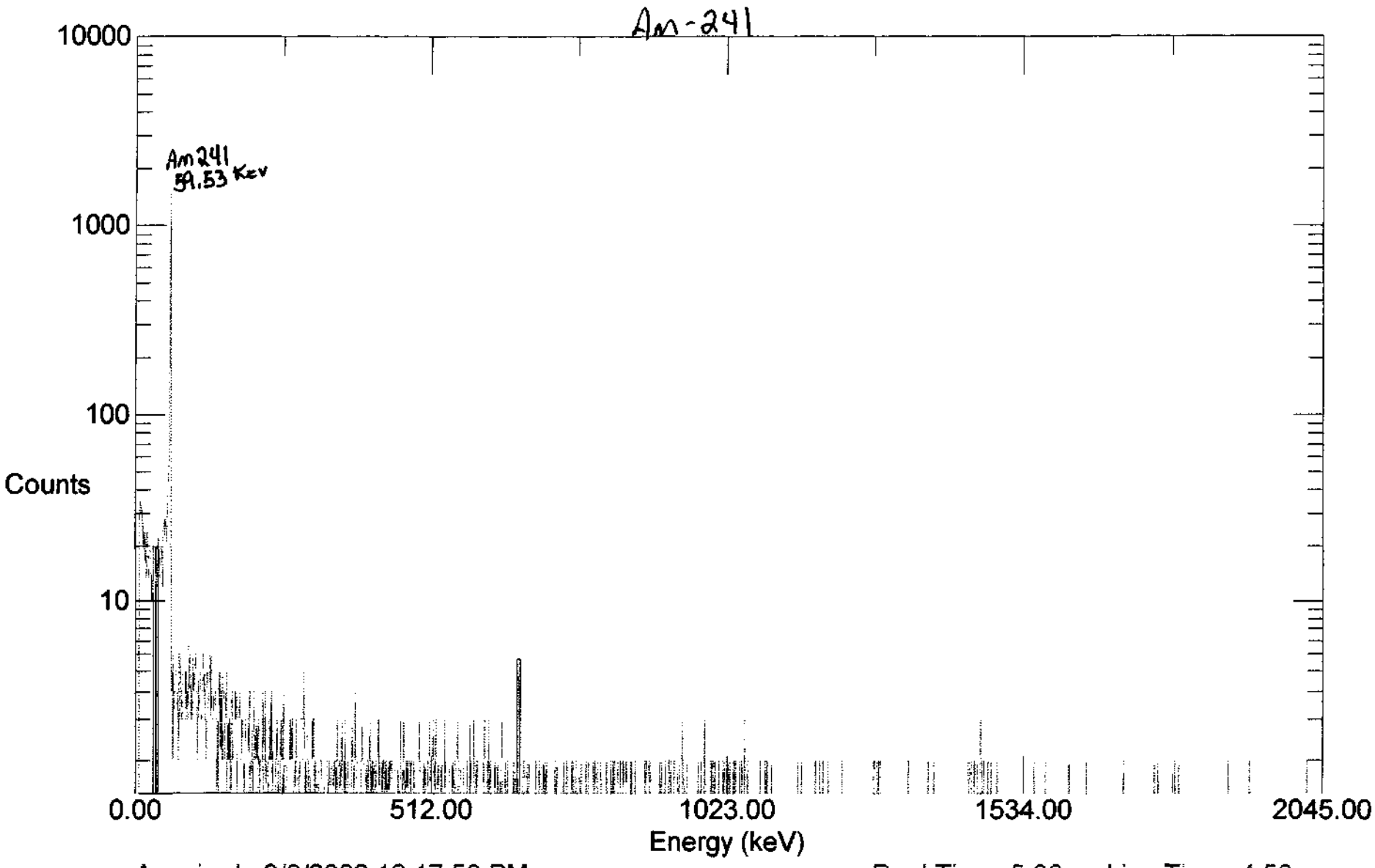
File: C:\User\GNIWEB~1\GNISOU~1\011 1SC-63 3-6-2002 12.15.44 PM.Spc. Channels: 8192

Detector: #1 digiDART USE 1b

H9

012 1 SC-64 3-6-2002 12.17.56 PM

SC-64



Acquired: 3/6/2002 12:17:56 PM Real Time: 5.00 s. Live Time: 4.56 s.

File: C:\User\GNIWEB~1\GNISOU~1\012 1 SC-64 3-6-2002 12.17.56 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-6-02

BKG	mR/hr
6"	.1
12"	.2
36"	.4

Container #	65	66	67	68	69
External on pig in mR/hr	<1	<1	<1	<1	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<1	<1	<1	<1	<1
Beta on open pig mR/hr O/W	<1	<1	<1	<1	<1

Picture	✓	✓	✓	✓	✓
Digi Dart	✓	✓	✓	✓	✓

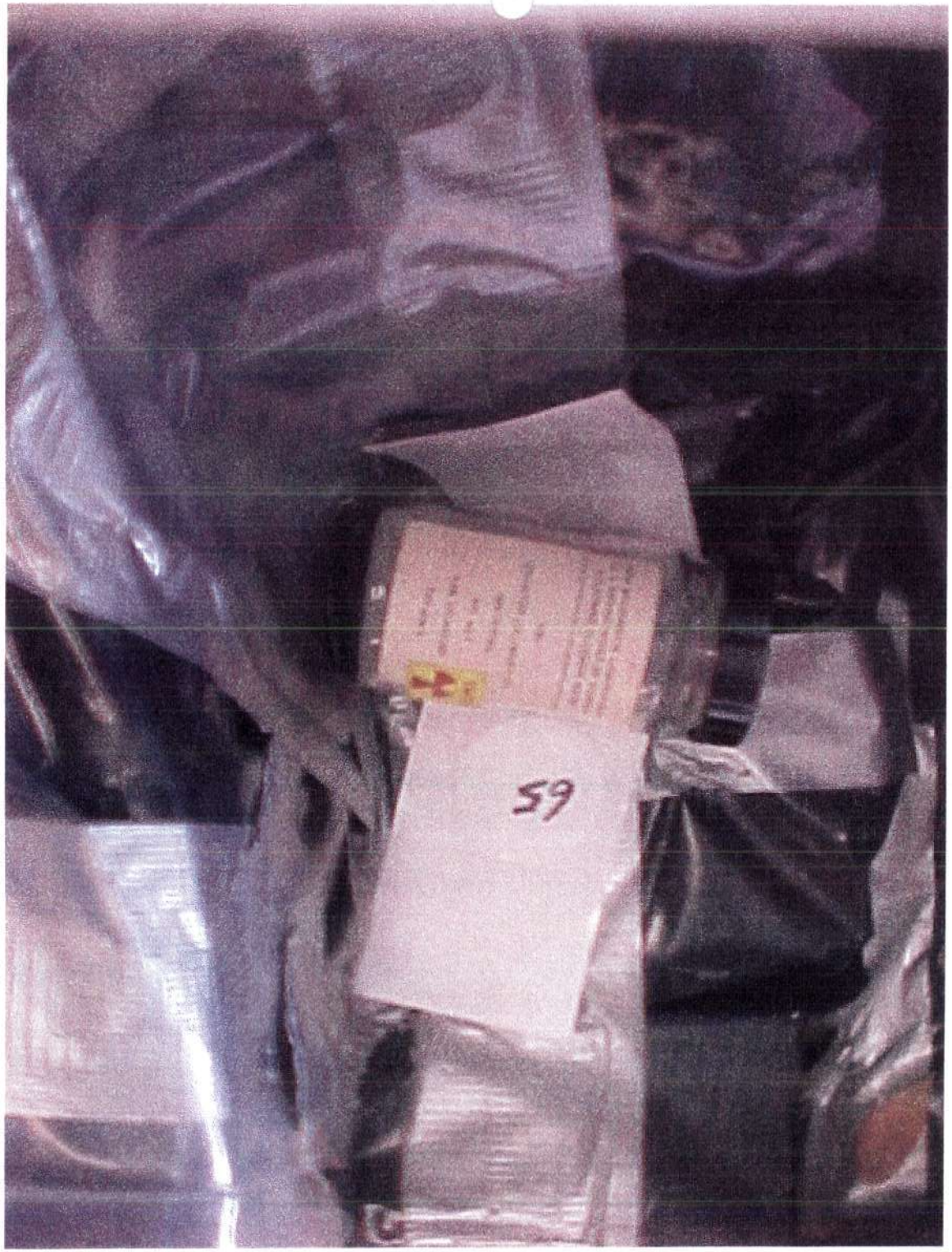
Table Readings

Source mR/hr @ 6 inchs	.2	BKg	BKg	BKg	BKg
Source mR/hr @ 12 inches	BKg	BKg	BKg	BKg	BKg
Source mR/hr @ 36 inches	BKg	BKg	BKg	BKg	BKg
Size of source in cc's	125	125	125	65	125
Weight in grams	100	100	100	60	100

CPM Alpha	~~5000-1+~~	~~3000~~	200	100	100
Direct Beta/Gamma	~~3000~~ ~~205.8~~	500	200	200	100

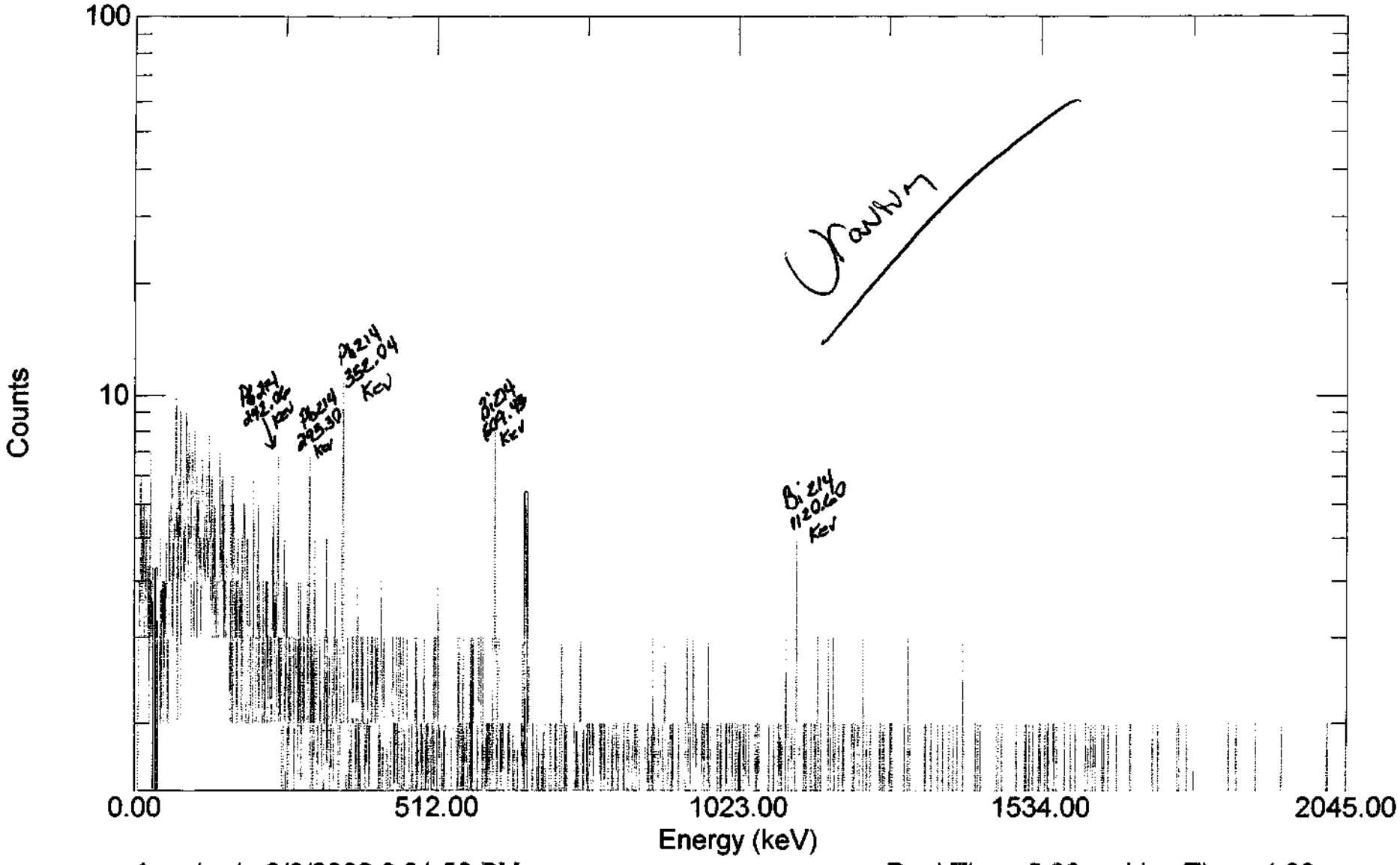
Info on source:	Uranium 4% 100 grams	Uranium 2% 42-2	.5% Uranium 42-4	106-8 1% Thorium 0.04 Uranium 60 grams	42-3 4% Uranium 100 grams

Information on pig:	None	~~2% Uranium~~ ~~42-2~~ UKD	None	None	None
Smear DPM per 100 cm^2 Alpha	2000	80.7	4	2.1	2.1
Smear DPM per 100 cm^2 Beta	300	61.	9.4	40	8


59

013 1SC-65 3-6-2002 2.31.56 PM

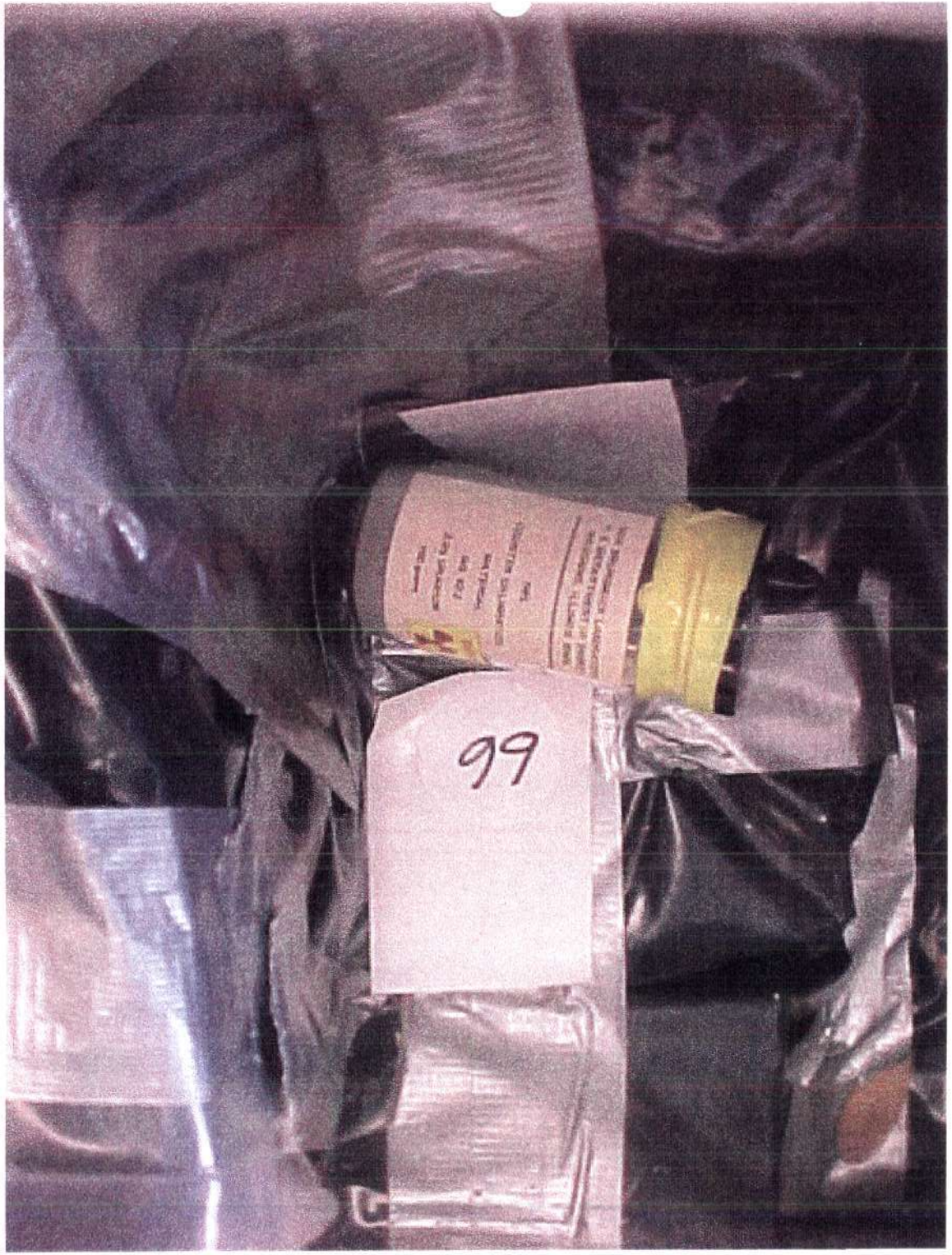
SC-65



Acquired: 3/6/2002 2:31:56 PM Real Time: 5.00 s. Live Time: 4.88 s.

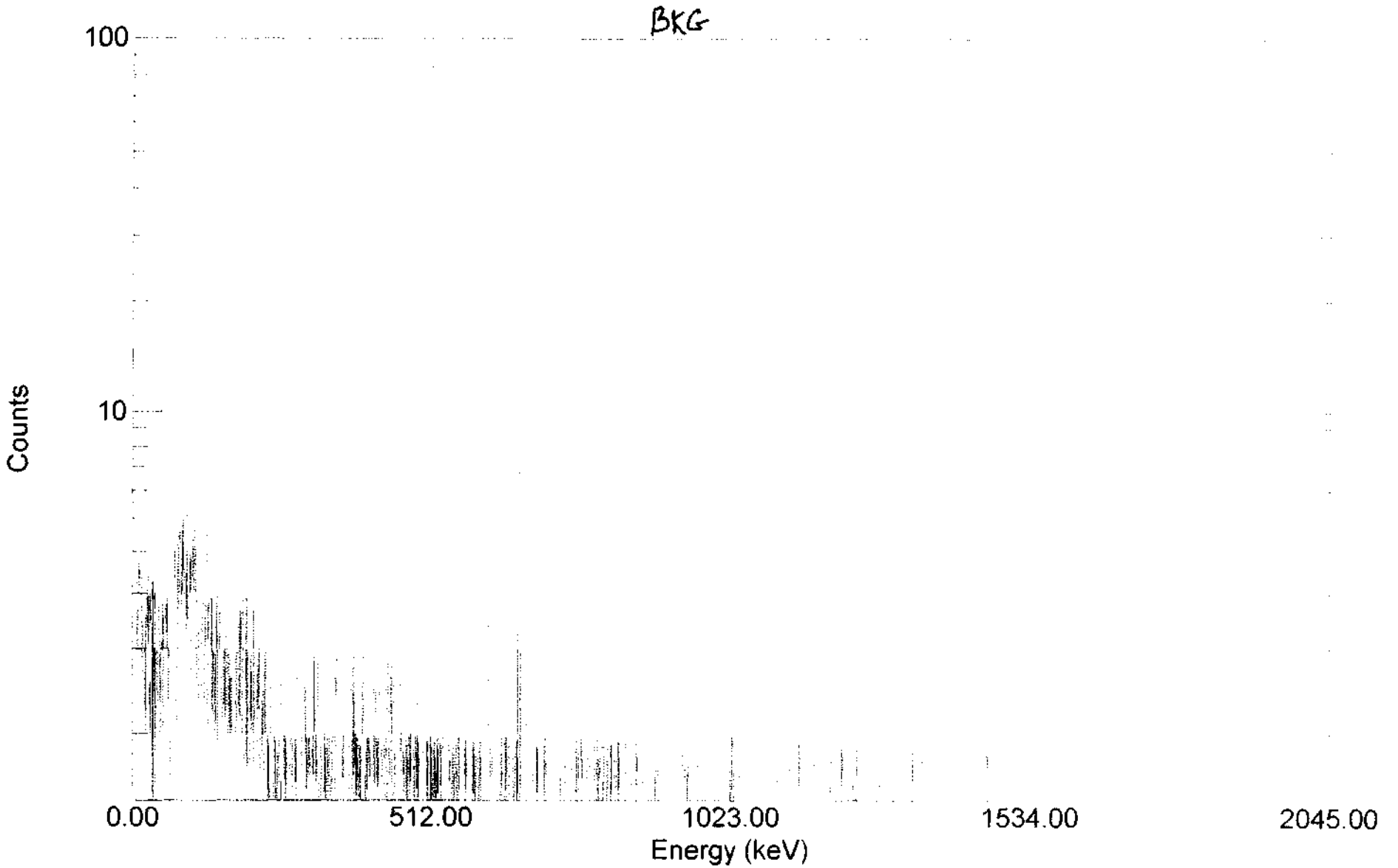
File: C:\User\GNIWEB~1\GNISOU~1\013 1SC-65 3-6-2002 2.31.56 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


99

014 ISC-66 3 6 2002 2 36 00 PM

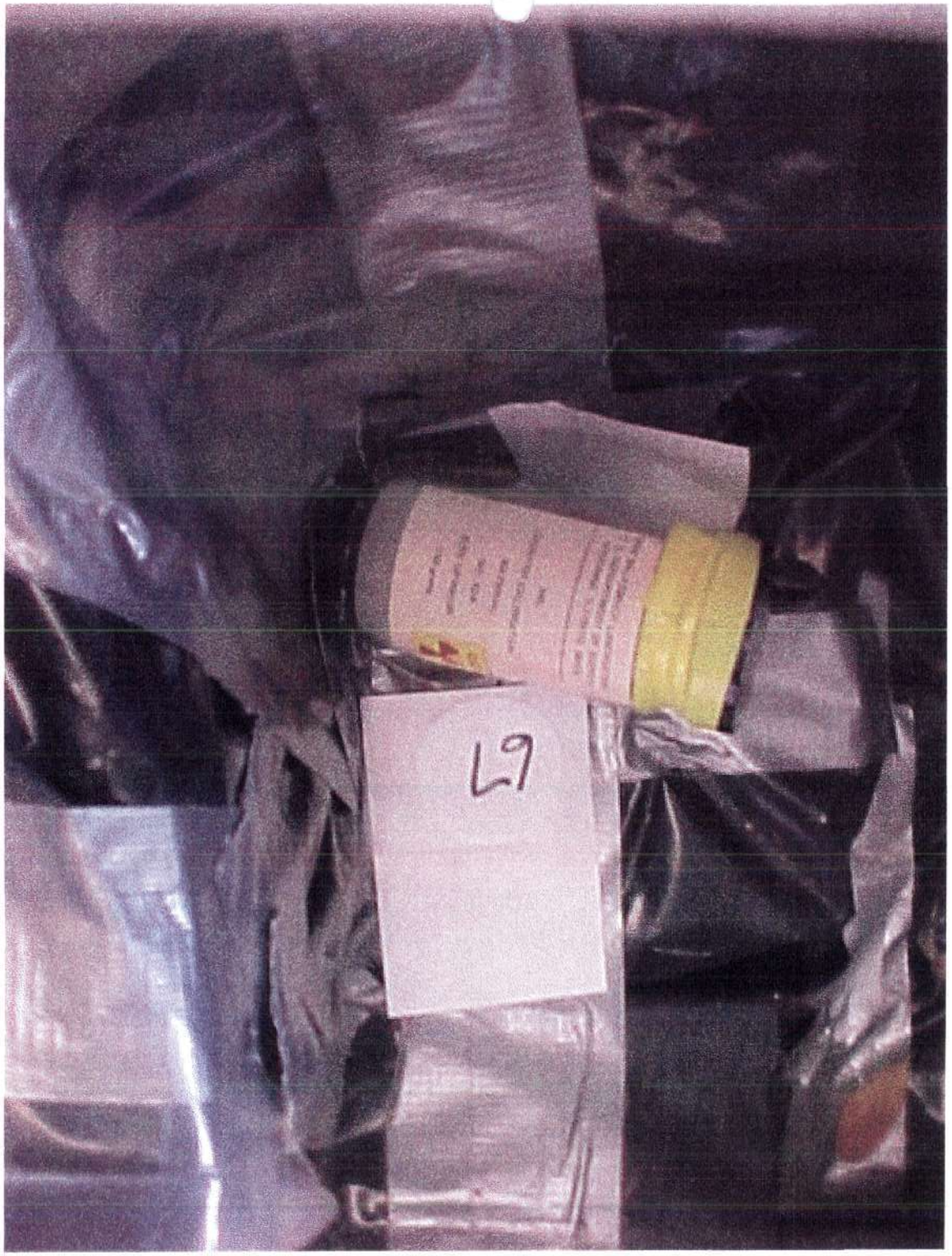
ISC-66



Acquired 3/6/2002 2 36.00 PM

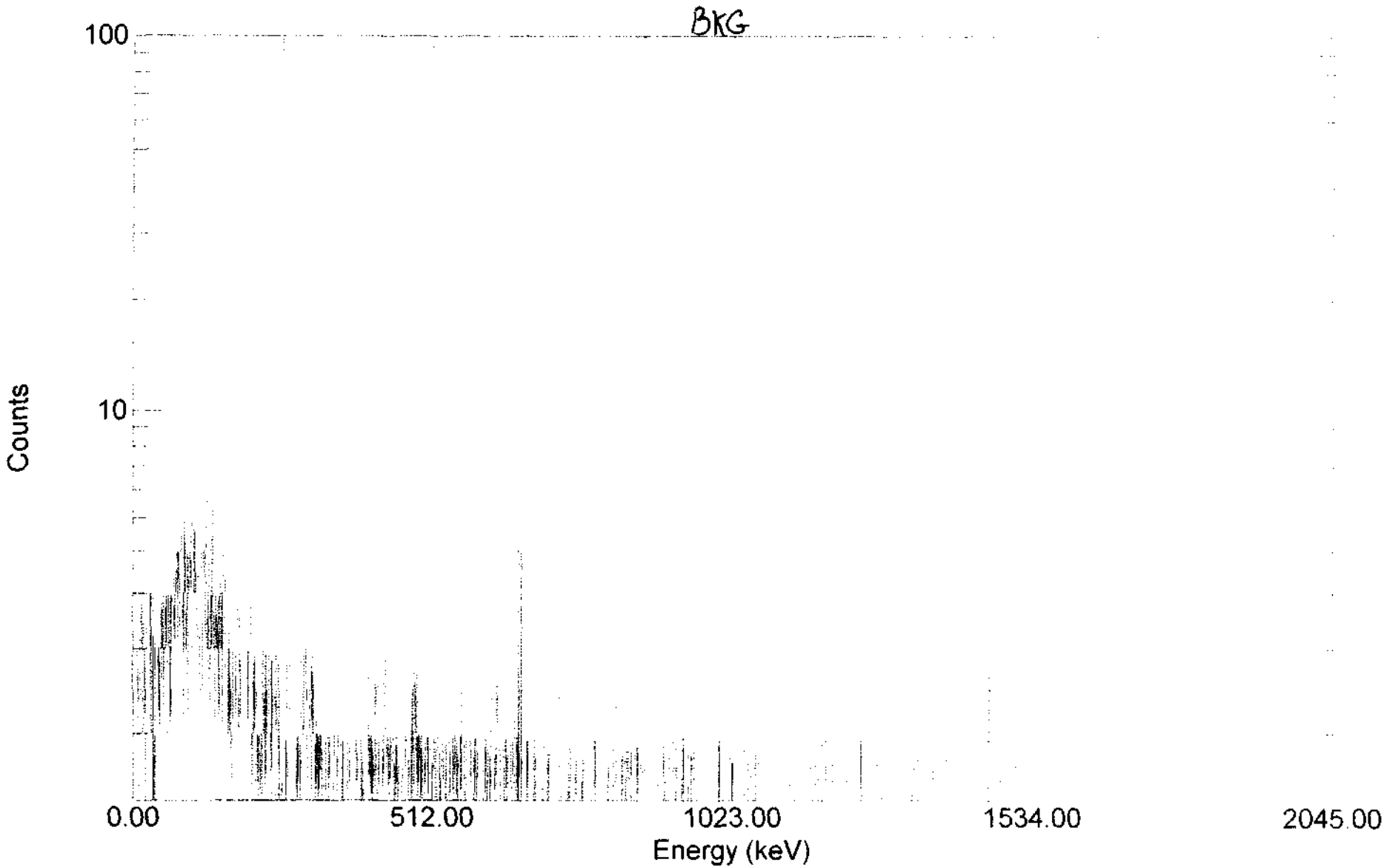
File C:\User\GNIWT B-1\GNISOU-1\014 ISC 66 3 6 2002 2 36 00 PM.spe

Detector #1 digiDART USE 1b


L9

015 ISC 67 3 6 2002 2 38 44 PM

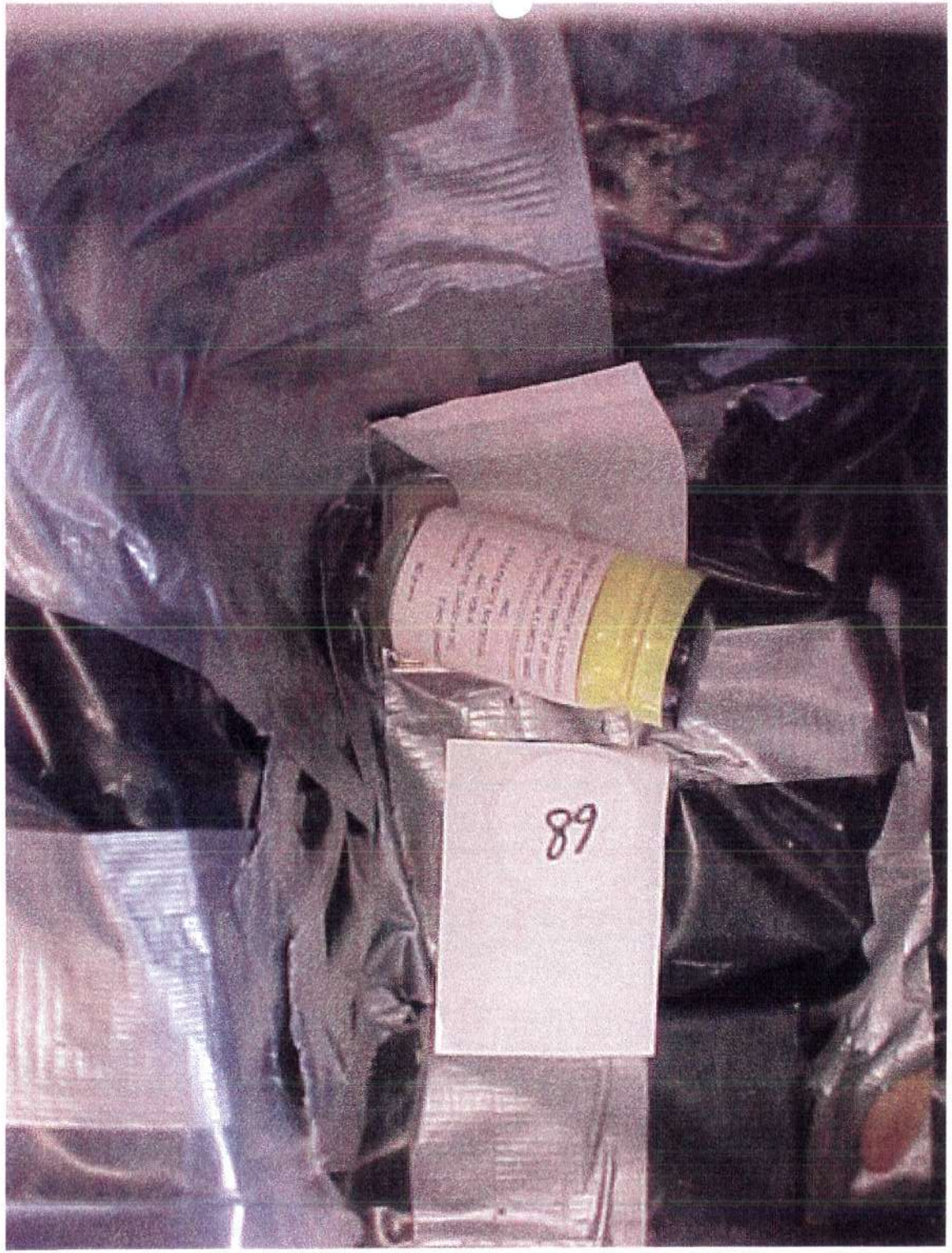
SC-67



Acquired 3/6/2002 2 38 44 PM Real Time 5 00 s Live Time 4 [illegible] s

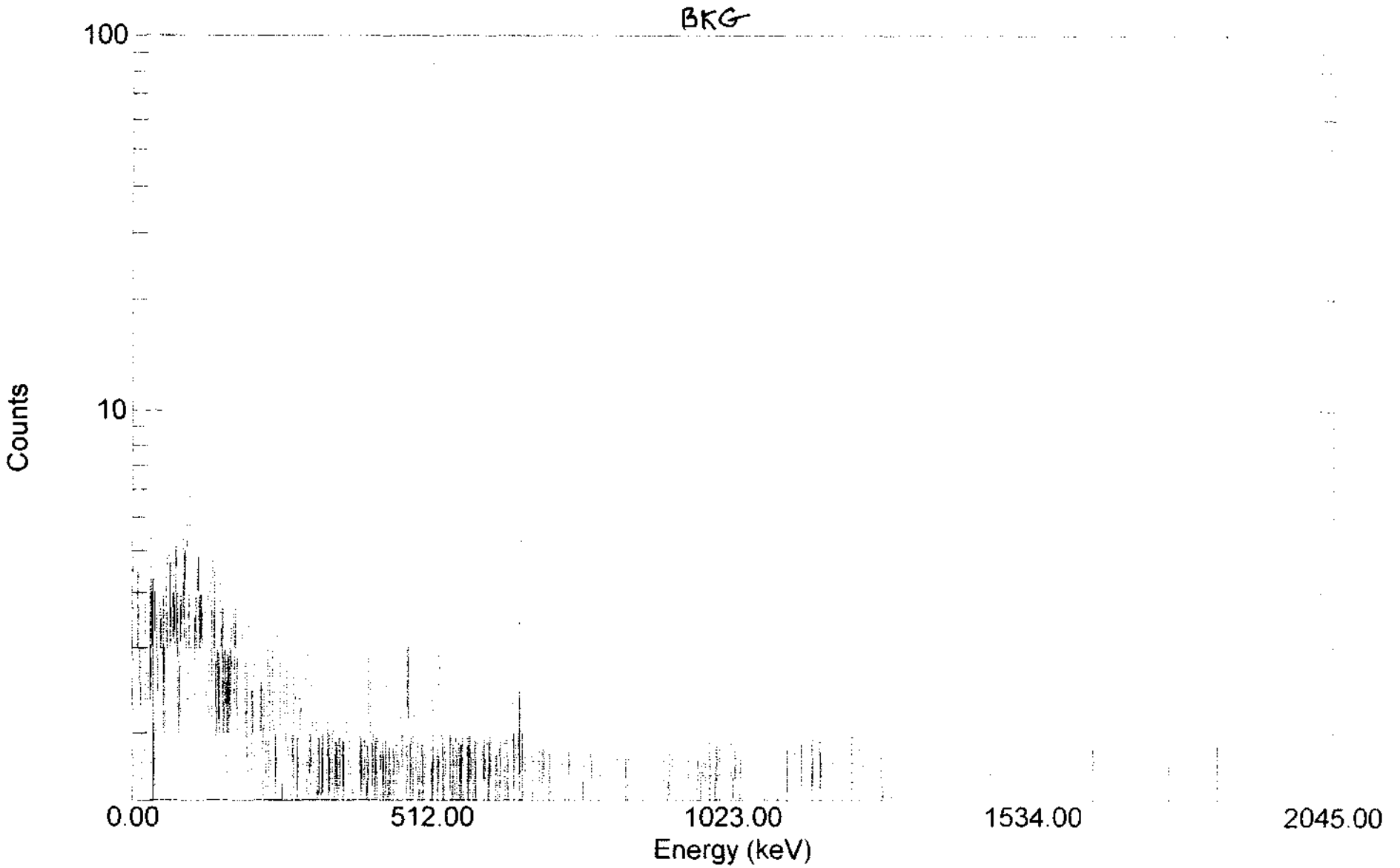
File C:\User\GNIWEB~1\GNISOU~1\015 ISC 67 3 6 2002 2 38 44 PM Spe [illegible]

Detector #1 digiDART USE 1b


89

016 1SC 68 3-6 2002 2 41 52 PM

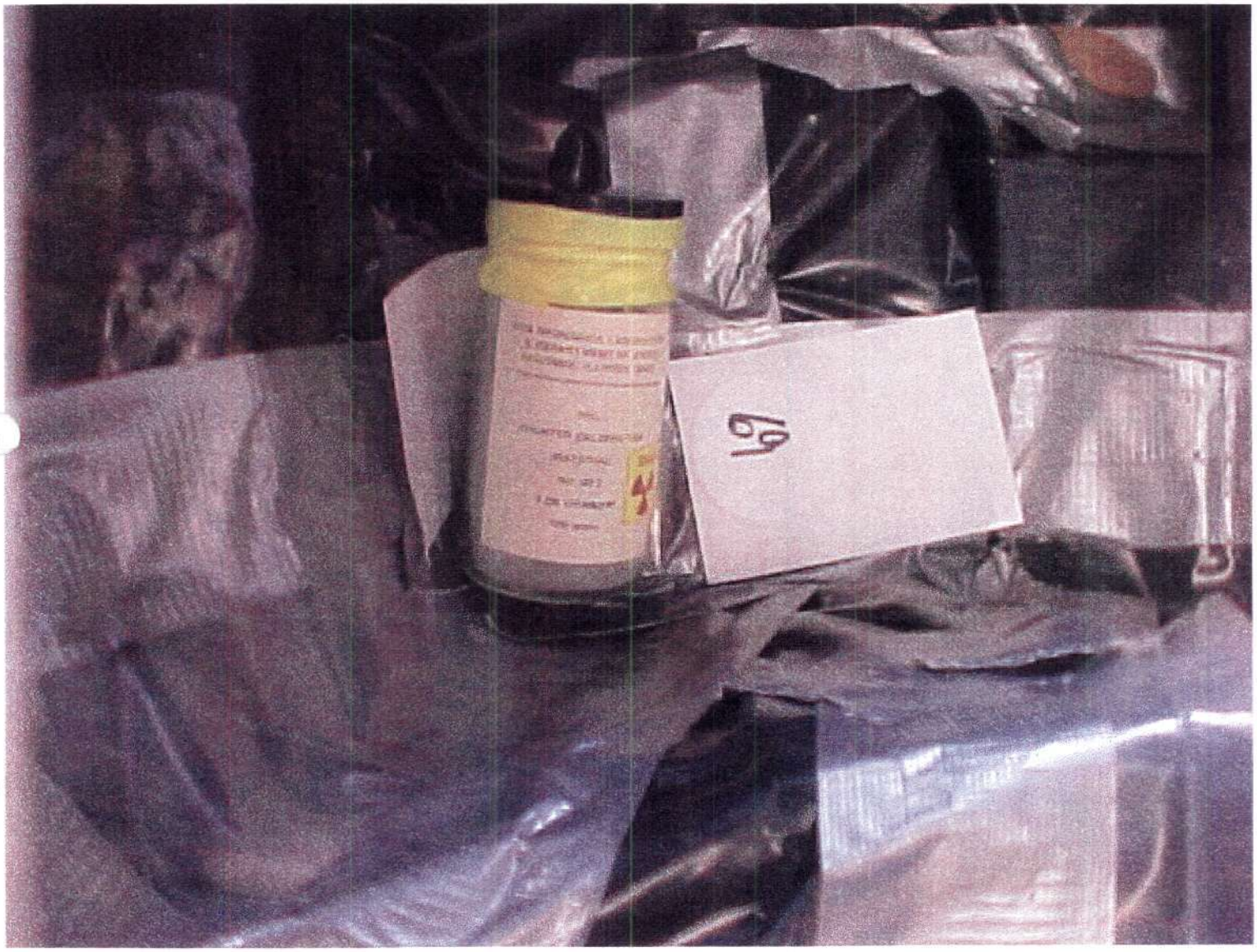
SC-68



Acquired: 3/6/2002 2 41 52 PM

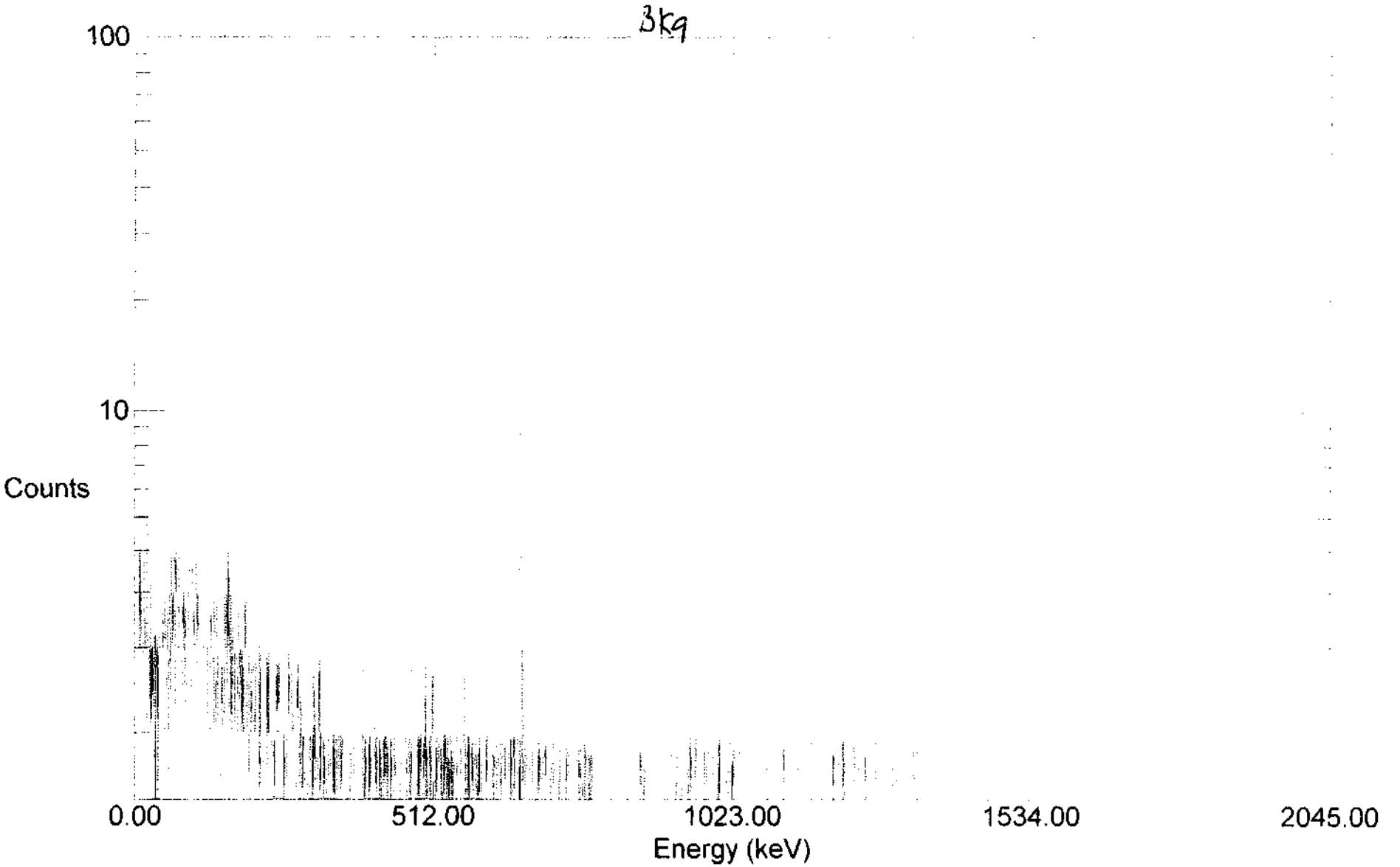
File: C:\User\GNIWFB~1\GNISOU~1\016 1SC 68 3 6 2002 2 41 52 PM Spe

Detector: #1 digiDART USE 1b


4
69

017 1SC 69 3 6 2002 2:43:39 PM

SC-69



Acquired: 3/6/2002 2:43:39 PM

File: C:\User\GNIWEB~1\GNISOU~1\017 1SC 69 3 6 2002 2:43:39 PM.Spe

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-6-02

BKG	mR/hr
6"	.1
12"	.2
36"	.4

Container #	70	71	72	73	74
External on pig in mR/hr	<1	<1	<1	2	180
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<1	<1	<1	5	400
Beta on open pig mR/hr O/W	<1	<1	<1	20	2000

Picture	✓	✓	✓	✓	✓
Digi Dart	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	1.5	BKg	BKg	4mr	~~[illegible]~~ 420
Source mR/hr @ 12 inches	0.8	BKg	BKg	1.5	~~[illegible]~~ 130
Source mR/hr @ 36 inches	0.9	BKg	BKg	0.7	~~[illegible]~~ 22
Size of source in cc's	2cm	20	2grams each	20	1
Weight in grams	3grams	20	2grams each	40	1

CPM Alpha		500	100		
Direct Beta/Gamma		3000	10,000		~~[illegible]~~

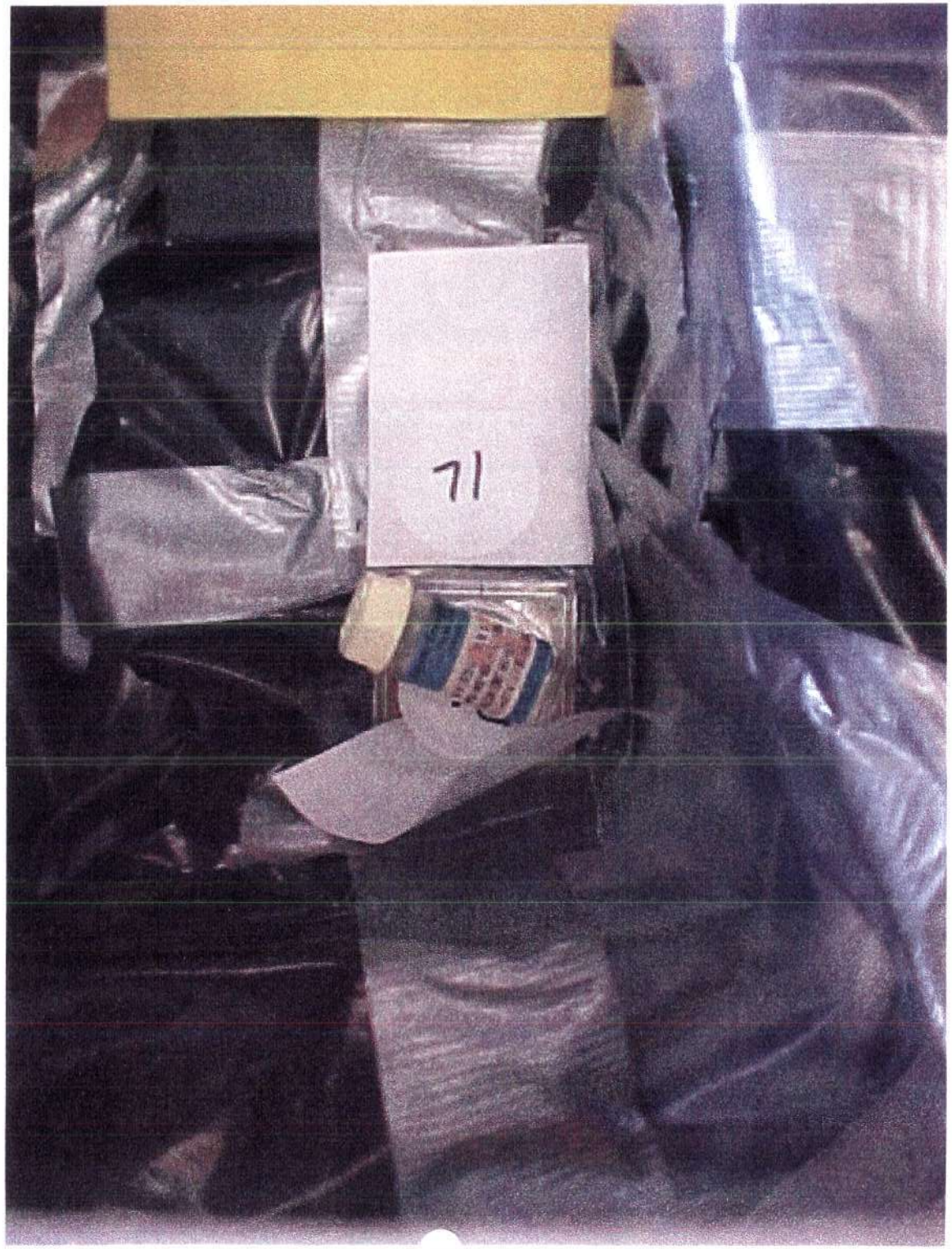
Info on source:		53MCI ~~None~~ Liquid Chloride	~~8.8 MCI~~ ~~CB109~~	None	

Information on pig:	SR90 39.7 Rad per second 9-18-89	None	8.8 MCI CB109	None	None
Smear DPM per 100 cm^2 Alpha	181	11.1	7.5	50,000	86.1
Smear DPM per 100 cm^2 Beta	44	15.5	19	BKg	53.3
Comments	20,000 OW 500 CW	Liquid	2 pieces	8 pieces	

70, β^- source

39.3 Rad/second

20 R/HR at 6"

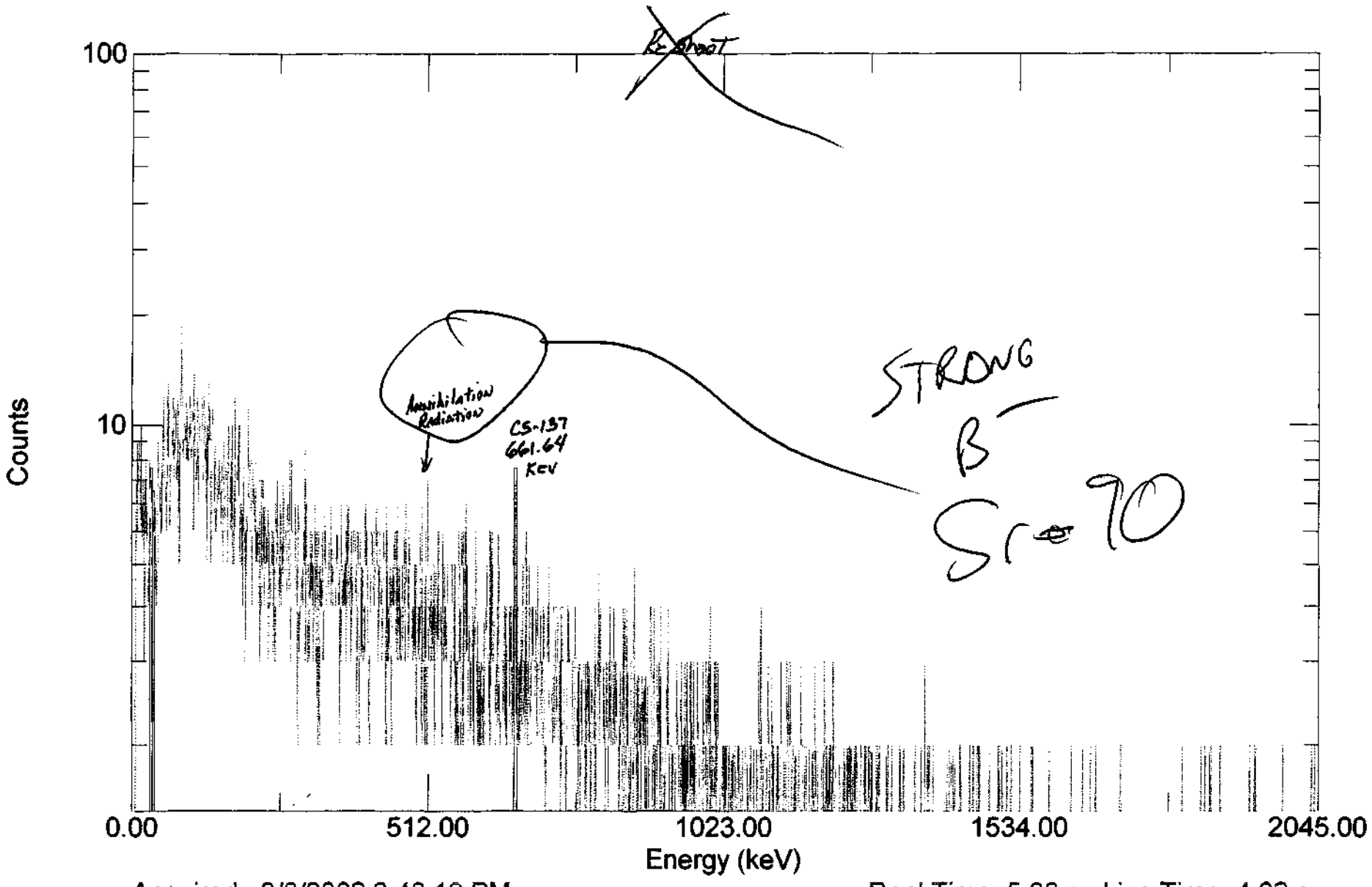

71

72
12
100

73

018 1SC-70 3-6-2002 2.48.18 PM

SC-70



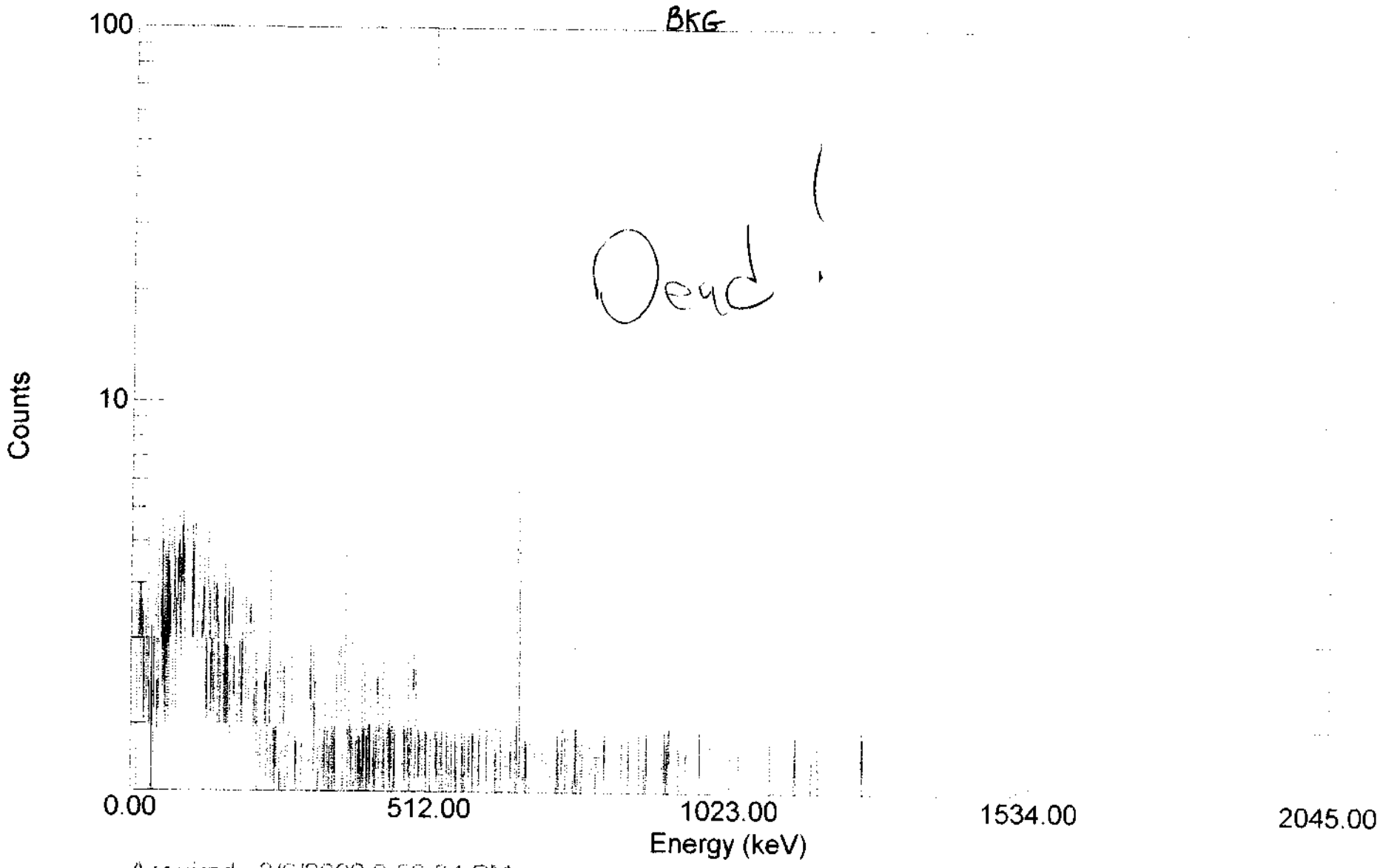
Acquired: 3/6/2002 2:48:19 PM Real Time: 5.00 s. Live Time: 4.62 s.

File: C:\User\GNIWEB~1\GNISOU~1\018 1SC-70 3-6-2002 2.48.18 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

019 ISC 71 3-2002 2:56:04 PM

SC 71



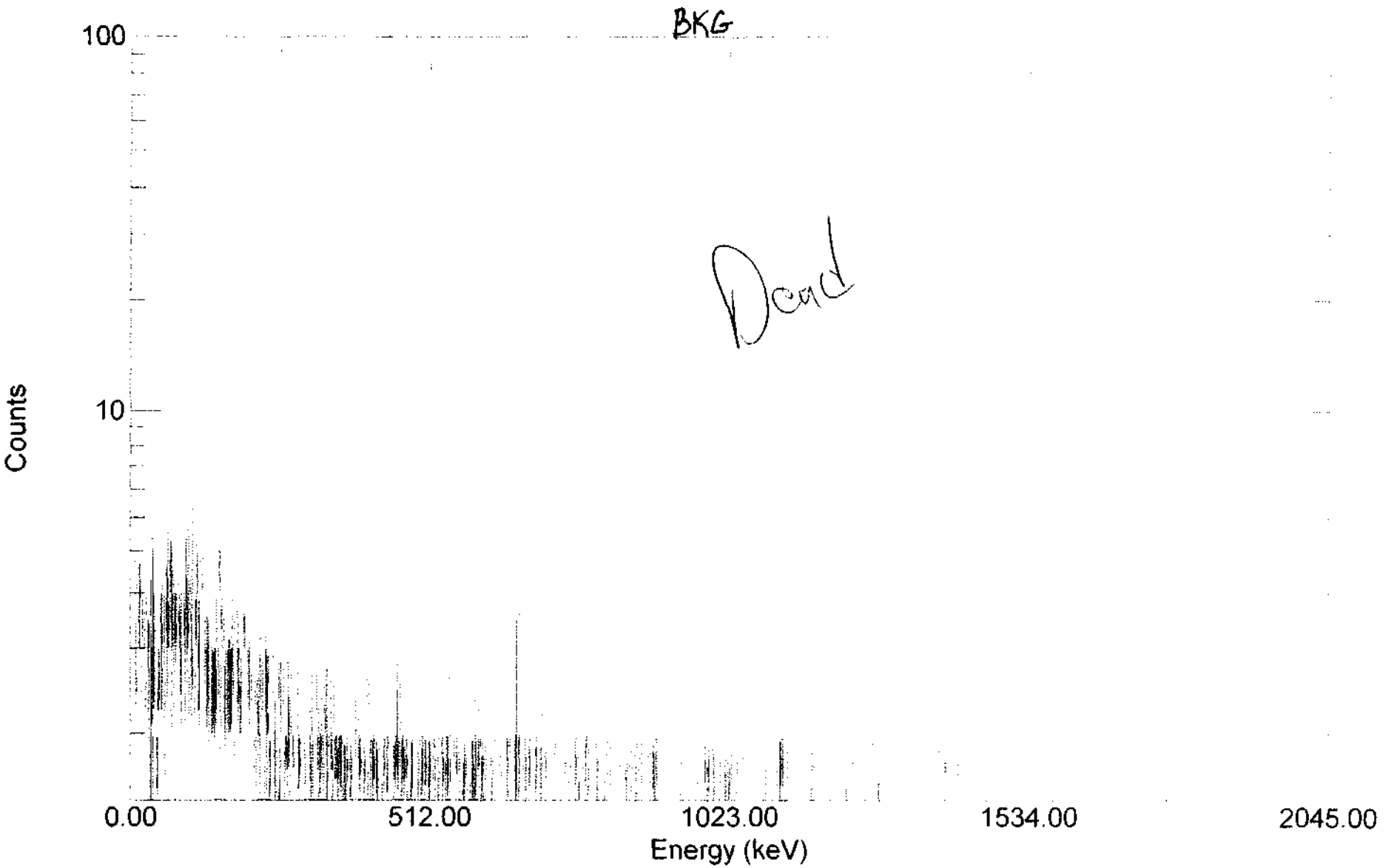
Acquired 3/6/2002 2:56:04 PM

File C:\User\GNIWI B~1\GNISOU~1\019 ISC 71 3 6 2002 2 56 04 PM Sp

Detector #1 digiDART USF 1b

020 ISC 72 3 6 2002 3 02 52 PM

ISC-72



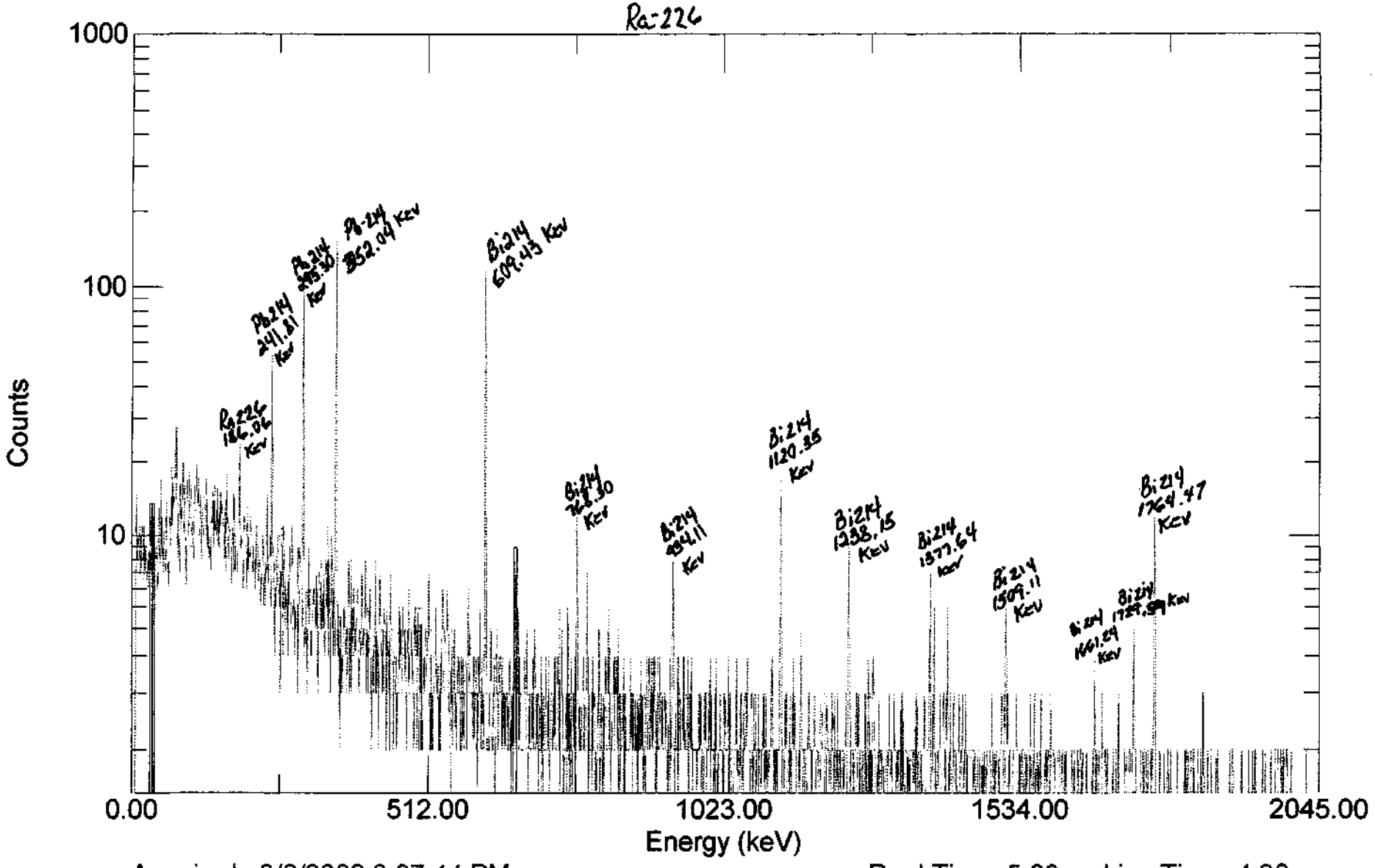
Acquired: 3/6/2002 3:02 51 PM Real Time: 5:00 s Live Time: 4:92 s

File: C:\User\GNIWEB~1\GNISOU~1\020 ISC 72 3 6 2002 3 02 52 PM.Spe Channels: 8192

Detector: #1 digiDART USE 1b

021 1SC-73 3-6-2002 3.07.43 PM

SC-73

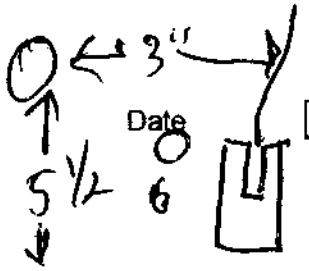


Acquired: 3/6/2002 3:07:44 PM Real Time: 5.00 s. Live Time: 4.36 s.

File: C:\User\GNIWEB~1\GNISOU~1\021 1SC-73 3-6-2002 3.07.43 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log



Date

BKG	mR/hr
6"	
12"	
36"	

Container #	74				
External on pig in mR/hr					
External on pig Neutron mR/hr					
Contact open pig mR/hr					
Beta on open pig mR/hr O/W					

Picture					

Table Readings

Source mR/hr @ 6 inchs	1/4	24				
Source mR/hr @ 12 inches	1/8	15				
Source mR/hr @ 36 inches	1/2	7				
Size of source in cc's						
Weight in grams						

CPM Alpha					
Direct Beta/Gamma					

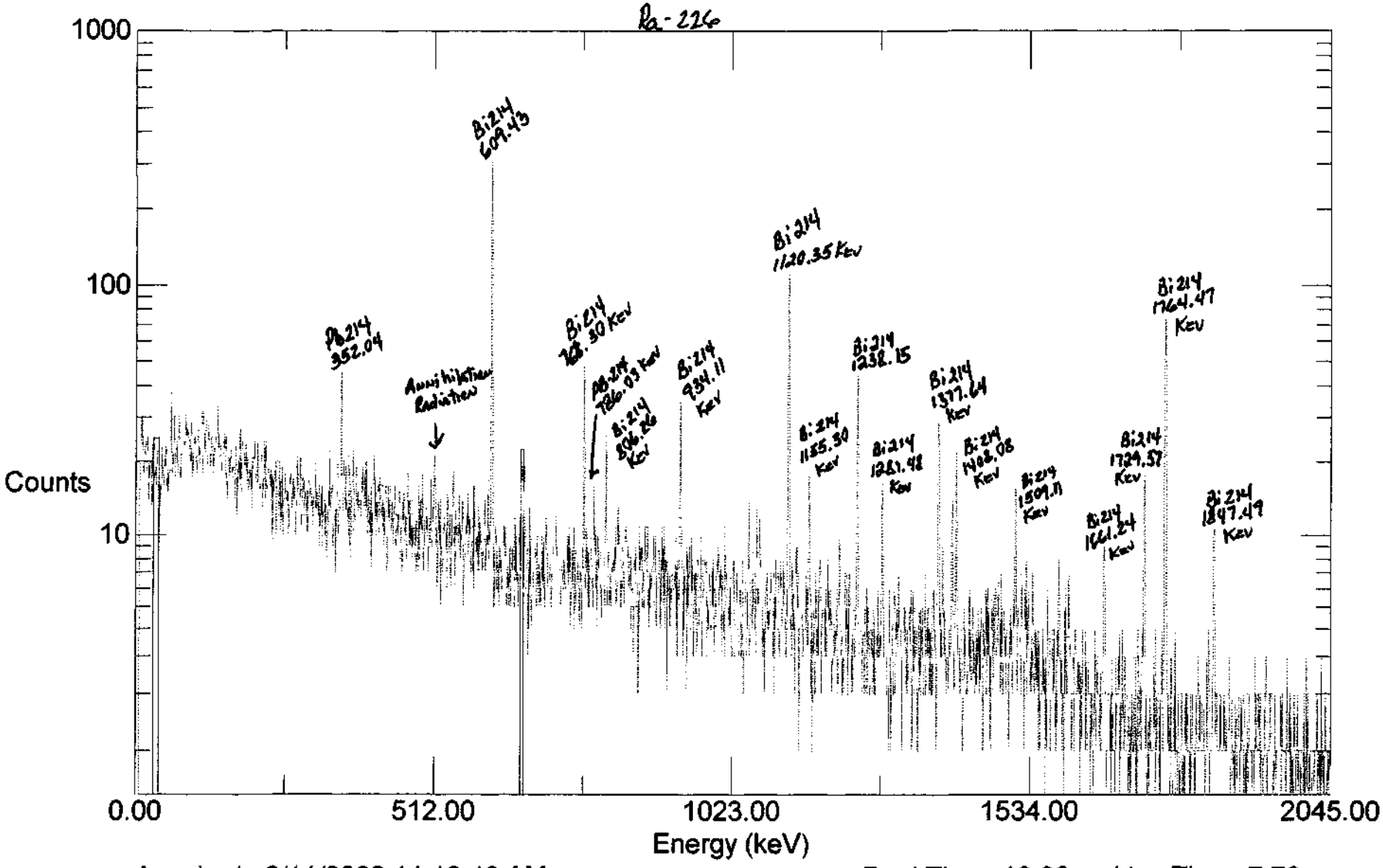
Info on source:	IN TYPE 4 P16				

Information on pig:					
Smear DPM per 100 cm^2 Alpha	86.1				
Smear DPM per 100 cm^2 Beta	53.3				

74
74

004 1SC-74-2 3-11-2002 11.10.46 AM

SC-74



Acquired: 3/11/2002 11:10:46 AM Real Time: 10.00 s. Live Time: 7.78 s.

File: C:\User\GNIWEB~1\004 1SC-74-2 3-11-2002 11.10.46 AM.Spc Channels: 8192

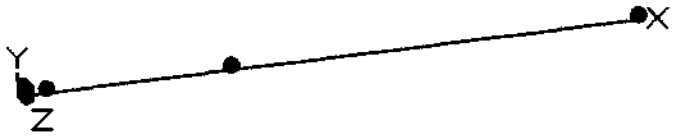
Detector: #1 digiDART USE 1b

MicroShield v5.01 (5.01-00036)
U.S. Ecology

Page : 1
I S File: Case1
F ~ Date: February 16, 2002
R Time: 3:07:00 PM
I ration: 00:00:15

File Ref: _____
Date: 2/16/02
By: TM
Checked: _____

Case Title: gni sc~~3~~ 74
Description: eu-152 small sources
Geometry: 13 - Rectangular Volume



Source Dimensions

Length	1.27 cm	0.5 in
Width	2.54 cm	1.0 in
Height	2.54 cm	1.0 in

Dose Points

	X	Y	Z
# 1	3.81 cm	1.27 cm	1.27 cm
	1.5 in	0.5 in	0.5 in
# 2	31.75 cm	1.27 cm	1.27 cm
	1 ft 0.5 in	0.5 in	0.5 in
# 3	92.71 cm	1.27 cm	1.27 cm
	3 ft 0.5 in	0.5 in	0.5 in

Shields

Shield Name	Dimension	Material	Density
Source	.5 in³	Water	1
Air Gap		Air	0.00122

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Excluded
Library : Grove

Nuclide	curies	becquerels	µCi/cm³	Bq/cm³
Eu-152	8.5000e-004	3.1450e+007	1.0374e+002	3.8384e+006

Buildup
The material reference is : Source

Integration Parameters

X Direction	10
Y Direction	20
Z Direction	20

Results - Dose Point # 1 - (1.5,0.5,0.5) in

Energy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.04	1.861e+07	4.775e+03	6.017e+03	2.112e+01	2.661e+01
0.05	4.653e+06	1.522e+03	1.920e+03	4.054e+00	5.114e+00
0.1	8.942e+06	6.007e+03	7.110e+03	9.191e+00	1.088e+01
0.2	2.357e+06	3.223e+03	3.573e+03	5.689e+00	6.305e+00
.3	8.504e+06	1.762e+04	1.903e+04	3.343e+01	3.609e+01
0.4	1.976e+06	5.500e+03	5.852e+03	1.072e+01	1.140e+01

I S File: Case1
Run Date: February 16, 2002
Run Time: 3:07:00 PM
I ration: 00:00:15

ergy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.5	1.774e+05	6.203e+02	6.539e+02	1.218e+00	1.283e+00
0.6	1.334e+06	5.619e+03	5.884e+03	1.097e+01	1.149e+01
0.8	5.600e+06	3.166e+04	3.285e+04	6.021e+01	6.248e+01
1.0	1.346e+07	9.553e+04	9.859e+04	1.761e+02	1.817e+02
1.5	7.296e+06	7.828e+04	8.010e+04	1.317e+02	1.348e+02
OTALS:	7.290e+07	2.504e+05	2.616e+05	4.644e+02	4.882e+02

Results - Dose Point # 2 - (12.5,0.5,0.5) in

nergy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.04	1.861e+07	5.204e+01	6.756e+01	2.301e-01	2.988e-01
0.05	4.653e+06	1.663e+01	2.160e+01	4.431e-02	5.755e-02
0.1	8.942e+06	6.589e+01	7.966e+01	1.008e-01	1.219e-01
0.2	2.357e+06	3.543e+01	3.979e+01	6.254e-02	7.024e-02
0.3	8.504e+06	1.940e+02	2.115e+02	3.680e-01	4.012e-01
0.4	1.976e+06	6.060e+01	6.500e+01	1.181e-01	1.266e-01
0.5	1.774e+05	6.840e+00	7.258e+00	1.343e-02	1.425e-02
0.6	1.334e+06	6.199e+01	6.530e+01	1.210e-01	1.275e-01
0.8	5.600e+06	3.495e+02	3.644e+02	6.648e-01	6.931e-01
1.0	1.346e+07	1.055e+03	1.094e+03	1.945e+00	2.016e+00
.5	7.296e+06	8.656e+02	8.883e+02	1.456e+00	1.495e+00
TOTALS:	7.290e+07	2.764e+03	2.904e+03	5.125e+00	5.421e+00

Results - Dose Point # 3 - (36.5,0.5,0.5) in

Energy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.04	1.861e+07	5.837e+00	7.806e+00	2.581e-02	3.452e-02
0.05	4.653e+06	1.871e+00	2.502e+00	4.983e-03	6.665e-03
0.1	8.942e+06	7.438e+00	9.183e+00	1.138e-02	1.405e-02
0.2	2.357e+06	4.009e+00	4.561e+00	7.076e-03	8.050e-03
0.3	8.504e+06	2.198e+01	2.419e+01	4.169e-02	4.589e-02
0.4	1.976e+06	6.871e+00	7.428e+00	1.339e-02	1.447e-02
0.5	1.774e+05	7.761e-01	8.290e-01	1.523e-03	1.627e-03
0.6	1.334e+06	7.038e+00	7.456e+00	1.374e-02	1.455e-02
0.8	5.600e+06	3.971e+01	4.159e+01	7.553e-02	7.911e-02
1.0	1.346e+07	1.200e+02	1.248e+02	2.212e-01	2.301e-01
1.5	7.296e+06	9.850e+01	1.014e+02	1.657e-01	1.706e-01
OTALS:	7.290e+07	3.140e+02	3.317e+02	5.820e-01	6.196e-01

USEcology
FS-TX-02-01
Source Log

Radium Source Log

Date 3-11-02

Container #	75	76	77	78	79
External on pig in mR/hr	5000	400	1400	3,000	1,000
External on pig Neutron mR/hr	>1	>1	>1	>1	>1
Contact open pig mR/hr	6,000	2,000	14,000	30,000	4,000

Picture	✓	✓	✓	✓	✓
Dig-I-Dart	✓	✓	✓	✓	✓

Table Readings

# of 1cc/1 gram needles	5	1	20	9	20

Info on source:					
	N/A	N/A	N/A	N/A	N/A

Information on pig:					
	N/A	N/A	N/A	N/A	N/A
Smear DPM per 100 cm^2 Alpha	— 396	5,000	102.0	50.2	5,000
Smear DPM per 100 cm^2 Beta	— 52	200	98	—0	600
	100 mr general Area ~~[illegible]~~s				

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **3/6/02** **Time** 1635

Location Sources

Survey # N/A

MDA Alpha DPM	MDA Beta DPM
10.4	64.5

BKG Alpha CPM	BKG Beta CPM
0.4	68

Alpha Eff 0.28

Beta/Gamma Eff 0.33

	2 Min CPM	DPM
61	18	30.7
62	43	75.4
63	5	7.5
64		-1.4
65		-1.4
66	46	80.7
67	3	3.9
68	2	2.1
69	2	2.1
70	102	180.7
71	7	11.1
72	5	7.5
73		-1.4
74	105	186.1
*75	1	0.4
*76	15	25.4
77		-1.4
78		-1.4
79		-1.4
80		-1.4
81		-1.4
82		-1.4
83		-1.4
84		-1.4
85		-1.4

* Brick

* Source

	2 Min CPM	DPM
61	144	12.4
62	139	4.8
63	148	18.5
64		-205.8
65		-205.8
66	176	60.9
67	142	9.4
68	162	39.7
69	141	7.9
70	165	44.2
71	146	15.5
72	148	18.5
73		-205.8
74	171	53.3
75	163	41.2
76	180	67.0
77		-205.8
78		-205.8
79		-205.8
80		-205.8
81		-205.8
82		-205.8
83		-205.8
84		-205.8
85		-205.8

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **3/11/02** **Time** 1610

Location Source Leak Rate

Survey #

MDA Alpha DPM	MDA Beta DPM
10.7	67.4

BKG Alpha CPM	BKG Beta CPM
0.45	74.6

Alpha Eff 0.28

	2 Min CPM	DPM
75	223	396.6
76		-1.6
77	58	102.0
78	29	50.2
79		-1.6
80		-1.6
81		-1.6
82	181	321.6
83		-1.6
84		-1.6
85		-1.6
86		-1.6
87		-1.6
88		-1.6
89		-1.6
90		-1.6
91		-1.6
92		-1.6
93		-1.6
94		-1.6
95		-1.6
96		-1.6
97		-1.6
98		-1.6
99		-1.6

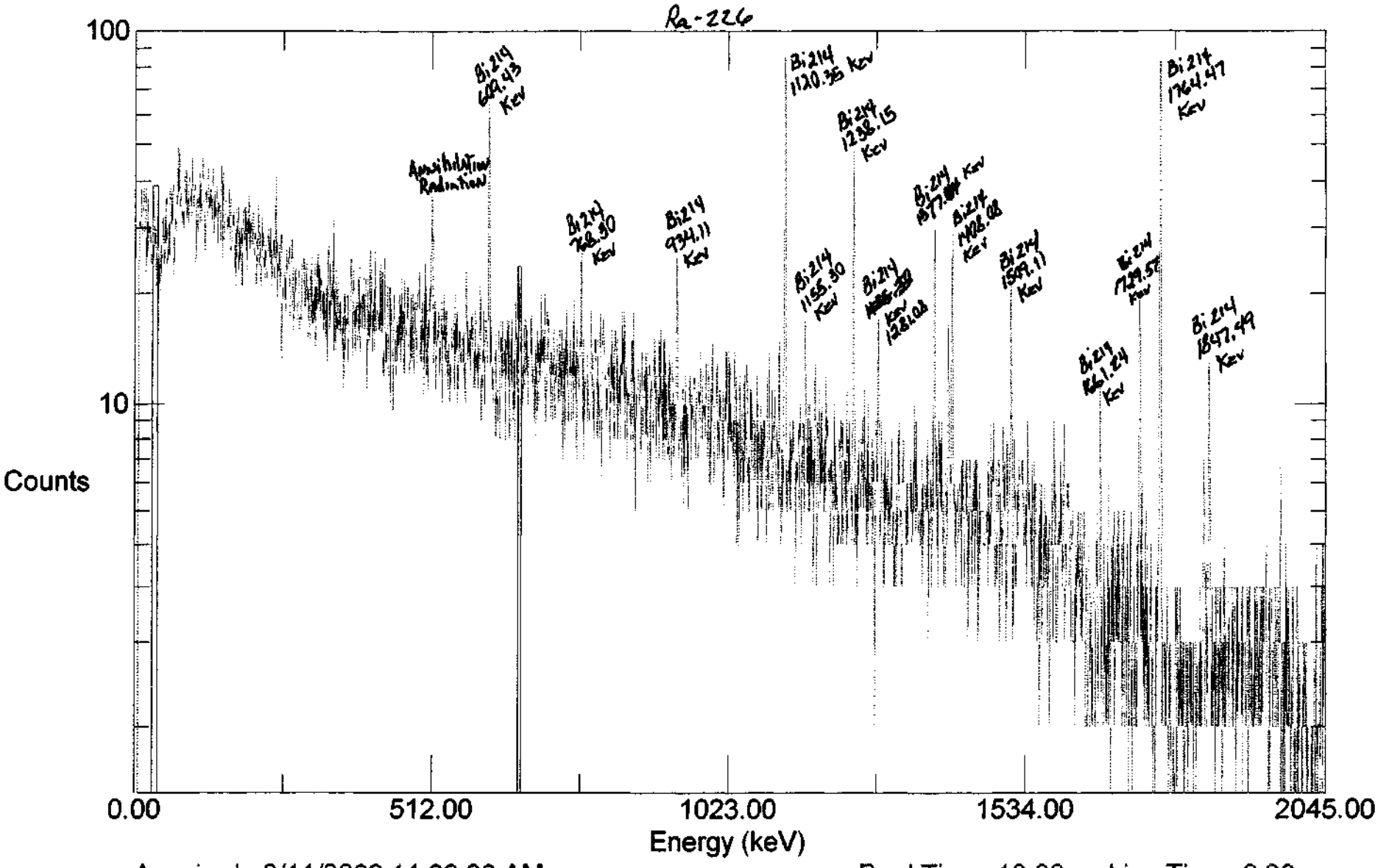
Beta/Gamma Eff 0.33

	2 Min CPM	DPM
75	183	51.2
76		-226.1
77	214	98.2
78	148	-1.8
79		-226.1
80		-226.1
81		-226.1
82	159	14.8
83		-226.1
84		-226.1
85		-226.1
86		-226.1
87		-226.1
88		-226.1
89		-226.1
90		-226.1
91		-226.1
92		-226.1
93		-226.1
94		-226.1
95		-226.1
96		-226.1
97		-226.1
98		-226.1
99		-226.1

15

007 1SC-75 3-11-2002 11.29.28 AM

SC-75



Acquired: 3/11/2002 11:29:28 AM Real Time: 10.00 s. Live Time: 6.28 s.

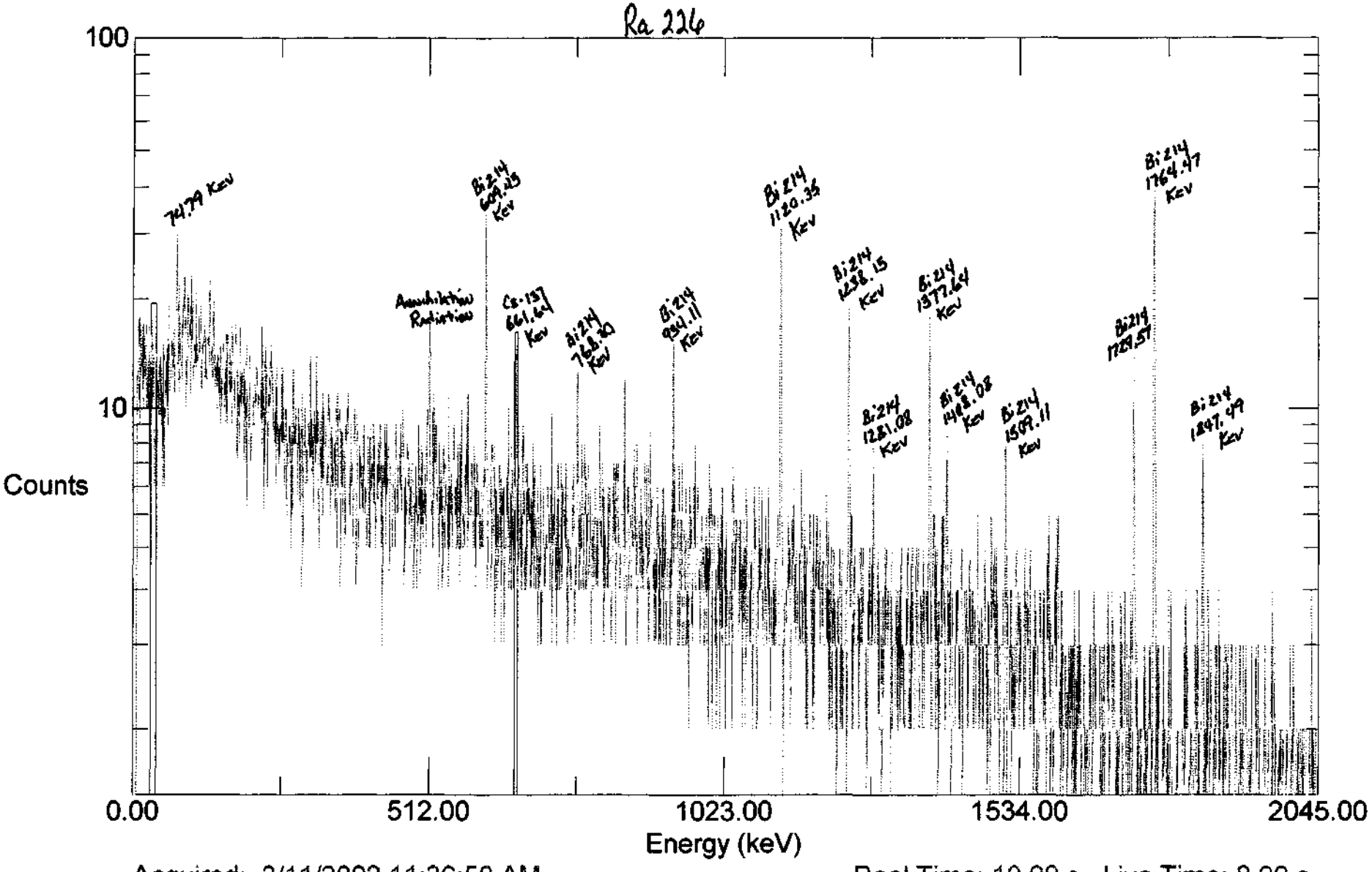
File: C:\User\GNIWEB~1\007 1SC-75 3-11-2002 11.29.28 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

7b

009 1 SC-76-2 3 . 1-2002 11.36.57 AM

SC-76



Acquired: 3/11/2002 11:36:58 AM Real Time: 10.00 s. Live Time: 8.90 s.

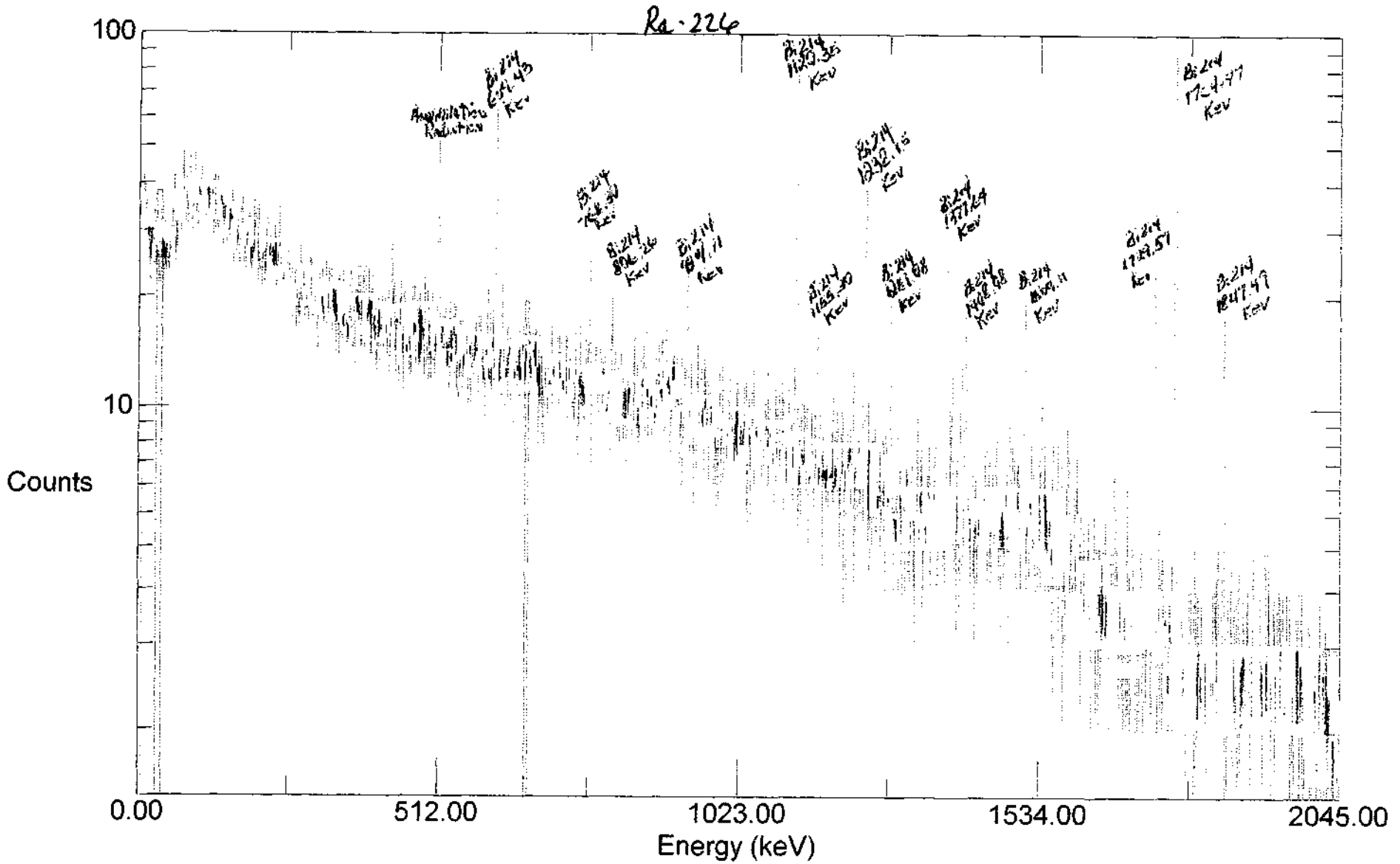
File: C:\User\GNIWEB~1\009 1 SC-76-2 3-11-2002 11.36.57 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

file: \MVC-004F.JPG

010 1 1SC-77 3- . 1-2002 11.45.09 AM

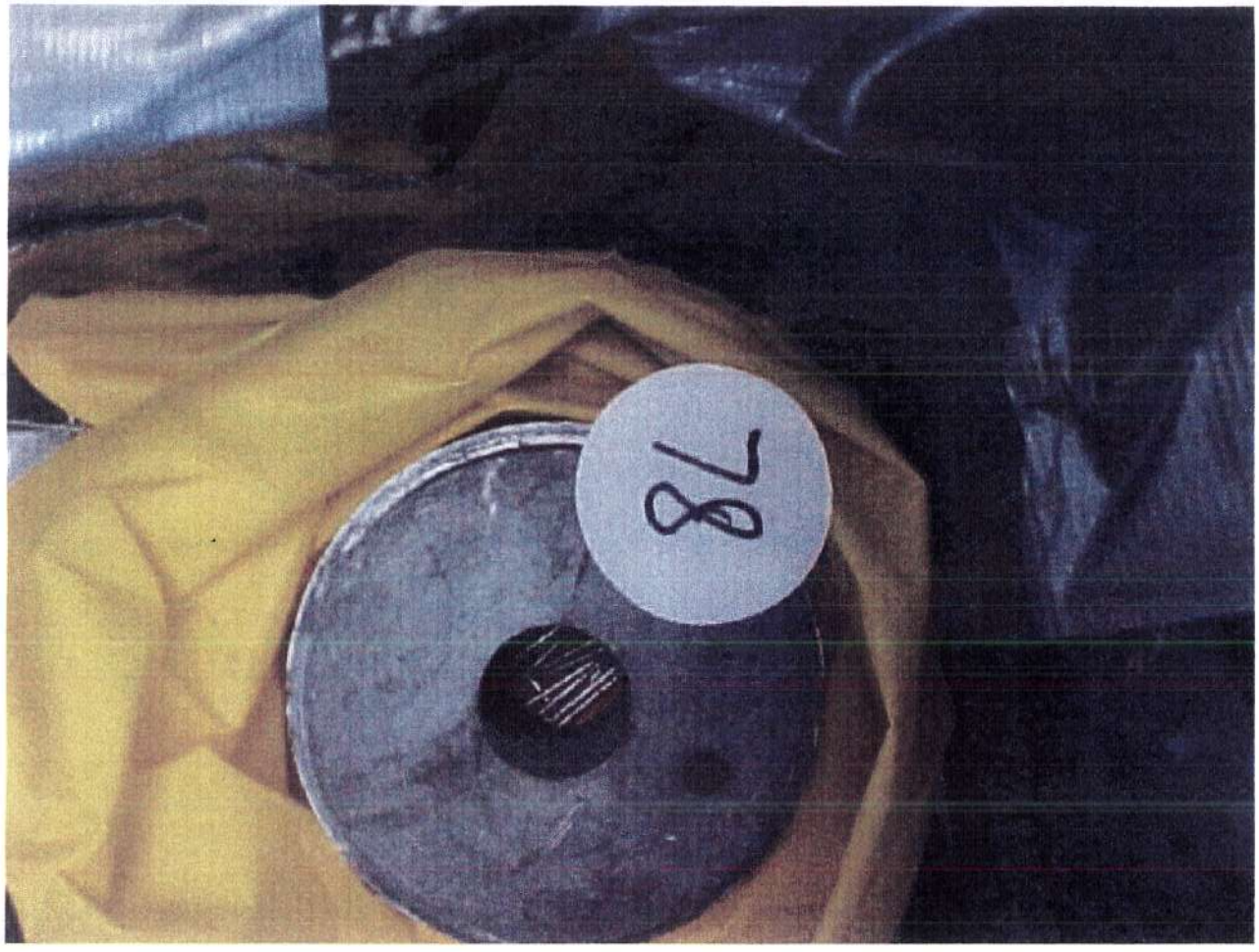
SC-77



Acquired: 3/11/2002 11:45:09 AM Real Time: 10.00 s. Live Time: 6.38 s.

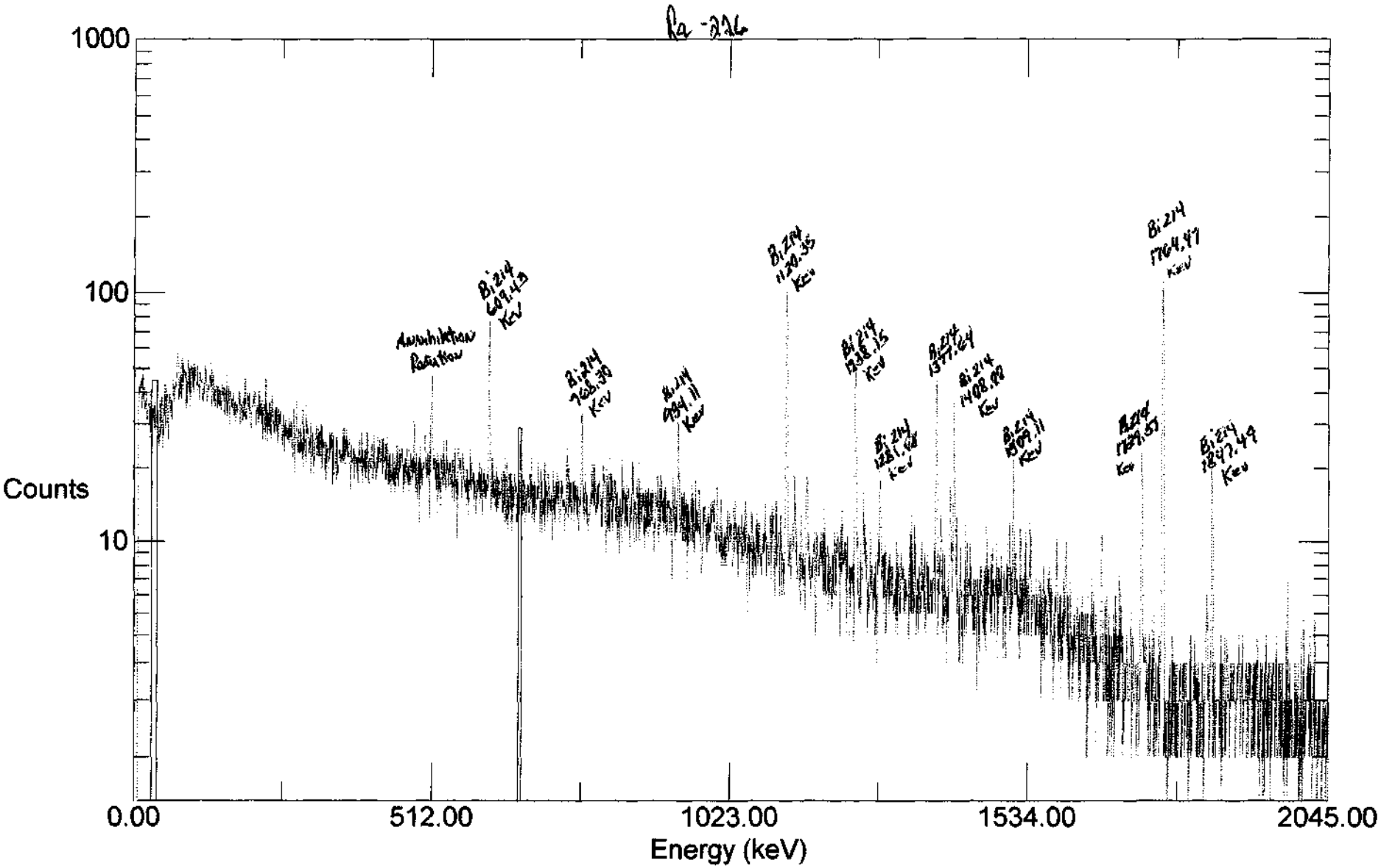
File: C:\User\GNIWEB~1\010 1 1SC-77 3-11-2002 11.45.09 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


78

0111 SC-78 3-11-2002 11.50.20 AM

SC-78



Acquired: 3/11/2002 11:50:21 AM Real Time: 10.00 s. Live Time: 4.26 s.

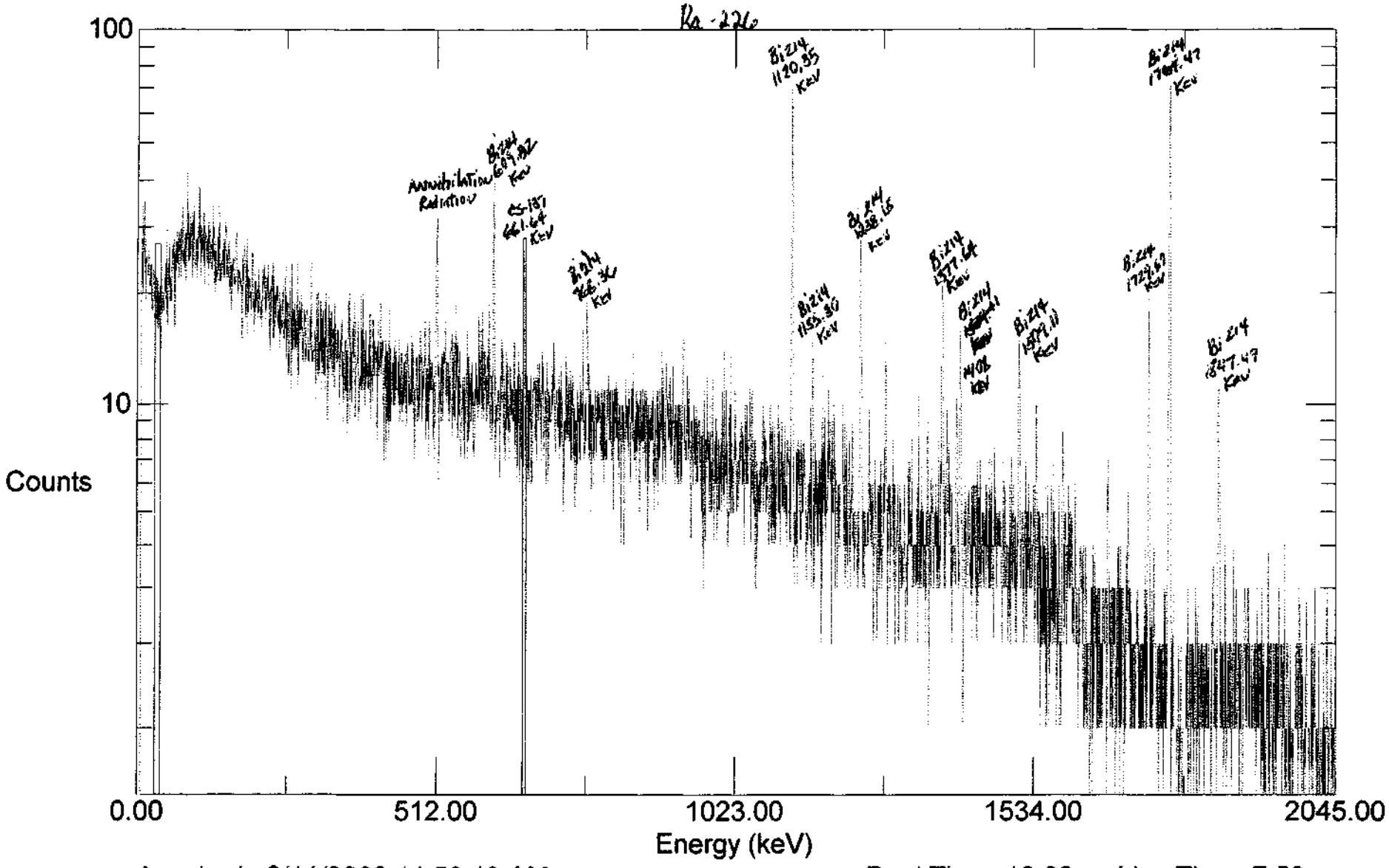
File: C:\User\GNIWEB~1\0111 SC-78 3-11-2002 11.50.20 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

79

0121 SC-79 3-11-2002 11.59.13 AM

SC-79



Acquired: 3/11/2002 11:59:13 AM Real Time: 10.00 s. Live Time: 7.50 s.

File: C:\User\GNIWEB~1\0121 SC-79 3-11-2002 11.59.13 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Radium Source Log

Date 3-11-02

Container #	80	81	82	83	84
External on pig in mR/hr	2,000	300	1,000	1,200	2,000
External on pig Neutron mR/hr	>1	>1	>1	>1	>1
Contact open pig mR/hr	10,000	800	4,000	10,000	8,000

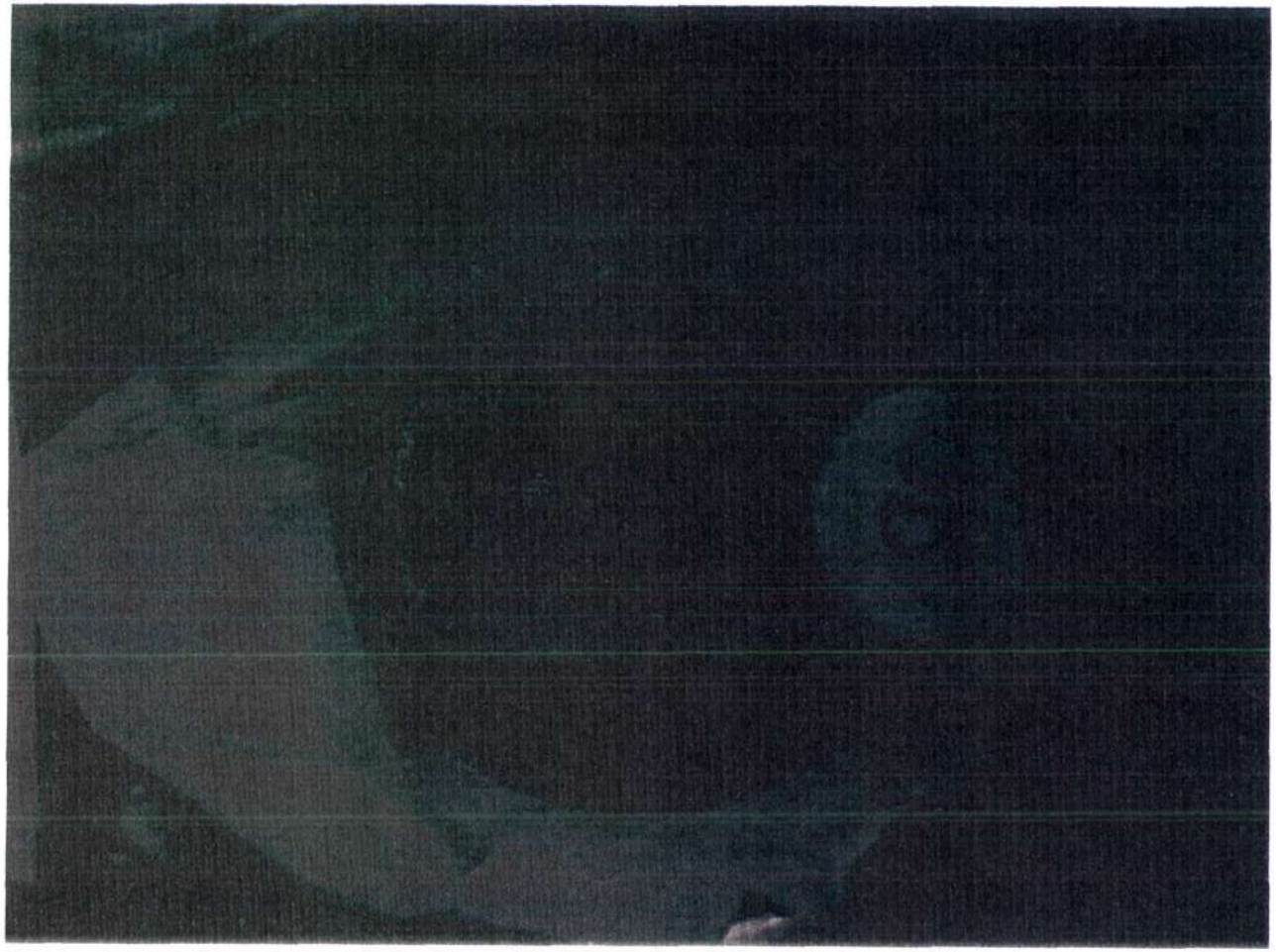
Picture	✓	✓	✓	✓	✓
Dig-I-Dart	✓	✓	✓	✓	

Table Readings

# of 1cc/1 gram needles	9	2	10	12	12

Info on source:					
	N/A	N/A	N/A	N/A	N/A

Information on pig:					
	N/A	N/A	N/A	N/A	N/A
Smear DPM per 100 cm^2 Alpha	8000	— 0	— 321	8000	15,000
Smear DPM per 100 cm^2 Beta	300	— 0	— 14	200	400
	Type 3	2 Packer pins	10 in a bottle		



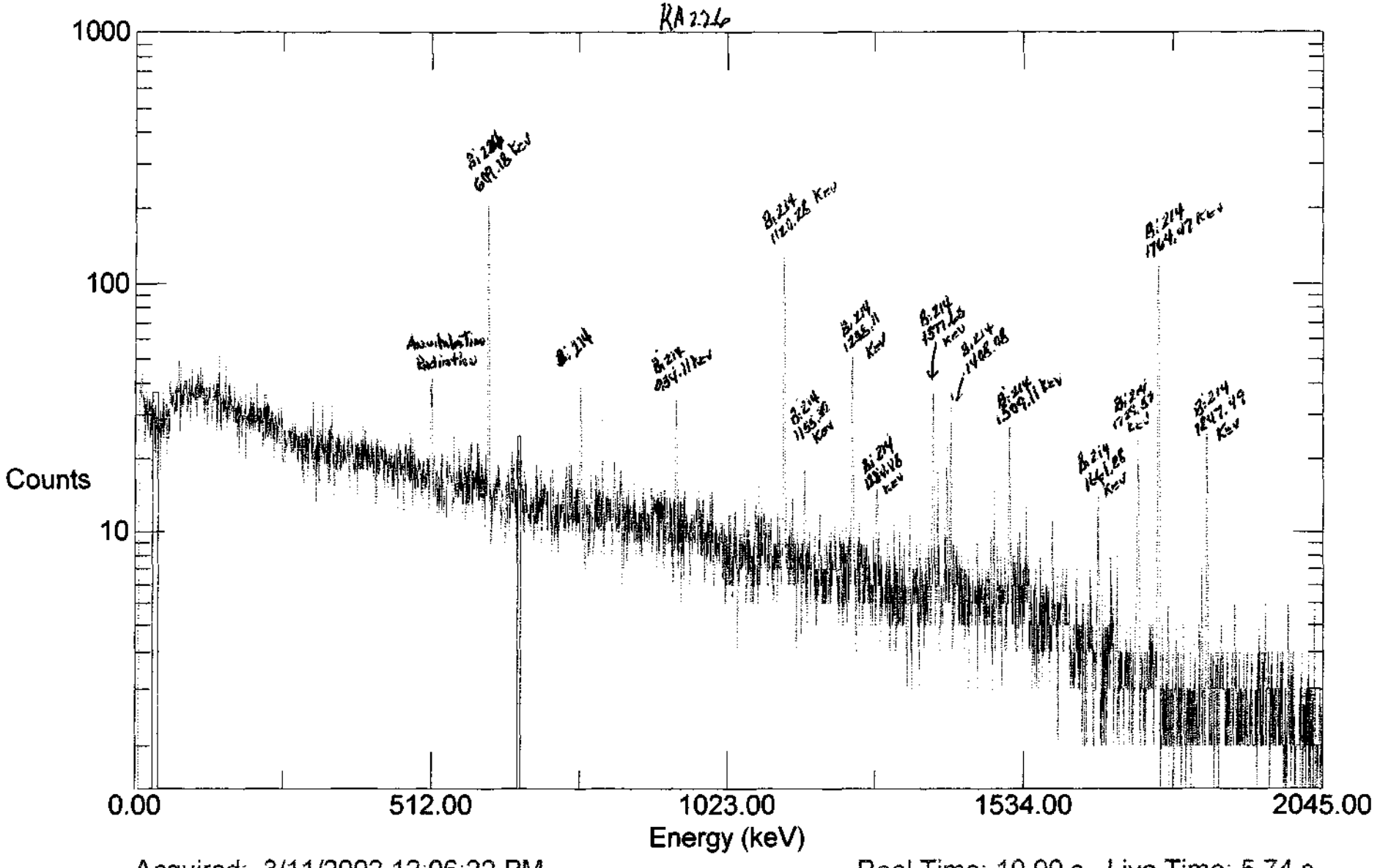
8

file: \MVC-007F.JPG

3/2002

013 1SC-80 3-11-2002 12.06.22 PM

SC-80



Acquired: 3/11/2002 12:06:22 PM Real Time: 10.00 s. Live Time: 5.74 s.

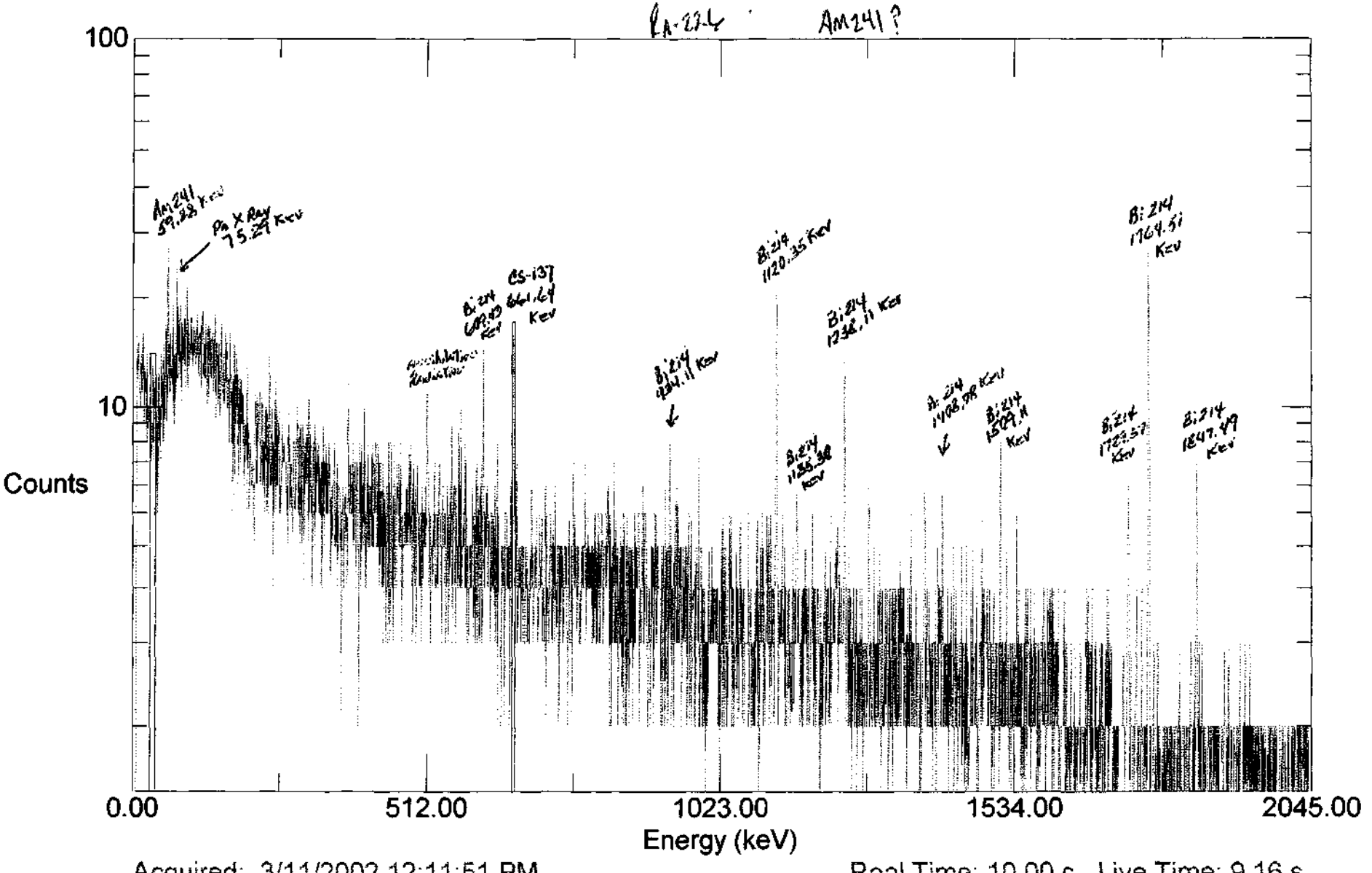
File: C:\User\GNIWEB~1\013 1SC-80 3-11-2002 12.06.22 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

81

014 1SC-81 3-1-2002 12.11.52 PM

SC-81



Acquired: 3/11/2002 12:11:51 PM Real Time: 10.00 s. Live Time: 9.16 s.

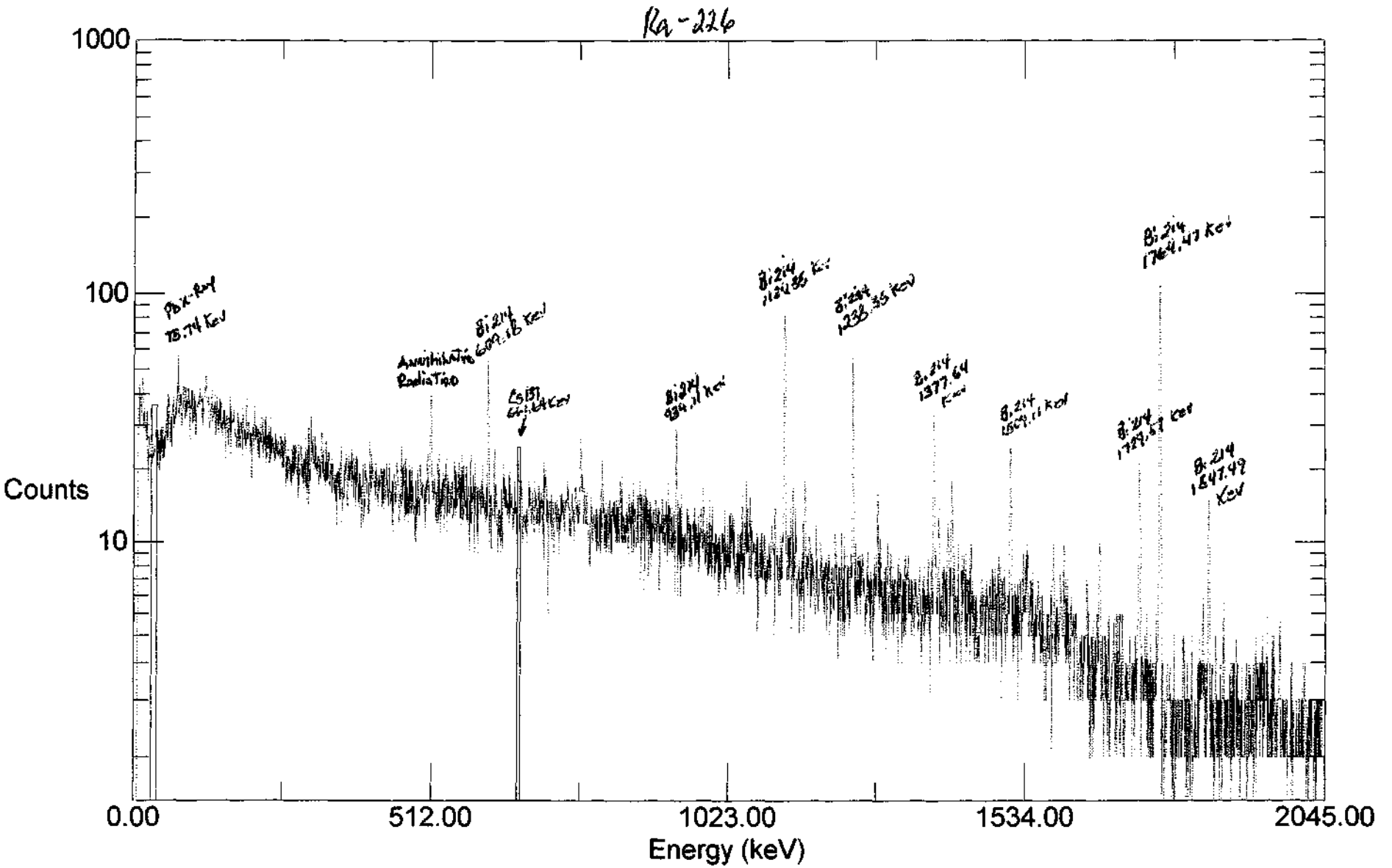
File: C:\User\GNIWEB~1\014 1SC-81 3-11-2002 12.11.52 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

e8

015 1SC-82 3-1-2002 12.18.40 PM

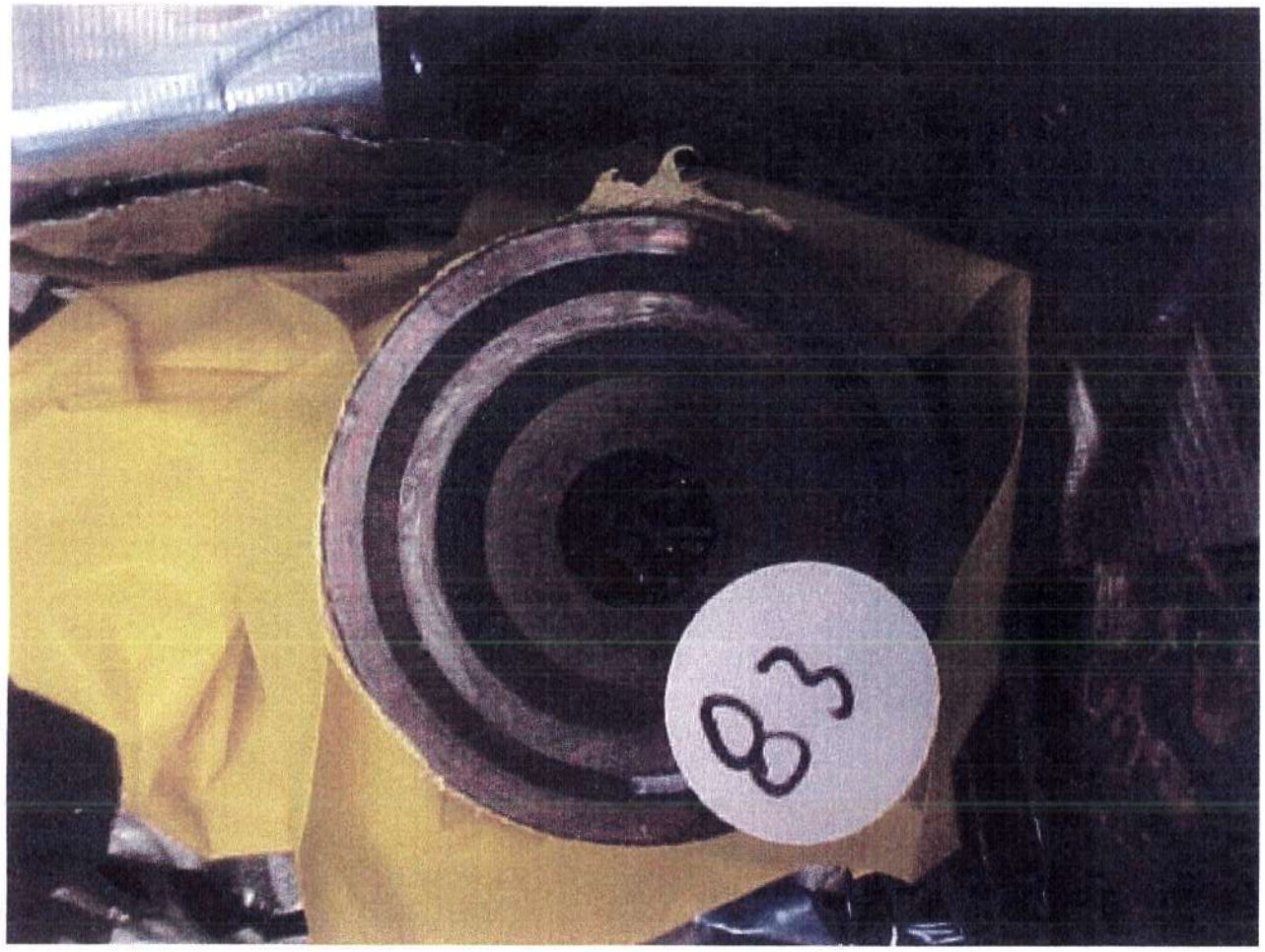
SC-82



Acquired: 3/11/2002 12:18:40 PM Real Time: 10.00 s. Live Time: 6.00 s.

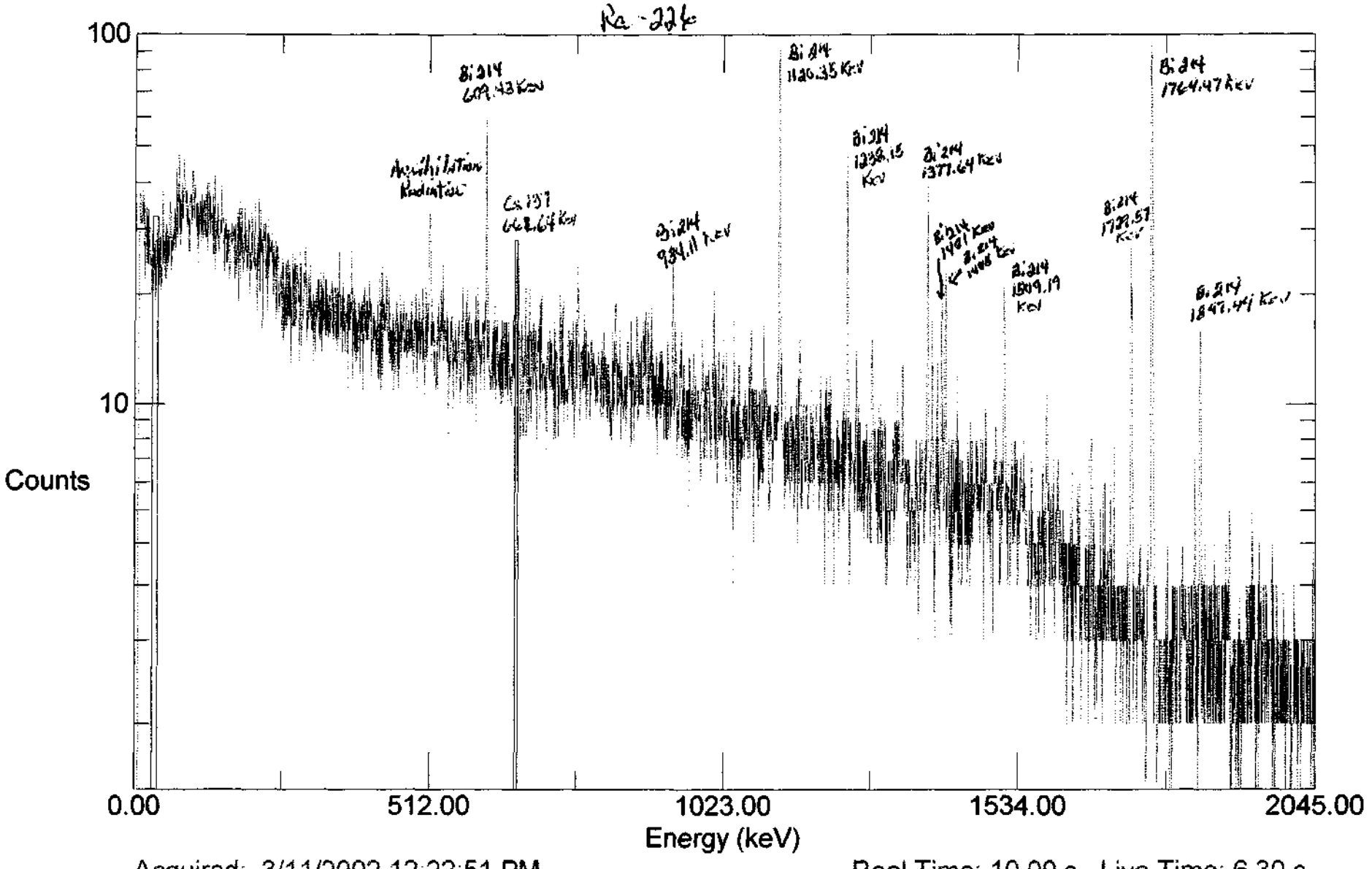
File: C:\User\GNIWEB~1\015 1SC-82 3-11-2002 12.18.40 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


83

0161 SC-83 3-1-2002 12.22.52 PM

SC-83



Acquired: 3/11/2002 12:22:51 PM Real Time: 10.00 s. Live Time: 6.30 s.

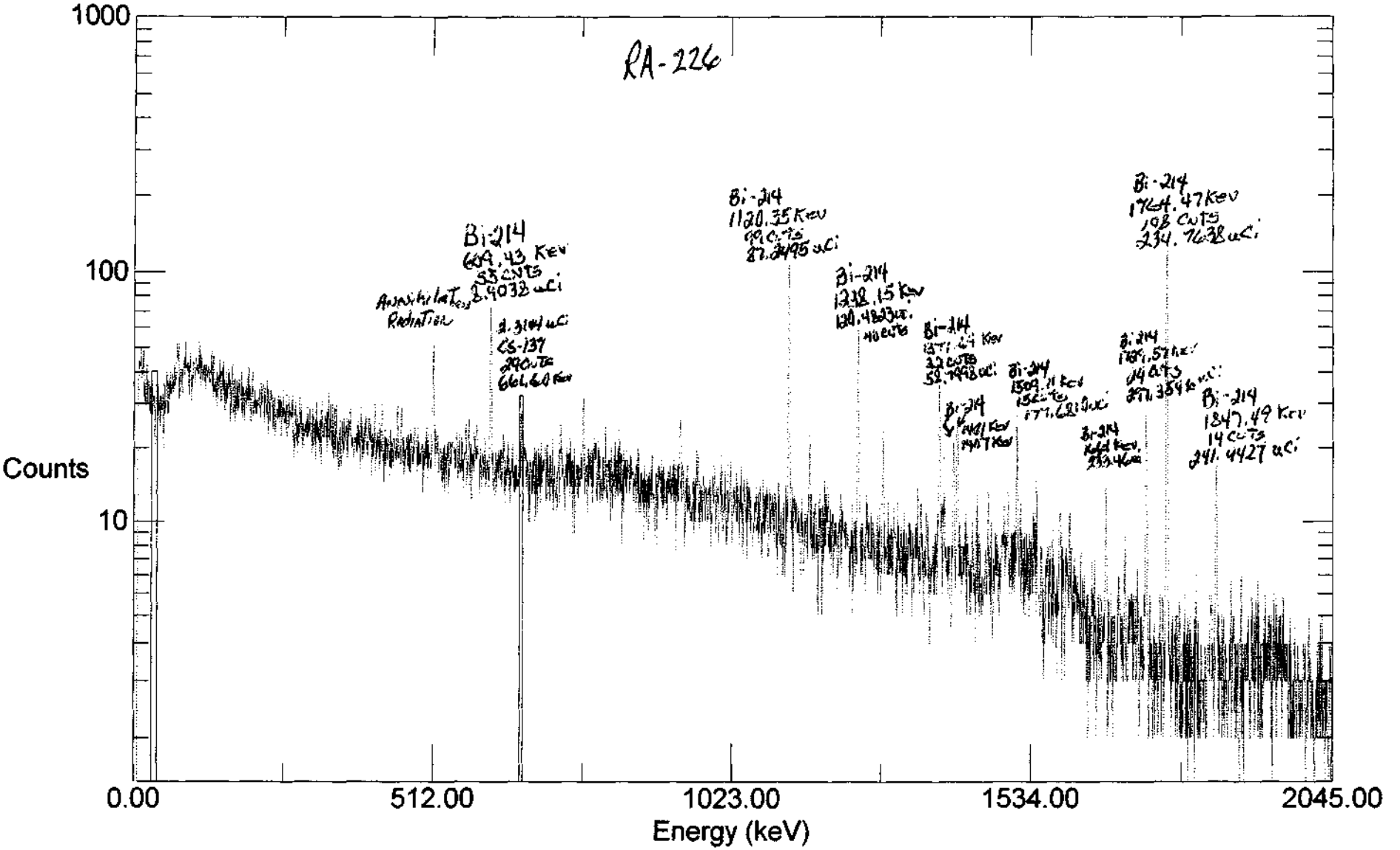
File: C:\User\GNIWEB~1\0161 SC-83 3-11-2002 12.22.52 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

84

017 1SC-84 3-1-2002 12.26.38 PM

SC-84



Acquired: 3/11/2002 12:26:38 PM Real Time: 10.00 s. Live Time: 3.68 s.

File: C:\User\GNIWEB~1\017 1SC-84 3-11-2002 12.26.38 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-12-02

BKG	mR/hr
6"	<2
12"	.2
36"	.3

Container #	85	86	87	88	89
External on pig in mR/hr	— <.2	— <.2	— <.2	— <.2	— <.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	~~5000~~ <.2	~~10,000~~ <.2	~~44,000~~ <.2	~~9,000~~ <.2	~~4,000~~ <.2
Beta on open pig mR/hr O/W	— <.2	— <.2	— <.2	— <.2	— <.2

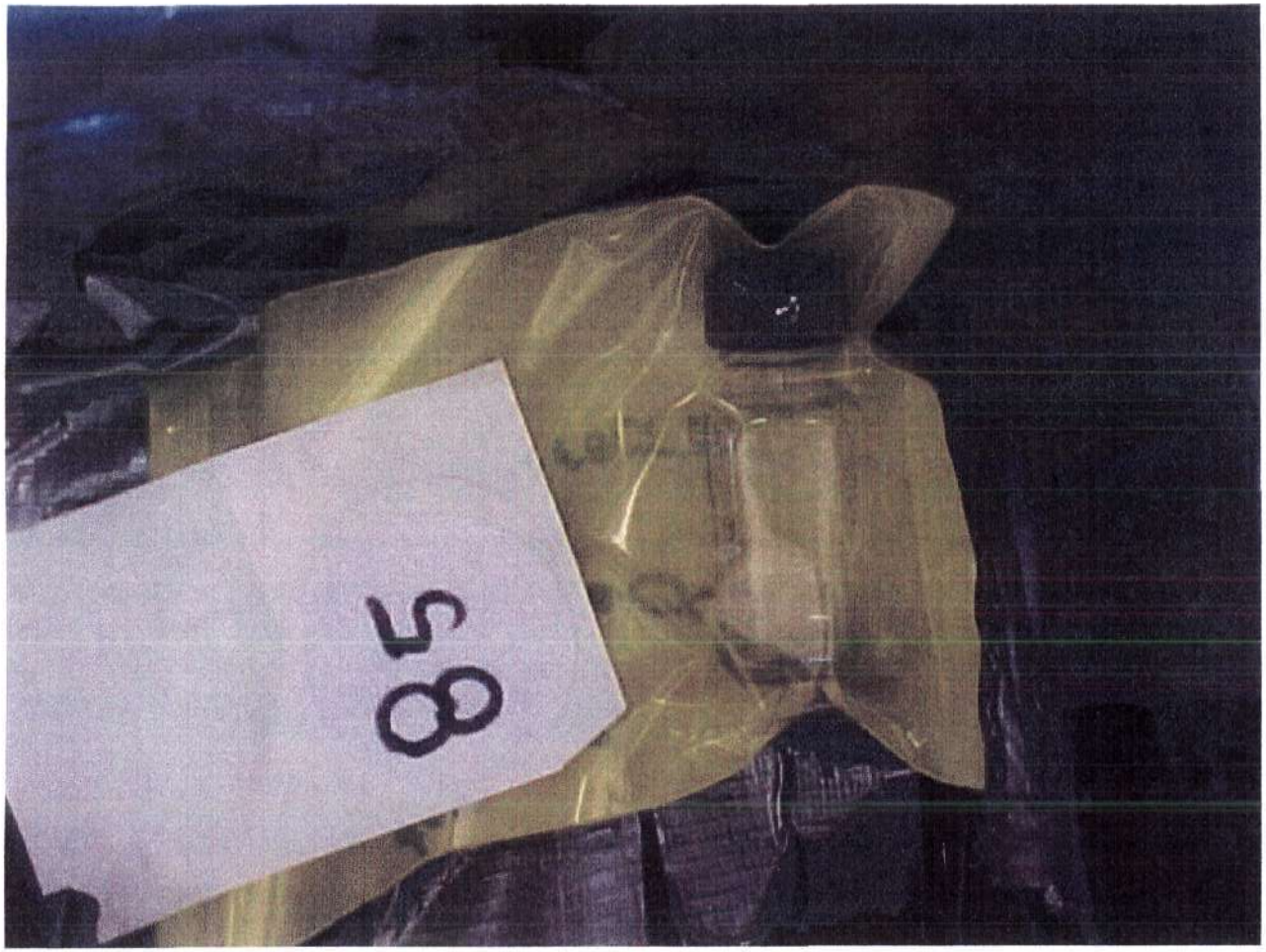
Picture	✓	✓	✓	✓	✓
DigiDart	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKg	BKg	BKg	BKg	BKg
Source mR/hr @ 12 inches	BKg	BKg	BKg	BKg	BKg
Source mR/hr @ 36 inches	BKg	BKg	BKg	BKg	BKg
Size of source in cc's	20	20	20	20	20
Weight in grams	20	20	20	23	20

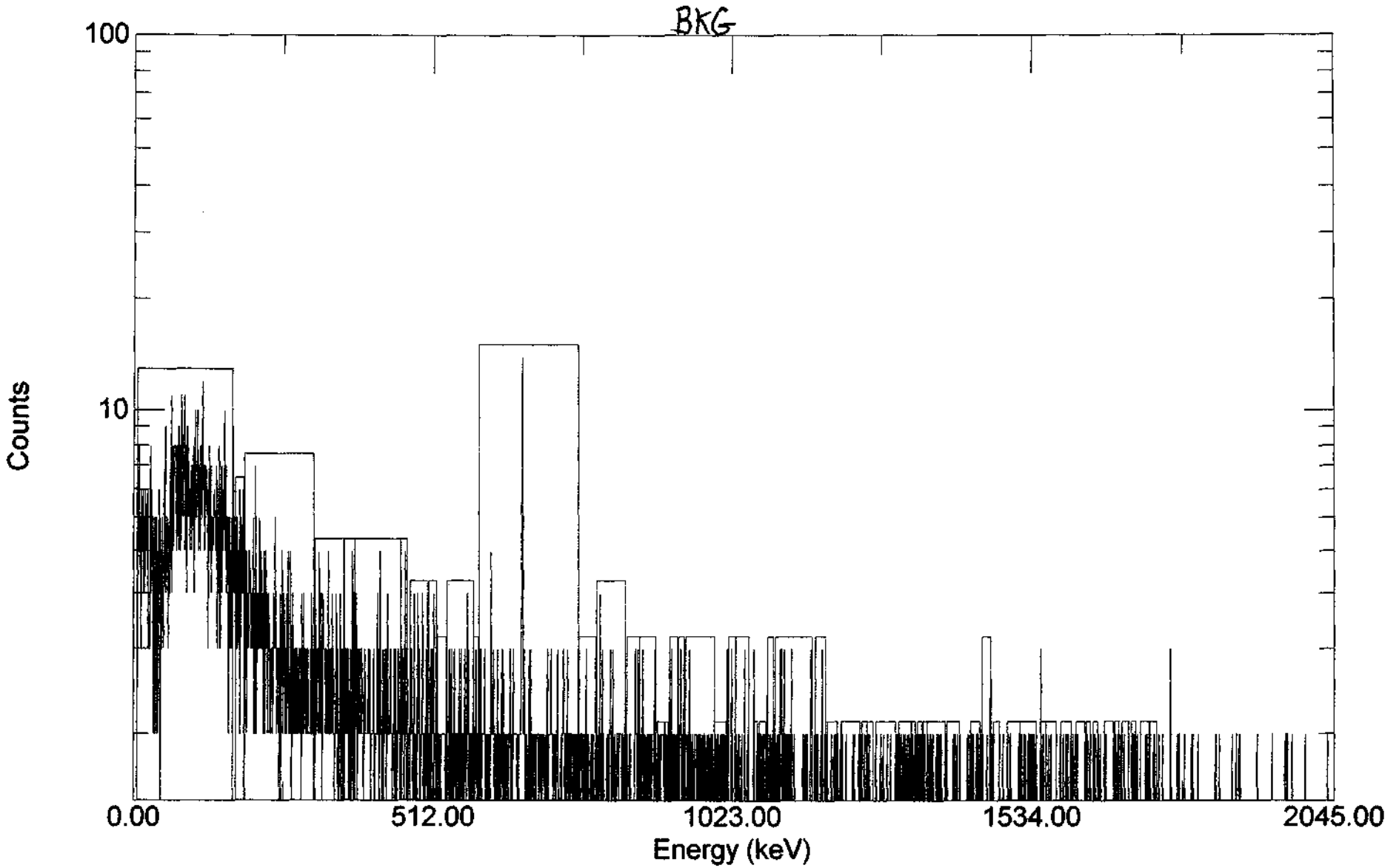
CPM Alpha	<200	~~350~~	~~500~~	<200	~~400~~
Direct Beta/Gamma	~~5K~~ 500	~~10K~~ ~~1000~~ 1000	~~44,000~~ 4,400	~~8,000~~ 800	~~9,000~~ 900
Info on source:	N/A	N/A	N/A	N/A	N/A

Information on pig:	N/A	N/A	N/A <250	N/A	N/A
Smear DPM per 100 cm^2 Alpha	300	580	<250	320	450
Smear DPM per 100 cm^2 Beta	4000	8000	14,000	7,000	6,000
	~~[illegible]~~ Bottle Liquid	Liquid	Liquid	Liquid	Liquid


58

004 1SC-85 3-1_-2002 3.05.53 PM

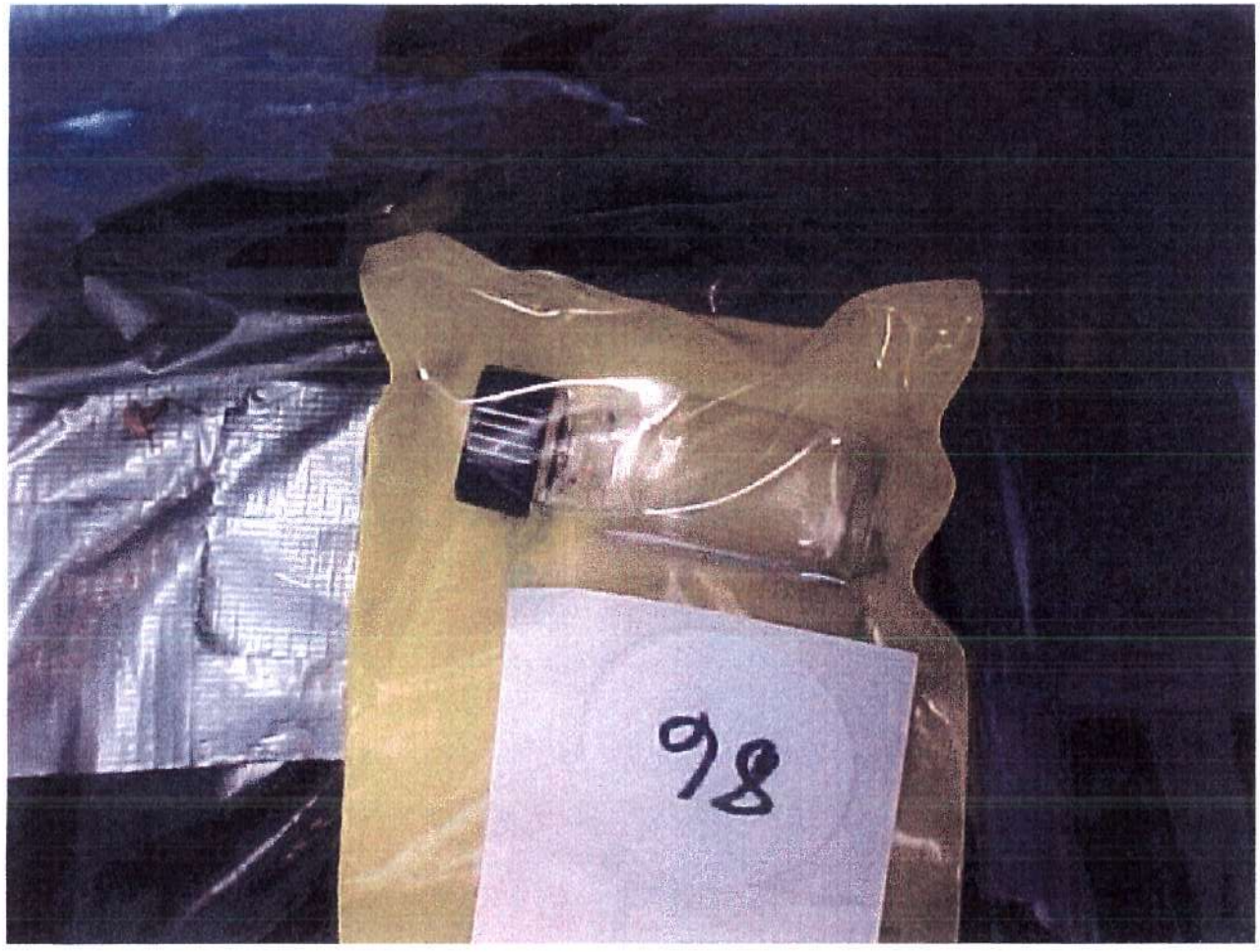
1SC-85



Acquired: 3/12/2002 3:05:53 PM Real Time: 10.00 s. Live Time: 9.76 s.

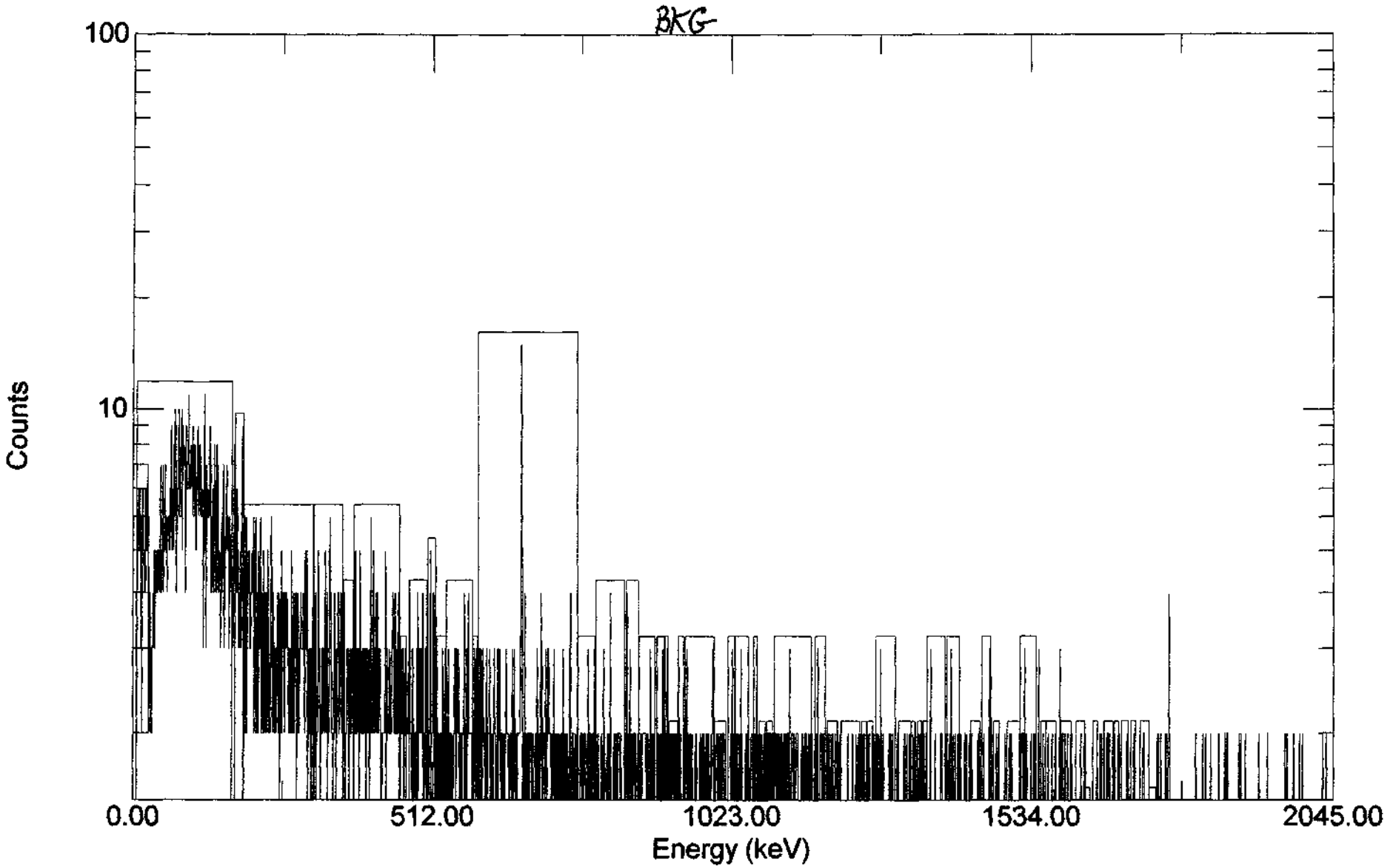
File: C:\User\GNIWEB~1\004 1SC-85 3-12-2002 3.05.53 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


98

005 1SC-86 3-12-2002 3.14.11 PM

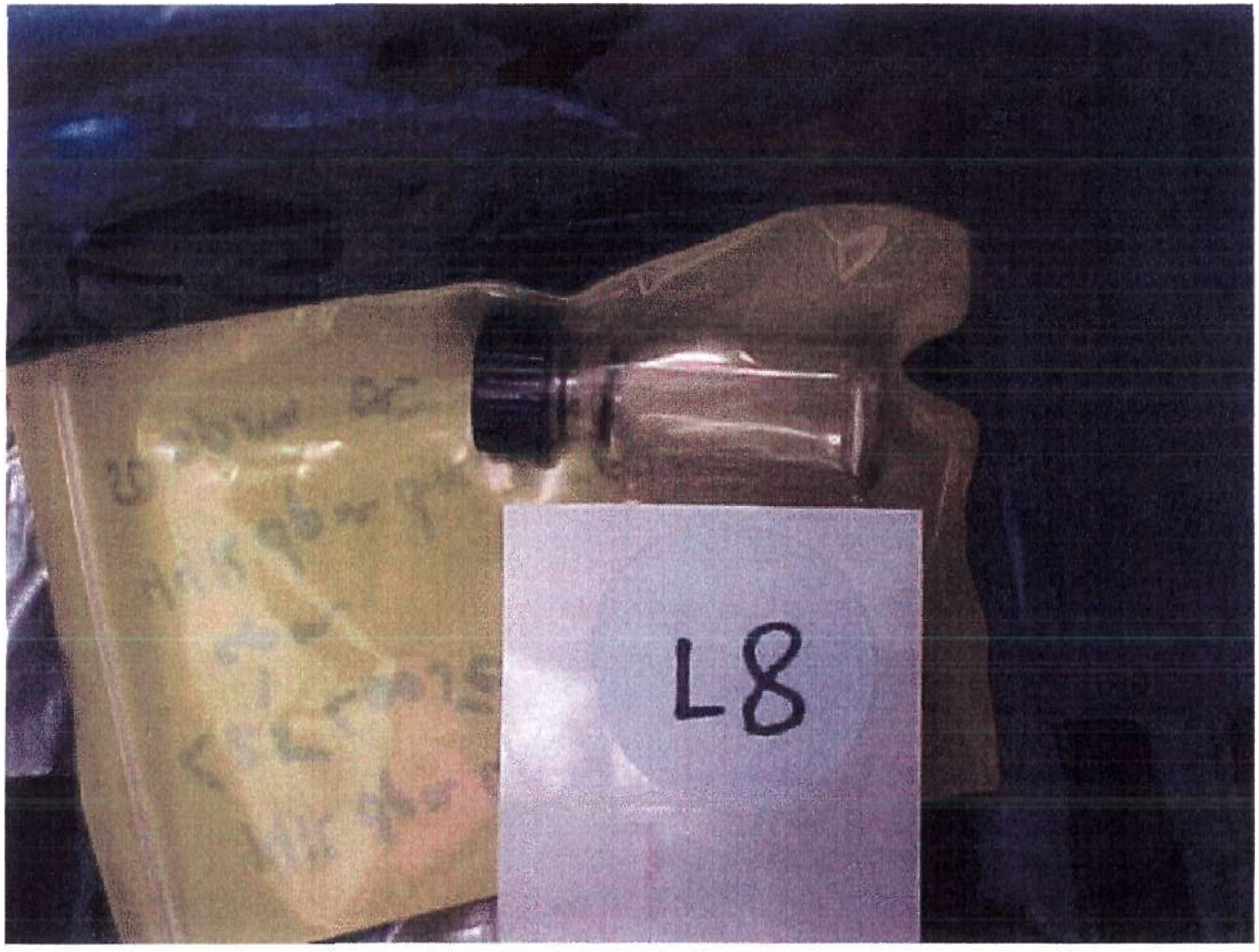
1SC-86



Acquired: 3/12/2002 3:14:11 PM Real Time: 10.00 s. Live Time: 9.72 s.

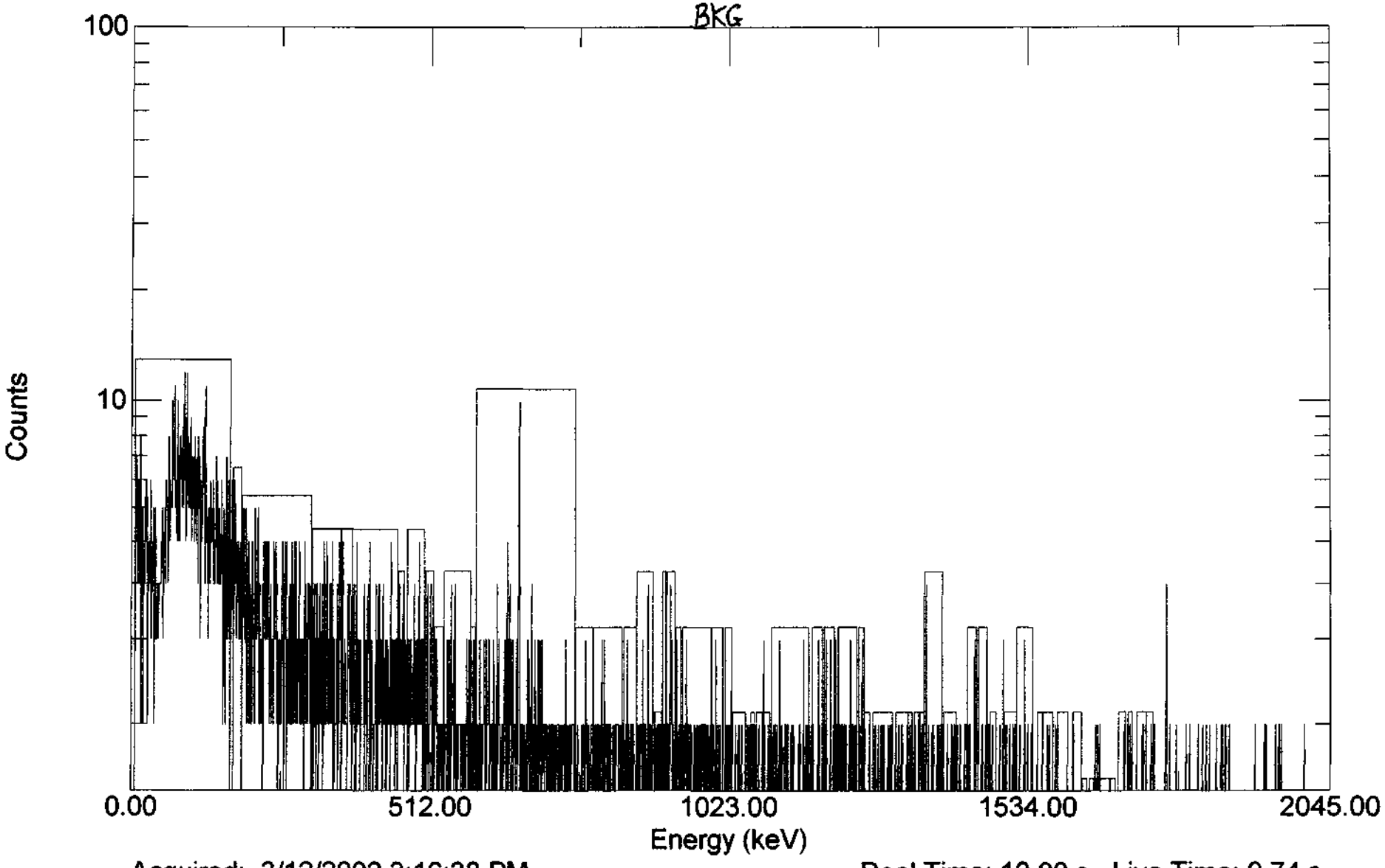
File: C:\User\GNIWEB~1\005 1SC-86 3-12-2002 3.14.11 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


L8

006 1SC-87 3- .2-2002 3.16.37 PM

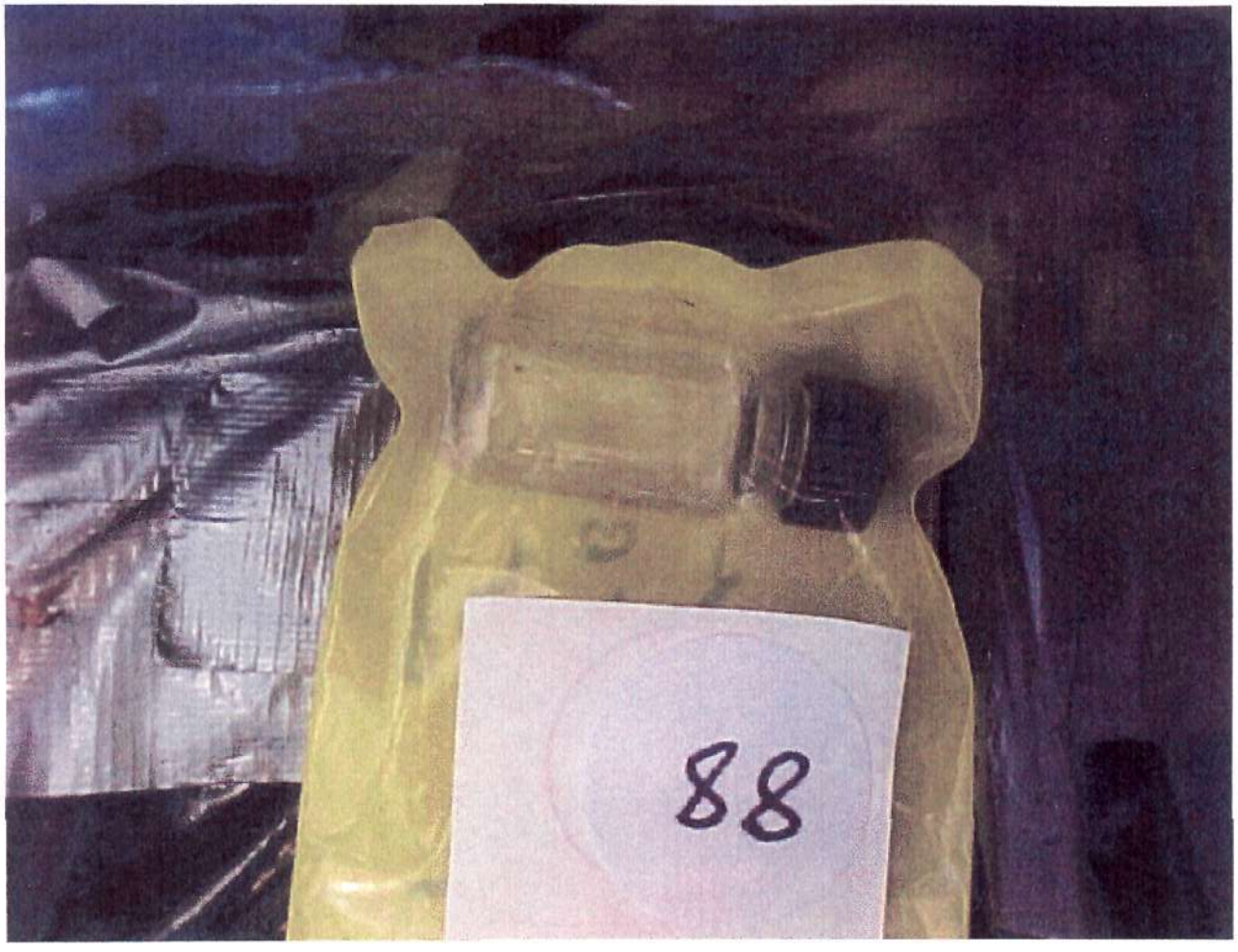
1SC-87



Acquired: 3/12/2002 3:16:38 PM Real Time: 10.00 s. Live Time: 9.74 s.

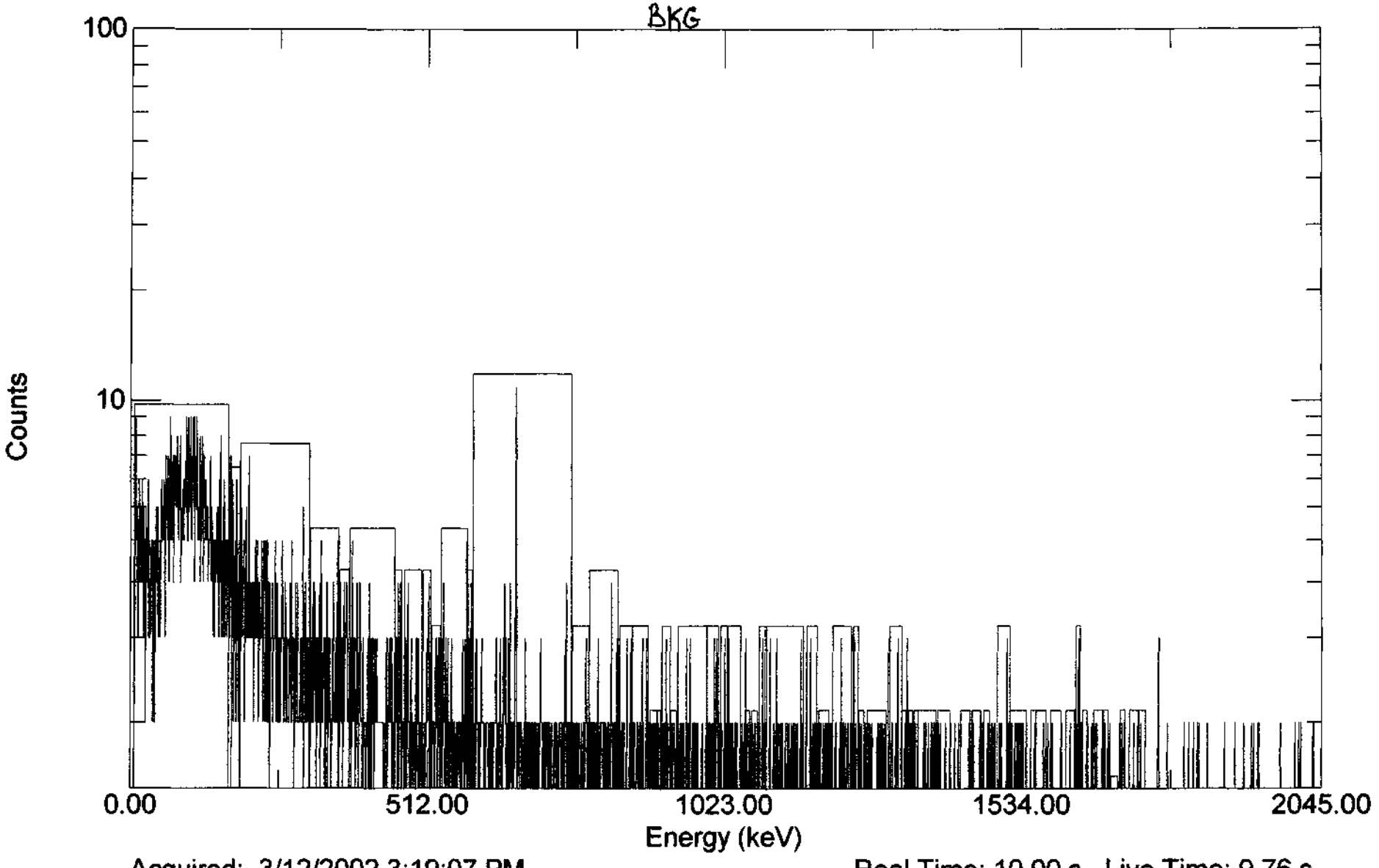
File: C:\User\GNIWEB~1\006 1SC-87 3-12-2002 3.16.37 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


88

007 1SC-88 3-12-2002 3.19.07 PM

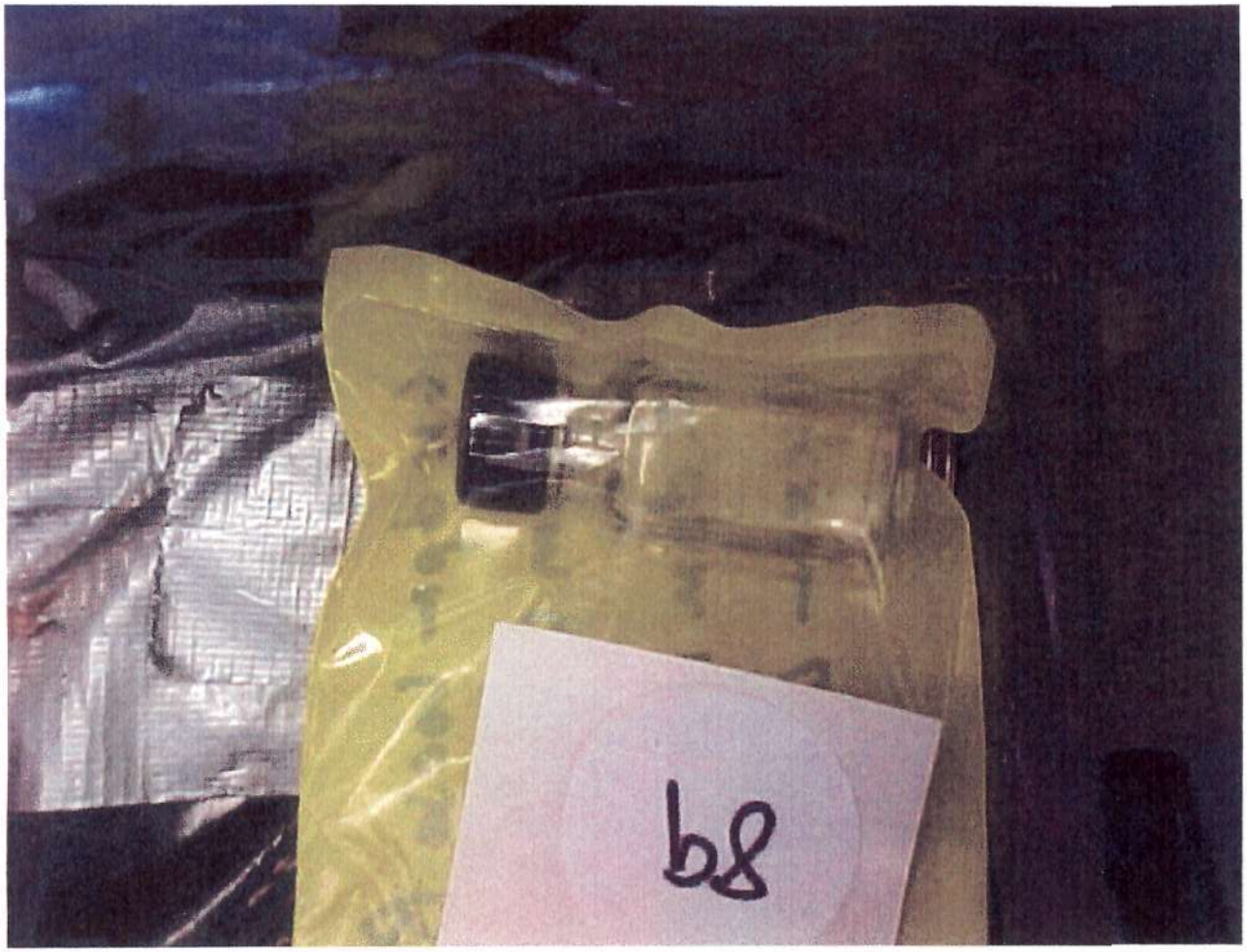
1SC-88



Acquired: 3/12/2002 3:19:07 PM Real Time: 10.00 s. Live Time: 9.76 s.

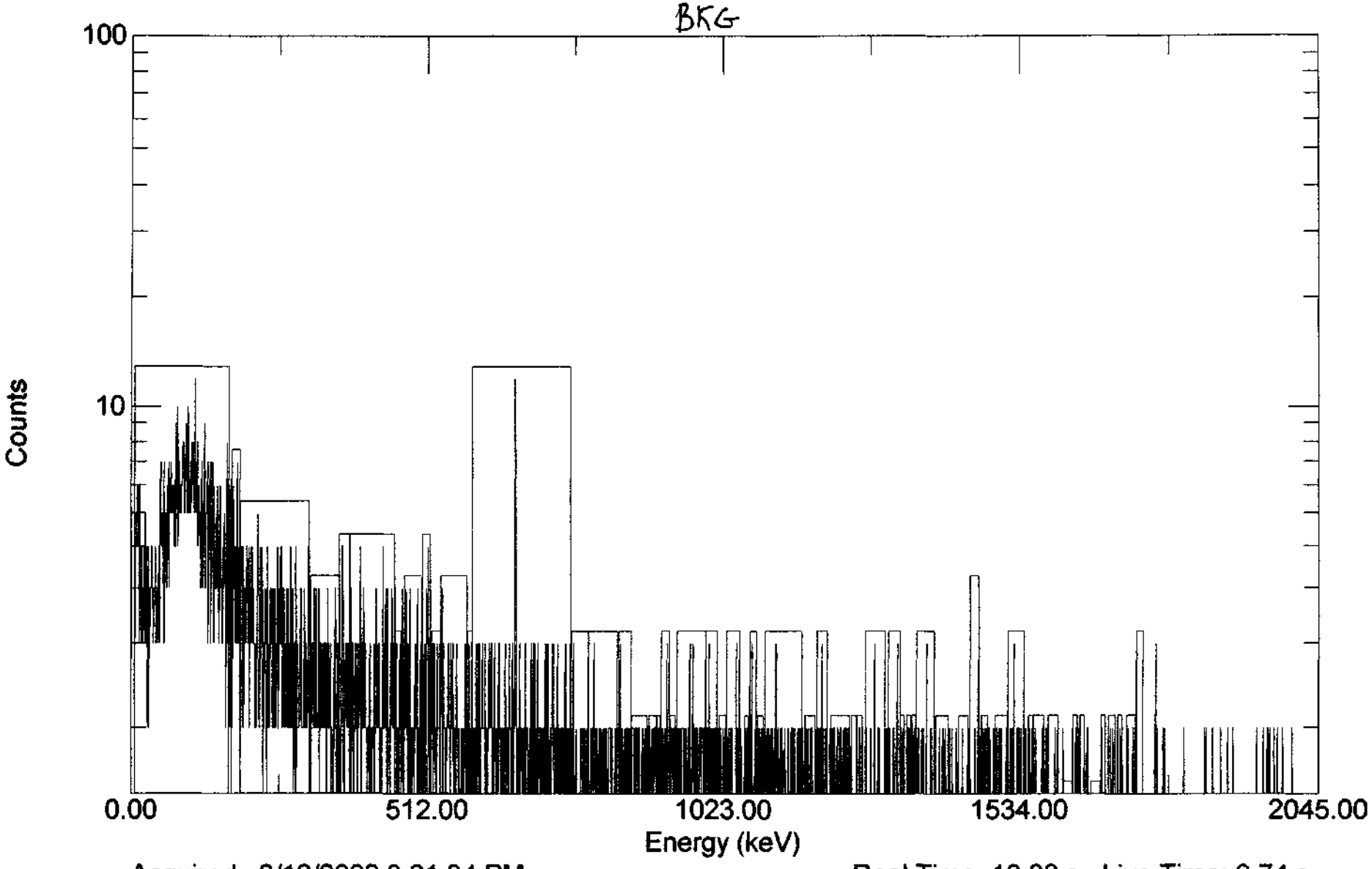
File: C:\User\GNIWEB~1\007 1SC-88 3-12-2002 3.19.07 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


b8

008 1SC-89 3- .2-2002 3.21.35 PM

1SC-89



Acquired: 3/12/2002 3:21:34 PM Real Time: 10.00 s. Live Time: 9.74 s.

File: C:\User\GNIWEB~1\008 1SC-89 3-12-2002 3.21.35 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-12-02

BKG	mR/hr
6"	<.2
12"	.2
36"	.3

Container #	90	91	92	93	94
External on pig in mR/hr	— <.2	— <.2	— <.2	— <.2	— <.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	~~8,000~~ <.2	~~13,000~~ <.2	~~Bkg~~ <.2	~~15,000~~ <.2	~~8,000~~ <.2
Beta on open pig mR/hr O/W	— <.2	<.2	<.2	<.2	<.2

Picture	✓	✓	✓	✓	✓
Digi Dact	✓	✓	✓	✓	✓

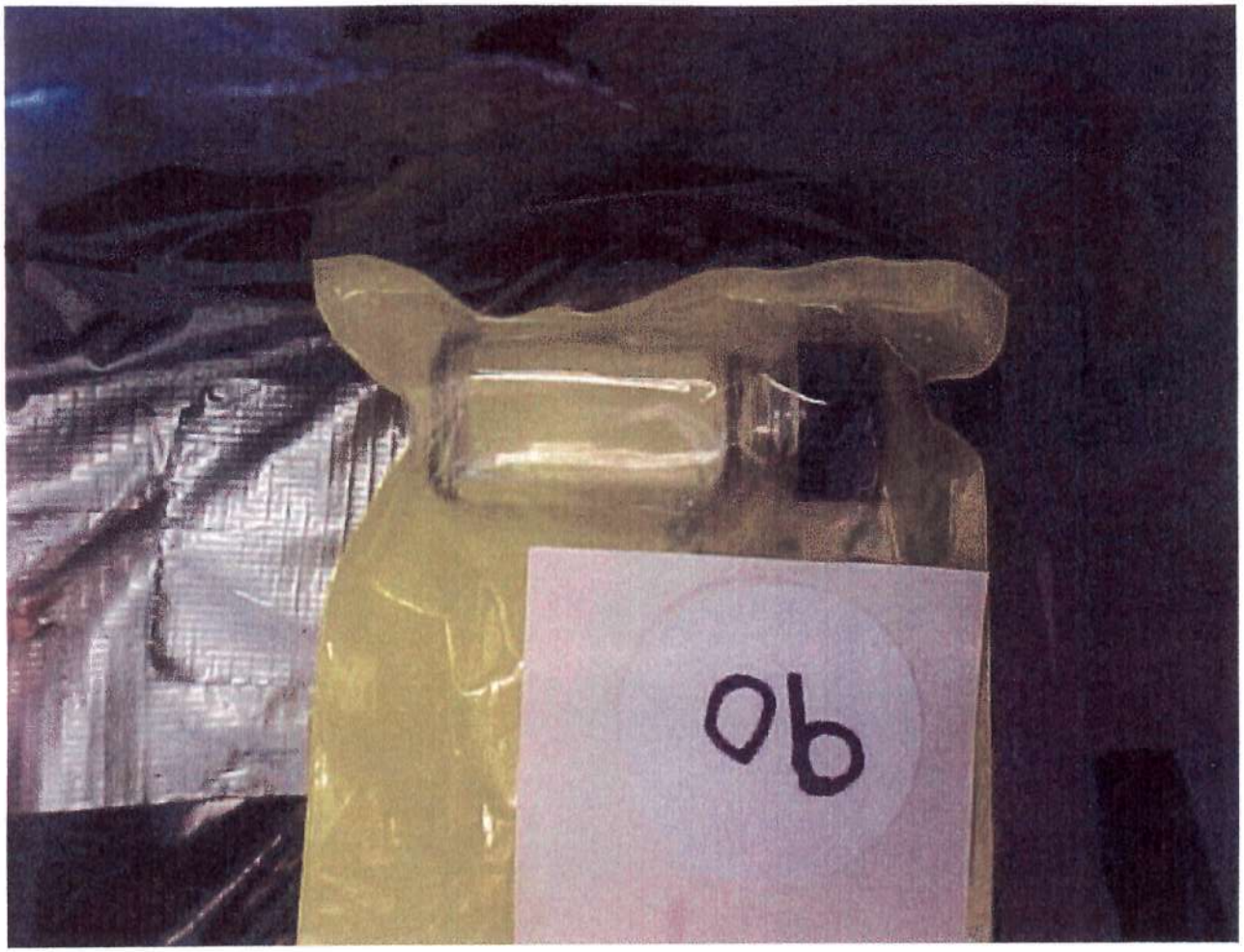
Table Readings

Source mR/hr @ 6 inchs	Bkg	Bkg	Bkg	Bkg	Bkg
Source mR/hr @ 12 inches	Bkg	Bkg	Bkg	Bkg	Bkg
Source mR/hr @ 36 inches	Bkg	Bkg	Bkg	Bkg	Bkg
Size of source in cc's	20	20	40	20	20
Weight in grams	22	22	60	22	20

CPM Alpha DIRECT	<250	300	<200	150	40
Direct Beta/Gamma	~~8,000~~ 800	~~13,000~~ 1300	Bkg	~~14,000~~ 1400	~~8,000~~ 800

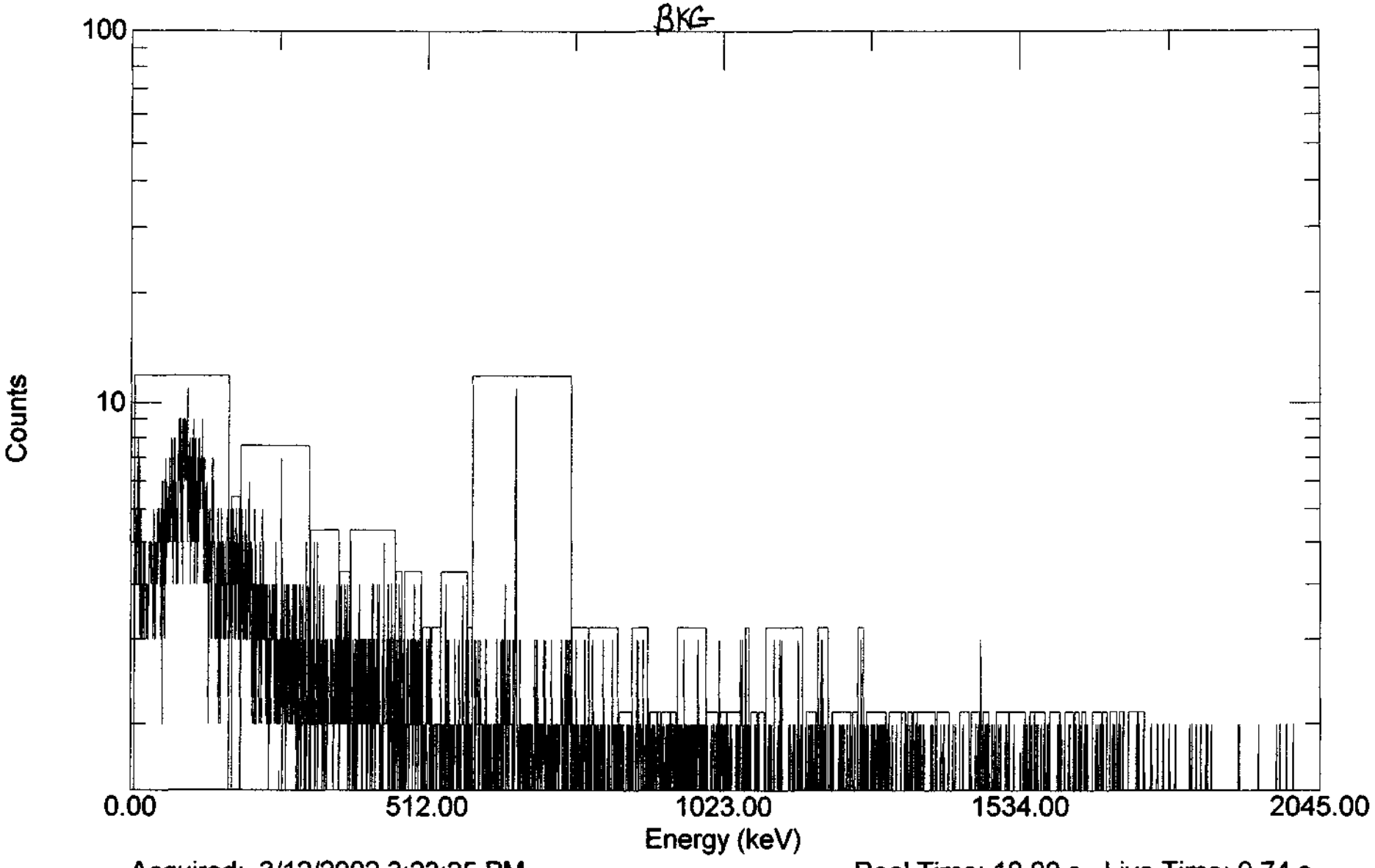
Info on source:					
	None	None	None	None	None

Information on pig:					
	None	None	None	None	None
Smear DPM per 100 cm^2 Alpha	250	400	120	290	40
Smear DPM per 100 cm^2 Beta	8,000	8,000	8,000	15,000	6,000
	Liquid	Liquid	2 bottles of liquid	Liquid	


0b

009 1SC-90 3-12-2002 3.23.25 PM

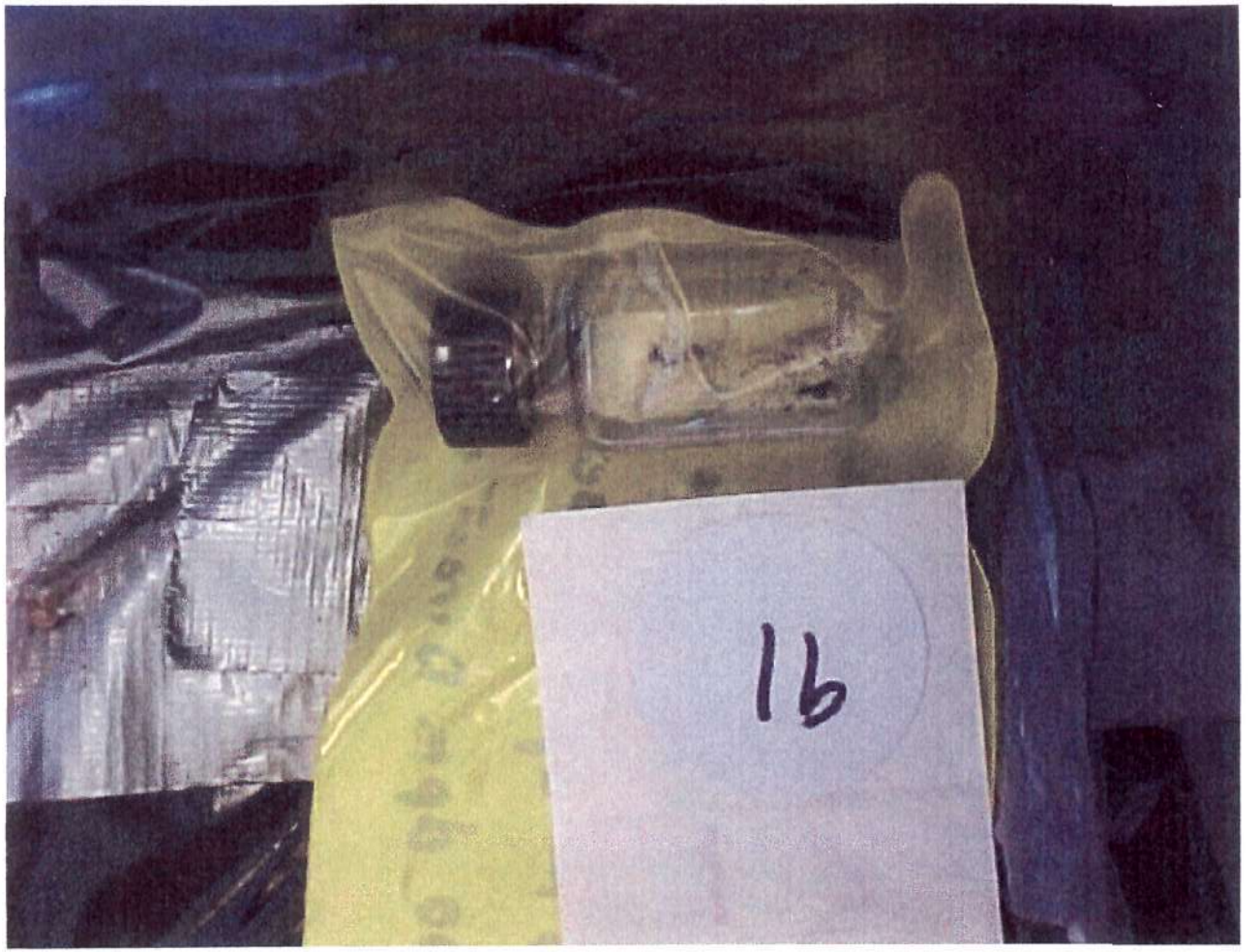
1SC-90



Acquired: 3/12/2002 3:23:25 PM Real Time: 10.00 s. Live Time: 9.74 s.

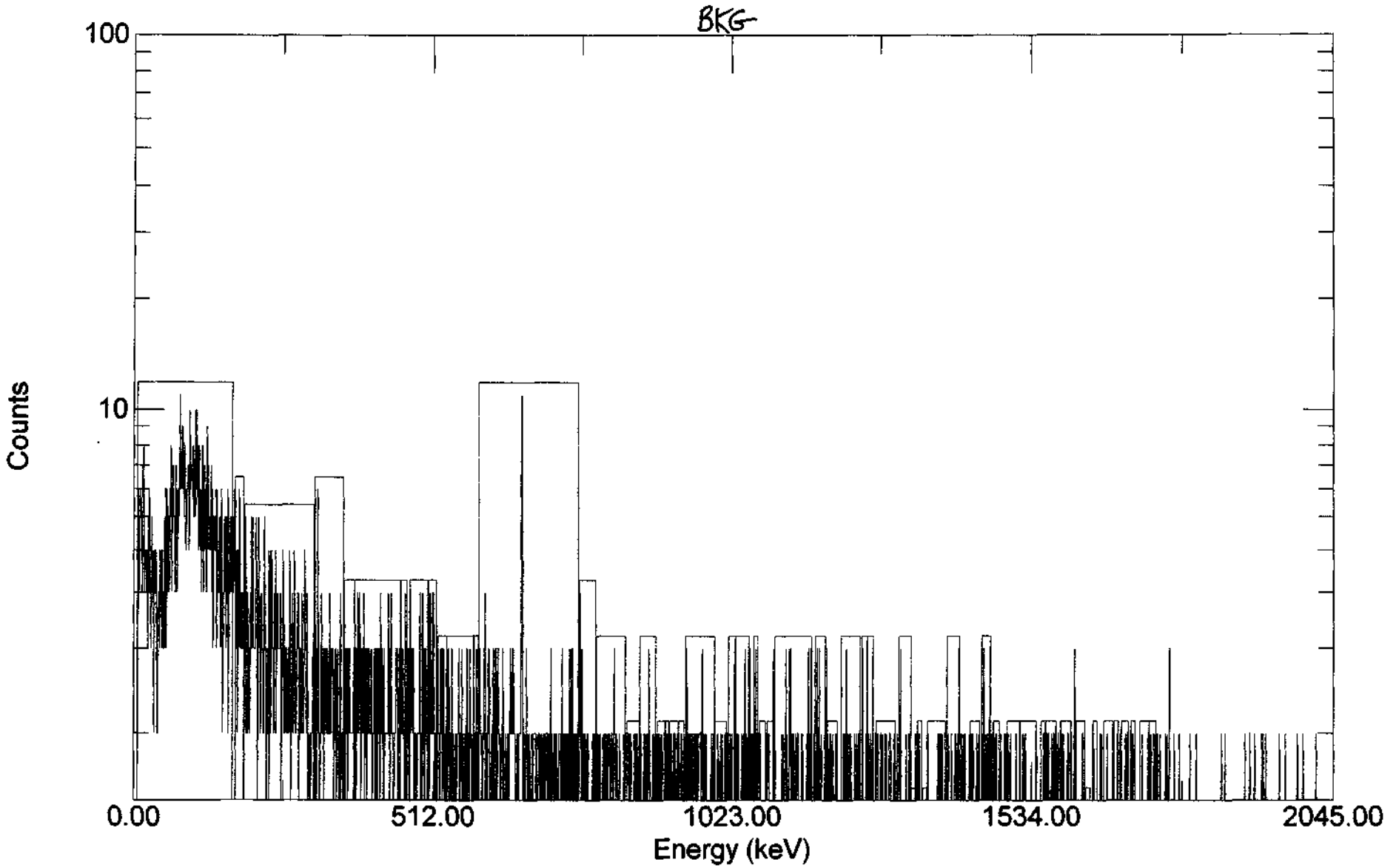
File: C:\User\GNIWEB~1\009 1SC-90 3-12-2002 3.23.25 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

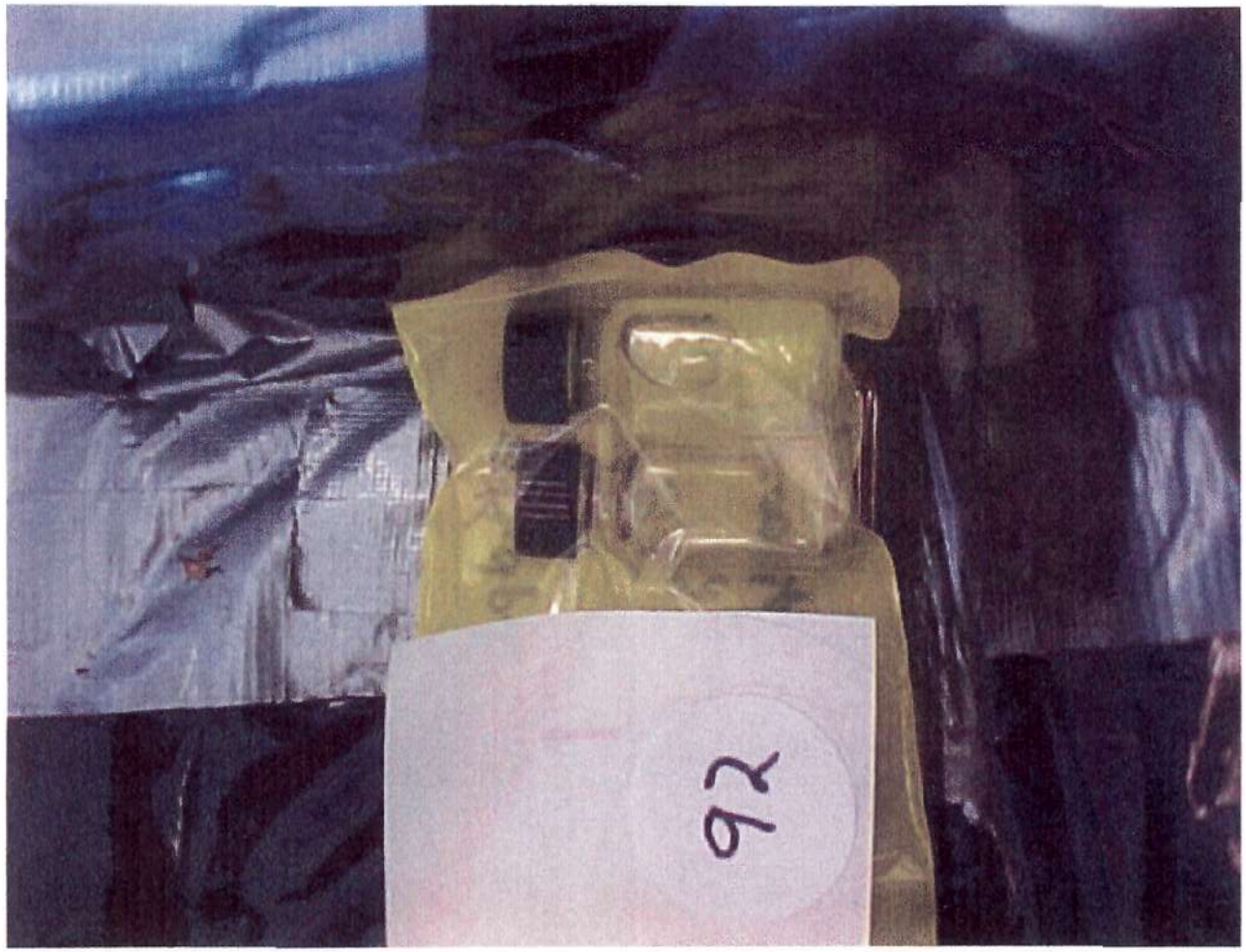

1b

010 1SC-91 3- .2-2002 3.25.31 PM

1SC-91

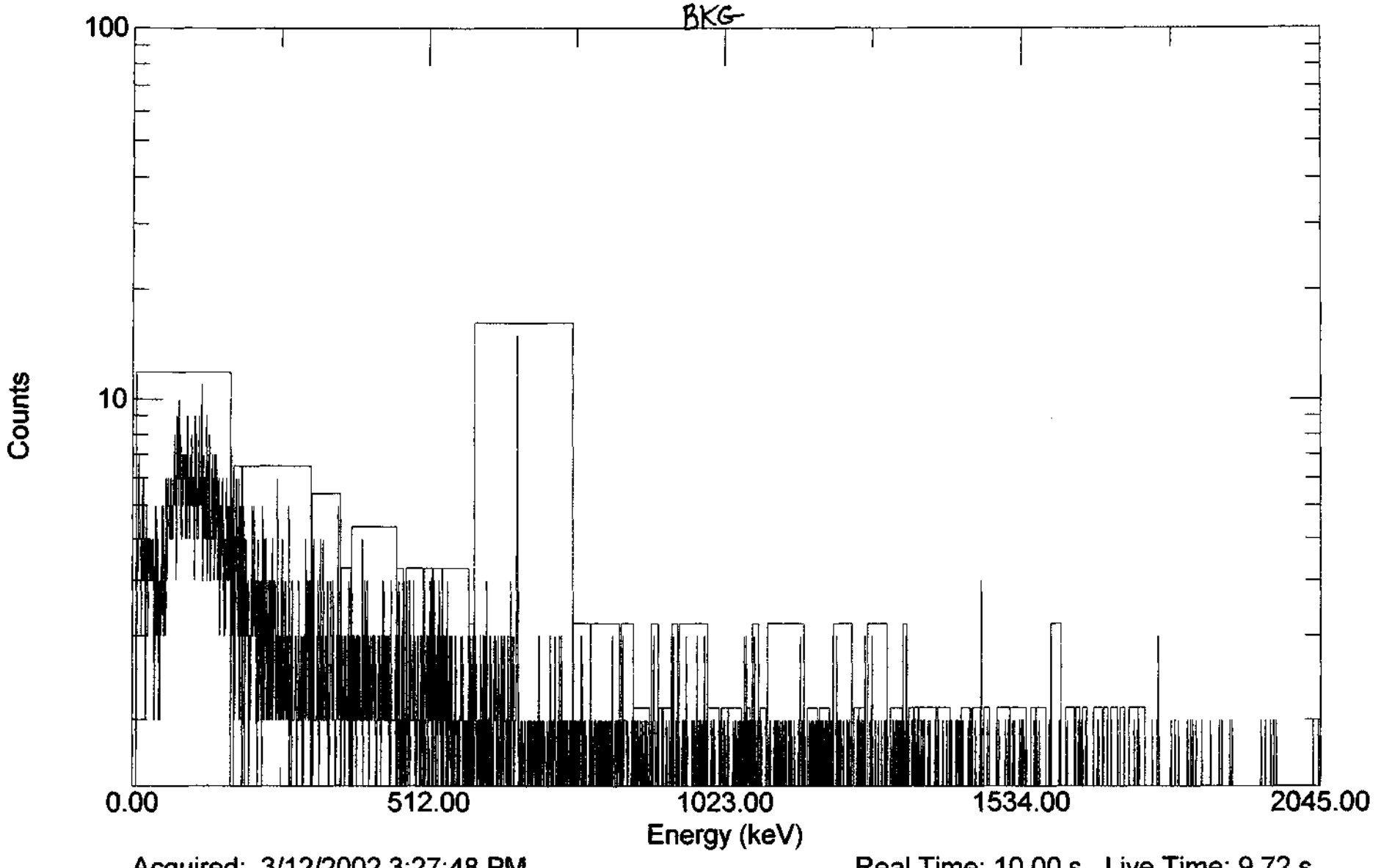


Acquired: 3/12/2002 3:25:31 PM Real Time: 10.00 s. Live Time: 9.74 s.
File: C:\User\GNIWEB~1\010 1SC-91 3-12-2002 3.25.31 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


92

011 1SC-92 3- .2-2002 3.27.48 PM

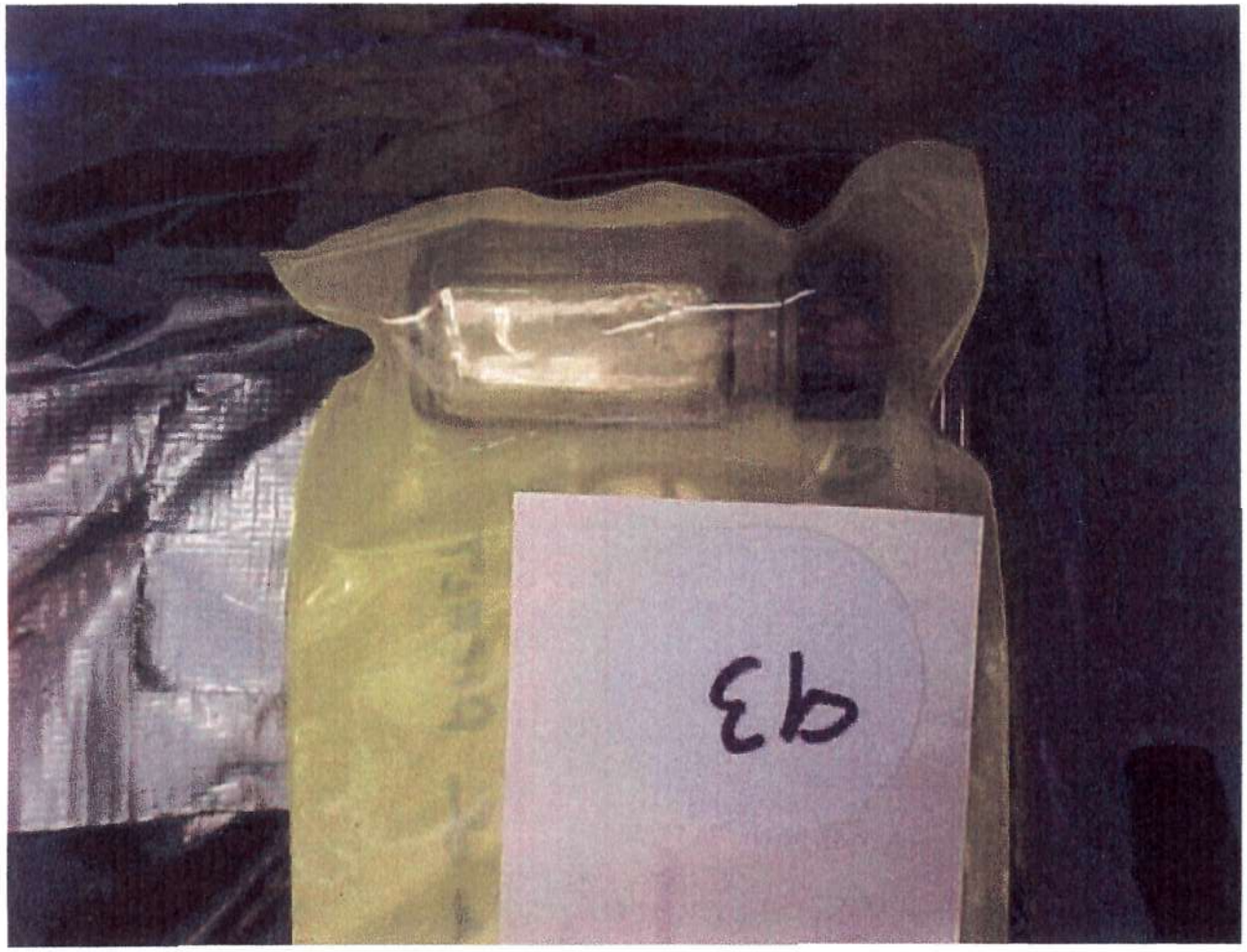
1SC-92



Acquired: 3/12/2002 3:27:48 PM Real Time: 10.00 s. Live Time: 9.72 s.

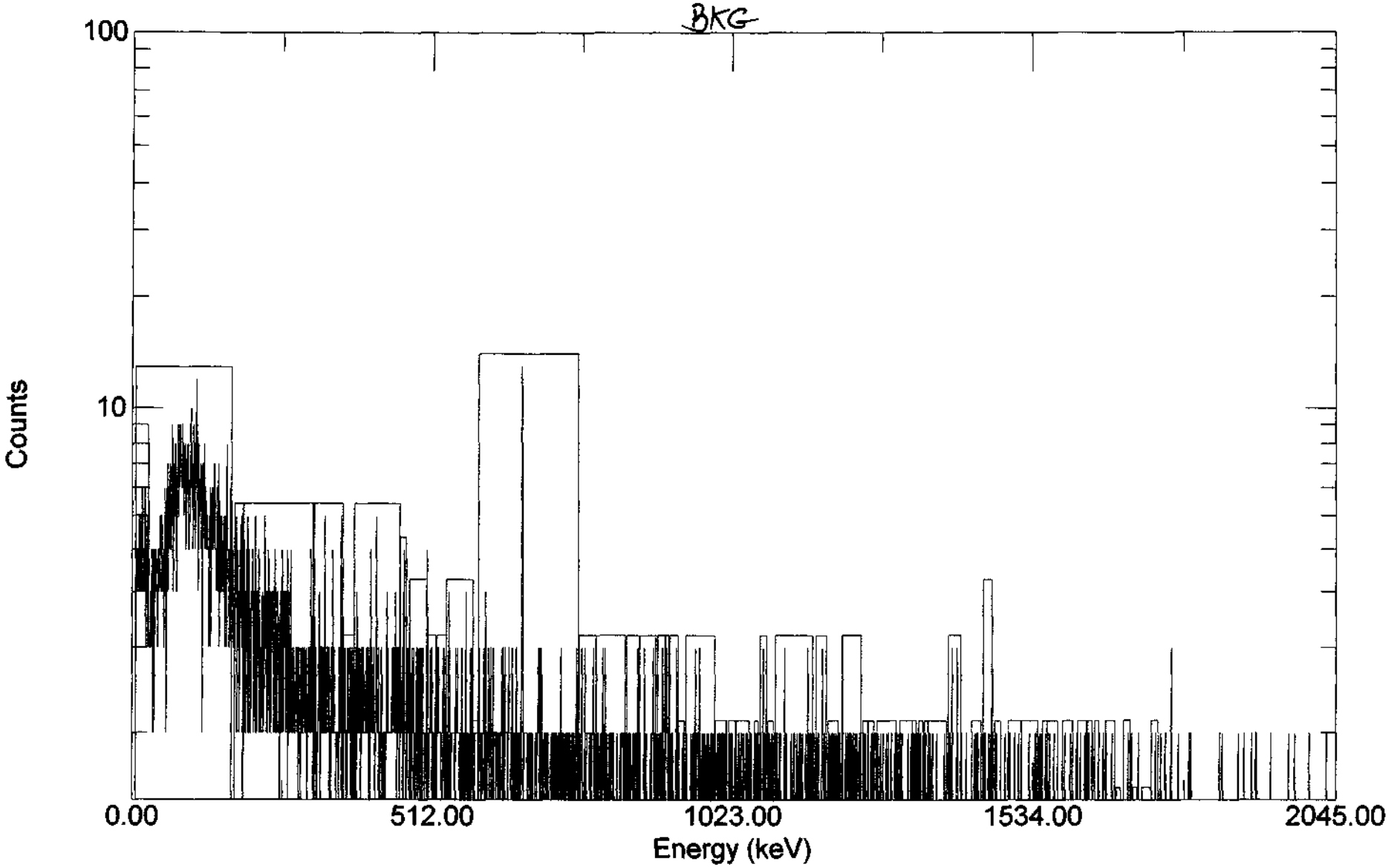
File: C:\User\GNIWEB~1\011 1SC-92 3-12-2002 3.27.48 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


q3

012 1SC-93 3- .2-2002 3.29.09 PM

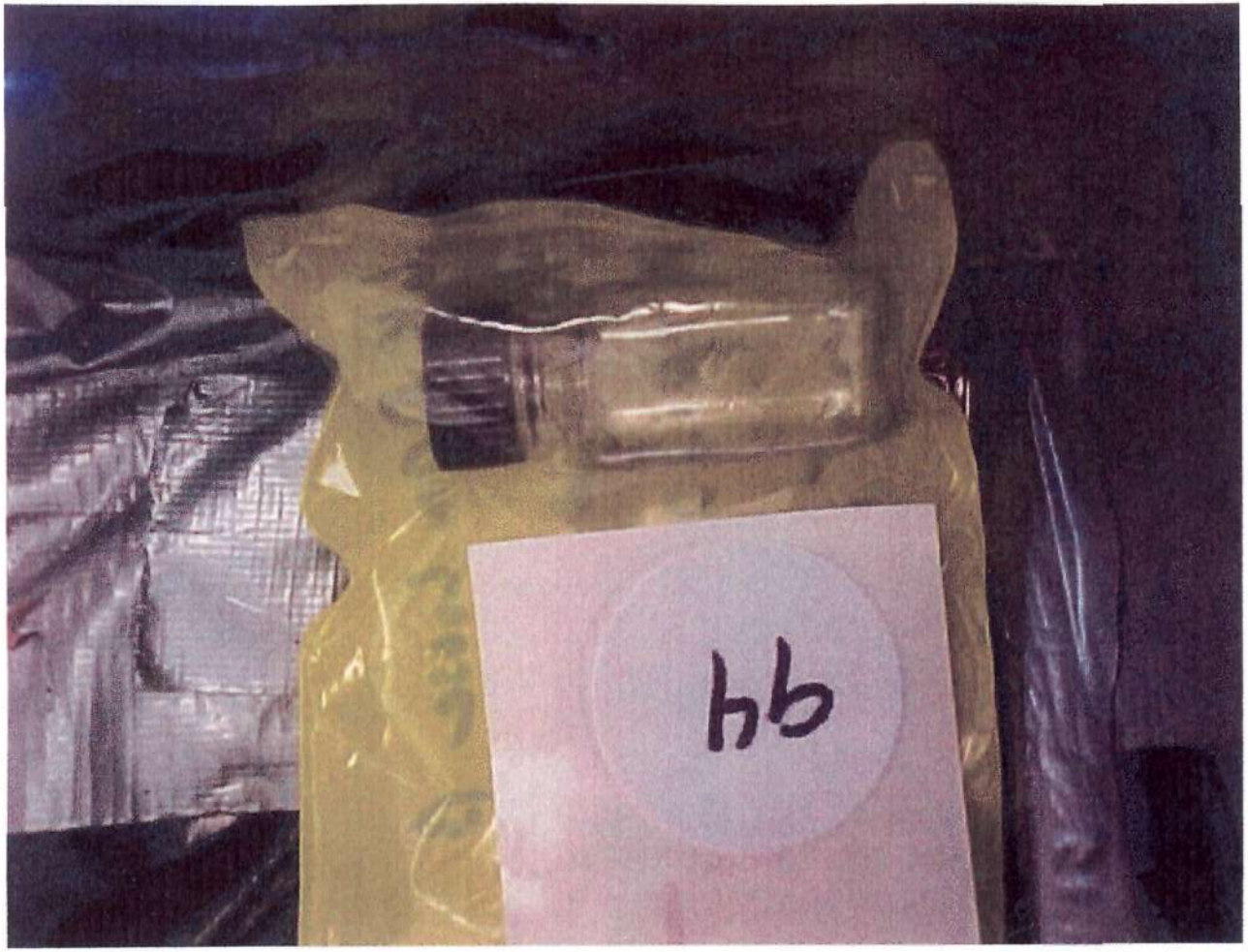
1SC-93



Acquired: 3/12/2002 3:29:09 PM Real Time: 10.00 s. Live Time: 9.72 s.

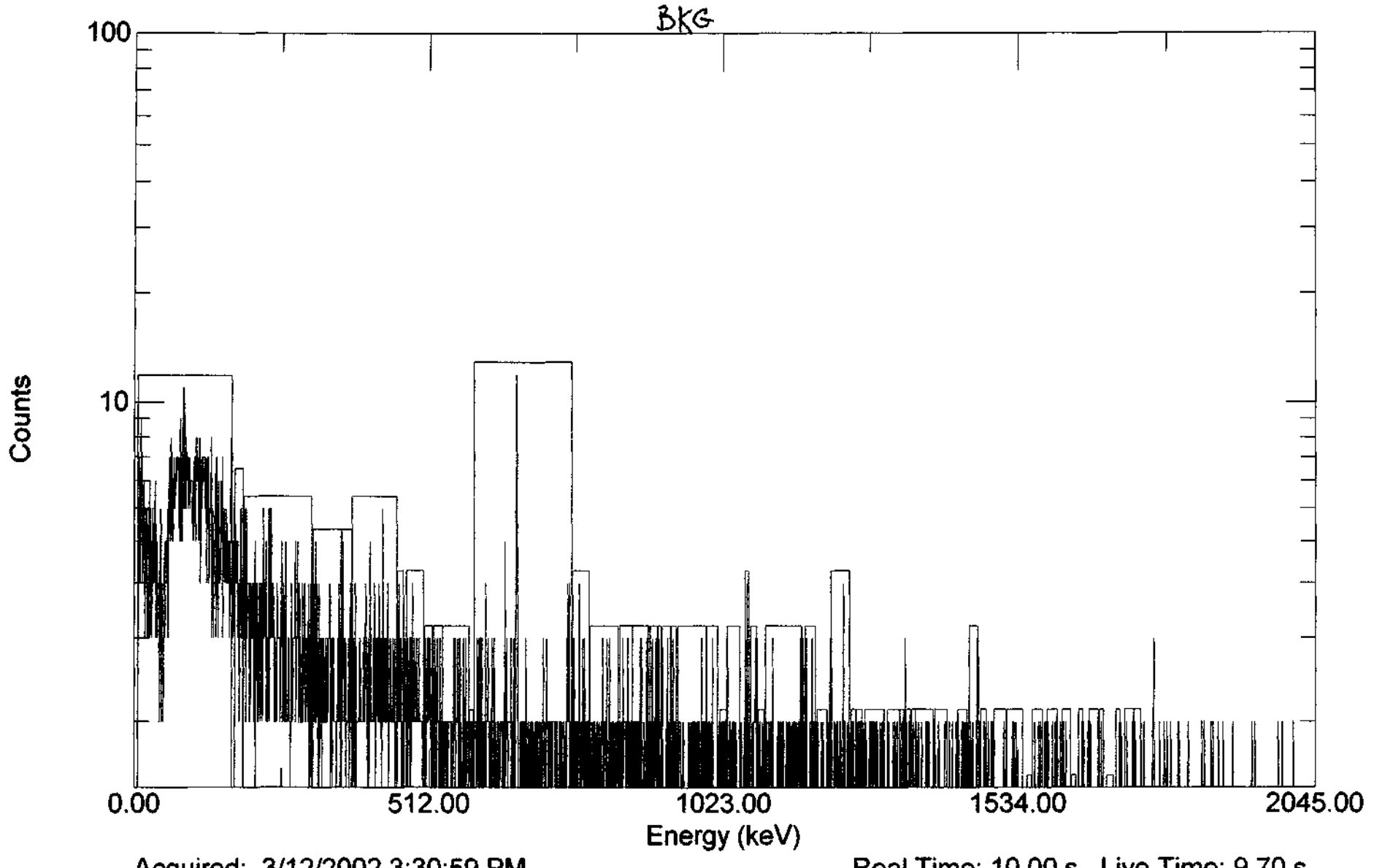
File: C:\User\GNIWEB~1\012 1SC-93 3-12-2002 3.29.09 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


hb

013 1SC-94 3- .2-2002 3.30.59 PM

1SC-94



Acquired: 3/12/2002 3:30:59 PM Real Time: 10.00 s. Live Time: 9.70 s.

File: C:\User\GNIWEB~1\013 1SC-94 3-12-2002 3.30.59 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-12-02

BKG	mR/hr
6"	<.2
12"	.2
36"	.3

Container #	95	96	97	98	99
External on pig in mR/hr	<.2	<.2	4	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<1	<1	4	<.2	<.2
Beta on open pig mR/hr O/W	<1 <.2	<1 <.2	7	.4	.2

Picture	✓	✓	✓	✓	✓
Digi Dart	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKg	BKg	.7	BKg	BKg
Source mR/hr @ 12 inches	BKg	BKg	.4	BKg	BKg
Source mR/hr @ 36 inches	BKg	BKg	.3	BKg	BKg
Size of source in cc's	20	20	20	20	20
Weight in grams	40	19	40	40	38

CPM Alpha	132	~~270~~ 27	<25	100	105
Direct Beta/Gamma	~~28,000~~ 2800	~~4,000~~ 400	~~130,000~~ 130,000	20,000	750

Info on source:	None	None	AG-110M	I 131 2-28-86	IR 192 6-9-87

Information on pig:	None	None	None	None	None
Smear DPM per 100 cm^2 Alpha	700	350	<200	150	3.4
Smear DPM per 100 cm^2 Beta	6,000	3000	12,000	BKg	65.5
	Full bottle of brown liquid with floaties	Red liquid	Clear liquid	Red liquid	Liquid Dark

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **3/13/02** **Time** 1645

Location Sources #99-124

Survey #

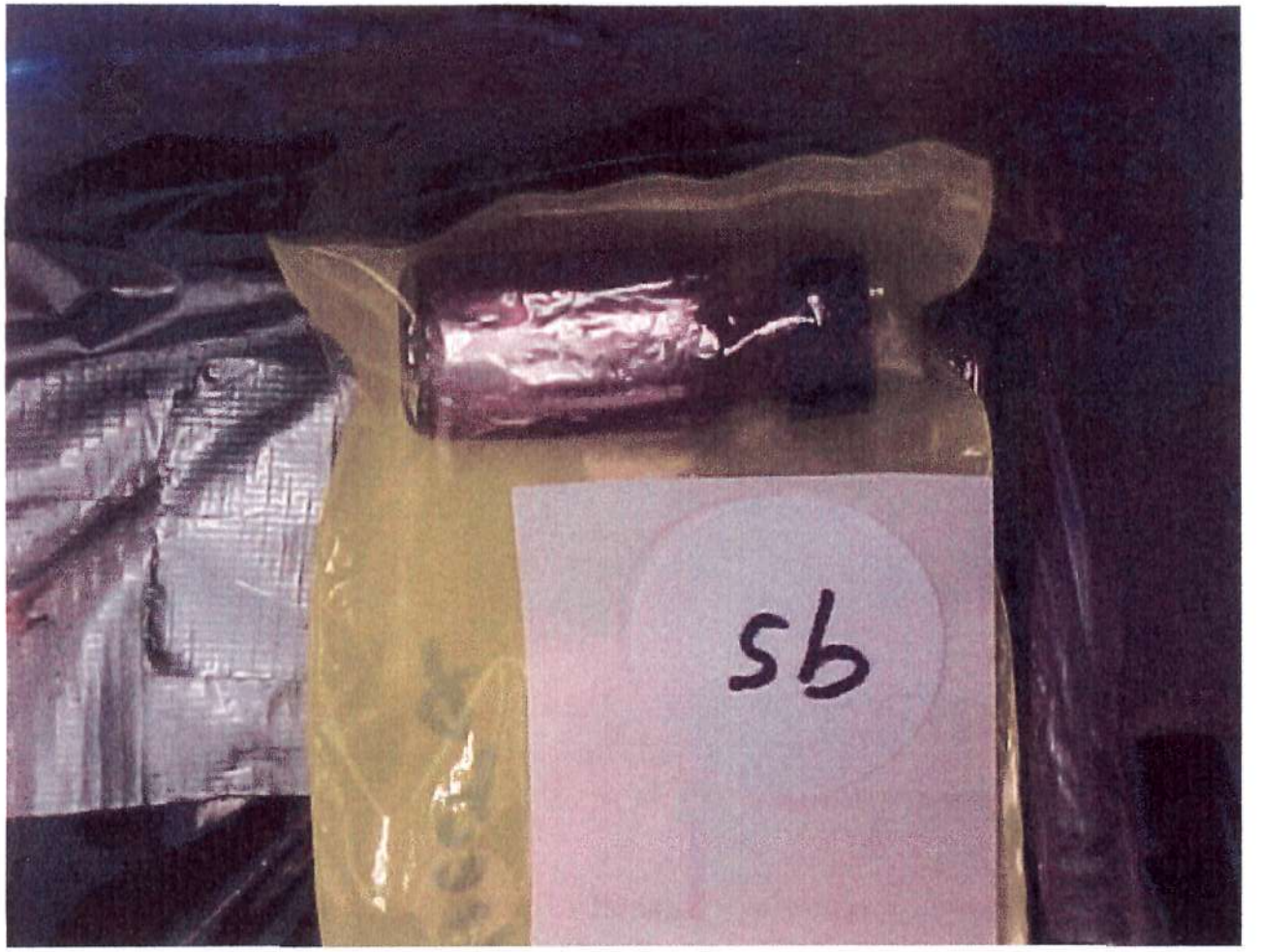
MDA Alpha DPM 11.3 **MDA Beta DPM** 66.6

BKG Alpha CPM 0.55 **BKG Beta CPM** 72.9

Alpha Eff 0.28 **Beta/Gamma Eff** 0.33

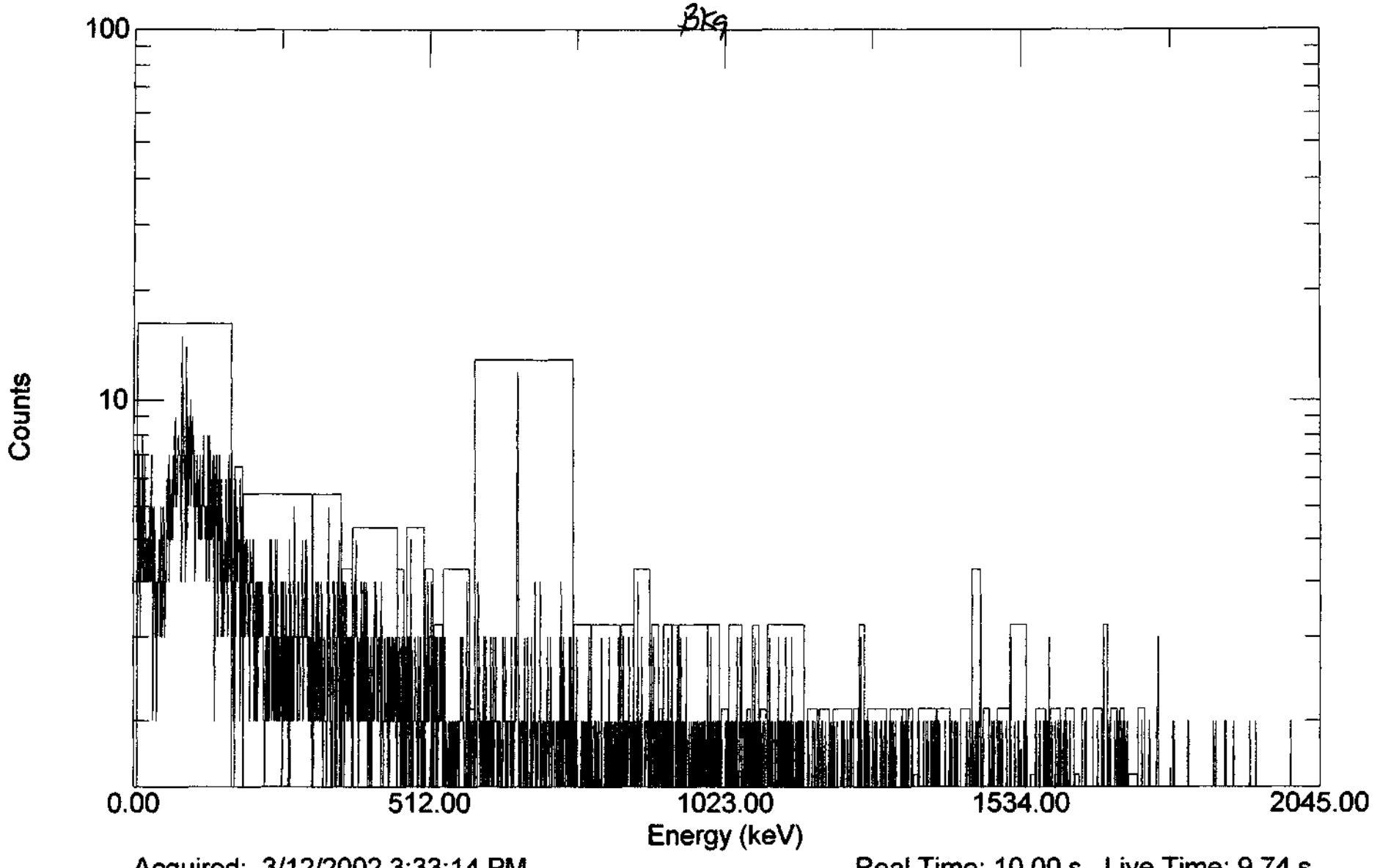
	2 Min CPM	DPM
99	3	3.4
100	14	23.0
101	6	8.8
104	4	5.2
105	2	1.6
106	1	1.0
107	5	7.0
108	10	15.9
109	2	1.6
110	1	-0.2
111	2	1.6
112	1	-0.2
113	2	1.6
114	0	-2.0
115	1	-0.2
116	3	3.4
117	1	-0.2
118	0	-2.0
119	0	-2.0
120	0	-2.0
121	0	-2.0
122	1	-0.2
123	1	-0.2
124	0	-2.0
125		-2.0

	2 Min CPM	DPM
99	189	65.5
100	239	141.2
101	225	120.0
104	173	41.2
105	185	59.4
106	136	-14.8
107	165	29.1
108	321	265.5
109	133	-19.4
110	160	21.5
111	161	23.0
112	173	41.2
113	192	70.0
114	157	17.0
115	162	24.5
116	127	-28.5
117	158	18.5
118	187	62.4
119	169	35.2
120	159	20.0
121	138	-11.8
122	162	24.5
123	160	21.5
124	154	12.4
125		-220.9


5b

014 1SC-95 3-1_-2002 3.33.14 PM

1SC-95

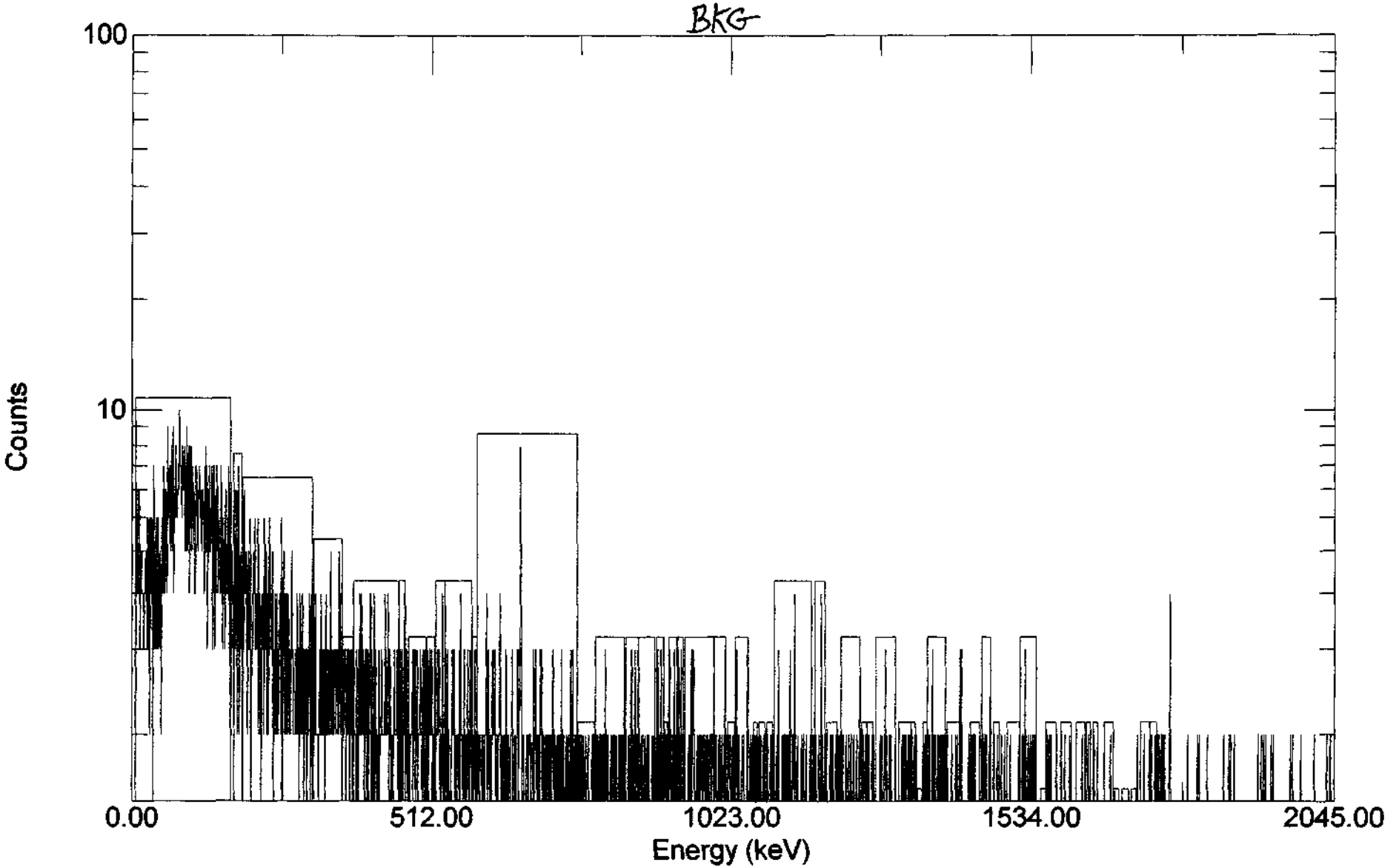


Acquired: 3/12/2002 3:33:14 PM Real Time: 10.00 s. Live Time: 9.74 s.
File: C:\User\GNIWEB~1\014 1SC-95 3-12-2002 3.33.14 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

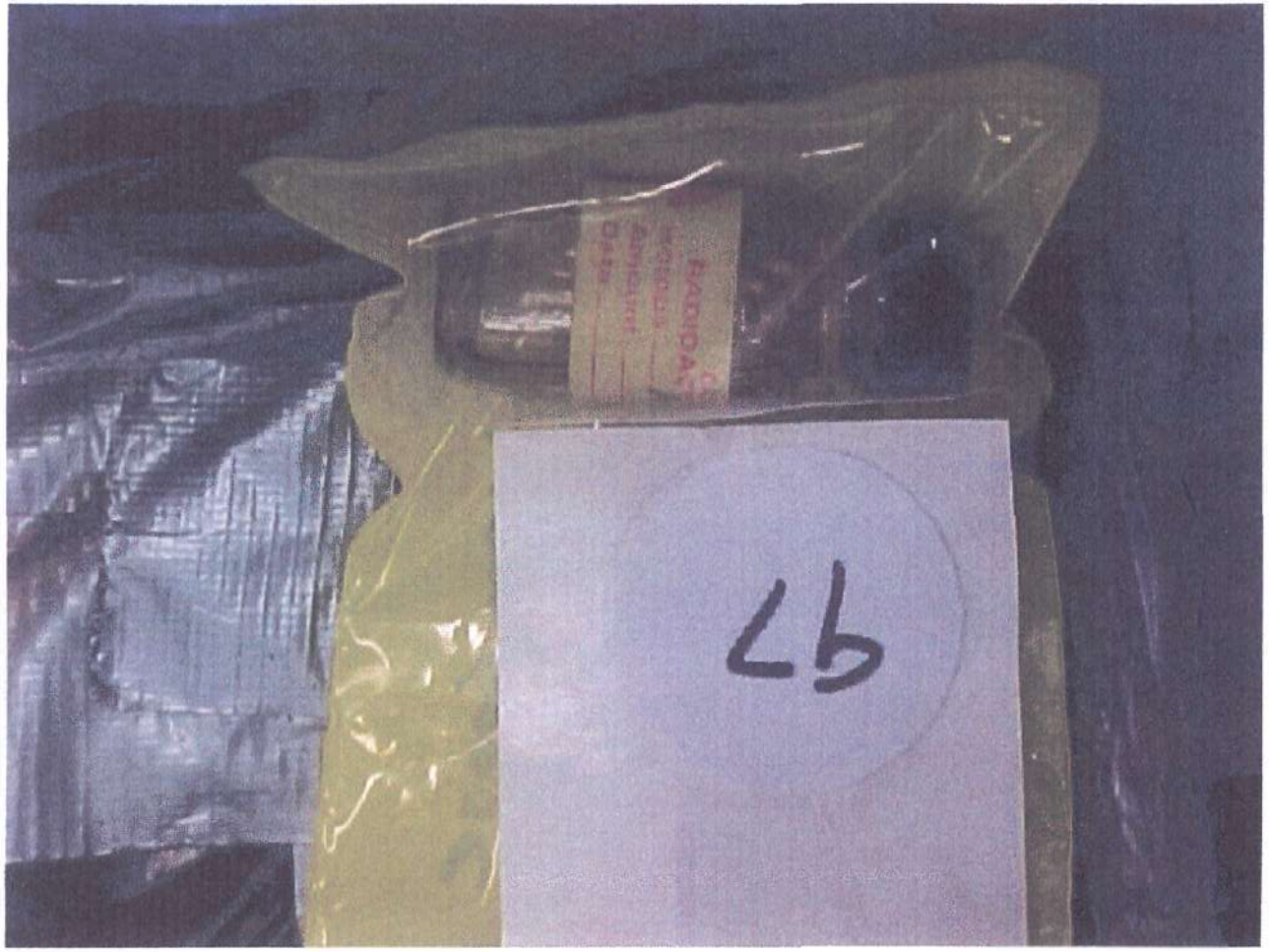
7b

015 1SC-96 3-12-2002 3.35.34 PM

1SC-96

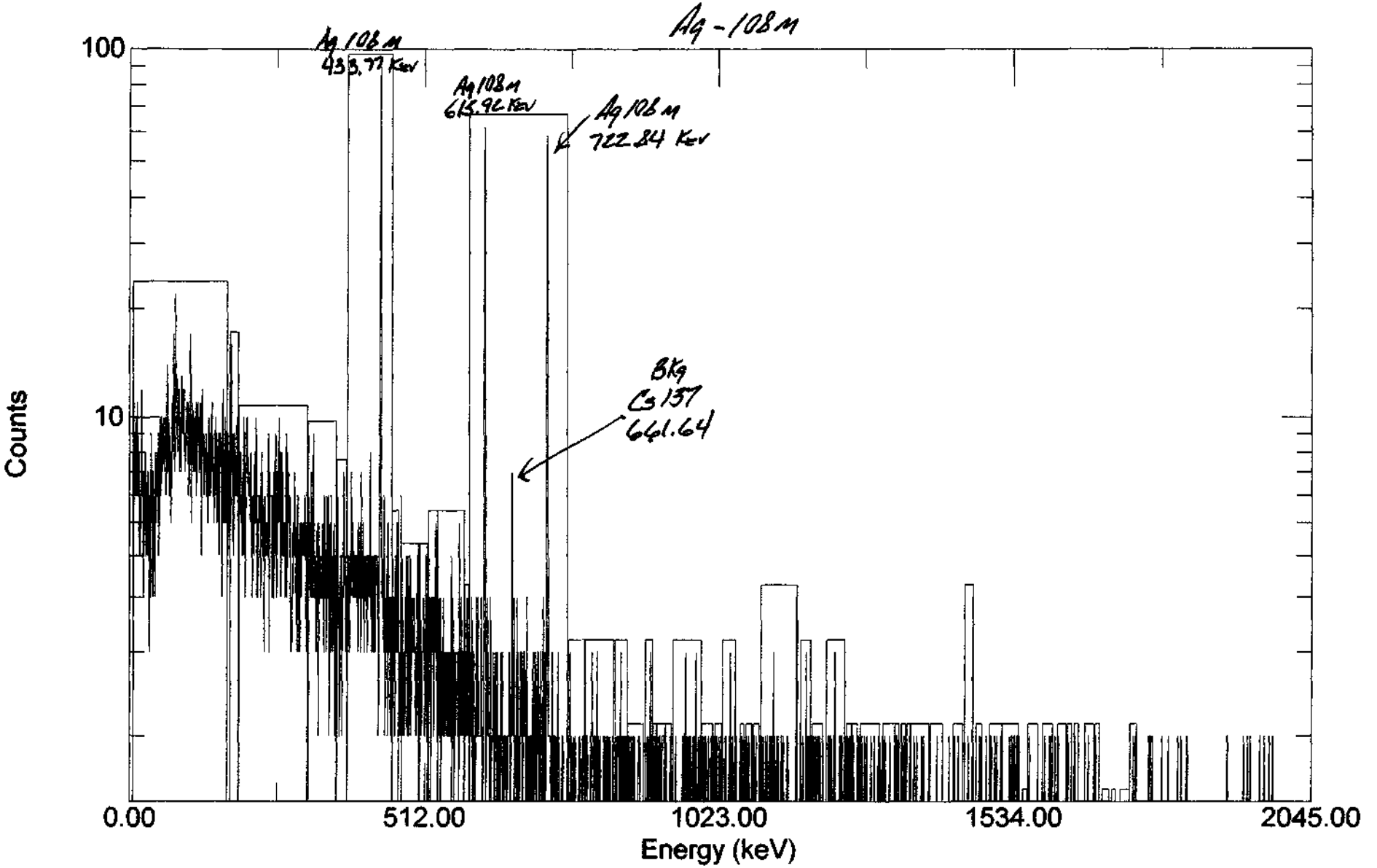


Acquired: 3/12/2002 3:35:34 PM Real Time: 10.00 s. Live Time: 9.74 s.
File: C:\User\GNIWEB~1\015 1SC-96 3-12-2002 3.35.34 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

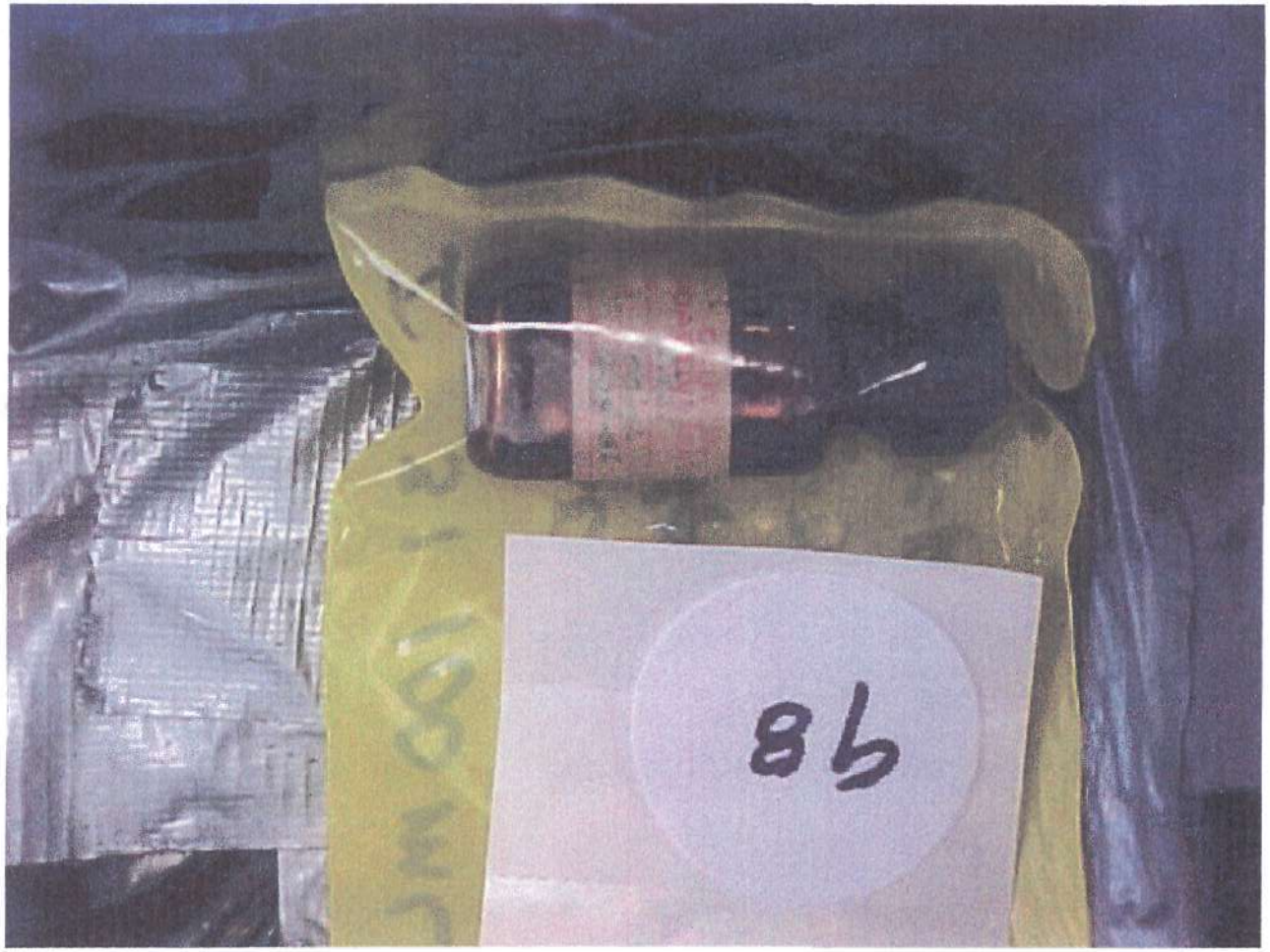

Lb

017 1SC-97 3- .2-2002 3.48.27 PM

1SC-97

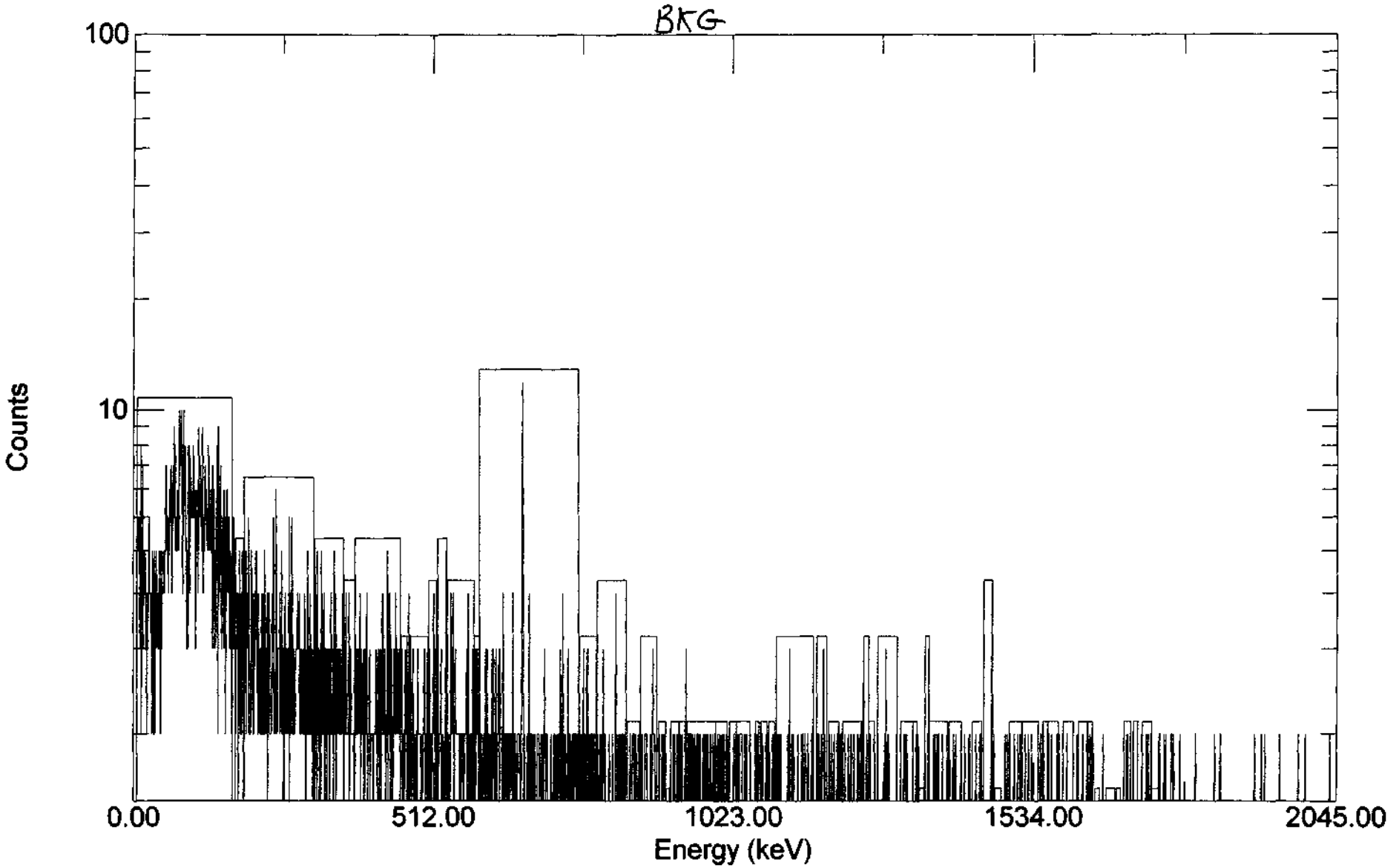


Acquired: 3/12/2002 3:48:27 PM Real Time: 10.00 s. Live Time: 9.50 s.
File: C:\User\GNIWEB~1\017 1SC-97 3-12-2002 3.48.27 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

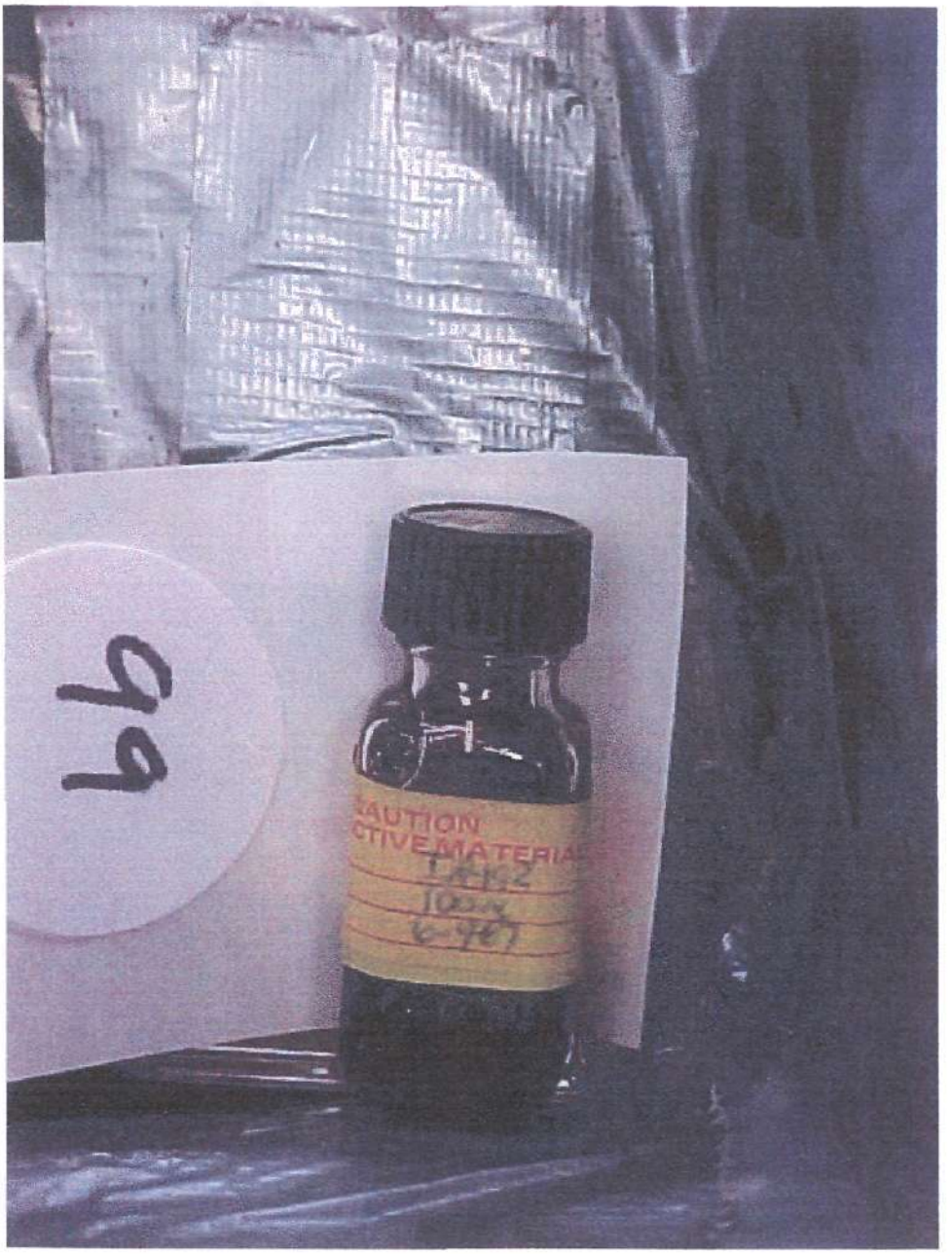

8b

018 1SC-98 3-12-2002 3.59.25 PM

1SC-98

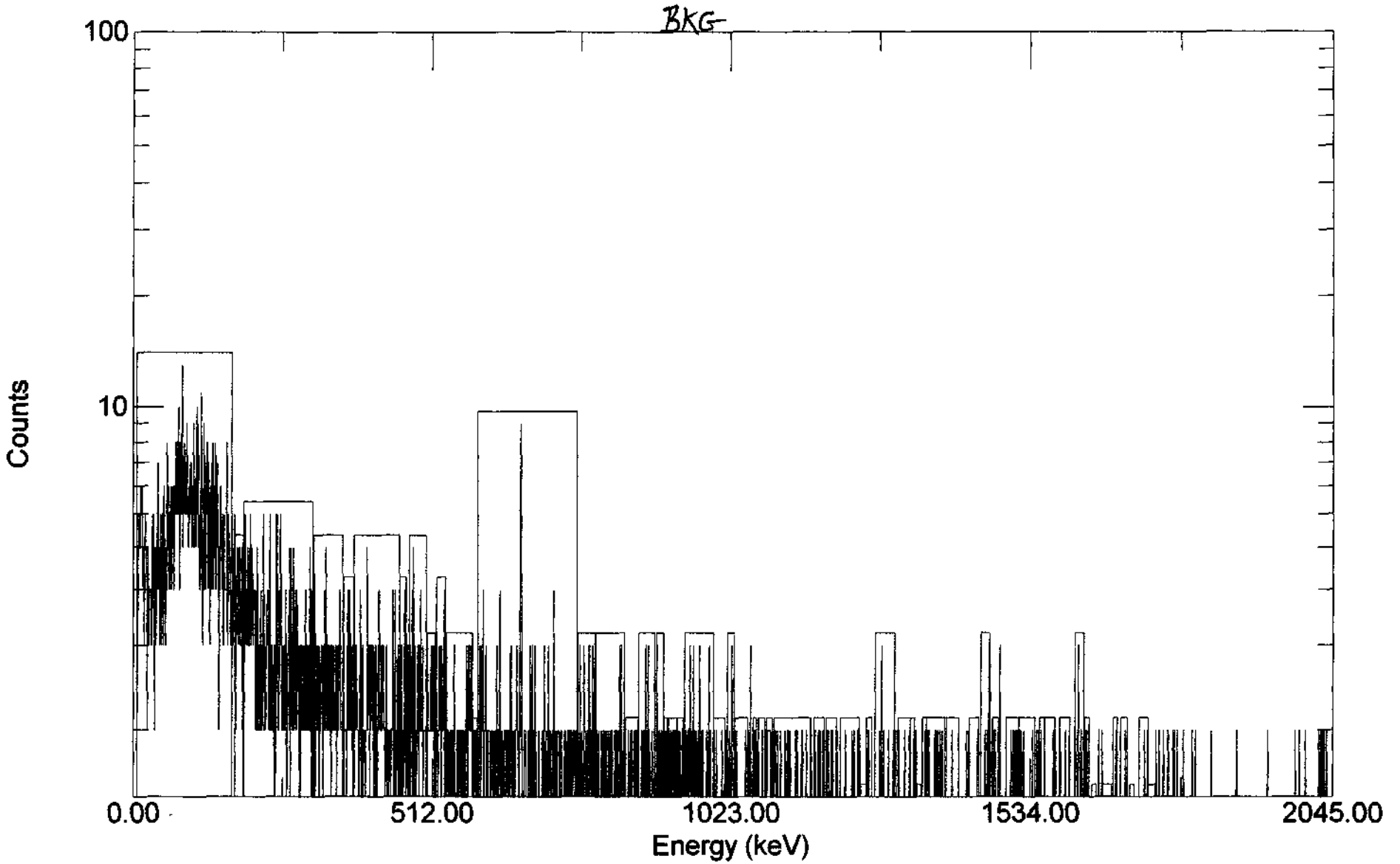


Acquired: 3/12/2002 3:59:25 PM Real Time: 10.00 s. Live Time: 9.72 s.
File: C:\User\GNIWEB~1\018 1SC-98 3-12-2002 3.59.25 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


99
CAUTION
ACTIVE MATERIAL

019 1SC-99 3 .2-2002 4.03.03 PM

1SC-99



Acquired: 3/12/2002 4:03:02 PM Real Time: 10.00 s. Live Time: 9.74 s.
File: C:\User\GNIWEB~1\019 1SC-99 3-12-2002 4.03.03 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-12-02

BKG	mR/hr
6"	<.2
12"	.2
36"	.3

Container #	Resp. Cart	100	101	102	103
External on pig in mR/hr	<1	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<.1
Contact open pig mR/hr	<1	<.2	<.2	<.2	<.2
Beta on open pig mR/hr O/W	<1	.3	.2	<.2	<.2

Picture	No pic	✓	✓	✓	✓
Digi Port	✓	✓	✓	✓	✓

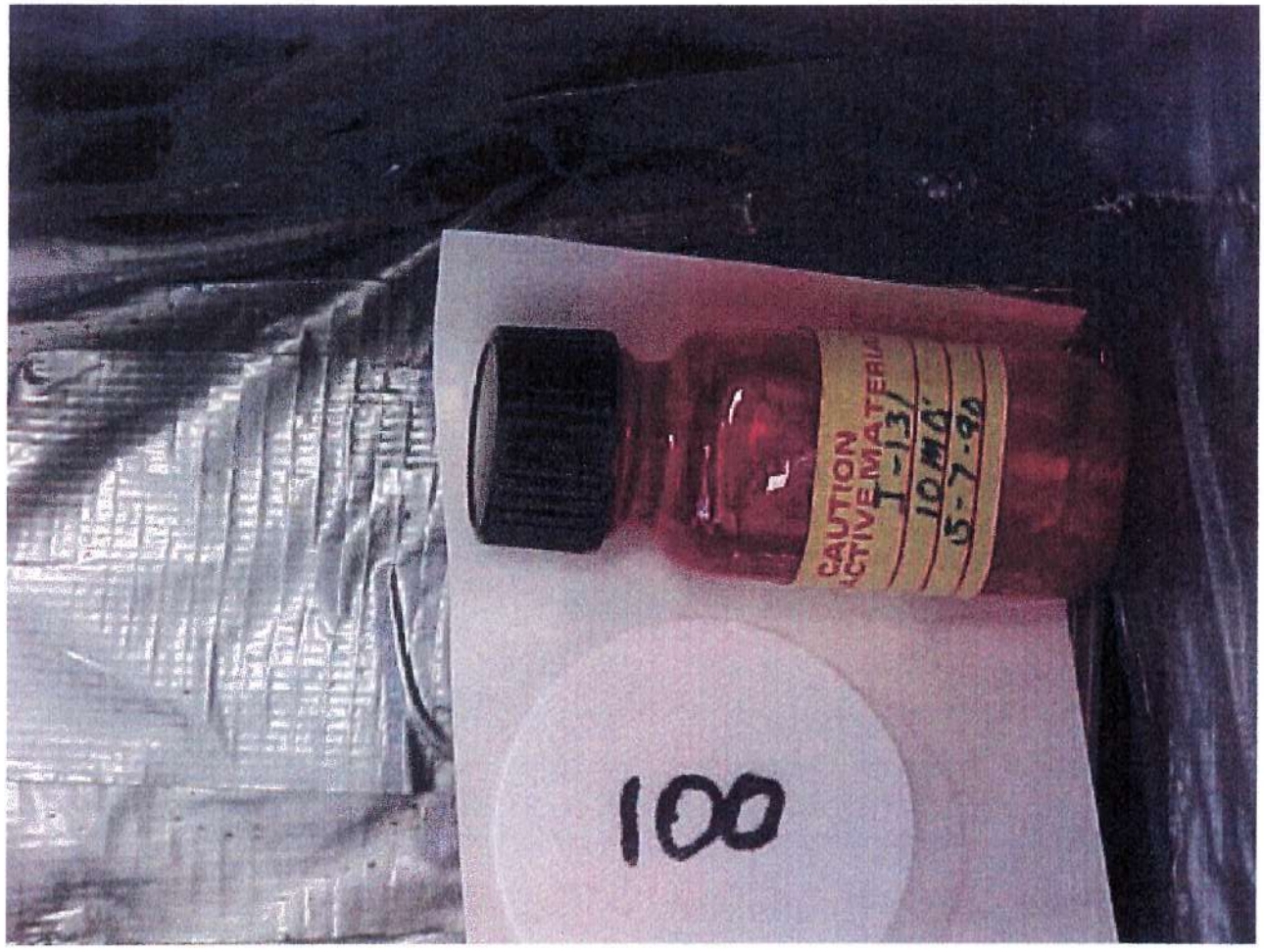
Table Readings

Source mR/hr @ 6 inchs		BKg	BKg	BKg	BKG.
Source mR/hr @ 12 inches		BKg	BKg	↓	↓
Source mR/hr @ 36 inches		BKg	BKg	↓	↓
Size of source in cc's		20	20	20	20
Weight in grams		42	20	42	53

CPM Alpha	200,000	50	47	<20	~~<20~~ 95
Direct Beta/Gamma	4,000	1,800	1,000	1300	800

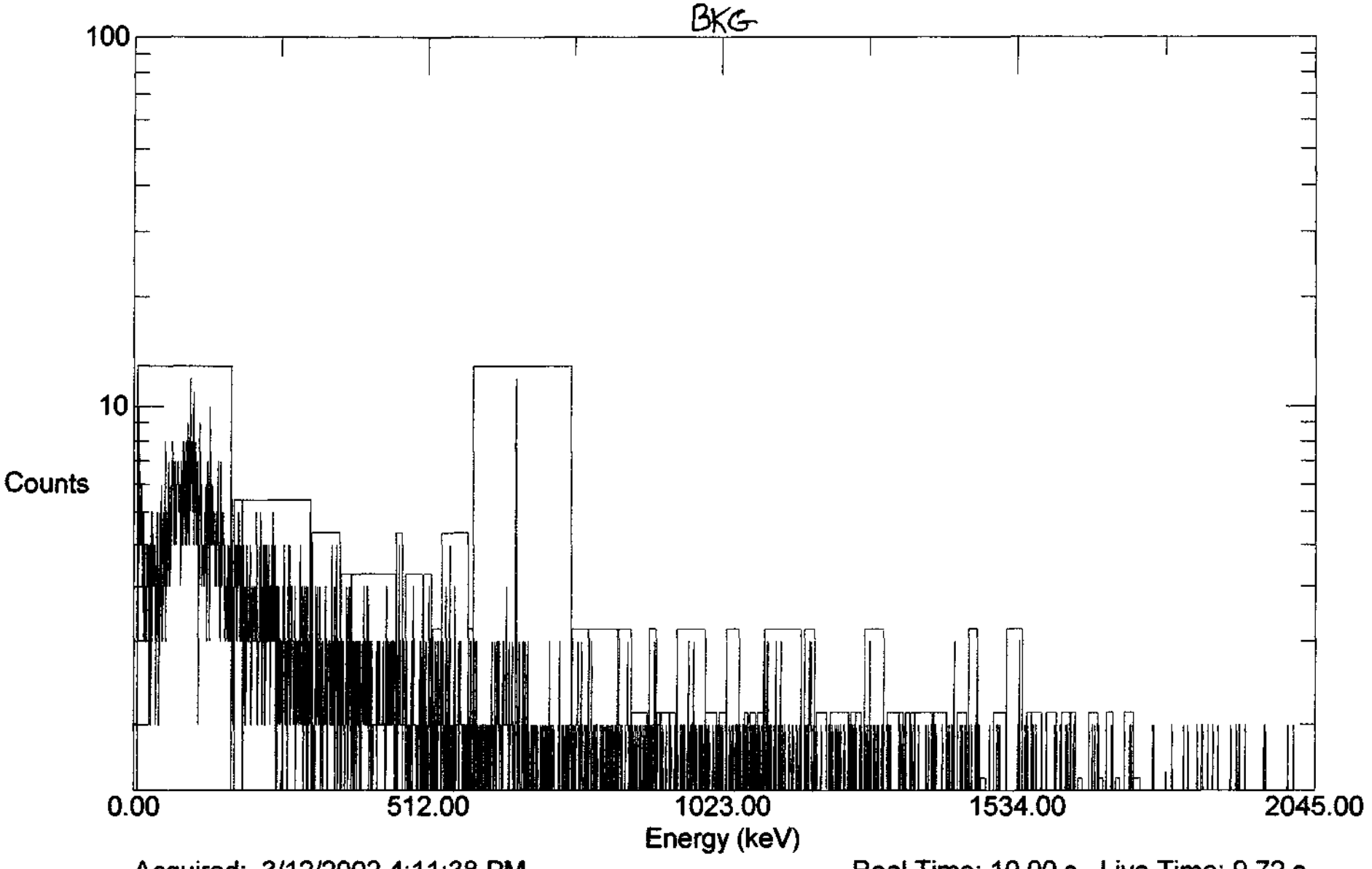
Info on source:		I131 10 MC 3-7-90	I R192 10-26-87	I TW -192 2mci 2-23-89	NONE

Information on pig:		None	None	No Pig	No Pig
Smear DPM per 100 cm^2 Alpha		23	8	<200	~~9K~~ 520
Smear DPM per 100 cm^2 Beta		141	120	10K	~~89K~~
	Dave and John Cartridges	Red liquid	Clear liquid	RED FULL liquid I TW -192. 2mci 8-23-89	(2) BOTTLES RED ½ FULL Liquid


CAUTION
I-131
10 MA
5-7-90
100

020 1SC-100 3-12-2002 4.11.38 PM

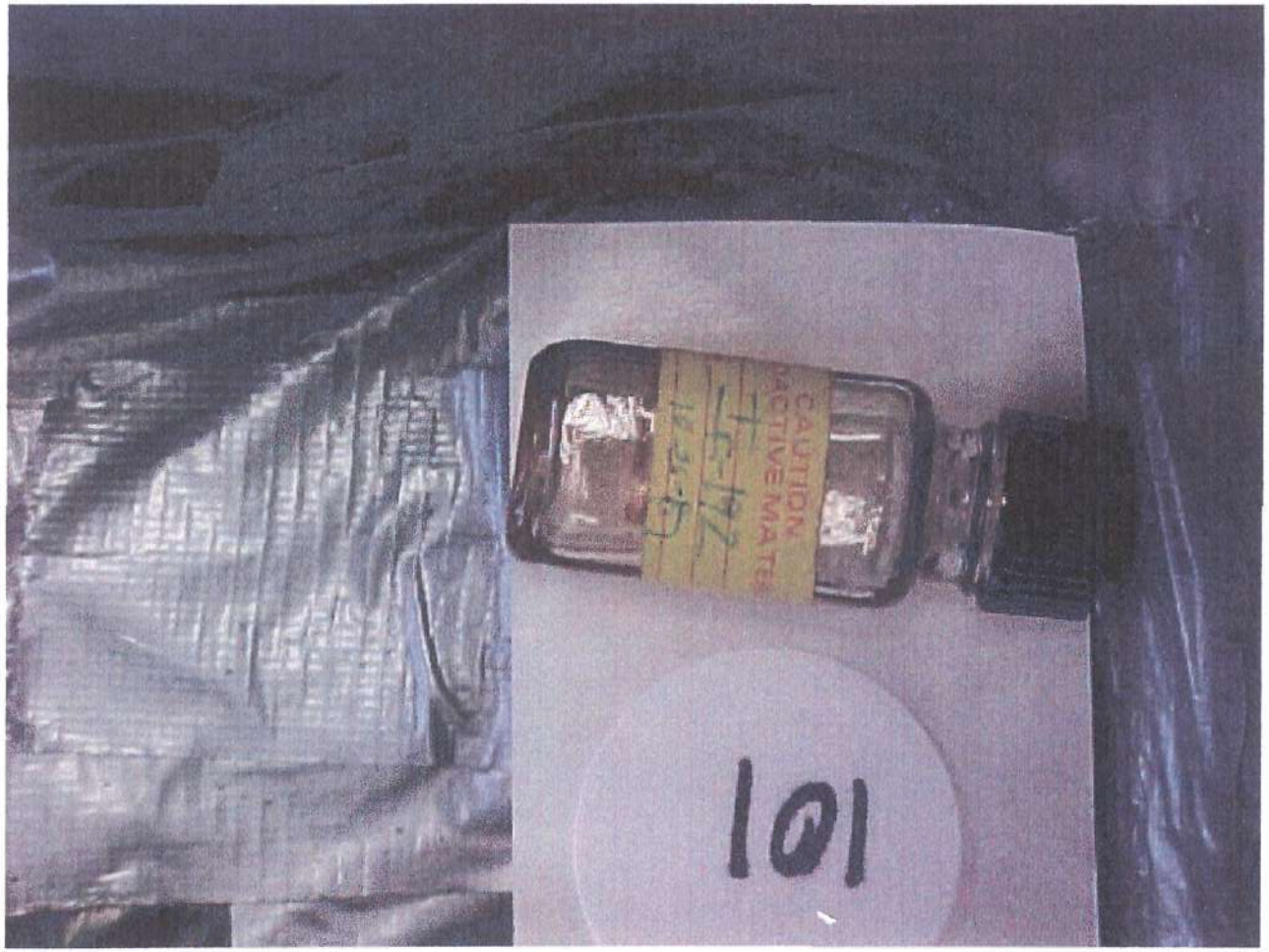
1SC-100



Acquired: 3/12/2002 4:11:38 PM Real Time: 10.00 s. Live Time: 9.72 s.

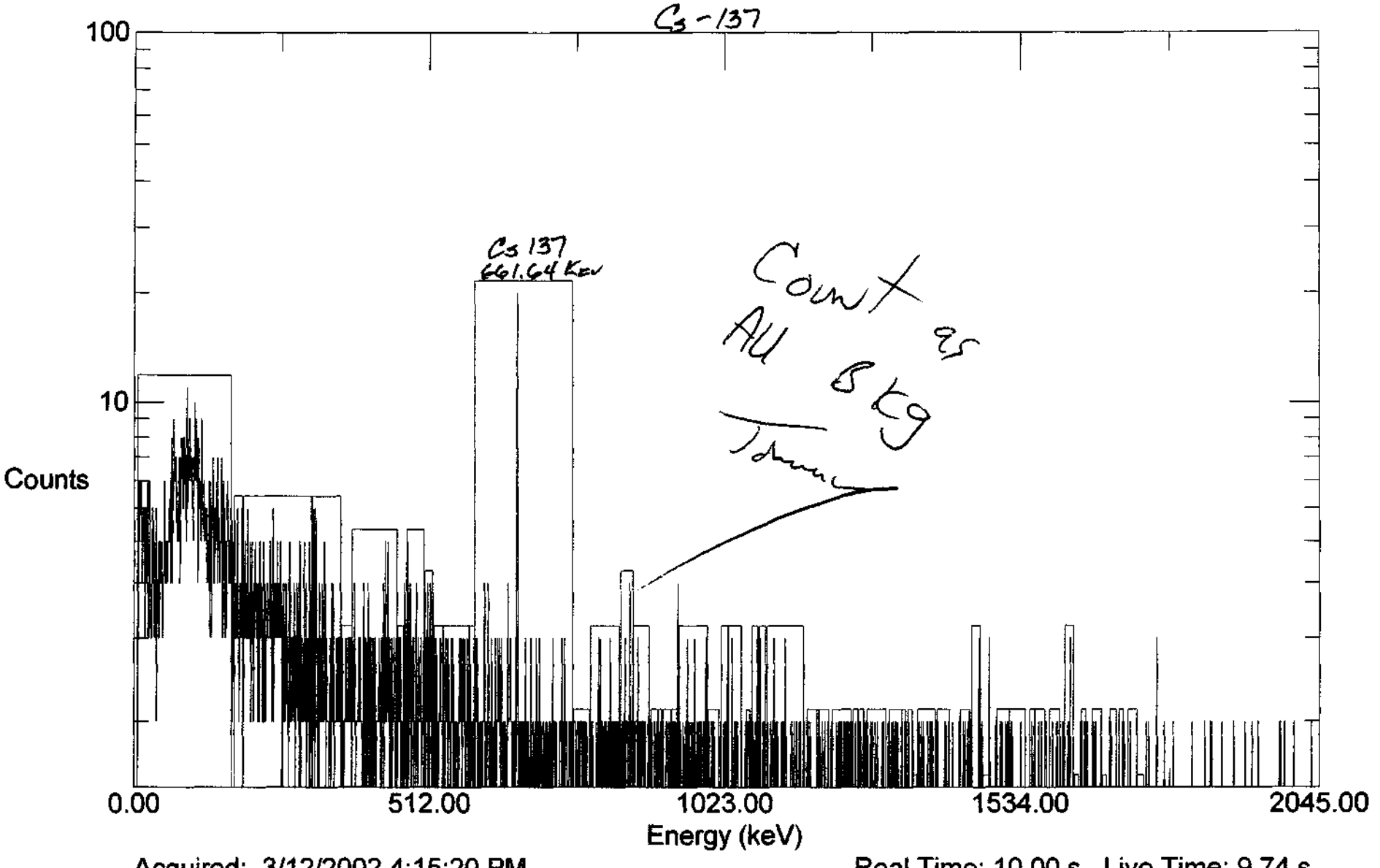
File: C:\User\GNIWEB~1\020 1SC-100 3-12-2002 4.11.38 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


CAUTION
ACTIVE MATE
101

021 1SC-101 3 .2-2002 4.15.20 PM

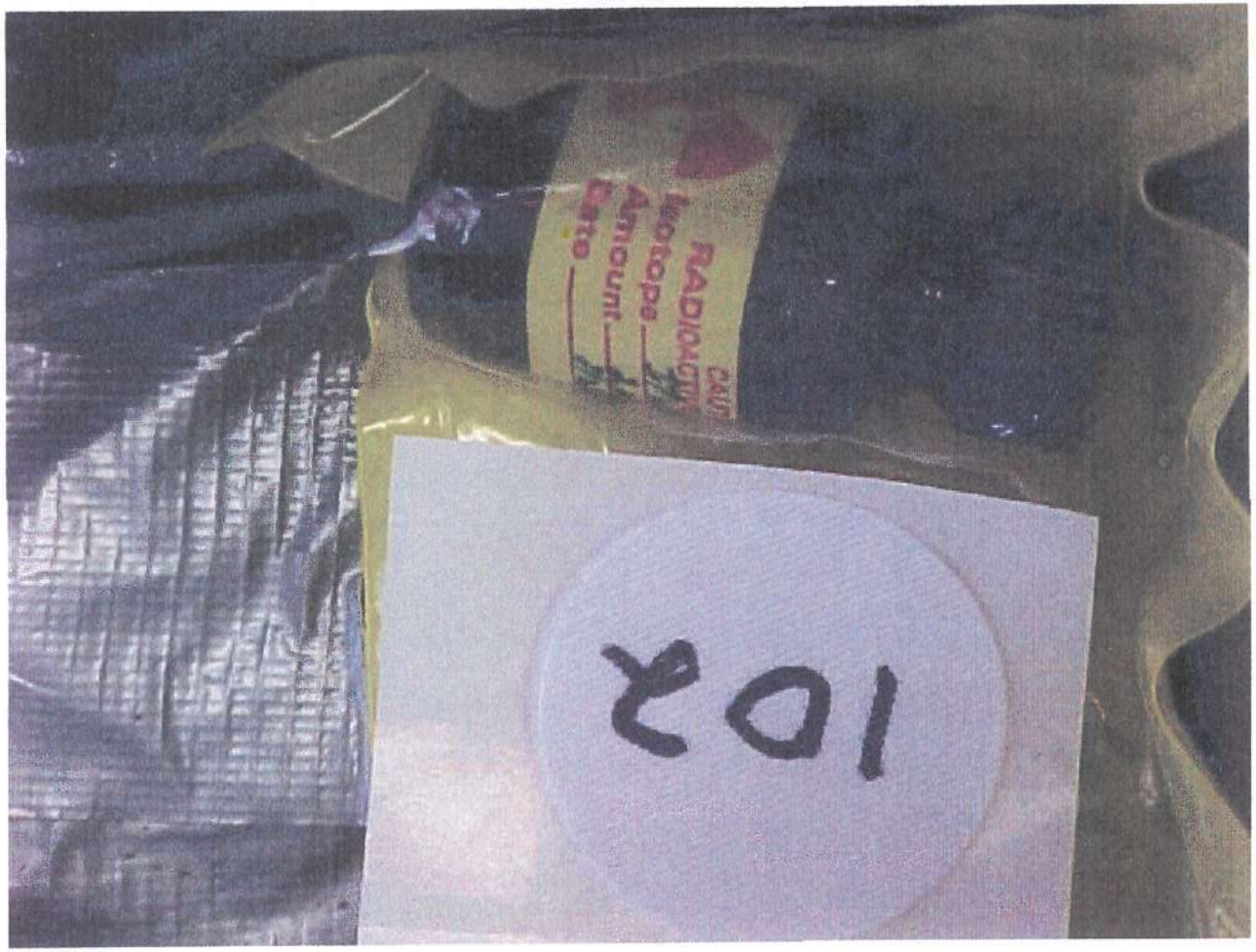
1SC-101



Acquired: 3/12/2002 4:15:20 PM Real Time: 10.00 s. Live Time: 9.74 s.

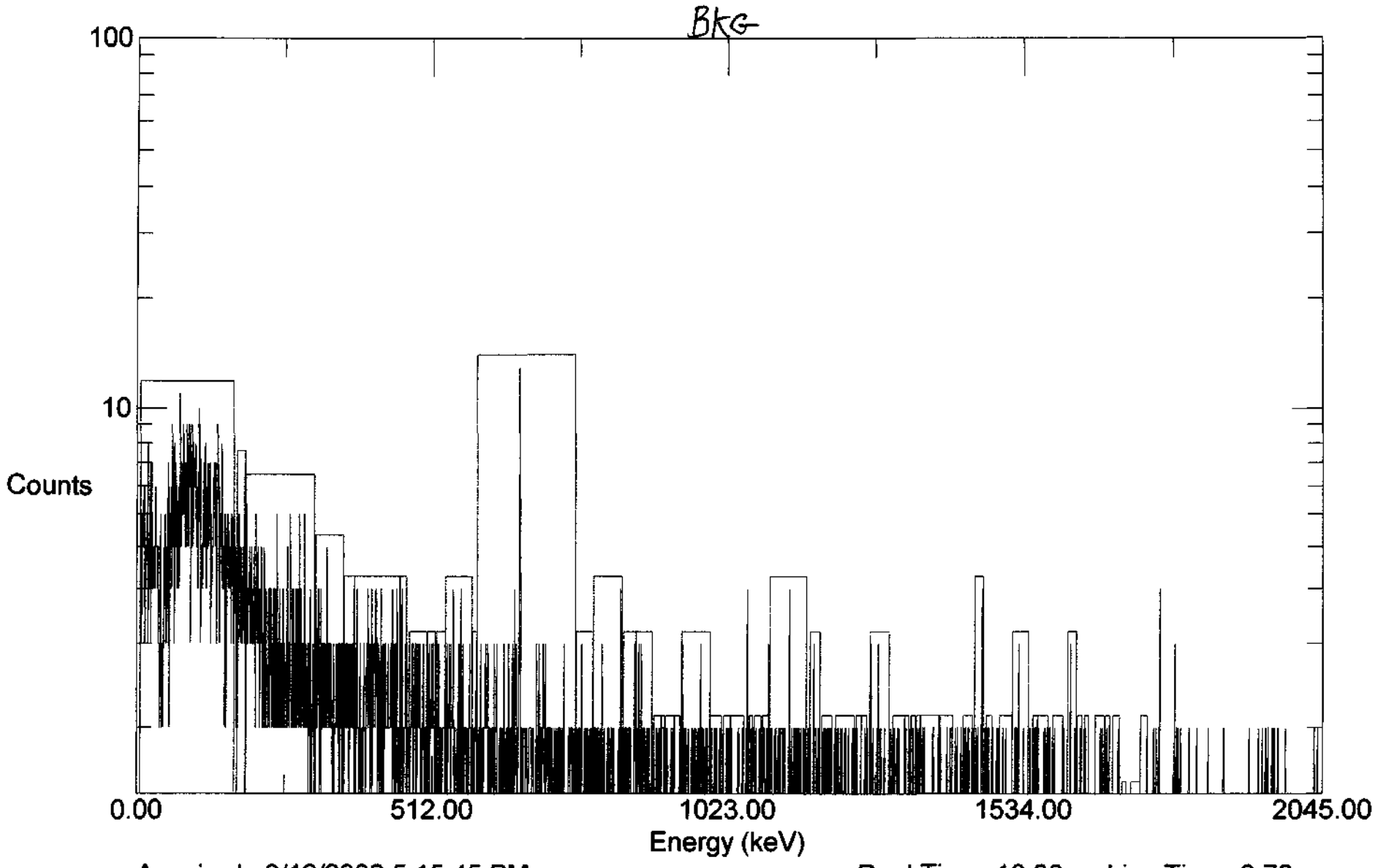
File: C:\User\GNIWEB~1\021 1SC-101 3-12-2002 4.15.20 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


RADIOACTIVE
Isotope
Amount
Date
102

022 1SC-102 3-12-2002 5.15.46 PM

1SC-102

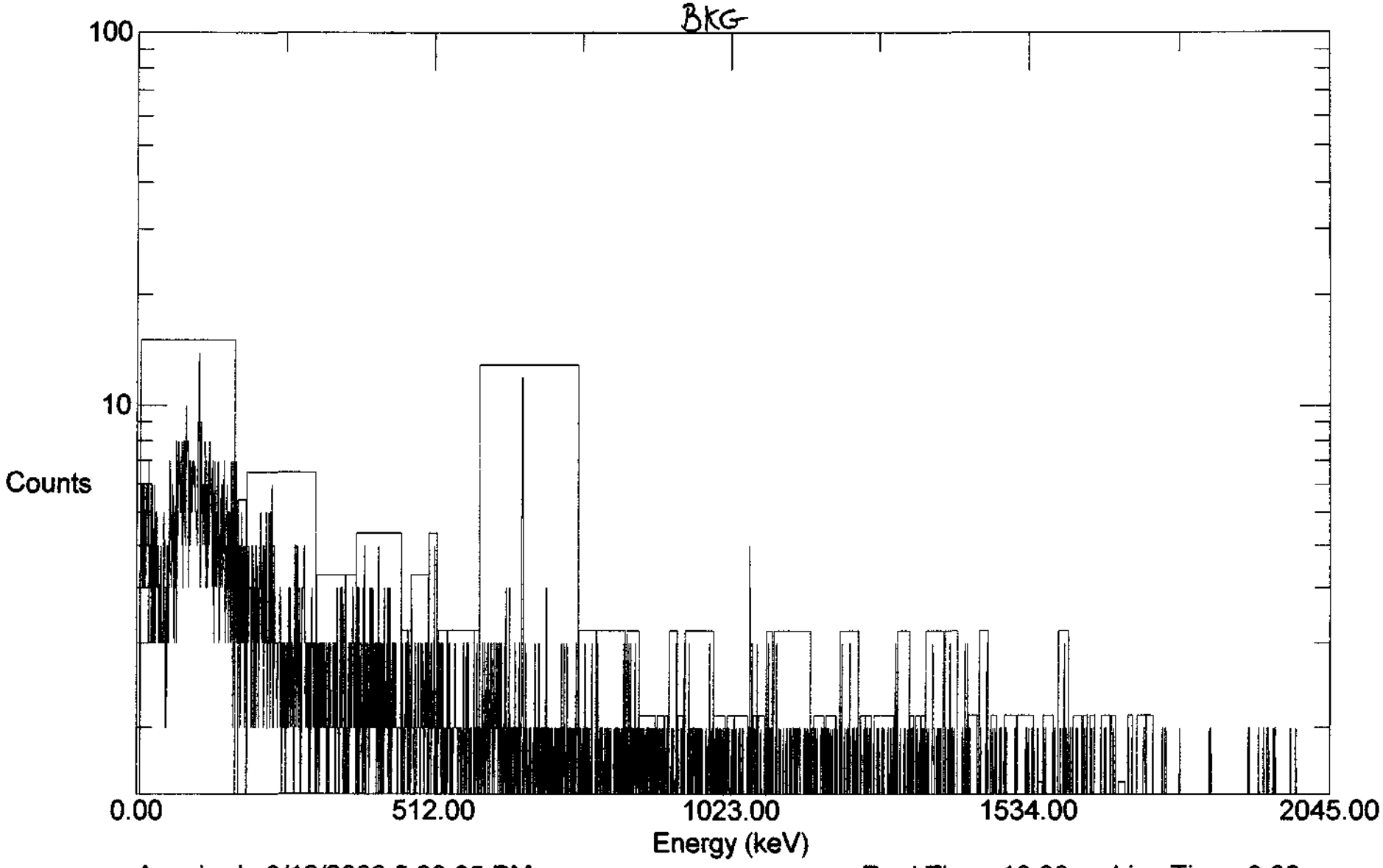


Acquired: 3/12/2002 5:15:45 PM Real Time: 10.00 s. Live Time: 9.78 s.
File: C:\User\GNIWEB~1\022 1SC-102 3-12-2002 5.15.46 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

103

023 1SC-103 3-12-2002 5.20.05 PM

1SC-103



Acquired: 3/12/2002 5:20:05 PM Real Time: 10.00 s. Live Time: 9.82 s.

File: C:\User\GNIWEB~1\023 1SC-103 3-12-2002 5.20.05 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-12-02

BKG	mR/hr
6"	<.2
12"	.2
36"	.3

Container #	104	105	106	107	108
External on pig in mR/hr	<.2	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<.1	<1	<1	<1	<.1
Contact open pig mR/hr	<.2	<.2	<.2	<.2	<.2
Beta on open pig mR/hr O/W	<.2	<.2	<.2	<.2	<.2

Picture	✓	✓	✓	✓	✓
DIGIT	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	20	20	20	20
Weight in grams	24 ~~30~~	38	38	38	40

CPM Alpha DIRECT	100	30	50	30	40 ~~20~~
Direct Beta/Gamma	1600	800	400	300	150 ~~40~~

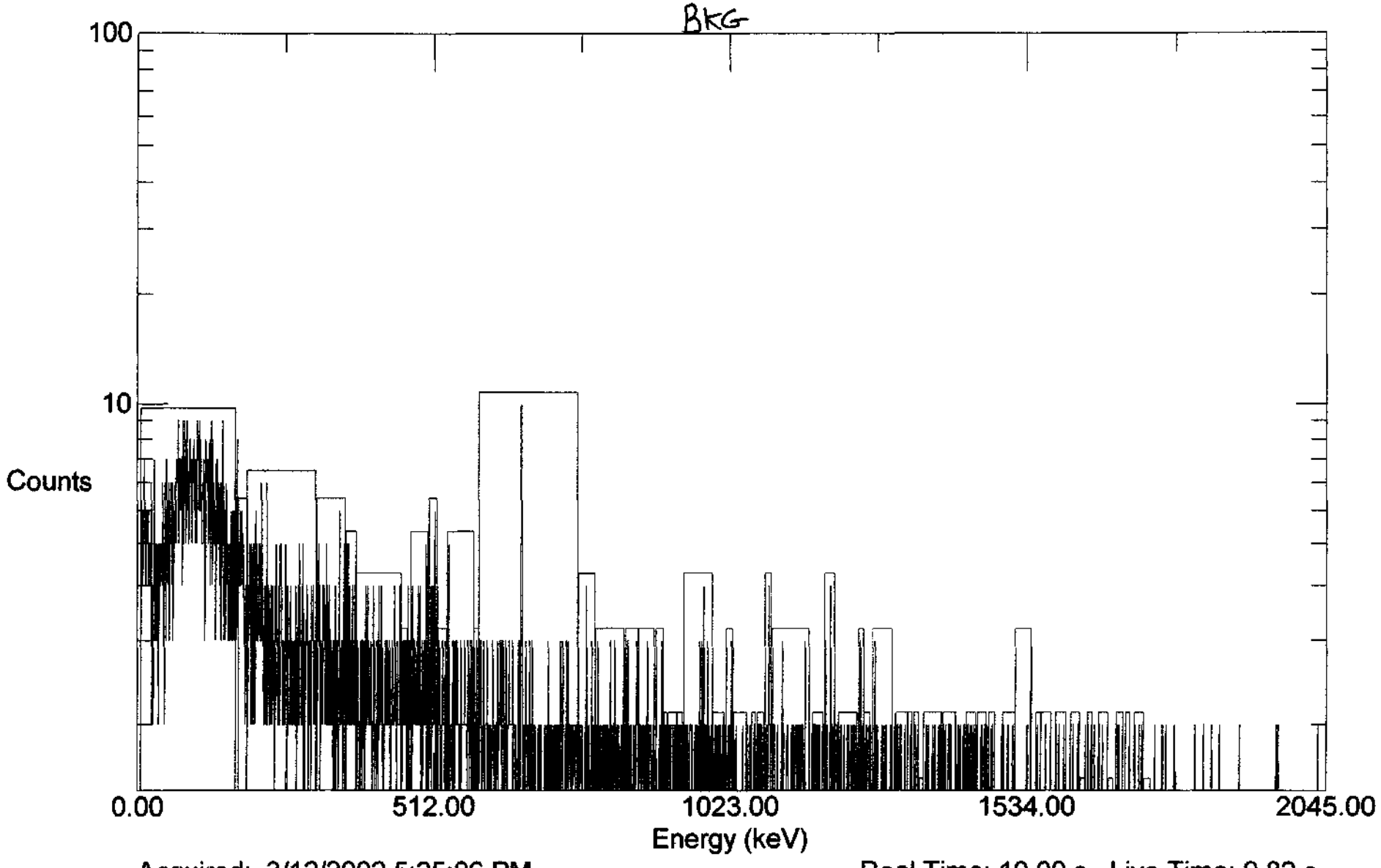
Info on source:	IR 192 100mci 6.9.87	IR 192 10 mci 5.30.89	IR 192 20mci 2-17-88	IR 192 10mci 5-30-89	IR 192 10 mci 5.30.89

Information on pig:	No Pig	NO Pig	NO Pig	NO Pig	NO Pig
Smear DPM per 100 cm^2 Alpha	5	1.6	1	7	15
Smear DPM per 100 cm^2 Beta	41	59.4	0	29	265
	CLEAR & BROWN tint liquid ½ Full	BLACK ish Liq 3/4 Full	~~BLUE~~ BLUE GREEN Liq.	Liquid BLUE GREEN	Liq. BLUE GREEN

104

024 1SC-104 3-12-2002 5.25.06 PM

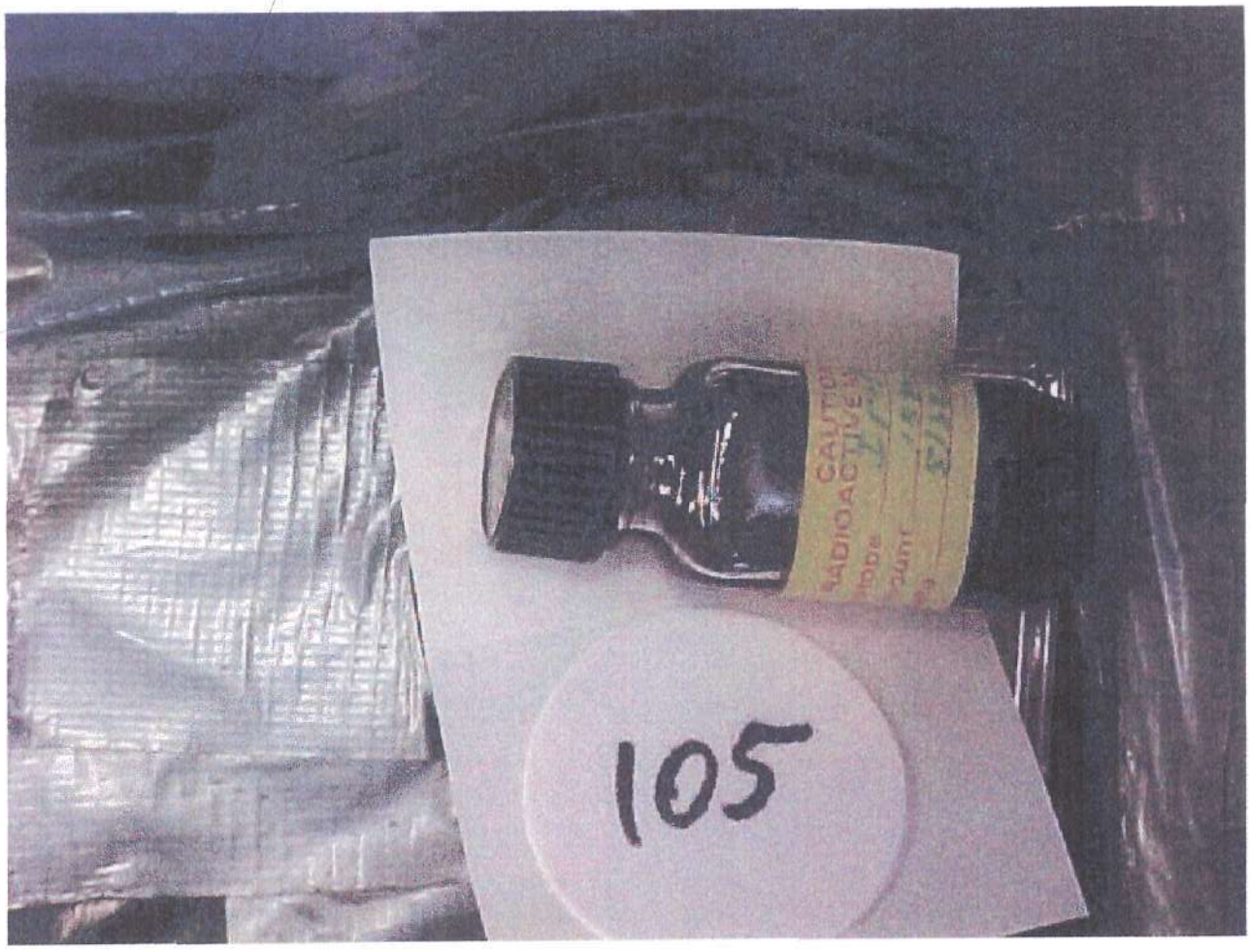
1SC-104



Acquired: 3/12/2002 5:25:06 PM Real Time: 10.00 s. Live Time: 9.82 s.

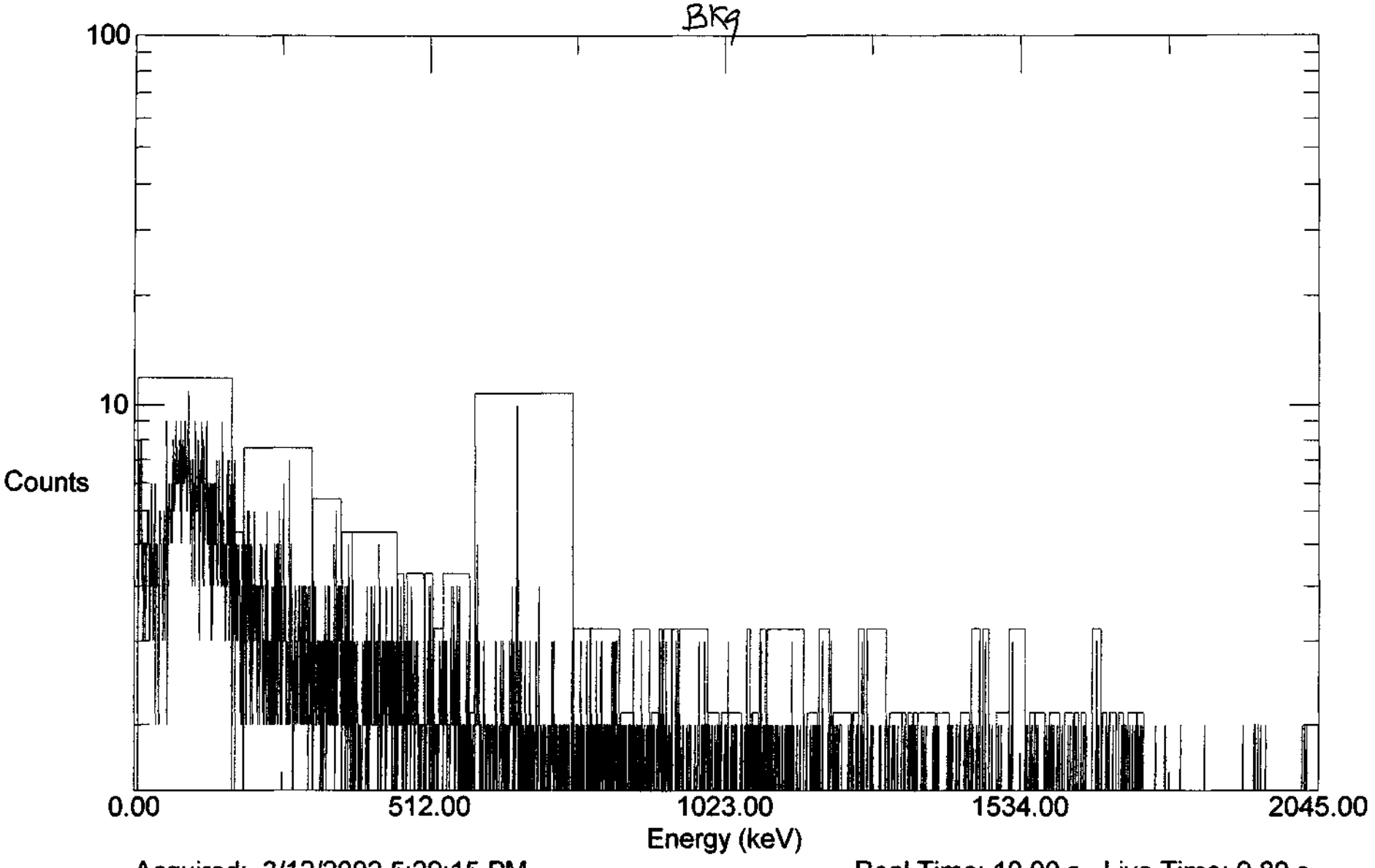
File: C:\User\GNIWEB~1\024 1SC-104 3-12-2002 5.25.06 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

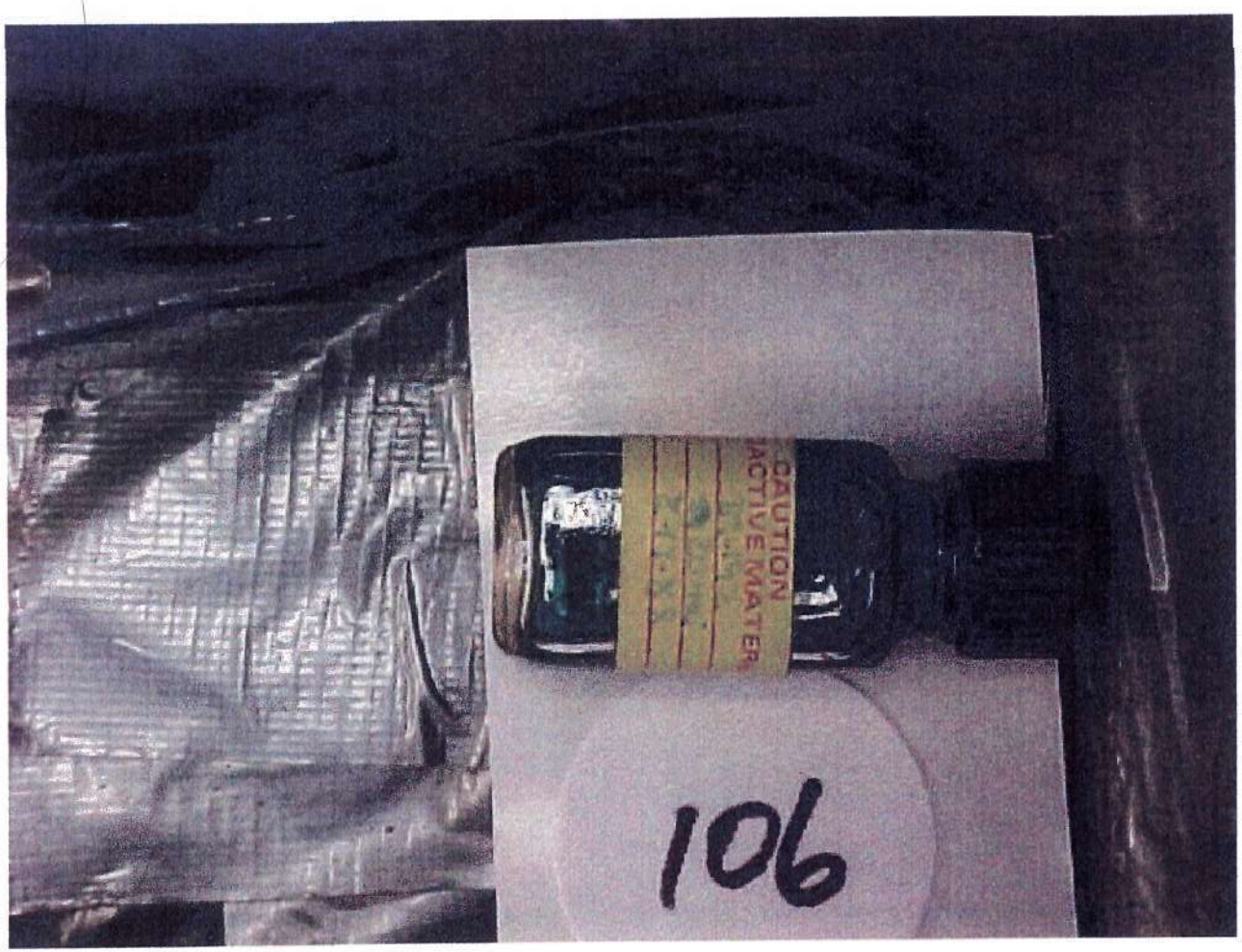

CAUTION
RADIOACTIVE
105

025 1SC-105 3 ,2-2002 5.29.15 PM

1SC-105

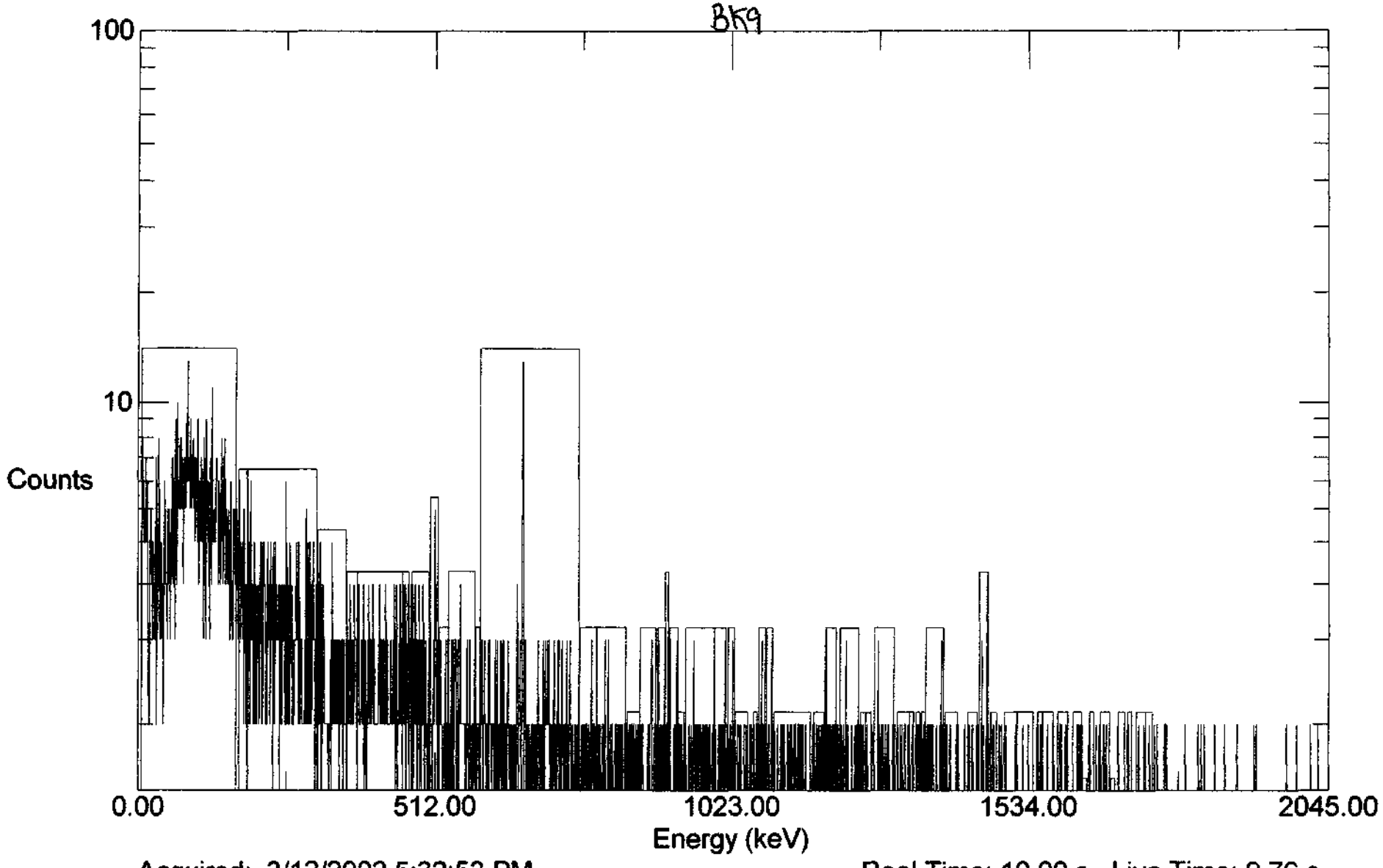


Acquired: 3/12/2002 5:29:15 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\025 1SC-105 3-12-2002 5.29.15 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


CAUTION
ACTIVE MATER
106

026 1SC-106 3-12-2002 5.32.53 PM

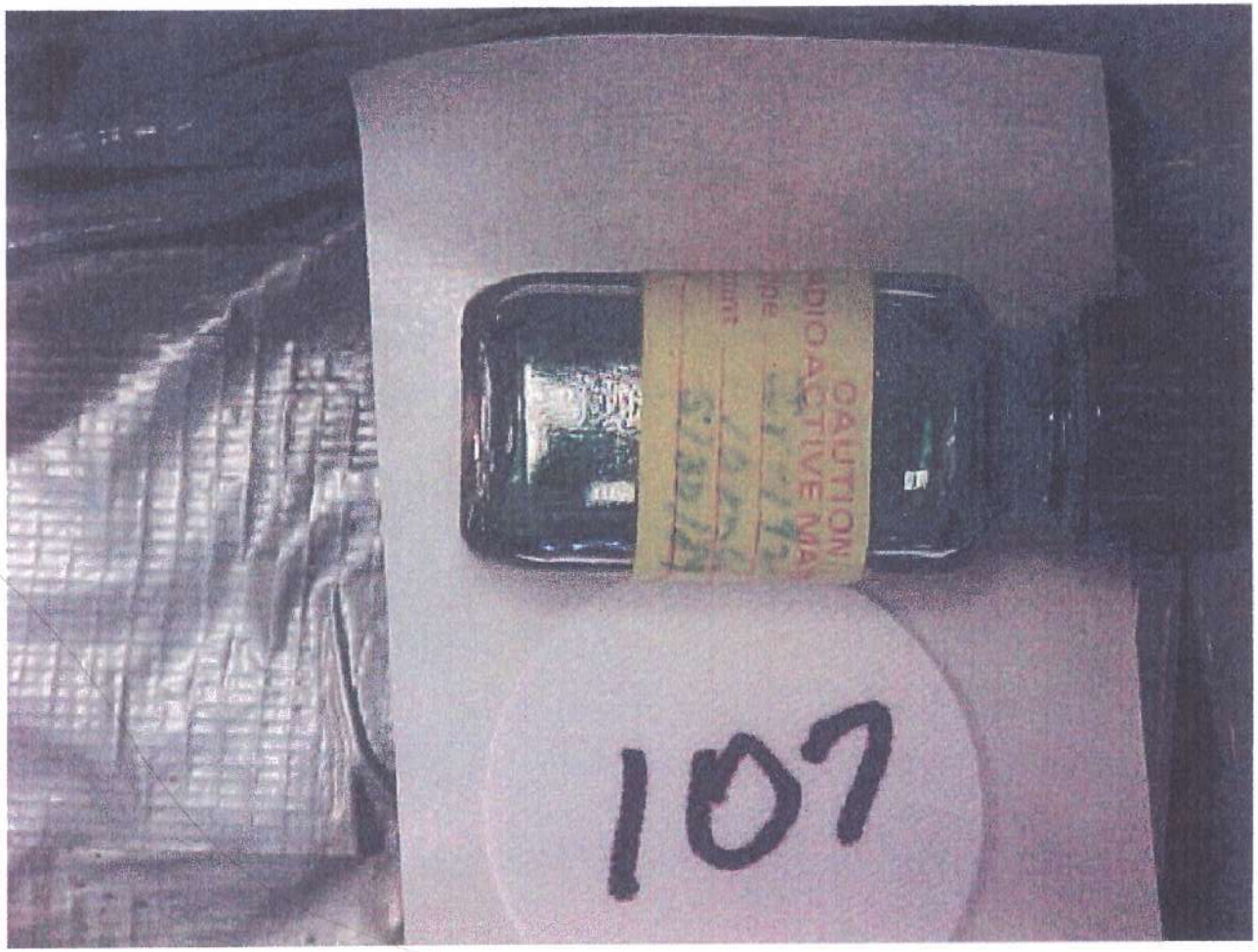
1SC-106



Acquired: 3/12/2002 5:32:53 PM Real Time: 10.00 s. Live Time: 9.76 s.

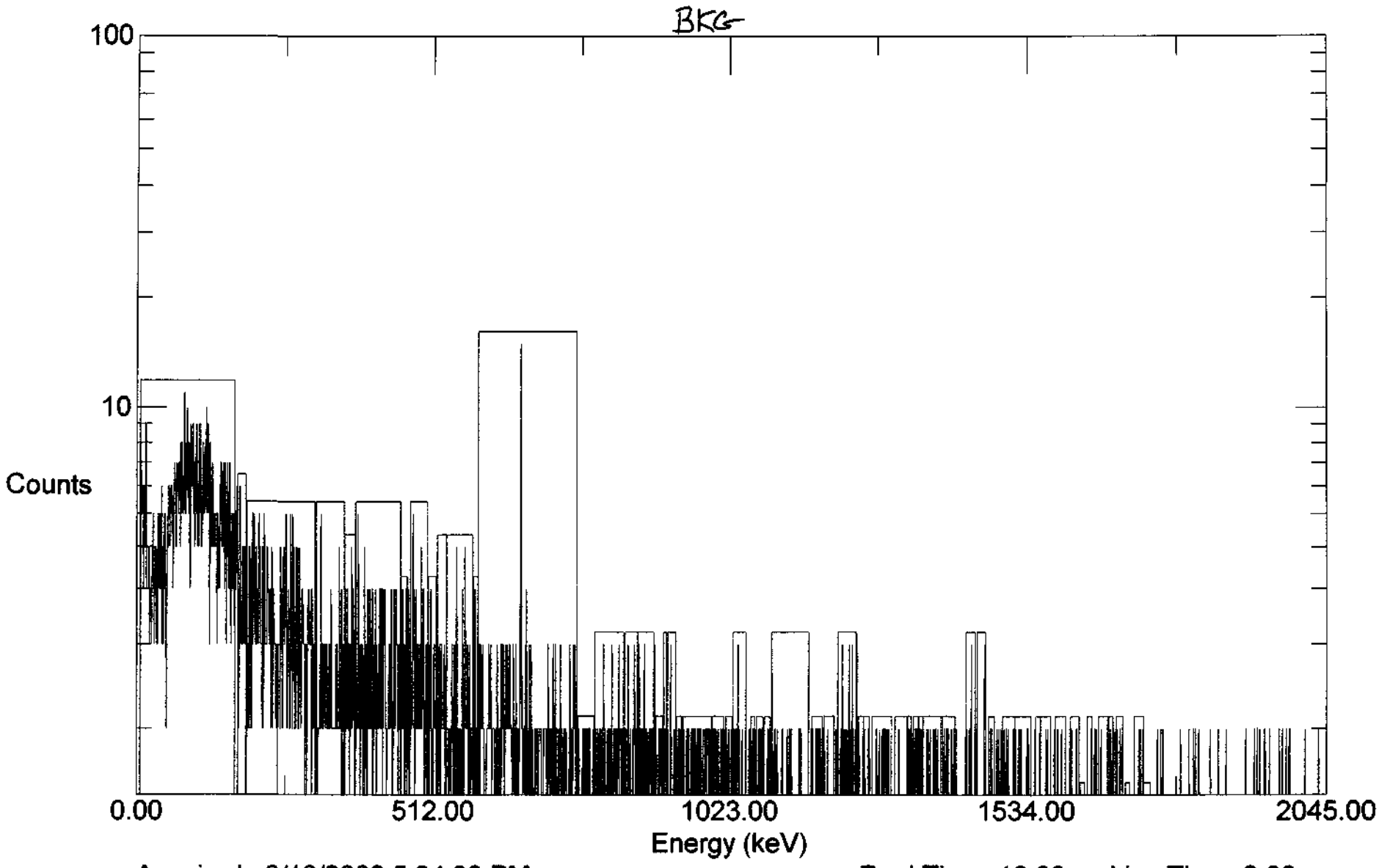
File: C:\User\GNIWEB~1\026 1SC-106 3-12-2002 5.32.53 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

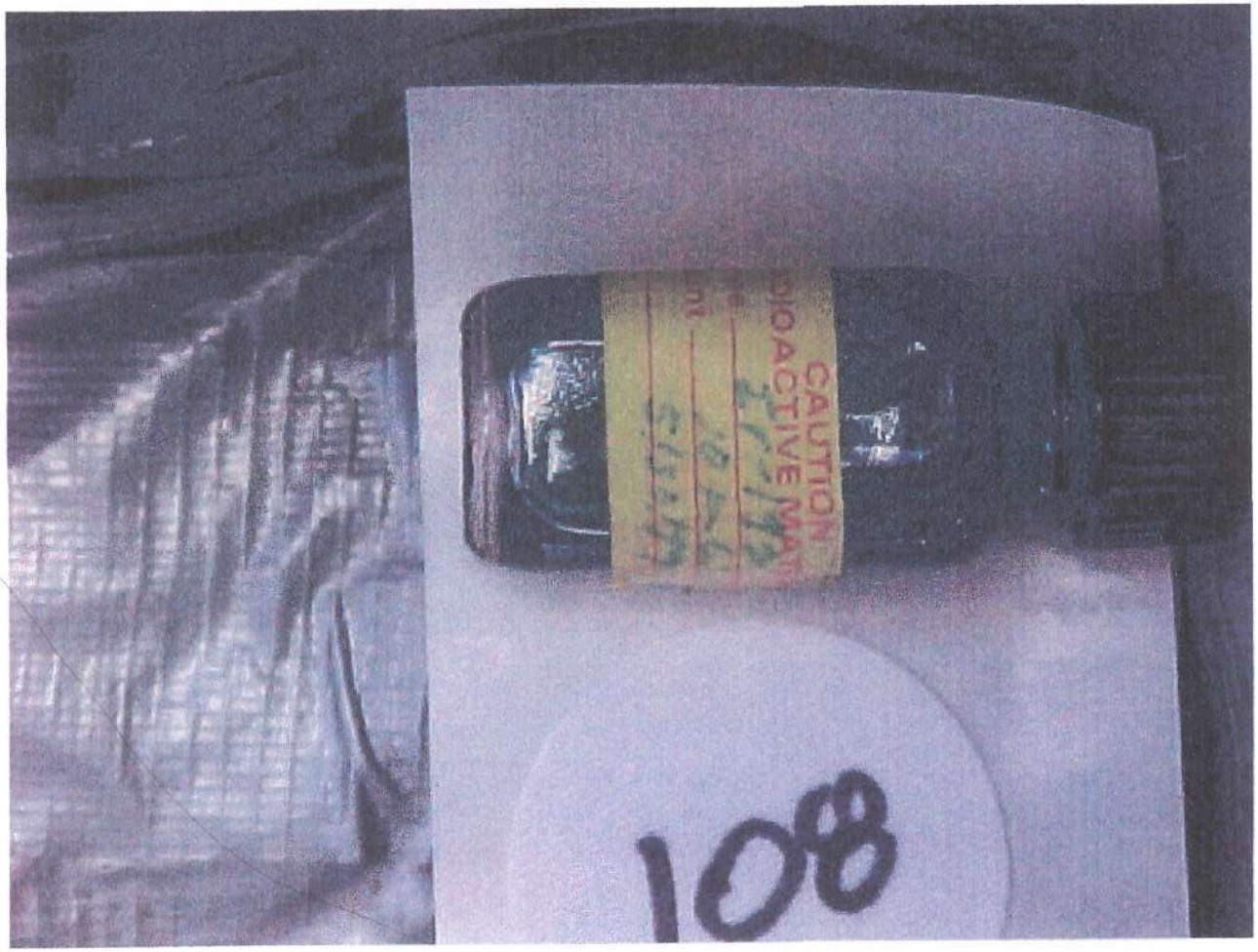

107
CAUTION
IOACTIVE MA

027 1SC-107 3-12-2002 5.34.29 PM

1SC-107

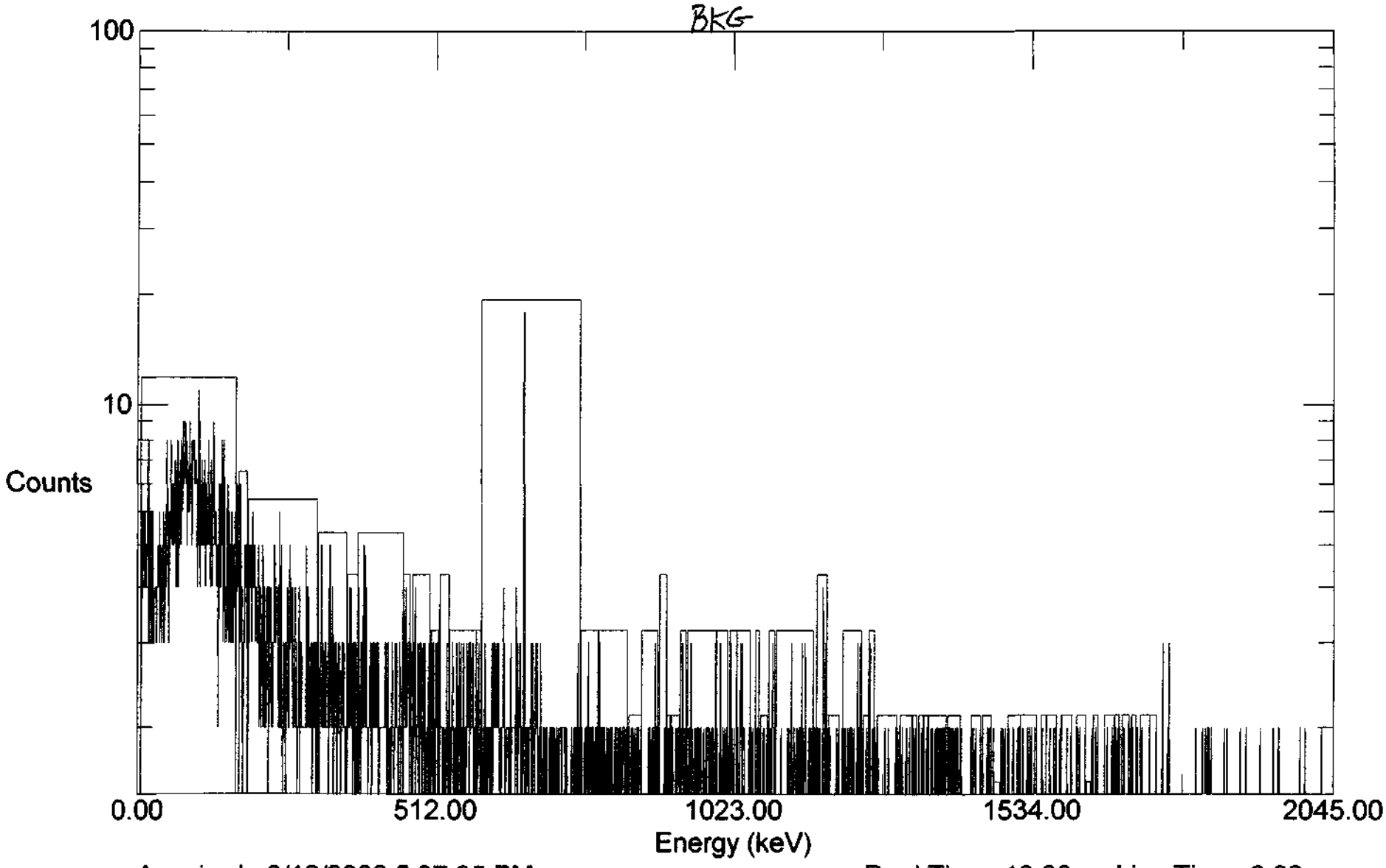


Acquired: 3/12/2002 5:34:30 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\027 1SC-107 3-12-2002 5.34.29 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


CAUTION
RADIOACTIVE MATERIAL
108

028 1SC-108 3-12-2002 5.37.35 PM

1SC-108



Acquired: 3/12/2002 5:37:35 PM Real Time: 10.00 s. Live Time: 9.82 s.

File: C:\User\GNIWEB~1\028 1SC-108 3-12-2002 5.37.35 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-12-02

BKG	mR/hr
6"	<.2
12"	.2
36"	.3

Container #	109	110	111	112	113
External on pig in mR/hr	<.2	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<.2	<.2	
Beta on open pig mR/hr O/W	<.2	<.2	<.2	<.2	

Picture	✓	✓	✓	✓	✓
DIGIT	✓	✓	✓	✓	✓
Table Readings					
Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG.
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	20	20	20	20
Weight in grams	27	22	40	23	38

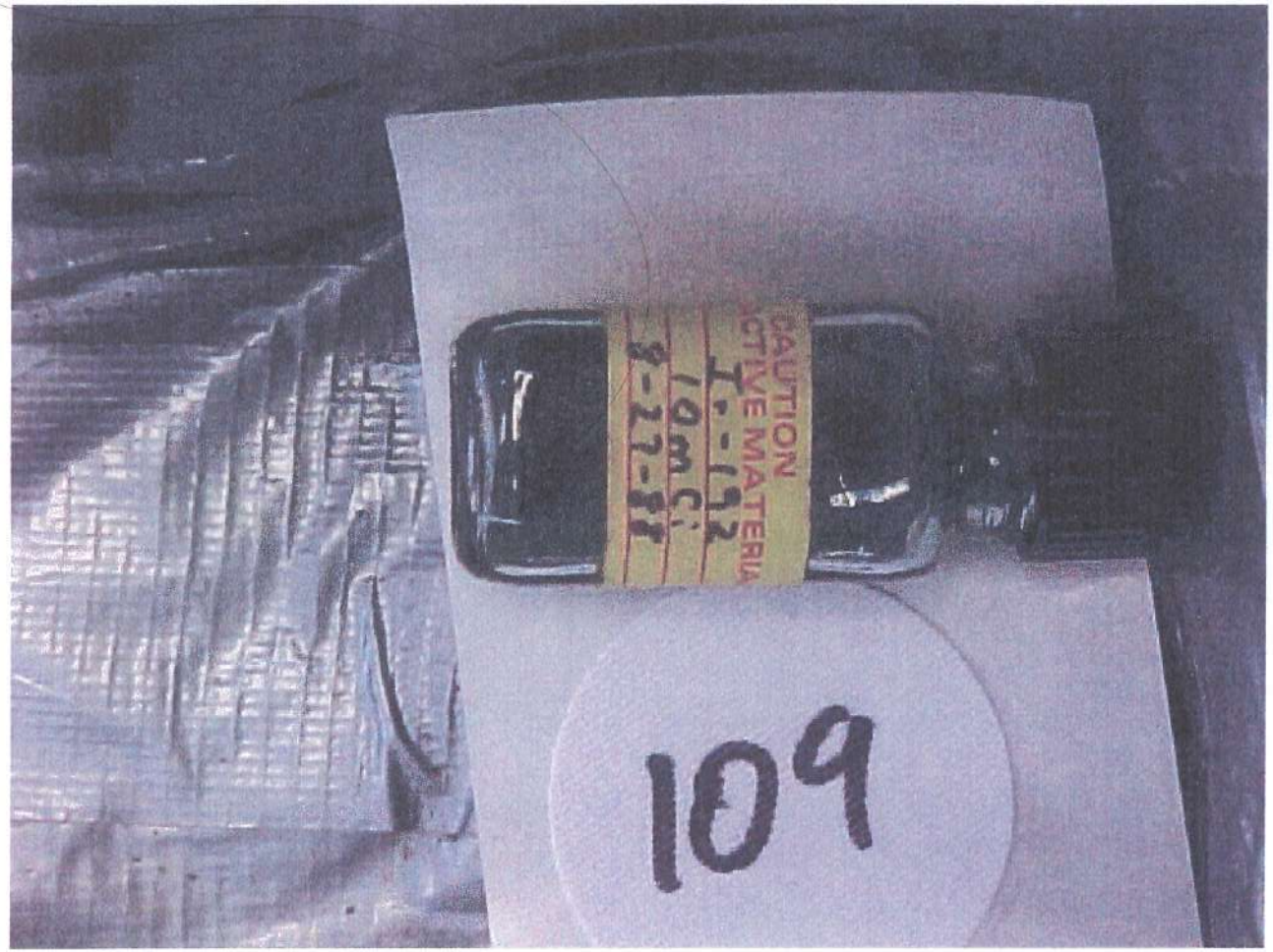
CPM Alpha	30	BKG.	BKG.	BKG	BKG
Direct Beta/Gamma	BKG	450	300	BKG	370

BKG≠ BD

Info on source:	IR192 10 mci 8-27-88	IR192 10 mci 1-17-89	IR192 3.5 mci 11-2-88	NO LABEL	I 131 10 mci 9-24-89

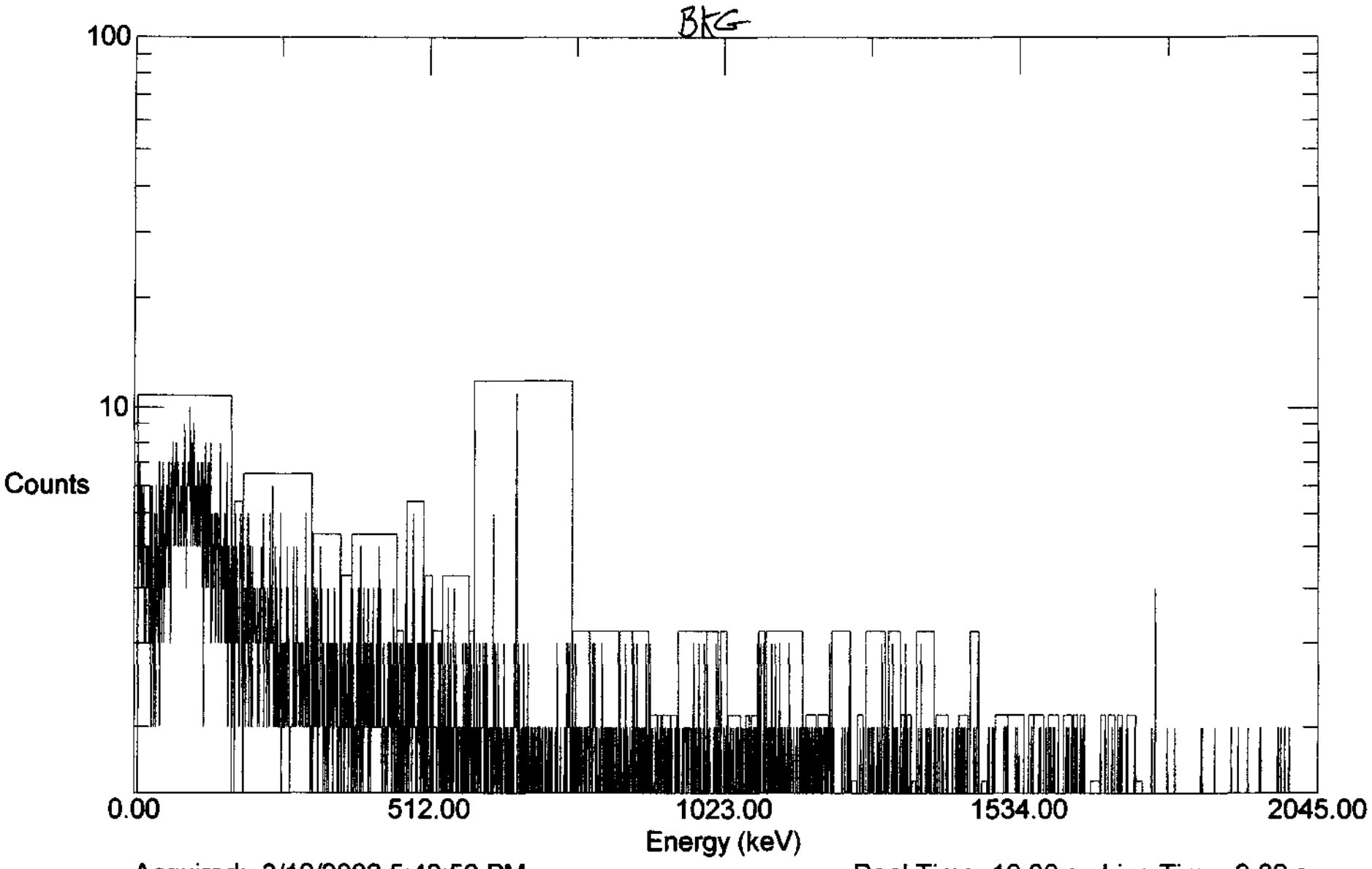
Information on pig:	NO Pig	No pig	NO pig	NO Pig	NO Pig
Smear DPM per 100 cm^2 Alpha	1	0	1	0	1
Smear DPM per 100 cm^2 Beta	0	21	23	41	70
	GREEN Liq. ½	GREEN Liq.	~~GREEN~~ Liq gray c floatys	white cloudy liq.	BROWN Liq.

2221 # 178133 177 #
CDD CDD


CAUTION
ACTIVE MATERIA
I-192
10mCi
8-22-88
109

029 1SC-109 3-12-2002 5.40.52 PM

1SC-109



Acquired: 3/12/2002 5:40:52 PM Real Time: 10.00 s. Live Time: 9.82 s.

File: C:\User\GNIWEB~1\029 1SC-109 3-12-2002 5.40.52 PM.Spc Channels: 8192

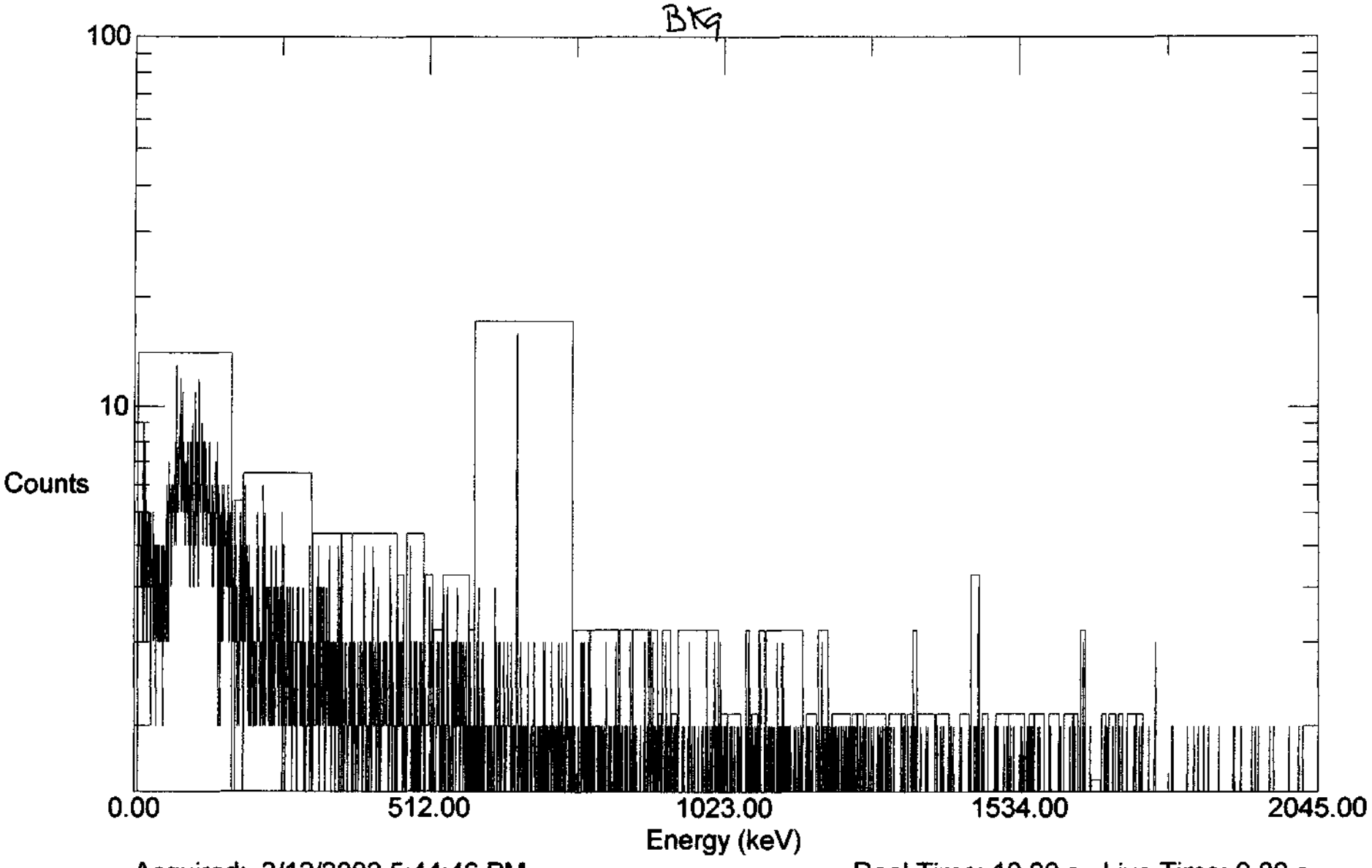
Detector: #1 digiDART USE 1b

file: \MVC-015F.JPG

3/2002

030 1SC-110 3-12-2002 5.44.46 PM

1SC-110

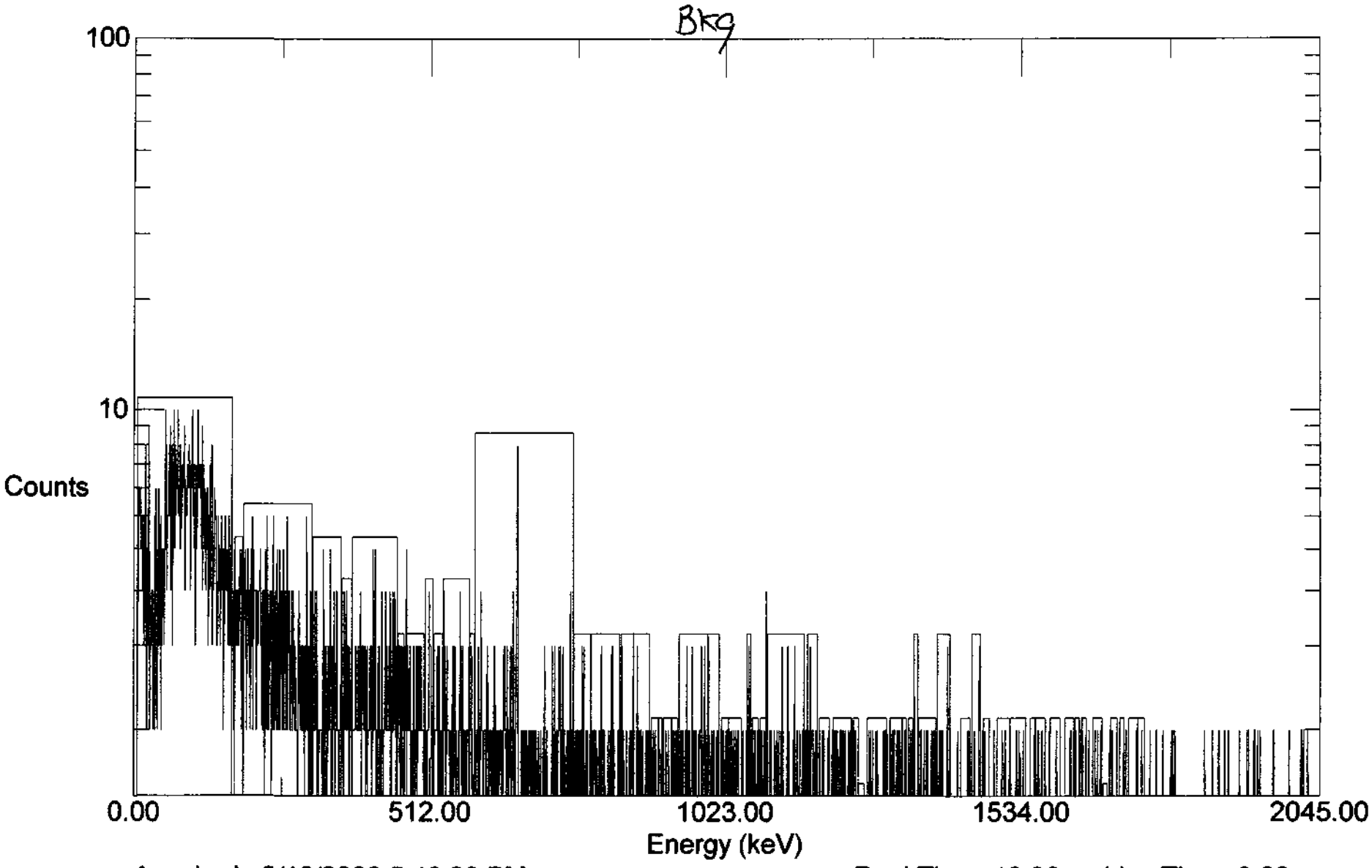


Acquired: 3/12/2002 5:44:46 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\030 1SC-110 3-12-2002 5.44.46 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

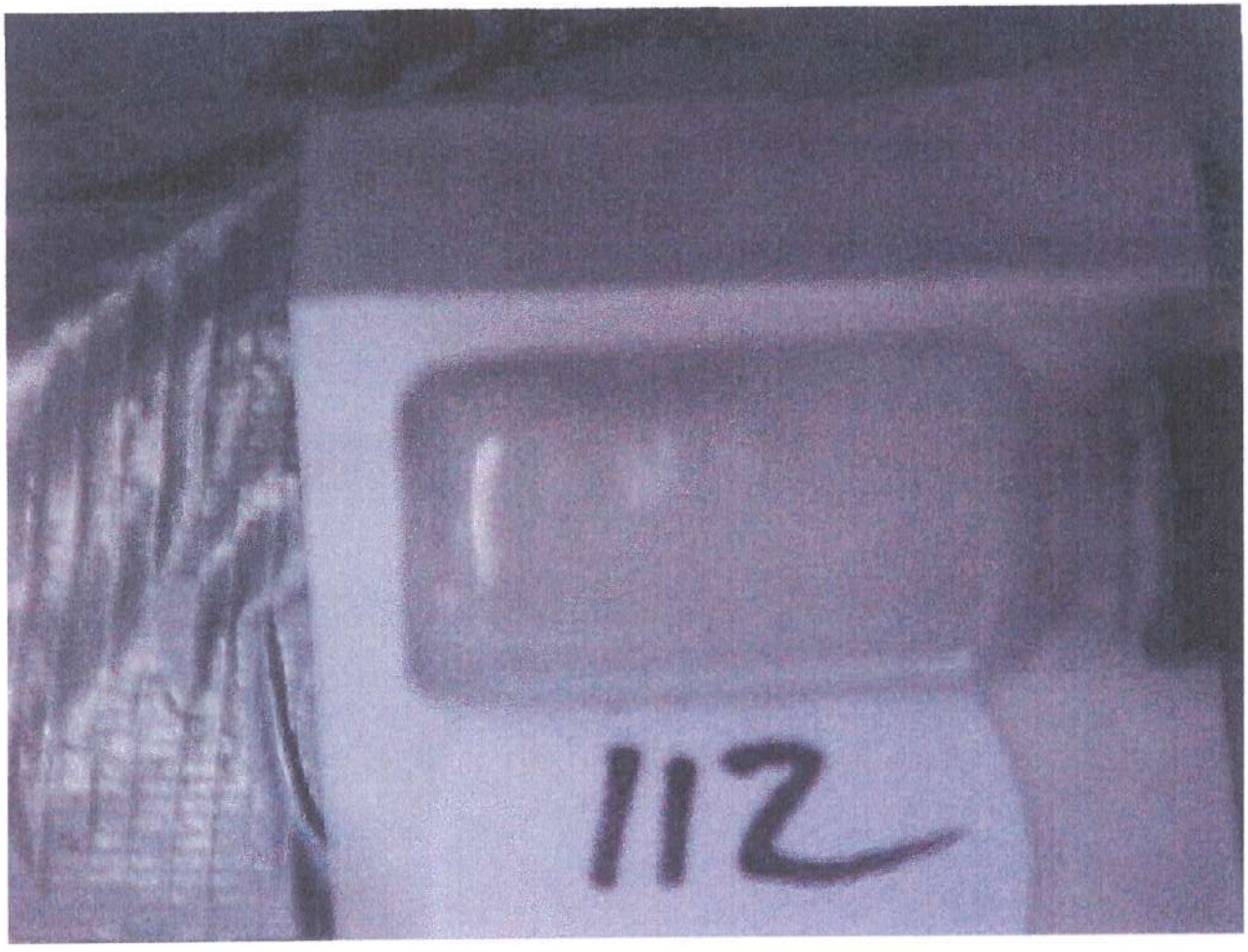
CAUTION
111

031 1SC-111 3-12-2002 5.46.28 PM

1SC-111

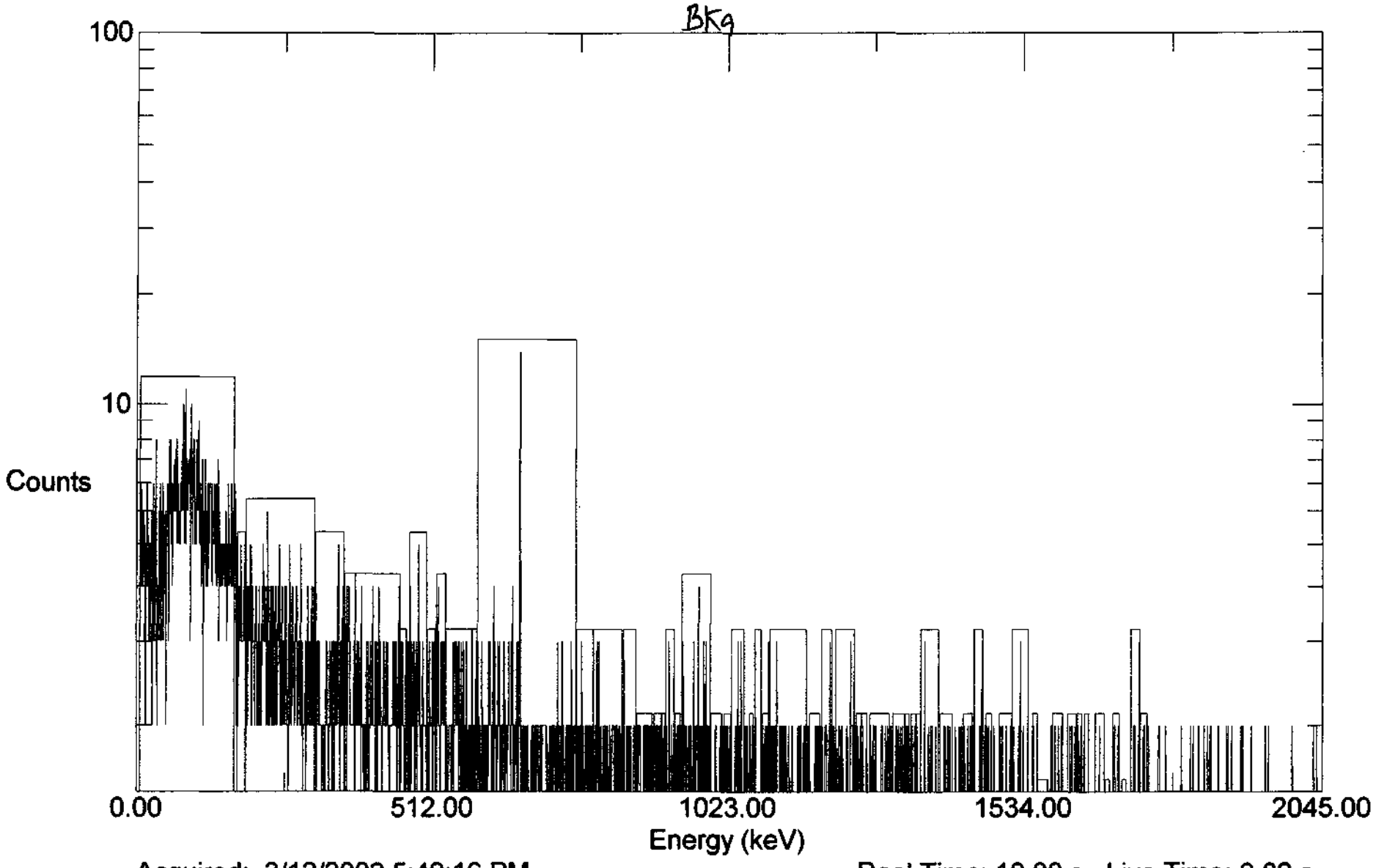


Acquired: 3/12/2002 5:46:28 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\031 1SC-111 3-12-2002 5.46.28 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

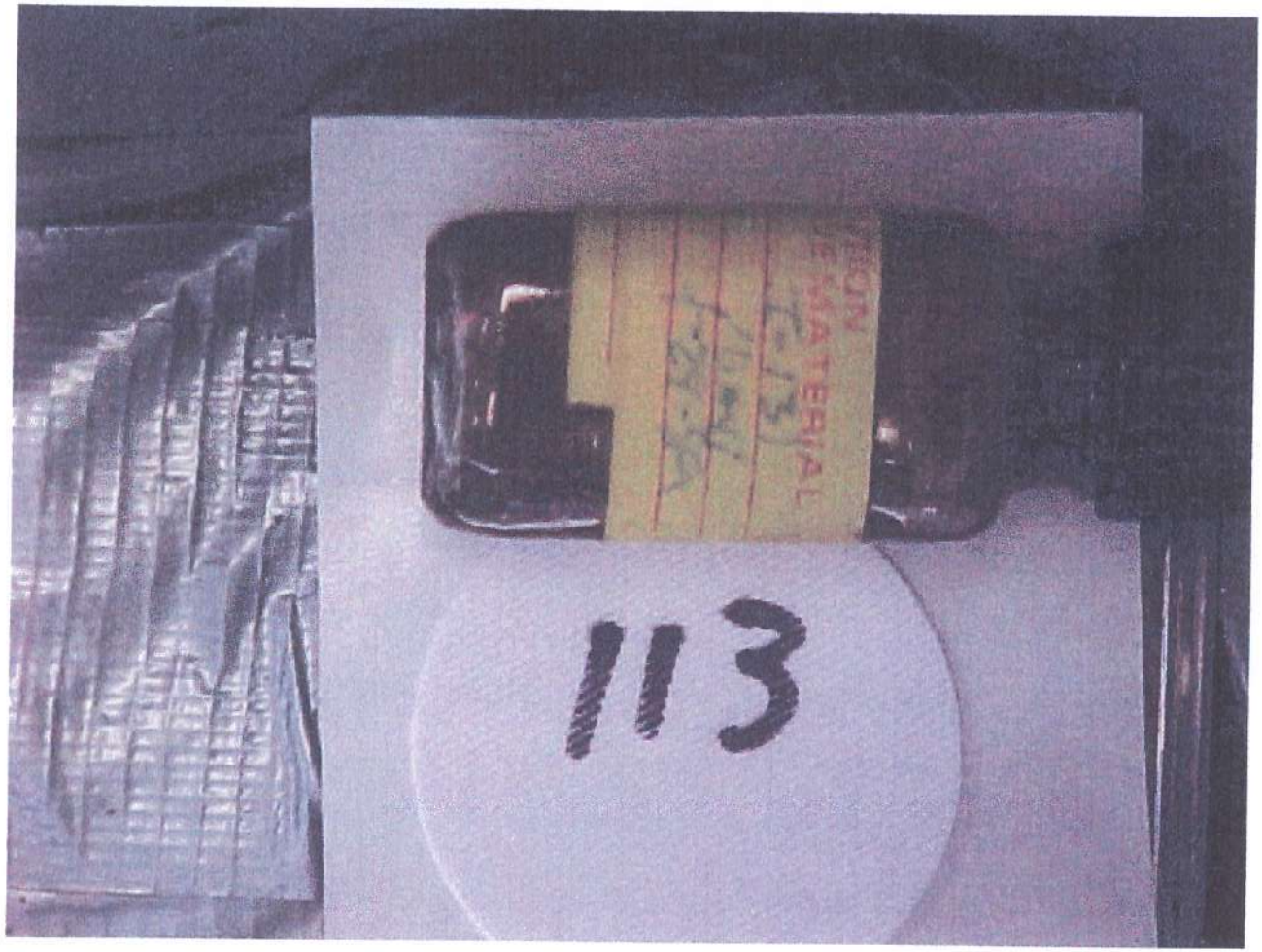

112

032 1SC-112 3-12-2002 5.49.16 PM

1SC-112

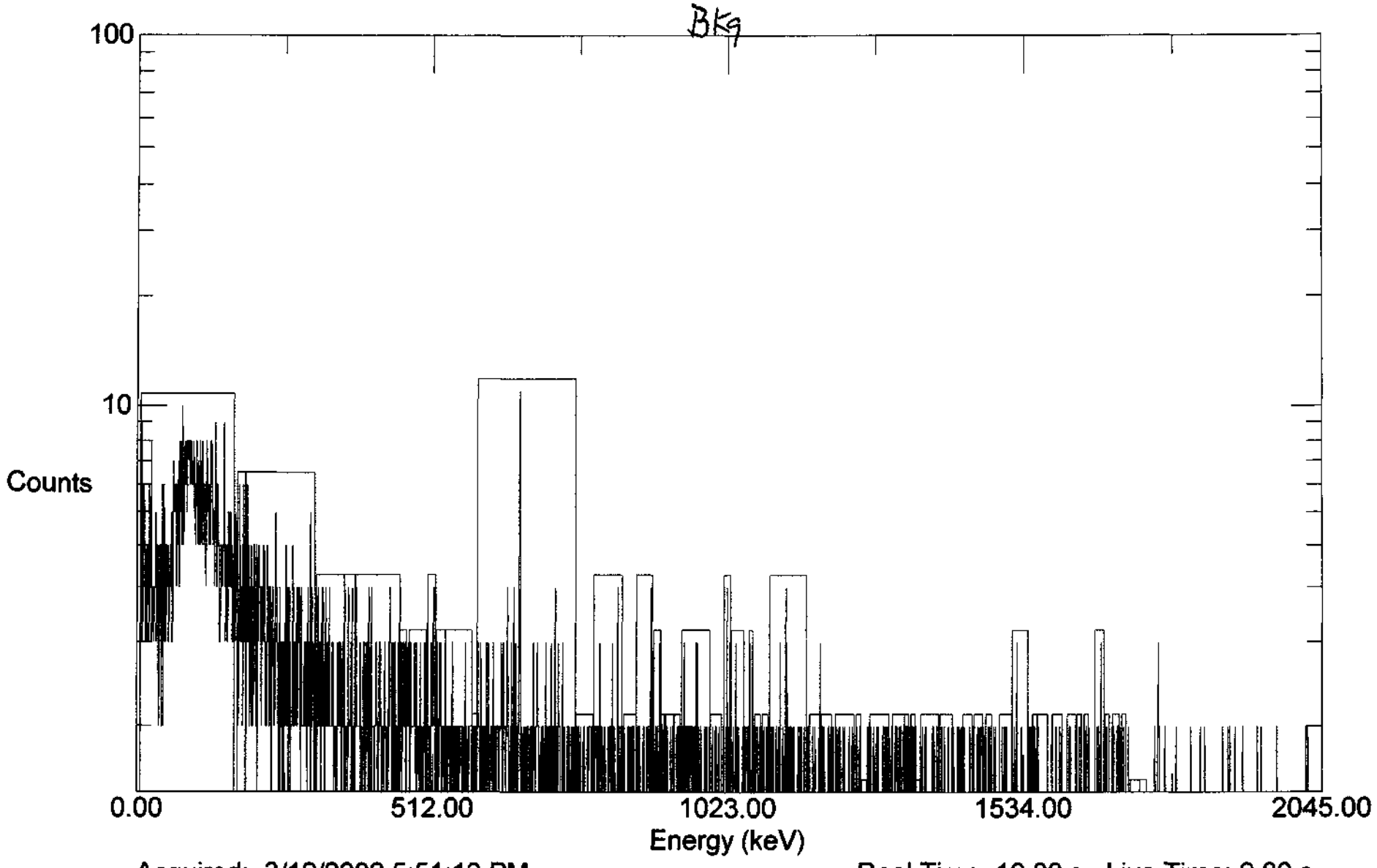


Acquired: 3/12/2002 5:49:16 PM Real Time: 10.00 s. Live Time: 9.82 s.
File: C:\User\GNIWEB~1\032 1SC-112 3-12-2002 5.49.16 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


113
MATERIAL

033 1SC-113 3-12-2002 5.51.13 PM

1SC-113



Acquired: 3/12/2002 5:51:13 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\033 1SC-113 3-12-2002 5.51.13 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3·12·02

BKG	mR/hr
6"	<.2
12"	.2
36"	.3

Container #	114	115	116	117	118
External on pig in mR/hr	<.2	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<.2	<.2	<.2
Beta on open pig mR/hr O/W	<.2	<.2	<.2	<.2	<.2

Picture	✓	✓	✓	✓	✓
DIGEST	✓	✓	✓	✓	✓

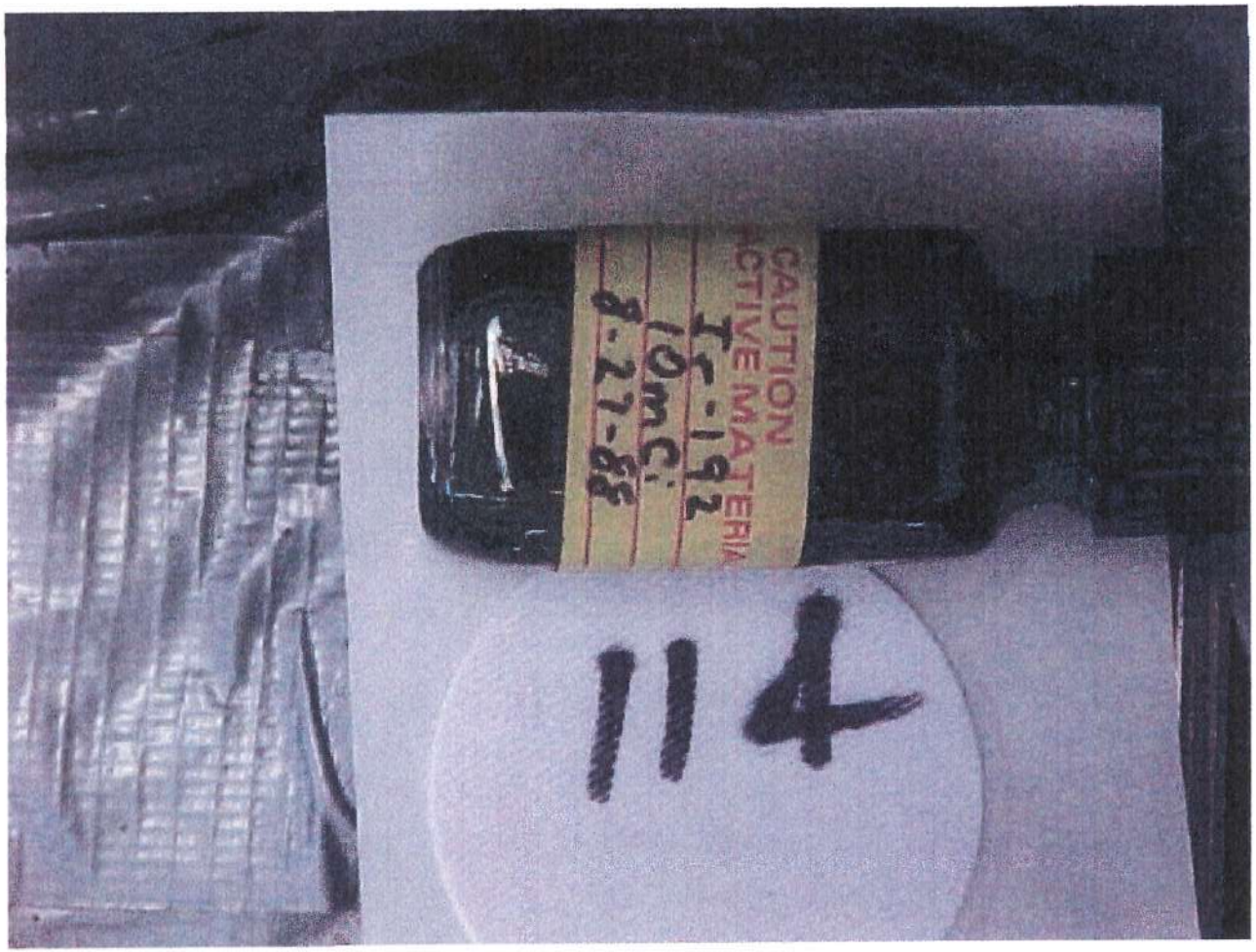
Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	20	20	20	20
Weight in grams	42	26	40	27	40

CPM Alpha	BKG	BKG.	BKG.	BKG	BKG
Direct Beta/Gamma	300	~~260~~ 330	320	300	720

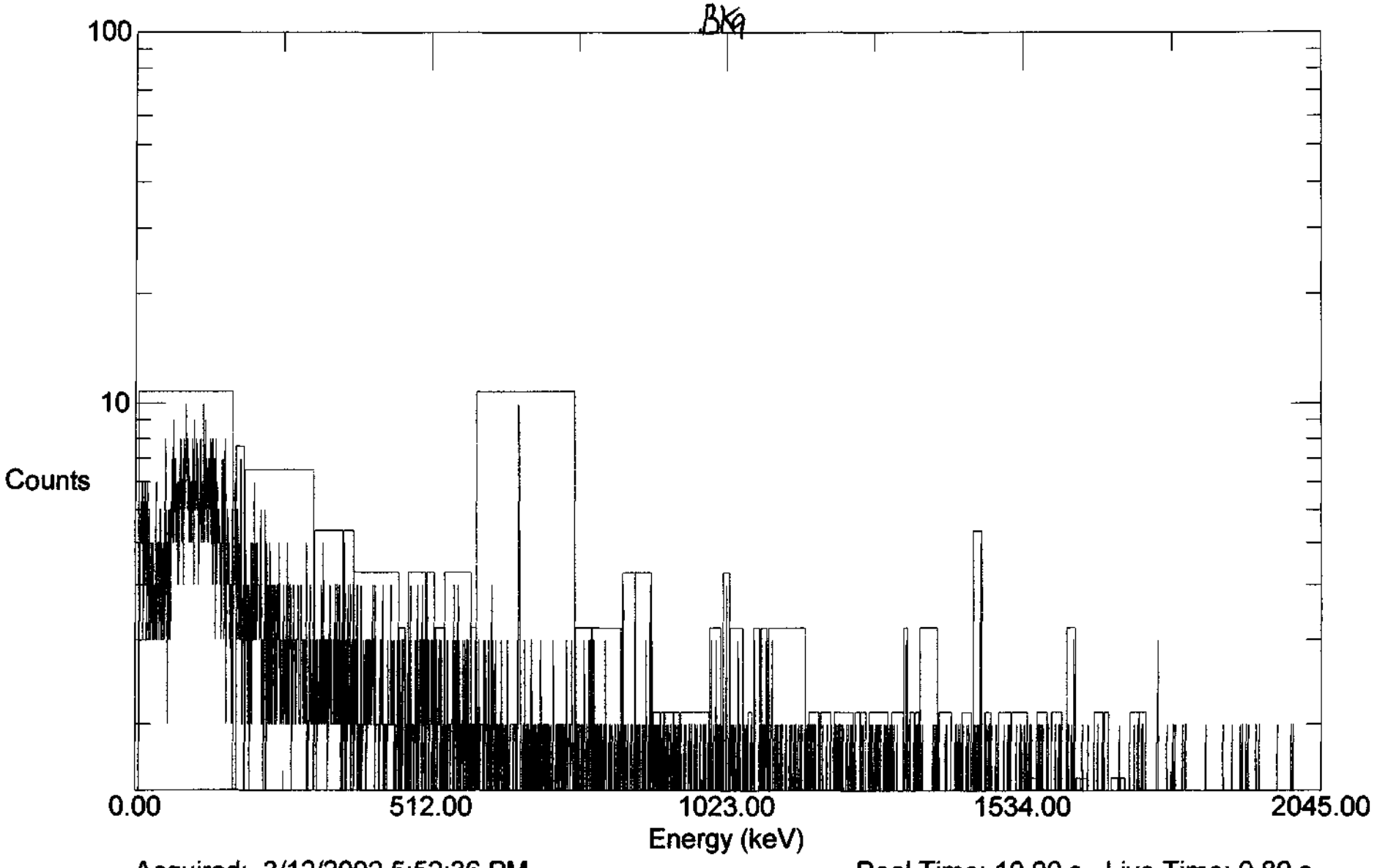
Info on source:	IR192 10 mci 8-27-88	I131. 3 mci 4.9.90	IR192 10 mci 10-31-88	IR192 .5 mci 11-2-88	I131. 25 mci 8-3-88

Information on pig:	NO Pig	NO Pig	NO Pig	NO Pig	NO Pig
Smear DPM per 100 cm^2 Alpha	0	0	3	0	0
Smear DPM per 100 cm^2 Beta	17	24	0	18	62
	GREEN Liq.	RED Liq.	BLUE Liq.	GREEN BLACK GRAY Liq.	BLUE GREEN LIQ.


CAUTION
ACTIVE MATERIA
Ir-192
10mCi
8-27-88
114

034 1SC-114 3-12-2002 5.52.37 PM

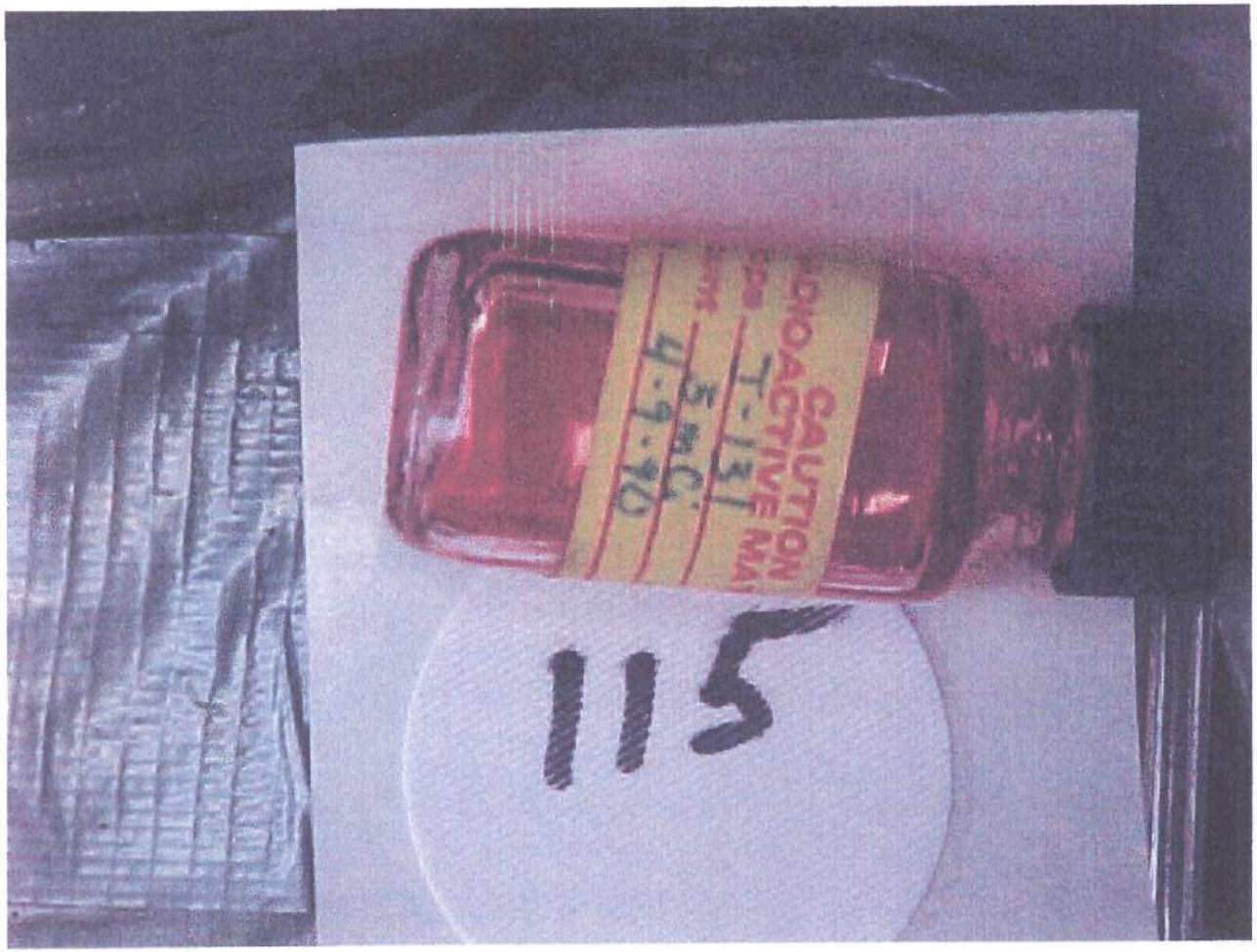
1SC-114



Acquired: 3/12/2002 5:52:36 PM Real Time: 10.00 s. Live Time: 9.80 s.

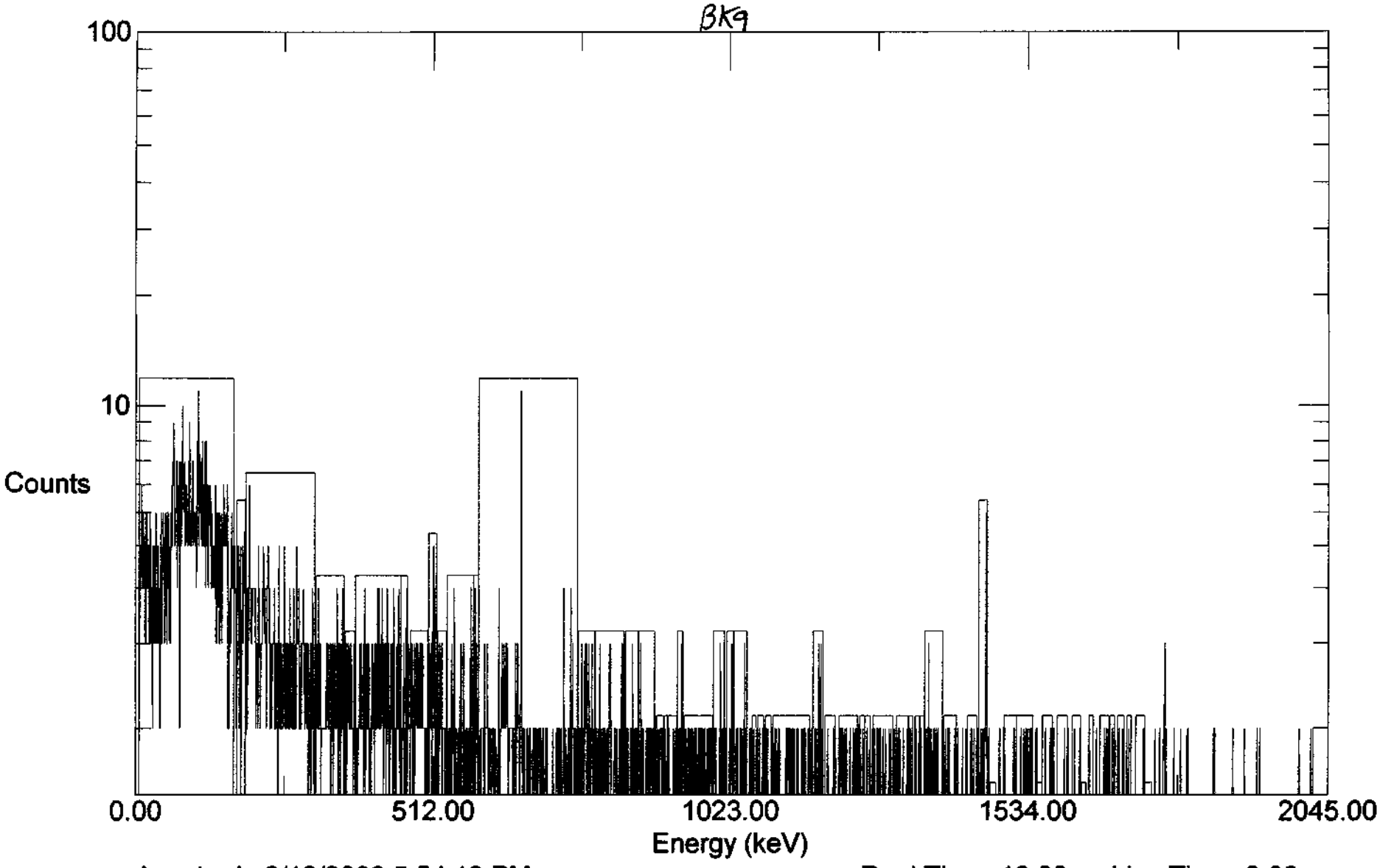
File: C:\User\GNIWEB~1\034 1SC-114 3-12-2002 5.52.37 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


115
CAUTION
RADIOACTIVE MA
T-131
5 mCi
4-9-70

035 1SC-115 3 .2-2002 5.54.19 PM

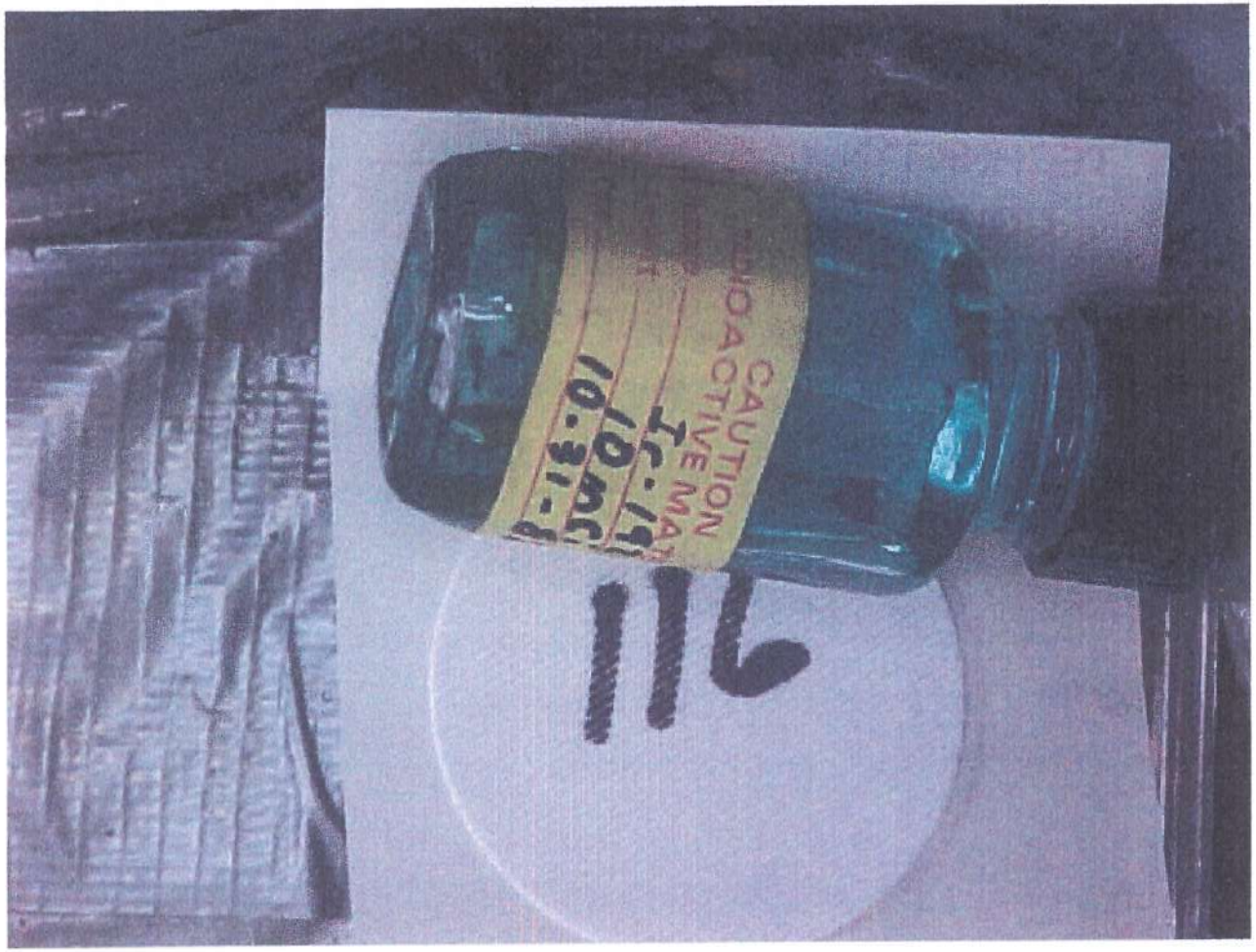
1SC-115



Acquired: 3/12/2002 5:54:19 PM Real Time: 10.00 s. Live Time: 9.80 s.

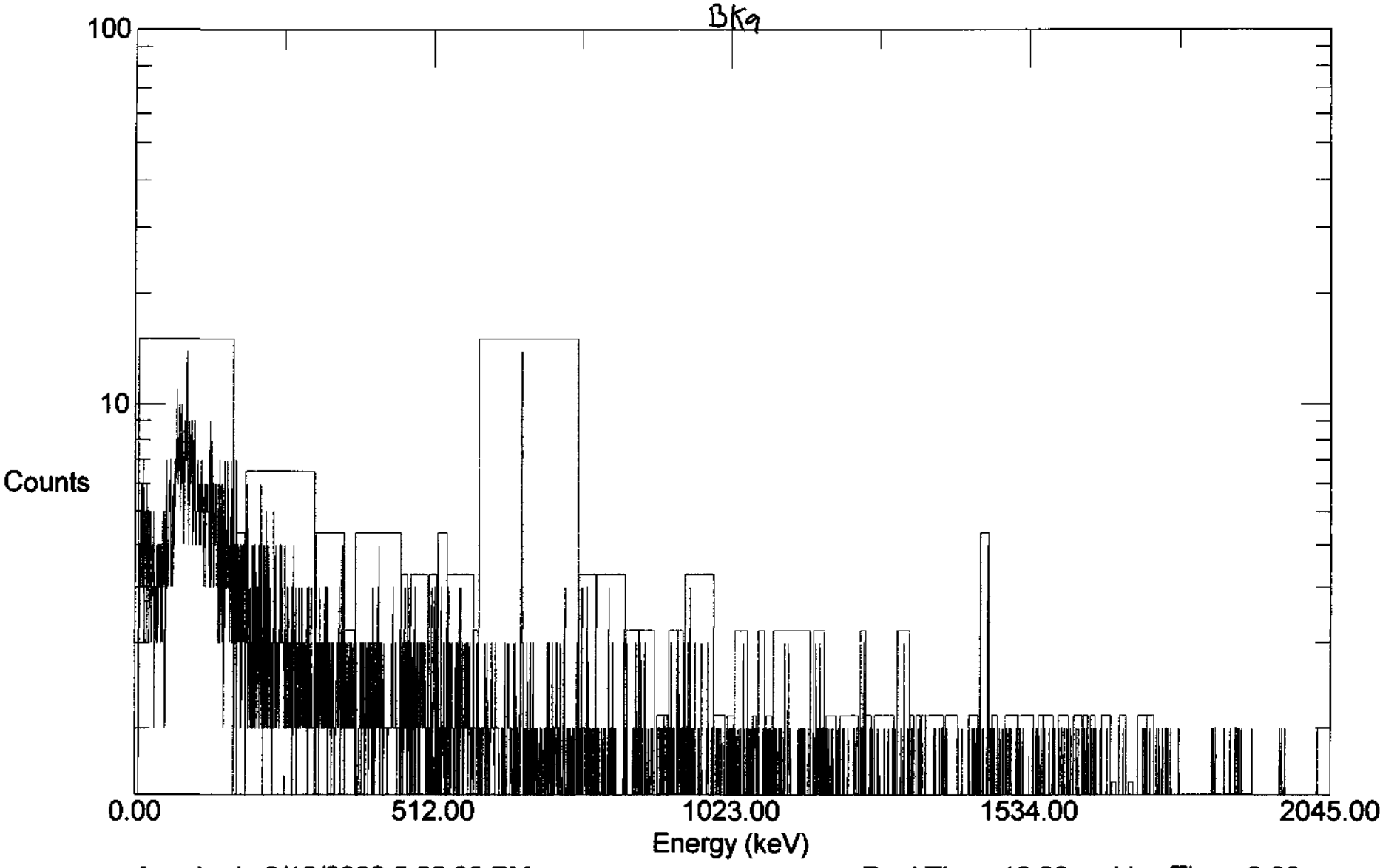
File: C:\User\GNIWEB~1\035 1SC-115 3-12-2002 5.54.19 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


CAUTION
116

036 1SC-116 3-12-2002 5.55.32 PM

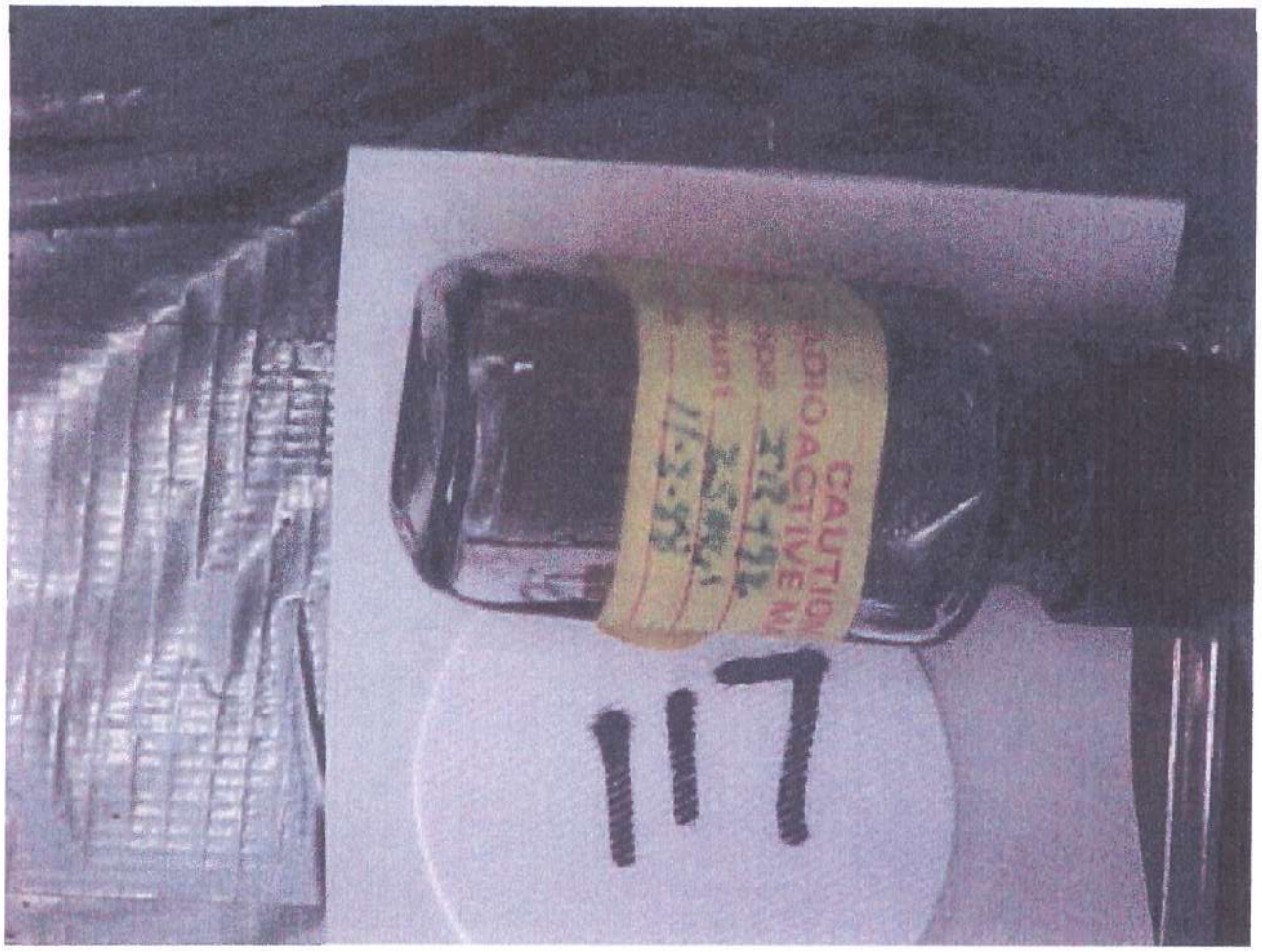
1SC-116



Acquired: 3/12/2002 5:55:32 PM Real Time: 10.00 s. Live Time: 9.80 s.

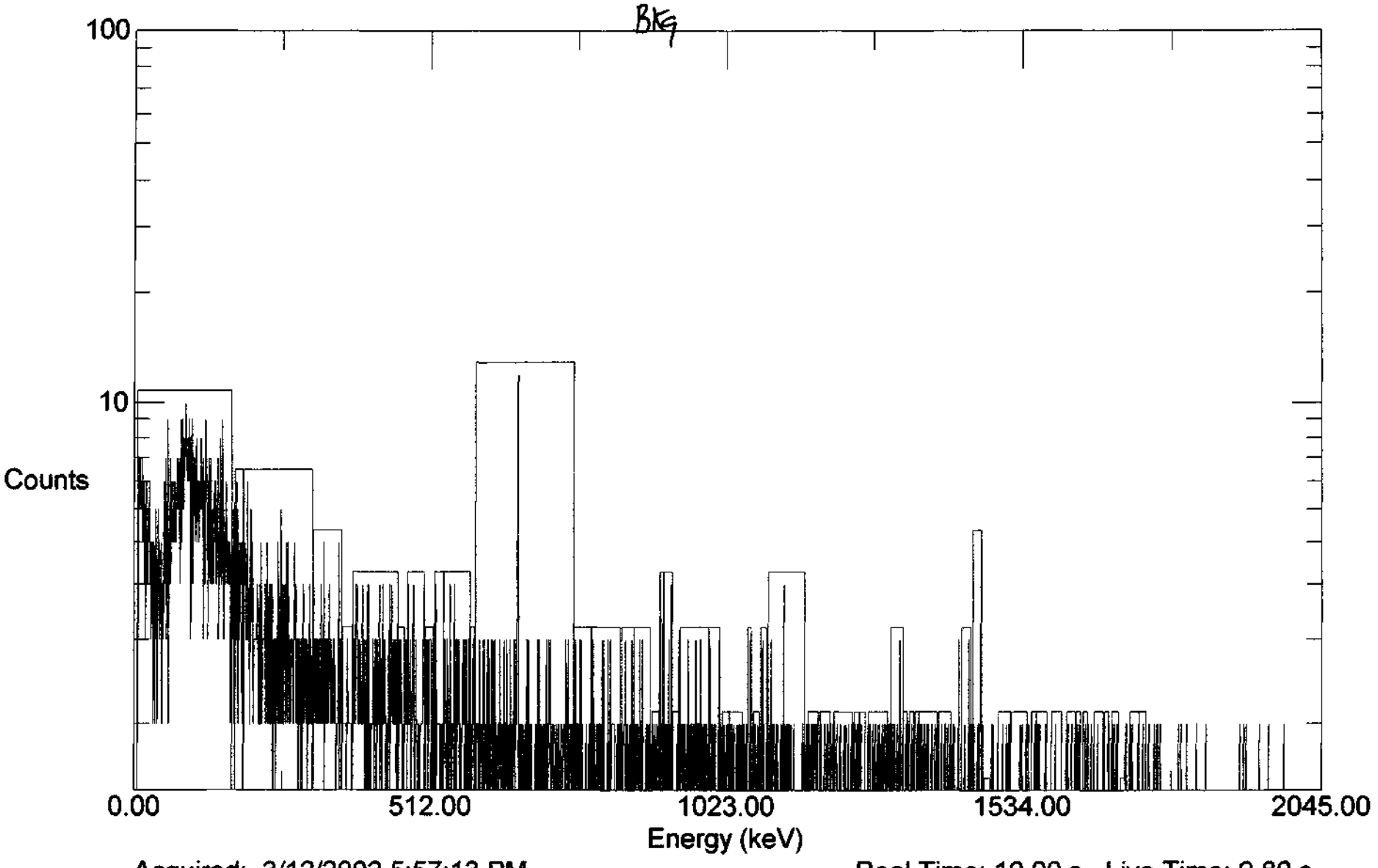
File: C:\User\GNIWEB~1\036 1SC-116 3-12-2002 5.55.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


CAUTION
RADIOACTIVE M
117

037 1SC-117 3- .2-2002 5.57.13 PM

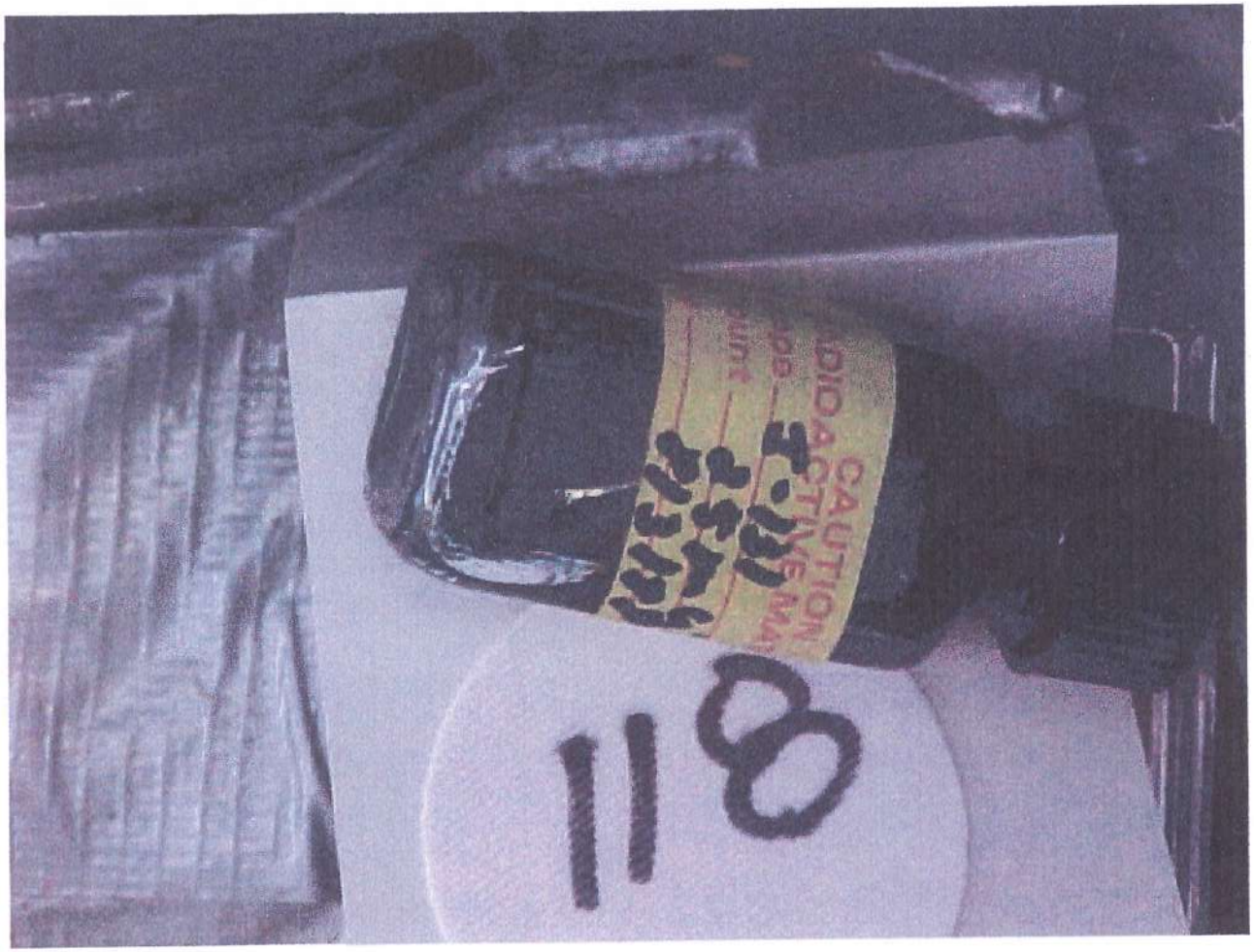
1SC-117



Acquired: 3/12/2002 5:57:13 PM Real Time: 10.00 s. Live Time: 9.80 s.

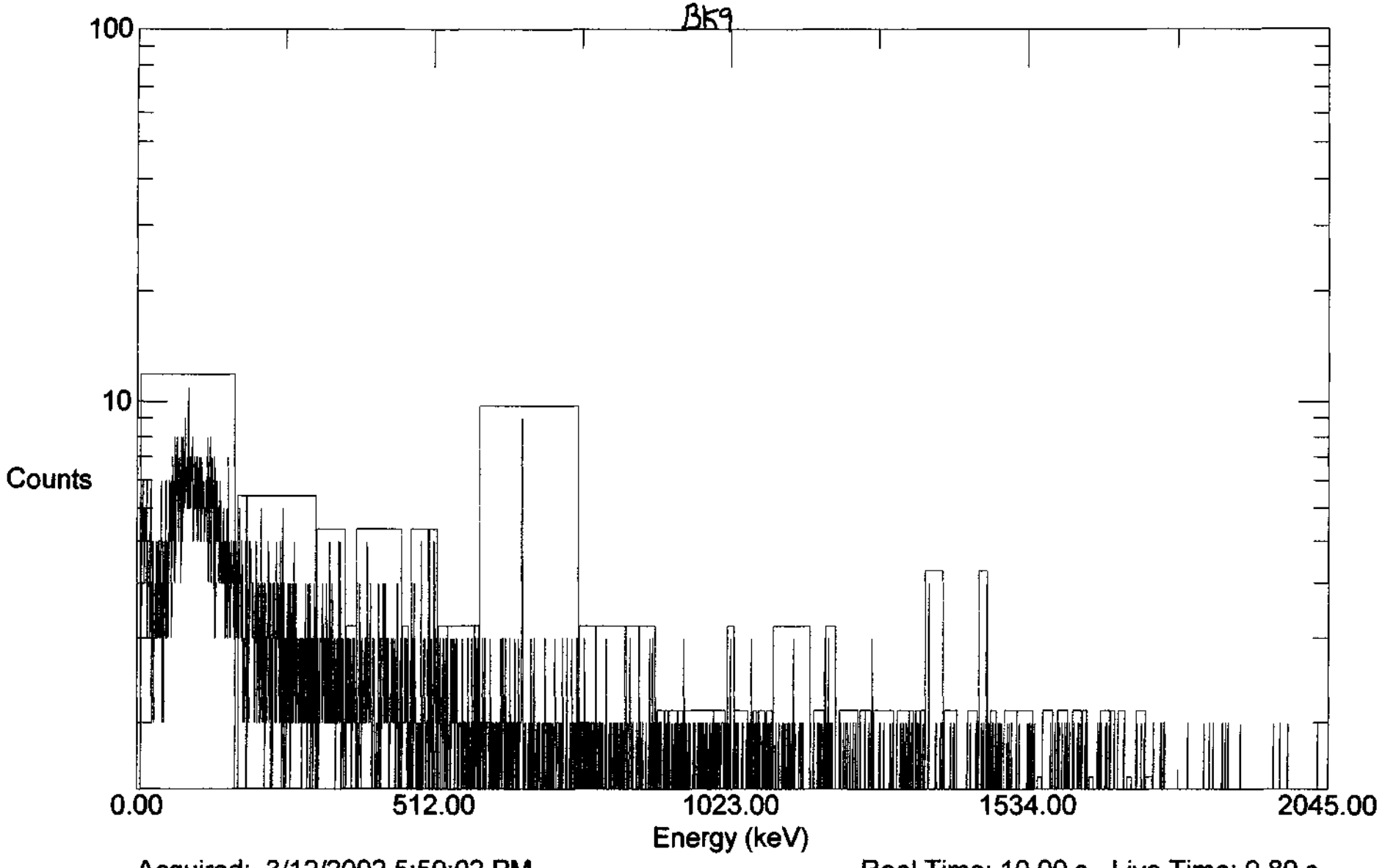
File: C:\User\GNIWEB~1\037 1SC-117 3-12-2002 5.57.13 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


CAUTION
RADIOACTIVE MA
118

038 1SC-118 3- .2-2002 5.59.02 PM

1SC-118



Acquired: 3/12/2002 5:59:02 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\038 1SC-118 3-12-2002 5.59.02 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-12-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	.3

Container #	119	120	121	122	123
External on pig in mR/hr	<.2	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<.2	<.2	<.2
Beta on open pig mR/hr O/W	<.2	<.2	<.2	<.2	<.2

Picture	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓

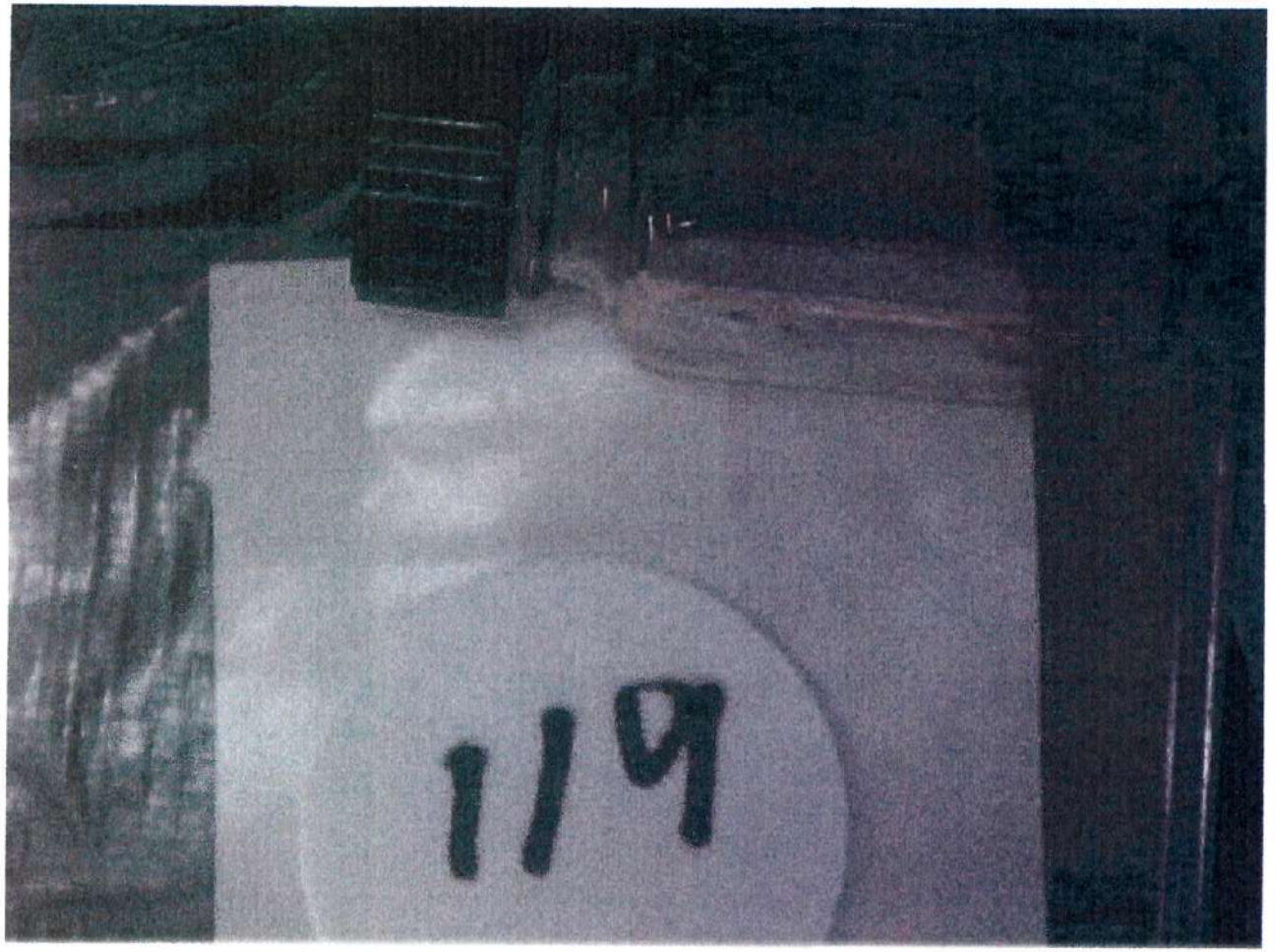
Table Readings

Source mR/hr @ 6 inchs	BKG.	BKG.	BKG	BKG	BKG.
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	20	20	20	20
Weight in grams	19	18	18	18	18

CPM Alpha	BKG	BKG	BKG	BKG.	BKG
Direct Beta/Gamma	400	300	320	BKG.	BKG

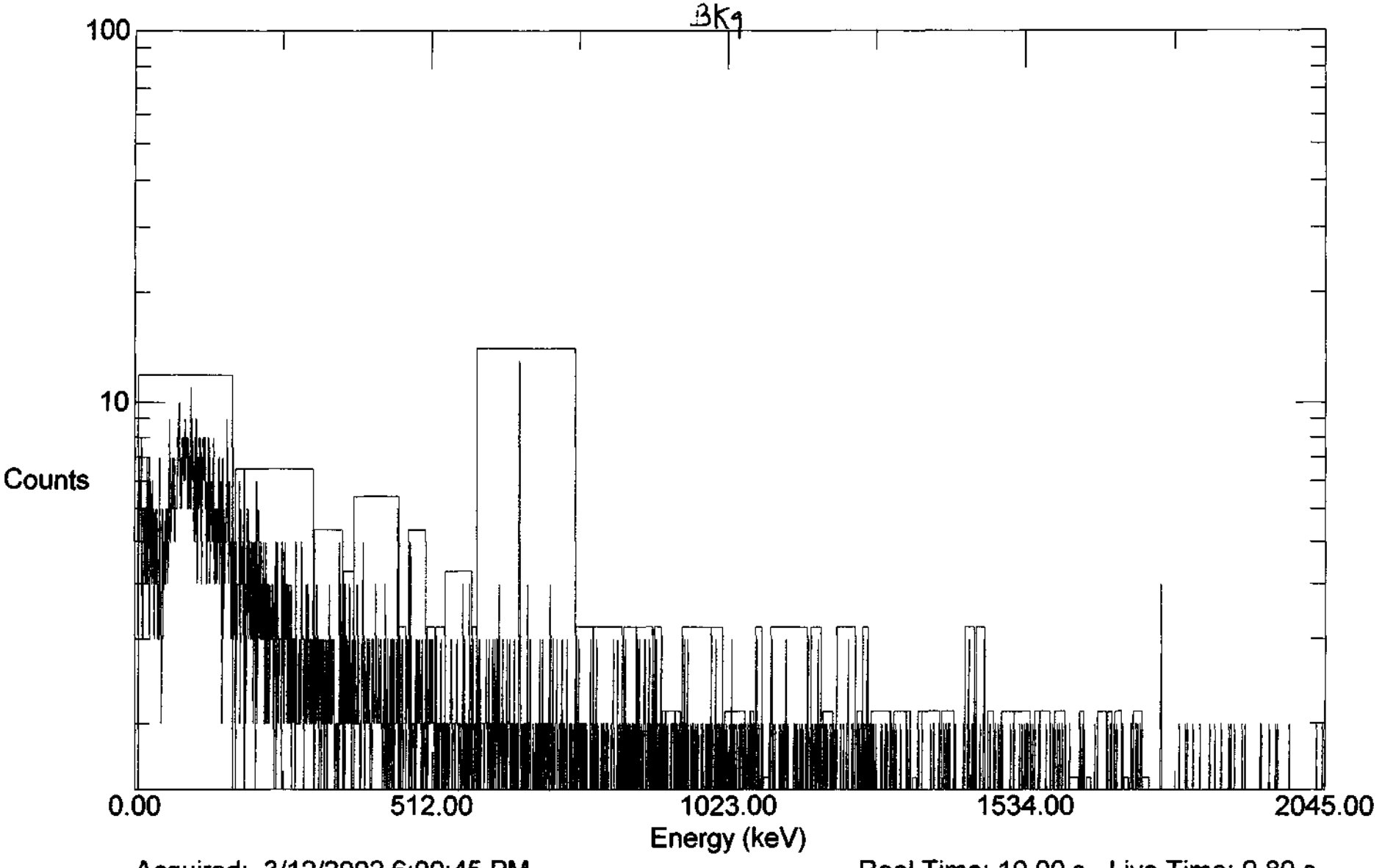
Info on source:	NO INFO	NO INFO	NO INFO	NO INFO	IR192

Information on pig:	NO Pig	NO Pig	NO Pig	NO Pig	NO Pig
Smear DPM per 100 cm^2 Alpha	0	0	0	0	0
Smear DPM per 100 cm^2 Beta	35	20	0	24	21
	1 DROP OF RED Liq.	CLEAR Liq. (LITTLE BIT) IN A ~~FLAT~~ test ~~tube~~ tube	test tube CLEAR Liq.	test tube CLEAR liq.	test tube CLEAR Liq.

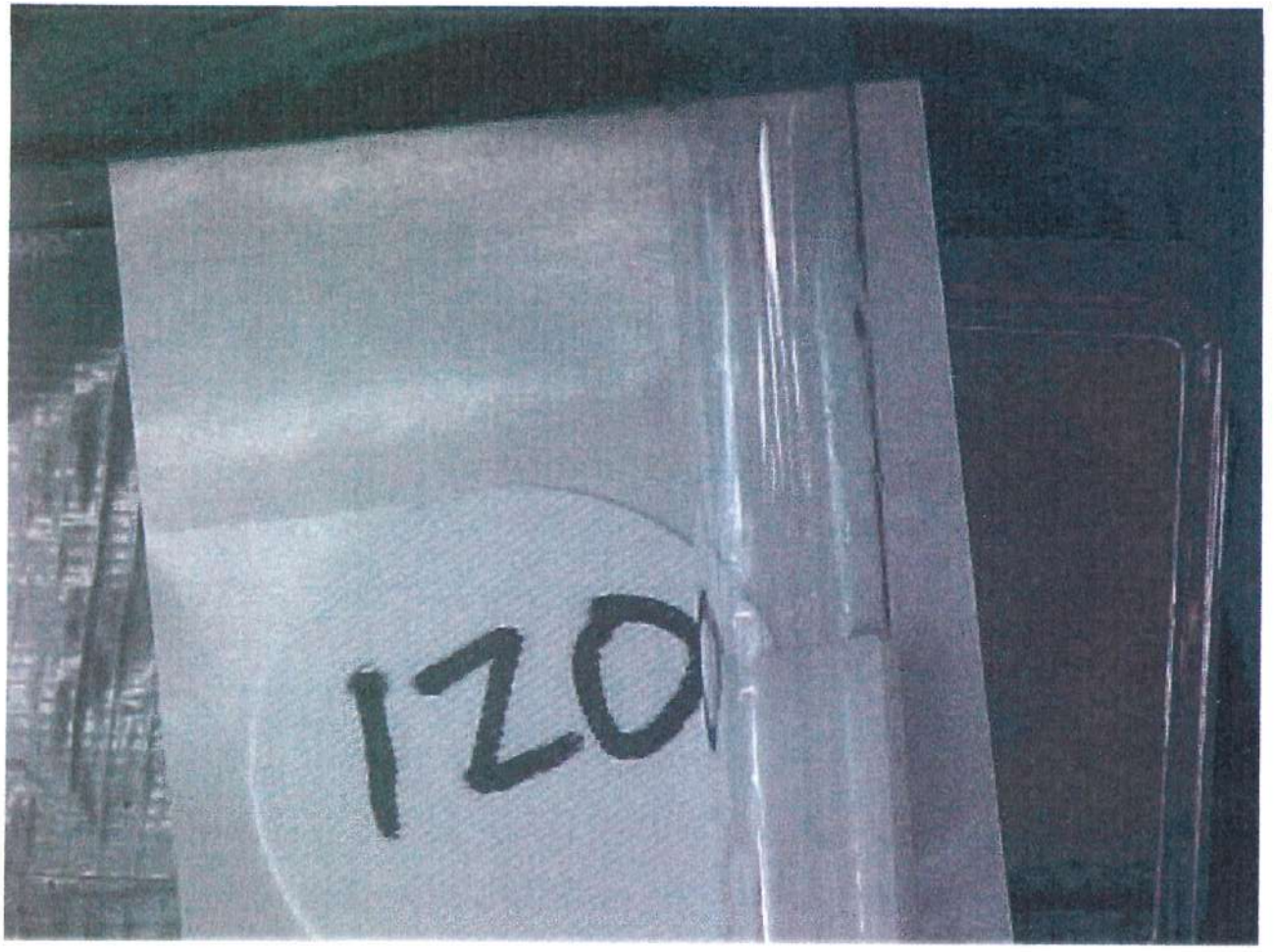

119

039 1SC-119 3-12-2002 6.00.45 PM

1SC-119

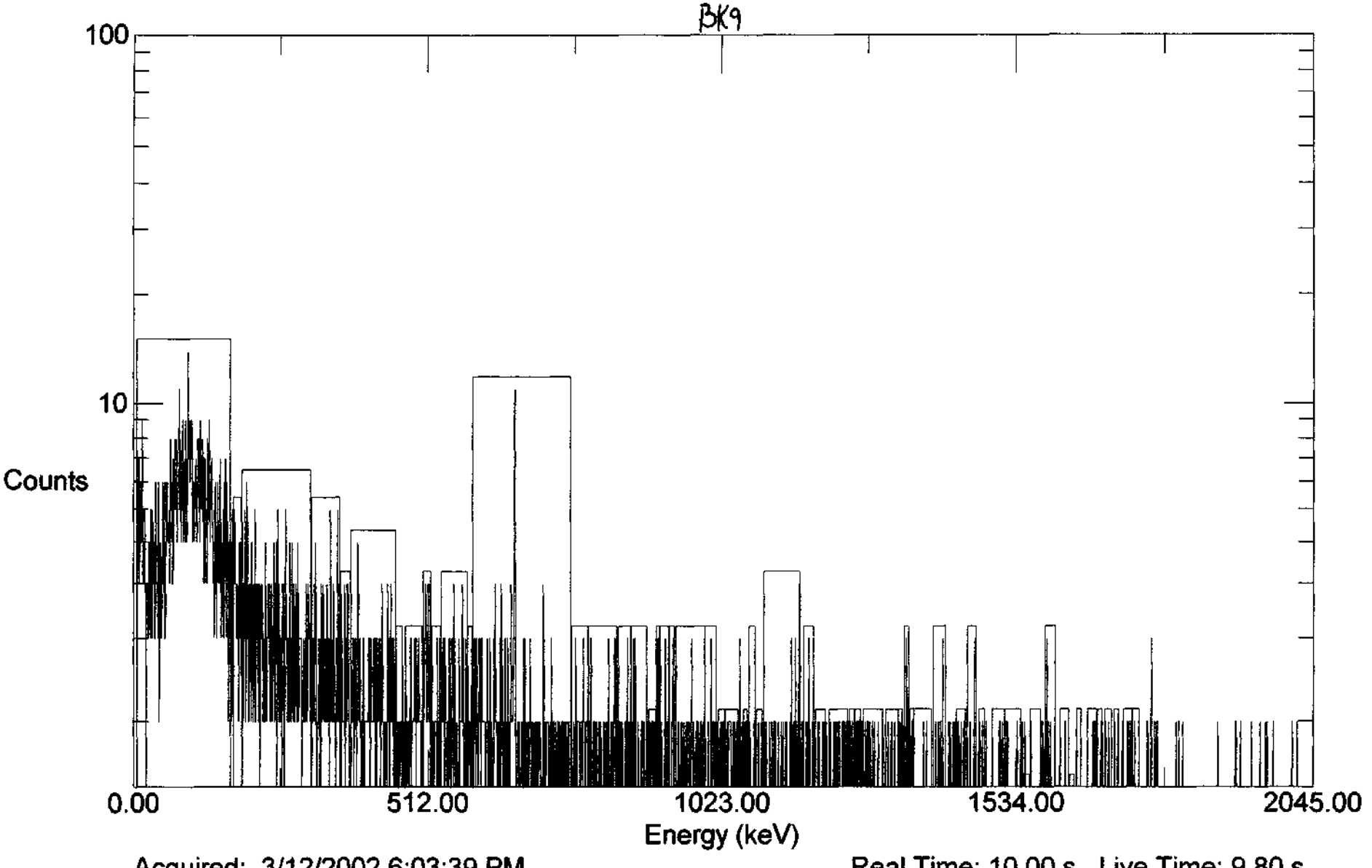


Acquired: 3/12/2002 6:00:45 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\039 1SC-119 3-12-2002 6.00.45 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

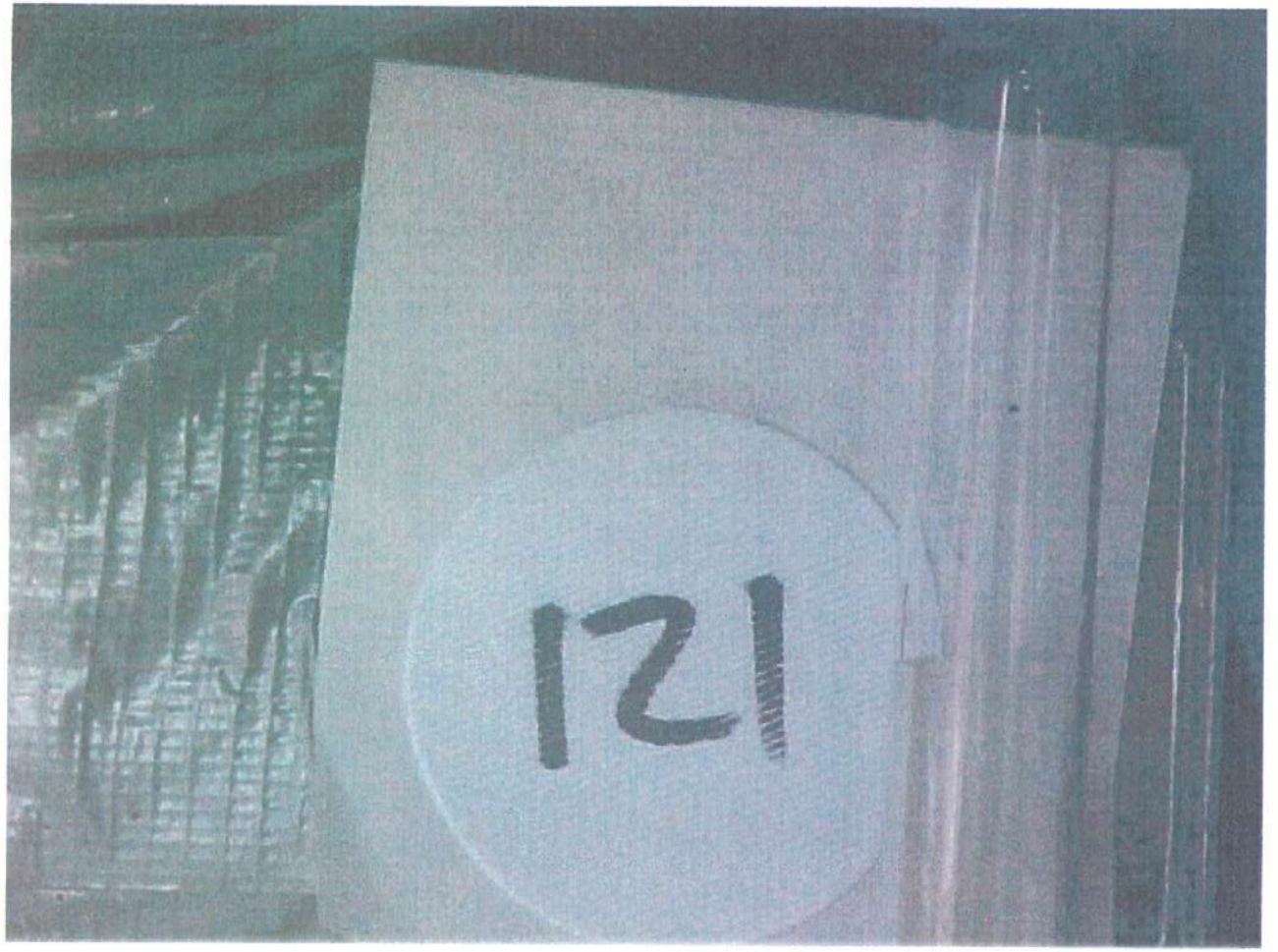

120

041 1SC-120 3 .2-2002 6.03.39 PM

1SC-120

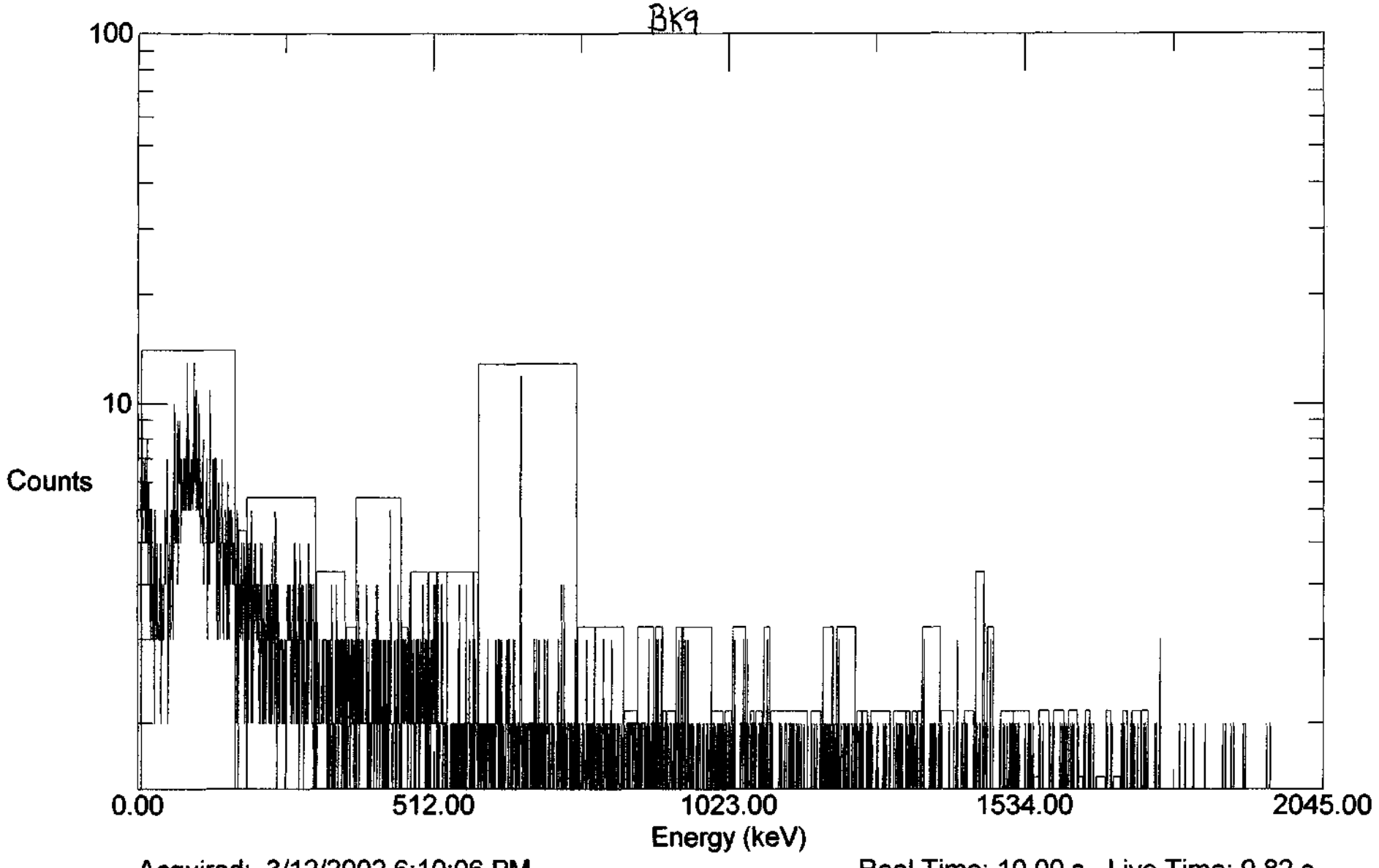


Acquired: 3/12/2002 6:03:39 PM Real Time: 10.00 s. Live Time: 9.80 s.
File: C:\User\GNIWEB~1\041 1SC-120 3-12-2002 6.03.39 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

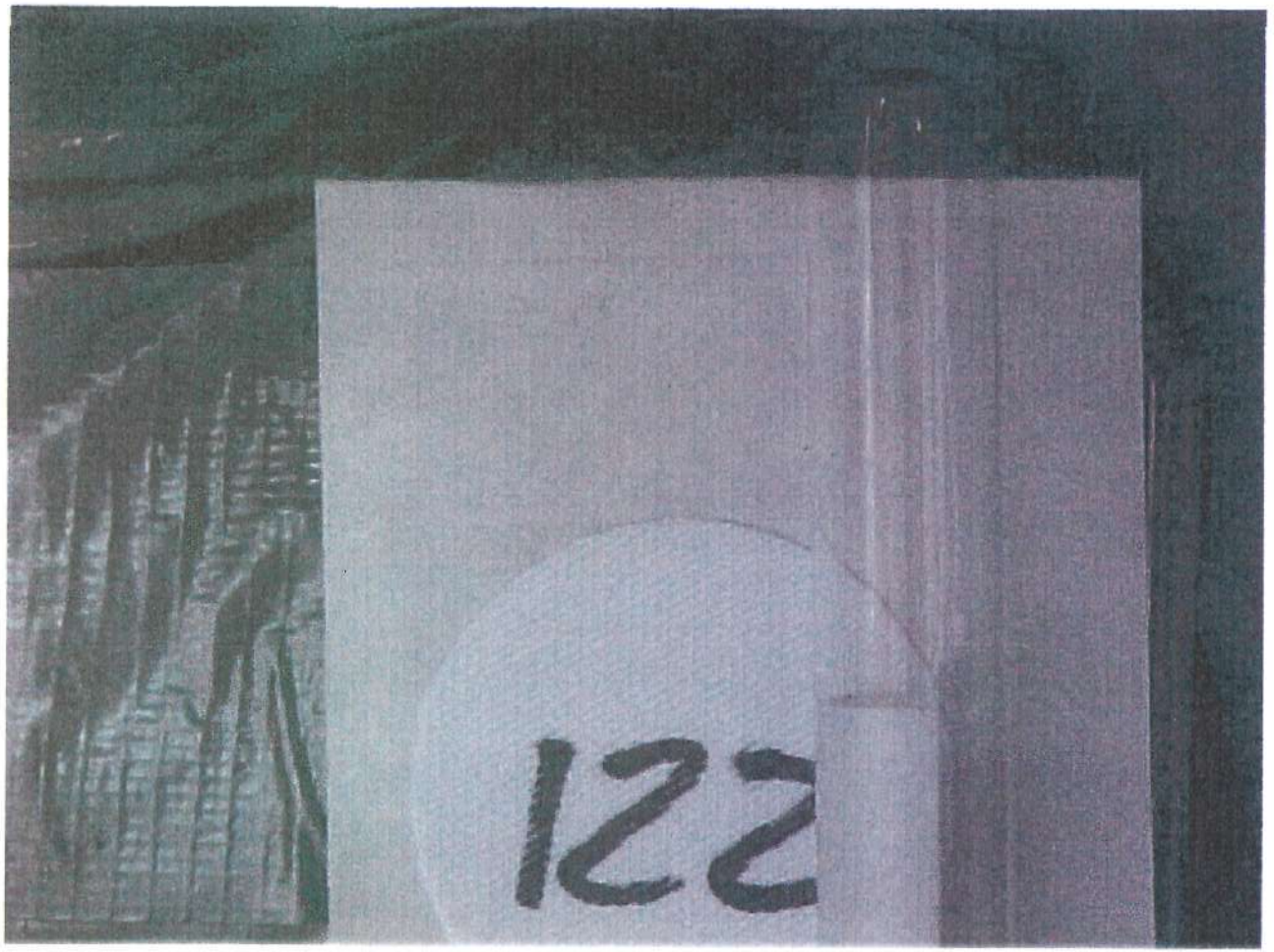

121

042 1SC-121 3-12-2002 6.10.06 PM

1SC-121

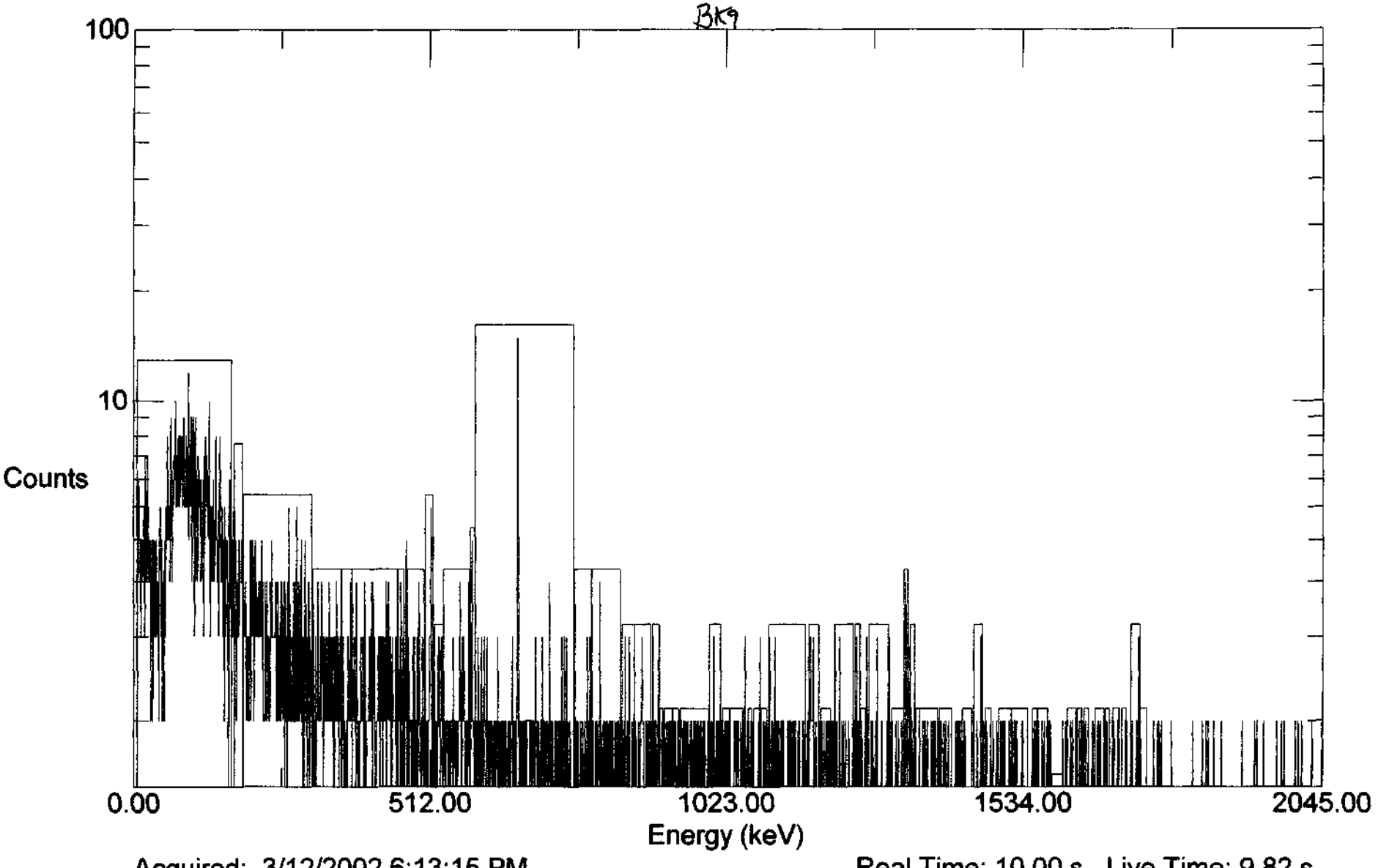


Acquired: 3/12/2002 6:10:06 PM Real Time: 10.00 s. Live Time: 9.82 s.
File: C:\User\GNIWEB~1\042 1SC-121 3-12-2002 6.10.06 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


122

043 1SC-122 3-12-2002 6.13.14 PM

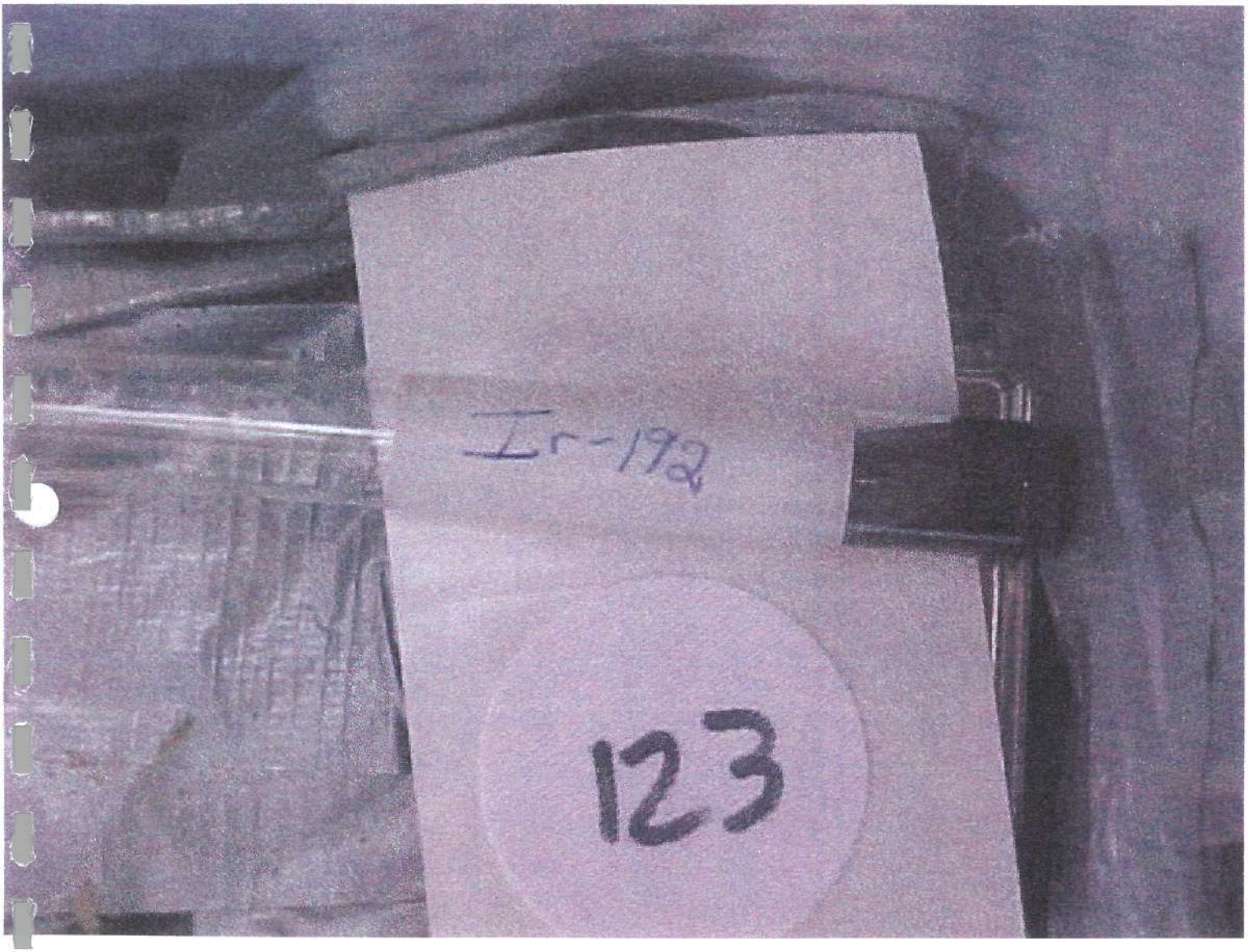
1SC-122



Acquired: 3/12/2002 6:13:15 PM Real Time: 10.00 s. Live Time: 9.82 s.

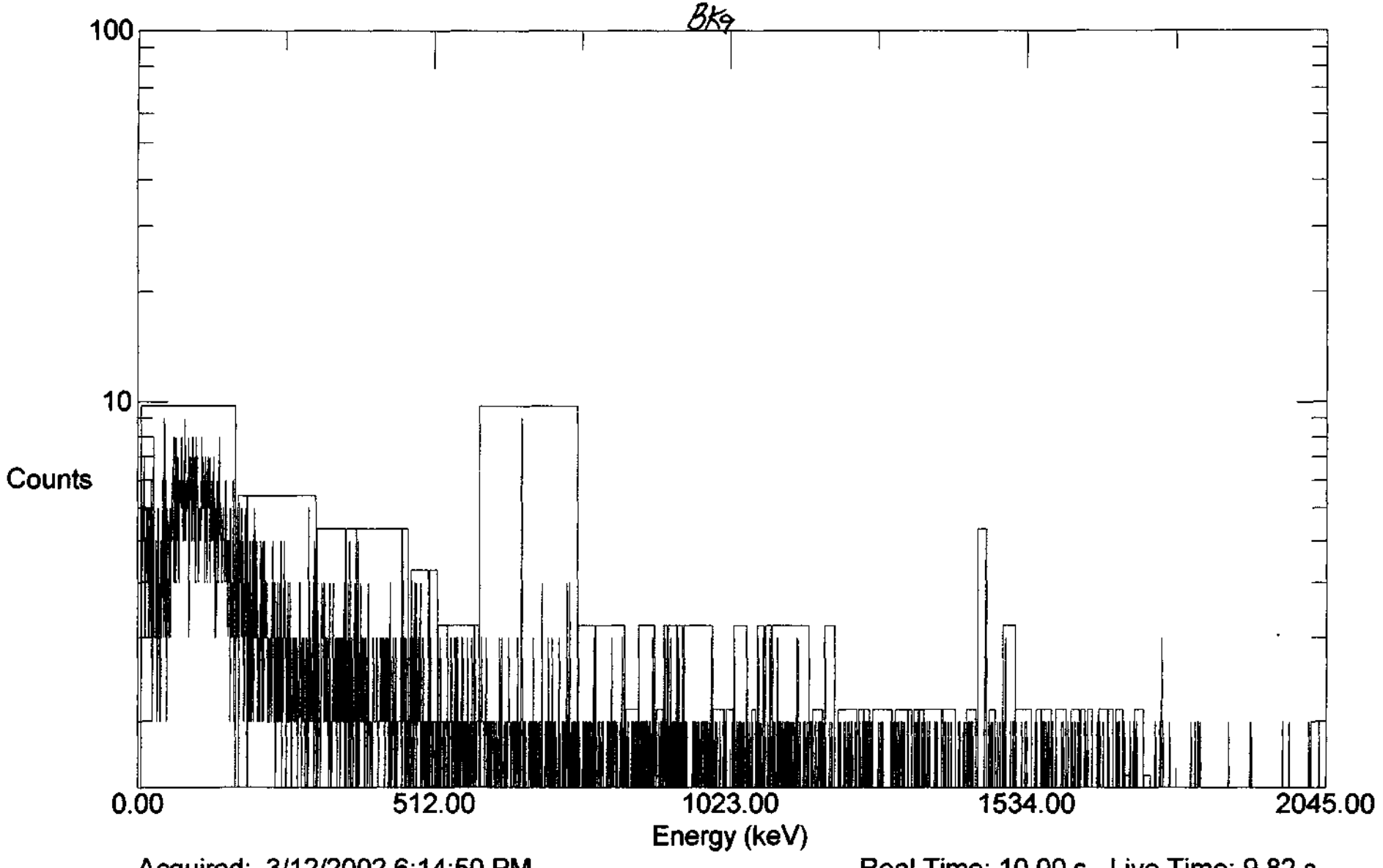
File: C:\User\GNIWEB~1\043 1SC-122 3-12-2002 6.13.14 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


Ir-192
123

044 1SC-123 3 .2-2002 6.14.50 PM

1SC-123



Acquired: 3/12/2002 6:14:50 PM Real Time: 10.00 s. Live Time: 9.82 s.
File: C:\User\GNIWEB~1\044 1SC-123 3-12-2002 6.14.50 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date ~~3-12-02~~ 3-13-02

~~NO PICTURE AT THIS TIME~~

BKG	mR/hr
6"	<.2
12"	<.2
36"	.3

Container #	124	125	126	127	128
External on pig in mR/hr	<.2	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr CLOSED	<.2	<.2 ~~0.3~~	<.2	<.2	<.2
Beta on open pig mR/hr O/W	<.2	0.3	<.2	<.2	<.2
Picture					
DIGEST					

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	40	40	120	20
Weight in grams	18	80	78	180	40

CPM Alpha DIRECT	BKG.	BKG	BKG.	BKG	BKG
Direct Beta/Gamma	BKG.	2300	BKG	BKG.	608

Info on source:	Sc 46	Sc-46	Au 199 WASH 1 WASH 2	WASH 1 WASH 2 3 3	5 mci IR 192 10.5.89

Information on pig:	NO Pig	NO Pig	NO Pig	(6) NO Pig	NO Pig
Smear DPM per 100 cm^2 Alpha	0	2	0	3	3
Smear DPM per 100 cm^2 Beta	12	116	28	25	27
	test tube cloudy Liq.	BOTTLE CLEAR LIQUID	(2) BOTTLES CLEAR Liquid	(6) CLEAR Liquid DIFF. AMOUNTS IN EACH BOTTLE	SAND IN BOTTLE

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **3/14/02** **Time** 0900

Location Source Smears #125-131

Survey #

MDA Alpha DPM	MDA Beta DPM
10.4	65.2

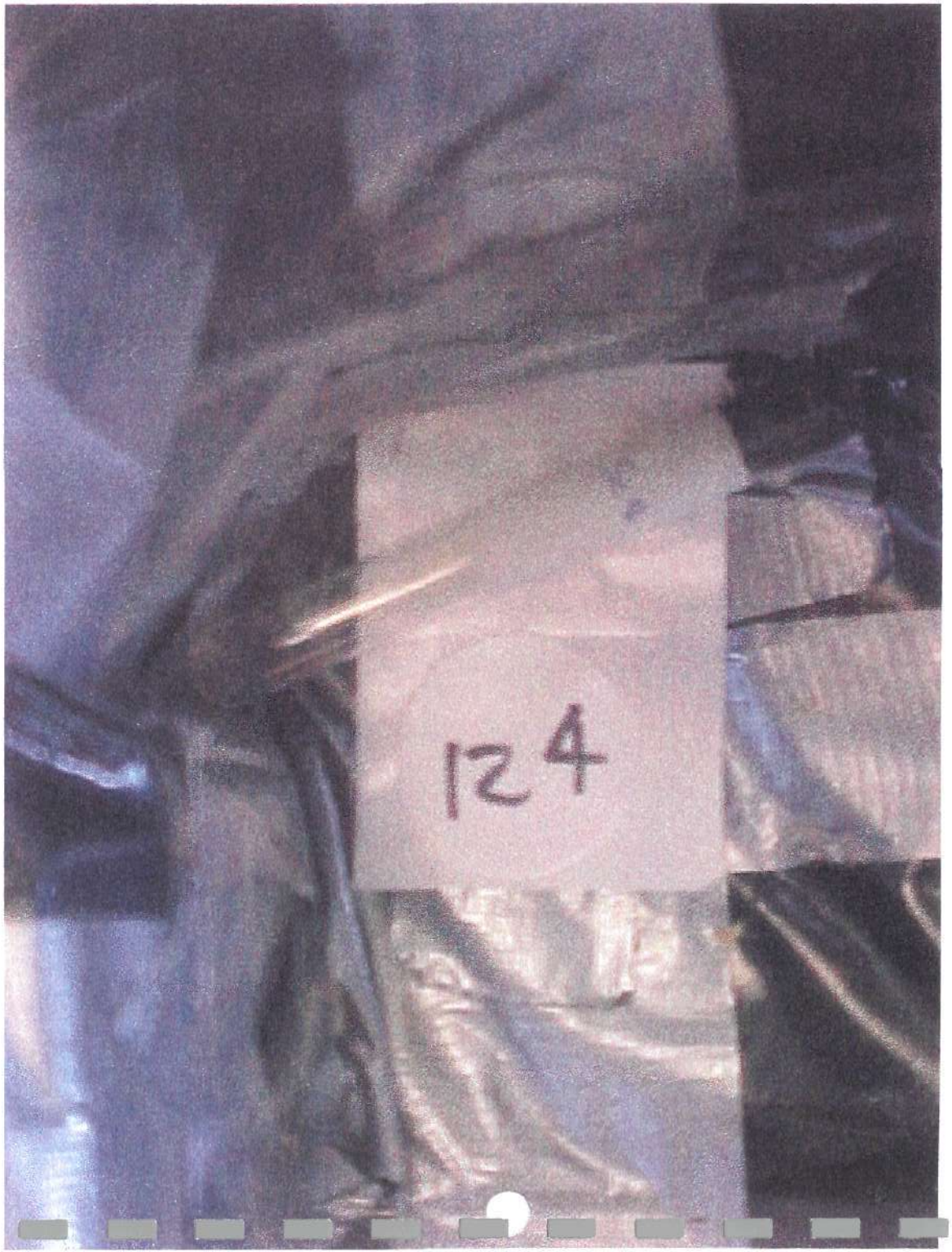
BKG Alpha CPM	BKG Beta CPM
0.4	69.5

Alpha Eff 0.28

	2 Min CPM	DPM
125	2	2.1
126	1	0.4
127	3	3.9
128	3	3.9
129	15	25.4
130	6	1.0
131	34	59.3
132		-1.4
133		-1.4
134		-1.4
135		-1.4
136		-1.4
137		-1.4
138		-1.4
139		-1.4
140		-1.4
141		-1.4
142		-1.4
143		-1.4
144		-1.4
145		-1.4
146		-1.4
147		-1.4
148		-1.4
149		-1.4

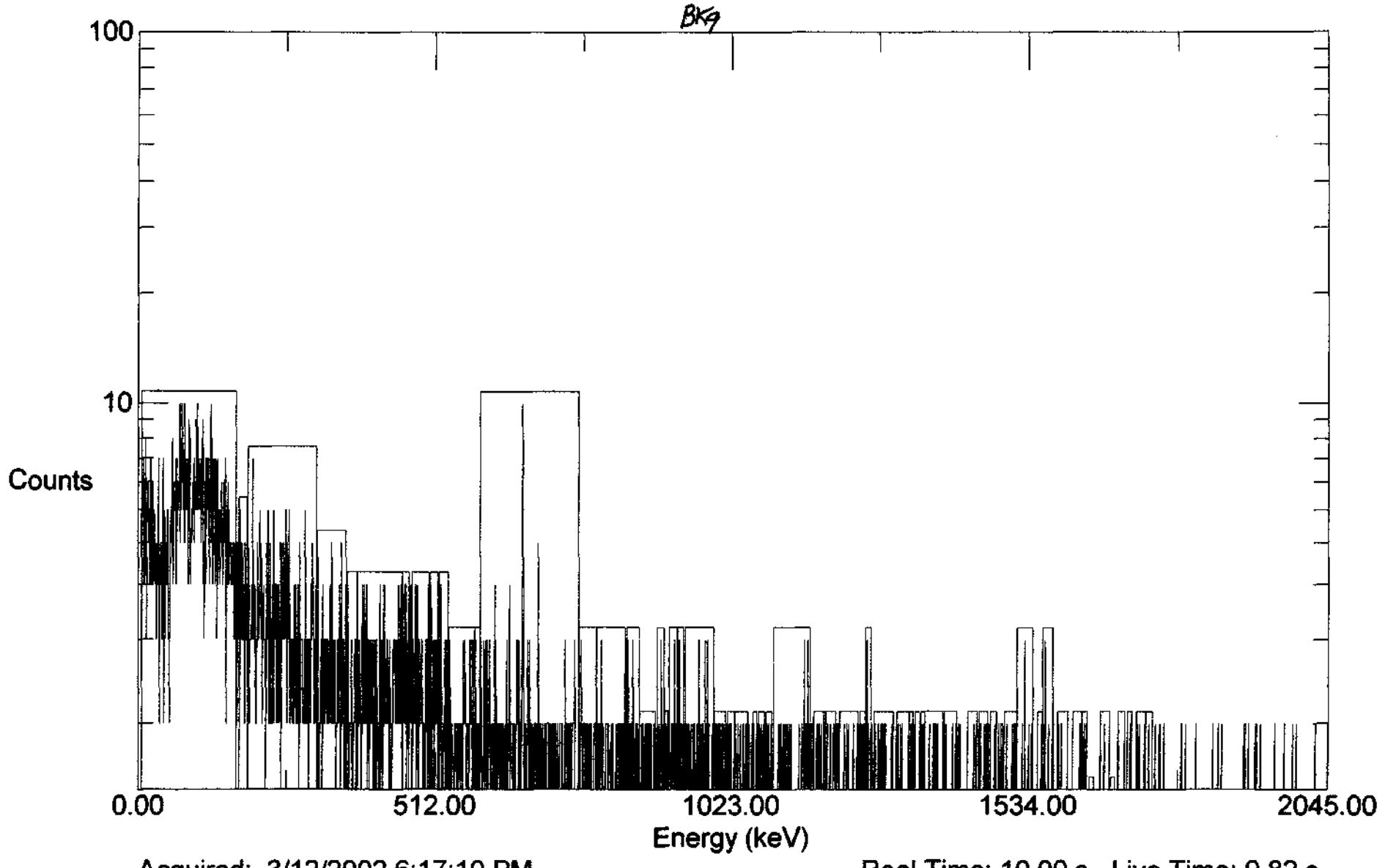
Beta/Gamma Eff 0.33

	2 Min CPM	DPM
125	216	116.7
126	158	28.8
127	156	25.8
128	157	27.3
129	345	312.1
130	172	50.0
131	1516	2,086.4
132		-210.6
133		-210.6
134		-210.6
135		-210.6
136		-210.6
137		-210.6
138		-210.6
139		-210.6
140		-210.6
141		-210.6
142		-210.6
143		-210.6
144		-210.6
145		-210.6
146		-210.6
147		-210.6
148		-210.6
149		-210.6

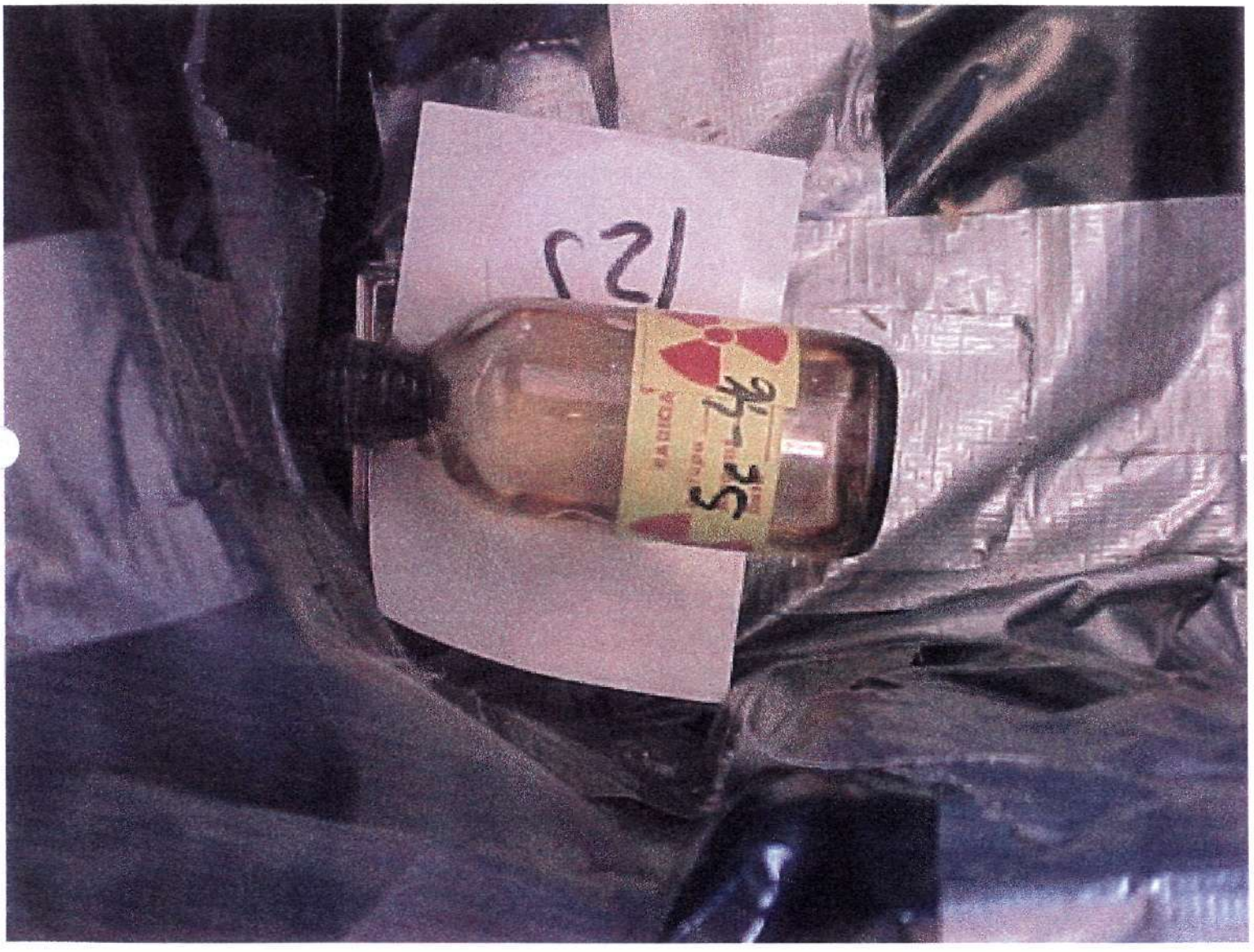

124

045 1SC-124 3- .2-2002 6.17.10 PM

1SC-124

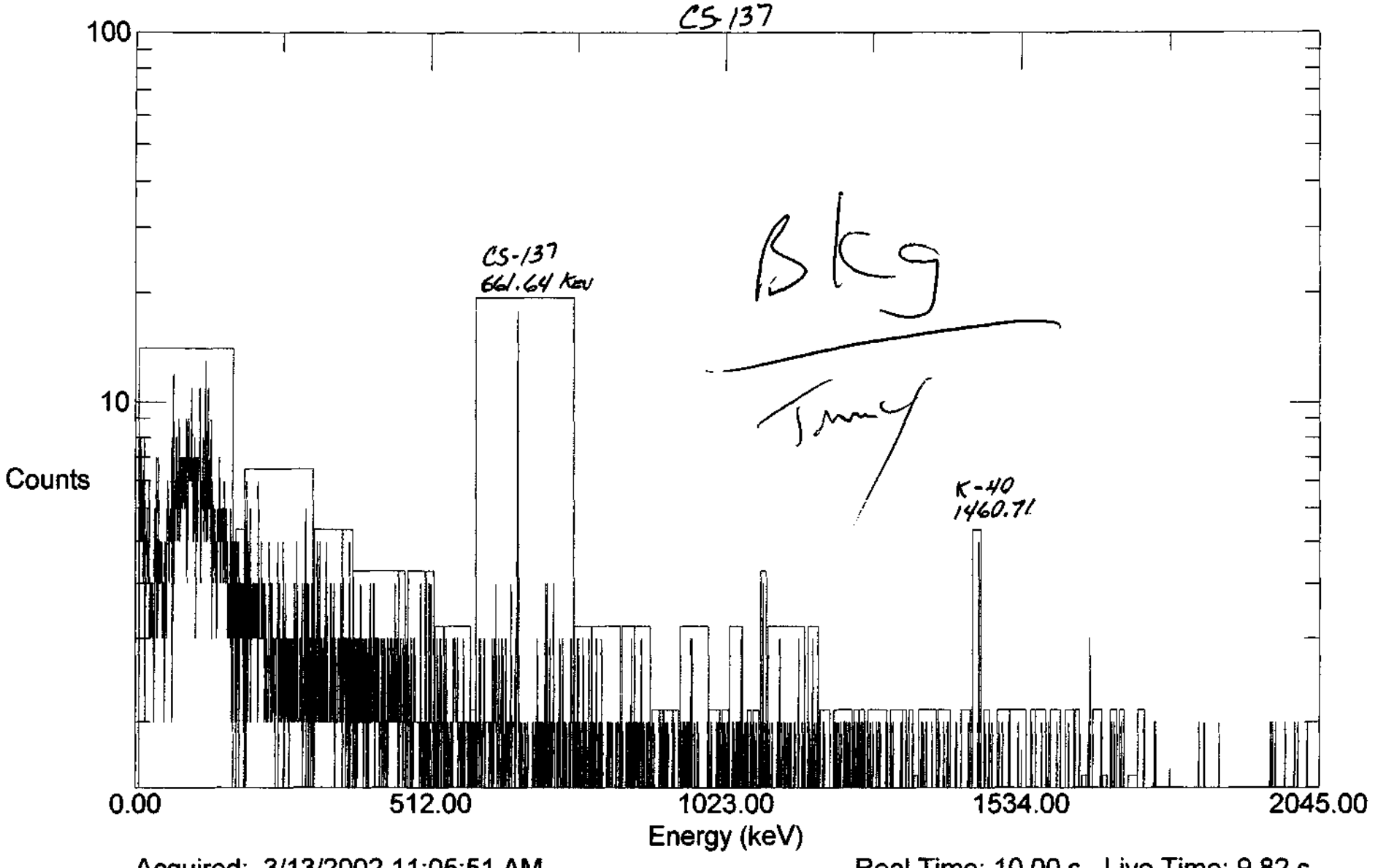


Acquired: 3/12/2002 6:17:10 PM Real Time: 10.00 s. Live Time: 9.82 s.
File: C:\User\GNIWEB~1\045 1SC-124 3-12-2002 6.17.10 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


RADIOA

003 1SC-125 3-13-2002 11.05.51 AM

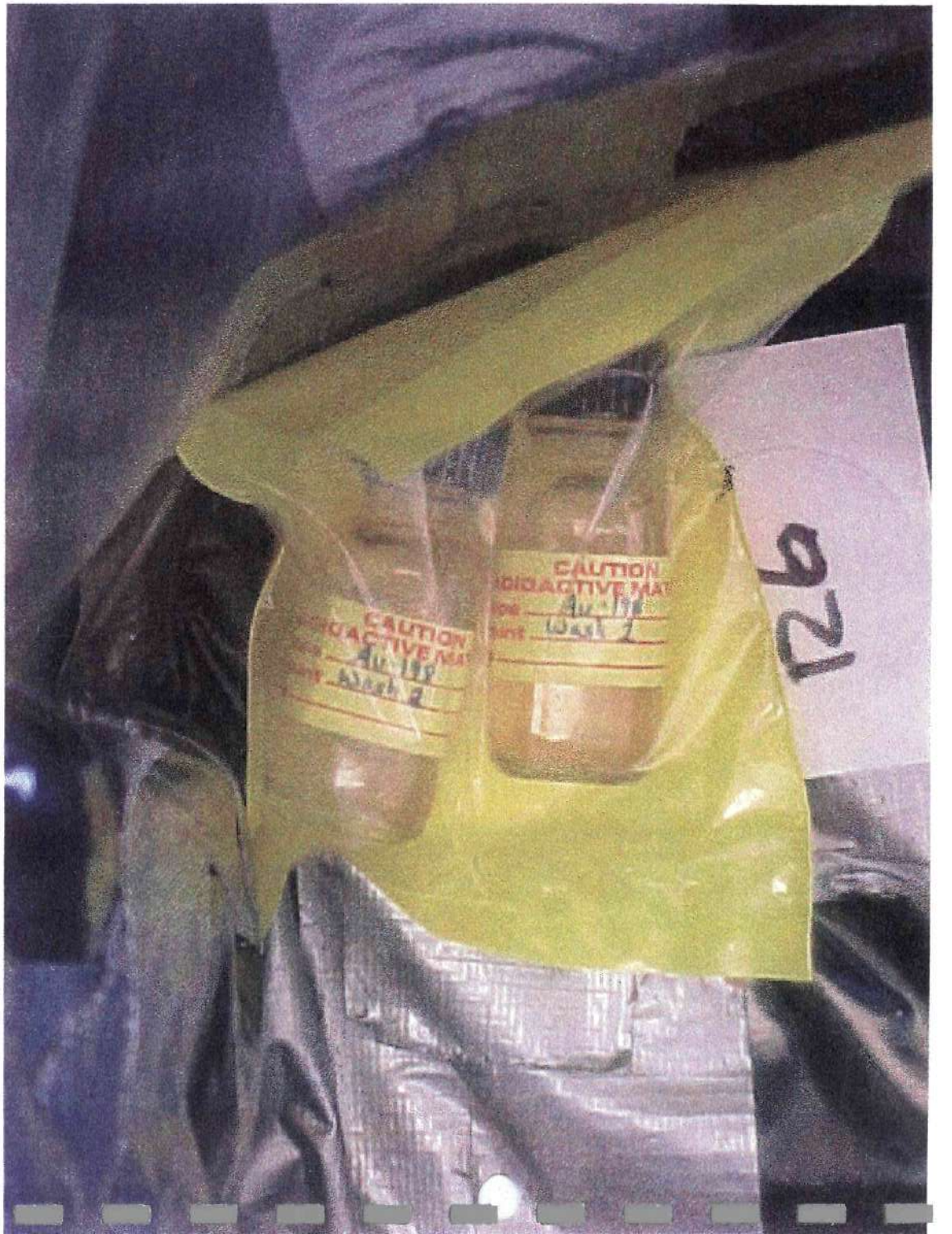
1SC-125



Acquired: 3/13/2002 11:05:51 AM Real Time: 10.00 s. Live Time: 9.82 s.

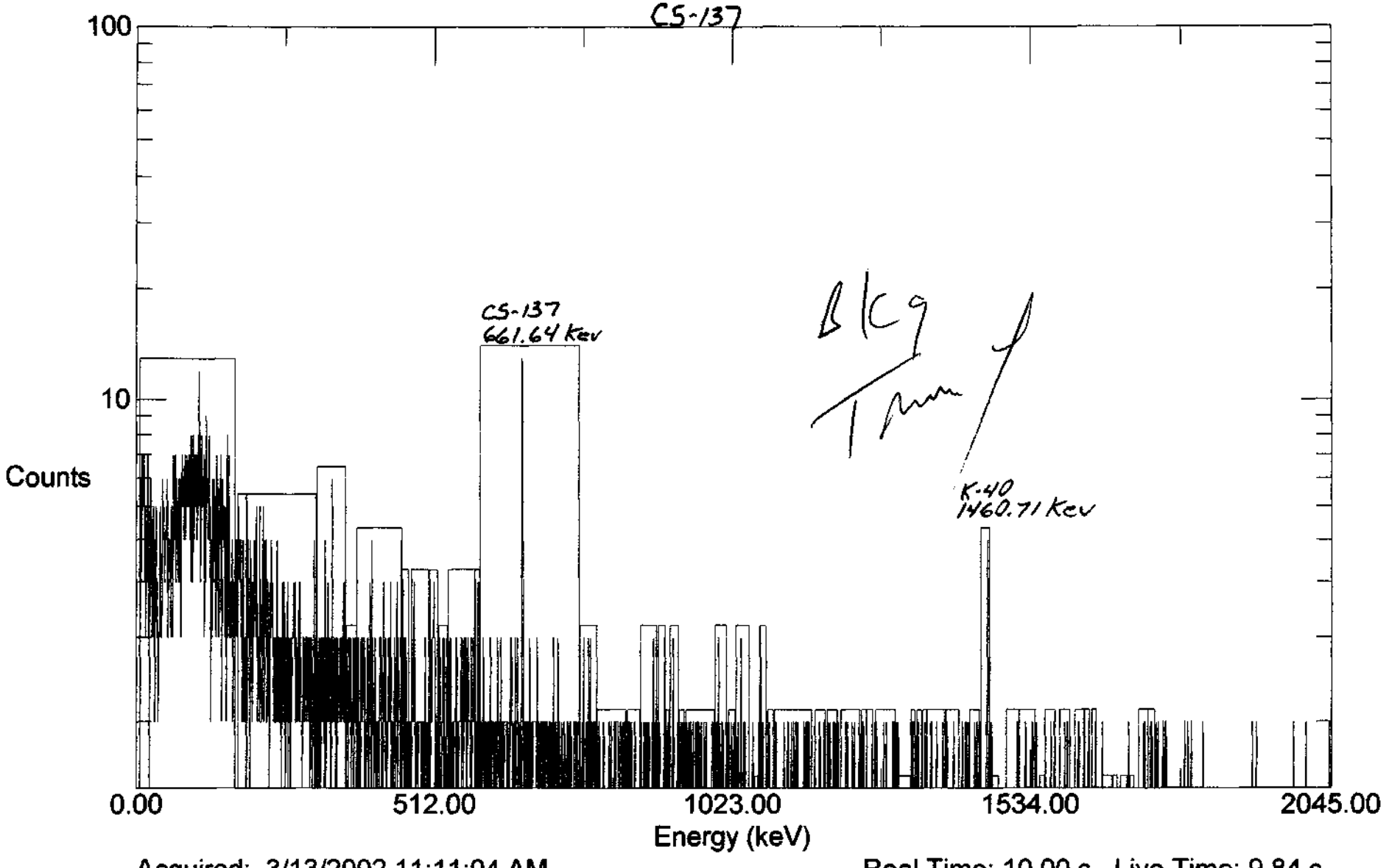
File: C:\User\GNIWEB~1\003 1SC-125 3-13-2002 11.05.51 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


CAUTION
CAUTION
126

004 1SC-126 3 ,3-2002 11.11.04 AM

1SC-126



Acquired: 3/13/2002 11:11:04 AM Real Time: 10.00 s. Live Time: 9.84 s.

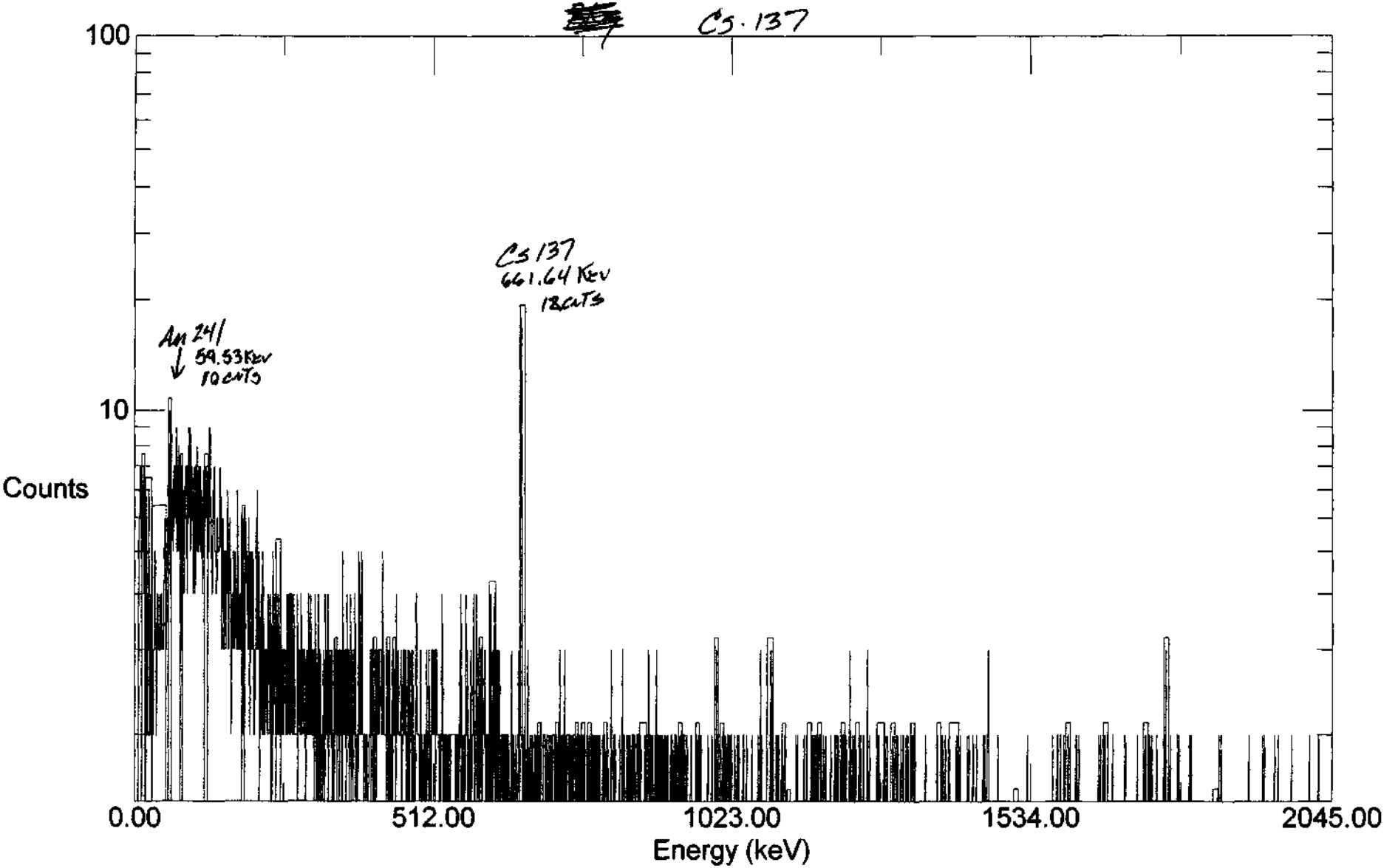
File: C:\User\GNIWEB~1\004 1SC-126 3-13-2002 11.11.04 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

127
Wash
#1
Wash
#2
Wash
#2
Wash
#1

005 1SC-127 3-13-2002 11.15.09 AM

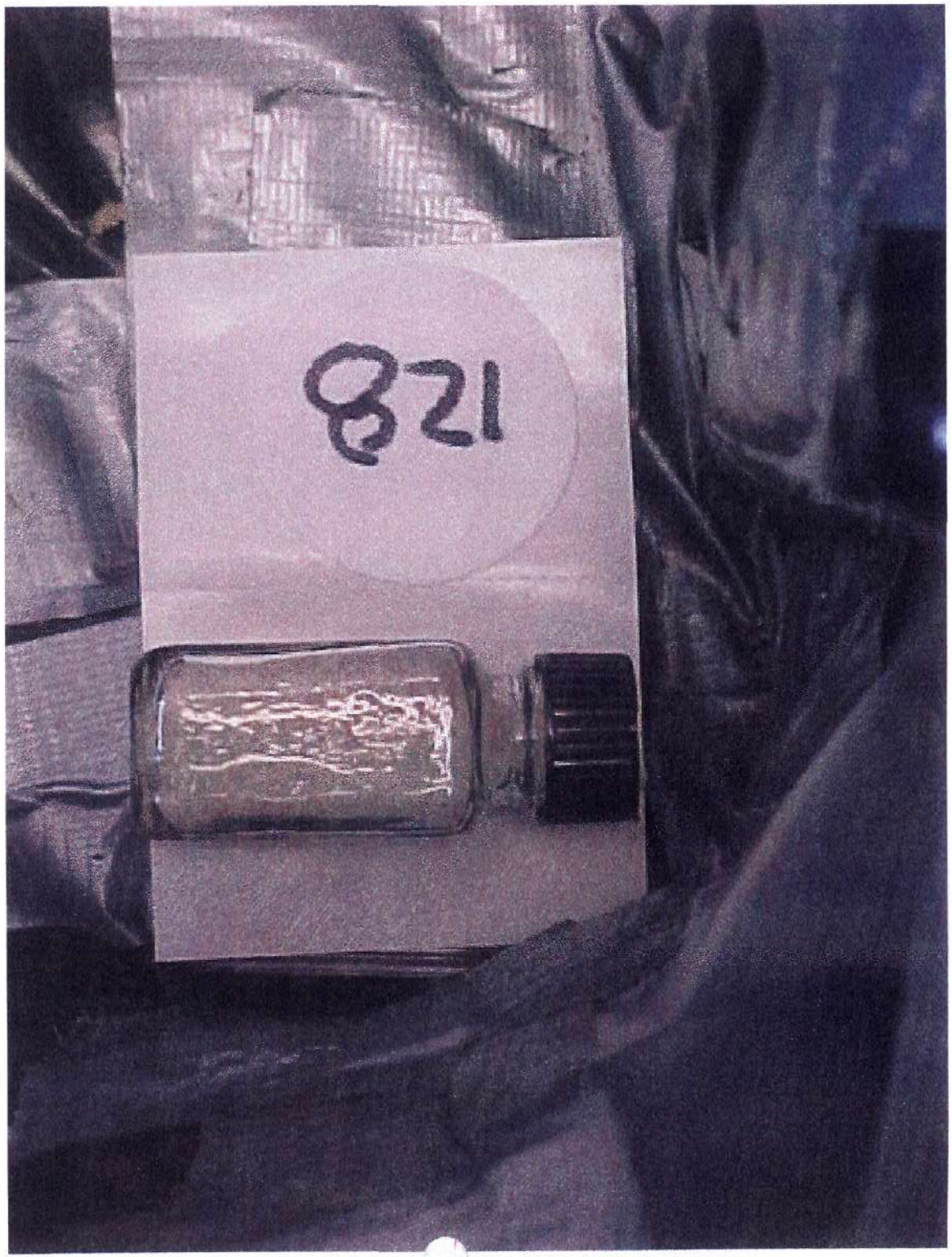
1SC-127



Acquired: 3/13/2002 11:15:09 AM Real Time: 10.00 s. Live Time: 9.80 s.

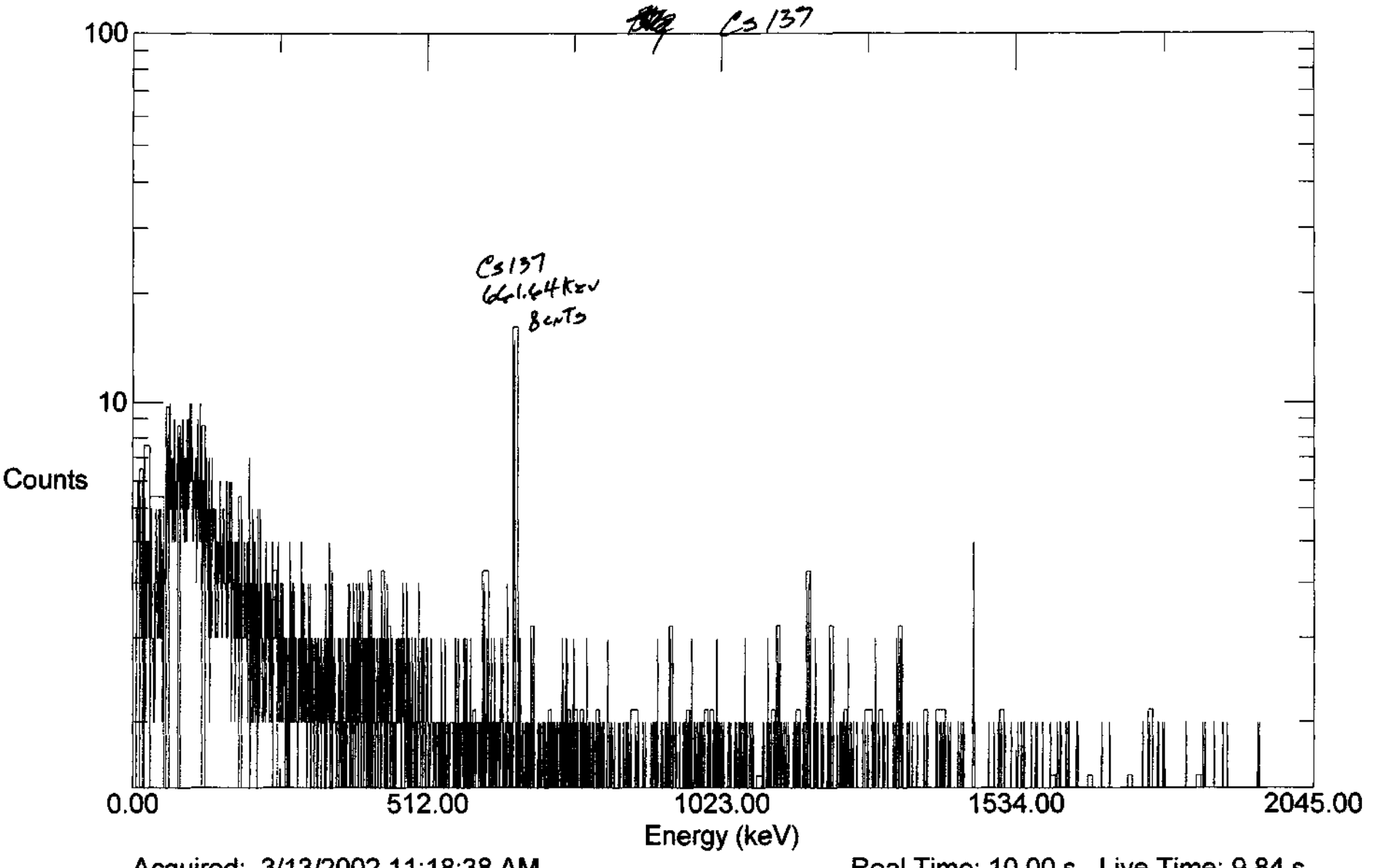
File: C:\User\GNIWEB~1\GNISOU~1\005 1SC-127 3-13-2002 11.15.09 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


821

006 1SC-128 3-13-2002 11.18.38 AM

1SC-128



Acquired: 3/13/2002 11:18:38 AM Real Time: 10.00 s. Live Time: 9.84 s.

File: C:\User\GNIWEB~1\GNISOU~1\006 1SC-128 3-13-2002 11.18.38 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-13-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	0.3

Container #	~~TRP~~ 129	130	131	132	133
External on pig in mR/hr	<.2	<.2	<.2	0.3	<1
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<.2	0.3	<1
Beta on open pig mR/hr O/W	<.2	<.2	1 mR	0.7	90

Picture	✓	✓	✓	✓	✓
OIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	20	20	40	500
Weight in grams	40	40	25	78	600

CPM Alpha	BKG	BKG	BKG	57	340000
Direct Beta/Gamma	800	750	18000	4500	654000

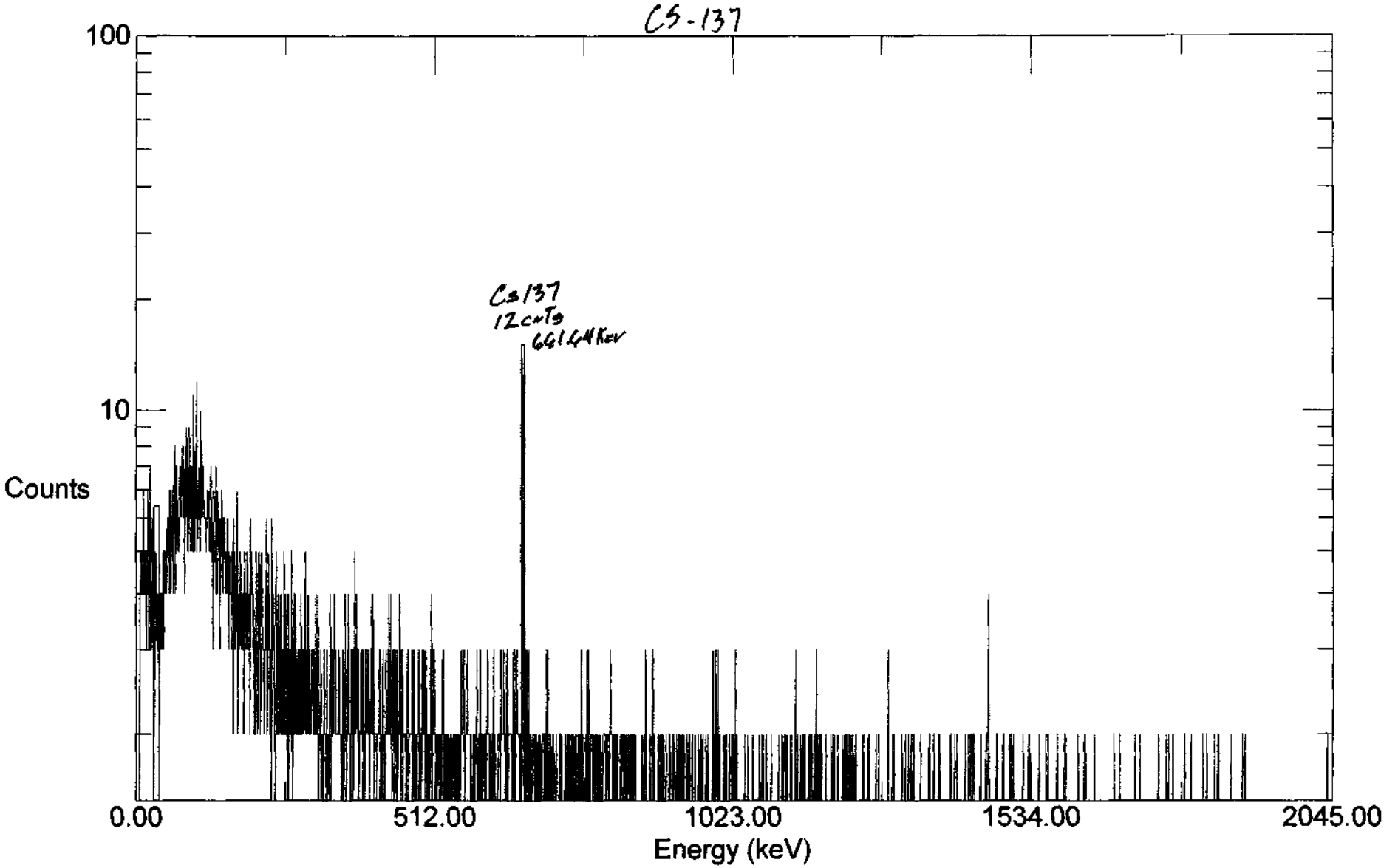
Info on source:	IR 192 5mci 10·5·89	IR192 5mci 10.5.89	CAUTION RAD. MAT DO NOT HANDLE 6D153	NAI Solution	~~BET~~ NO LABEL
			6D-1A-643A) " " 670A		

Information on pig:	NO Pig	NO Pig	NO Pig	NO Pig	NO Pig
Smear DPM per 100 cm^2 Alpha	25	1	59	<500	2550000 ~~1990000~~ ← million
Smear DPM per 100 cm^2 Beta	312	50	2086	20K	1990000
	SAND IN BOTTLE	SAND IN BOTTLE	5 ~~PIECE~~ SECTIONS IN (1) BOTTLE	1 BOTTLE ORANGEish COLOR	BEAKER OF SOLIFIED Liq.

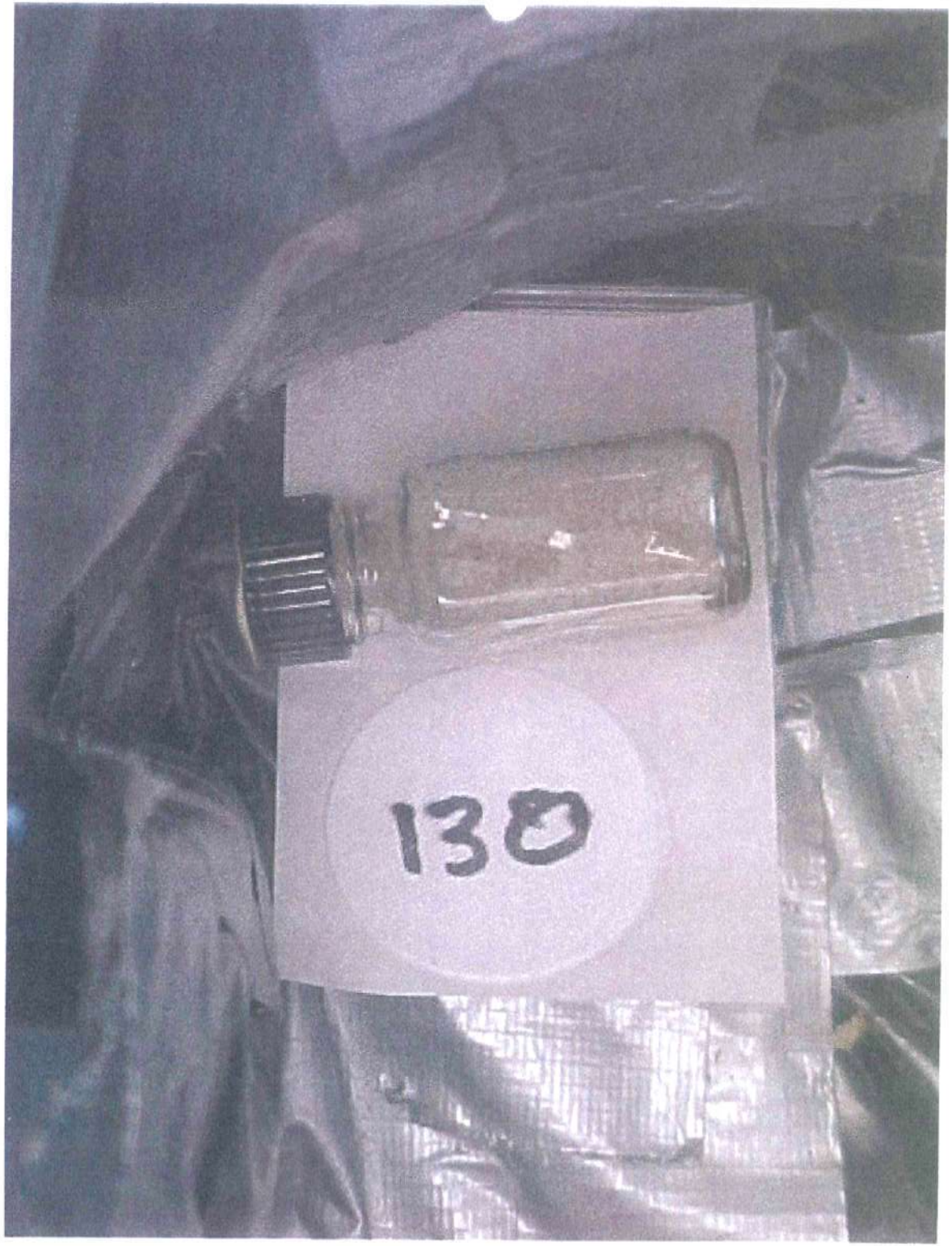
521

007 1SC-129 3-13-2002 11.21.40 AM

1SC-129

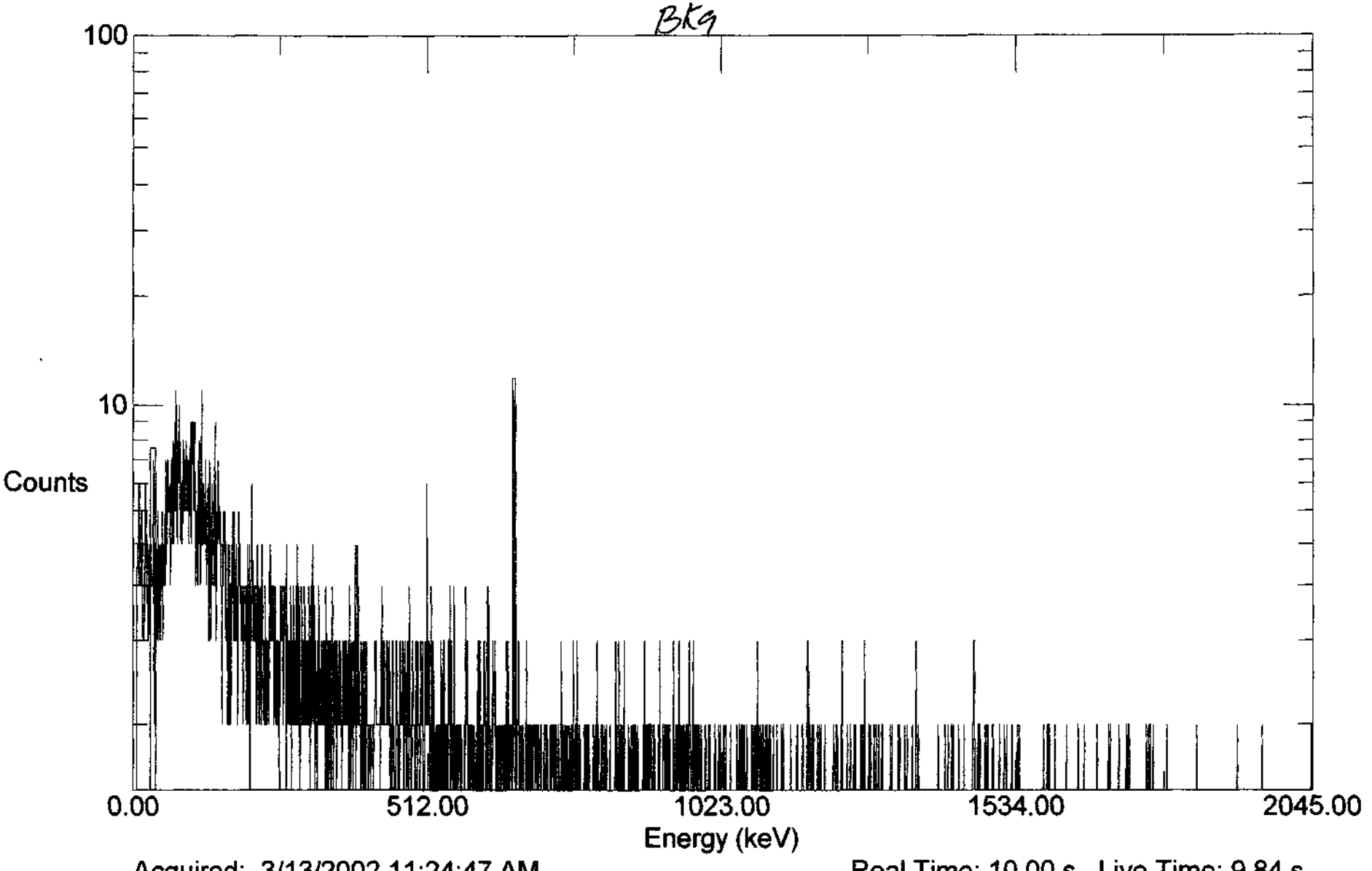


Acquired: 3/13/2002 11:21:40 AM Real Time: 10.00 s. Live Time: 9.84 s.
File: C:\User\GNIWEB~1\GNISOU~1\007 1SC-129 3-13-2002 11.21.40 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


130

008 1SC-130 3-13-2002 11.24.47 AM

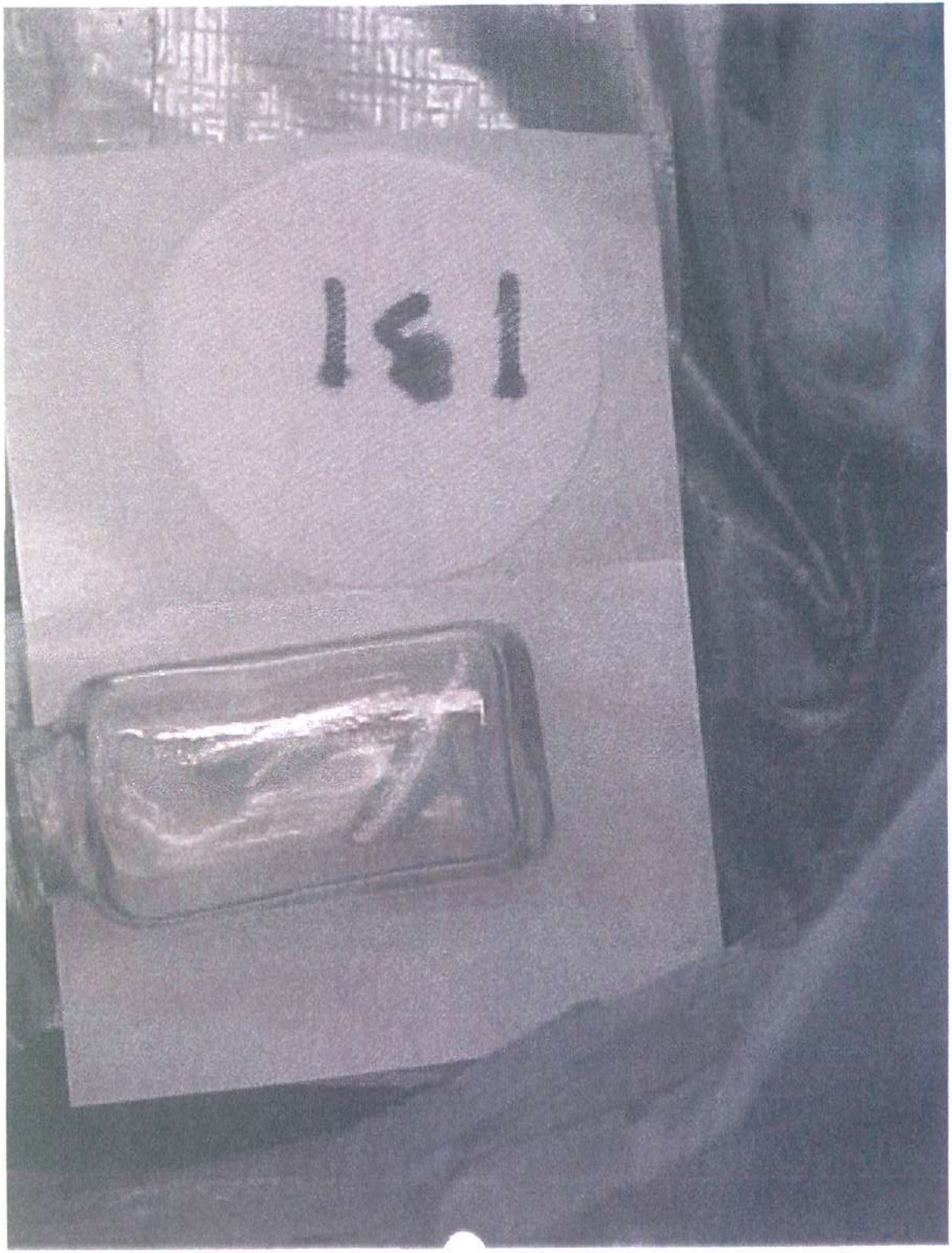
1SC-130



Acquired: 3/13/2002 11:24:47 AM Real Time: 10.00 s. Live Time: 9.84 s.

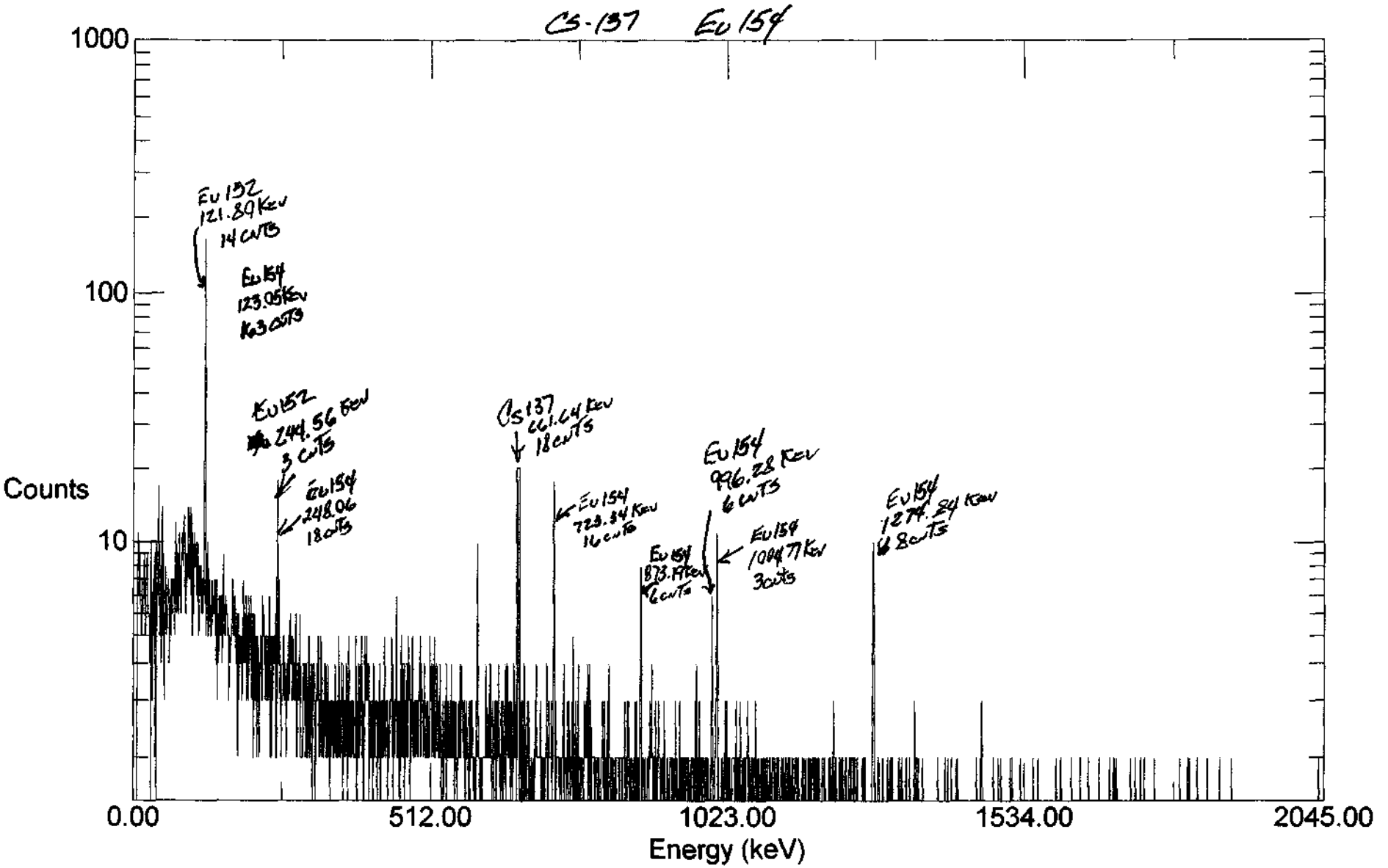
File: C:\User\GNIWEB~1\GNISOU~1\008 1SC-130 3-13-2002 11.24.47 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


181

009 1SC-131 3-13-2002 11.33.43 AM

1SC-131



Acquired: 3/13/2002 11:33:43 AM Real Time: 10.00 s. Live Time: 9.72 s.

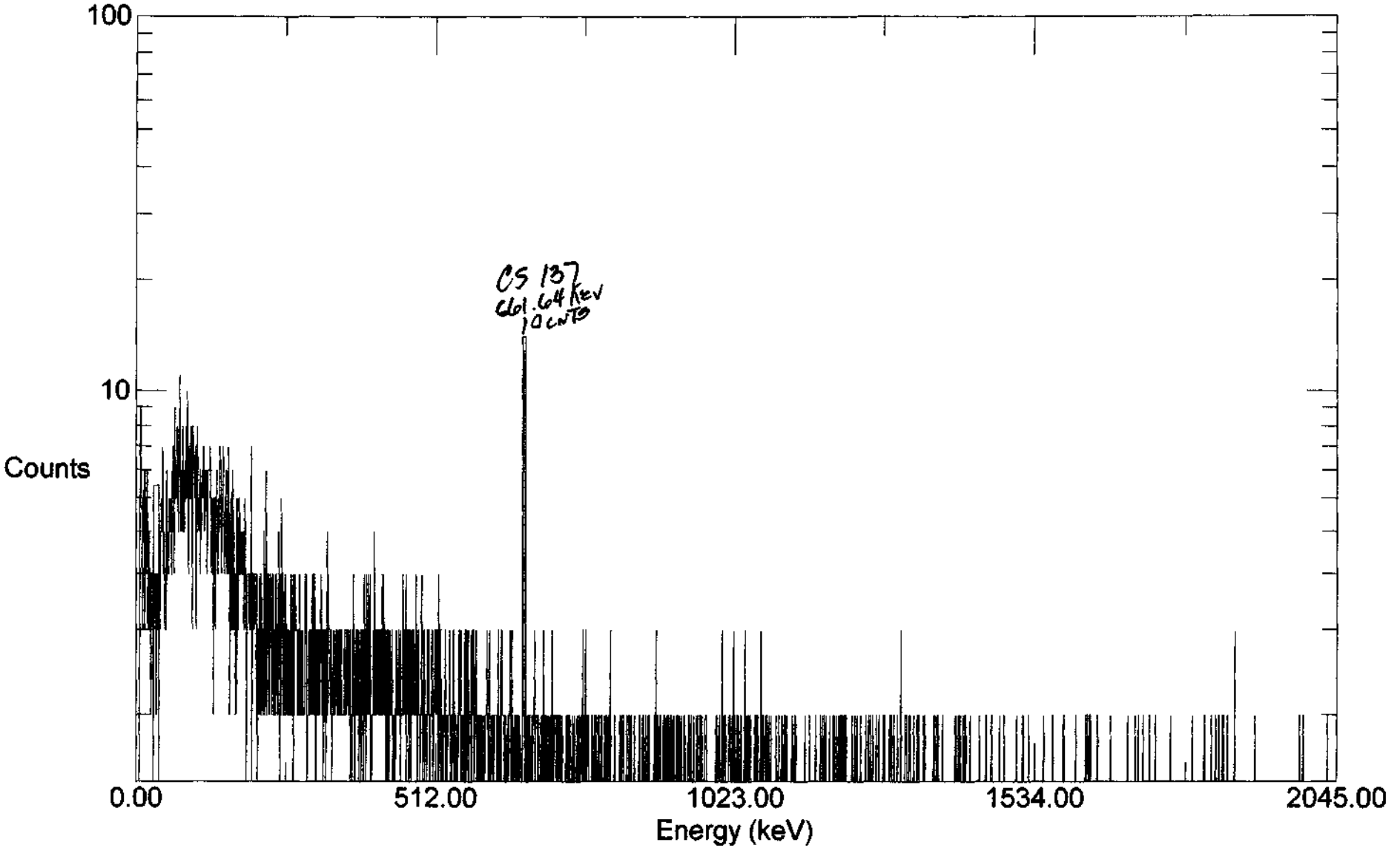
File: C:\User\GNIWEB~1\GNISOU~1\009 1SC-131 3-13-2002 11.33.43 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

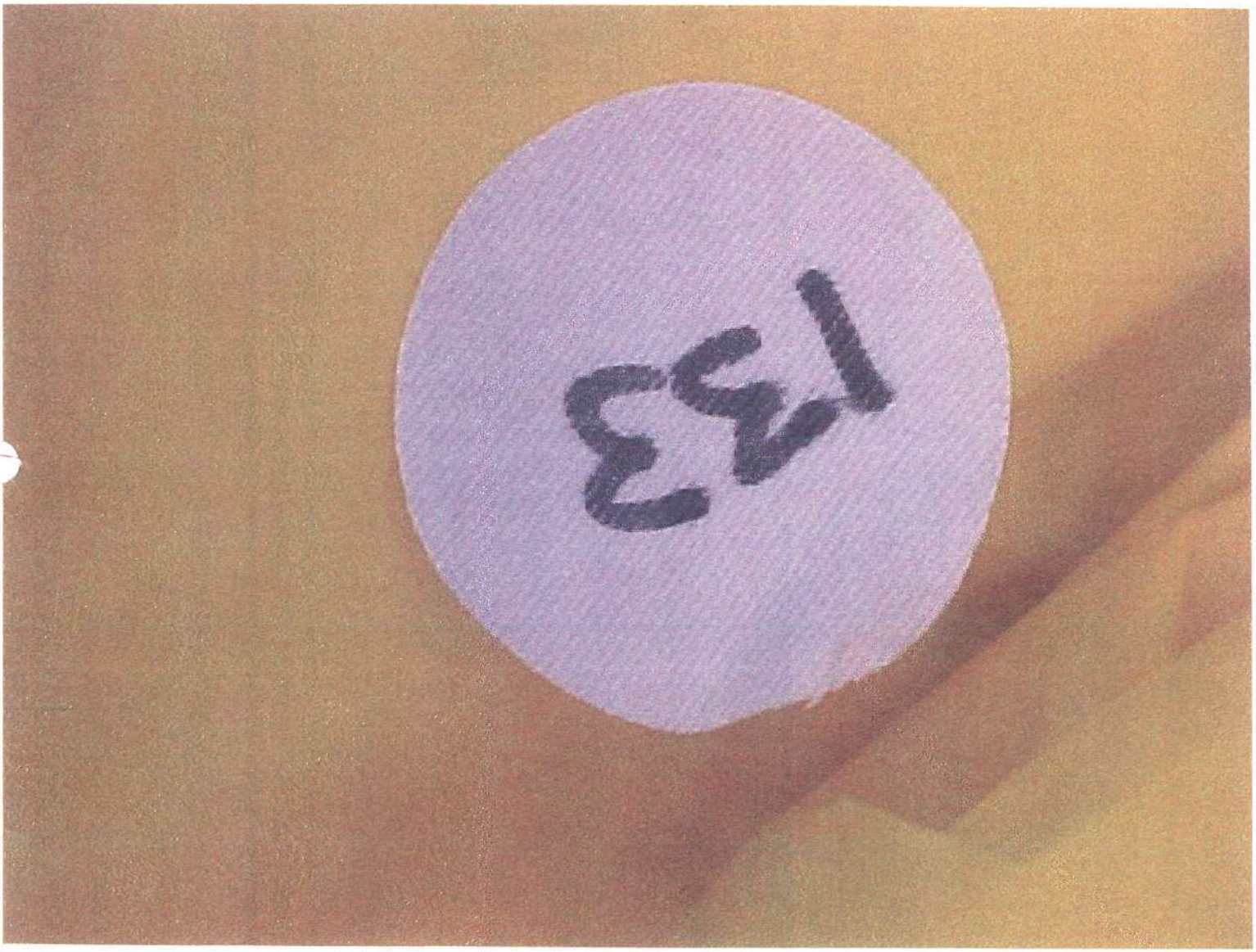
132

010 1SC-132 3-13-2002 11.39.28 AM

1SC-132

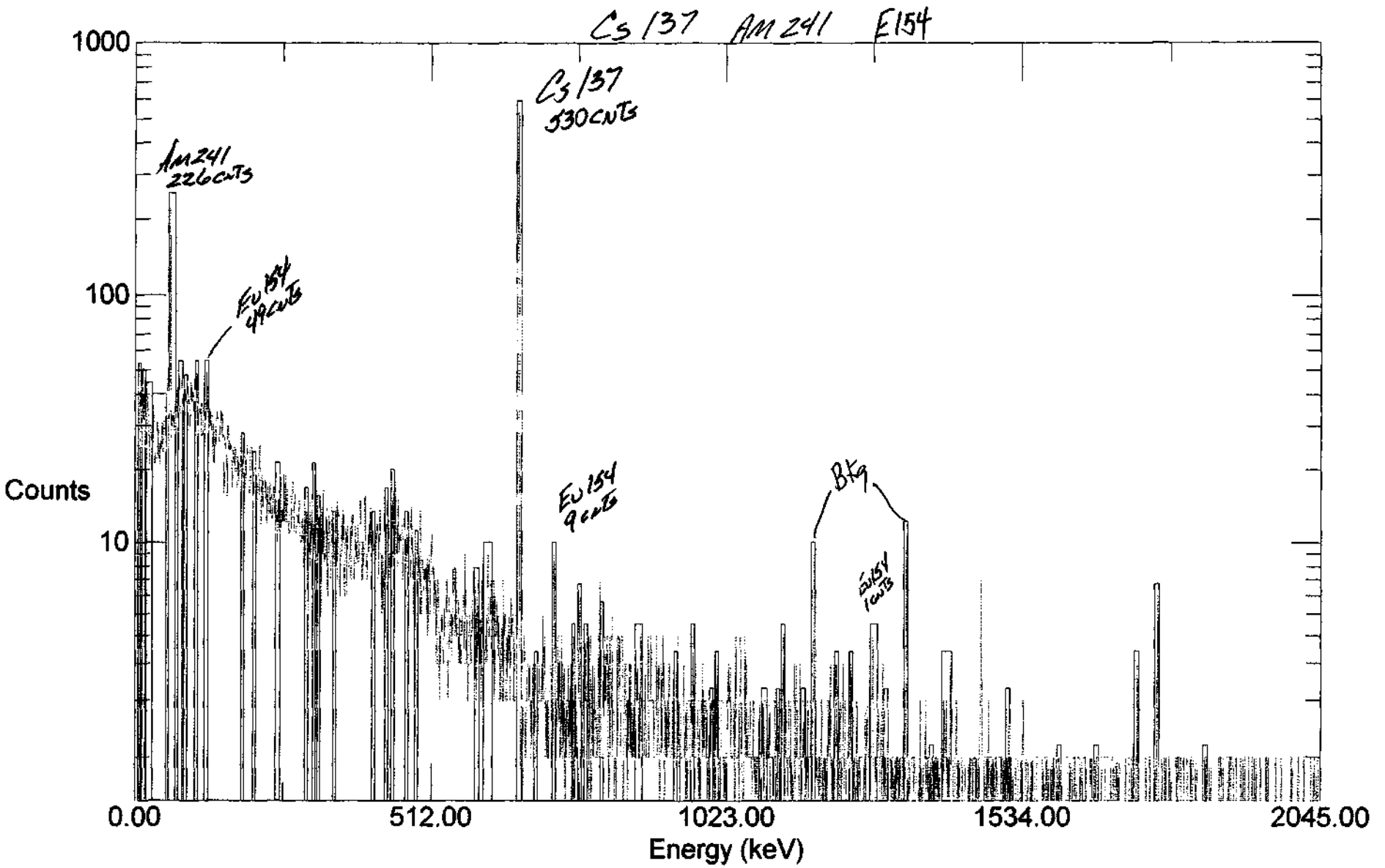


Acquired: 3/13/2002 11:39:28 AM Real Time: 10.00 s. Live Time: 9.84 s.
File: C:\User\GNIWEB~1\GNISOU~1\010 1SC-132 3-13-2002 11.39.28 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


153

0351SC-133.2 ,-2-2002 3.08.31 PM

SC-133-2



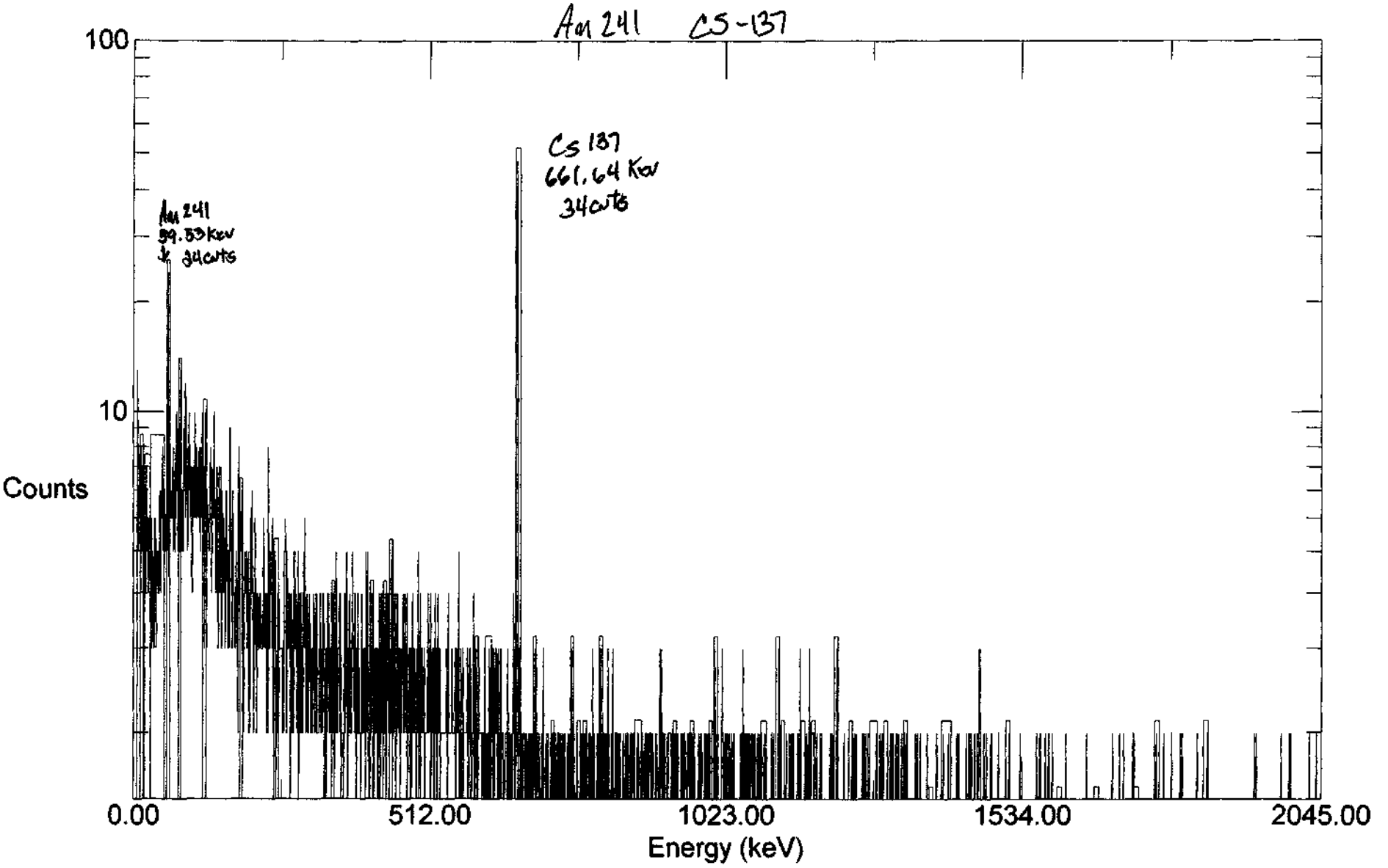
Acquired: 4/2/2002 3:08:30 PM Real Time: 60.00 s. Live Time: 58.38 s.

File: C:\User\GNIWEB~1\0351SC-133.2 4-2-2002 3.08.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

011 1SC-133 3-13-2002 11.46.22 AM

1SC-133



Acquired: 3/13/2002 11:46:23 AM Real Time: 10.00 s. Live Time: 9.80 s.

File: C:\User\GNIWEB~1\GNISOU~1\011 1SC-133 3-13-2002 11.46.22 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-13-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	0.3

Container #	134	135			
External on pig in mR/hr					
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	60 mR				
Beta on open pig mR/hr O/W	70				

Picture	✓				
	✓				

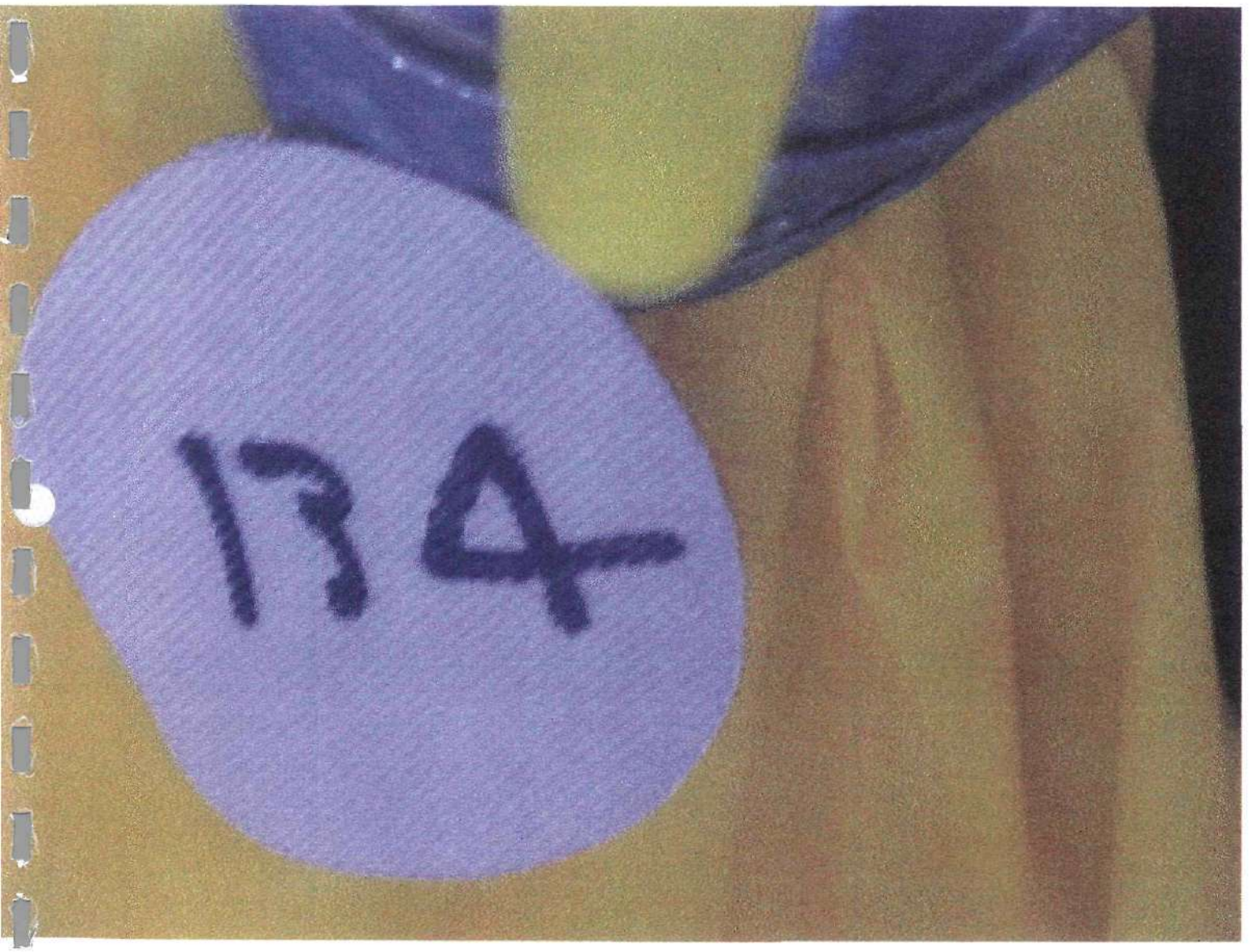
Table Readings

Source mR/hr @ 6 inchs	15				
Source mR/hr @ 12 inches	5 ~~20~~ ~~18~~				
Source mR/hr @ 36 inches	1.2				
Size of source in cc's	500				
Weight in grams	600				

CPM Alpha					
Direct Beta/Gamma					

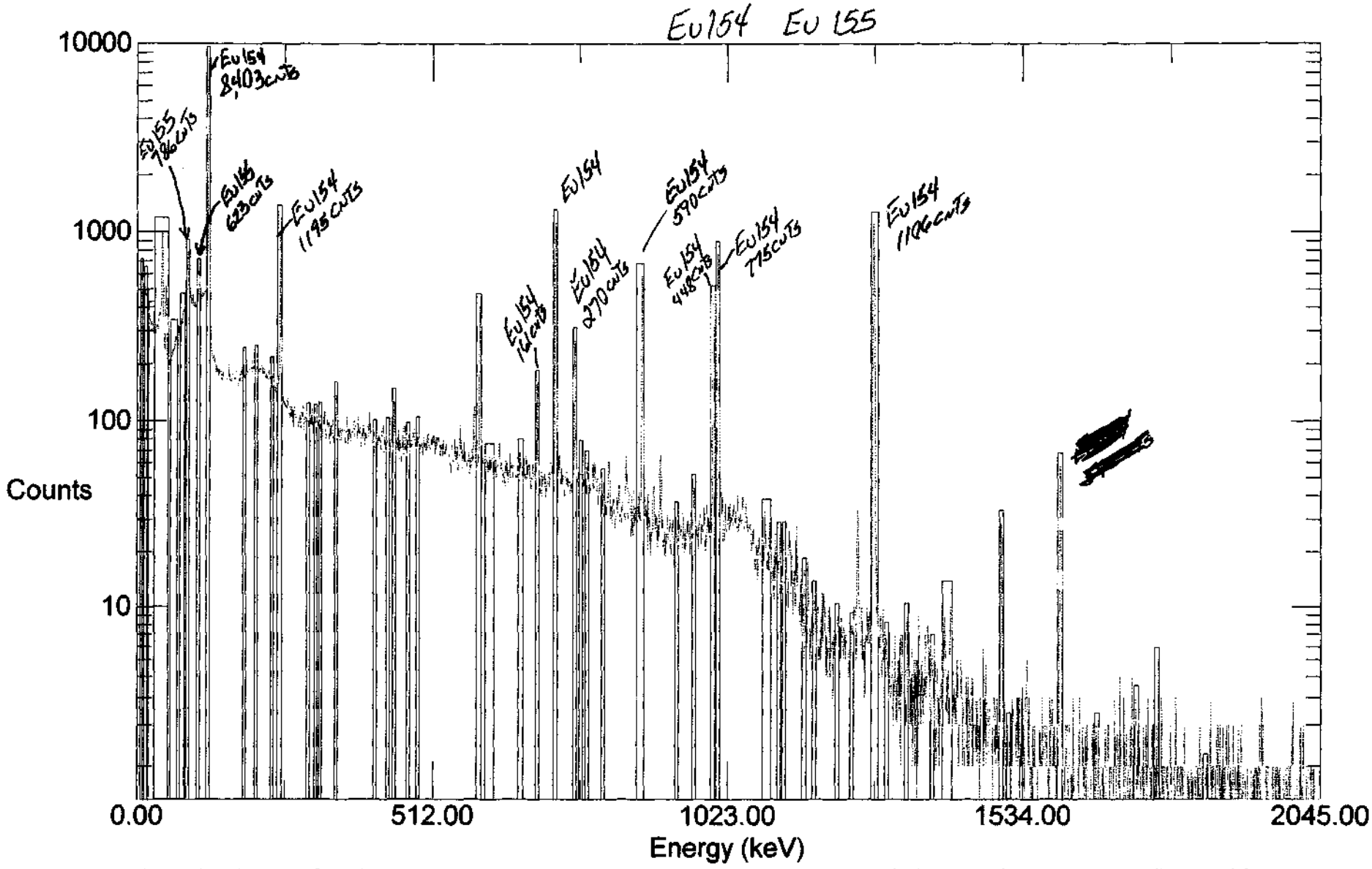
Info on source:	NO LABEL				

Information on pig:	NO PIG				
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta	70w/3cw				
	GLASS BEAKER OF SOLIFIED Liq.				


134

034 1SC-134-2 4-1-2002 5.25.36 PM

1SC-1342



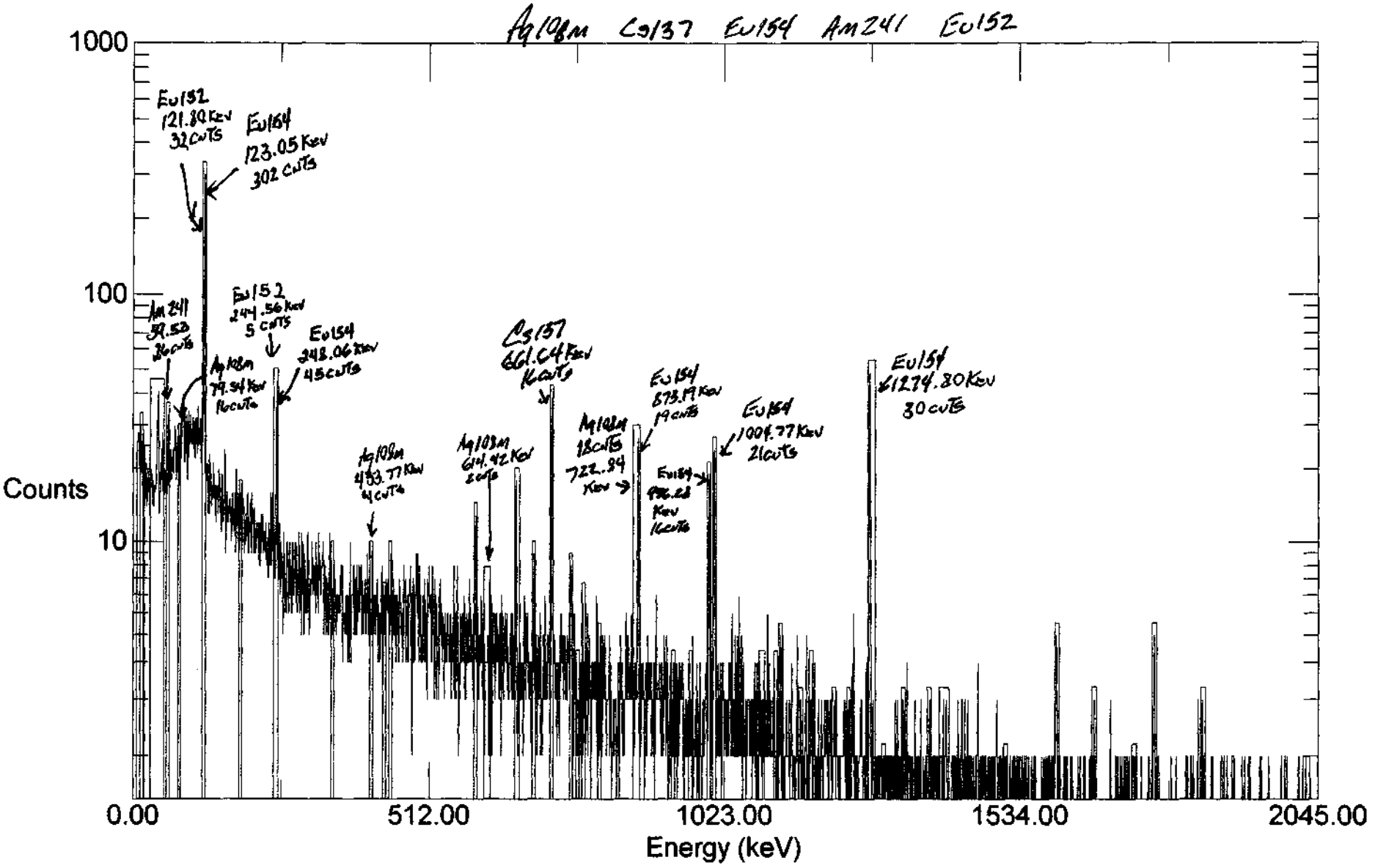
Acquired: 4/1/2002 5:25:36 PM Real Time: 60.00 s. Live Time: 13.06 s.

File: C:\User\GNIWEB~1\034 1SC-134-2 4-1-2002 5.25.36 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

012 1SC-134 3-13-2002 11.51.26 AM

1SC-134



Acquired: 3/13/2002 11:51:26 AM Real Time: 10.00 s. Live Time: 8.98 s.

File: C:\User\GNIWEB~1\GNISOU~1\012 1SC-134 3-13-2002 11.51.26 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3/22/02

BKG	mR/hr
6"	<.1
12"	<.2
36"	<.2

Container #	135	136	137	138	139
External on pig in mR/hr	<.2	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<2	<.2	<.2
Beta on open pig mR/hr O/W	<.2	<.2	<.2	<.2	<.2

Picture	✓	✓	✓	✓	✓
~~OBSERVATI~~	✓	✓	✓	✓	✓

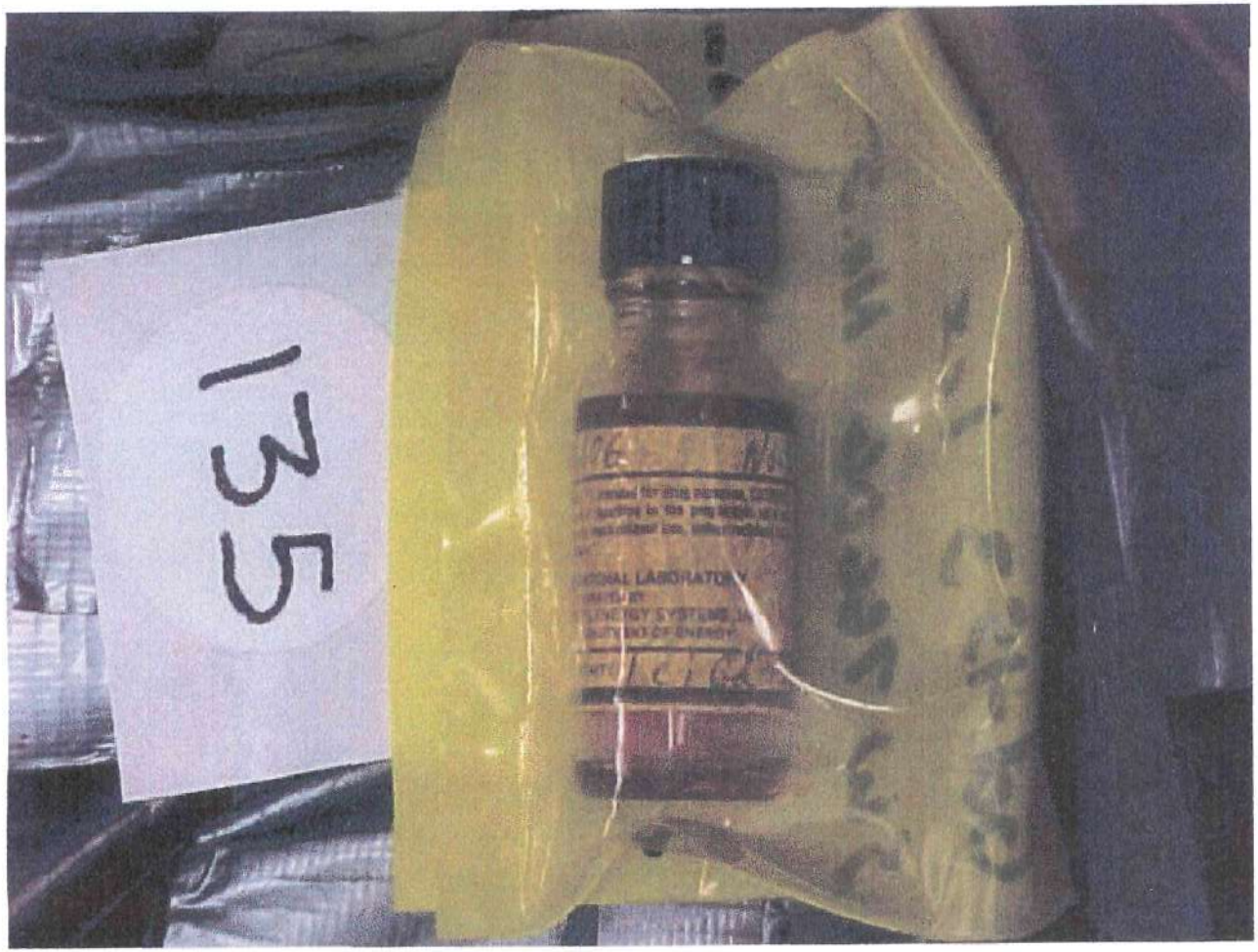
Table Readings

Source mR/hr @ 6 inchs	BKG.	BKG	BKG	BKG.	BKG
Source mR/hr @ 12 inches	BKG.	BKG	↓	↓	↓
Source mR/hr @ 36 inches	BKG	BKG.	↓	↓	↓
Size of source in cc's	20	20	20	20	20
Weight in grams	21	21	21	21	21

CPM Alpha	<25	<25	<25	~~6000~~ <25	<25
Direct Beta/Gamma	6,000	5000	5000	6000	200

Info on source:	SW 76606 No. 5 1ci Gd-153 9-15-87	SW 76606 No. 3 1ci Gd153 9.15.87	~~SW 76606~~ #2 SW 77027 9.14.87 1ci Gd.153	SW 76606 → #1 1ci Gd153 →	→ #2+4

Information on pig:	NO PIG	NO PIG	NO PIG	→	→
Smear DPM per 100 cm^2 Alpha	<250	<250	~~25~~ <250	<250	300
Smear DPM per 100 cm^2 Beta	120,000	12,000	20000	55000	20000
	BOTTLE PIECES OF PLASTIC + SPONGE	BOTTLE PIECES OF PLASTIC	BOTTLE PIECES OF PLASTIC	BOTTLE OF PLASTIC	BOTTLES (2) PLASTIC + SPOUNGE

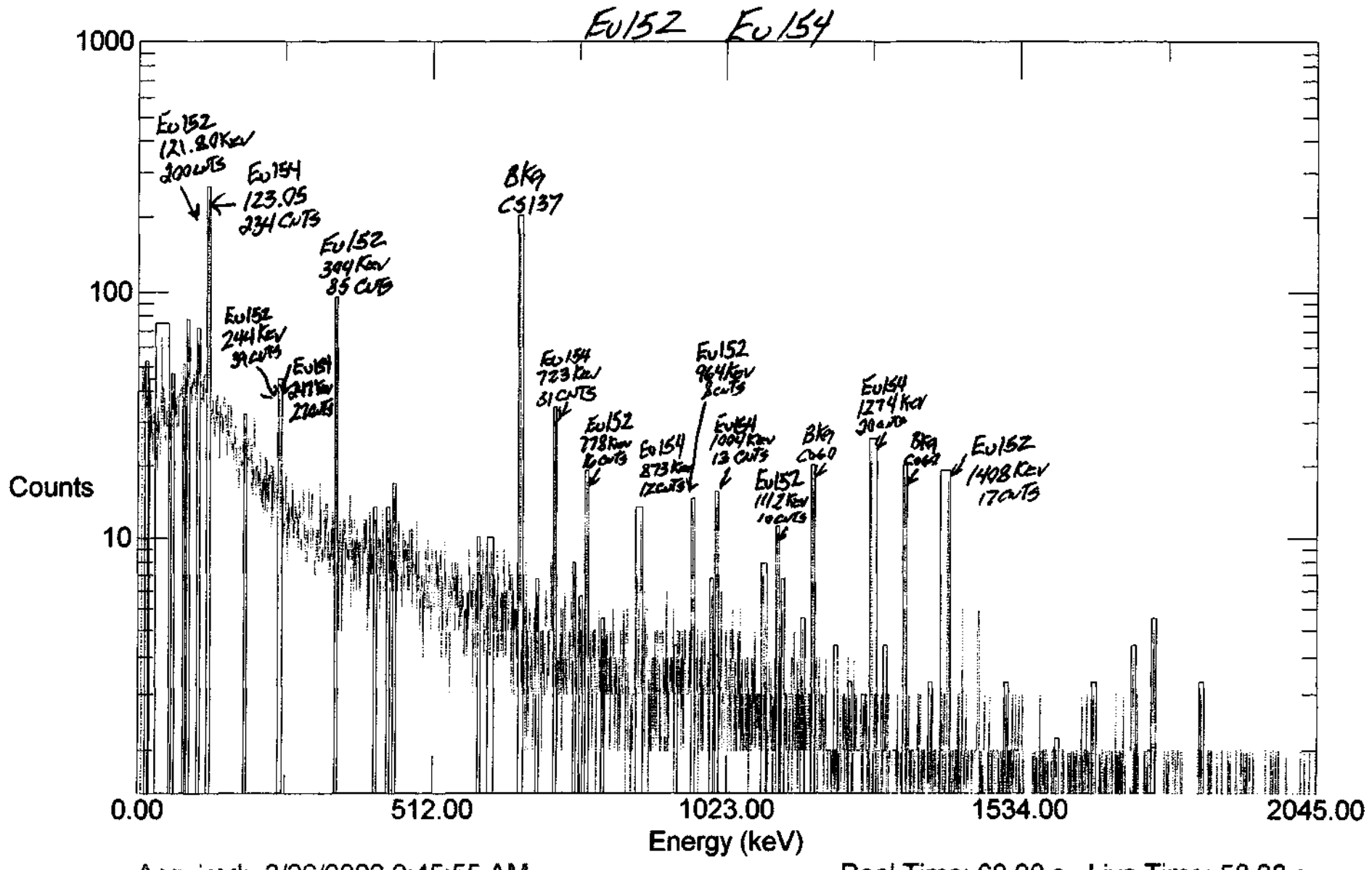


file: \MVC-013F.JPG

2/2002

003 1SC-1352 3-26-2002 9.45.55 AM

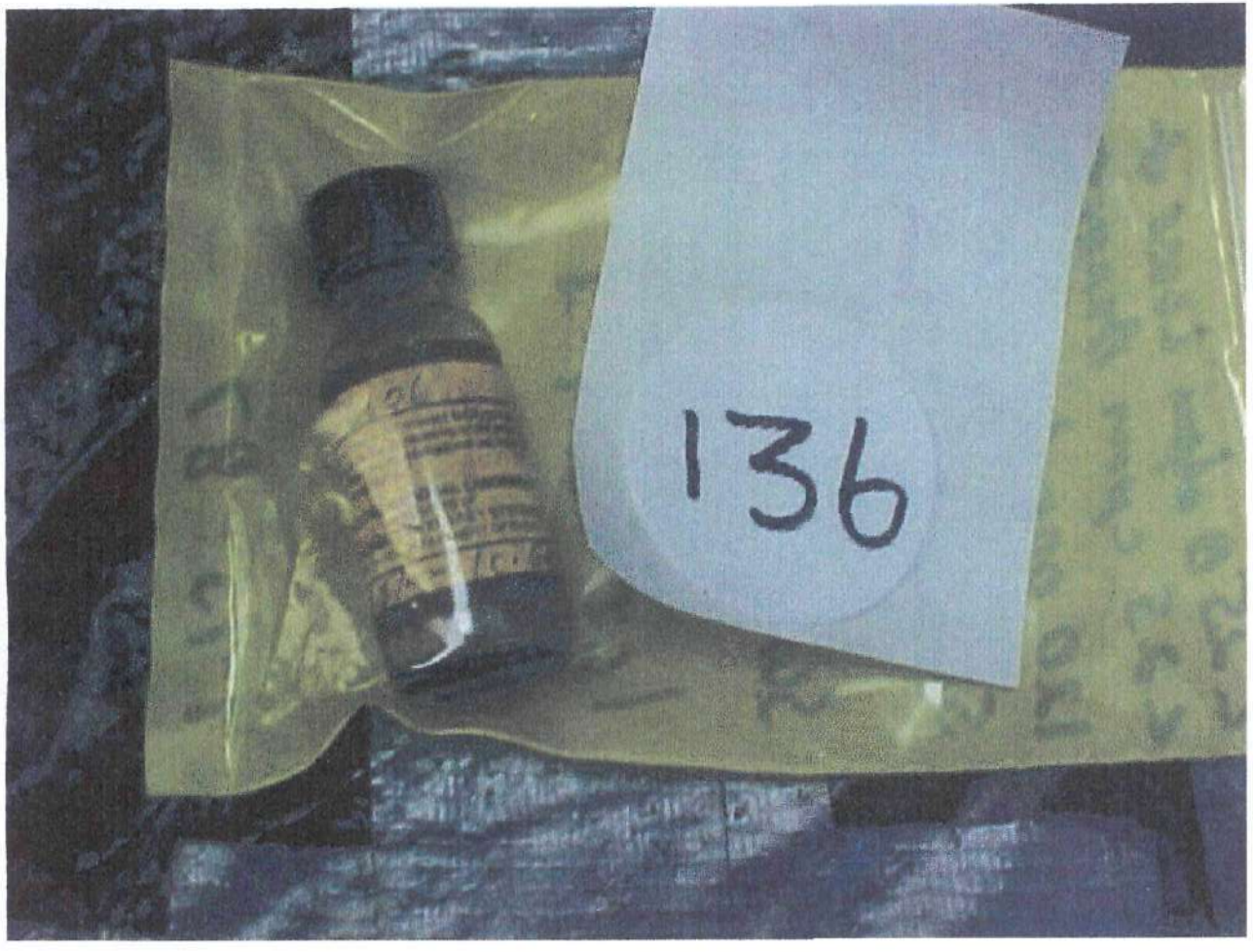
1SC-135-2



Acquired: 3/26/2002 9:45:55 AM Real Time: 60.00 s. Live Time: 58.28 s.

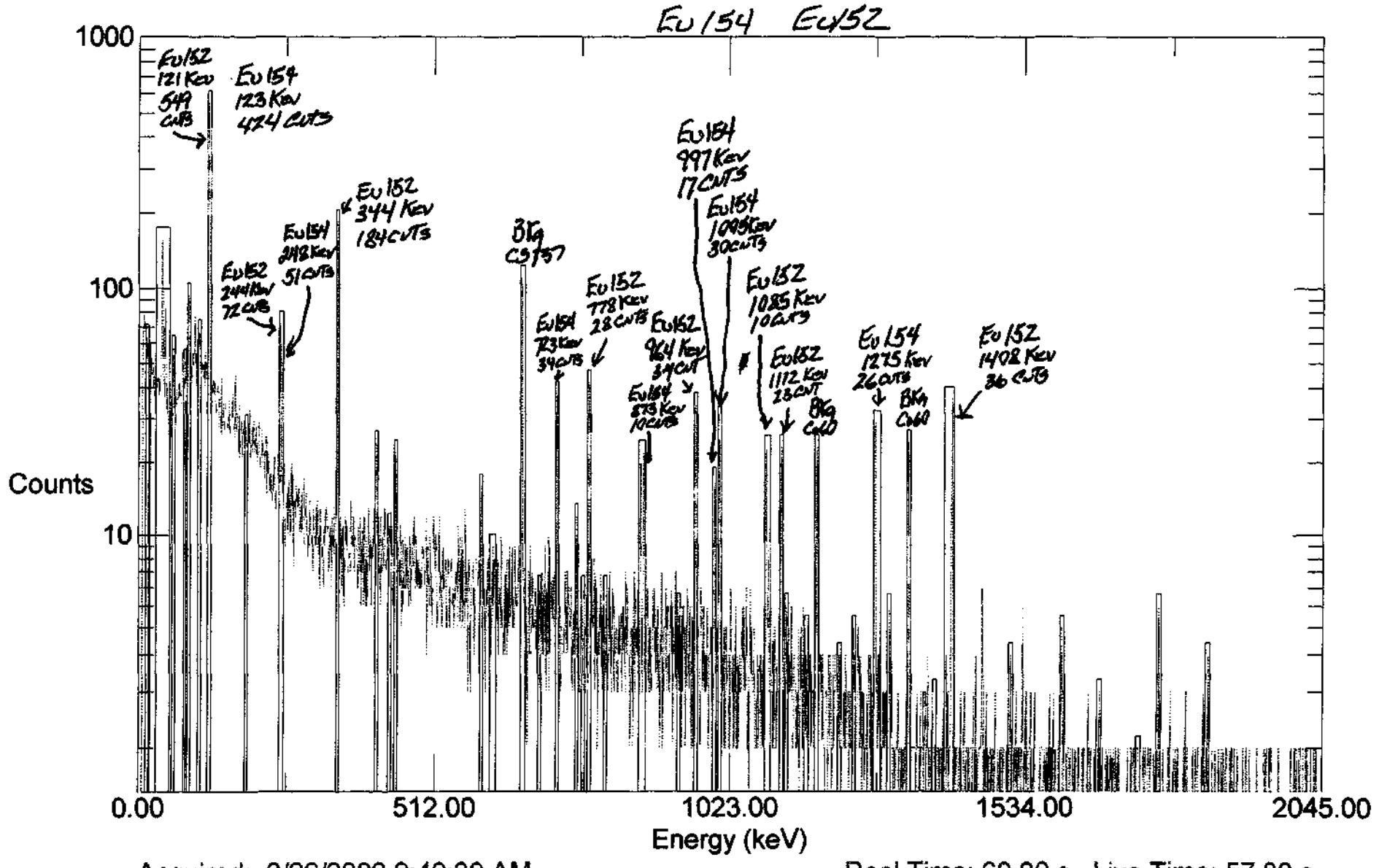
File: C:\User\GNIWEB~1\003 1SC-1352 3-26-2002 9.45.55 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


136

005 1SC-136-2 3-26-2002 9.49.40 AM

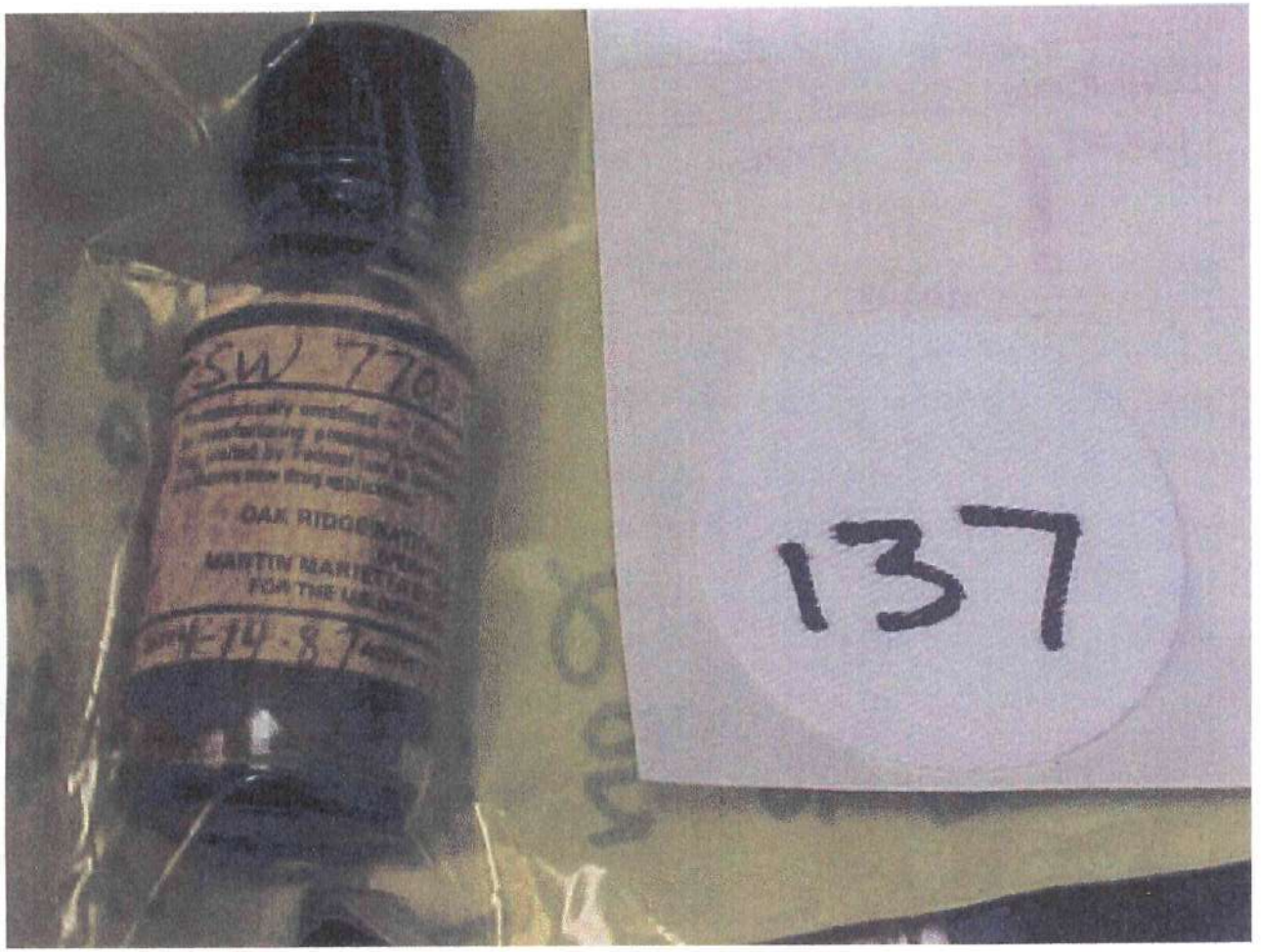
1SC-136-2



Acquired: 3/26/2002 9:49:39 AM Real Time: 60.00 s. Live Time: 57.80 s.

File: C:\User\GNIWEB~1\005 1SC-136-2 3-26-2002 9.49.40 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



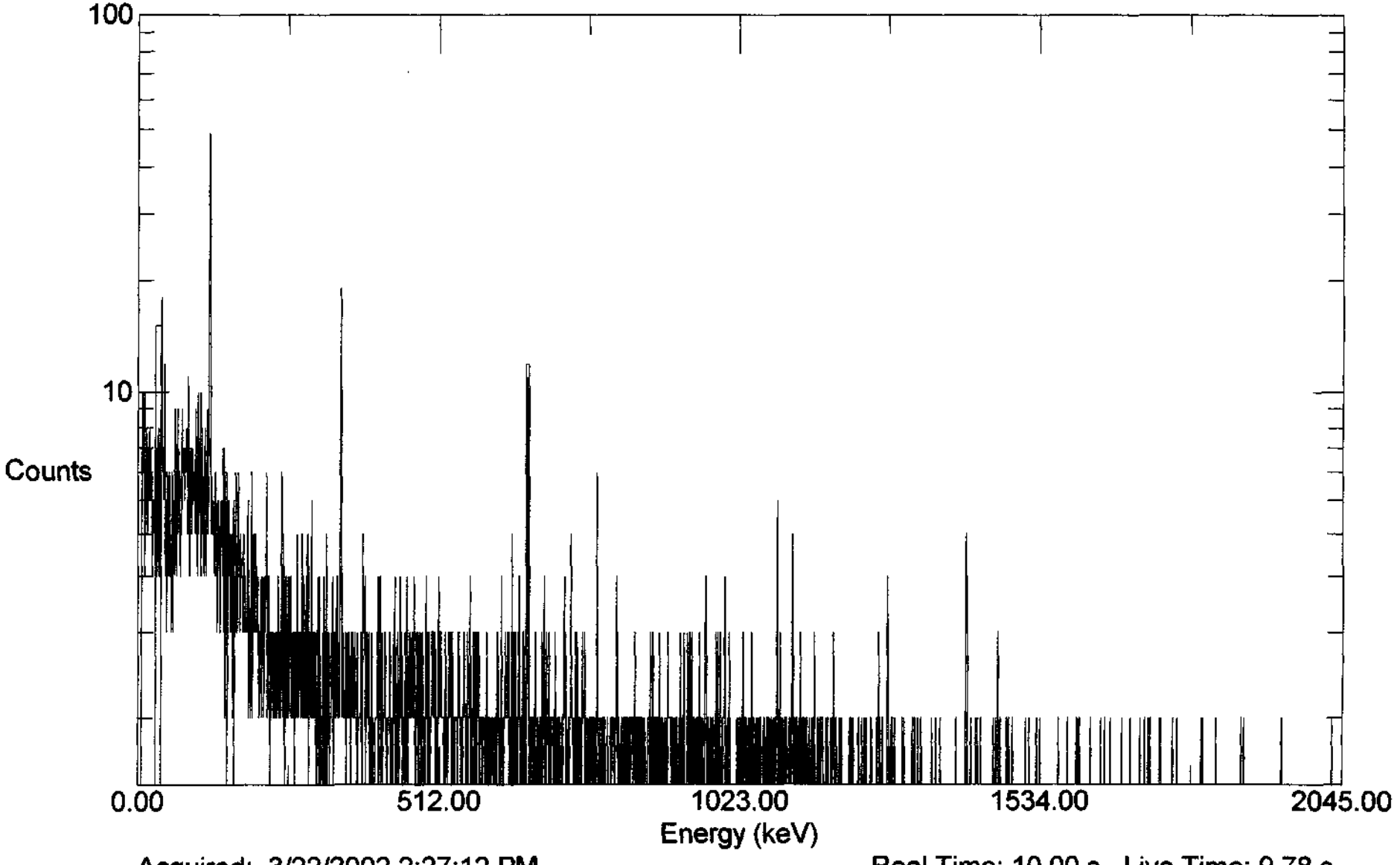
file: \MVC-015F.JPG

2/2002

Re Shoot

006 1SC-137 3-22-2002 2.27.12 PM

1SC-137



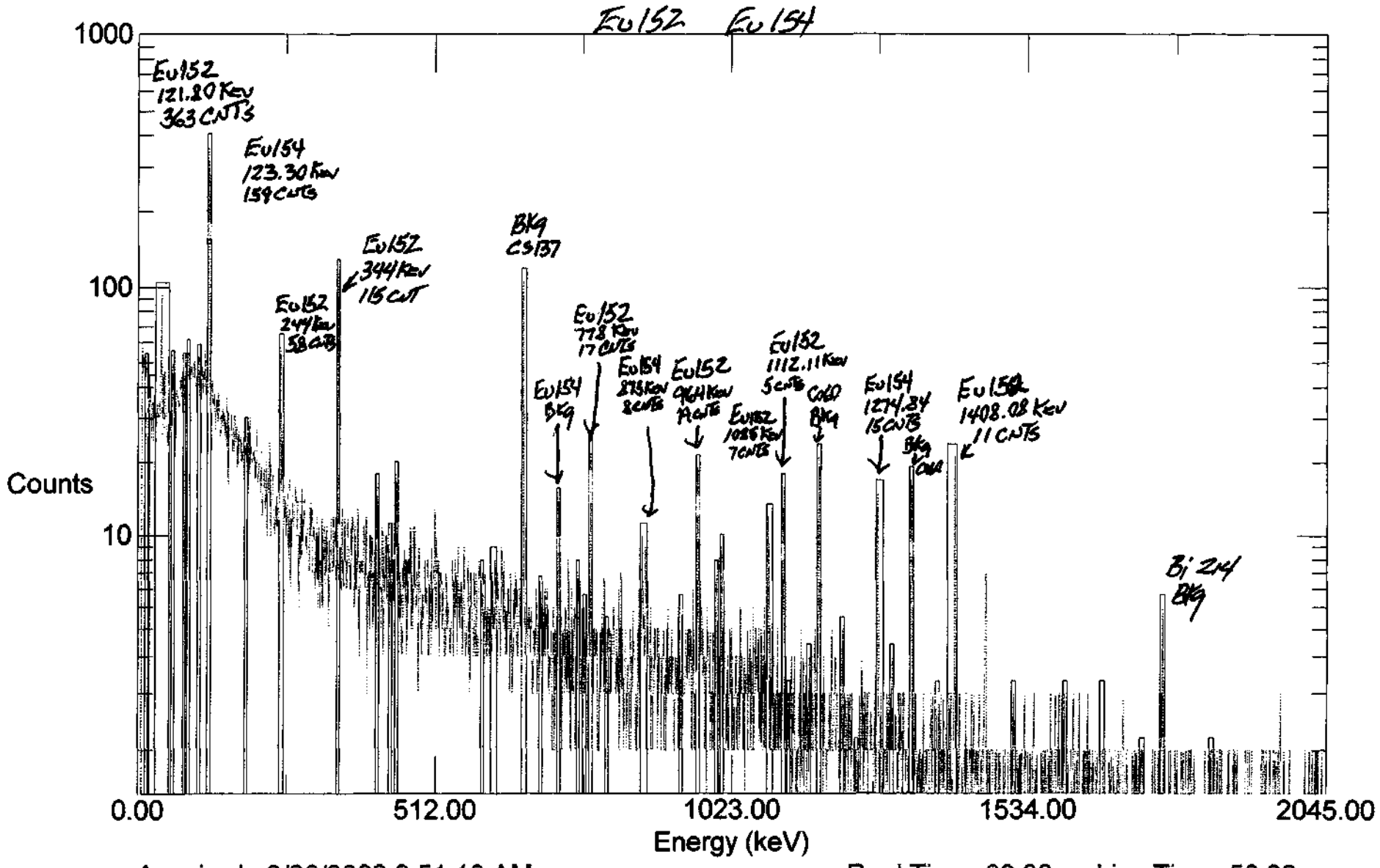
Acquired: 3/22/2002 2:27:12 PM Real Time: 10.00 s. Live Time: 9.78 s.

File: C:\User\GNIWEB~1\006 1SC-137 3-22-2002 2.27.12 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

006 1SC-137-2 3 _6-2002 9.51.20 AM

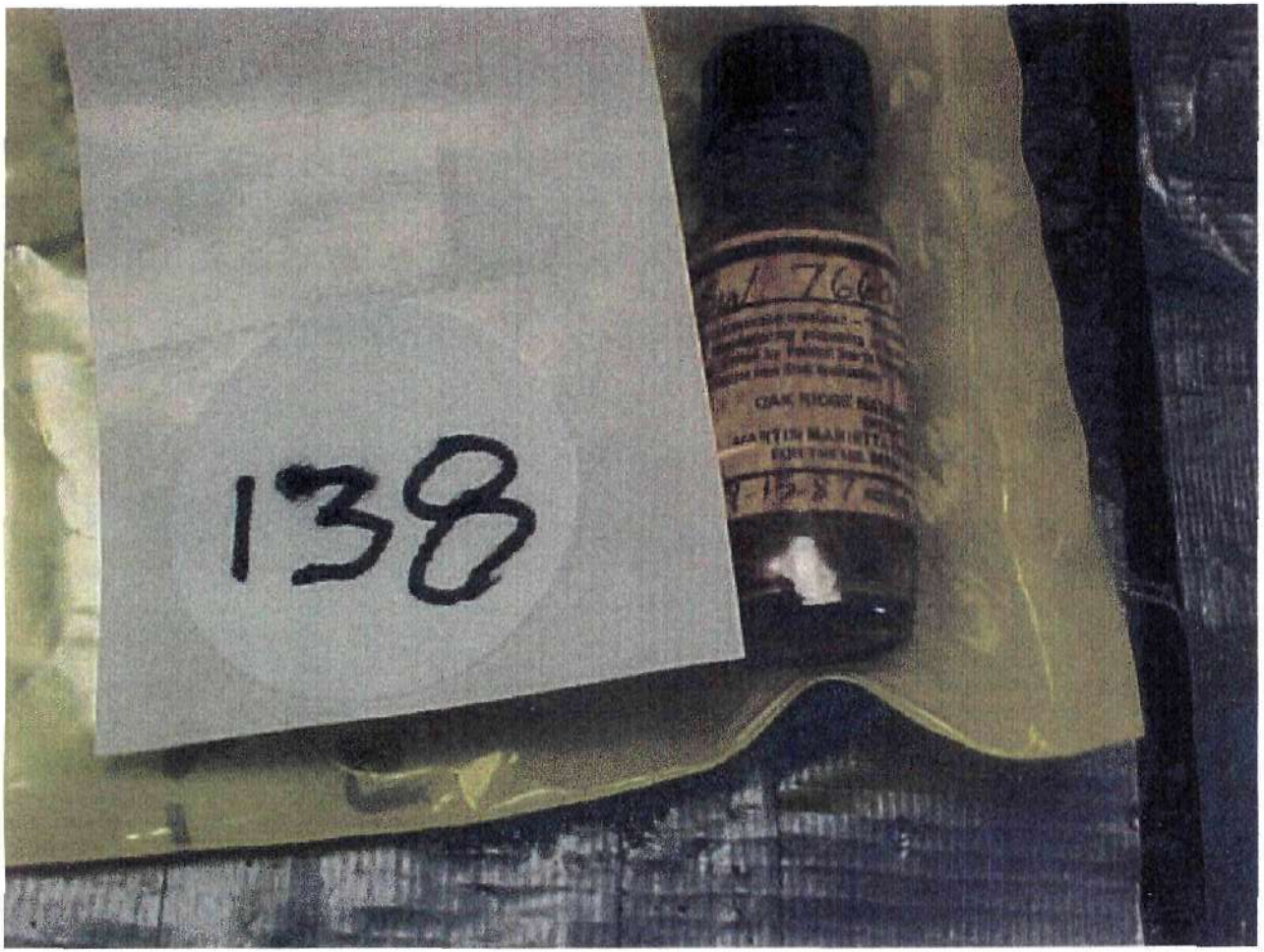
1SC-137-2



Acquired: 3/26/2002 9:51:19 AM Real Time: 60.00 s. Live Time: 58.28 s.

File: C:\User\GNIWEB~1\006 1SC-137-2 3-26-2002 9.51.20 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



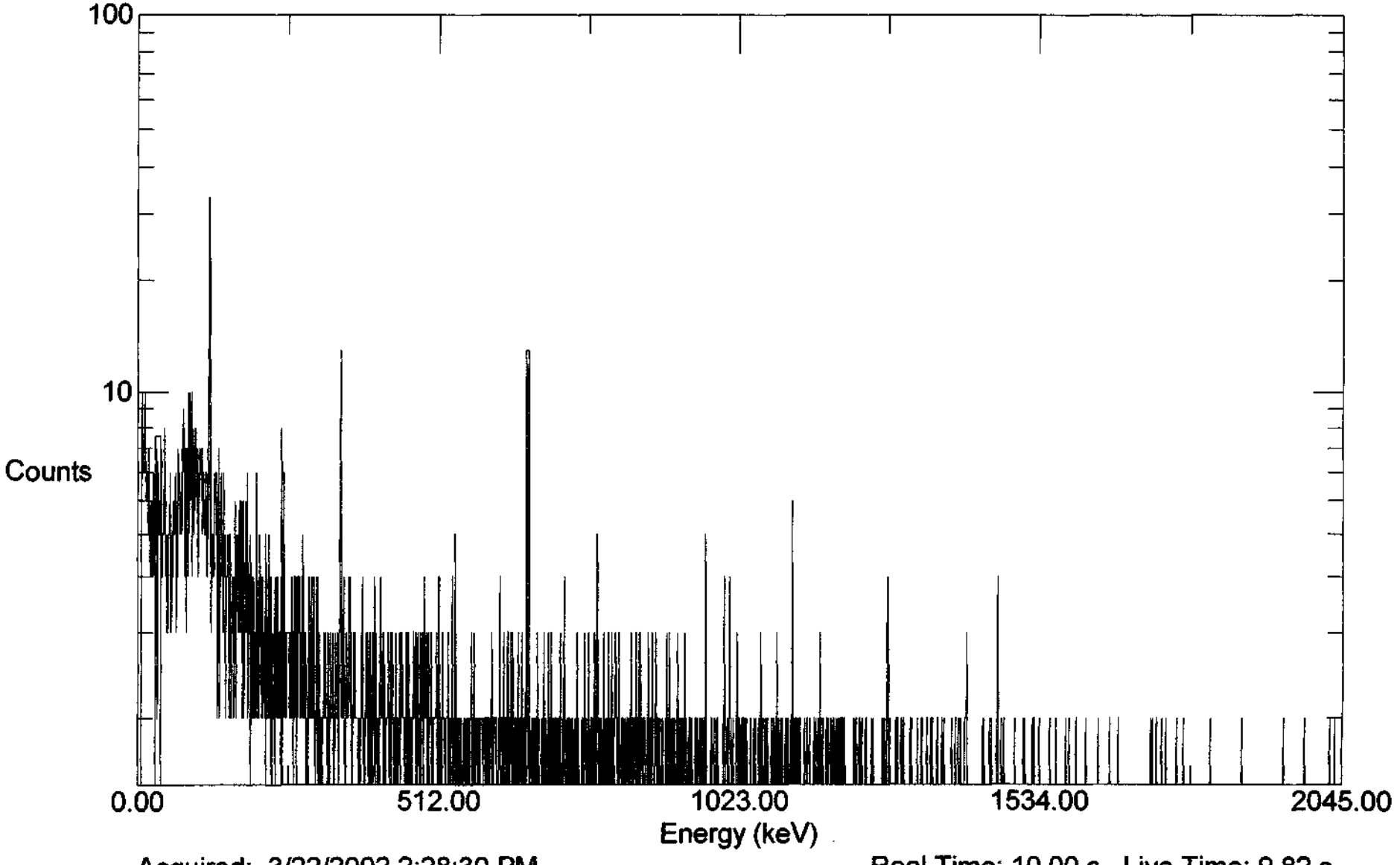
file: \MVC-016F.JPG

2/2002

Re Shoot

007 1SC-138 3-22-2002 2.28.30 PM

1SC-138



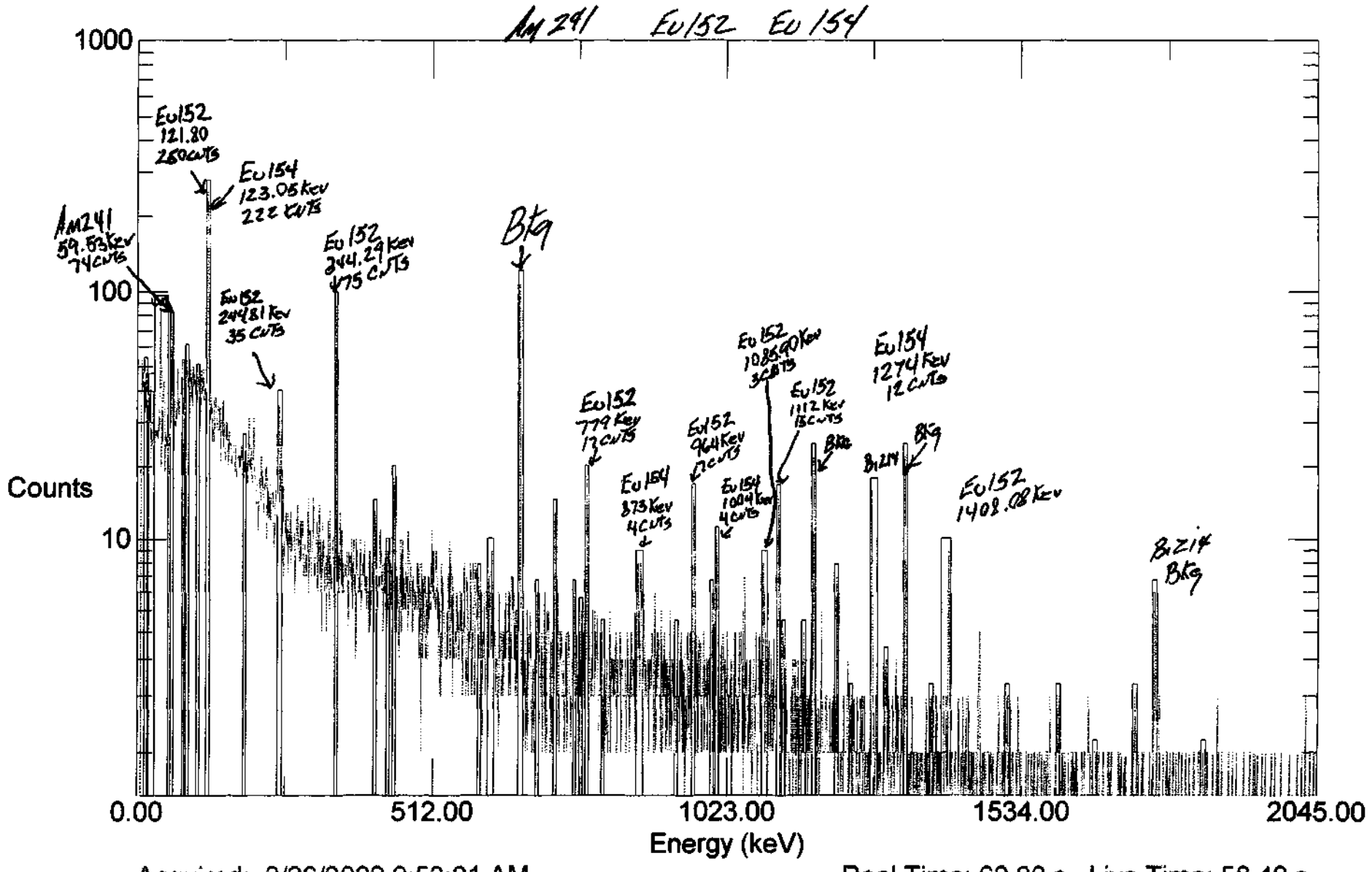
Acquired: 3/22/2002 2:28:30 PM Real Time: 10.00 s. Live Time: 9.82 s.

File: C:\User\GNIWEB~1\007 1SC-138 3-22-2002 2.28.30 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

007 1SC-1382 3-26-2002 9.53.02 AM

1SC-138-2



Acquired: 3/26/2002 9:53:01 AM Real Time: 60.00 s. Live Time: 58.40 s.

File: C:\User\GNIWEB~1\007 1SC-1382 3-26-2002 9.53.02 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

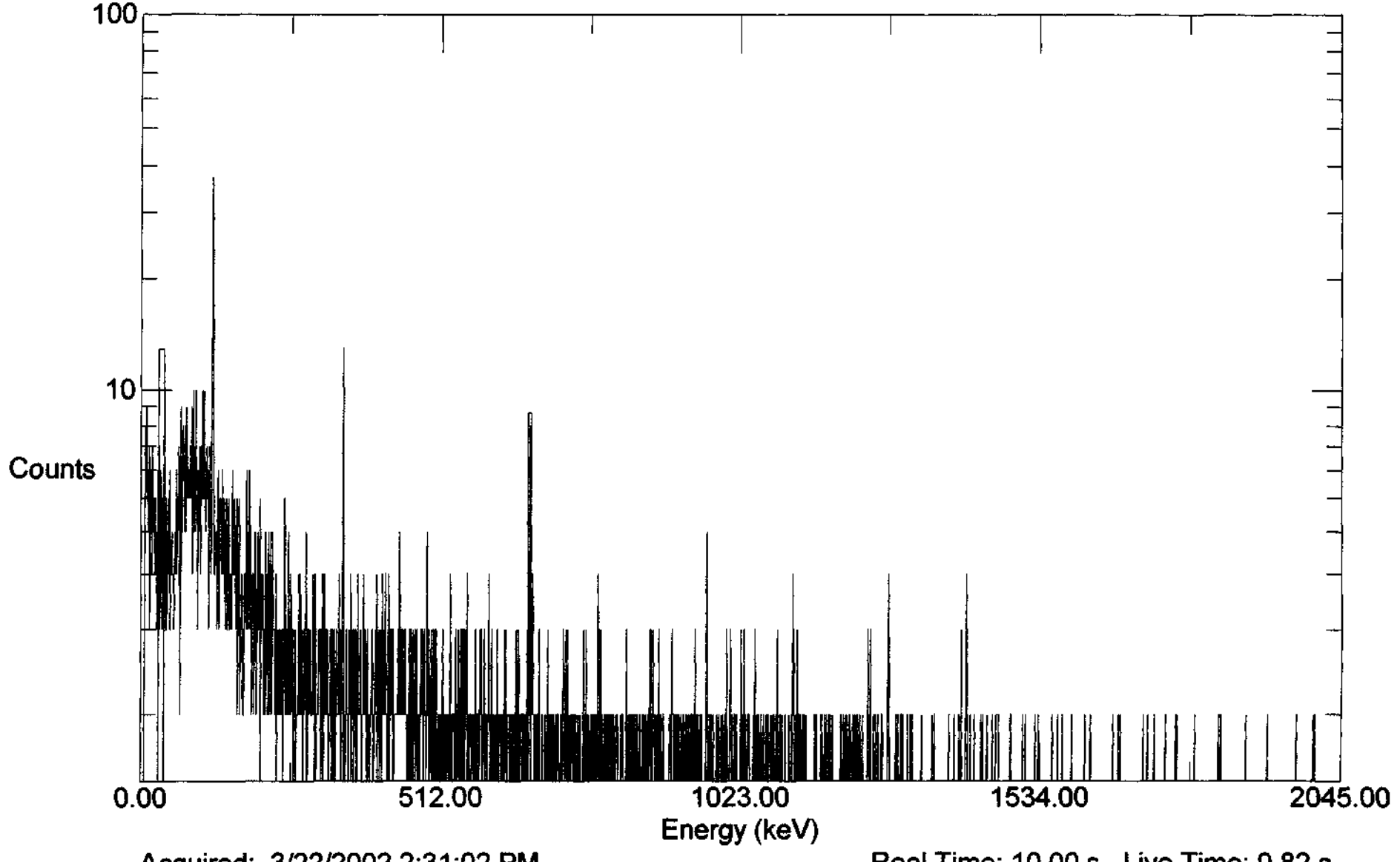
file: \MVC-017F.JPG

2/2002

Re Shoot.

008 1SC-139 3-22-2002 2.31.02 PM

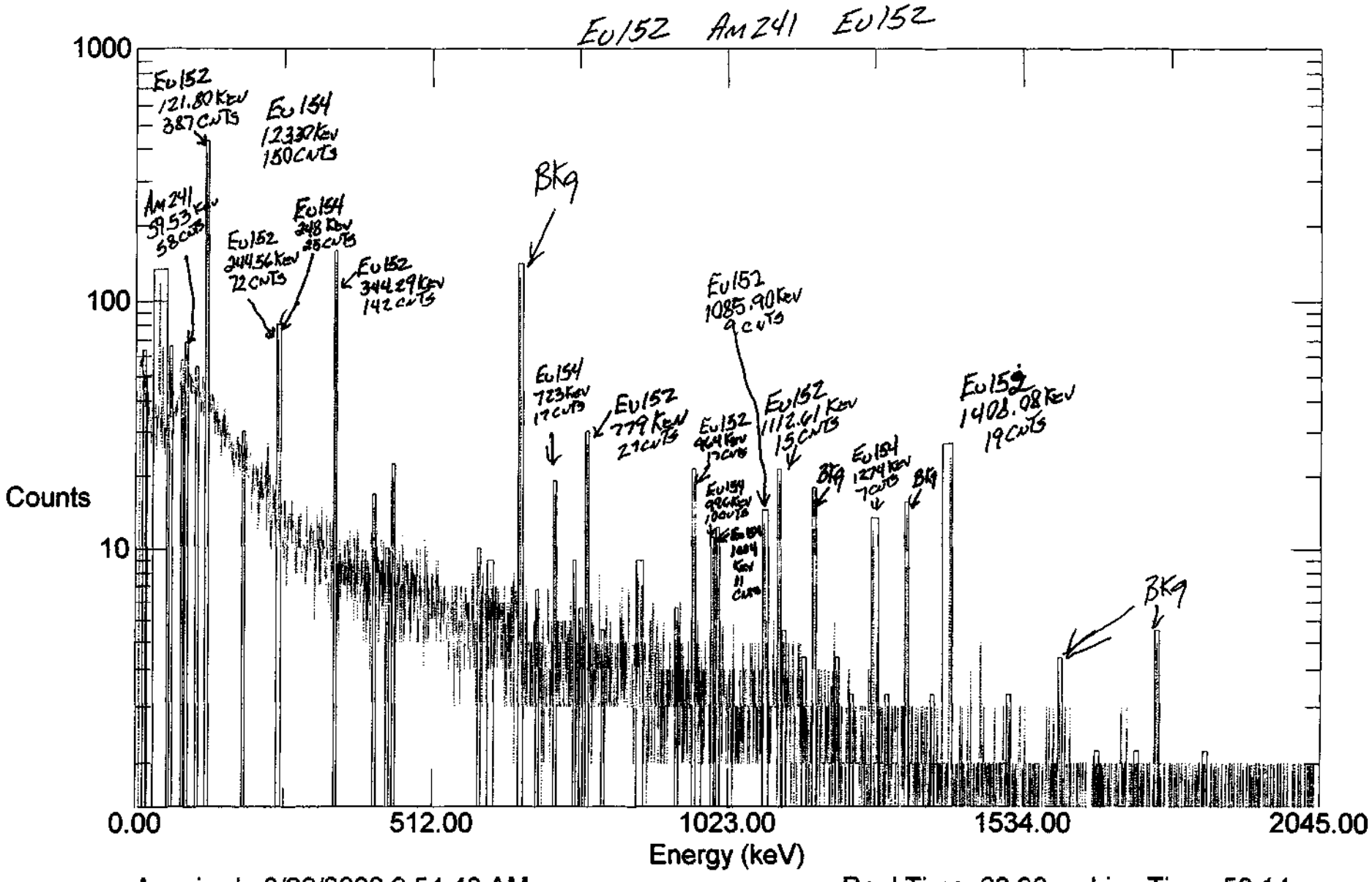
1SC-139



Acquired: 3/22/2002 2:31:02 PM Real Time: 10.00 s. Live Time: 9.82 s.
File: C:\User\GNIWEB~1\008 1SC-139 3-22-2002 2.31.02 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

008 1SC-1392 3-26-2002 9.54.47 AM

1SC-139-2



Acquired: 3/26/2002 9:54:48 AM Real Time: 60.00 s. Live Time: 58.14 s.

File: C:\User\GNIWEB~1\008 1SC-1392 3-26-2002 9.54.47 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3/22/02

BKG	mR/hr
6"	<.1
12"	<.2
36"	.2

Container #	140	141	142	143	144
External on pig in mR/hr	<.2	<.2	<.2	<.2	<.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	<.2	<.2	<.2	<.2	<.2
Beta on open pig mR/hr O/W	<.2	<.2	<.2	<.2	<.2

Picture	✓	✓	✓	✓	✓
DIGI DART	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG.	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	23	20	19	22
Weight in grams	17	23	21	15 ~~19~~	19

CPM Alpha	<25	80	<25	<25	<25
Direct Beta/Gamma	58000	180000	20W/.5cw	50000	85000

Info on source:	GD.153 RAD MAT. SYMBLE →	→	→	→	→

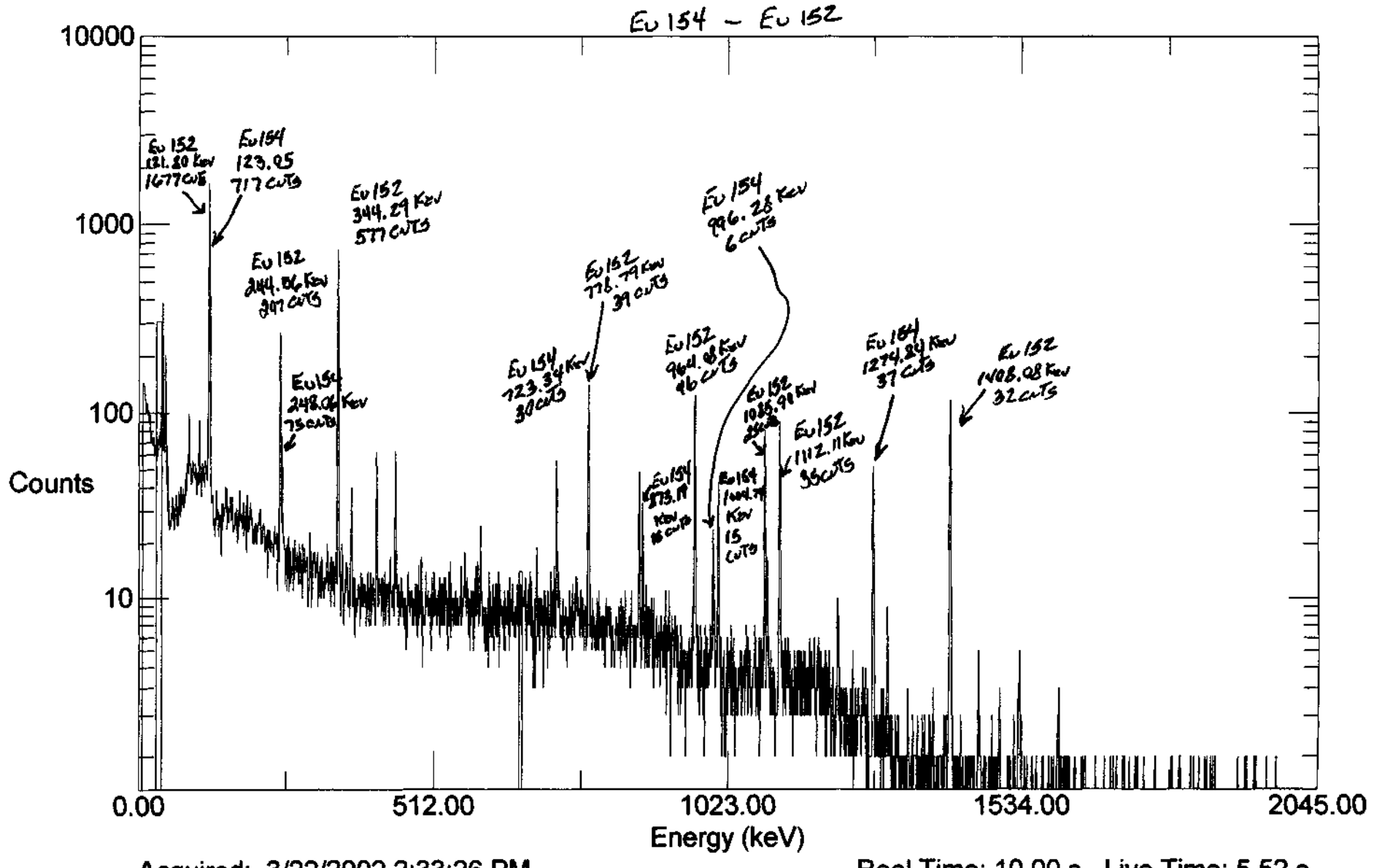
Information on pig:	N/A	N/A	N/A	N/A	N/A
Smear DPM per 100 cm^2 Alpha	<250	<250	<500	<250	<250
Smear DPM per 100 cm^2 Beta	80000	900000	~~20~~ ~~20W/.5cw~~	350000	190000
	BAG c̄ MANY PIECES OF Gd SOURCES →	~~280~~ →	200K (53) PIECES →	→	→

file: \MVC-018F.JPG

2/2002

009 1SC-140 3-22-2002 2.33.27 PM

1SC-140



Acquired: 3/22/2002 2:33:26 PM Real Time: 10.00 s. Live Time: 5.52 s.

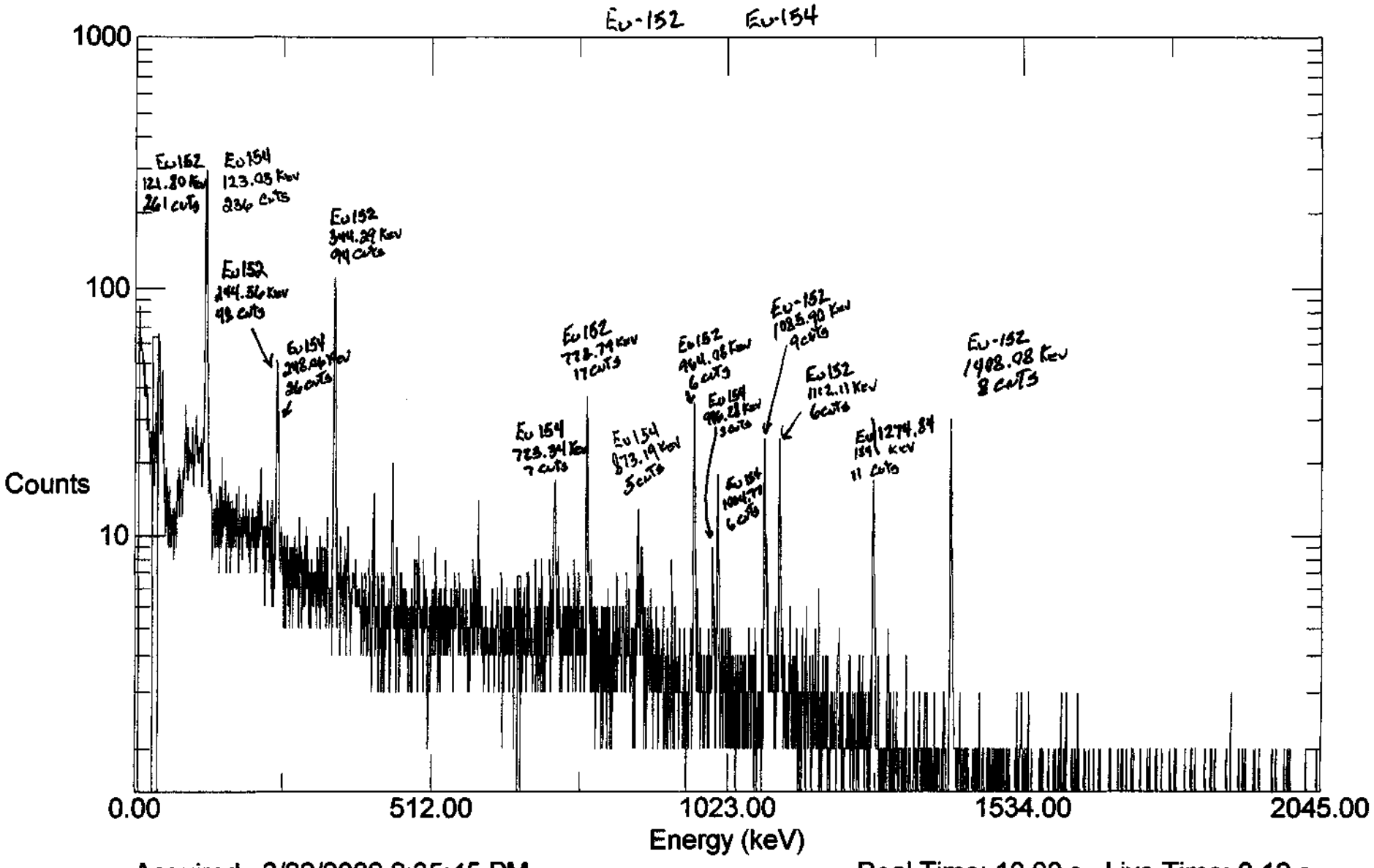
File: C:\User\GNIWEB~1\009 1SC-140 3-22-2002 2.33.27 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

141

010 1SC-141 3-22-2002 2.35.46 PM

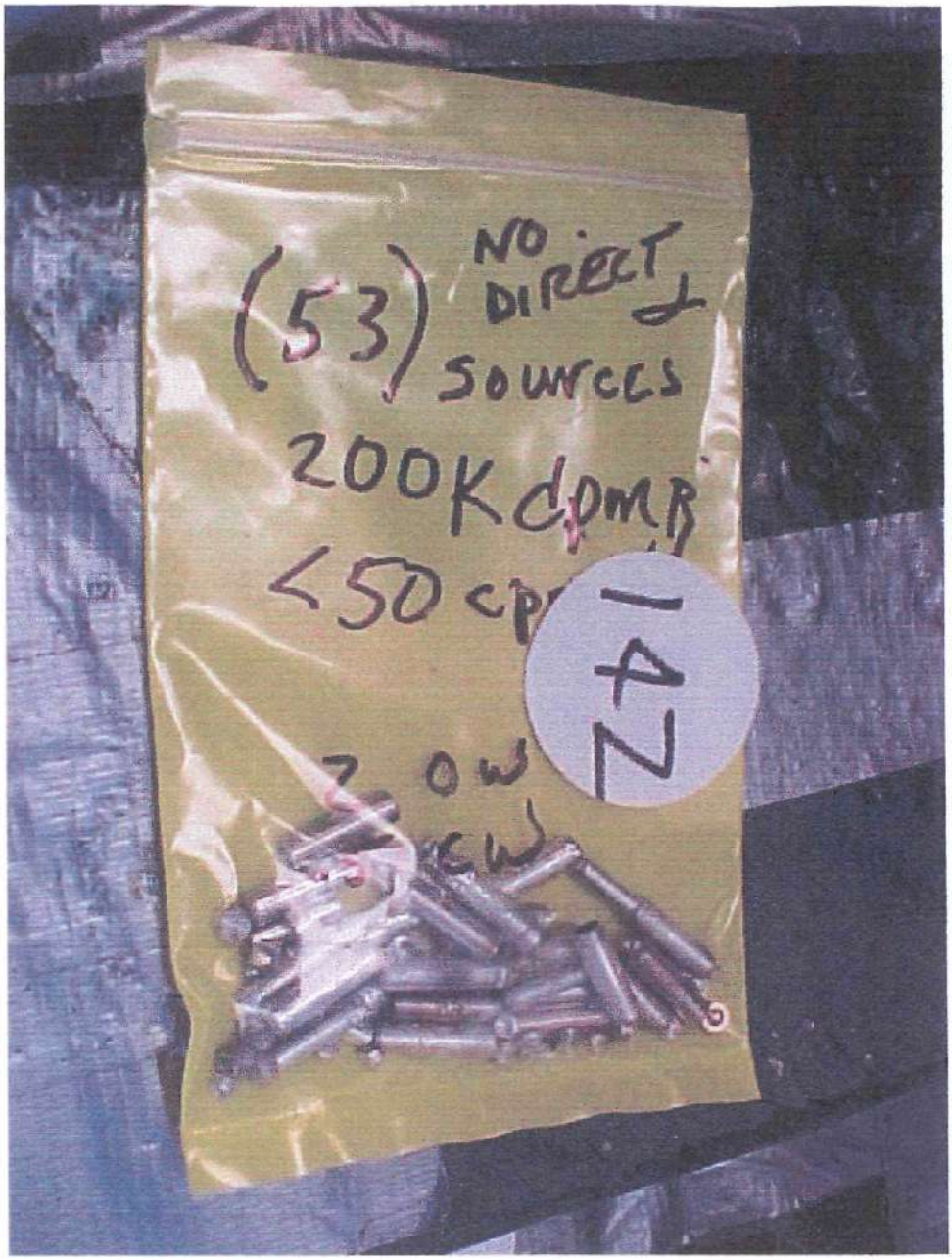
1SC-141



Acquired: 3/22/2002 2:35:45 PM Real Time: 10.00 s. Live Time: 0.12 s.

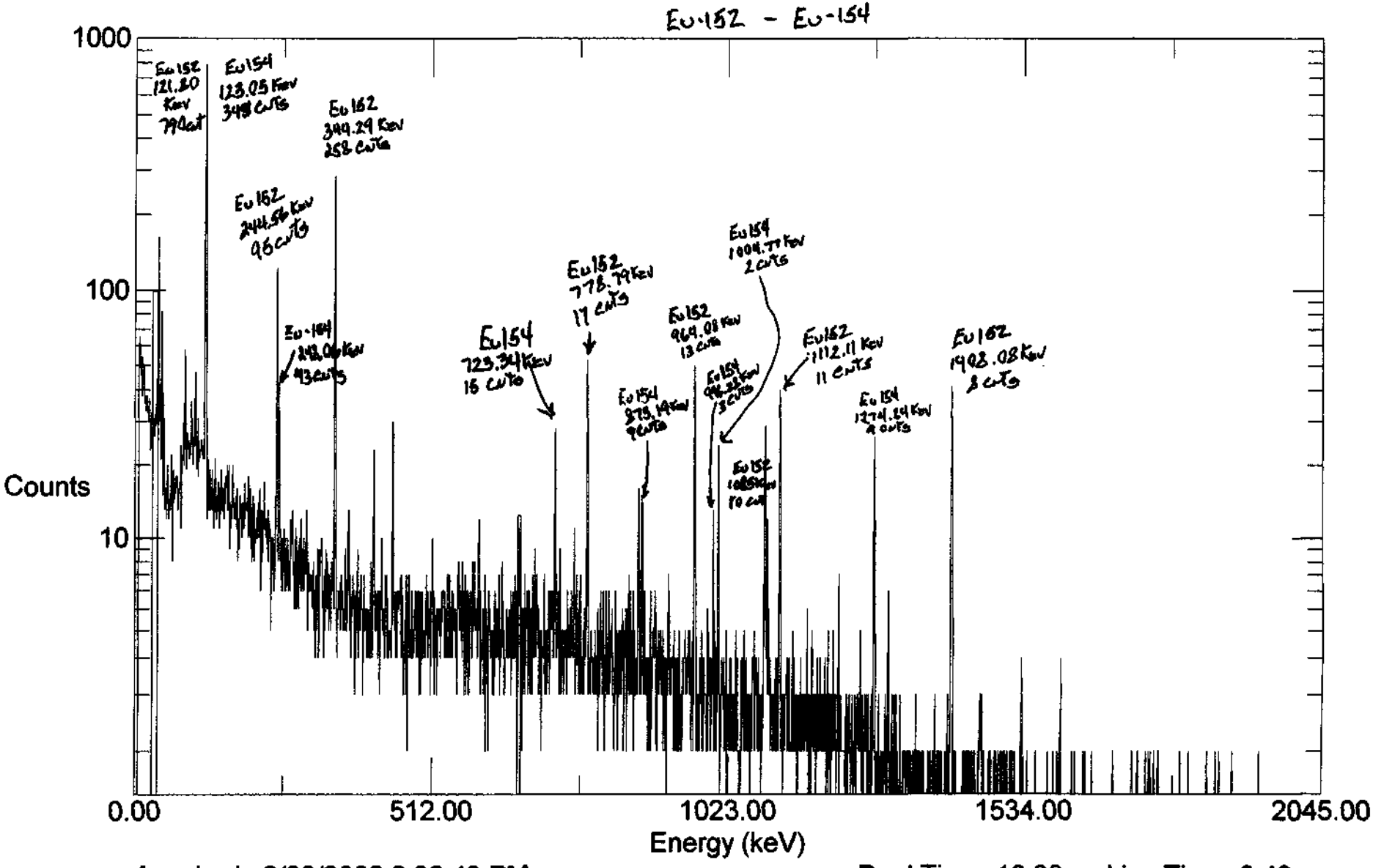
File: C:\User\GNIWEB~1\010 1SC-141 3-22-2002 2.35.46 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


(53) NO DIRECT & SOURCES
200K dpmB
<50 cp
14N

011 1SC-142 3-22-2002 2.38.49 PM

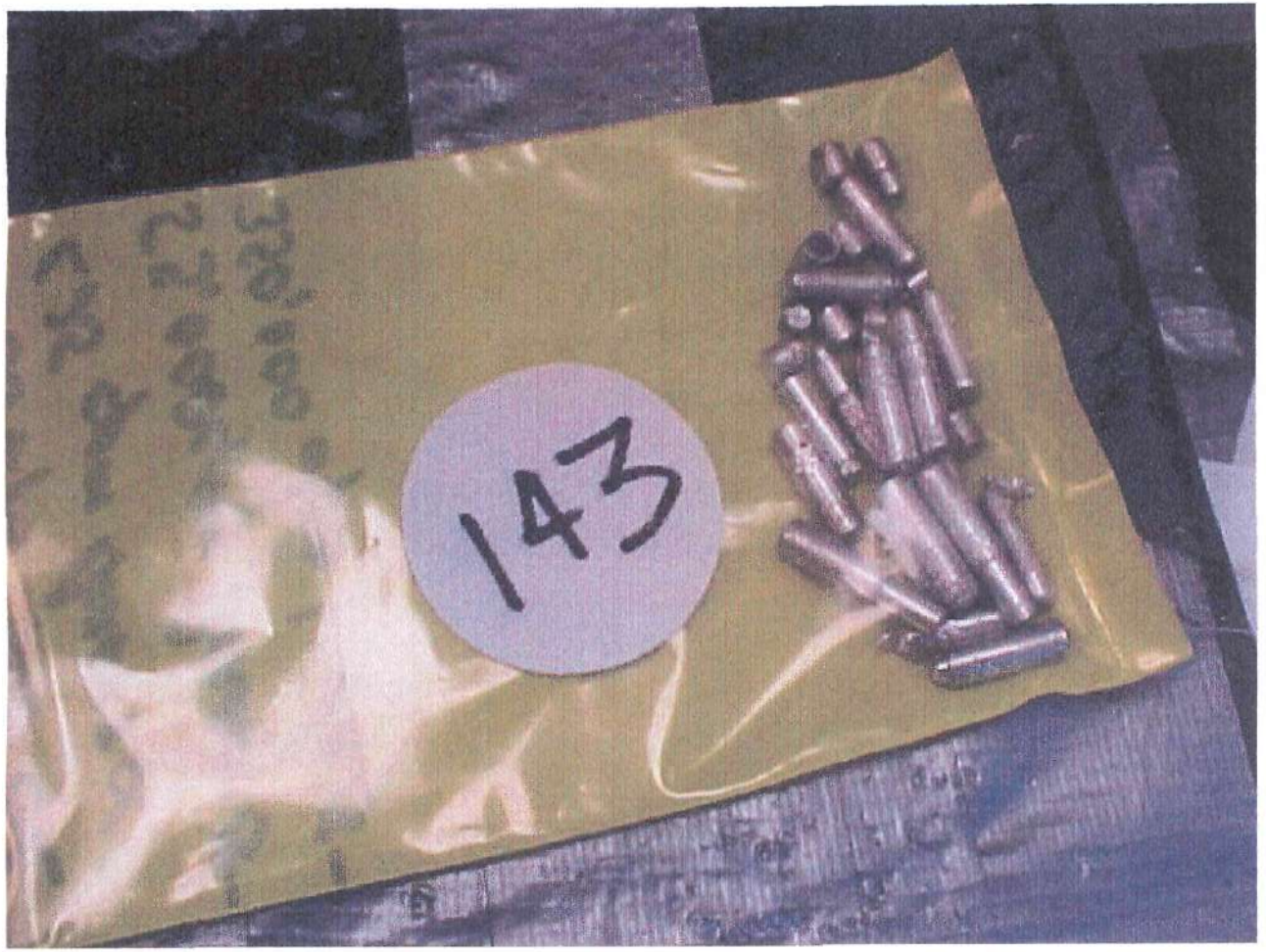
1SC-142



Acquired: 3/22/2002 2:38:49 PM Real Time: 10.00 s. Live Time: 8.48 s.

File: C:\User\GNIWEB~1\011 1SC-142 3-22-2002 2.38.49 PM.Spc Channels: 8192

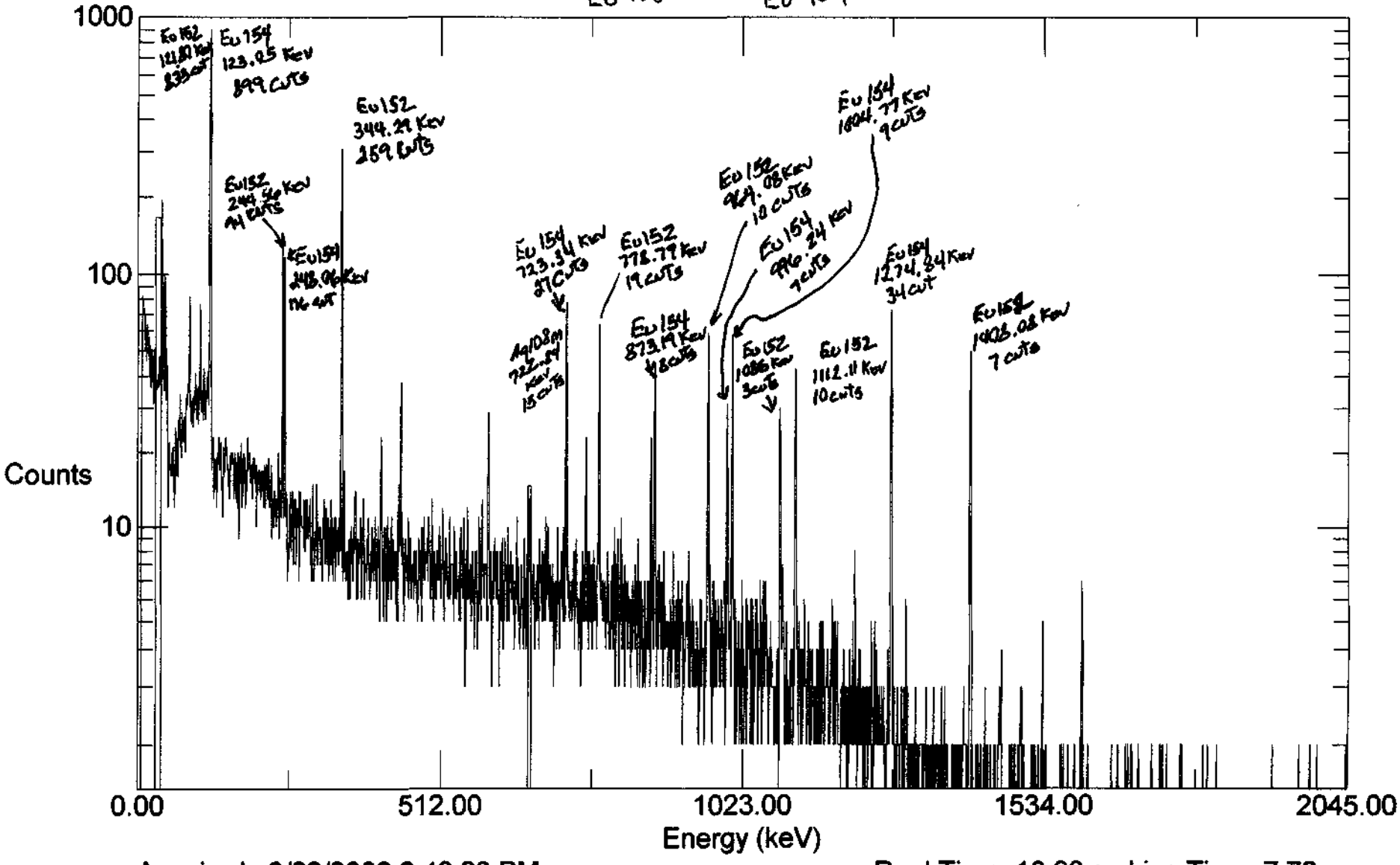
Detector: #1 digiDART USE 1b


143

012 1SC-143 3-22-2002 2.40.20 PM

1SC-143

Eu-152 ~ Eu-154



Acquired: 3/22/2002 2:40:20 PM Real Time: 10.00 s. Live Time: 7.72 s.

File: C:\User\GNIWEB~1\012 1SC-143 3-22-2002 2.40.20 PM.Spc Channels: 8192

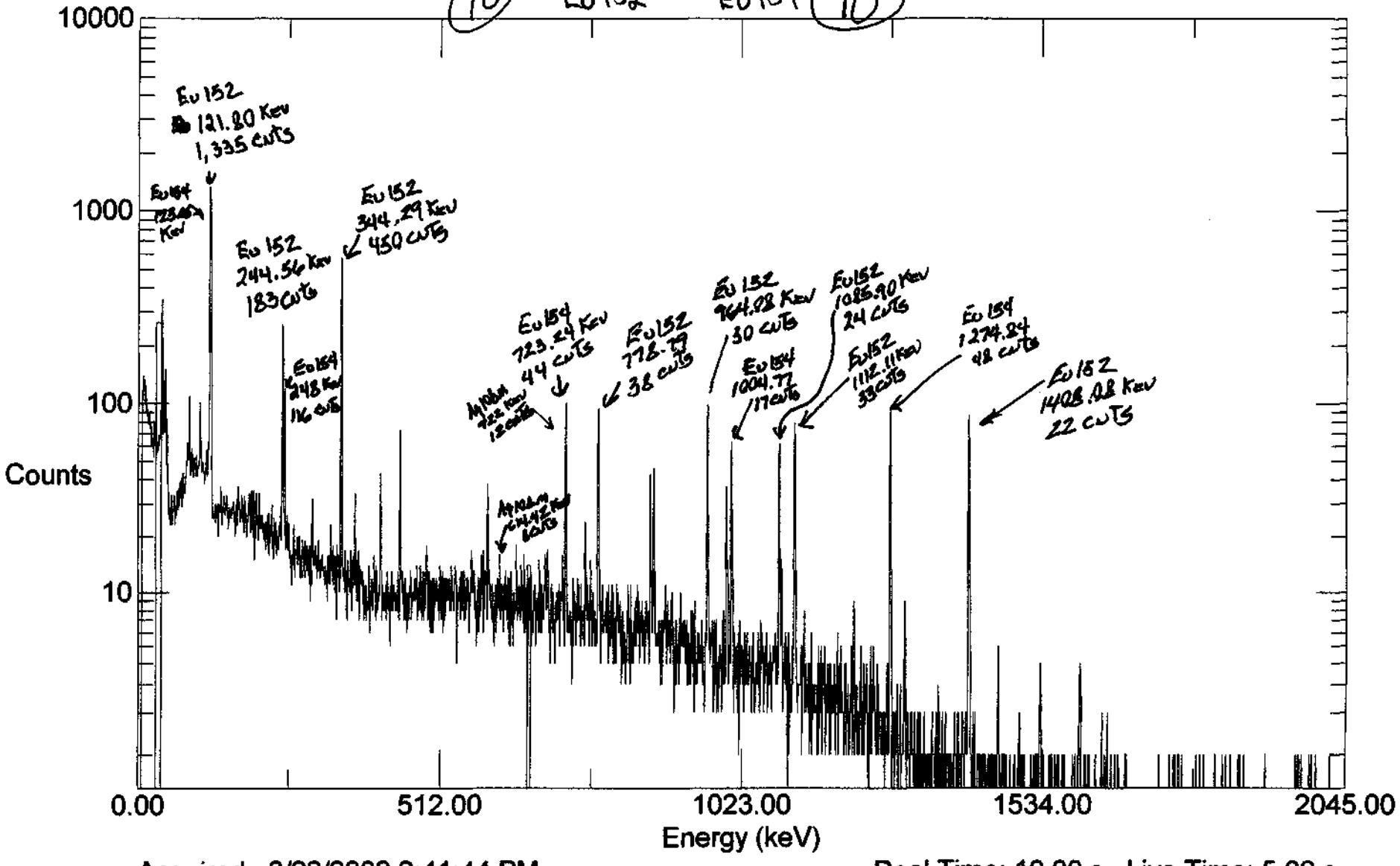
Detector: #1 digiDART USE 1b

144

013 1SC-144 3-22-2002 2.41.44 PM

1SC-144

10 Eu 152 ~ Eu 154 90



Acquired: 3/22/2002 2:41:44 PM Real Time: 10.00 s. Live Time: 5.62 s.

File: C:\User\GNIWEB~1\013 1SC-144 3-22-2002 2.41.44 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 5-22-02

BKG	mR/hr
6"	<.1
12"	<.2
36"	0.2

Container #	145	146	147		
External on pig in mR/hr	~~3~~ 35				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	~~100~~ 35				
Beta on open pig mR/hr O/W	100				

Picture	✓				
DIG.	✓				

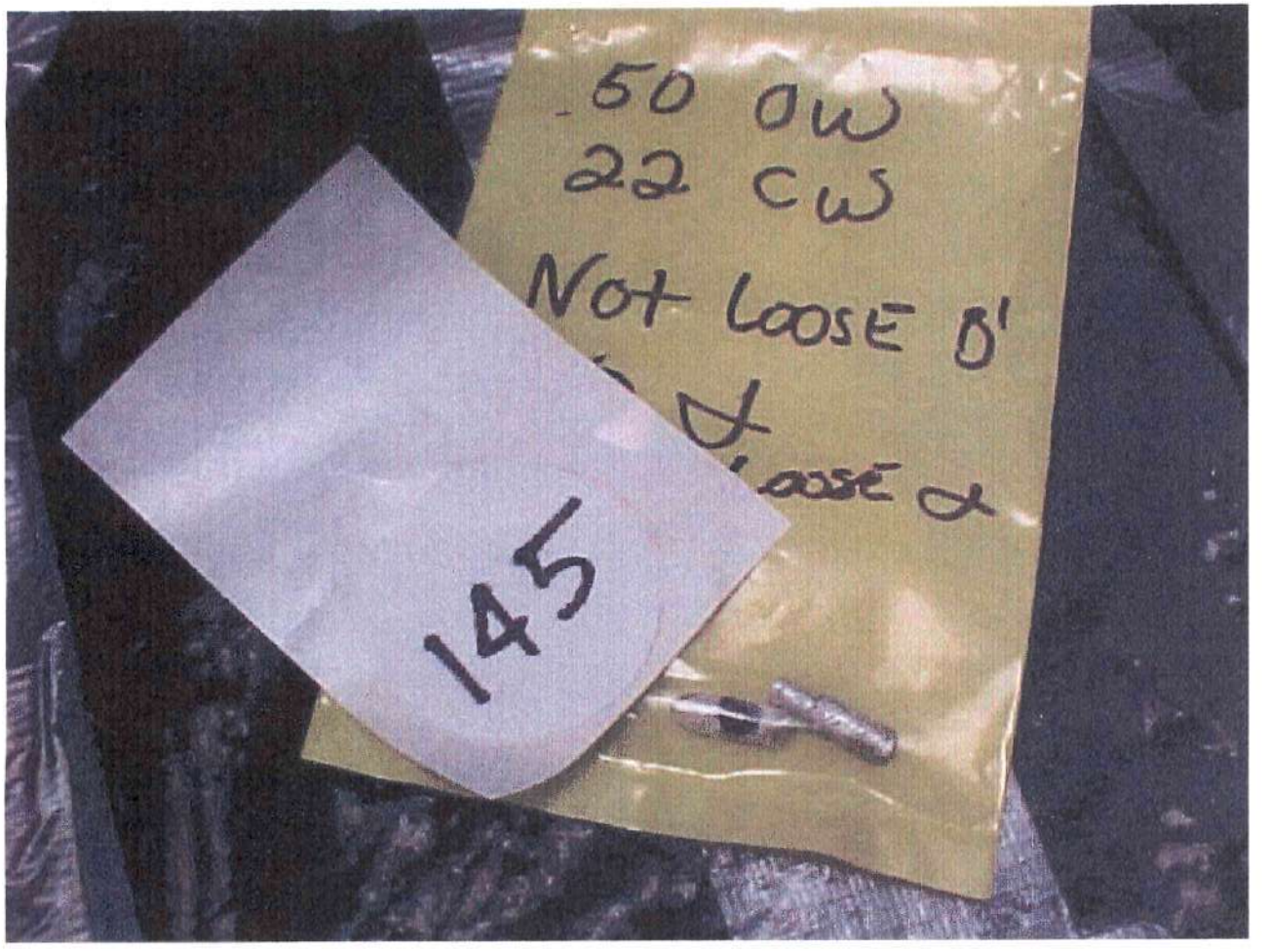
Table Readings

Source mR/hr @ 6 inchs	3.5				
Source mR/hr @ 12 inches	1.5				
Source mR/hr @ 36 inches	0.3				
Size of source in cc's	2				
Weight in grams	2				

CPM Alpha	<25				
Direct Beta/Gamma	500w/220w				

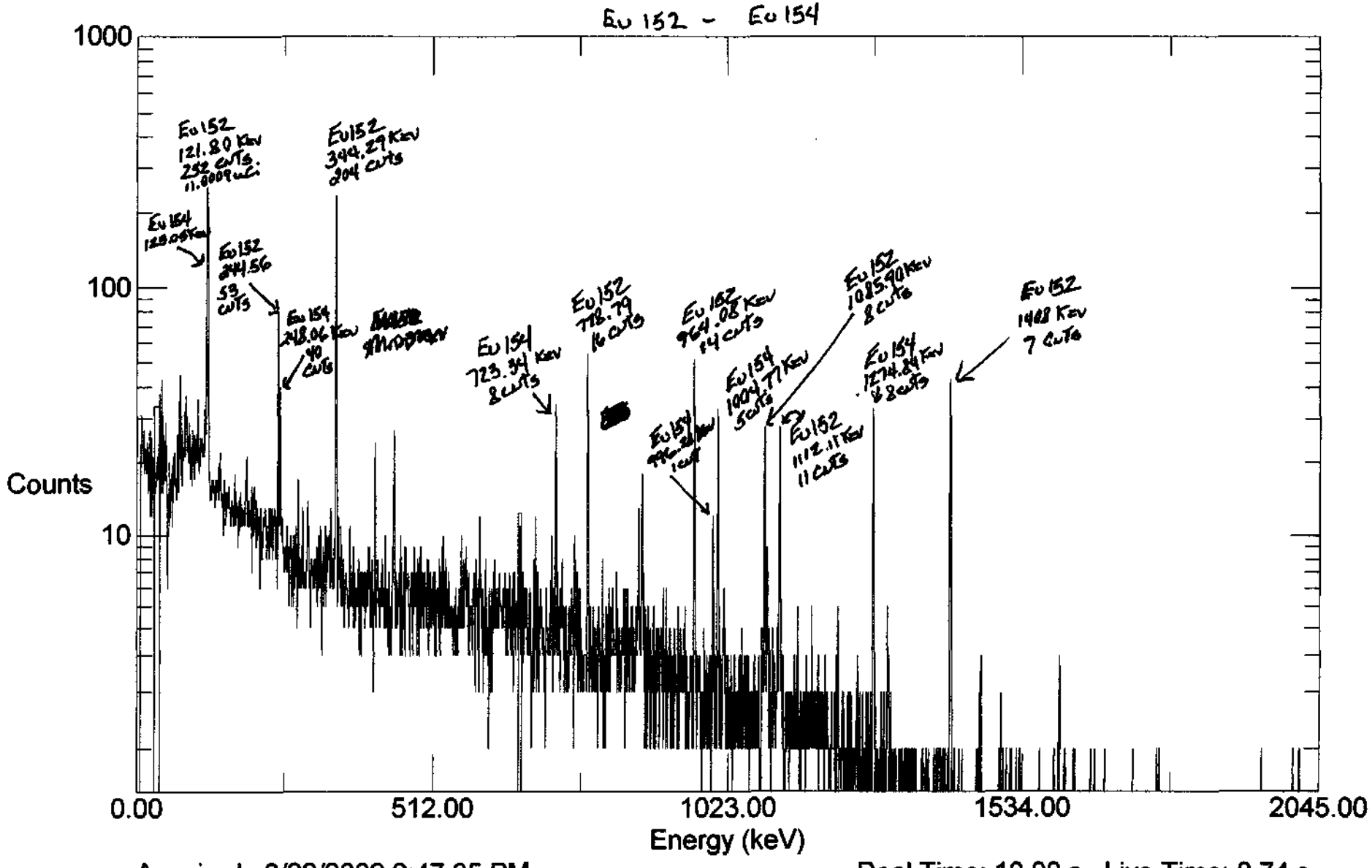
Info on source:	Gd 153 & Nothing on other				

Information on pig:					
Smear DPM per 100 cm^2 Alpha	<250				
Smear DPM per 100 cm^2 Beta	<1K				
	BAG Gd 153 & piece of glass with something encased				


50 OW
22 CW
Not LOOSE B'
145

014 1SC-145 3-22-2002 2.47.06 PM

1SC-145



Acquired: 3/22/2002 2:47:05 PM Real Time: 10.00 s. Live Time: 8.74 s.

File: C:\User\GNIWEB~1\014 1SC-145 3-22-2002 2.47.06 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	146	147			
External on pig in mR/hr	150	BKG			
External on pig Neutron mR/hr	<1	<1			
Contact open pig mR/hr	N	/A			
Beta on open pig mR/hr O/W					

Picture	✓	✓			
DIGET	✓	✓			

Table Readings

Source mR/hr @ 6 inchs	40	BKG			
Source mR/hr @ 12 inches	14				
Source mR/hr @ 36 inches	2	pig 80			
Size ~~of source~~ in cc's pig →	1000	1000			
Weight in grams	130 Lbs	125 Lb			

CPM Alpha					
Direct Beta/Gamma					

Info on source:	LEFT IN PIG				

LOCK ON PIG

Information on pig:	CS 137 3- GULF TX NUC. WES.		OWNER: GREEN EN ← ECHED IN		
Smear DPM per 100 cm^2 Alpha	250K	200K			
Smear DPM per 100 cm^2 Beta	20K	20K			
	USADOT 7A	RADMAT SPECIAL FORM N.O.S.	MAT. CS-137 QUANITY 250mCi S.#YL-1-778		

BOW

N.O.S., NA9182 USADOT-7A

COM PROBE INC. FORT WORTH TX

USEcology
FS-TX-02-01
Source Log

Date 4-4-02

BKG	mR/hr
6"	[illegible]
12"	
36"	

Container #	188	189	147	146	
External on pig in mR/hr			10 mr	300	
External on pig Neutron mR/hr					
Contact open pig mR/hr			20,000	100,000	
Beta on open pig mR/hr O/W					

Picture					

Table Readings

Source mR/hr @ 6 inchs			1,000	12,000	
Source mR/hr @ 12 inches			300	4,000	
Source mR/hr @ 36 incnes			100	800	
Size of source in cc's				4	
Weight in grams				8	

CPM Alpha					
Direct Beta/Gamma					

Info on source: ISOTOPE	CS137	CS137	CS137	CS137	

Information on pig: DATE	7-80	2-68		PILL	
Smear DPM per 100 cm^2 Alpha				100	
Smear DPM per 100 cm^2 Beta				21K	
CURIE	1000 MCI	2000 MCI	250 MCI	CI 2	

✓ ✓ 100MR DIRECT

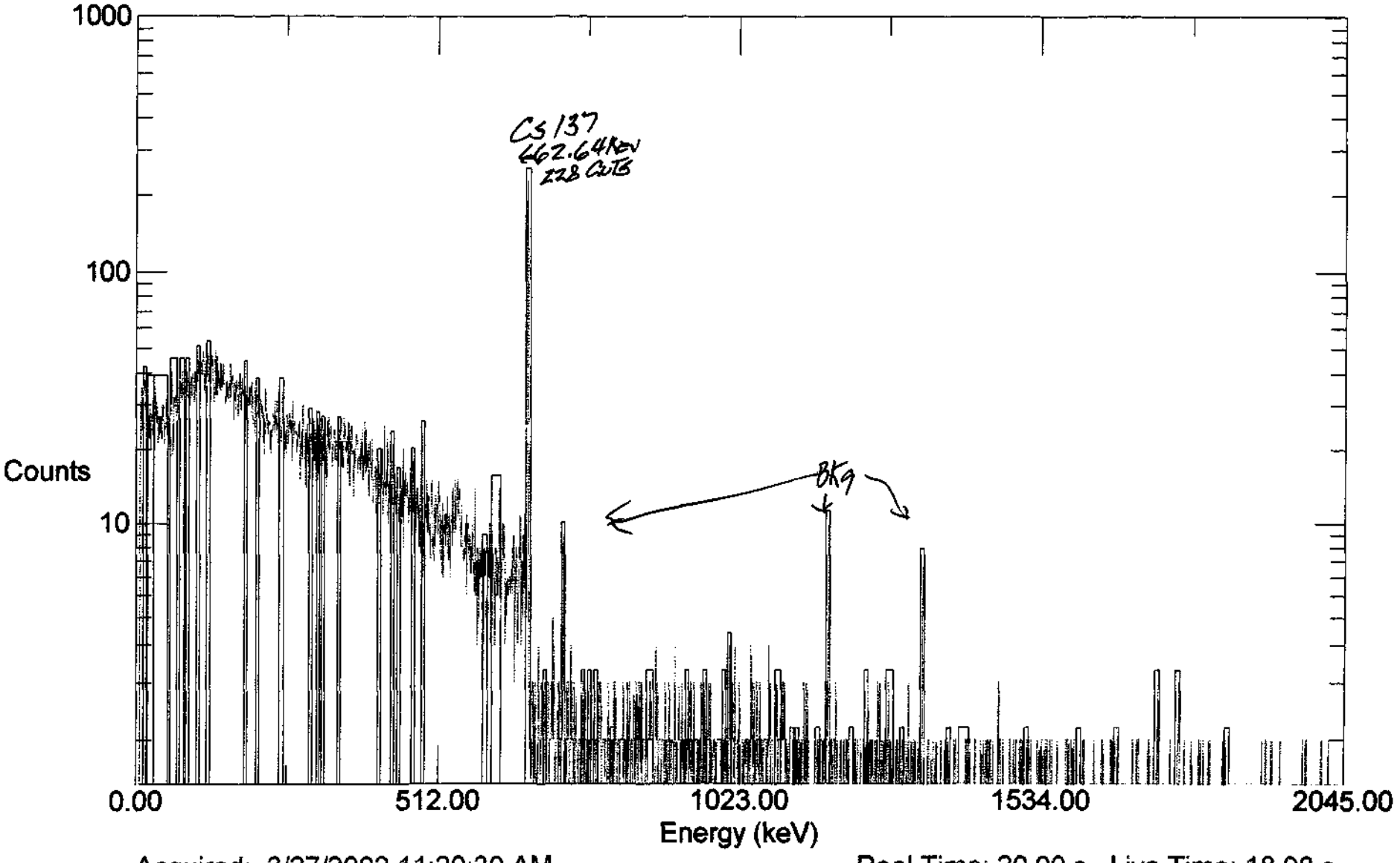
146
RADIOACTIVE

9h1

1/16

002 1SC-146 3-27-2002 11.20.29 AM

1SC-146



Acquired: 3/27/2002 11:20:30 AM Real Time: 20.00 s. Live Time: 18.08 s.

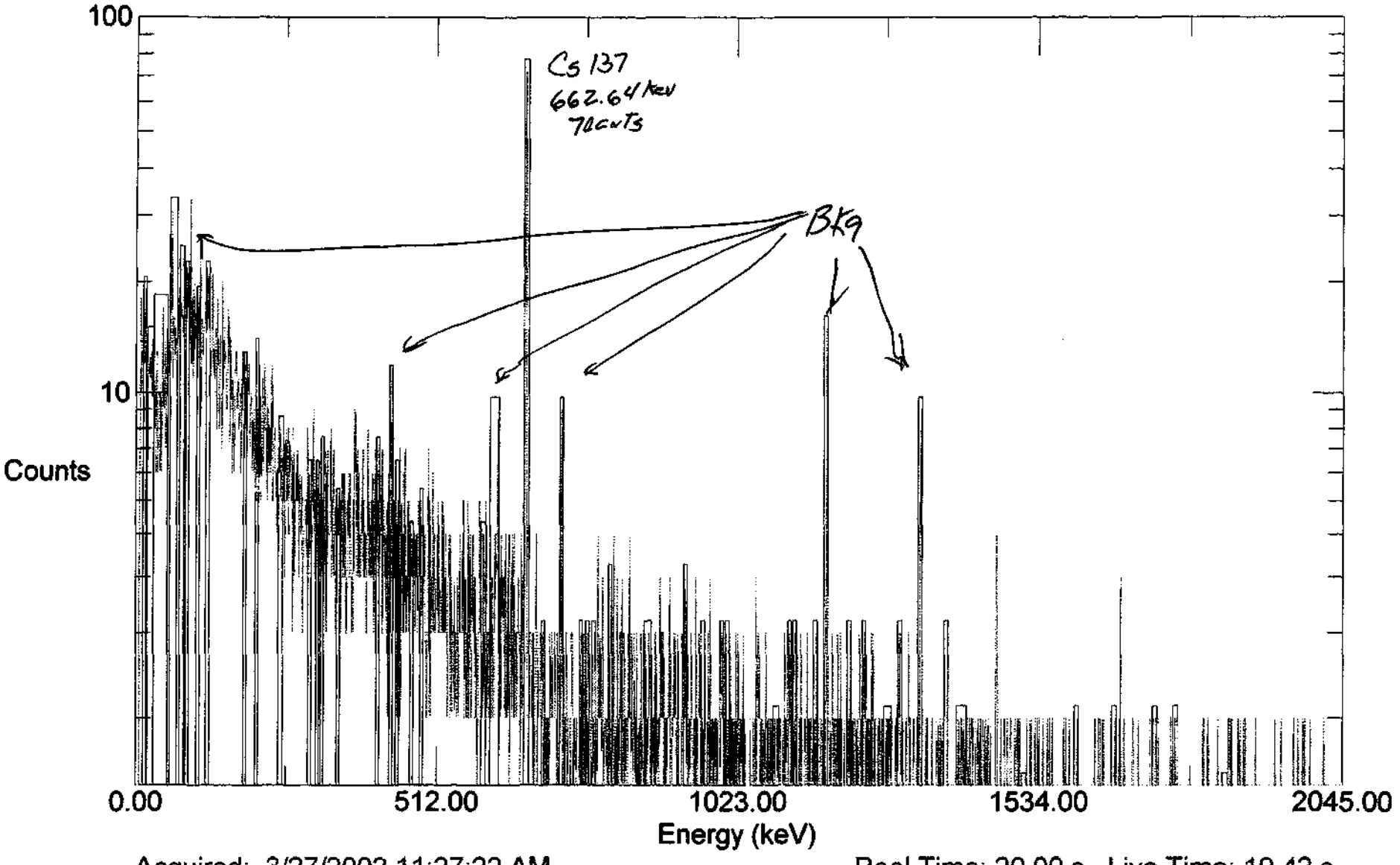
File: C:\User\GNIWEB~1\002 1SC-146 3-27-2002 11.20.29 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

RADIOACTIVE
SPECIAL FORM
USA DOT-7A
GROSS WT
COMPROBE INC.
FORT WORTH TX.

003 1SC-147 3-27-2002 11.27.22 AM

1SC-147



Acquired: 3/27/2002 11:27:22 AM Real Time: 20.00 s. Live Time: 19.42 s.

File: C:\User\GNIWEB~1\003 1SC-147 3-27-2002 11.27.22 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	148	149	150	~~151~~	
External on pig in mR/hr	BKG.	0.5	0.6	~~BKG~~	
External on pig Neutron mR/hr	<1	<1	<1		
Contact open pig mR/hr	N/A				
Beta on open pig mR/hr O/W					

Picture	✓	✓	✓		
DIGET	✓	✓	✓		

Table Readings

Source mR/hr @ 6 inchs	BKG.	~~<.0~~ .2	0.2		
Source mR/hr @ 12 inches	↓	↓	↓		
Source mR/hr @ 36 inches					
Size of ~~source~~ in cc's	700	740	800		
Weight in grams	16 Lb.	16 Lb.	20 ~~16~~ Lb		

CPM Alpha					
Direct Beta/Gamma					

Info on source:			LONG LOCKED PIG		

Information on pig:	LOCKED LONG PIG	LOCKED LONG PIG. SERIAL # NO	Co60 Co6 SERIAL #77-CO-20		
Smear DPM per 100 cm^2 Alpha	250 K	250K	250K		
Smear DPM per 100 cm^2 Beta	20 K	20K	20K		
	USADOT-7A GULF NUC. WEBSTER TX	NO DATE RAD TRIFOIL 6.0 UCI Co60 ~~10 E~~ 10 CO200	0.225 10-3-79 MAYBE USADOT-7A		

USEcology
FS-TX-02-01
Source Log

Date 4-16-01

Re DO OUTSIDE SHIELD

BKG	mR/hr
6"	0.3
12"	0.3
36"	0.3

Container #	149	149	150		
External on pig in mR/hr	—	—	—		
External on pig Neutron mR/hr	—	—	—		
Contact open pig mR/hr	1.6	4	2		
Beta on open pig mR/hr O/W	1.6	4	2		

Picture					
DIGET					

Table Readings

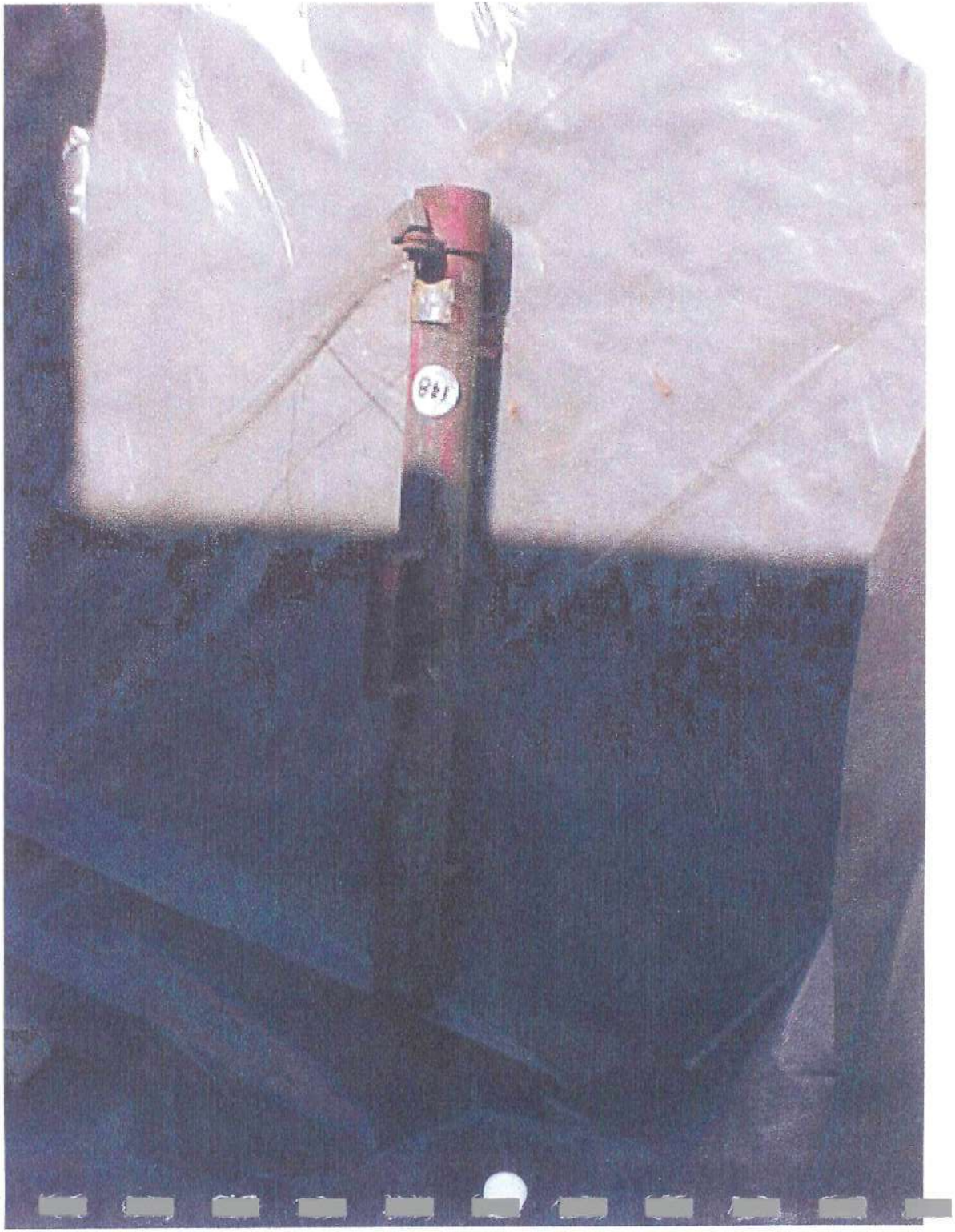
Source mR/hr @ 6 inchs	0.5	0.7	0.7		
Source mR/hr @ 12 inches	0.4	0.5	0.4		
Source mR/hr @ 36 inches	0.3	0.4	0.3		
Size of source in cc's	400	600	500		
Weight in [redacted] POUND	3 LBS	5 LBS	6 LBS		

CPM Alpha					
Direct Beta/Gamma					

Info on source:					

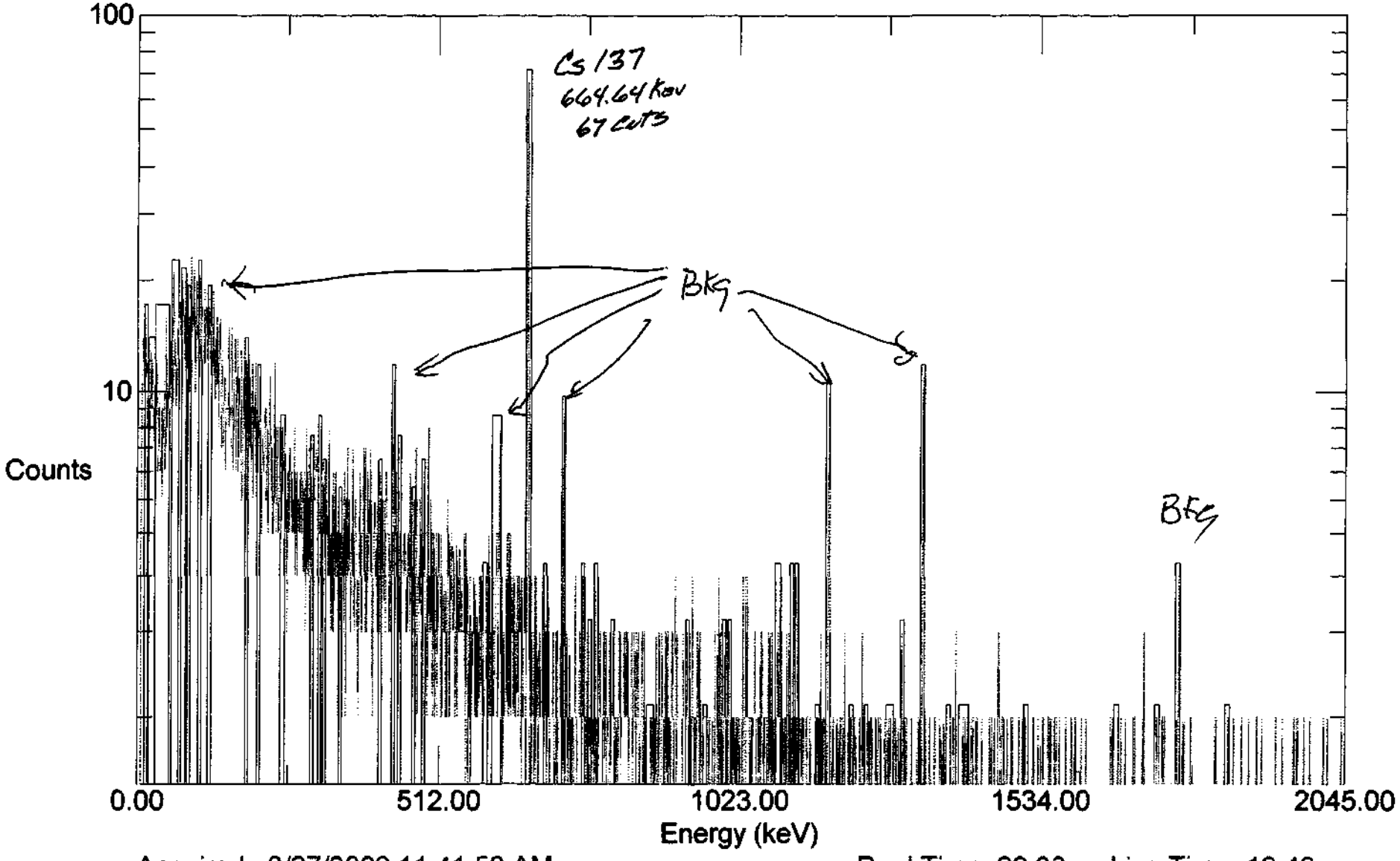
Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

148


148

004 1SC-148 3-27-2002 11.41.57 AM

1SC-148



Acquired: 3/27/2002 11:41:58 AM Real Time: 20.00 s. Live Time: 19.46 s.

File: C:\User\GNIWEB~1\004 1SC-148 3-27-2002 11.41.57 AM.Spc Channels: 8192

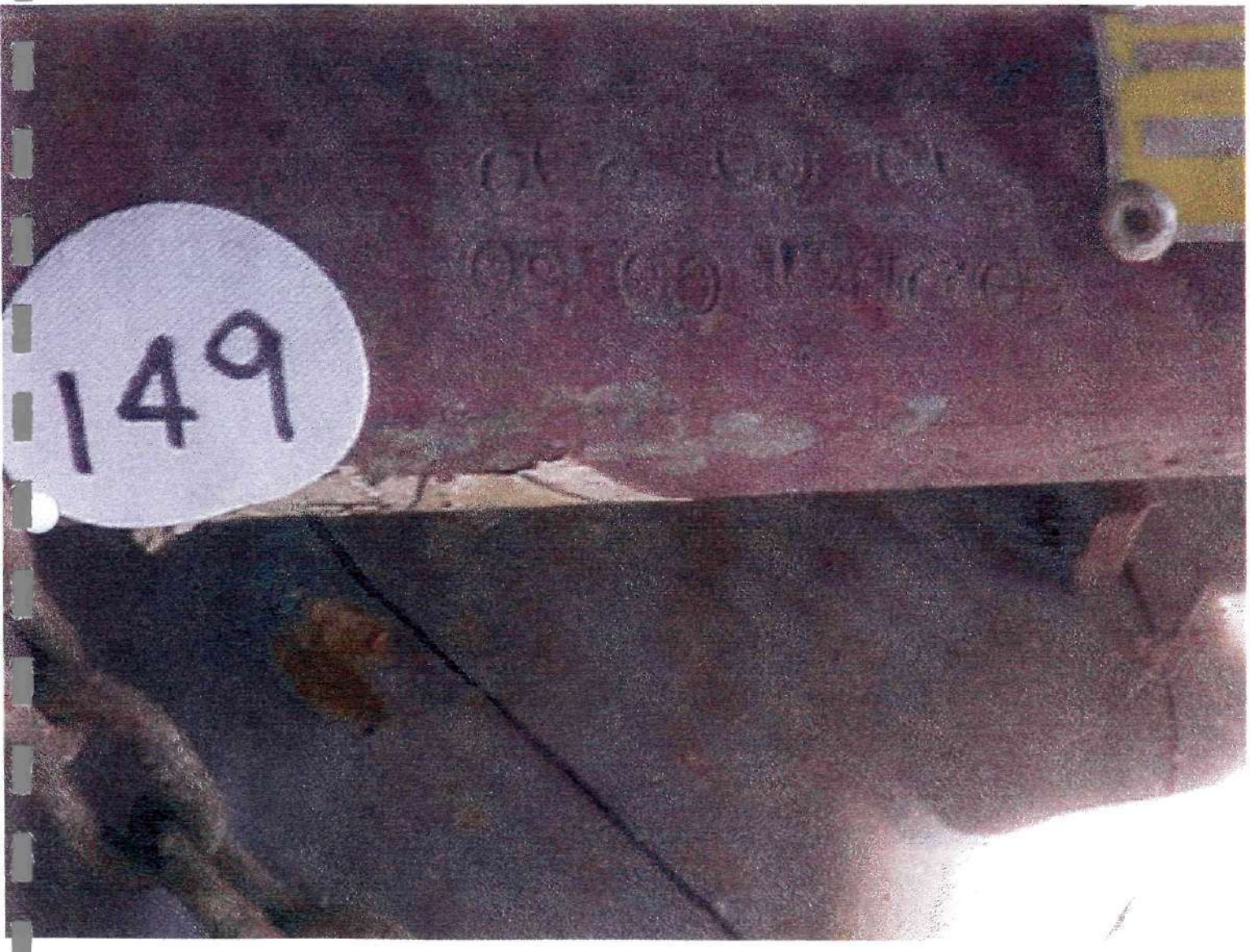
Detector: #1 digiDART USE 1b

Ecology
FS-TX-02-01
Source Log

Date 4-4-02

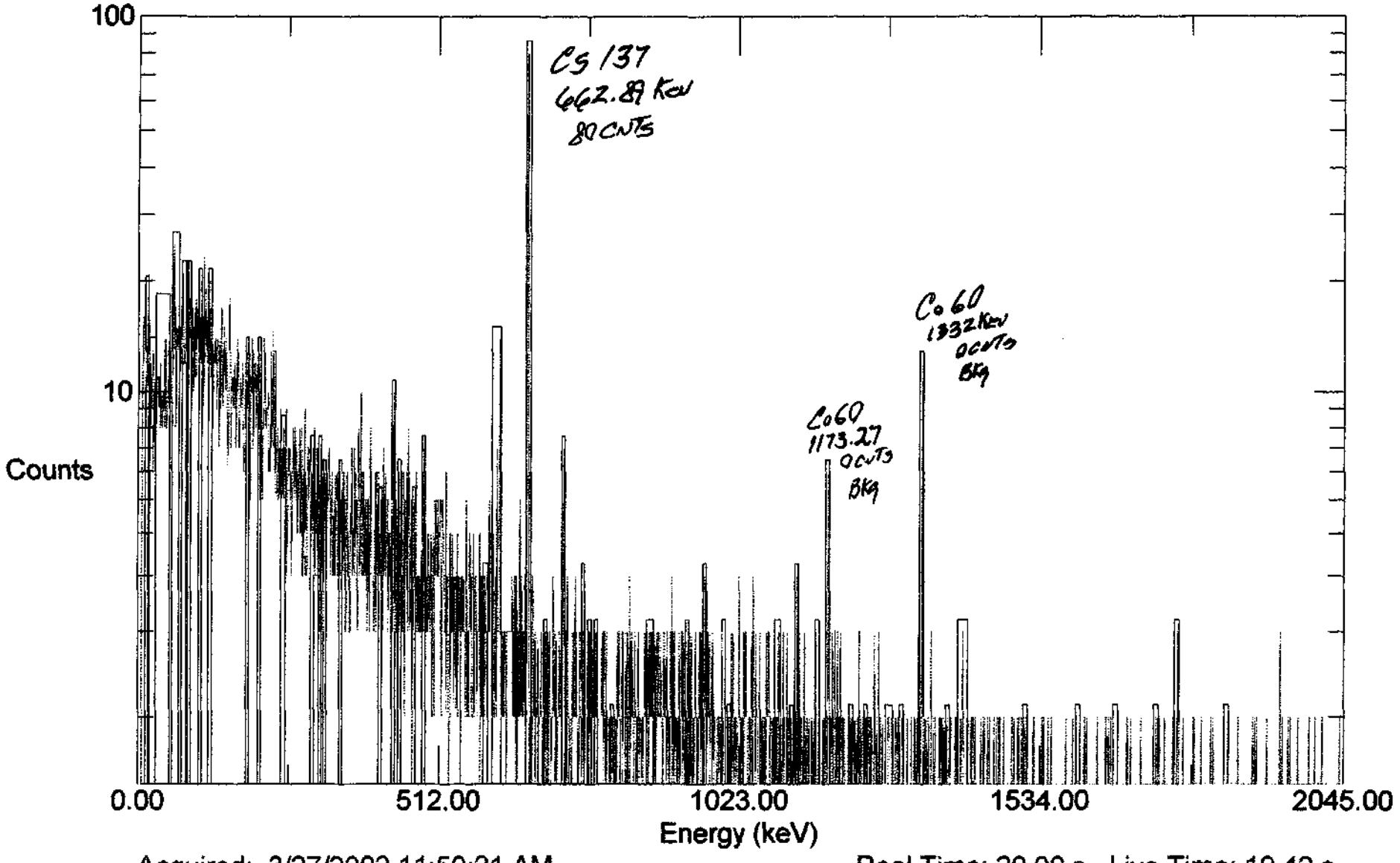
BKG	mR/hr
6"	
12"	
36"	

Container #	148	149	150	151	152
External on pig in mR/hr					
External on pig Neutron mR/hr					
Contact open pig mR/hr					
Beta on open pig mR/hr O/W					
Picture					
Table Readings					
Source mR/hr @ 6 inchs					
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's					
Weight in grams					
CPM Alpha					
Direct Beta/Gamma					
Info on source:					
ISOTOPE		Co-60	Co-60	CS-137	CS-137
Information on pig:					
DATE			10-3-79	5-85	5-85
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
CURIE	*Removed from pig	6.0UCI	*Removed from pig	~~10UCI~~ 10 mCI	~~10UCI~~ 10 mCI


149

005 1SC-149 3-27-2002 11.50.21 AM

1SC-149



Acquired: 3/27/2002 11:50:21 AM Real Time: 20.00 s. Live Time: 19.42 s.

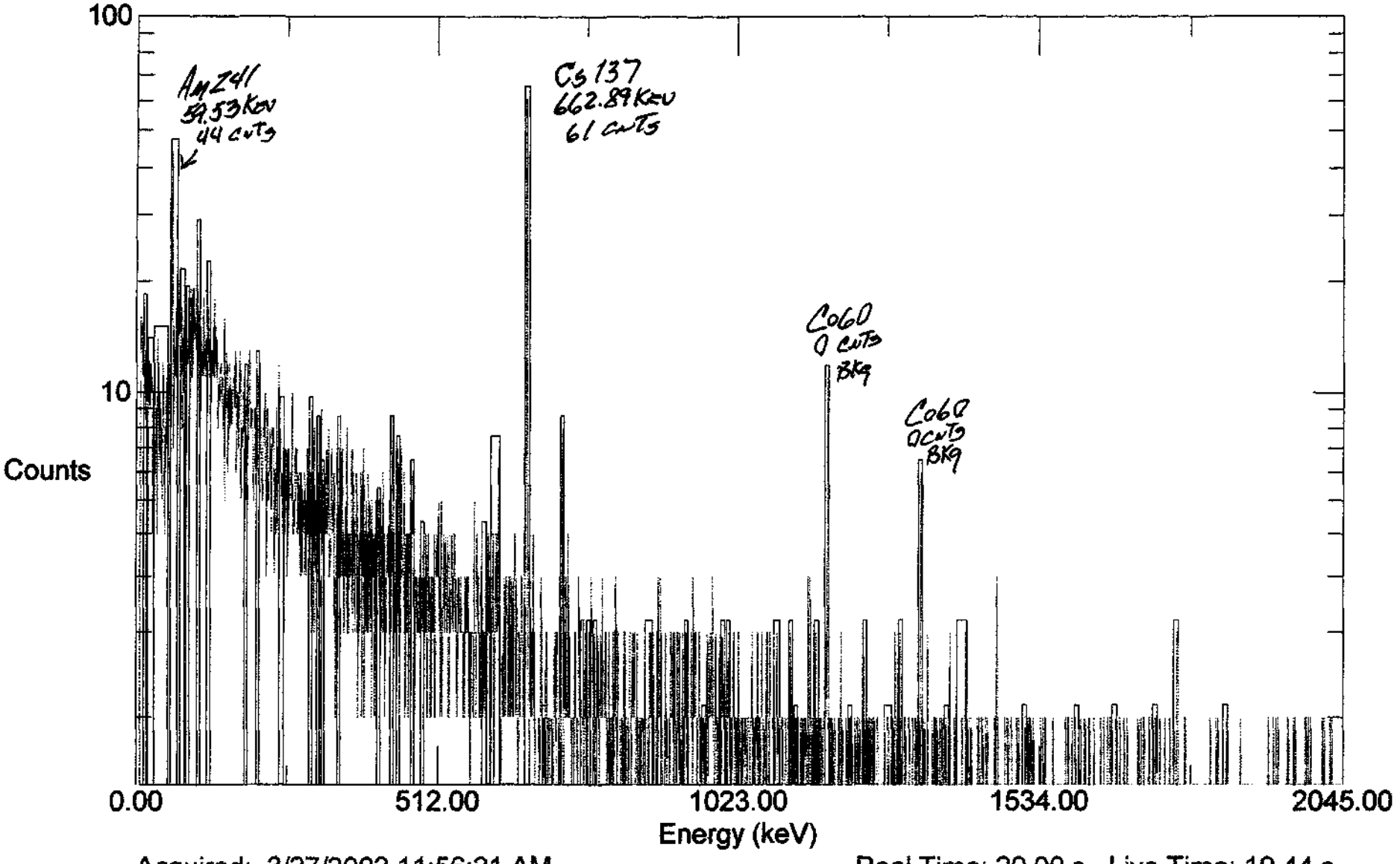
File: C:\User\GNIWEB~1\005 1SC-149 3-27-2002 11.50.21 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

#150

006 1SC-150 3-27-2002 11.56.20 AM

1SC-150



Acquired: 3/27/2002 11:56:21 AM Real Time: 20.00 s. Live Time: 19.44 s.

File: C:\User\GNIWEB~1\006 1SC-150 3-27-2002 11.56.20 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	151				
External on pig in mR/hr	BKG				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	N/A				
Beta on open pig mR/hr O/W					

Picture	✓				
DIGET	✓				

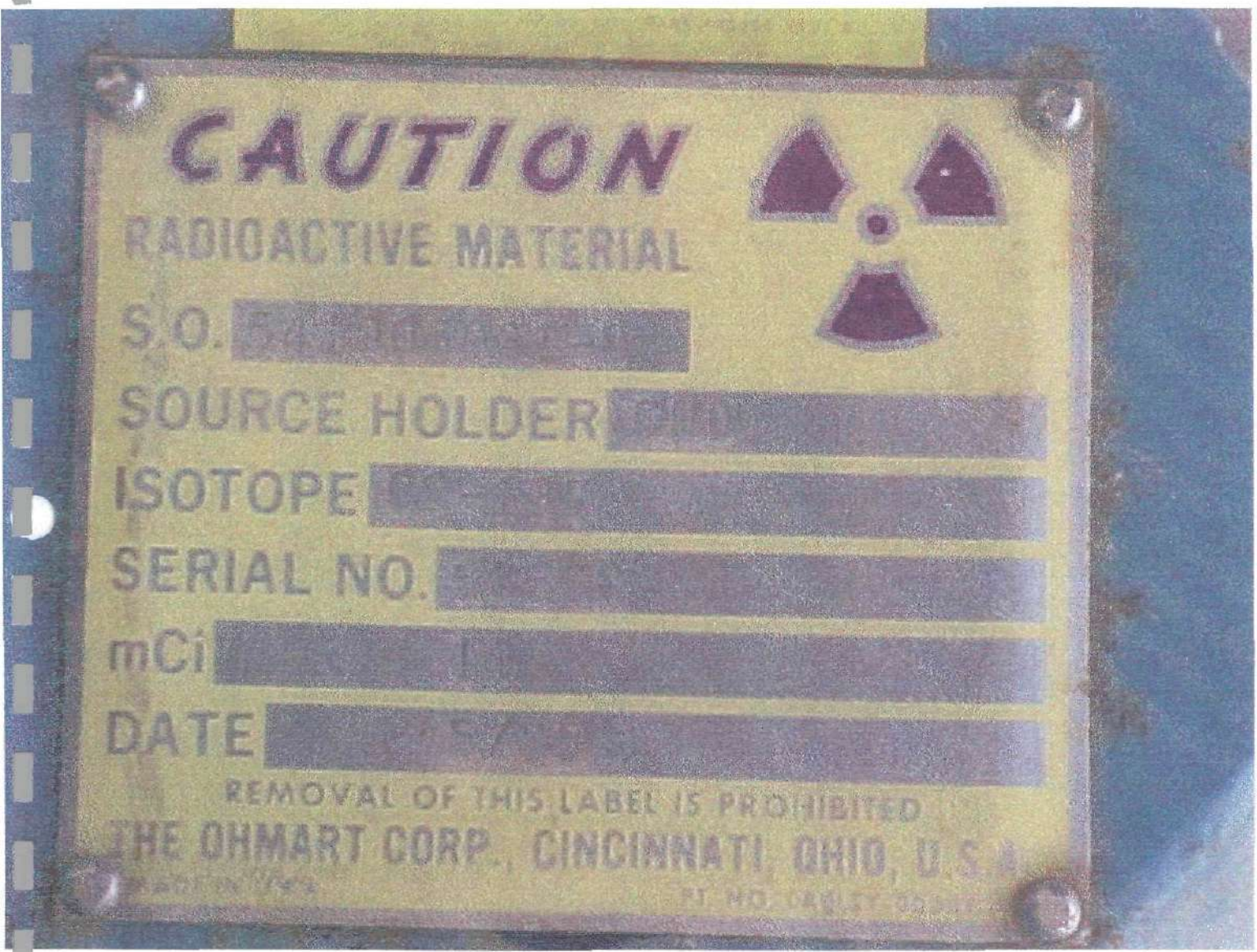
Table Readings

Source mR/hr @ 6 inchs	BKG				
Source mR/hr @ 12 inches	↓				
Source mR/hr @ 36 inches					
Size of ~~source~~ in cc's	115				
Weight in grams	80 Lb				

CPM Alpha					
Direct Beta/Gamma					

Info on source:	RADMAT S.O. 541005031-B ~~SOURCE HOLDER~~ SHD				
Information on pig:	ISO CS-137	SER# 68669			
Smear DPM per 100 cm^2 Alpha	250K				
Smear DPM per 100 cm^2 Beta	20K				
	THE OHMART ~~OHMART~~ ~~CINEMAT~~	10 uci 5-85 CORP. OHIO			

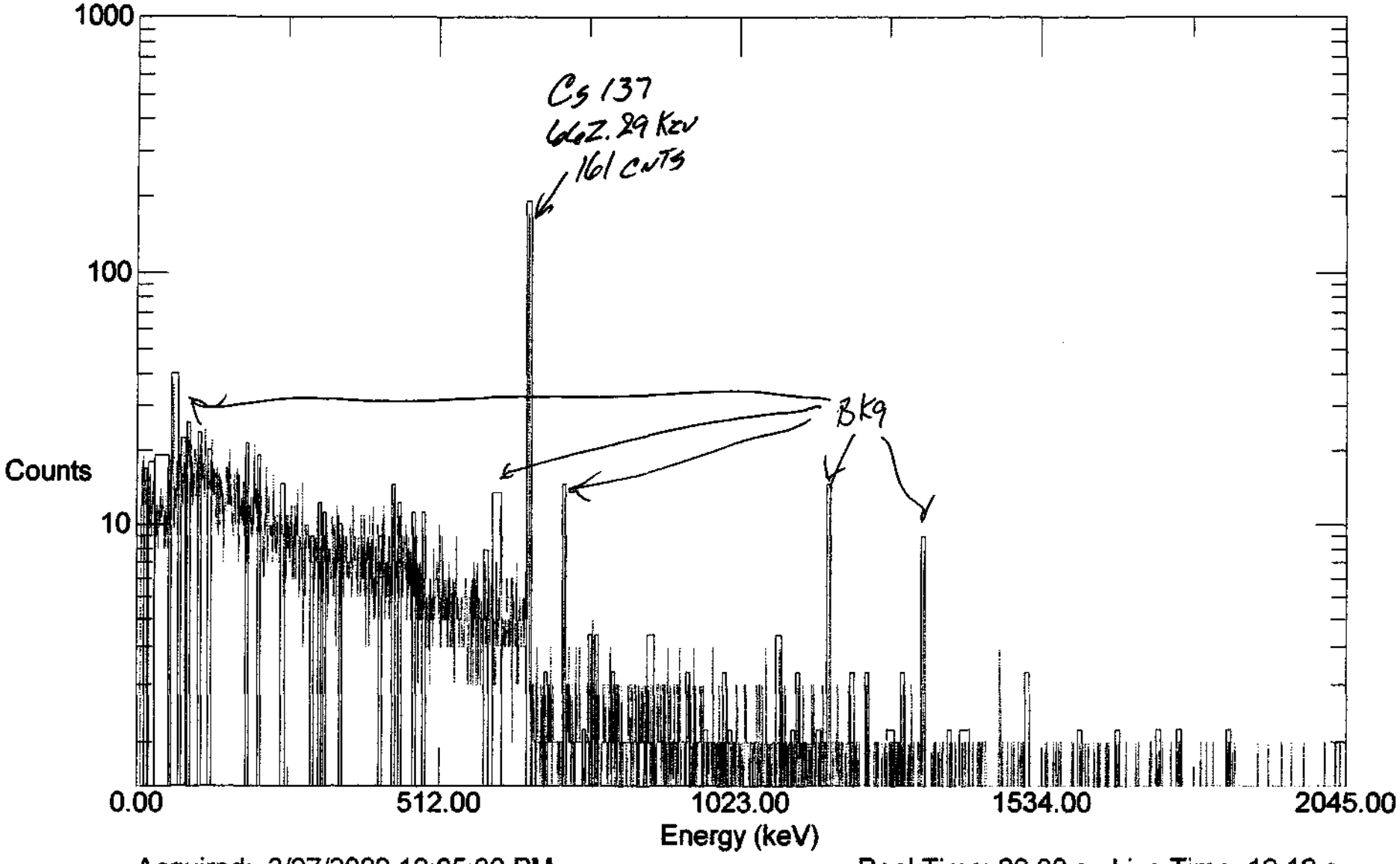
CINCINNATI USA


CAUTION
RADIOACTIVE MATERIAL
S.O.
SOURCE HOLDER
ISOTOPE
SERIAL NO.
mCi
DATE
REMOVAL OF THIS LABEL IS PROHIBITED
THE OHMART CORP., CINCINNATI, OHIO, U.S.A.

#151

007 1SC-151 3-27-2002 12.05.31 PM

1SC-151



Acquired: 3/27/2002 12:05:30 PM Real Time: 20.00 s. Live Time: 19.16 s.

File: C:\User\GNIWEB~1\007 1SC-151 3-27-2002 12.05.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	152	153			
External on pig in mR/hr	0.3	BKG.			
External on pig Neutron mR/hr	<1	<1			
Contact open pig mR/hr	N	A			
Beta on open pig mR/hr O/W					

Picture	✓	✓			
DIGET	✓	✓			

Table Readings

Source mR/hr @ 6 inchs	<.2	BKG			
Source mR/hr @ 12 inches	↓	↓			
Source mR/hr @ 36 inches					
Size of ~~source~~ in cc's	115 ~~.75~~	.75			
Weight in grams	~~47.321~~ 80 Lb.	47.321			

CPM Alpha	~~25 200K~~				
Direct Beta/Gamma	~~30~~				

Info on ~~source~~:	S.O. 541005031-A S SHD ISATOPE CS-137	IR192 ACTIVITY 0" RESIDUAL" uci			

Information on pig:	USADOT TYPE A RAD MAT	LONG (CANT SEE A LOCK) 6" Round Pig			
Smear DPM per 100 cm^2 Alpha	250K →				
Smear DPM per 100 cm^2 Beta	20K				
	THE OHMART CORP. SERIAL # 68668 10 uci 5-85	HALABURTON SER. HWY 31 + 3 R/9 PO BOX 1021 Kilgore TX. 75662 MAYBE ADDRESSED ~~TO GULF NUC. CANT TELL~~ ON TRANSPORT INDEX 0.11 mR/h ON SHIPING LABEL			

ON PLATE HALBURTON SERVICE DUNCAN OK PART # ME7.00008 SER. # E5980-1

152
CAUTION

DO NOT DESTROY THIS TAG

Keep In Your Ohmart Gage File

"The radioactive source contained within this source holder container has been tested prior to shipment in accordance with AEC and state regulations and has been found to have less than 0.005 micro curies of removable activity."

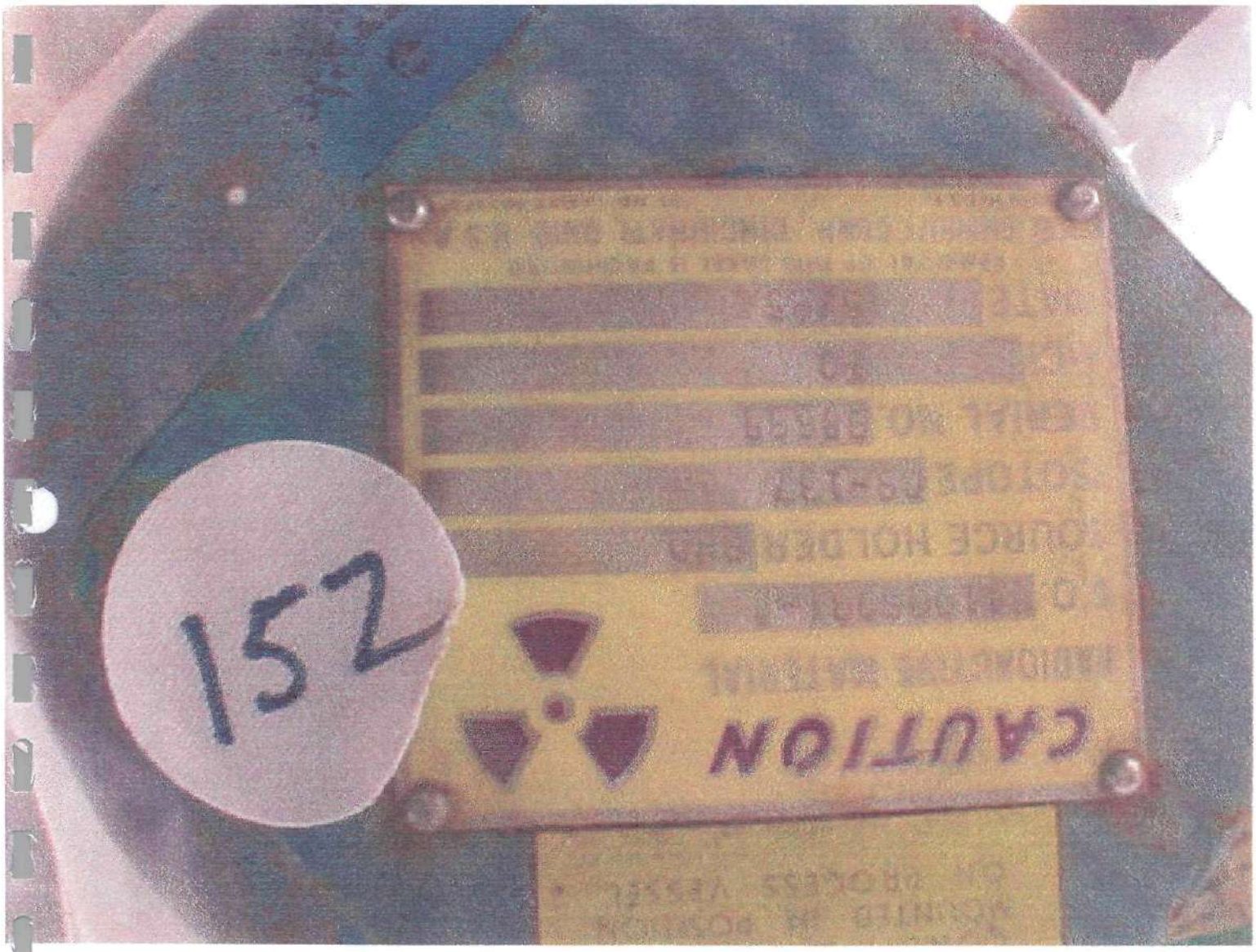
Leak Test Date [illegible] By [illegible]

THE OHMART CORPORATION Cincinnati, Ohio 45209, U.S.A.

This meter page or component has been carefully tested and meets our rigid specifications. Reasonable care in handling this precision instrument will provide long and troublefree service.

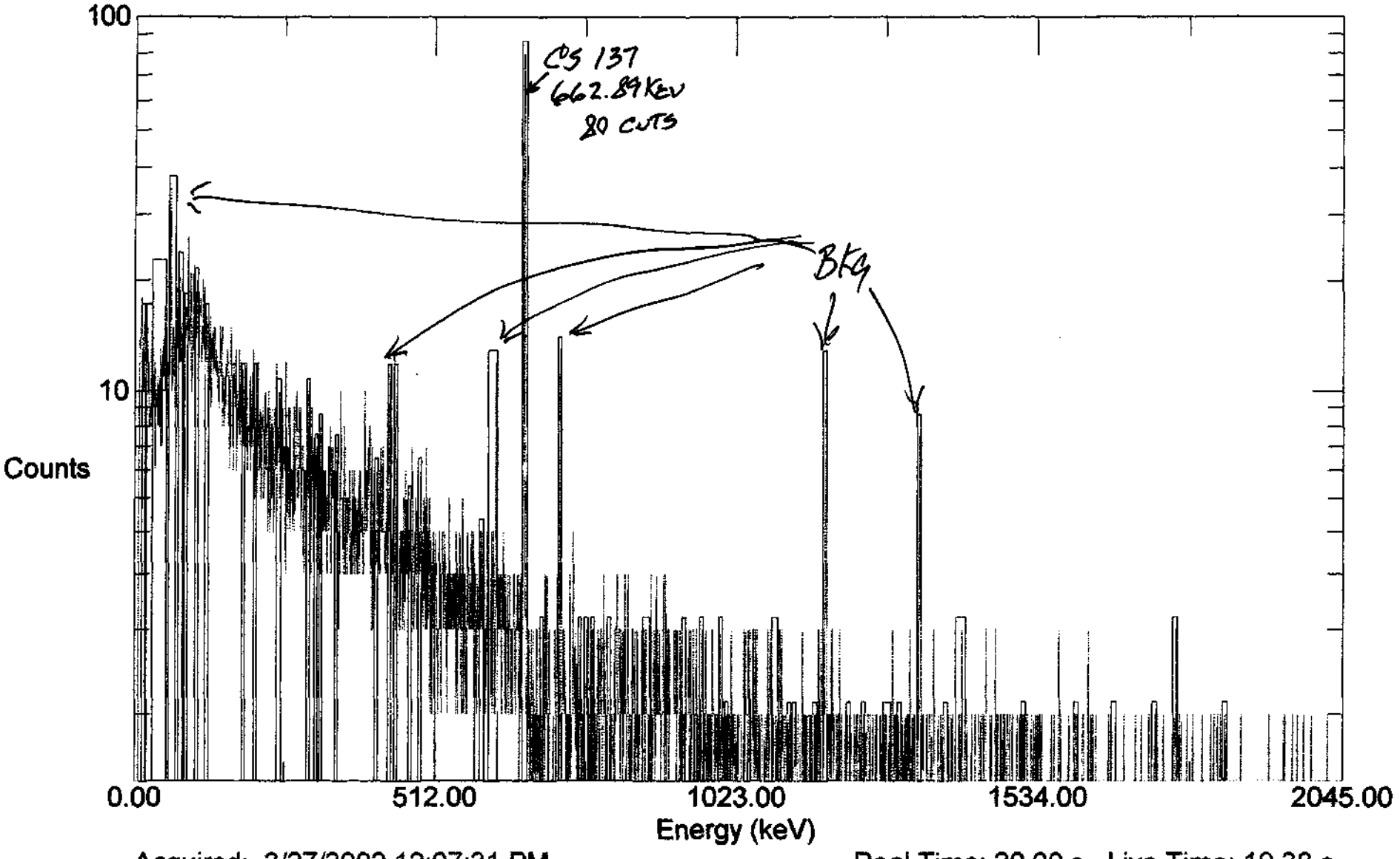
Quality Control Insp. by

THE ONMART CORPORATION
CINCINNATI, OHIO 45209


CAUTION
152

008 1SC-152 3-27-2002 12.07.31 PM

1SC-152



Acquired: 3/27/2002 12:07:31 PM Real Time: 20.00 s. Live Time: 19.38 s.

File: C:\User\GNIWEB~1\008 1SC-152 3-27-2002 12.07.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

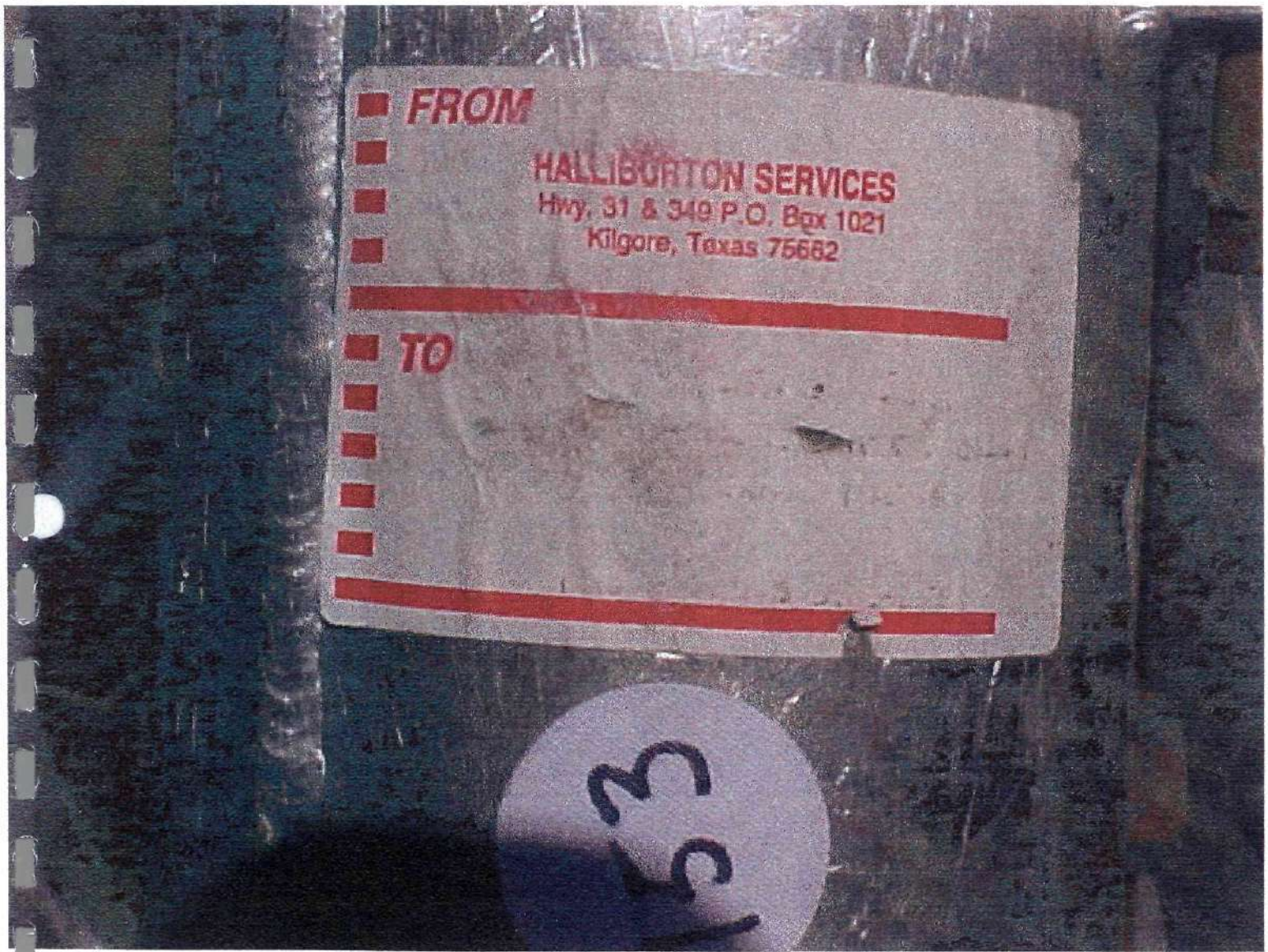
USEcology
FS-TX-02-01
Source Log

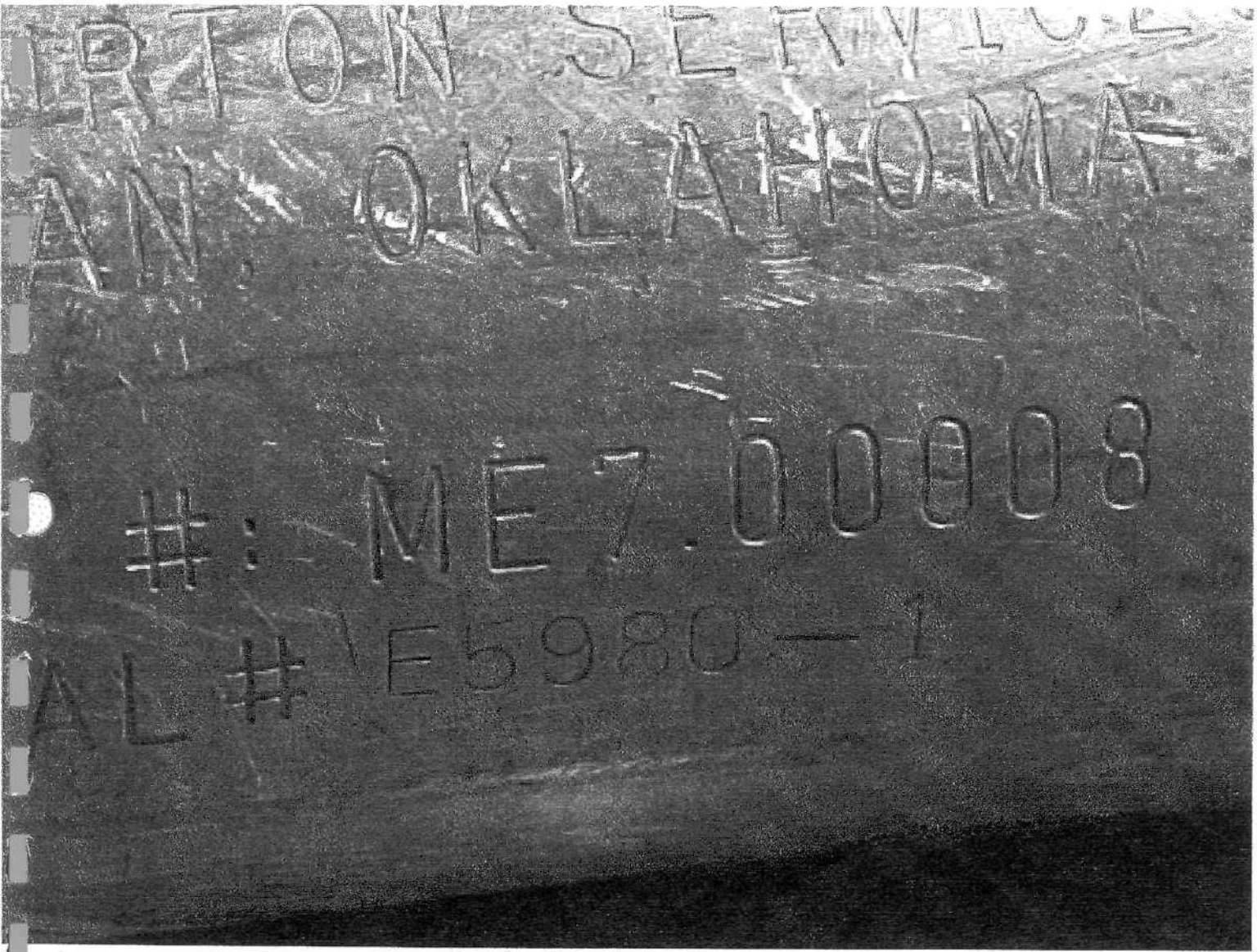
Date 4-4-02

BKG	mR/hr
6"	
12"	
36"	

Container #	153	154	155	156	157
External on pig in mR/hr					
External on pig Neutron mR/hr					
Contact open pig mR/hr					
Beta on open pig mR/hr O/W					
Picture					
Table Readings					
Source mR/hr @ 6 inchs					
Source mR/hr @ 12 inches					
Source mR/hr @ 36 inches					
Size of source in cc's					
Weight in grams					
CPM Alpha					
Direct Beta/Gamma					
Info on source:					
ISOTOPE	IR 192	DU		RA 226	CS137
Information on pig:					
DATE	* NO source				9-79
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
CURIE		NO INFO	NO INFO	2mCI	100 ~~uCI~~ mCI

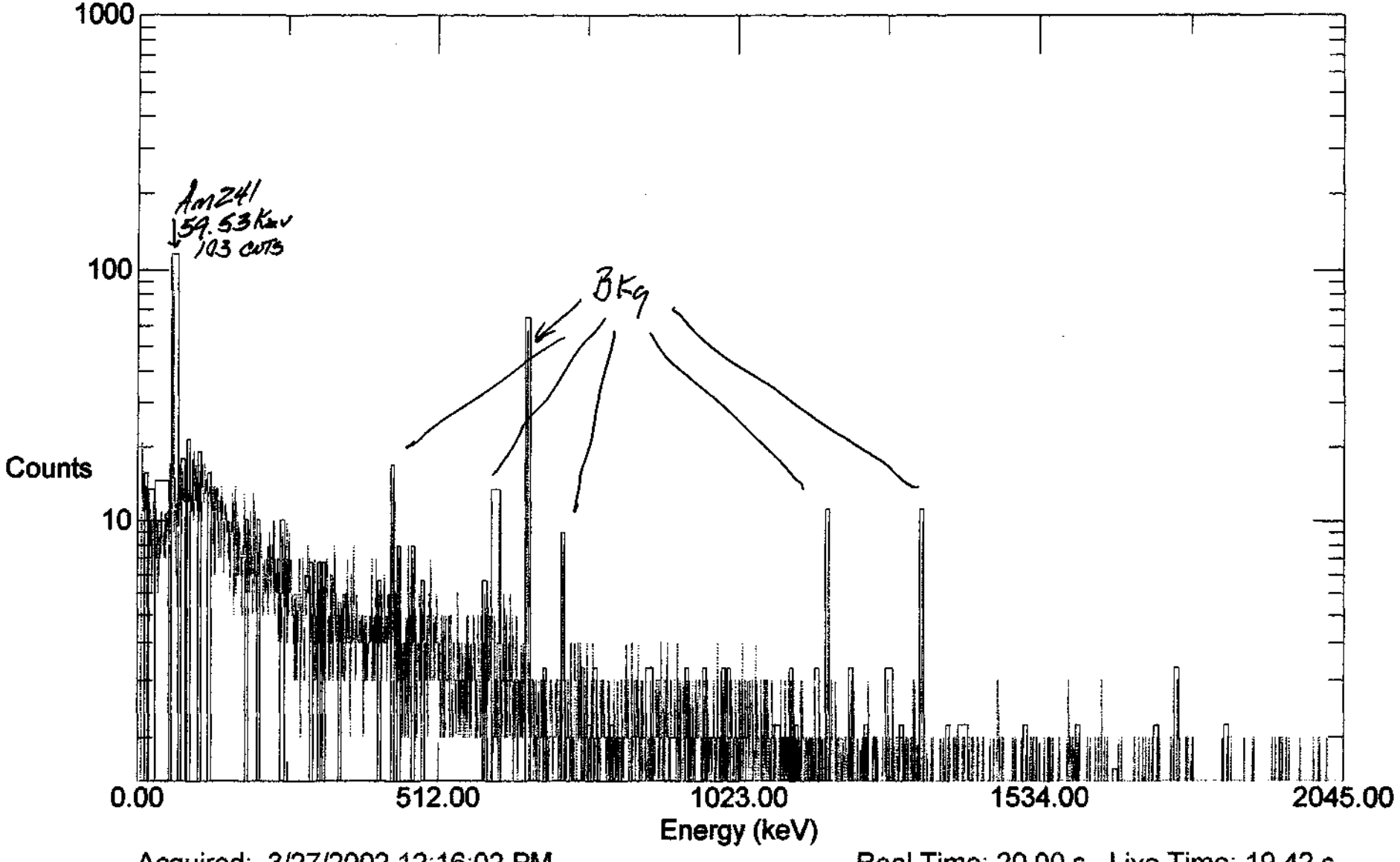
800 mR/hr
SOURCE
EXPOSED


FROM
HALLIBURTON SERVICES
Hwy. 31 & 349 P.O. Box 1021
Kilgore, Texas 75662
TO
33


IRTON SERVICES
AN OKLAHOMA
#: ME7.0008
AL #VE5980-1

009 1SC-153 3-27-2002 12.16.02 PM

1SC-153



Acquired: 3/27/2002 12:16:02 PM Real Time: 20.00 s. Live Time: 19.42 s.

File: C:\User\GNIWEB~1\009 1SC-153 3-27-2002 12.16.02 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

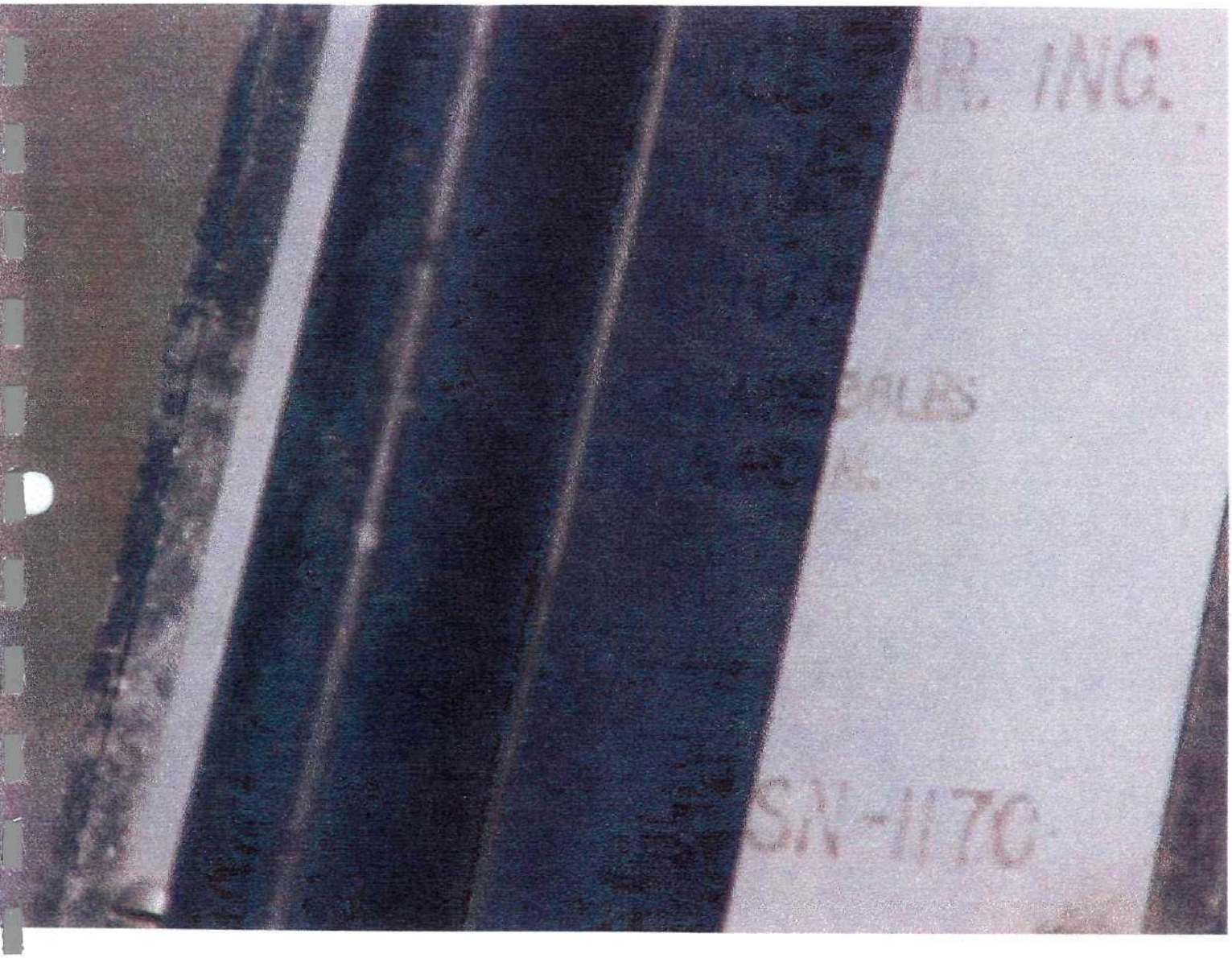
USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	154		155	156	
External on pig in mR/hr	1.5		1.5	BKG	
External on pig Neutron mR/hr	<1		<1	<1	
Contact open pig mR/hr	1.5		1.5	BKG	
Beta on open pig mR/hr O/W	↓		1.5	↓	
Picture	✓		✓	✓	
DIGET	✓		✓	✓	
Table Readings					
Source mR/hr @ 6 inchs	0.5	→	→	→	
Source mR/hr @ 12 inches	BKG.				
Source mR/hr @ 36 inches					
Size of source in cc's	80	→	→	105	
Weight in grams	36 Lb			70 Lb	
CPM Alpha					
Direct Beta/Gamma					
Info on source:	GULFNUC INC CALIFORNIA MODEL# U110A SAYS		→	RAD TRIFOIL RA226 AMOUNT: 12 mci	
Information on pig:	This unit CONTAINS 36 Lbs. OF DEPLETED URANIUM"		→	SERIAL# R441	
Smear DPM per 100 cm^2 Alpha	250K		250K	250K	
Smear DPM per 100 cm^2 Beta	20K		20K	20K	
	SIGNALHILL SN-124C →		~~H-SP~~ SN-117C CAUTION RAD. MAT → NOTIFY AUTHORITES IF FOUND	SUPPLIER: IN-VAL-CO ILLEGABLE THE REST IS	

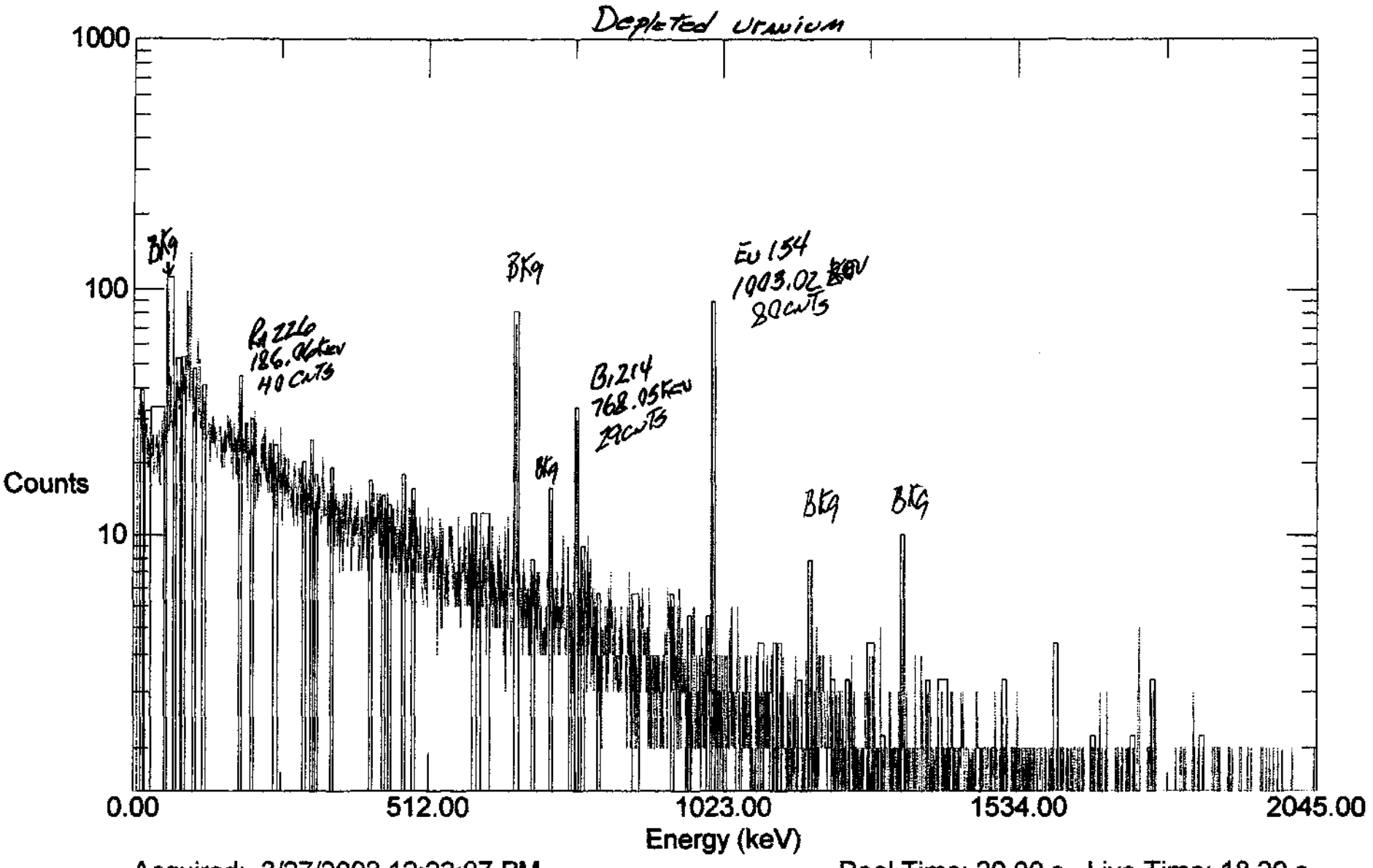
15-4


SN-1170

SN-124

010 1SC-154 3-27-2002 12.23.08 PM

1SC-154



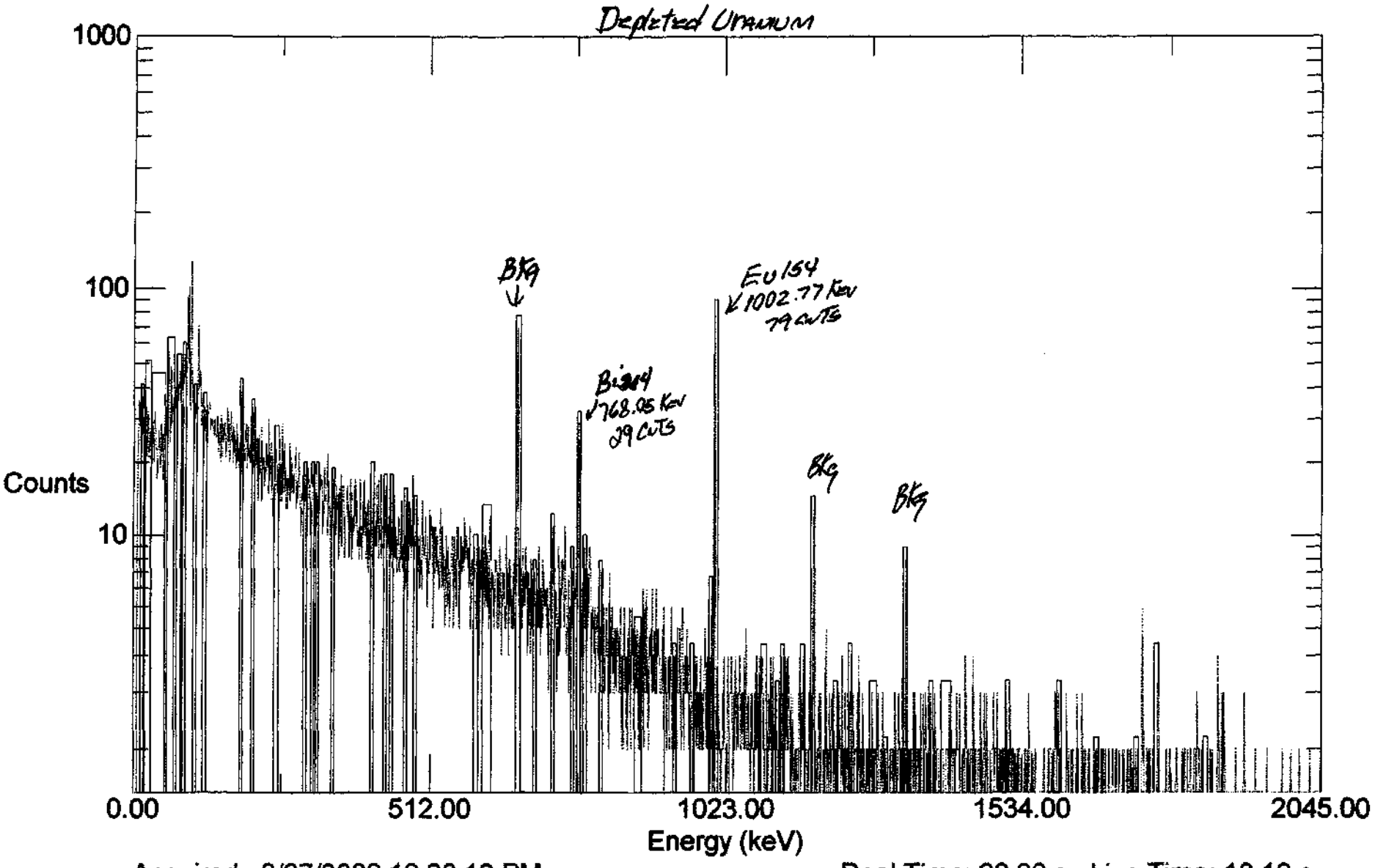
Acquired: 3/27/2002 12:23:07 PM Real Time: 20.00 s. Live Time: 18.20 s.

File: C:\User\GNIWEB~1\010 1SC-154 3-27-2002 12.23.08 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

011 1SC-155 3-27-2002 12.28.12 PM

1SC-155



Acquired: 3/27/2002 12:28:12 PM Real Time: 20.00 s. Live Time: 18.12 s.

File: C:\User\GNIWEB~1\011 1SC-155 3-27-2002 12.28.12 PM.Spc Channels: 8192

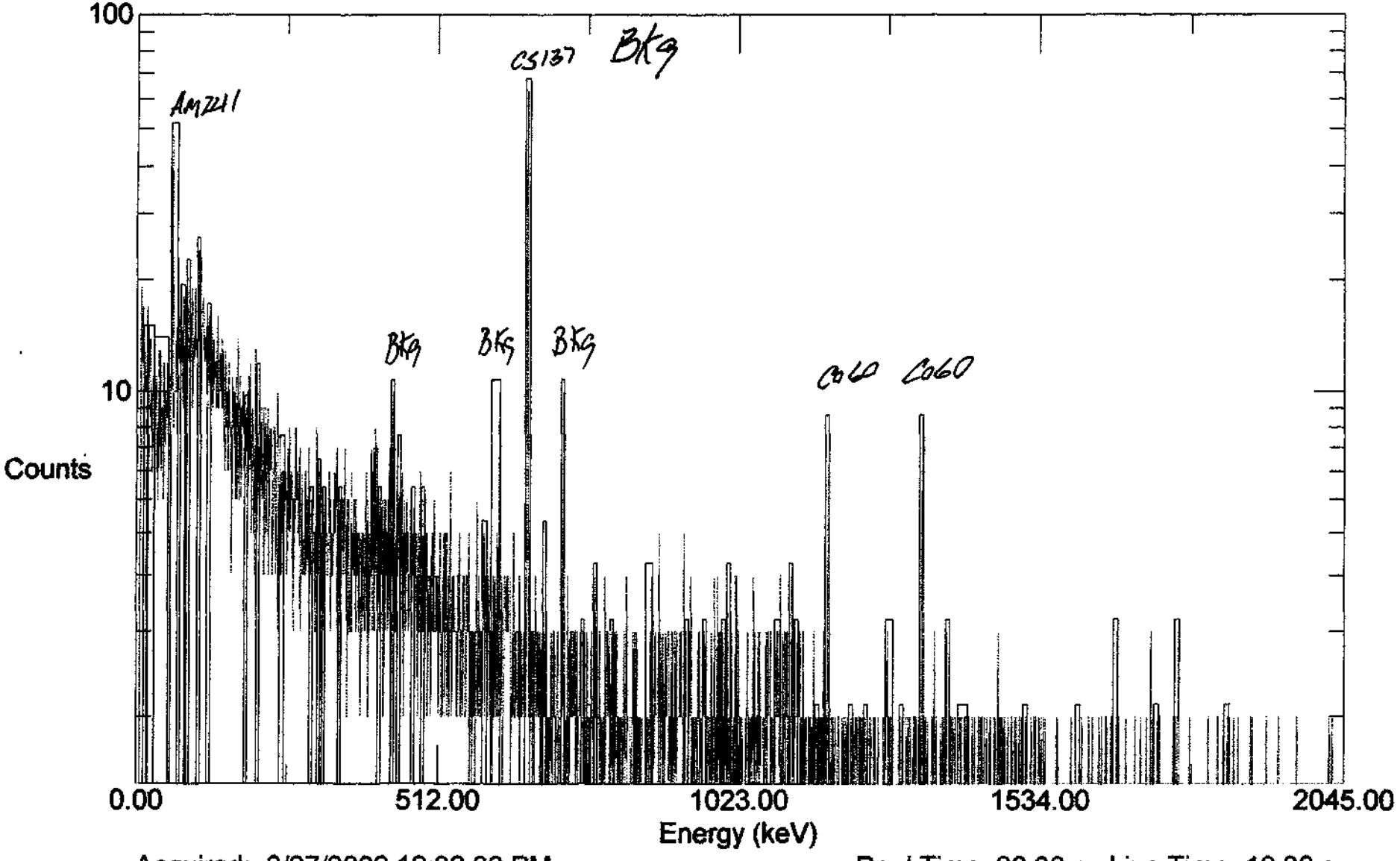
Detector: #1 digiDART USE 1b

156

Re-...

012 1SC-156 3-27-2002 12.32.32 PM

1SC-156



Acquired: 3/27/2002 12:32:32 PM Real Time: 20.00 s. Live Time: 19.36 s.

File: C:\User\GNIWEB~1\012 1SC-156 3-27-2002 12.32.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	157				
External on pig in mR/hr	11				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	11				
Beta on open pig mR/hr O/W	11				

Picture	✓				
DIGET	✓				

Table Readings

Source mR/hr @ 6 inchs	3				
Source mR/hr @ 12 inches	1				
Source mR/hr @ 36 inches	0.4				
Size of source in cc's	77				
Weight in grams	10				

CPM Alpha					
Direct Beta/Gamma					

Info on source:	Cs 137. 100mCi 9-79				

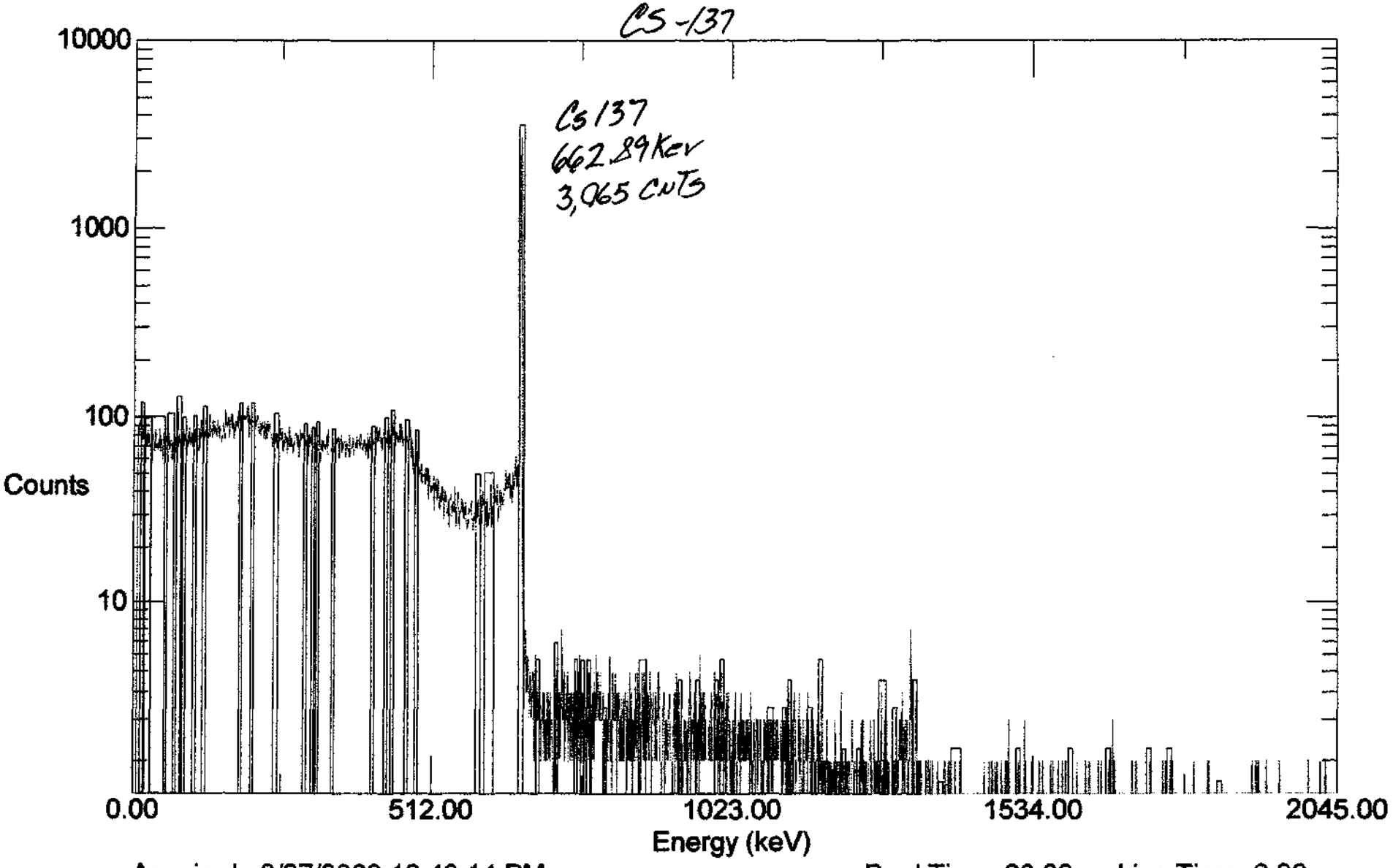
Information on pig:	#70628 #10369 01-DE18				
Smear DPM per 100 cm^2 Alpha	250K				
Smear DPM per 100 cm^2 Beta	20K				
	PLATE HAS NRC REQ. DISPOSAL				

157

CS137
10368
5

013 1SC-157 3-27-2002 12.40.14 PM

1SC-157



Acquired: 3/27/2002 12:40:14 PM Real Time: 20.00 s. Live Time: 6.26 s.
File: C:\User\GNIWEB~1\013 1SC-157 3-27-2002 12.40.14 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	158	159	160	161	162
External on ~~pig~~ in mR/hr	<.2	BKG	0.5	0.8	<.2
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr	<.2	BKG	0.5	0.2 ~~0.45~~	<.2
Beta on open ~~pig~~ mR/hr O/W	<.2		1.5	0.4	0.5

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	<.2	<.2	<.2
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	60	60	60	60	20
Weight in grams	70	70	70	70	17

CPM Alpha	<25	NO α	<25	<25	<25
Direct Beta/Gamma	650	BKG	3000	1600	6500

Info on source:	~~GRE~~ GRAY ISH Liquid	Liq	Ag 119 10-22-82	IR 192 Liq	Liq

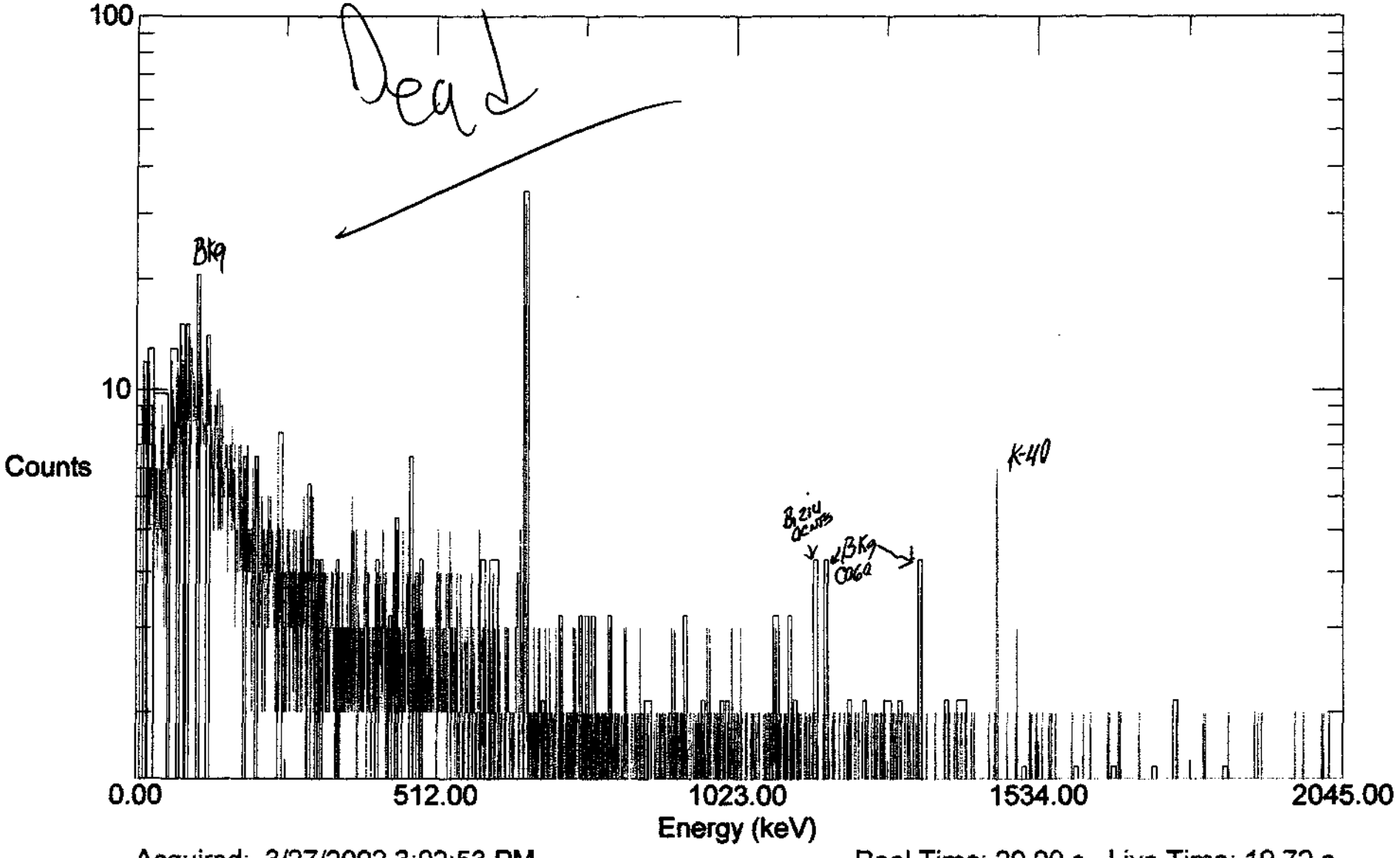
Information ~~on pig~~:	NO pig →				
Smear DPM per 100 cm^2 Alpha	~~[illegible]~~	NO α	20000	<250	<250
Smear DPM per 100 cm^2 Beta	~~<250~~	2000	500	8000	2000
	<250 α / 4000 β				

158

Re shoot

015 1SC-158 3-27-2002 3.02.52 PM

1SC-158



Acquired: 3/27/2002 3:02:53 PM Real Time: 20.00 s. Live Time: 19.72 s.

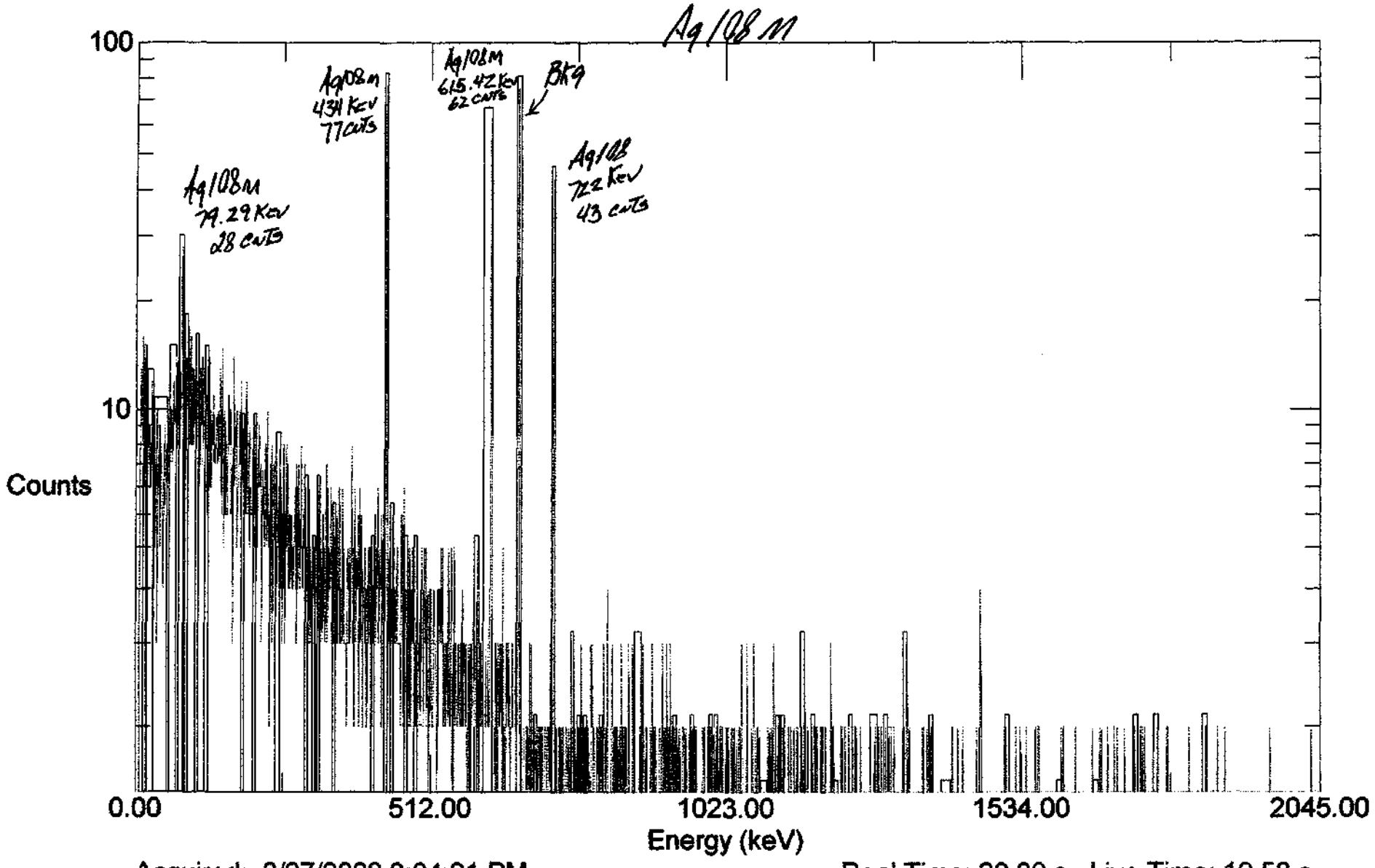
File: C:\User\GNIWEB~1\015 1SC-158 3-27-2002 3.02.52 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

159

016 1SC-159 3-27-2002 3.04.21 PM

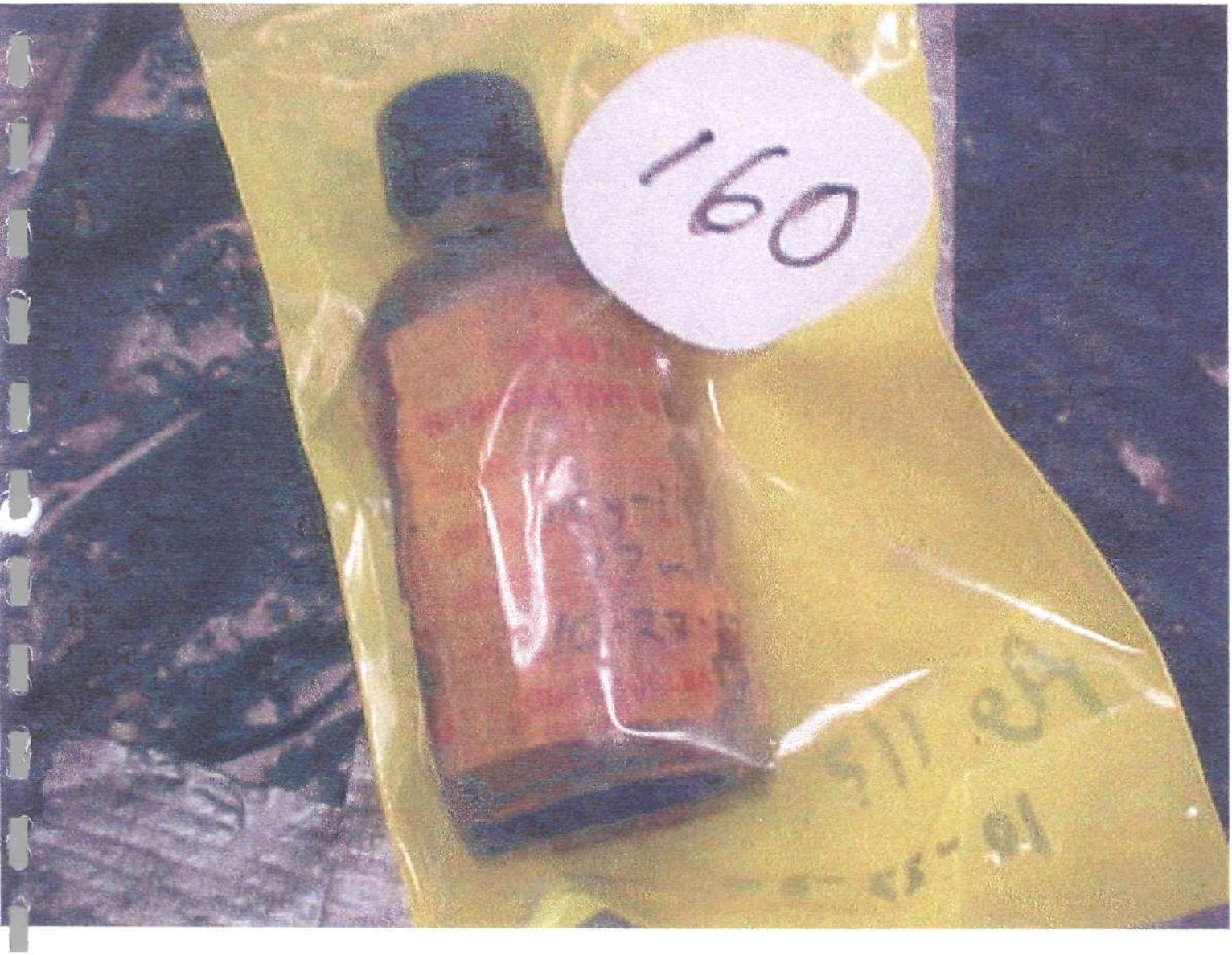
1SC-159



Acquired: 3/27/2002 3:04:21 PM Real Time: 20.00 s. Live Time: 19.58 s.

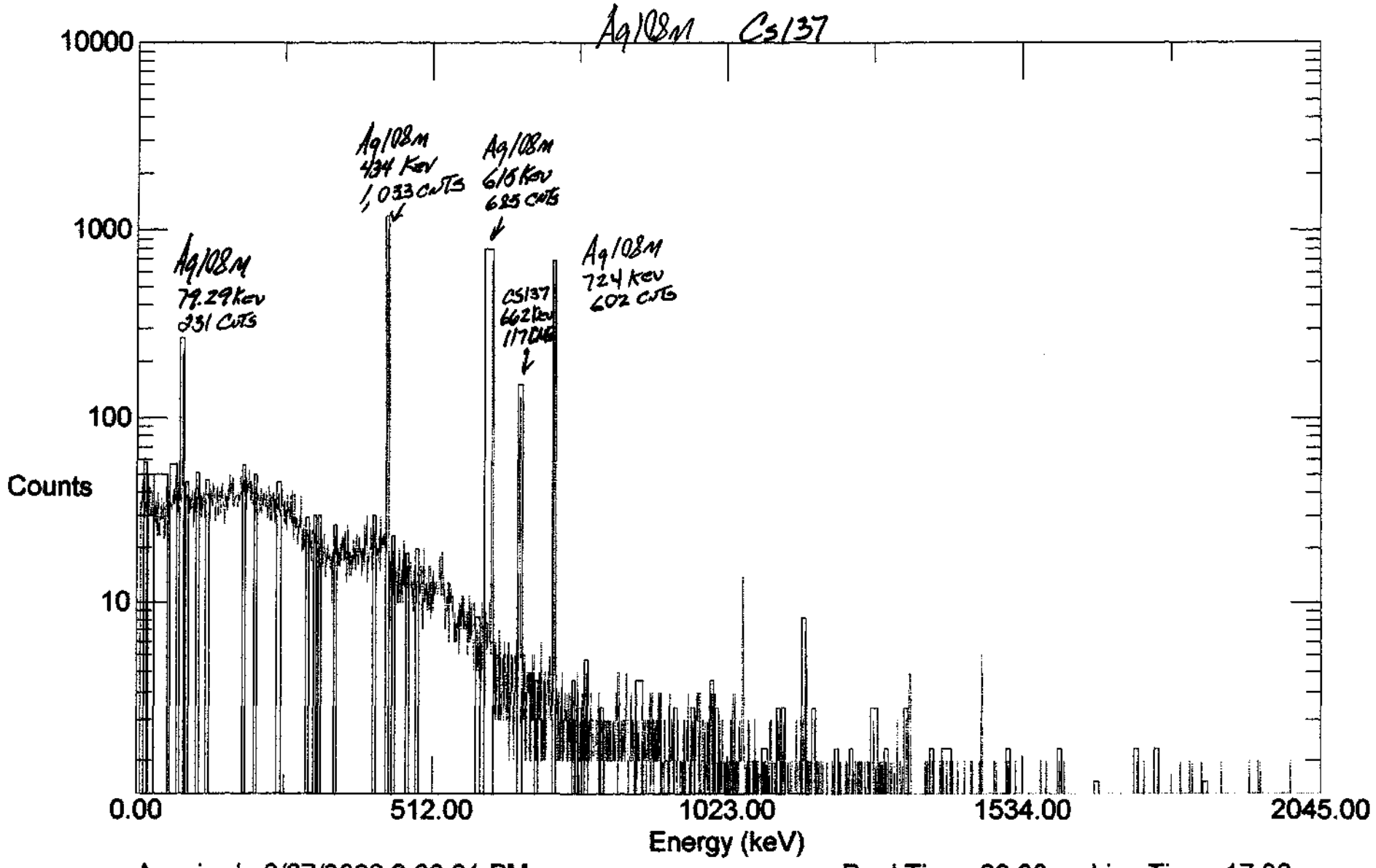
File: C:\User\GNIWEB~1\016 1SC-159 3-27-2002 3.04.21 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


160

017 1SC-160 3-27-2002 3.06.00 PM

1SC-160



Acquired: 3/27/2002 3:06:01 PM Real Time: 20.00 s. Live Time: 17.30 s.

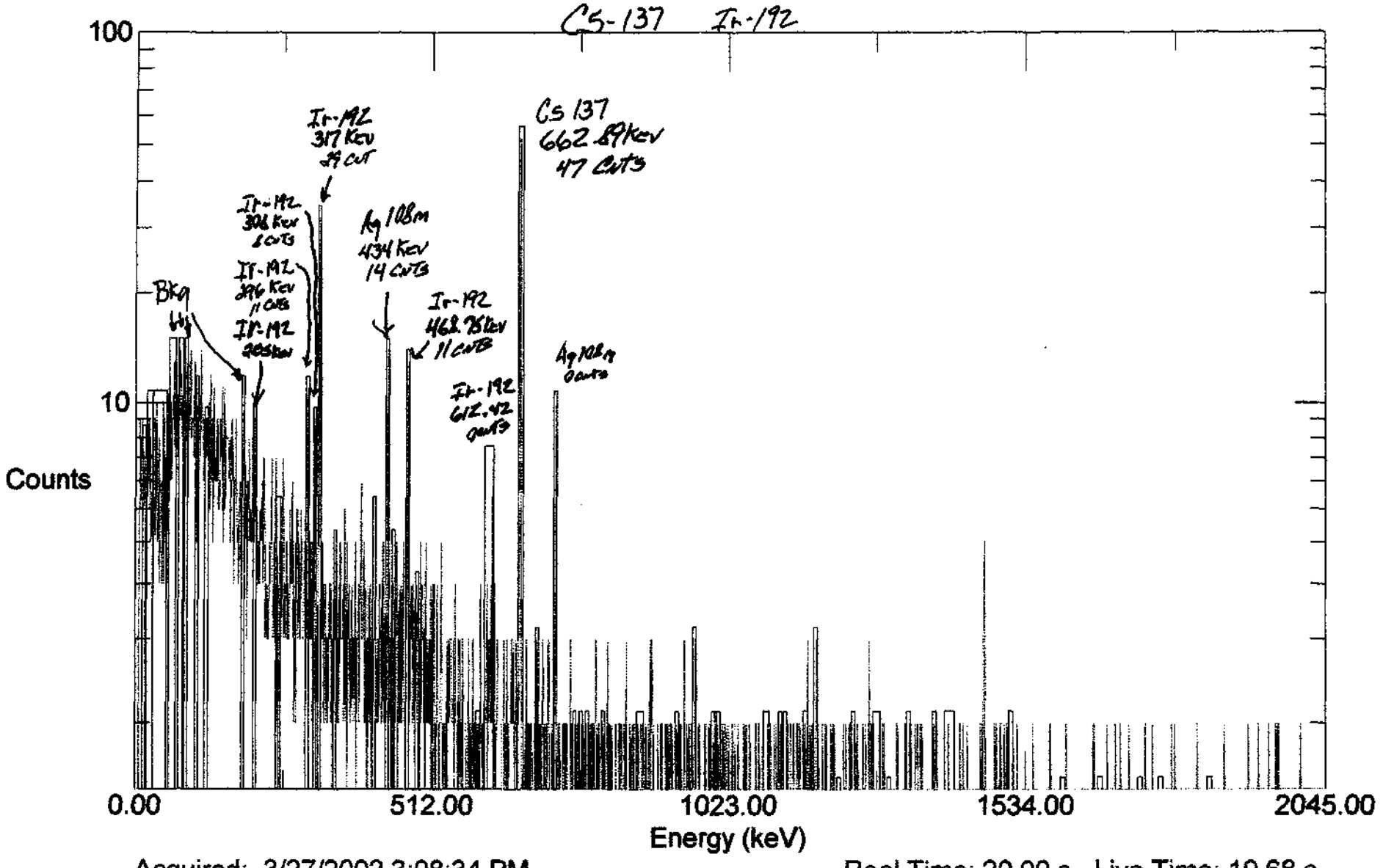
File: C:\User\GNIWEB~1\017 1SC-160 3-27-2002 3.06.00 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

161
IR-192

018 1SC-161 3-27-2002 3.08.34 PM

1SC-161



Acquired: 3/27/2002 3:08:34 PM Real Time: 20.00 s. Live Time: 19.68 s.

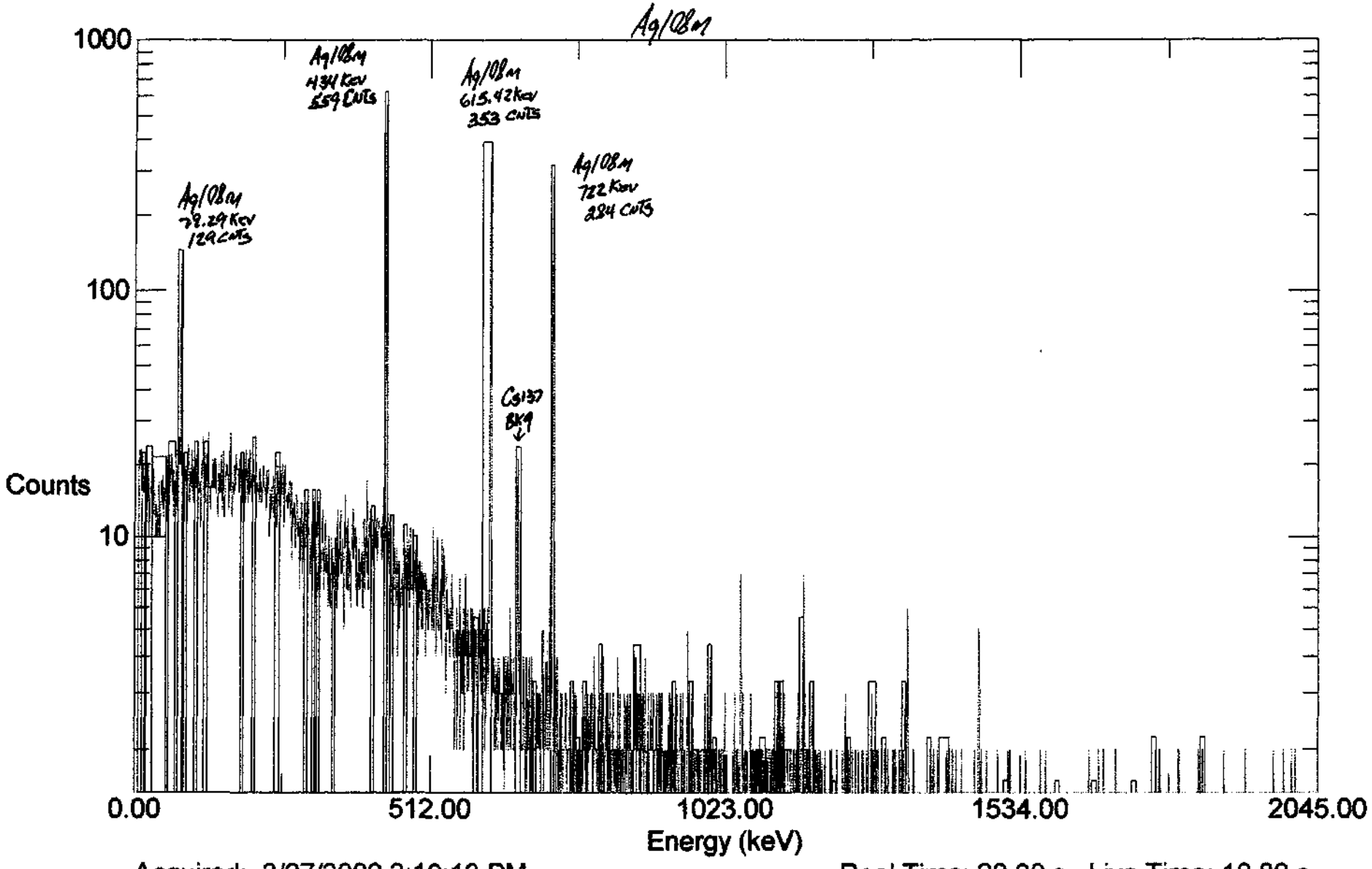
File: C:\User\GNIWEB~1\018 1SC-161 3-27-2002 3.08.34 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

162

019 1SC-162 3-27-2002 3.10.13 PM

1SC-162



Acquired: 3/27/2002 3:10:13 PM Real Time: 20.00 s. Live Time: 18.80 s.

File: C:\User\GNIWEB~1\019 1SC-162 3-27-2002 3.10.13 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	163	164	165	166	167
External on ~~pig~~ in mR/hr	0.3	<.2	<.2	<.2	<.2
External on ~~pig~~ Neutron mR/hr	<1	<1	<1	<1	<1
Contact open ~~pig~~ mR/hr	0.3	<.2	<.2	<.2	<.2
Beta on open ~~pig~~ mR/hr O/W	0.5	<.2	<.2	<.2	.5

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

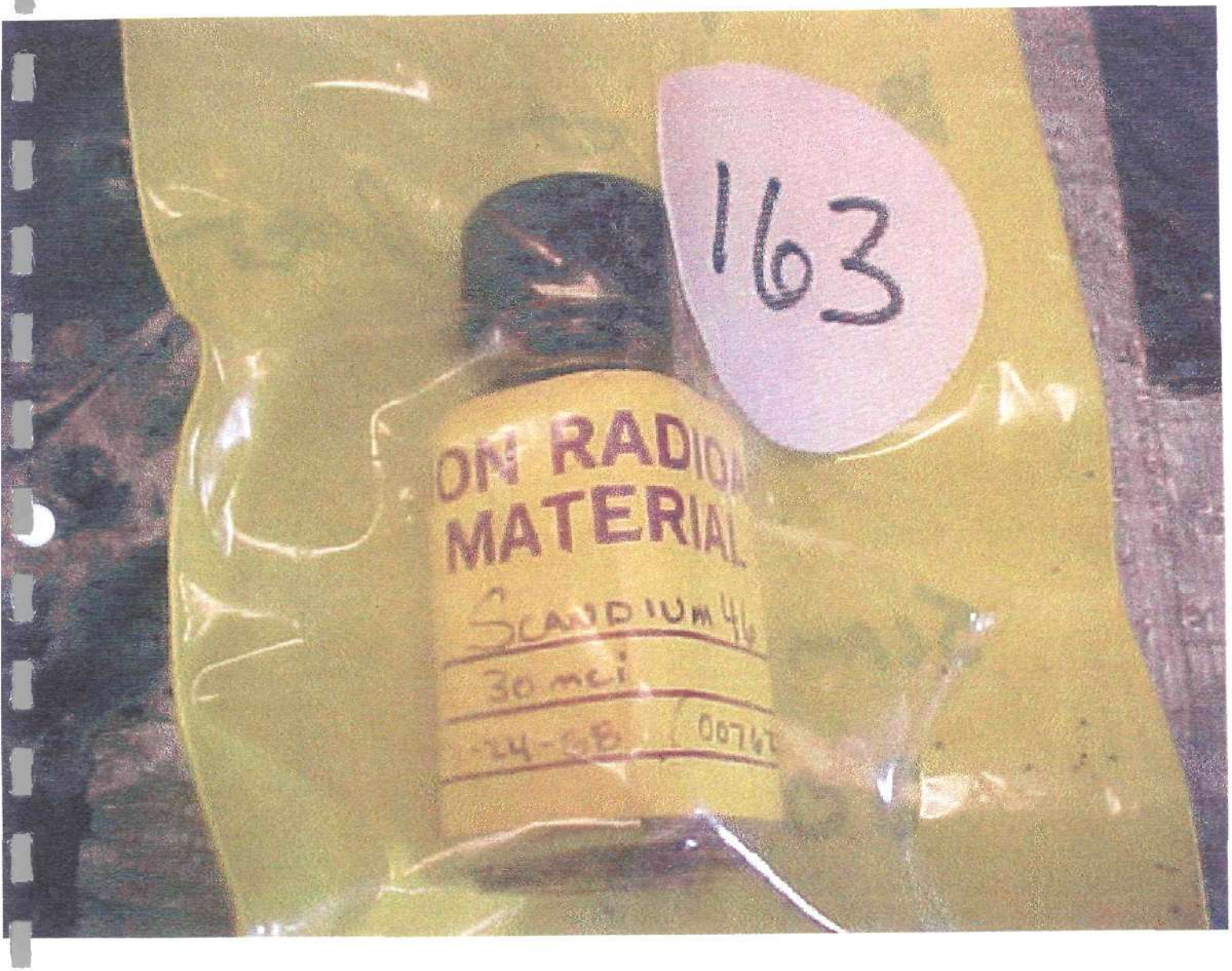
Table Readings

Source mR/hr @ 6 inchs	<.2	<.2	<.2	<.2	<.2
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	20	20 ~~60~~	60	20	60
Weight in grams	15	15 ~~20~~	150	55	37

CPM Alpha	BKG	<25	<25	<25	<25
Direct Beta/Gamma	3000	200	4000	<BKG	12000

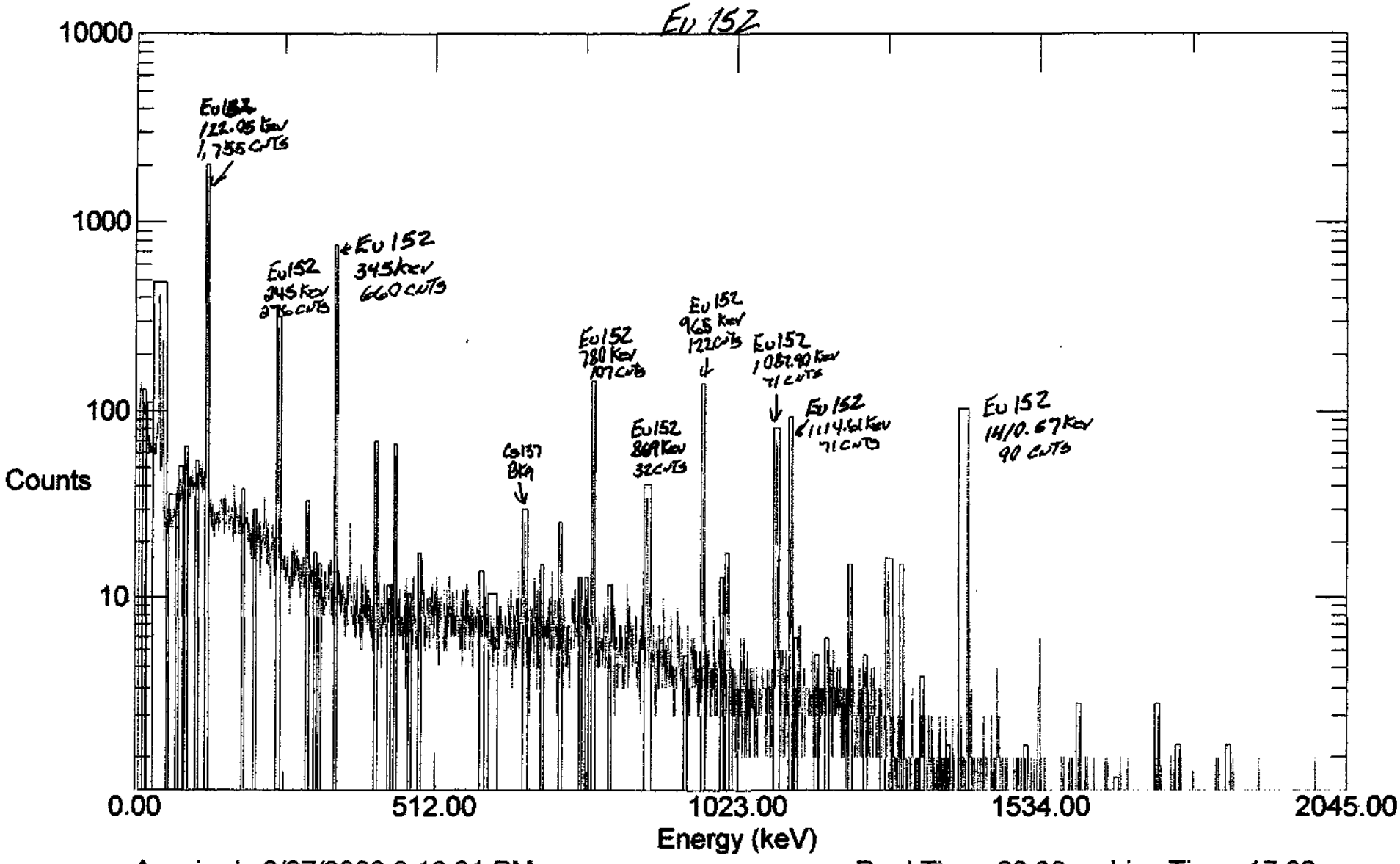
Info on source:	Liq Sc 46 30 mici 3-24-88 00762	Sc 46 8·28·84 Liq.	Sc 46 10-3-86 SAND?	SAND NO I.D.	LITTLE PIECES OF SHAVINGS IR192

Information on ~~pig~~:	NO pig				
Smear DPM per 100 cm^2 Alpha	<250	<250	<250	<250	<250
Smear DPM per 100 cm^2 Beta	15000	6000	4000	<BKG	10000


163
ON RADIO
MATERIAL
SCANDIUM 46
30 mCi
-24-88
00741

020 1SC-163 3-27-2002 3.12.31 PM

1SC-163



Acquired: 3/27/2002 3:12:31 PM Real Time: 20.00 s. Live Time: 17.02 s.

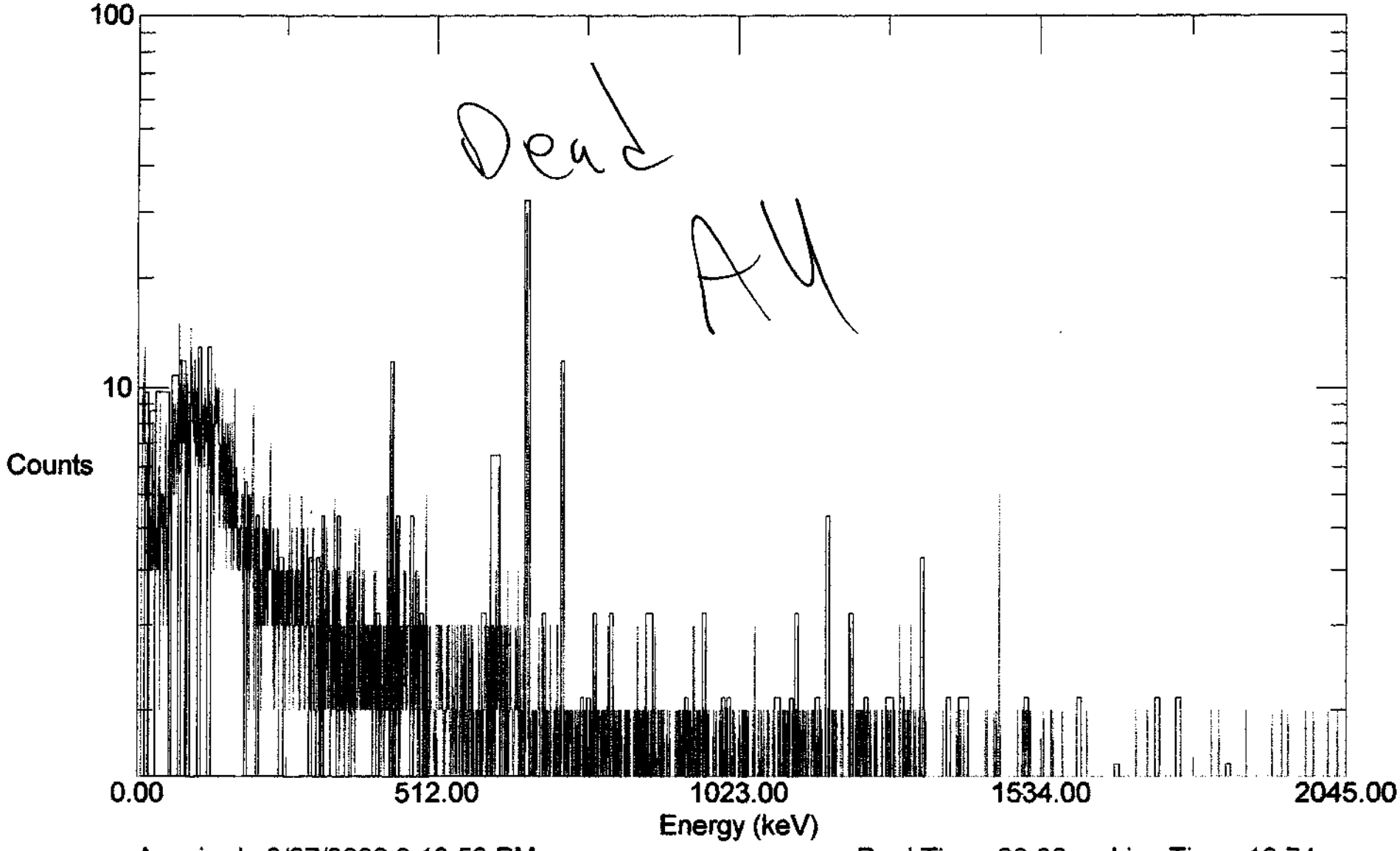
File: C:\User\GNIWEB~1\020 1SC-163 3-27-2002 3.12.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

164
SC-16

021 1SC-164 3-27-2002 3.13.58 PM

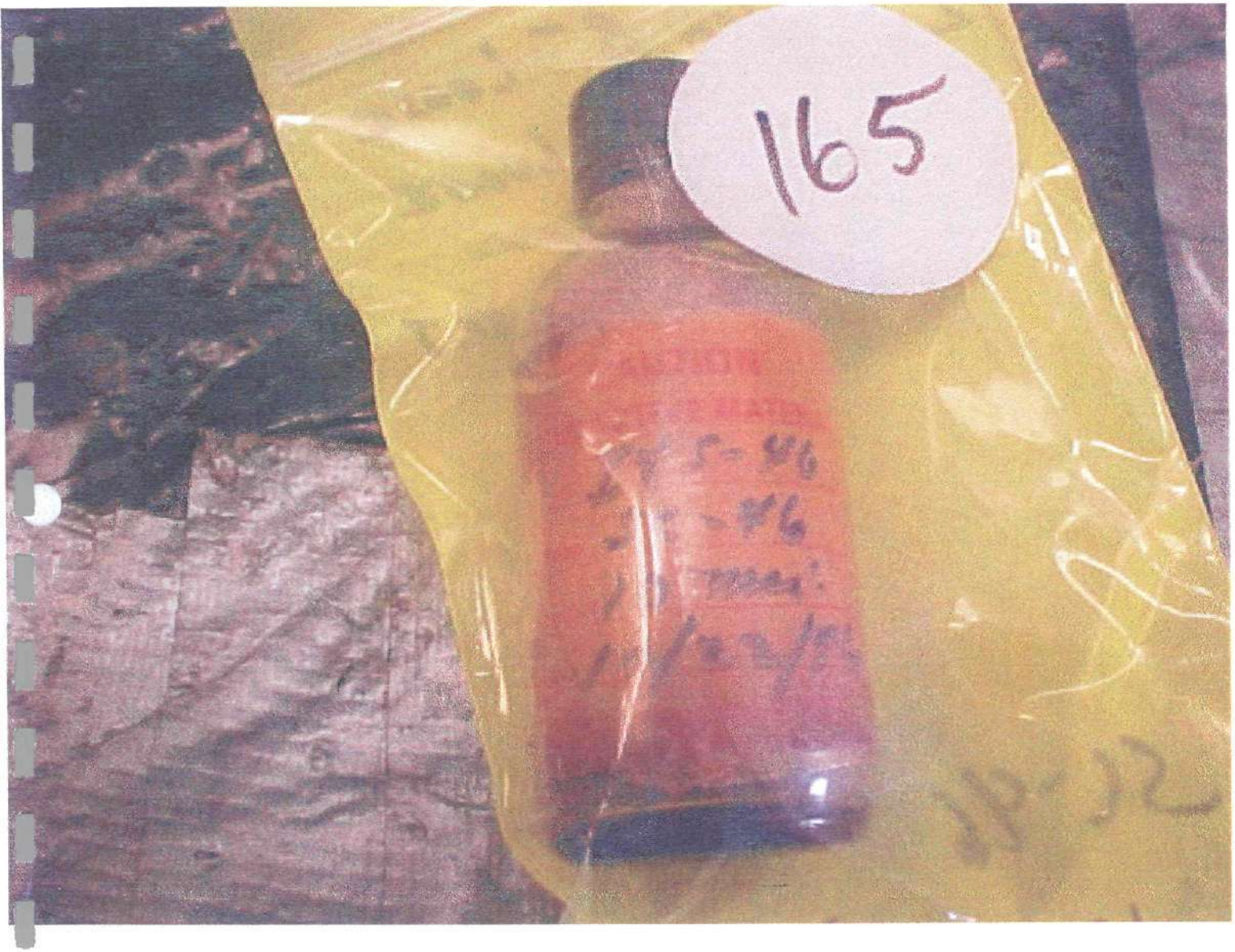
1SC-164



Acquired: 3/27/2002 3:13:59 PM Real Time: 20.00 s. Live Time: 19.74 s.

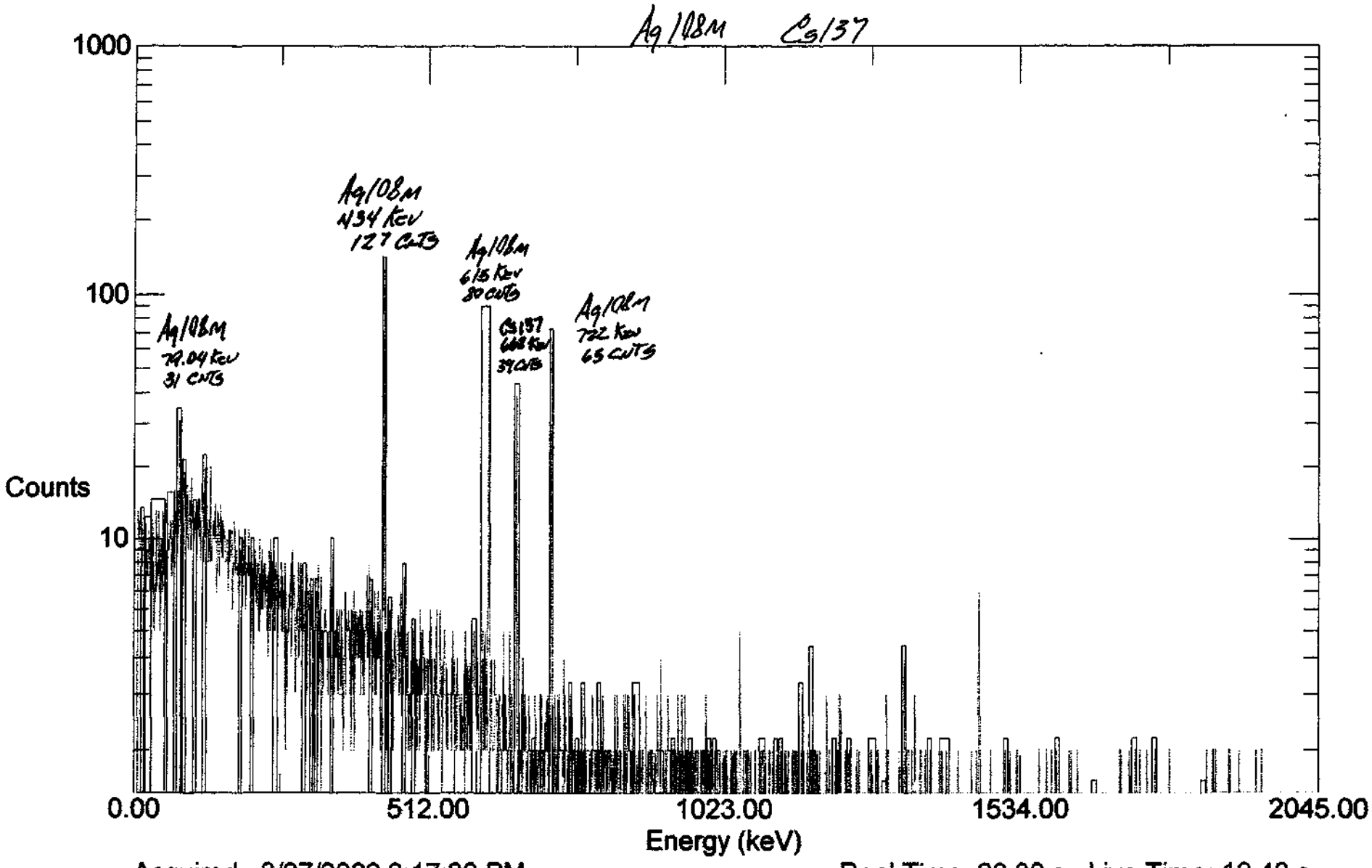
File: C:\User\GNIWEB~1\021 1SC-164 3-27-2002 3.13.58 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


165

022 1SC-165 3-27-2002 3.17.32 PM

1SC-165



Acquired: 3/27/2002 3:17:32 PM Real Time: 20.00 s. Live Time: 19.48 s.

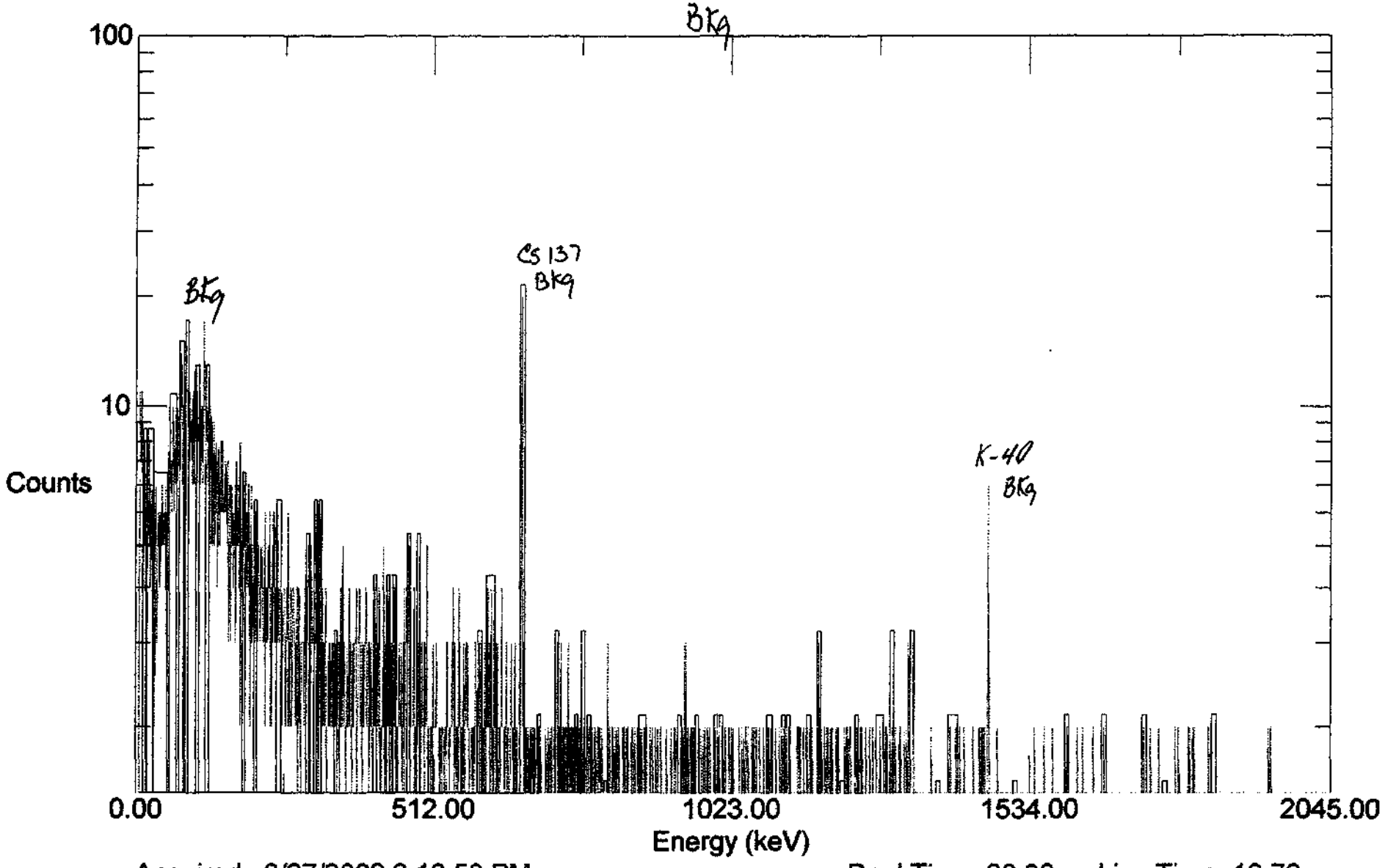
File: C:\User\GNIWEB~1\022 1SC-165 3-27-2002 3.17.32 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

16b

023 1SC-166 3-27-2002 3.18.50 PM

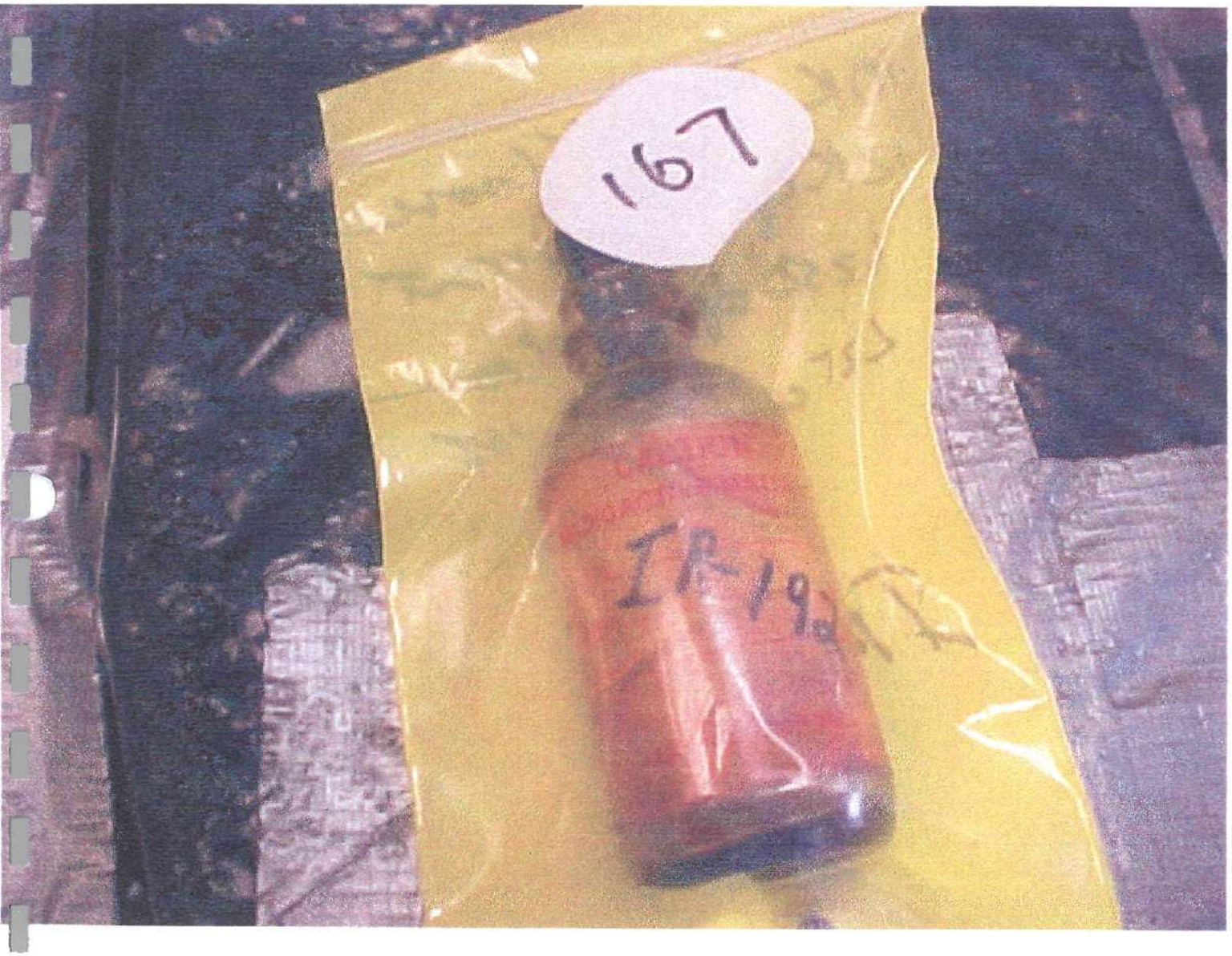
1SC-166



Acquired: 3/27/2002 3:18:50 PM Real Time: 20.00 s. Live Time: 19.76 s.

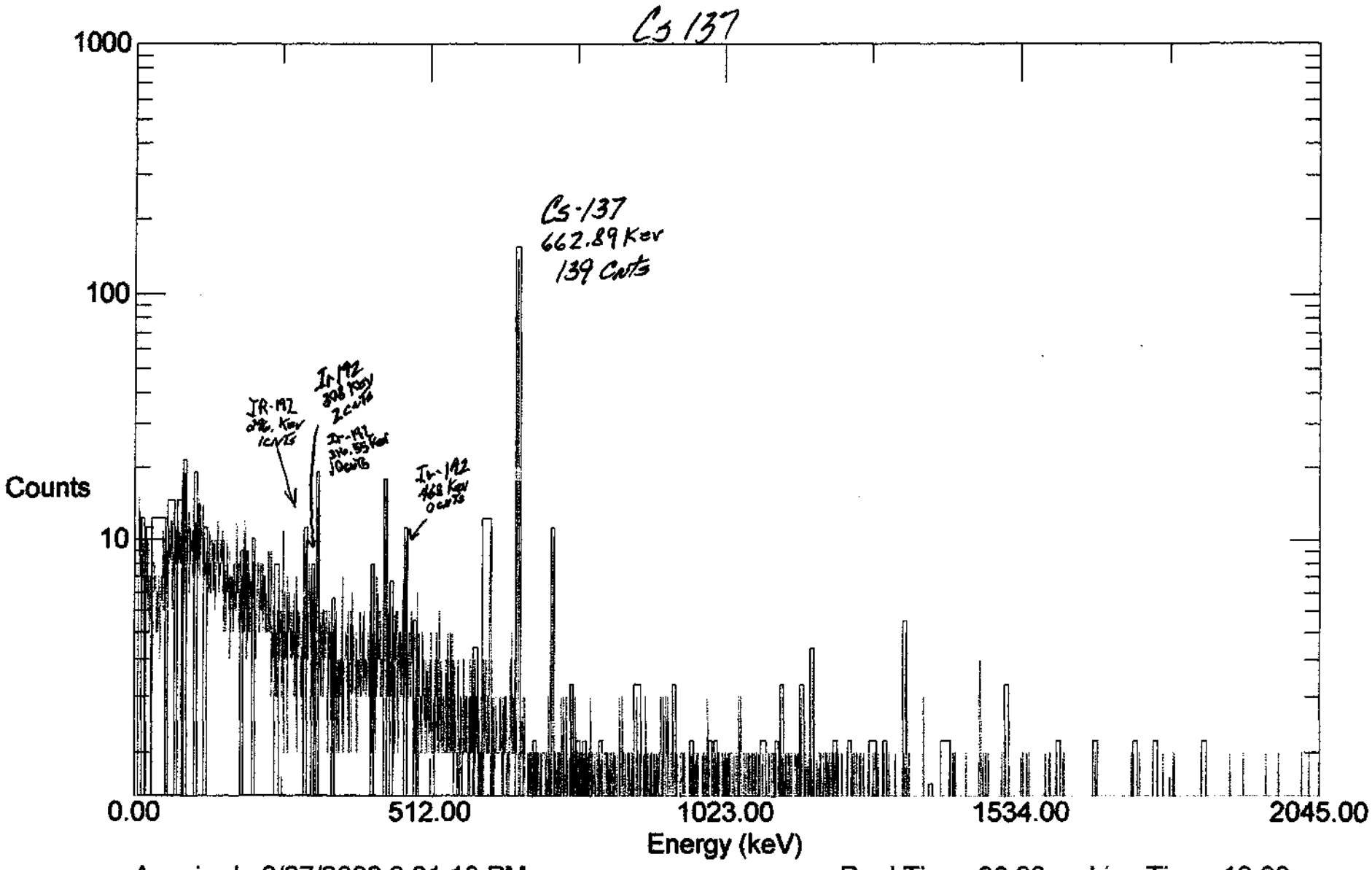
File: C:\User\GNIWEB~1\023 1SC-166 3-27-2002 3.18.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


167
IR-192

024 1SC-167 3-27-2002 3.21.18 PM

1SC-167



Acquired: 3/27/2002 3:21:18 PM Real Time: 20.00 s. Live Time: 19.60 s.

File: C:\User\GNIWEB~1\024 1SC-167 3-27-2002 3.21.18 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.2

Container #	168	169	170	~~171~~	~~172~~
External on ~~pig~~ in mR/hr	0.3	<.2	<.2		
External on ~~pig~~ Neutron mR/hr	<1	<1	<1		
Contact open ~~pig~~ mR/hr	0.3	~~0.~~ <.2	<.2		
Beta on open ~~pig~~ mR/hr O/W	0.4	<.2	↓		

Picture	✓	✓	✓		
DIGET	✓	✓	✓		

Table Readings

Source mR/hr @ 6 inchs	<.2	<.2	<.2		
Source mR/hr @ 12 inches	↓	↓	↓		
Source mR/hr @ 36 inches					
Size of source in cc's	5	20	20		
Weight in grams	1	55	55		

CPM Alpha	<25	BKG	BKG		
Direct Beta/Gamma	1600	BKG	↓		

Info on source:	Poss Ag? glass vile homemade	IR 196 13mci 1.18.88	IR ~~196~~ 192 20mci 1-20-88		

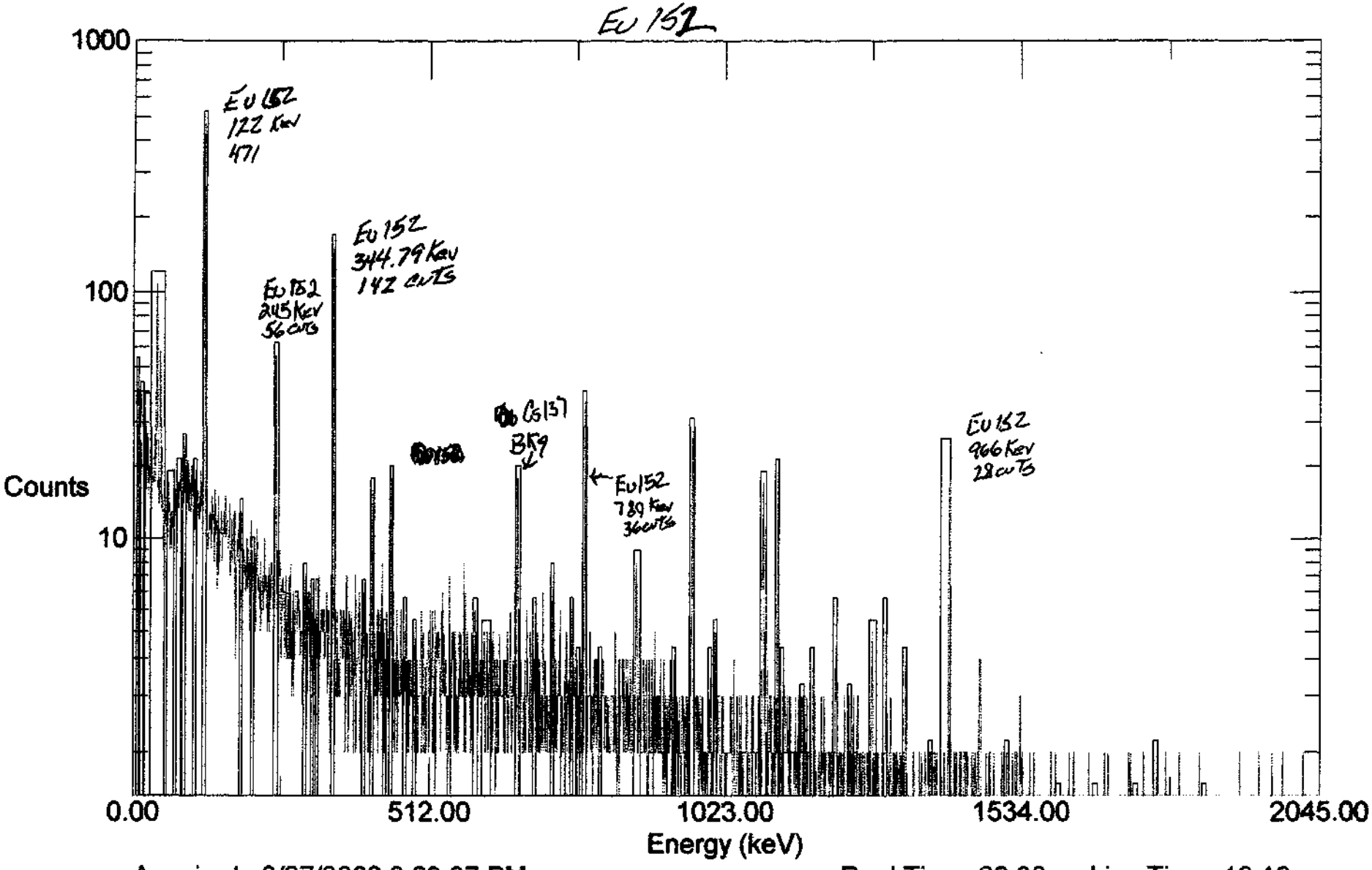
~~Information on pig:~~					
Smear DPM per 100 cm^2 Alpha	<250	< BKG	< BKG		
Smear DPM per 100 cm^2 Beta	<100	< BKG	< BKG		

BKG α 19 cpm
BKg β 220 cpm

168

025 1SC-168 3-27-2002 3.23.07 PM

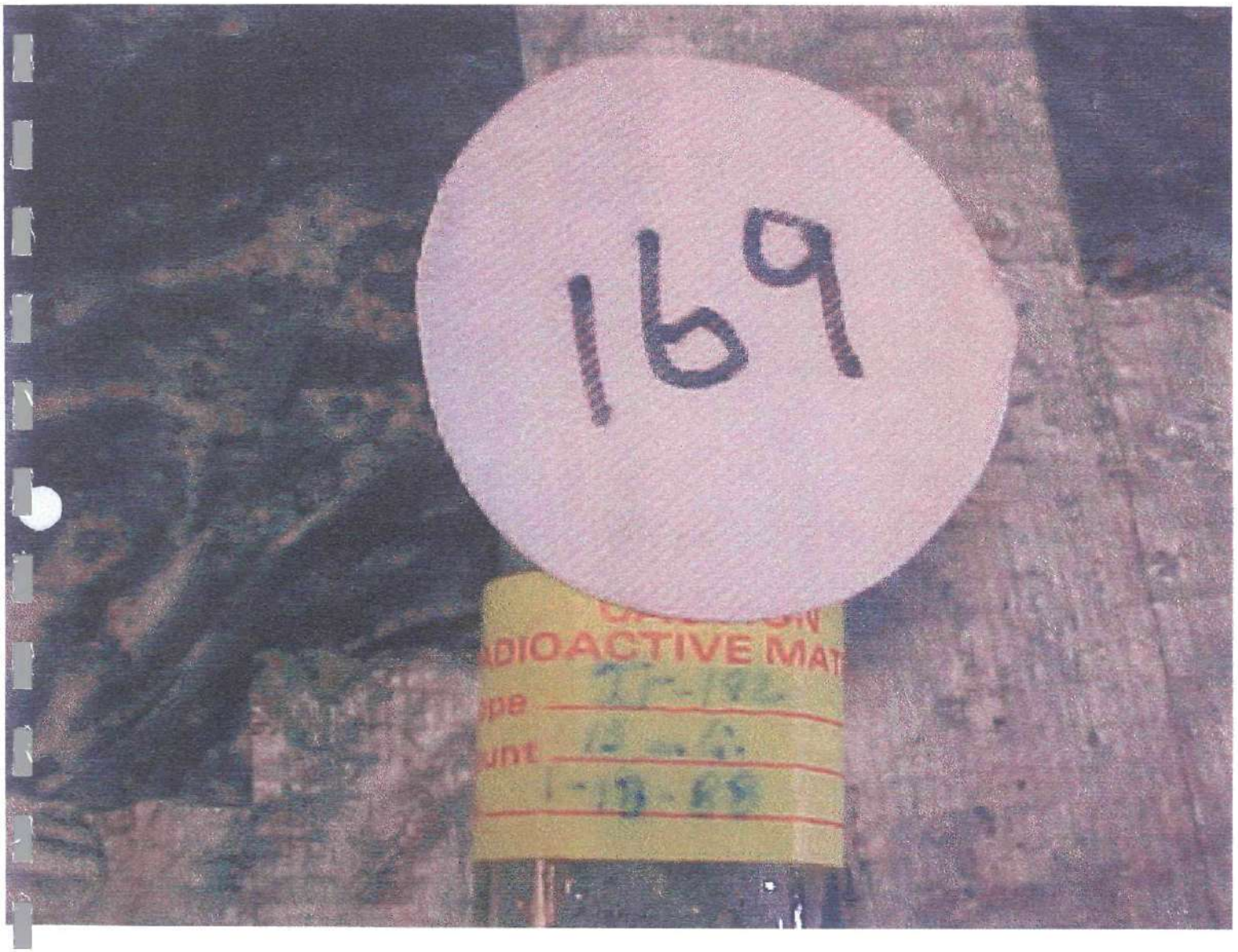
1SC-168



Acquired: 3/27/2002 3:23:07 PM Real Time: 20.00 s. Live Time: 19.10 s.

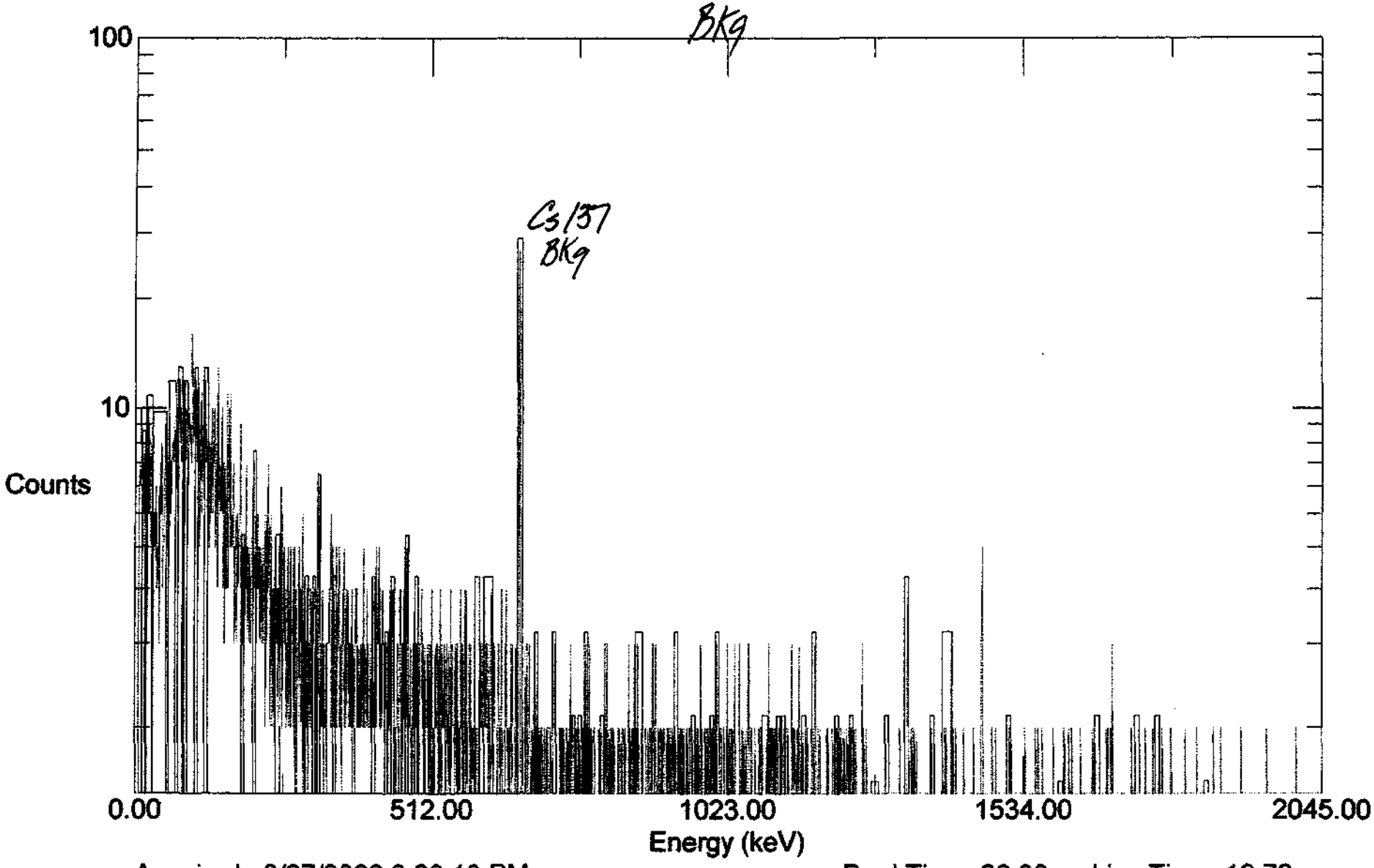
File: C:\User\GNIWEB~1\025 1SC-168 3-27-2002 3.23.07 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


169
ADIOACTIVE MAT

026 1SC-169 3-27-2002 3.26.11 PM

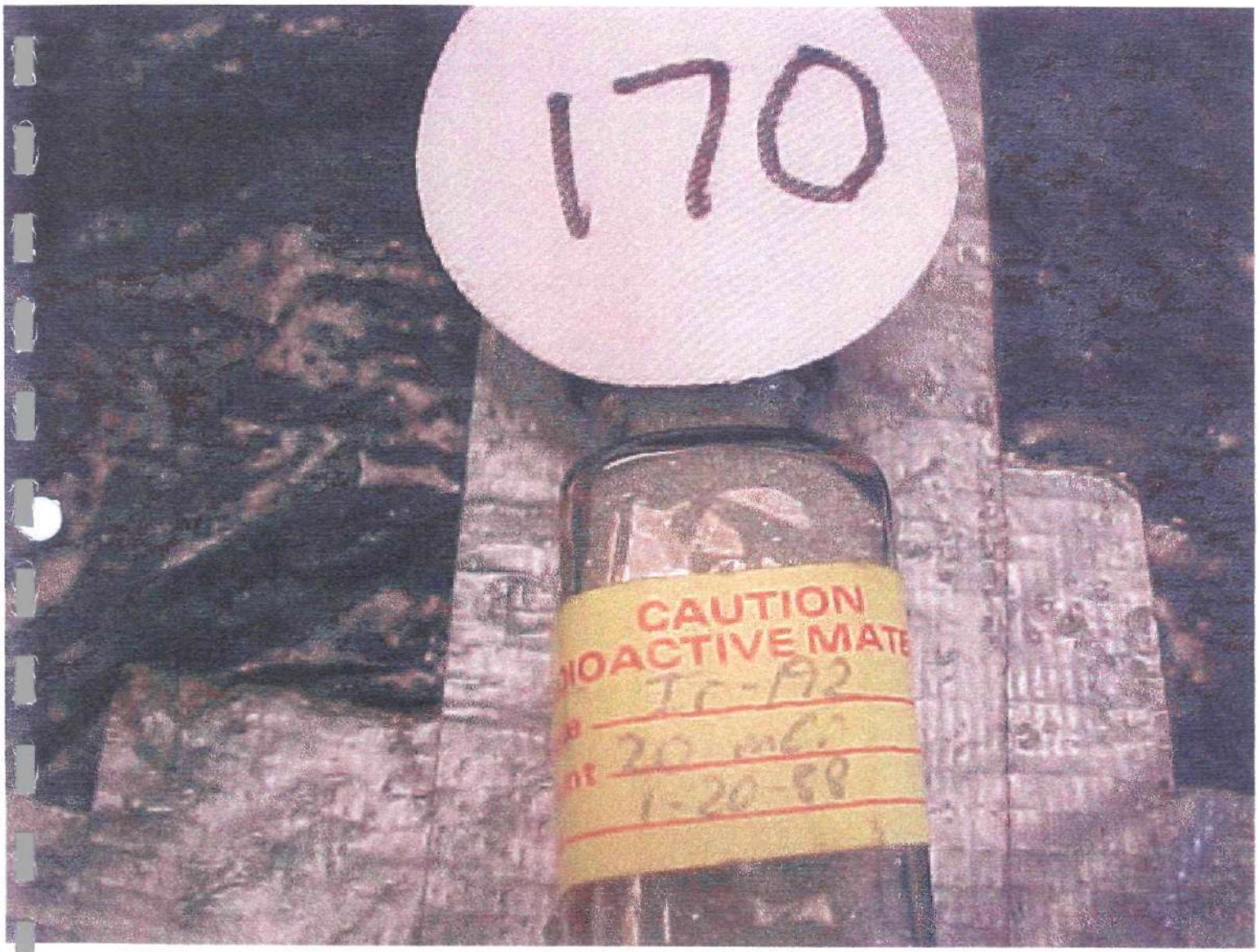
1SC-169



Acquired: 3/27/2002 3:26:10 PM Real Time: 20.00 s. Live Time: 19.72 s.

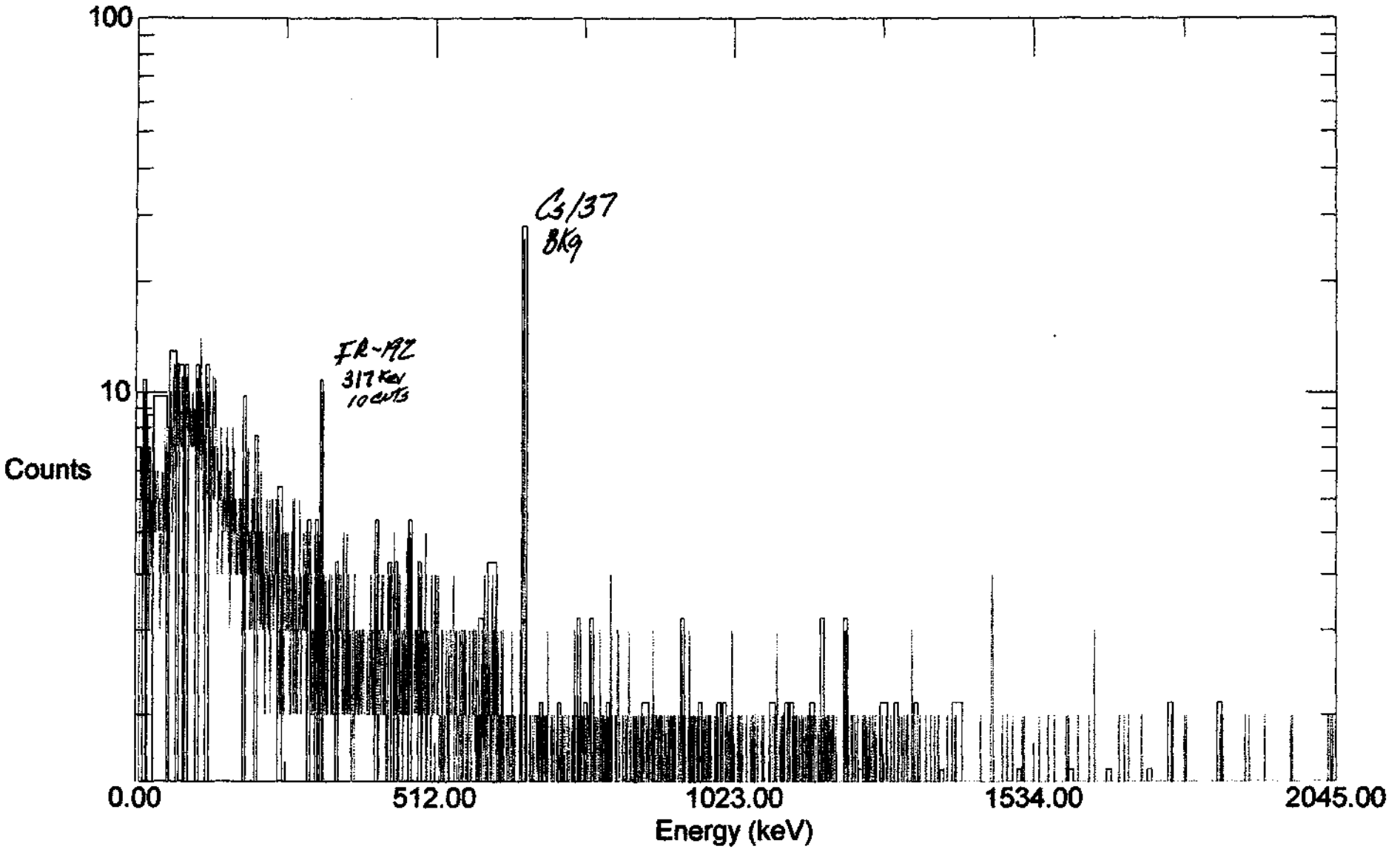
File: C:\User\GNIWEB~1\026 1SC-169 3-27-2002 3.26.11 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


170
CAUTION
IOACTIVE MATE
Tc-192
20 mCi
1-20-88

027 1SC-170 3-27-2002 3.28.05 PM

1SC-170



Acquired: 3/27/2002 3:28:05 PM Real Time: 20.00 s. Live Time: 19.74 s.

File: C:\User\GNIWEB~1\027 1SC-170 3-27-2002 3.28.05 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	171	172	173	174	175
External on pig in mR/hr	4	12	<.2	<.2	<.2
External on pig Neutron mR/hr	<	<1	<1	<1	<1
Contact open pig mR/hr	800	100	<.2	.3	40
Beta on open pig mR/hr O/W	1000	500	1	3	60

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	70	400	<.2	<.2	100
Source mR/hr @ 12 inches	19	20	↓	↓	4
Source mR/hr @ 36 inches	2.5	3	↓	↓	0.5
Size of source in cc's	1	30	5	20	5
Weight in grams	2	40	1	16	1.5

CPM Alpha	-0.7	2	35.0	13.6	1.1
Direct Beta/Gamma	66.4	-17.0	98.2	95.2	93.6

Info on source:	Pill Rusty	ALUM. FOIL	RA226 2.5mci CAUTION INDUST 6-26-75	GD ?	Ag107 Reshoot

Information on pig:	NO INFO				
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **3/28/02 TIME: 805**

Location Source Leak Rate Test

Survey #

MDA Alpha DPM	MDA Beta DPM
9.1	64.5

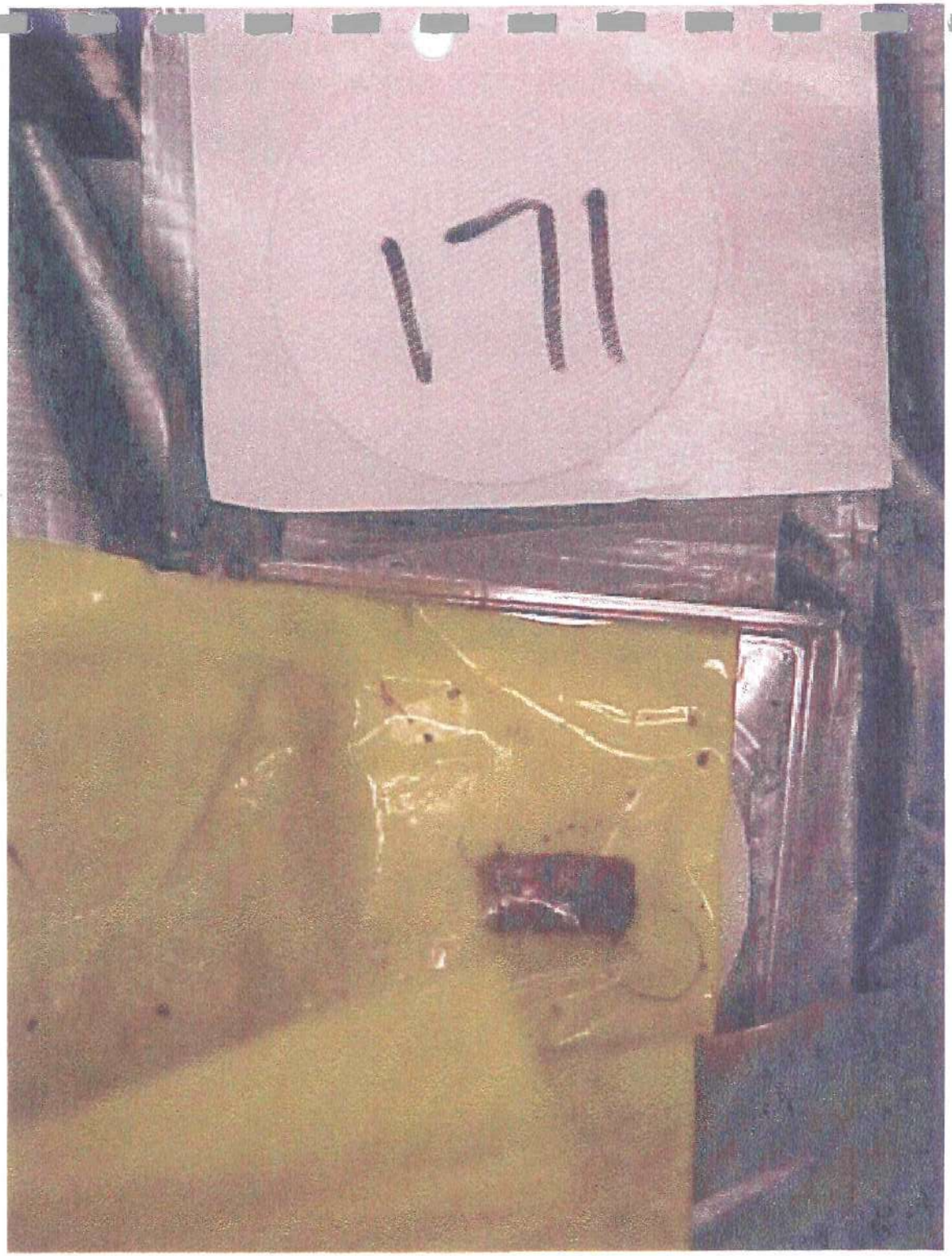
BKG Alpha CPM	BKG Beta CPM
0.2	68

Alpha Eff 0.28

Beta/Gamma Eff 0.33

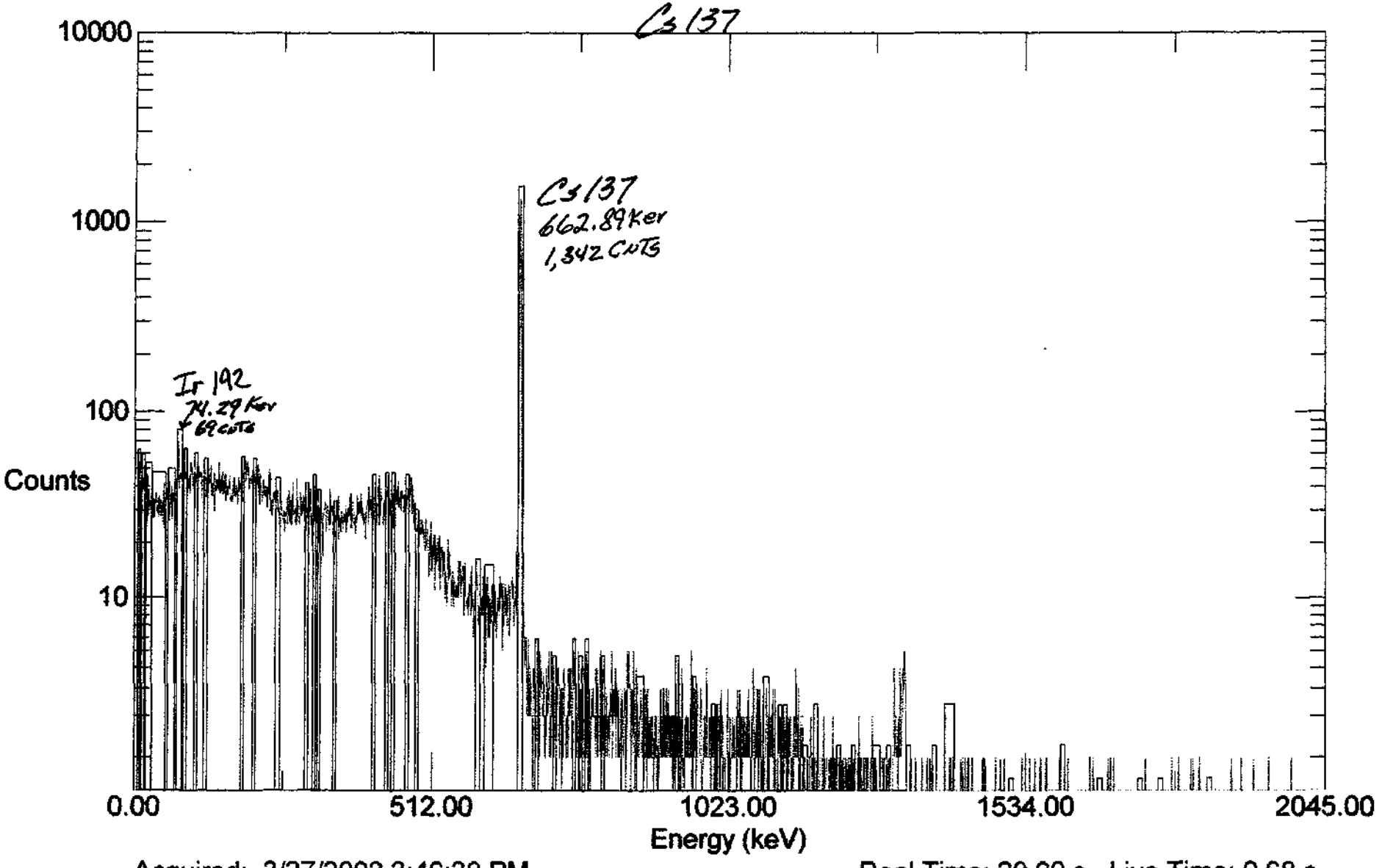
	2 Min CPM	DPM
171	0	-0.7
172	2	2.9
173	20	35.0
174	8	13.6
175	1	1.1
176	1	1.1
177	4	6.4
178	3	4.6
179	7	11.8
180	2	2.9
181	1	1.1
182	3	4.6
183	1	1.1
184	2	2.9
185		-0.7
186	6	10.0
187	22	38.6
188	3	4.6
189	1	1.1
190		-0.7
191		-0.7
192		-0.7
193		-0.7
194		-0.7
195		-0.7

	2 Min CPM	DPM
171	180	86.4
172	125	-17.0
173	201	98.2
174	199	95.2
175	198	93.6
176	234	148.2
177	178	63.3
178	197	92.1
179	143	10.3
180	138	2.7
181	141	7.3
182	138	2.7
183	143	10.3
184	645	770.9
185		-206.4
186	236	151.2
187	188	78.5
188	157	31.5
189	150	20.9
190		-206.4
191		-206.4
192		-206.4
193		-206.4
194		-206.4
195		-206.4


171

028 1SC-171 3-27-2002 3.46.30 PM

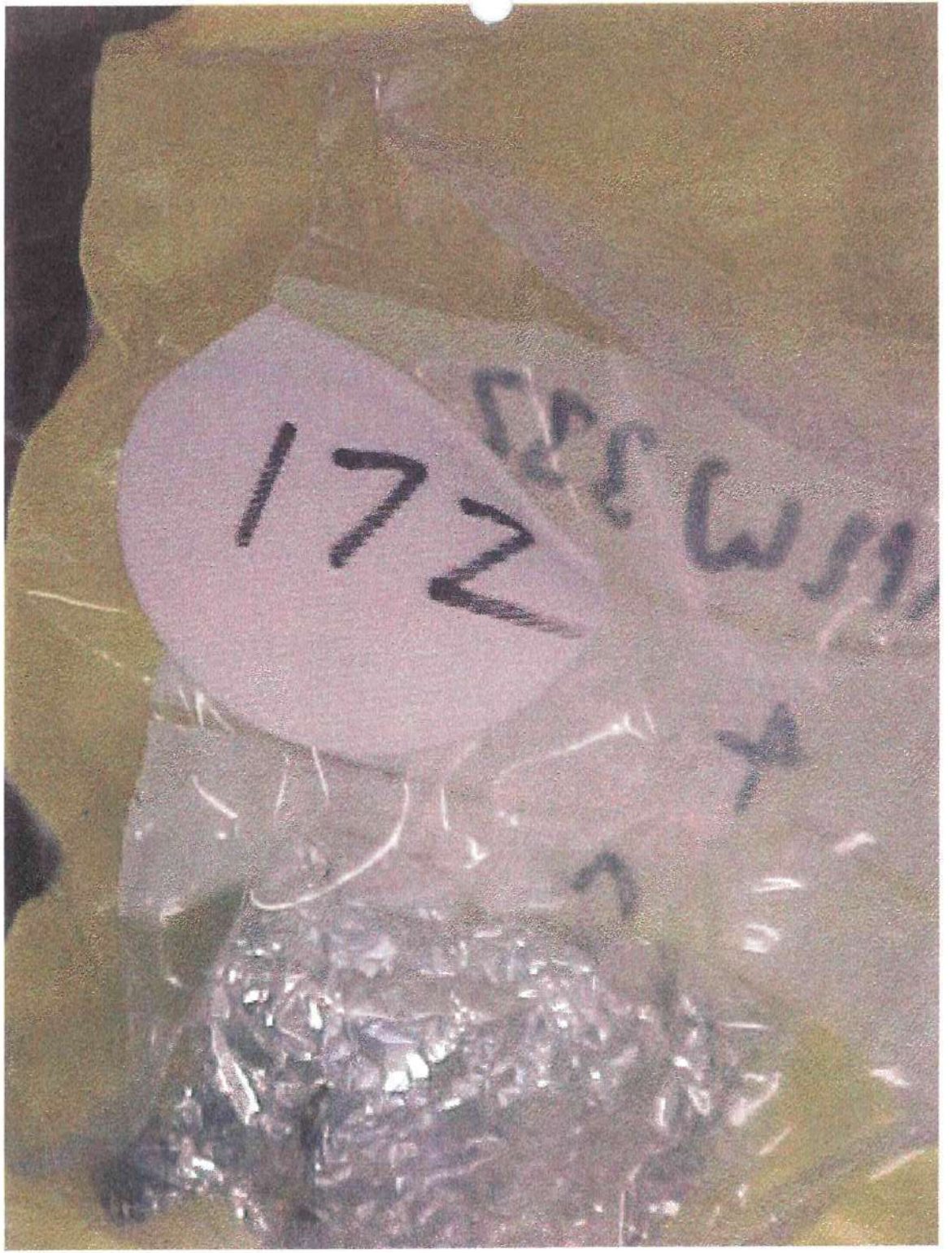
1SC-171



Acquired: 3/27/2002 3:46:30 PM Real Time: 20.00 s. Live Time: 0.68 s.

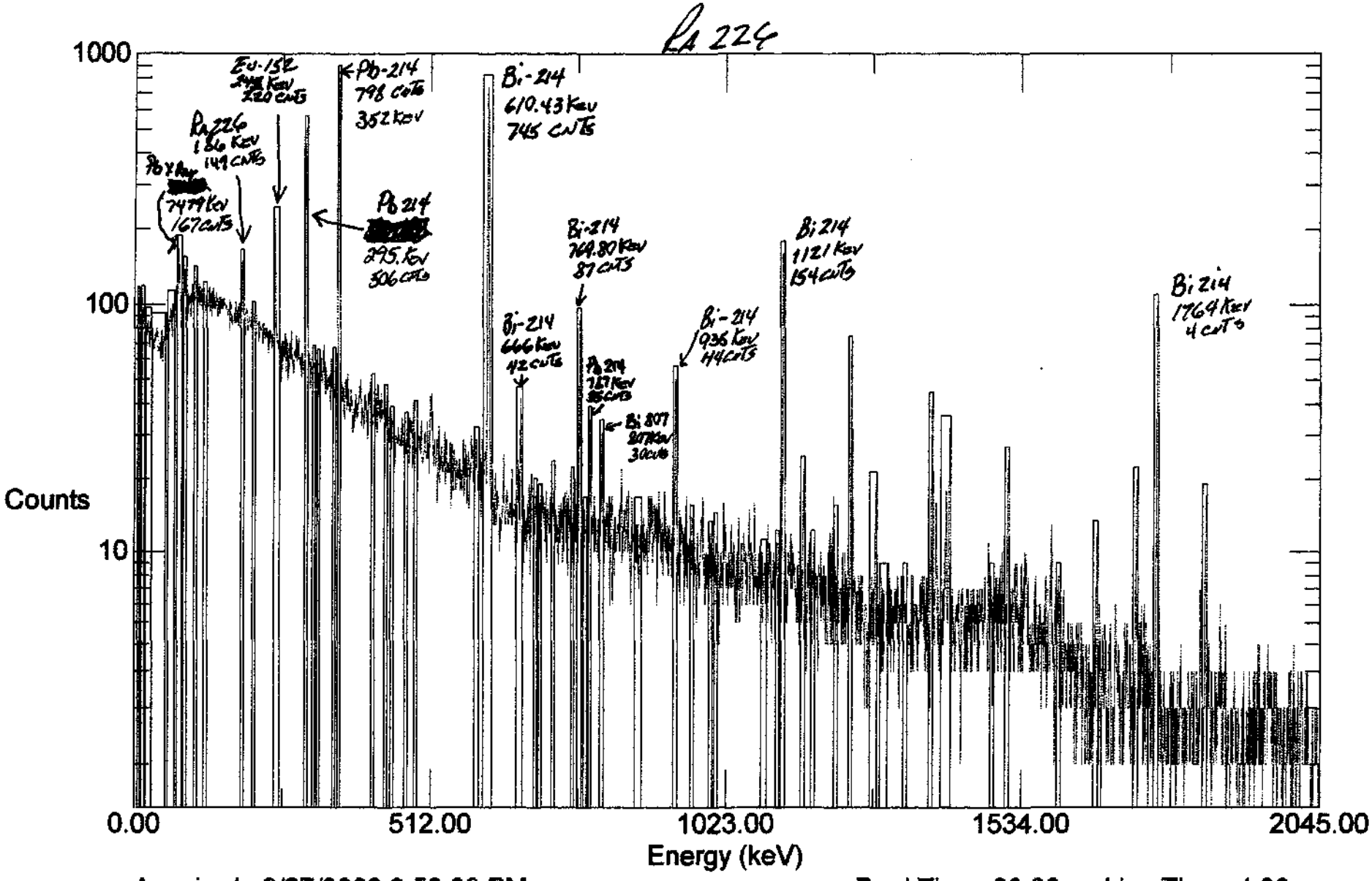
File: C:\User\GNIWEB~1\028 1SC-171 3-27-2002 3.46.30 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


172

029 1SC-172 3-27-2002 3.58.00 PM

1SC-172



Acquired: 3/27/2002 3:58:00 PM Real Time: 20.00 s. Live Time: 4.68 s.

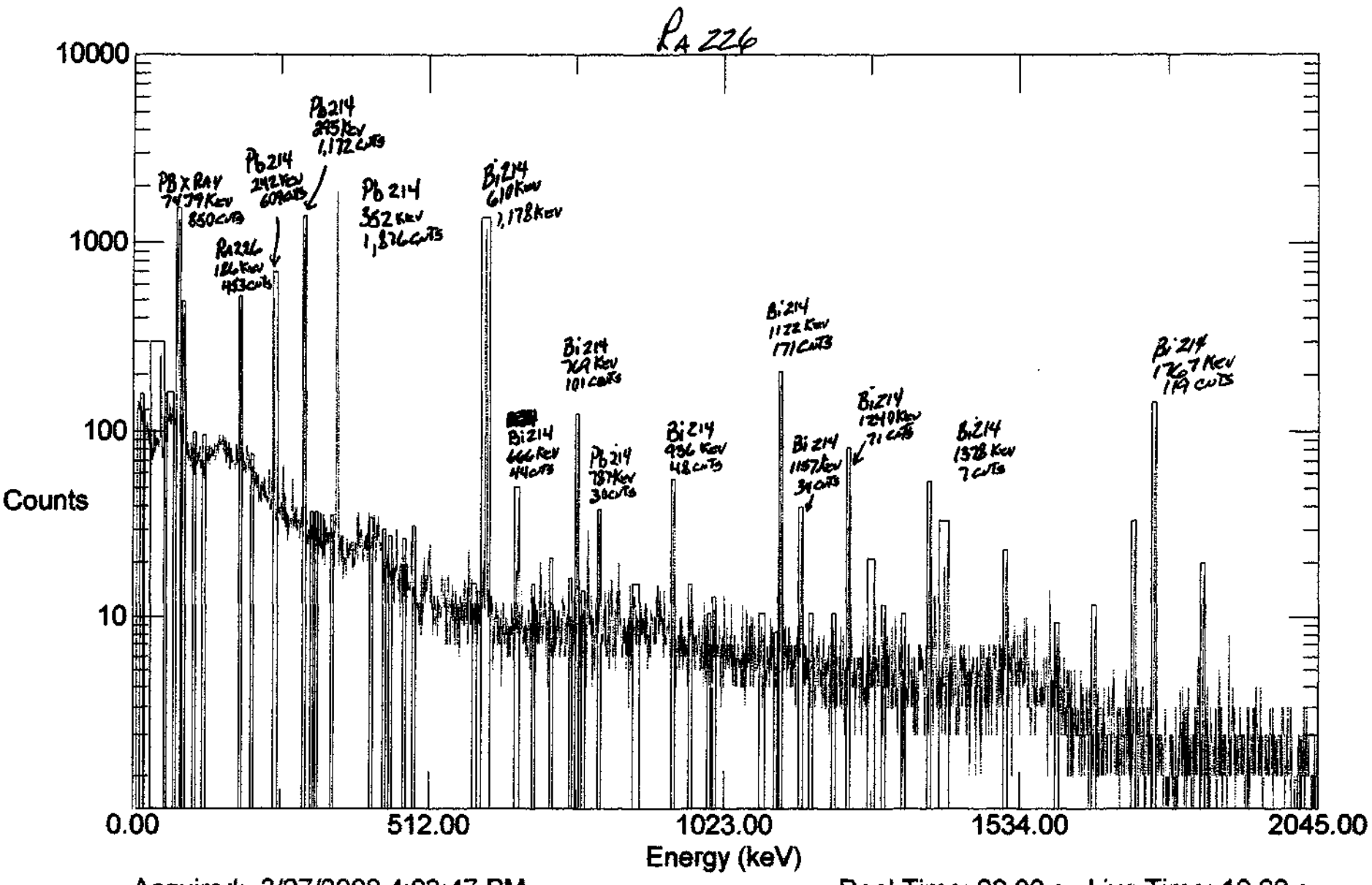
File: C:\User\GNIWEB~1\029 1SC-172 3-27-2002 3.58.00 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

ELI

030 1SC-173 3-27-2002 4.03.47 PM

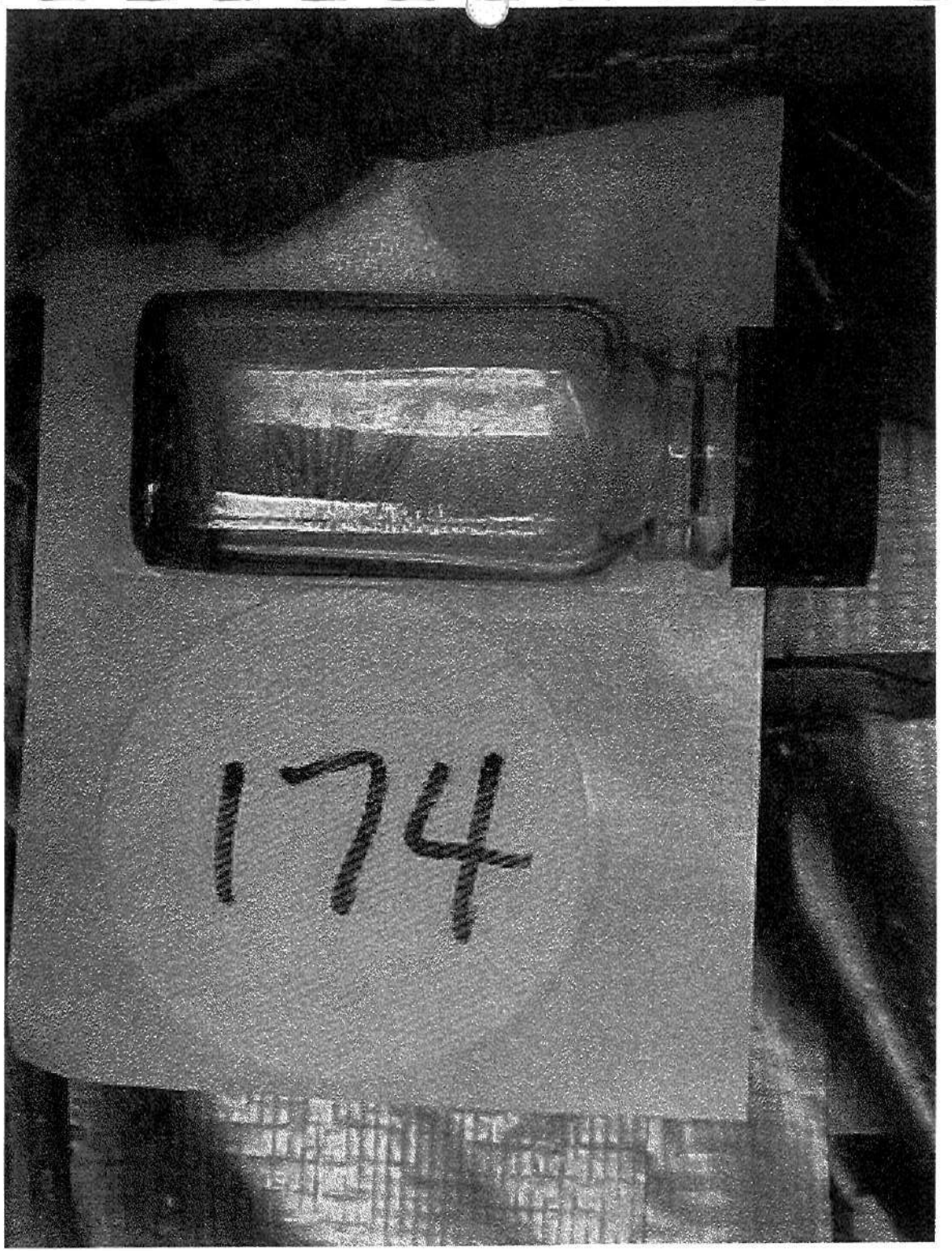
1SC-173



Acquired: 3/27/2002 4:03:47 PM Real Time: 20.00 s. Live Time: 10.62 s.

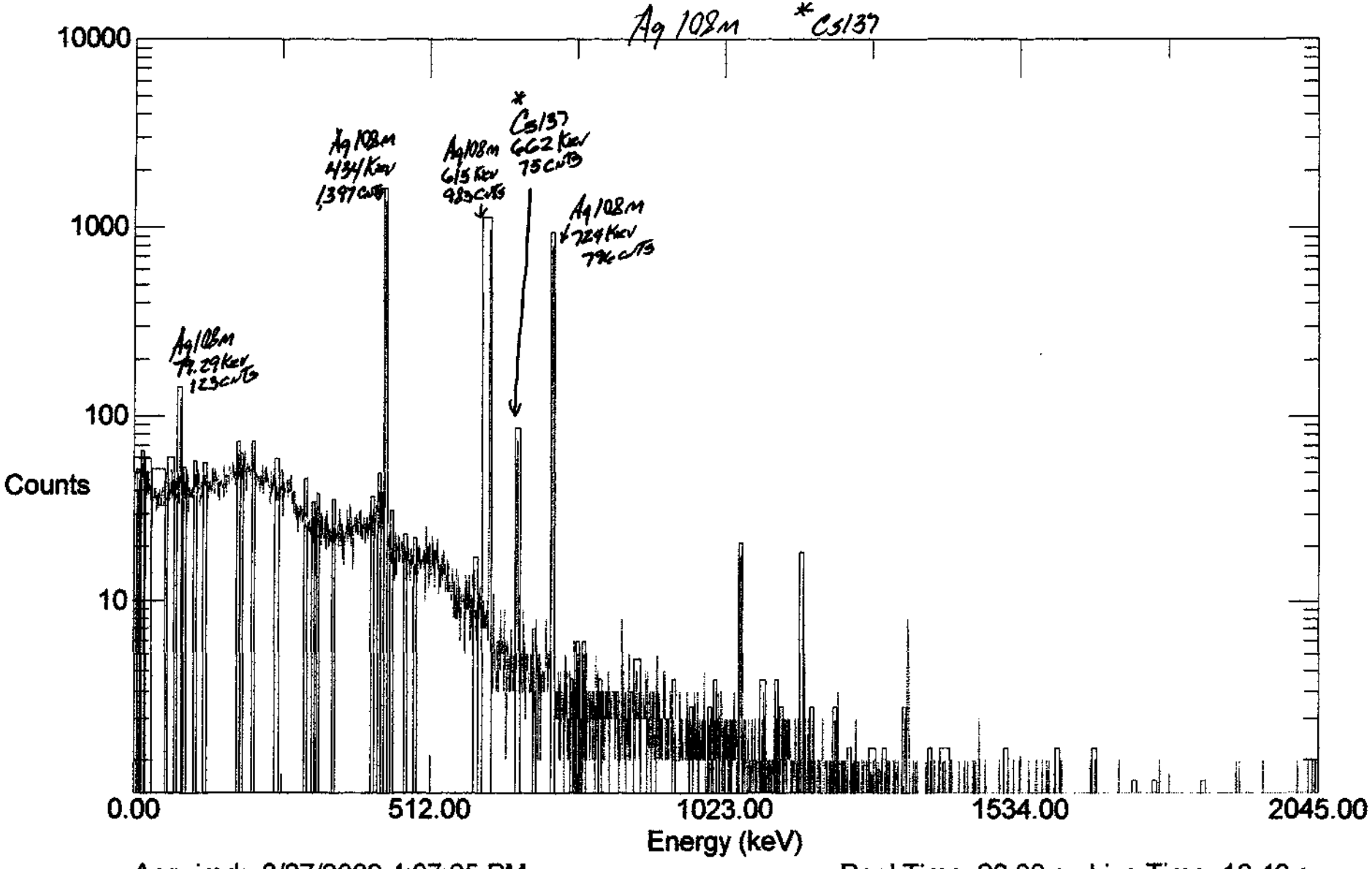
File: C:\User\GNIWEB~1\030 1SC-173 3-27-2002 4.03.47 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


174

031 1SC-174 3-27-2002 4.07.06 PM

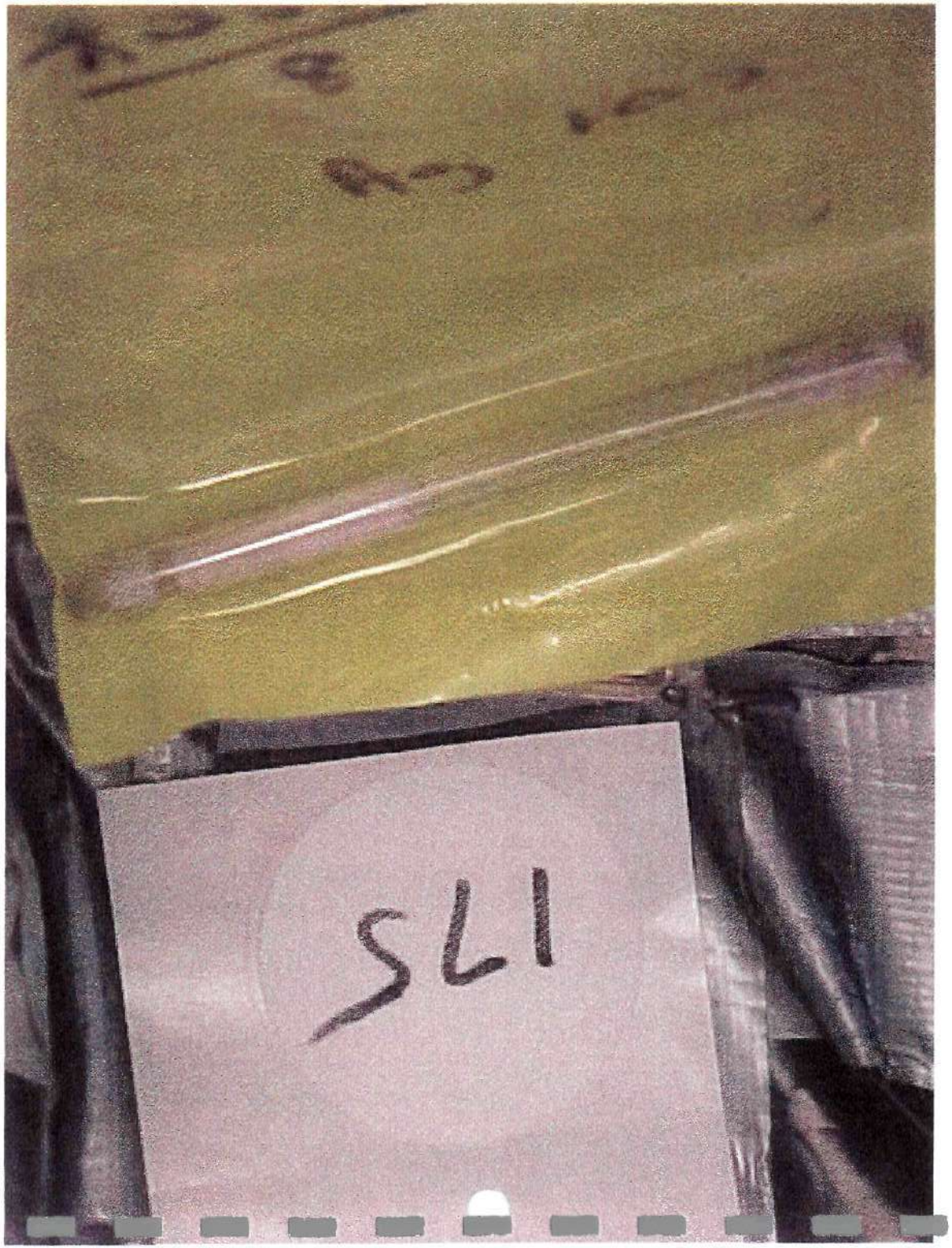
1SC-174



Acquired: 3/27/2002 4:07:05 PM Real Time: 20.00 s. Live Time: 16.40 s.

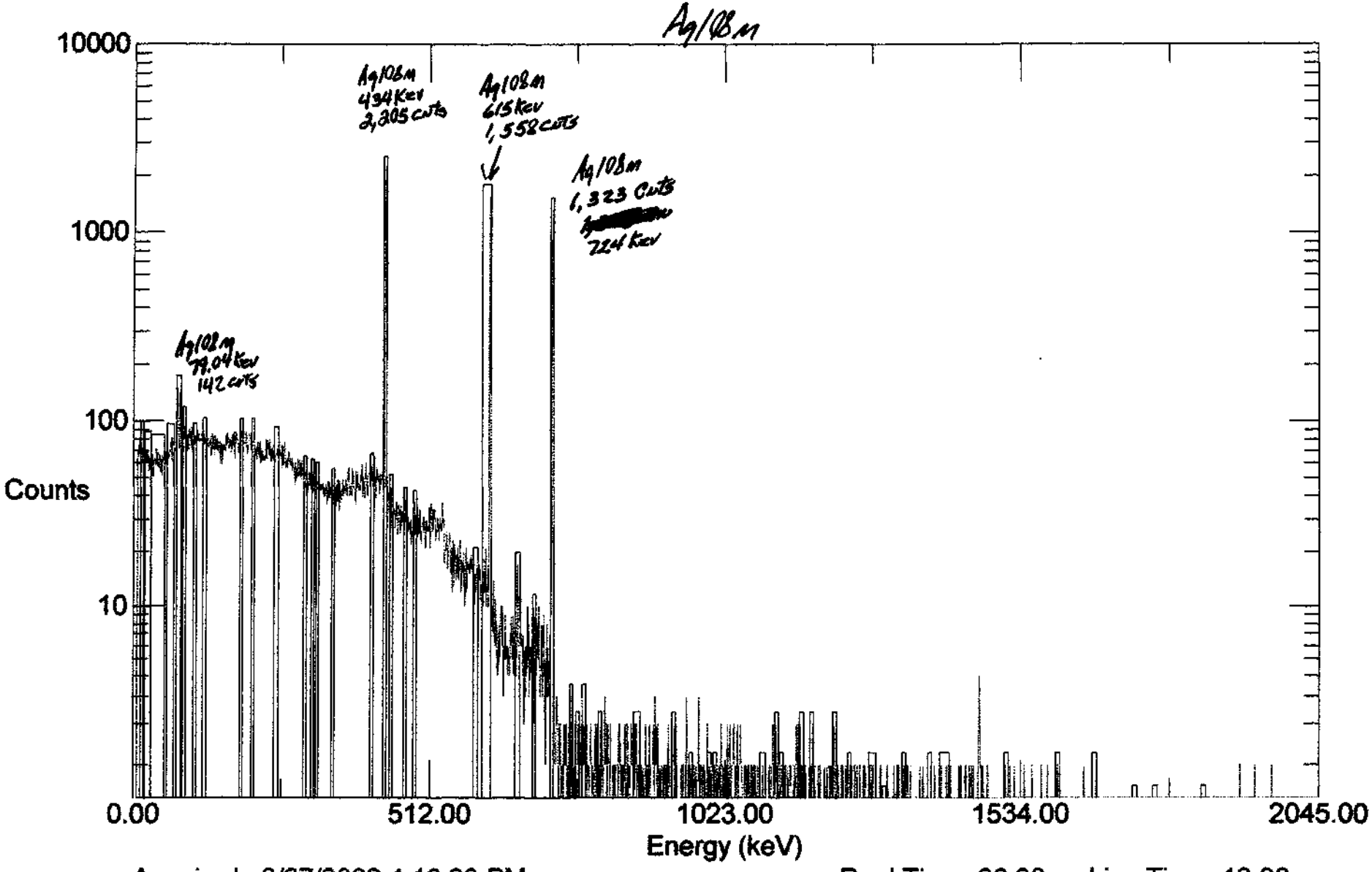
File: C:\User\GNIWEB~1\031 1SC-174 3-27-2002 4.07.06 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


541

032 1SC-175 3-27-2002 4.10.33 PM

1SC-175



Acquired: 3/27/2002 4:10:33 PM Real Time: 20.00 s. Live Time: 13.28 s.

File: C:\User\GNIWEB~1\032 1SC-175 3-27-2002 4.10.33 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	176	177	178	179	180
External on pig in mR/hr	4	BKG	6	3.5	0.2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr e/w	25	BKG	34	20	.5
Beta on open pig mR/hr O/W	30	↓	45	30	1

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

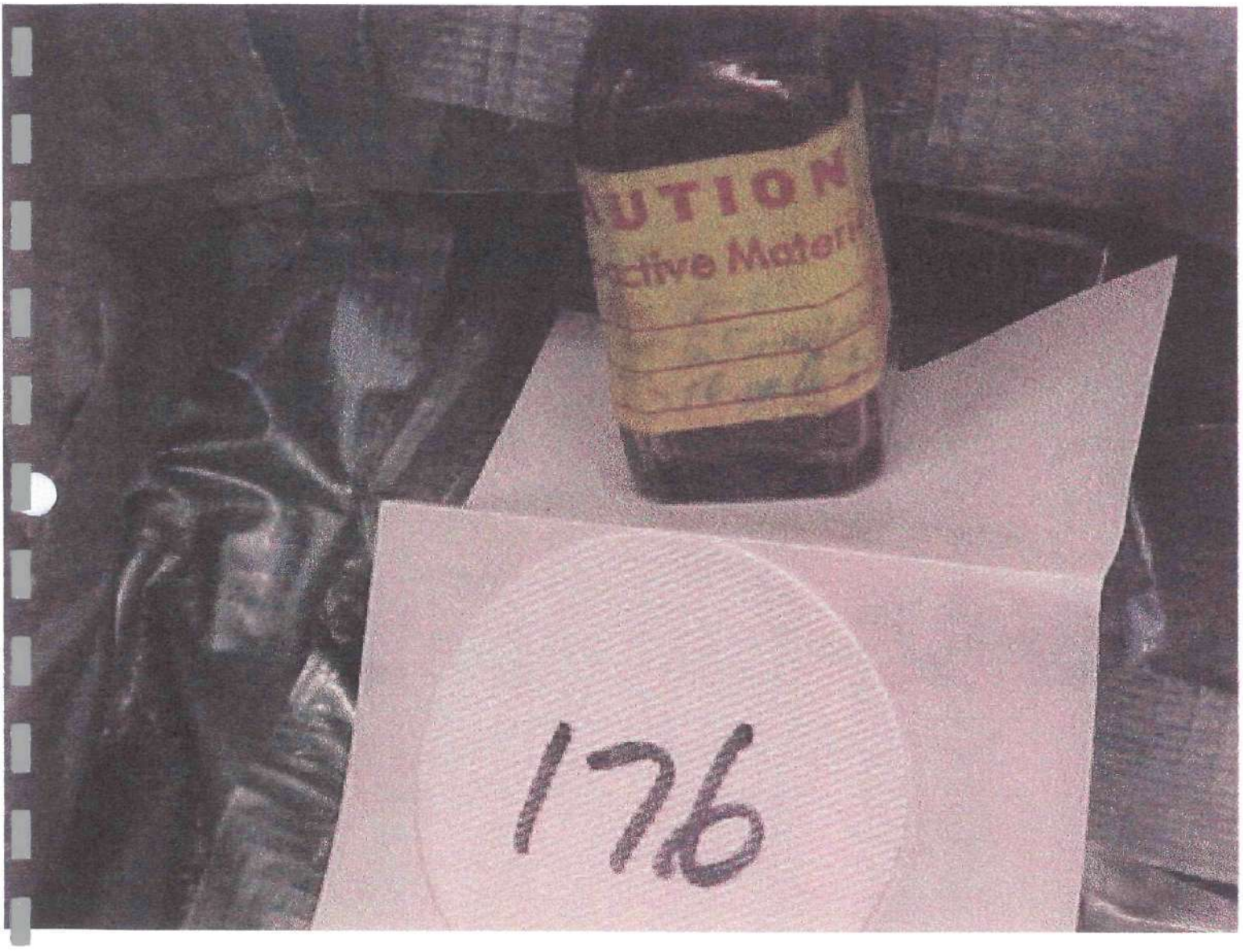
Table Readings

Source mR/hr @ 6 inchs	200	BKG	30	25	.5
Source mR/hr @ 12 inches	7	↓	8	7	.3
Source mR/hr @ 36 inches	1	↓	0.9	1	<.2
Size of source in cc's	20	1 QT	20	20	20
Weight in grams	15	400	50	15	15

CPM Alpha	1.1 ~~BKG~~	6.4 BKG	4.6	11.8	2.9
Direct Beta/Gamma	148.2 ~~BKG~~	63.3 ↓	92.1	10.3	2.7

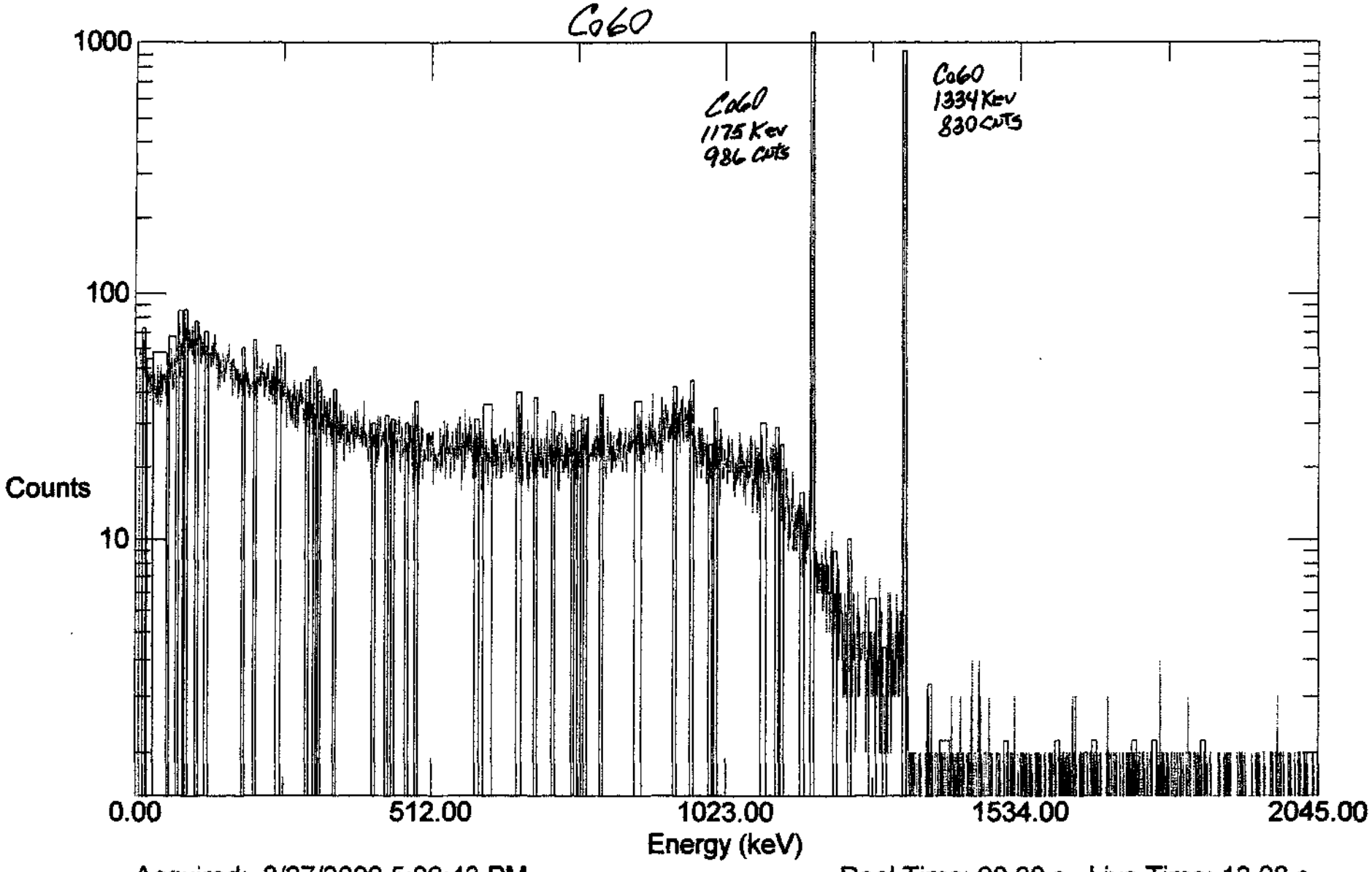
Info on source:	Co60 5.5mci 10.can't READ DATE	I-123 LAB 12-29-86	NO INFO	Smaller than B.B.'s Co60 (PELLETS)	Co-60 .25 mci/pelle 7-11-79

Information on pig:	NO INFO	CAN NOT OPENED	~~Smaller than B.B.'s~~		
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					


UTION
ctive Materi
176

033 1SC-176 3-27-2002 5.06.44 PM

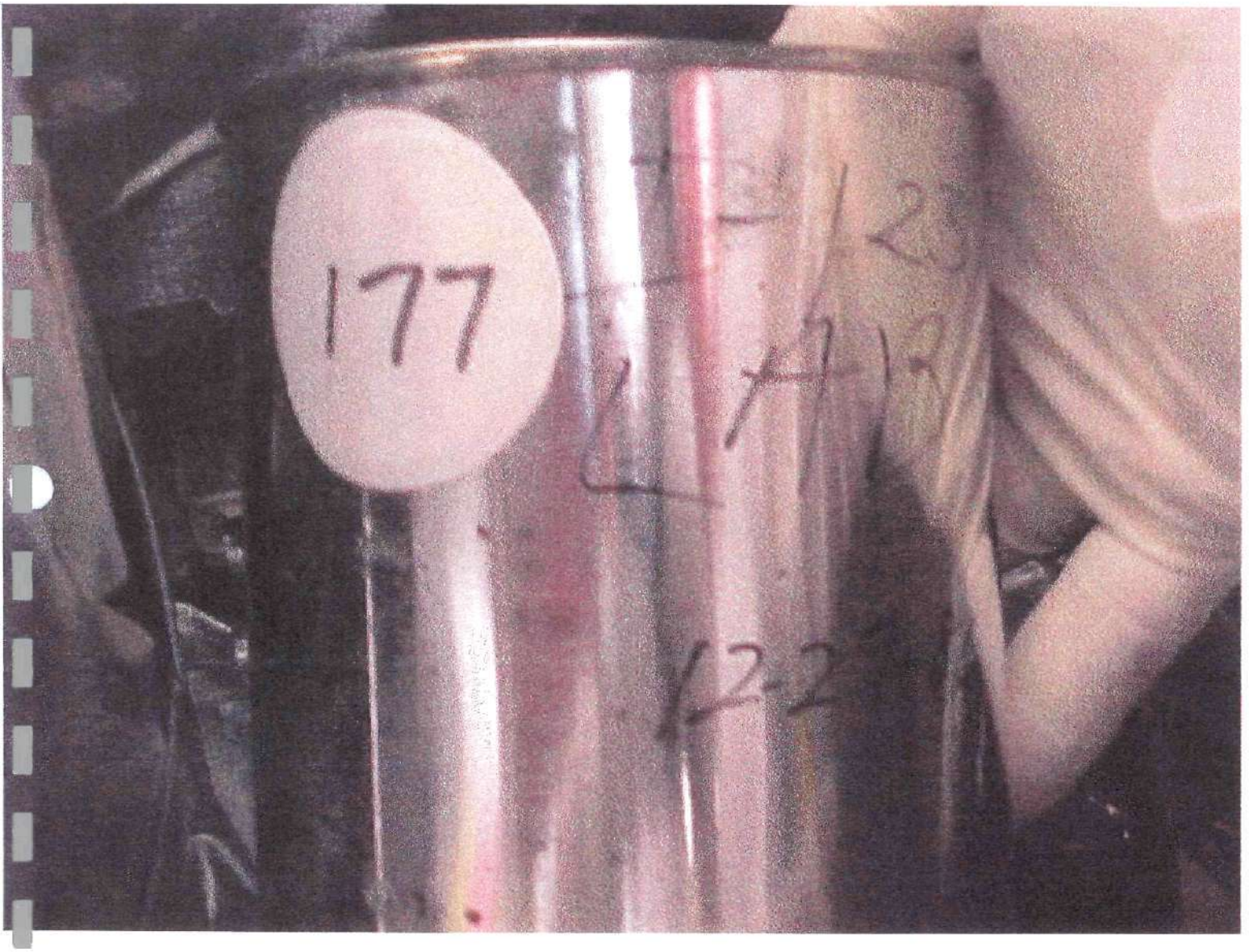
1SC-176



Acquired: 3/27/2002 5:06:43 PM Real Time: 20.00 s. Live Time: 13.28 s.

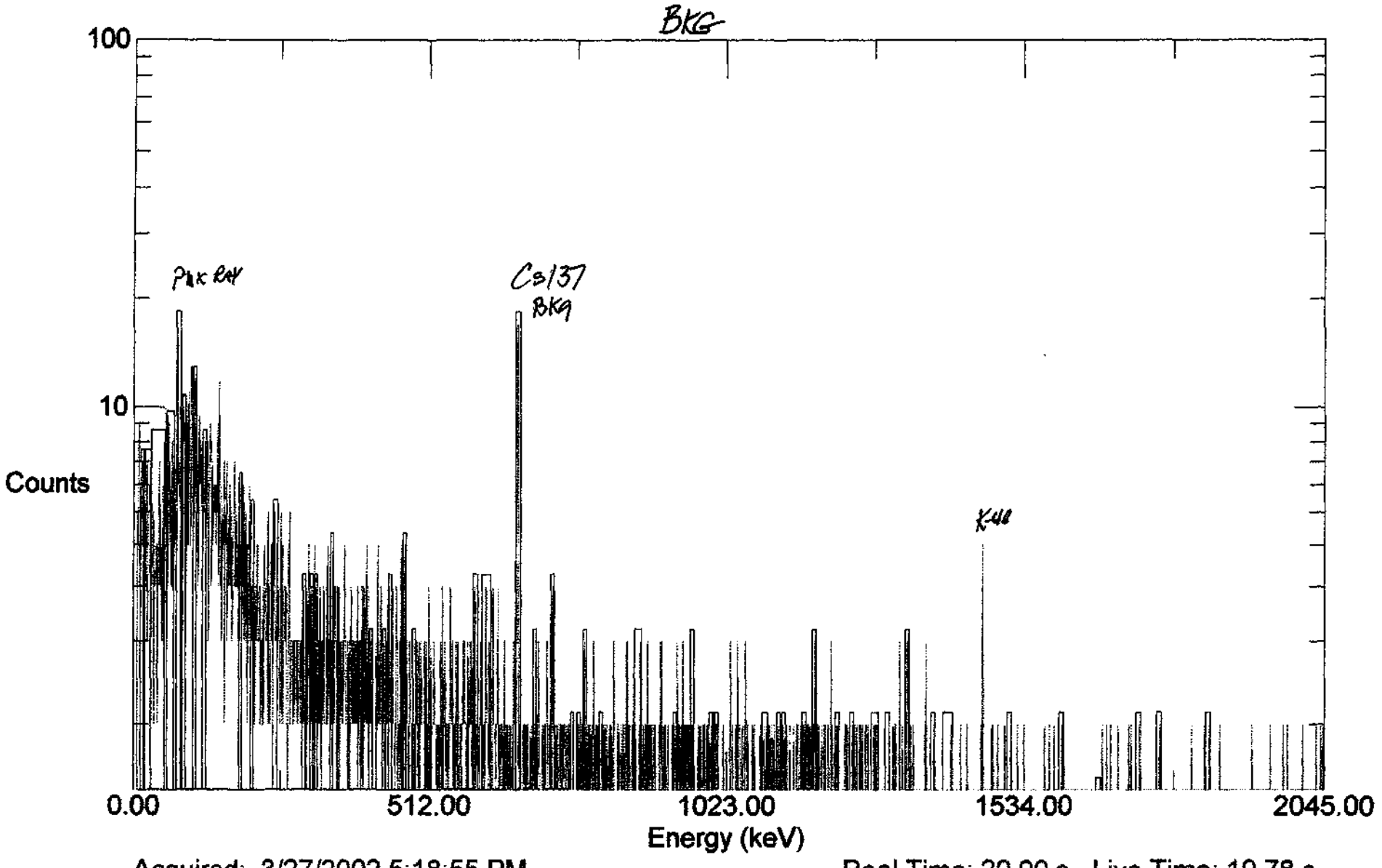
File: C:\User\GNIWEB~1\033 1SC-176 3-27-2002 5.06.44 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


177

034 1SC-177 3-27-2002 5.18.55 PM

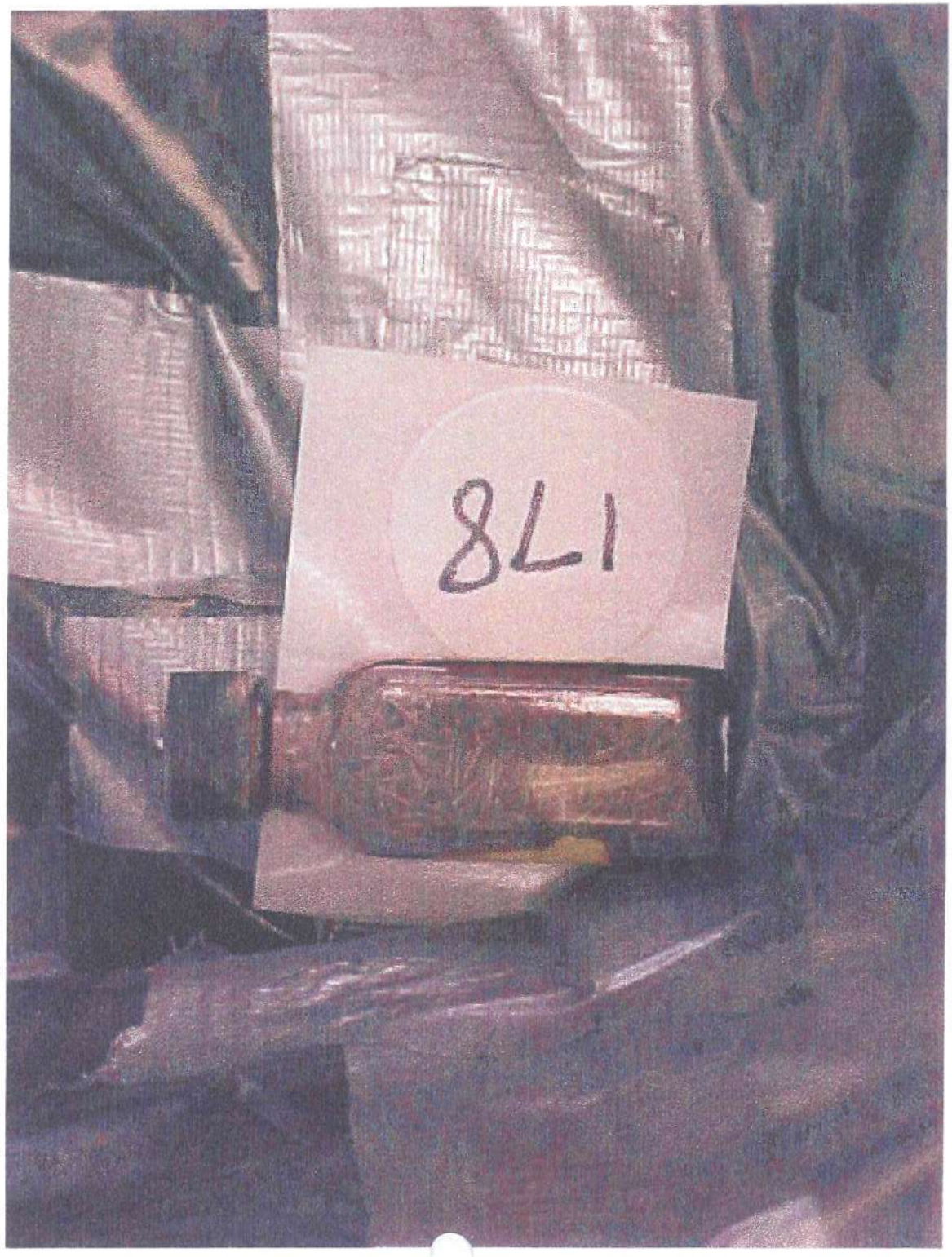
1SC-177



Acquired: 3/27/2002 5:18:55 PM Real Time: 20.00 s. Live Time: 19.78 s.

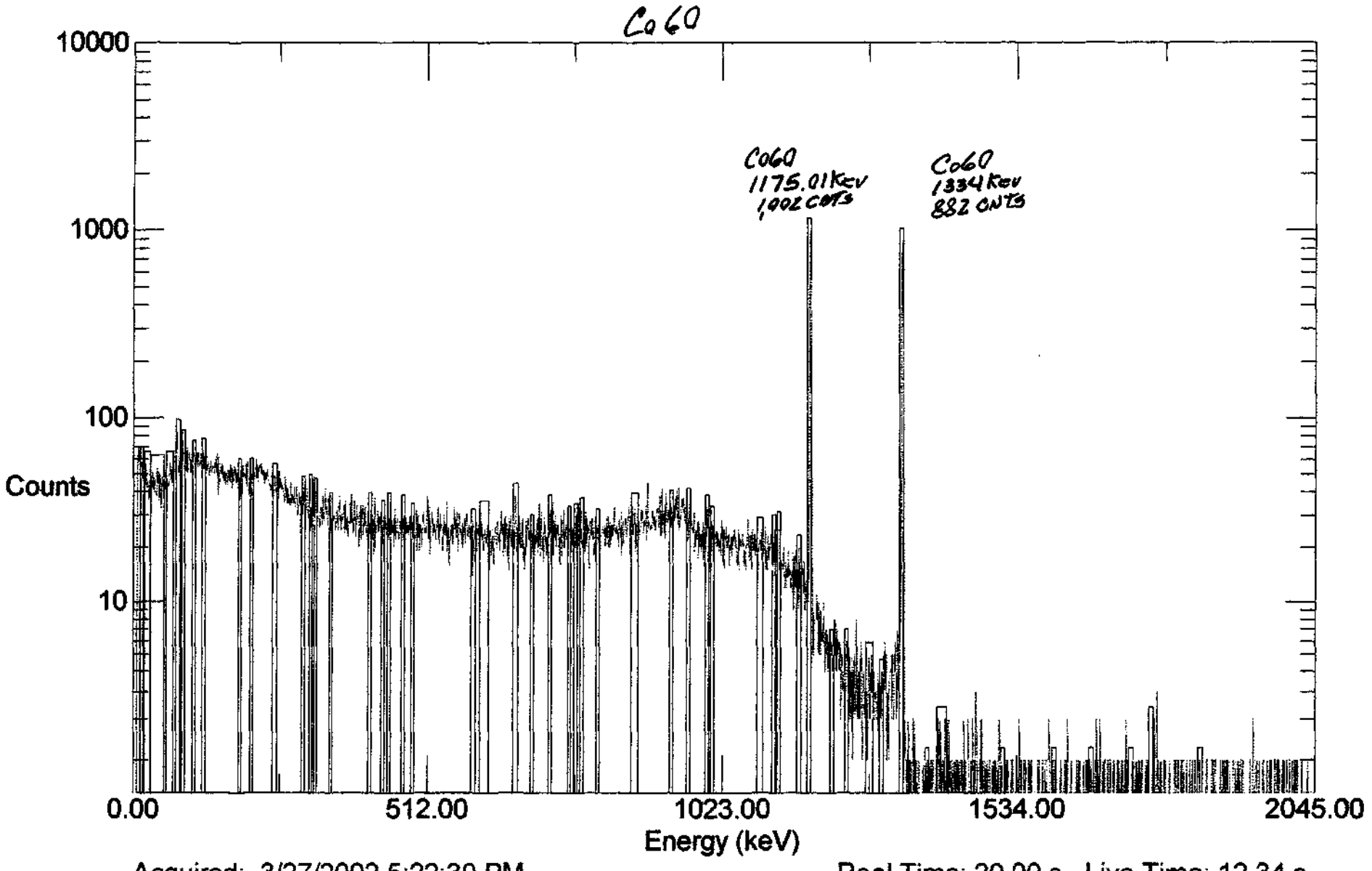
File: C:\User\GNIWEB~1\034 1SC-177 3-27-2002 5.18.55 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


8L1

035 1SC-178 3-27-2002 5.22.31 PM

1SC-178



Acquired: 3/27/2002 5:22:30 PM Real Time: 20.00 s. Live Time: 12.34 s.

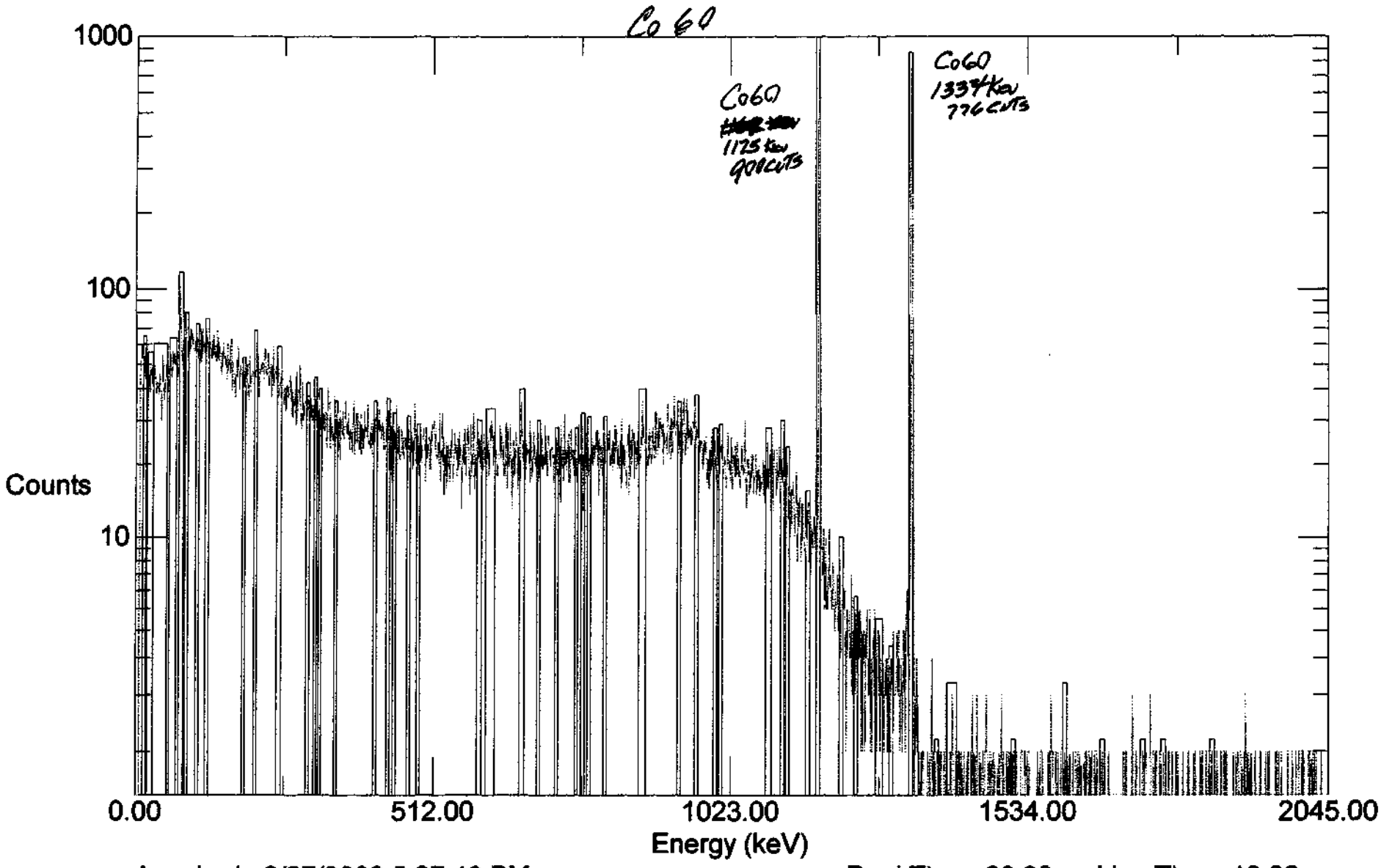
File: C:\User\GNIWEB~1\035 1SC-178 3-27-2002 5.22.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

1149

036 1SC-179 3-27-2002 5.27.47 PM

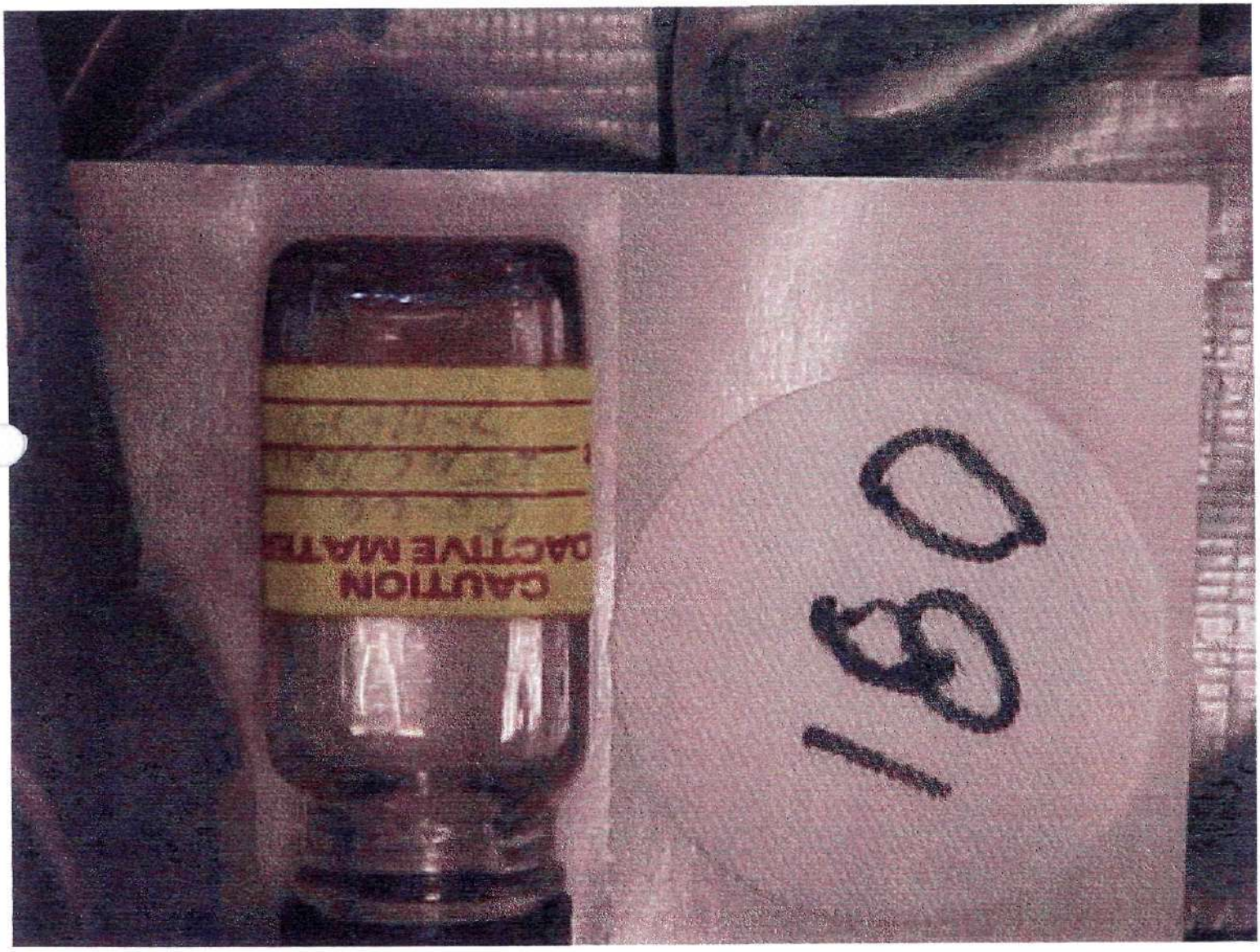
1SC-179



Acquired: 3/27/2002 5:27:46 PM Real Time: 20.00 s. Live Time: 13.22 s.

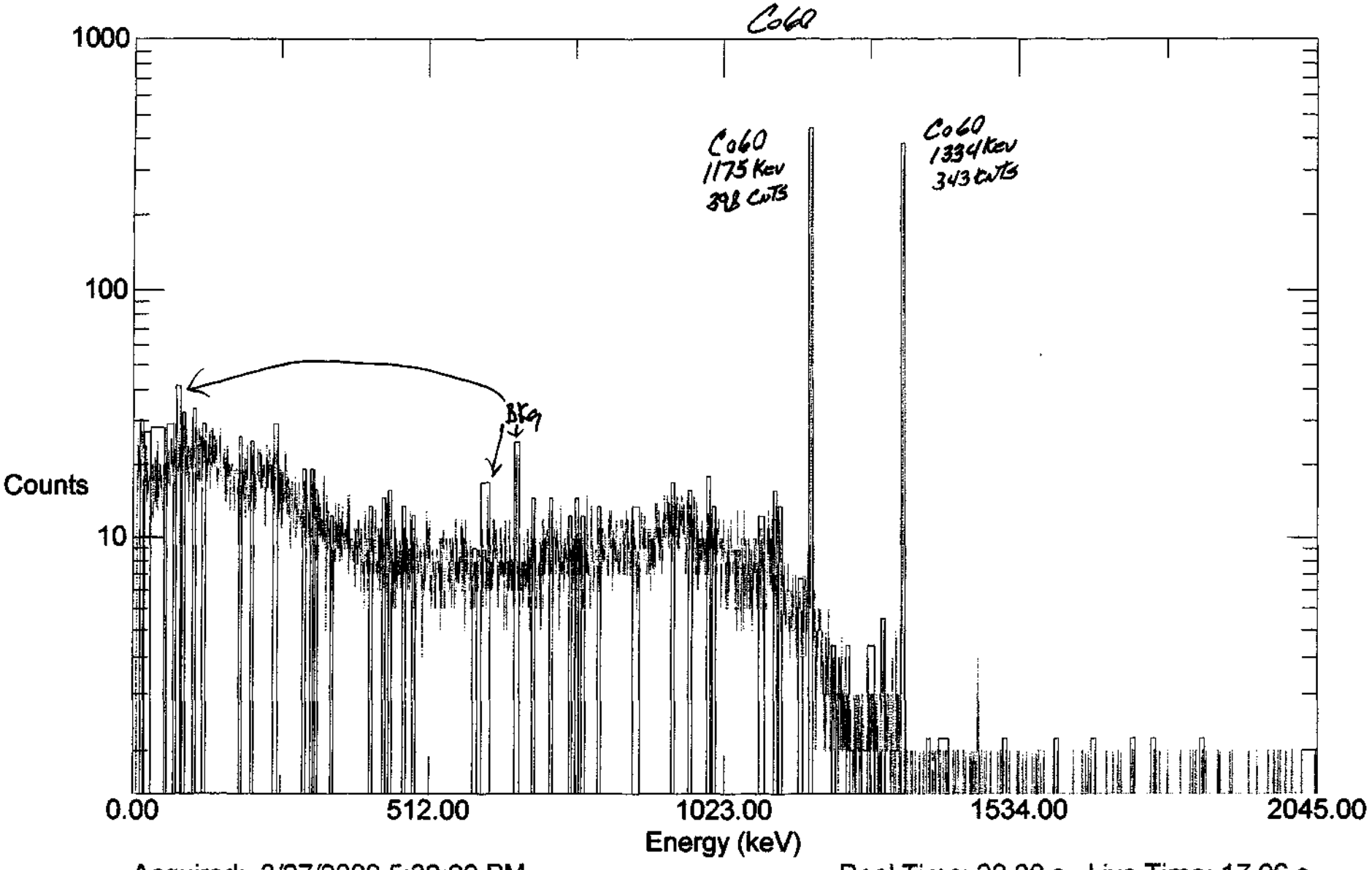
File: C:\User\GNIWEB~1\036 1SC-179 3-27-2002 5.27.47 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


CAUTION
180

037 1SC-180 3-27-2002 5.32.21 PM

1SC-180



Acquired: 3/27/2002 5:32:22 PM Real Time: 20.00 s. Live Time: 17.96 s.

File: C:\User\GNIWEB~1\037 1SC-180 3-27-2002 5.32.21 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	181	182	183	183 I/S 2st Pig	
External on pig in mR/hr	BKG	0.1	2.5	15 ~~15~~ ~~25~~	
External on pig Neutron mR/hr	<1	<1	<1	<1	
Contact open pig mR/hr CW	BKG	0.2		23	
Beta on open pig mR/hr O/W	~~BKG~~ 0.3	0.4	20	35	
SMEAR	✓	✓		✓	
Picture	✓	✓		✓	
DIGET	✓	✓		✓	

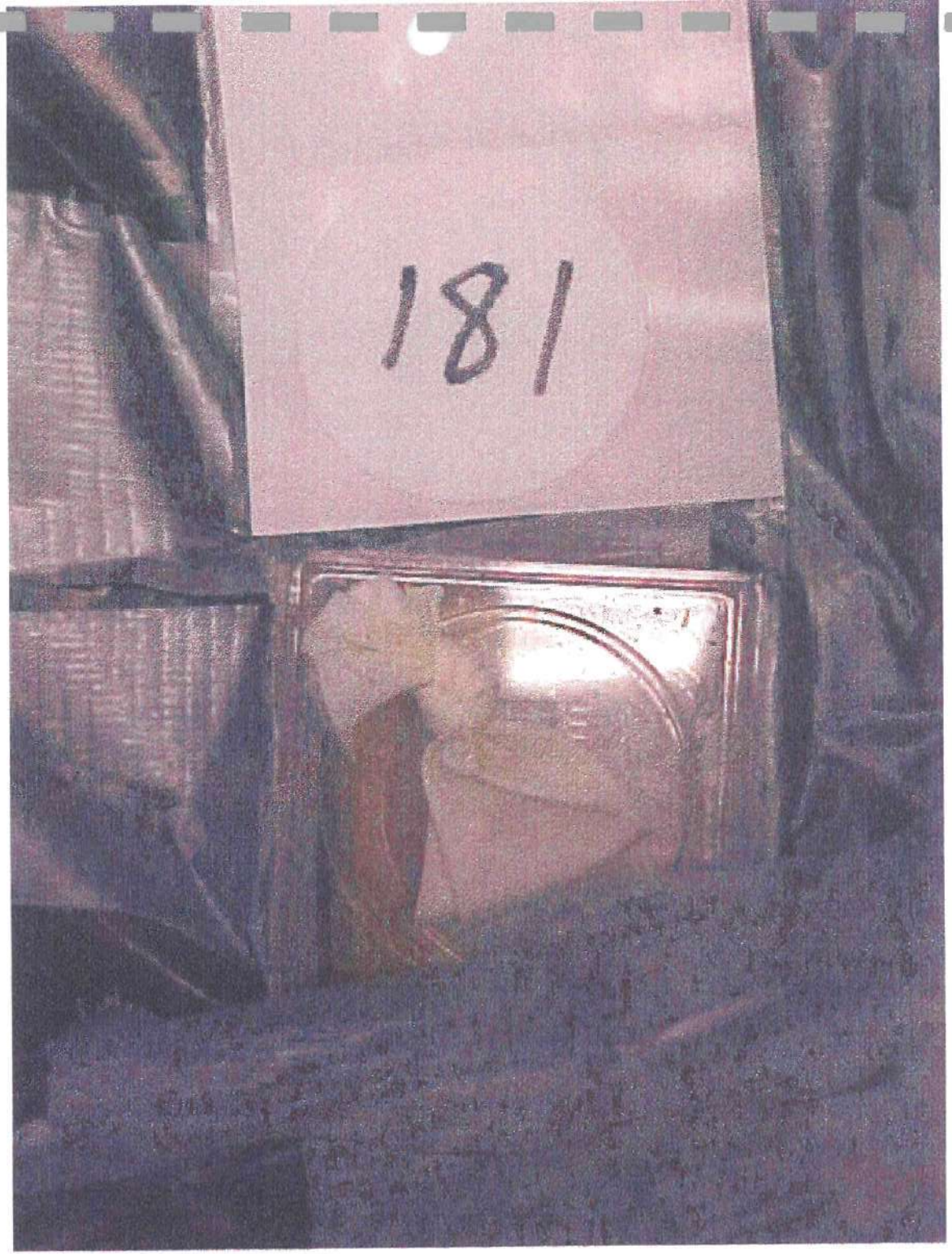
Table Readings

Source mR/hr @ 6 inchs	0.2	0.2		30	
Source mR/hr @ 12 inches	<.2	<0.2		5	
Source mR/hr @ 36 inches	<.2	<0.1		0.7	
Size of source in cc's	2	80		4	
Weight in grams	1	150		2 ~~15~~	

CPM Alpha	<20	<20		1.1	
Direct Beta/Gamma	50000	20000		150 cw/ow 0.3	

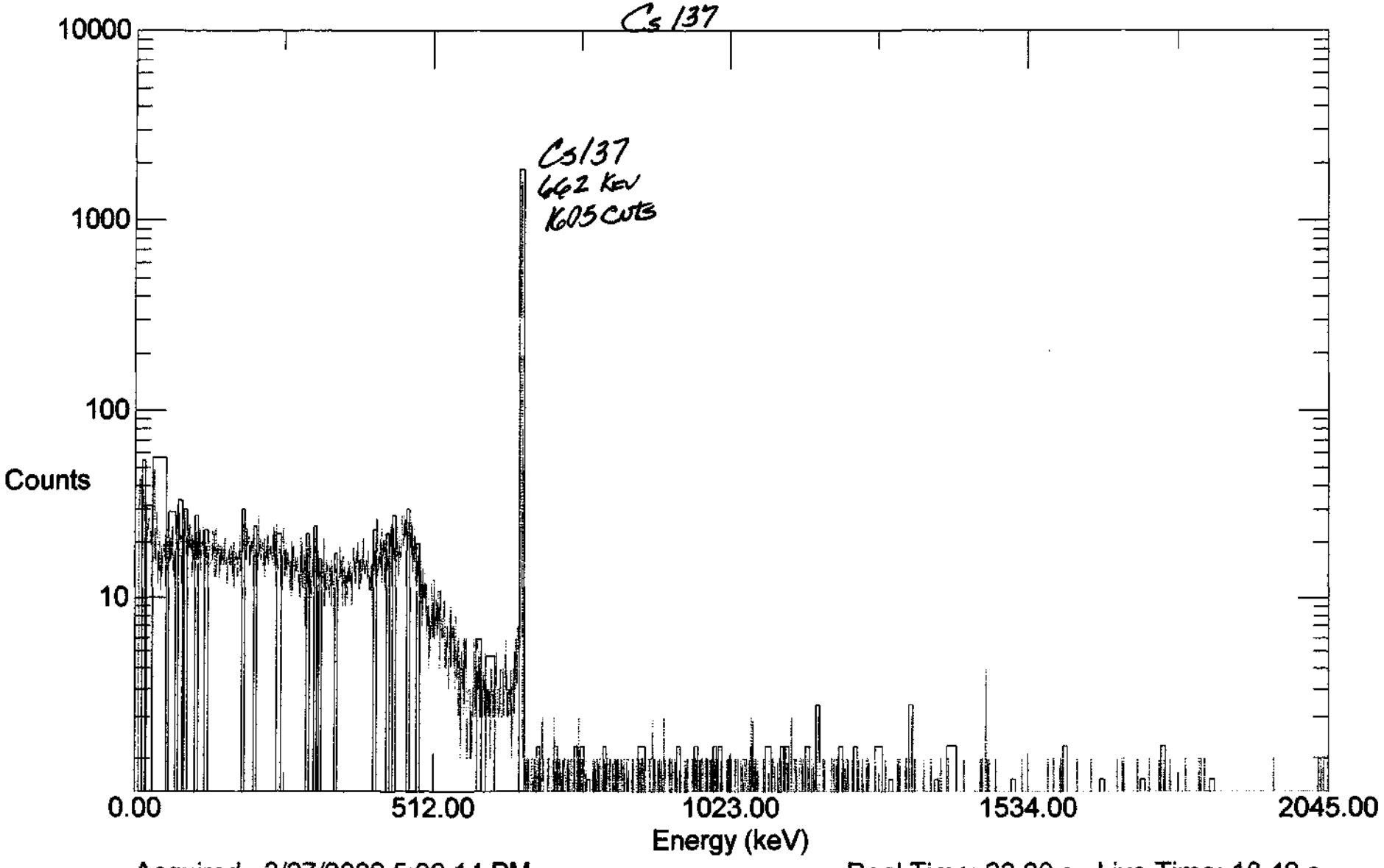
Info on source:	SM. BAG OF PELLETS	RA 2-44 RA 226 2.5 ~~mrem~~ uci 1-31-83		4 BAGGED 3/8" x 1/8" cylinders	

Information on pig:	NO INFO	NO INFO		NO INFO	
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	Digatec Cs-137				


181

038 1SC-181 3-27-2002 5.36.14 PM

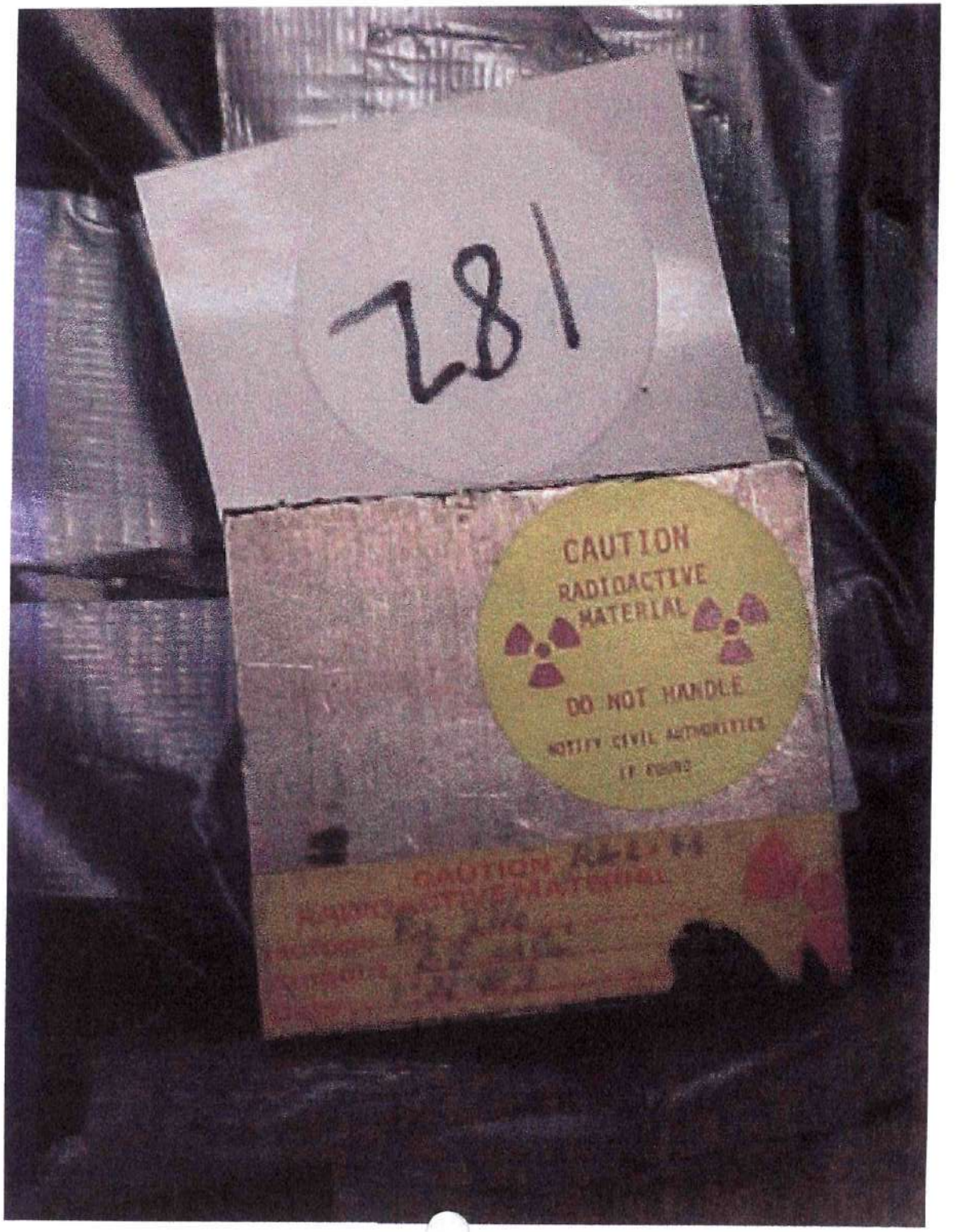
1SC-181



Acquired: 3/27/2002 5:36:14 PM Real Time: 20.00 s. Live Time: 18.40 s.

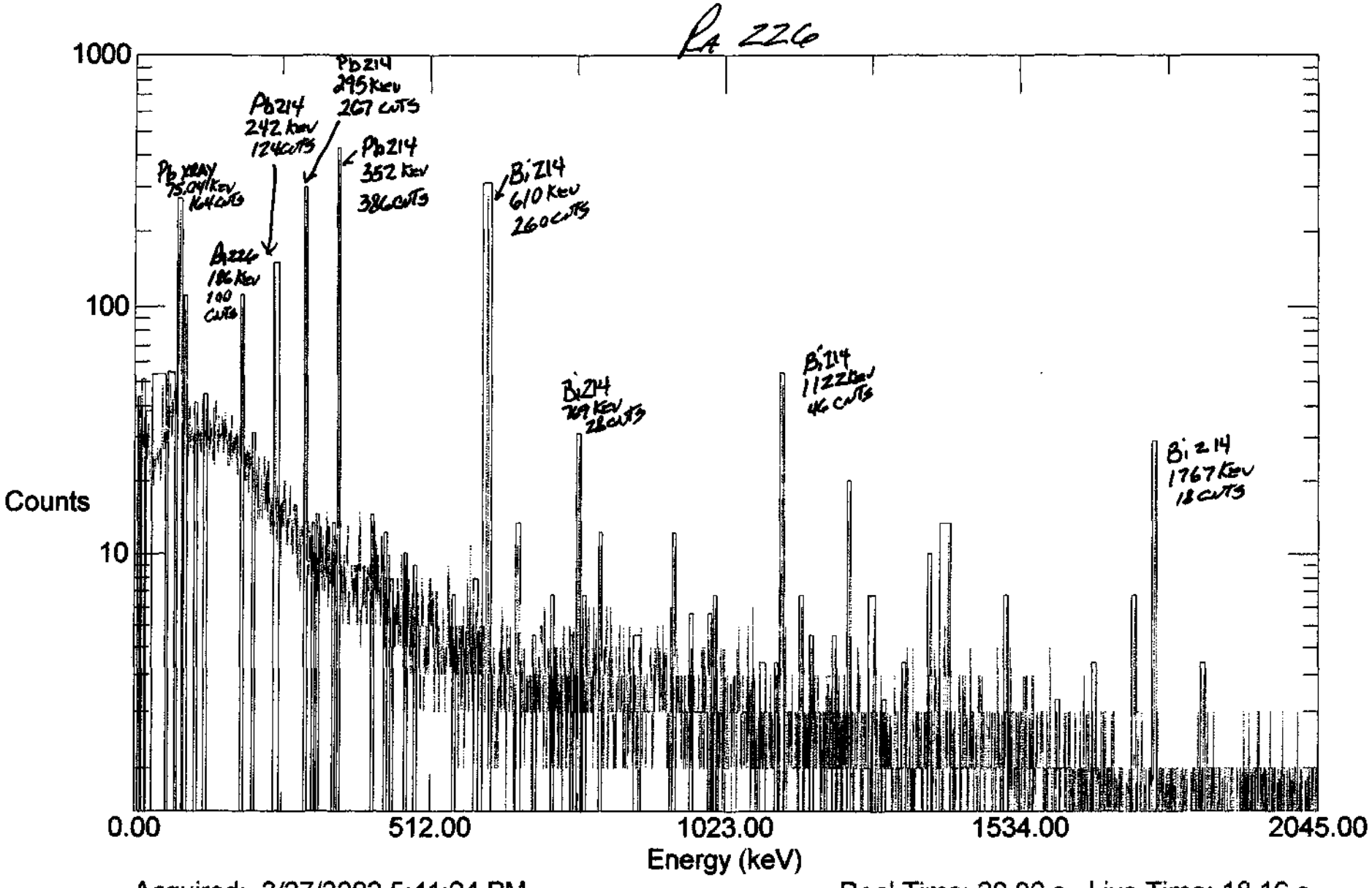
File: C:\User\GNIWEB~1\038 1SC-181 3-27-2002 5.36.14 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


281
CAUTION
RADIOACTIVE
MATERIAL
DO NOT HANDLE
NOTIFY CIVIL AUTHORITIES
IF FOUND
CAUTION
RADIOACTIVE MATERIAL

039 1SC-182 3-27-2002 5.41.23 PM

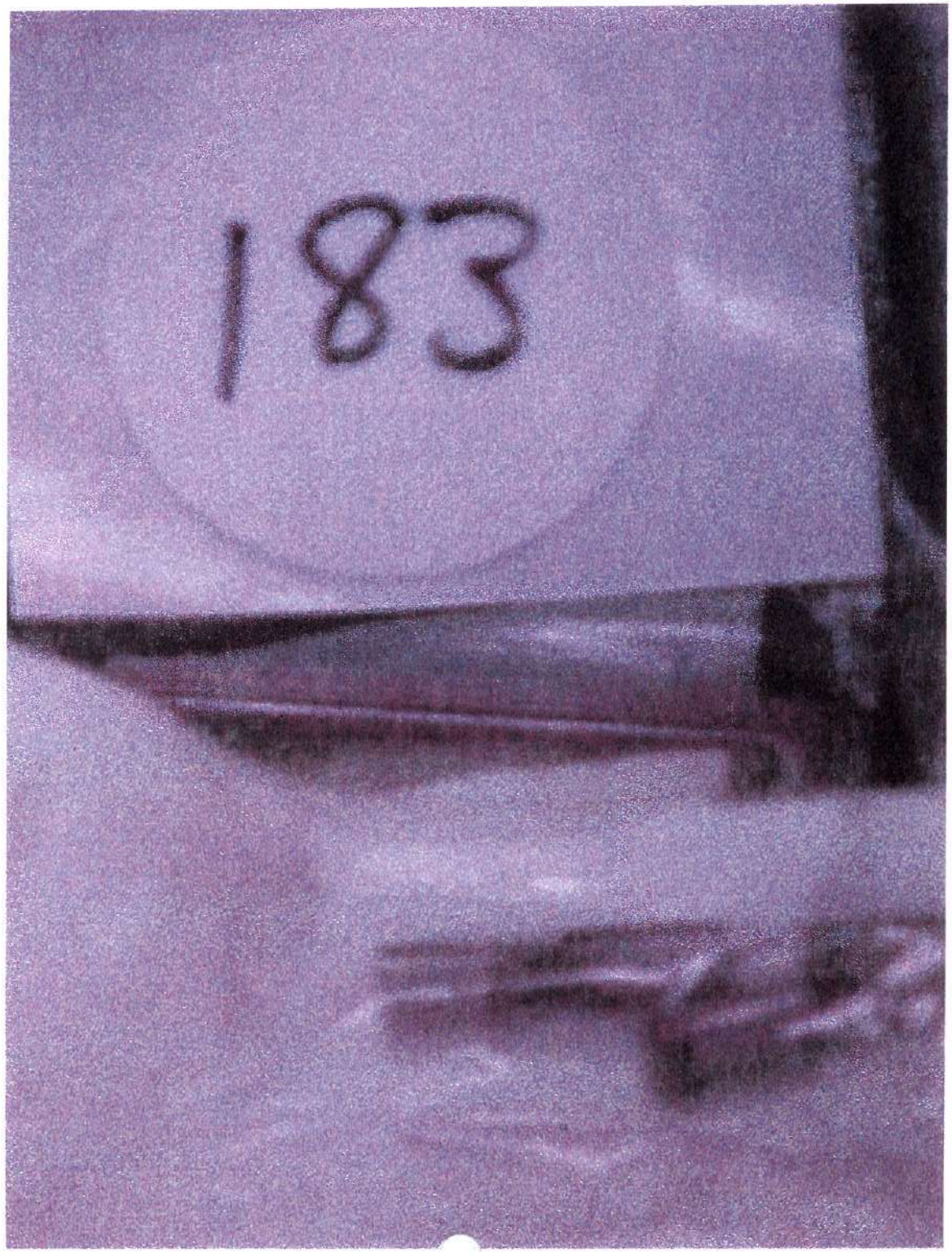
1SC-182



Acquired: 3/27/2002 5:41:24 PM Real Time: 20.00 s. Live Time: 18.16 s.

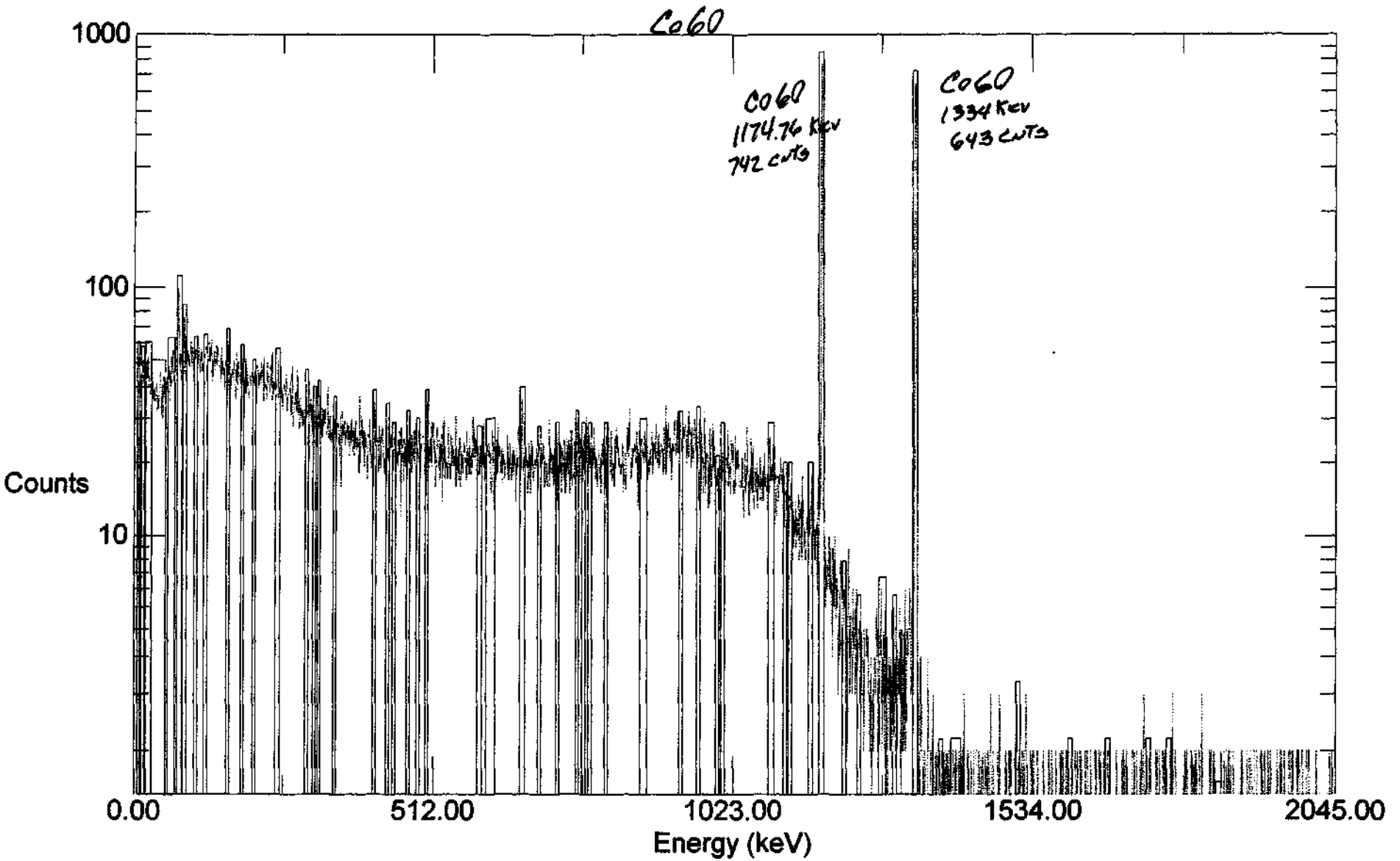
File: C:\User\GNIWEB~1\039 1SC-182 3-27-2002 5.41.23 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


183

040 1SC-183 3-27-2002 5.47.28 PM

1SC-183



Acquired: 3/27/2002 5:47:28 PM Real Time: 20.00 s. Live Time: 14.14 s.

File: C:\User\GNIWEB~1\040 1SC-183 3-27-2002 5.47.28 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3·27·02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

Container #	184	185	186	187	188
External on pig in mR/hr	6 ~~0.1~~	6	0.1	4	2.5
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr CW	40 ~~0.5~~	18	1	45	N/A
Beta on open pig mR/hr O/W	70 ~~0.7~~	32	1.7	600	
SMEAR	✓	NO	✓	✓	✓
Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

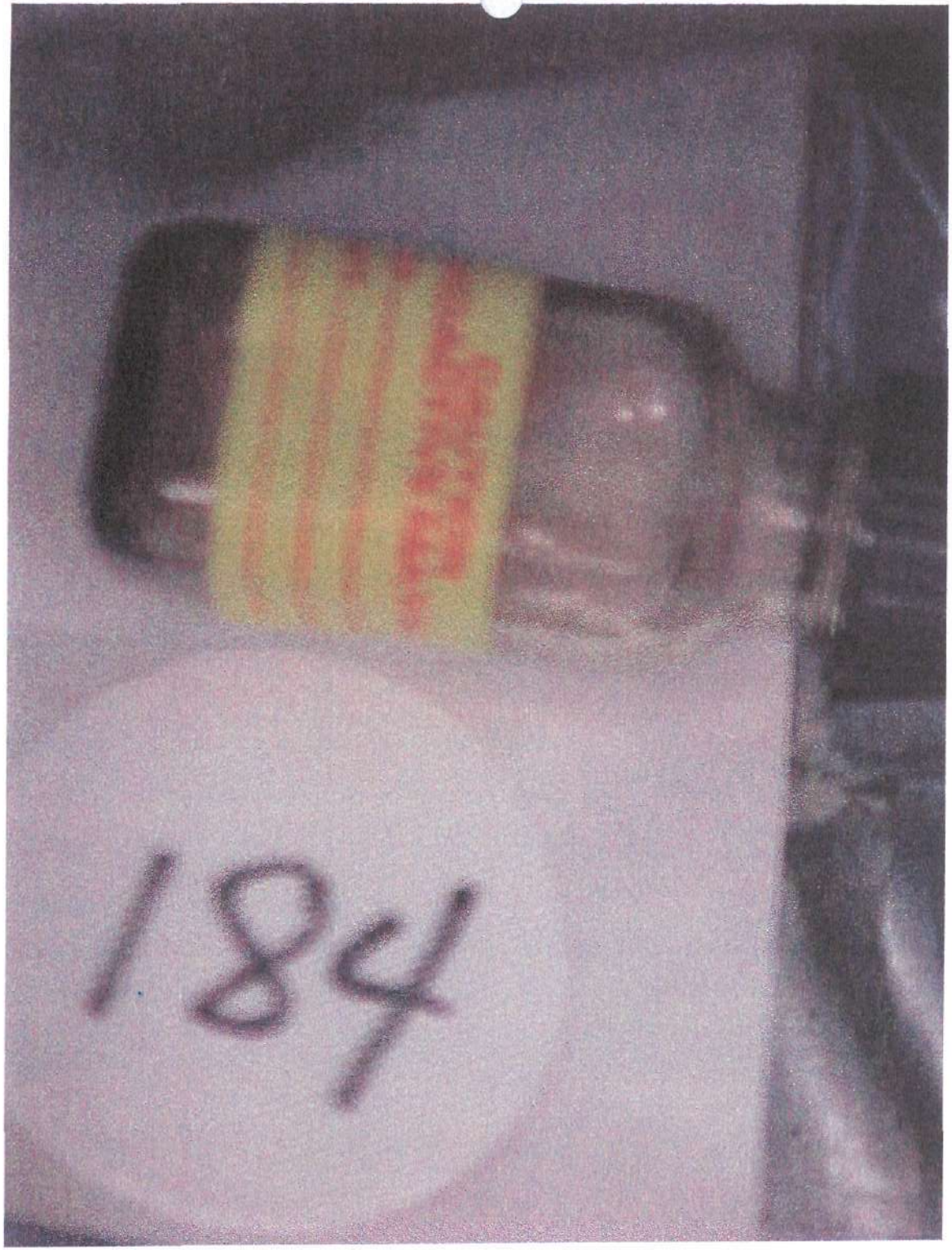
Table Readings

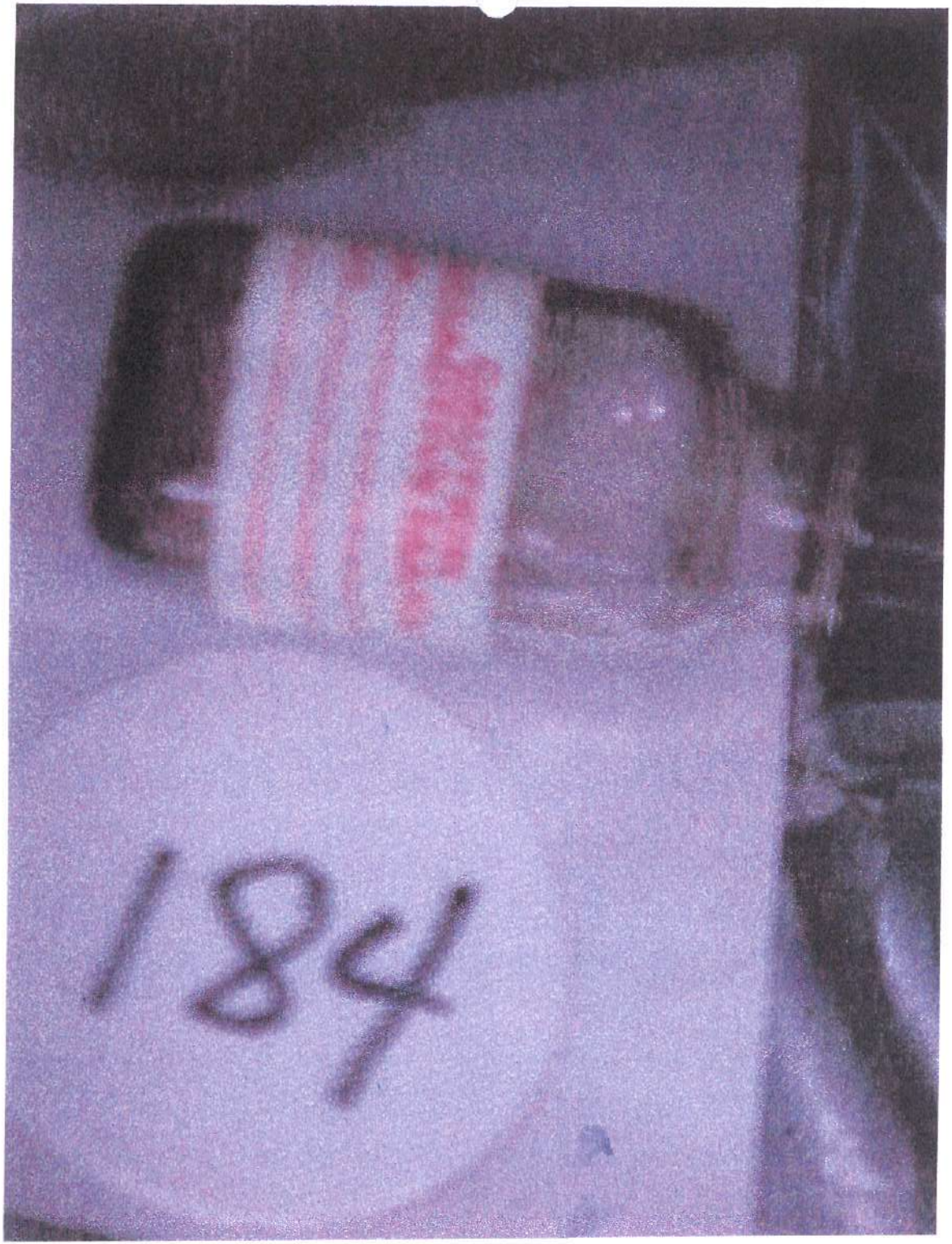
Source mR/hr @ 6 inchs	48	7.5	0.7	40	0.9
Source mR/hr @ 12 inches	10	3	0.3	10	0.4
Source mR/hr @ 36 inches	1.5	0.5	0.1	1.4	0.2
Size of source in cc's	20	2	20	20	~~[illegible]~~ 1FT^3
Weight in grams	15	1	35	8	80Lb

CPM Alpha	2.9	~~[illegible]~~	10.0	38.6	4.6
Direct Beta/Gamma	770.9	100CW/180OW	151.2	78.5	31.5

Info on source:	SMALL BB'S NO INFO	GLASS tube 1" X 1"	Ag wires ~~[illegible]~~ 4.4.73 DATE	RAMW 332 WRAPED IN Foil IN ZIPLOCK	NOT OPENED

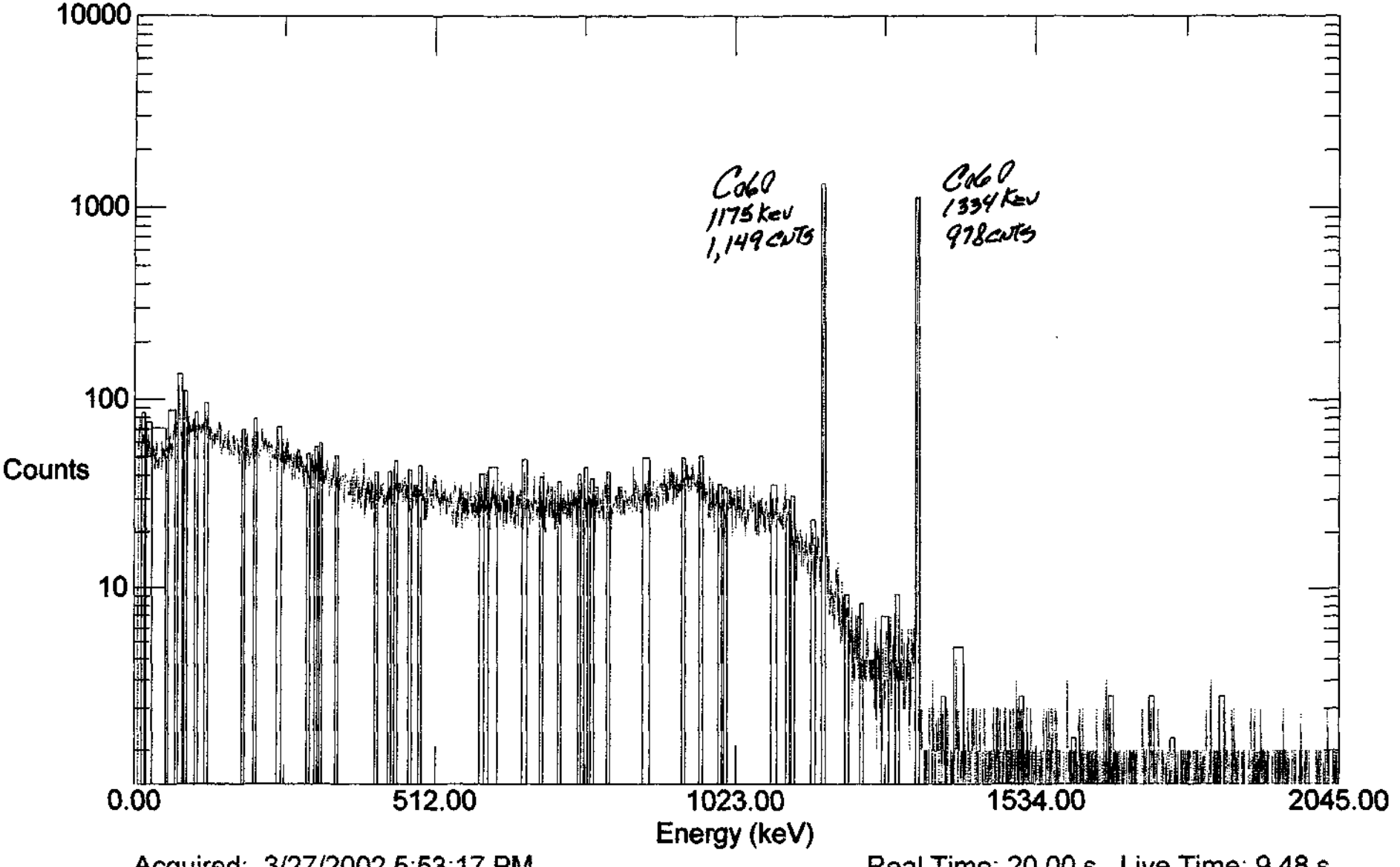
Information on pig:	NO INFO			2 pig things	RADM S.O.# 0030072 SOURCE HOLDER SR-1
Smear DPM per 100 cm^2 Alpha		300			
Smear DPM per 100 cm^2 Beta		<2000			
	Diget SAYS Co60	Ag107 Diget says		Radian	BOX SAYS Cs137 Cs137 SER # ~~[illegible]~~ 69145 1000 mci 7-80 ON Pig


184


1884

041 1SC-184 3-27-2002 5.53.18 PM

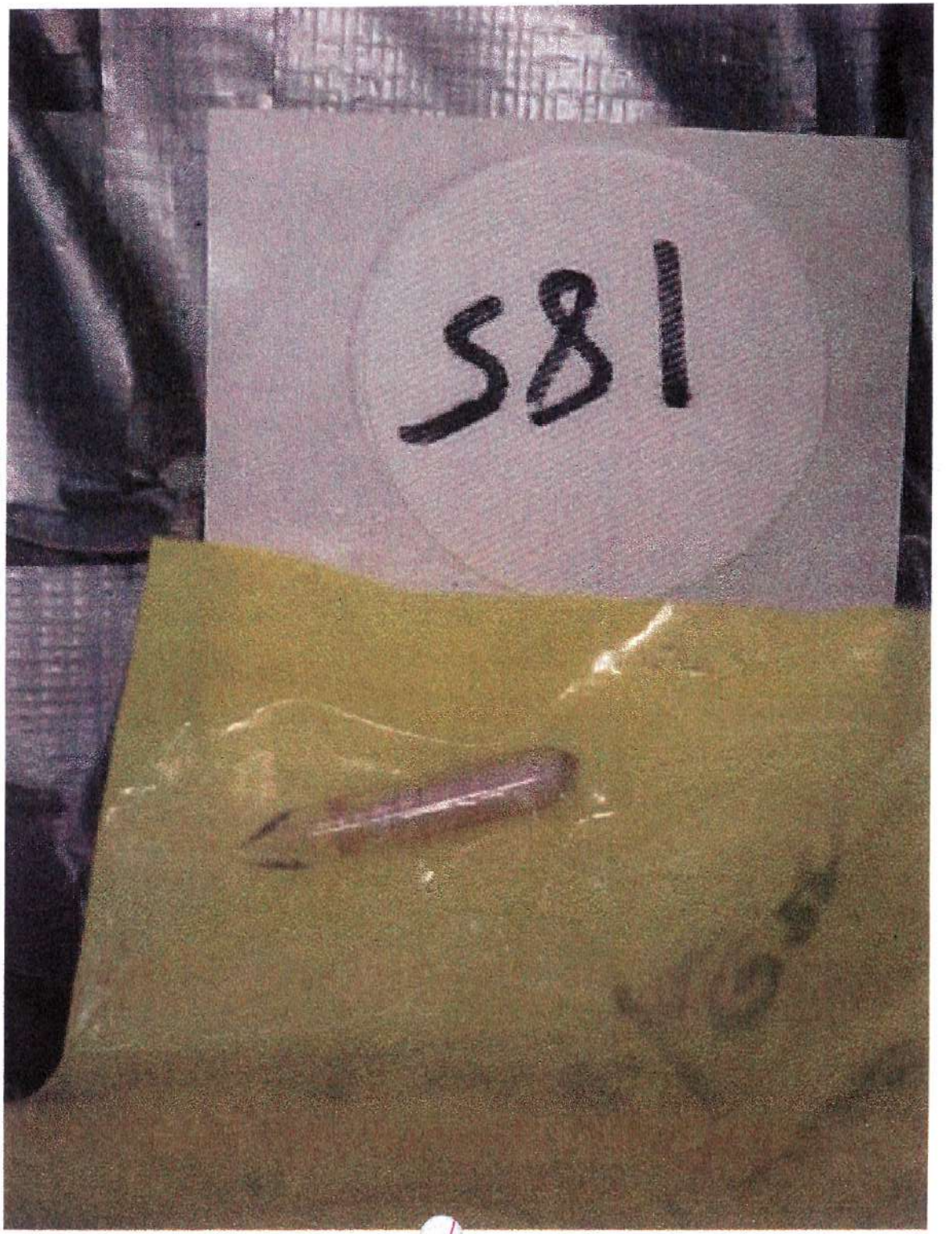
1SC-184



Acquired: 3/27/2002 5:53:17 PM Real Time: 20.00 s. Live Time: 9.48 s.

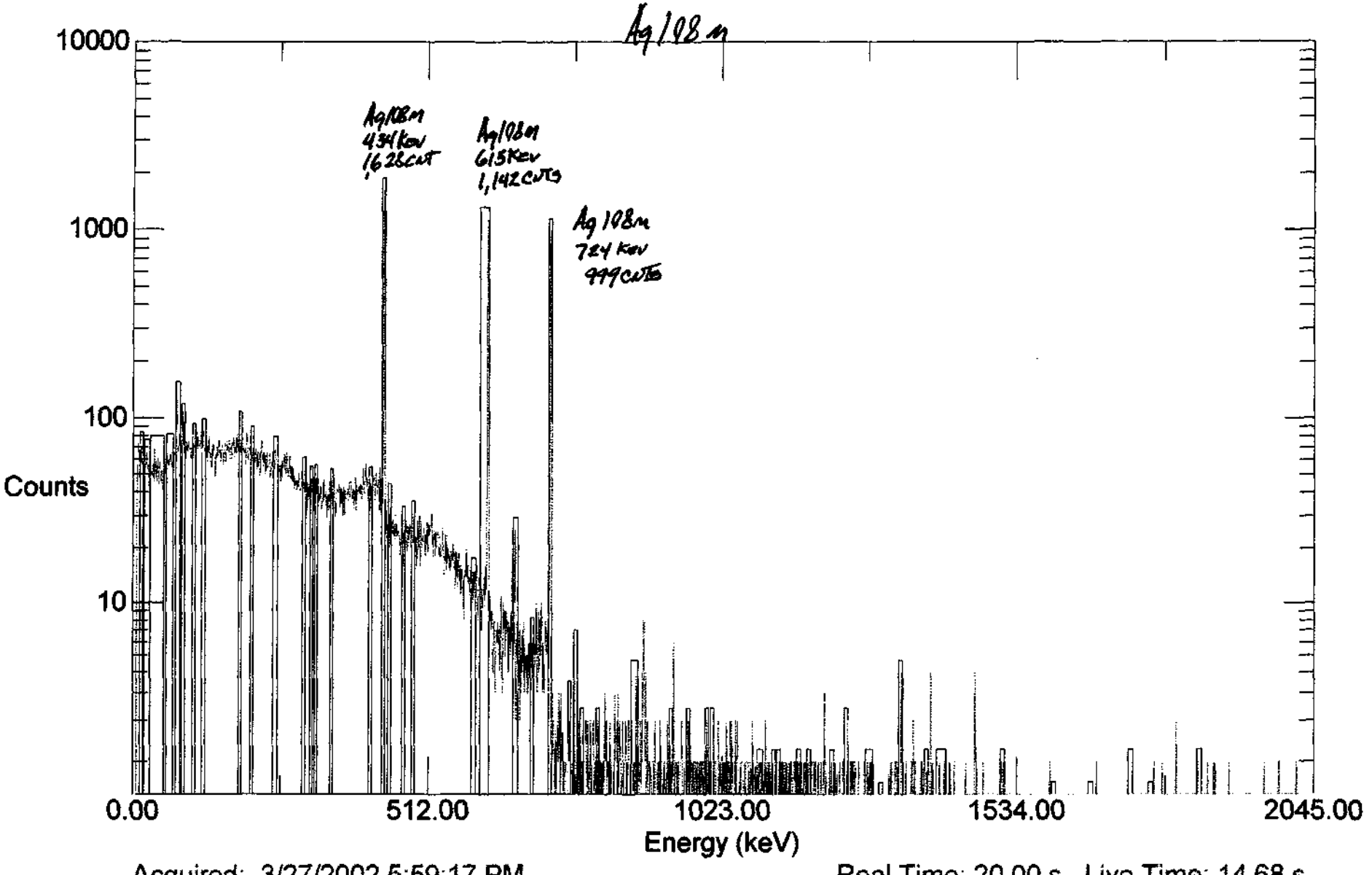
File: C:\User\GNIWEB~1\041 1SC-184 3-27-2002 5.53.18 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


581

042 1SC-185 3-27-2002 5.59.18 PM

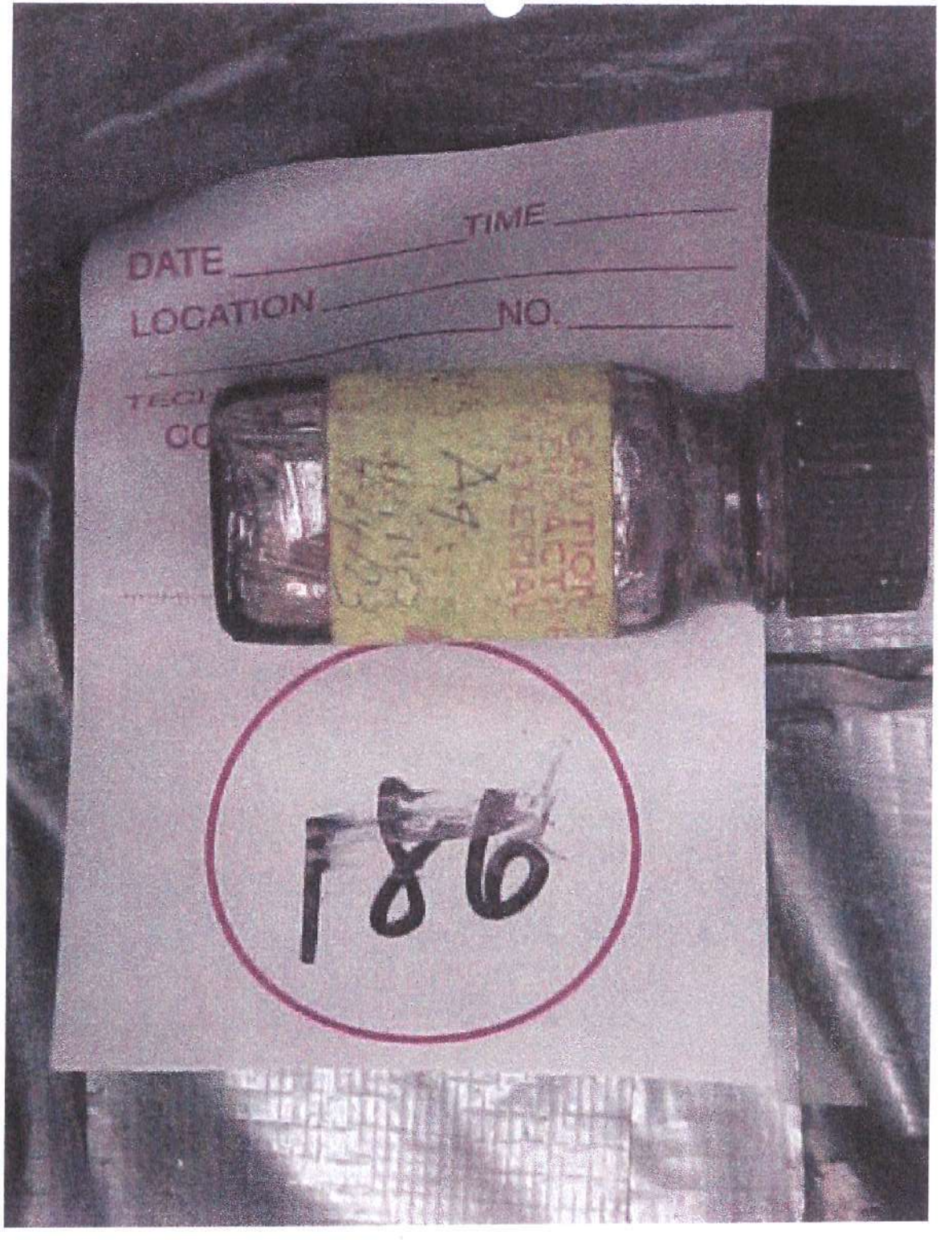
1SC-185



Acquired: 3/27/2002 5:59:17 PM Real Time: 20.00 s. Live Time: 14.68 s.

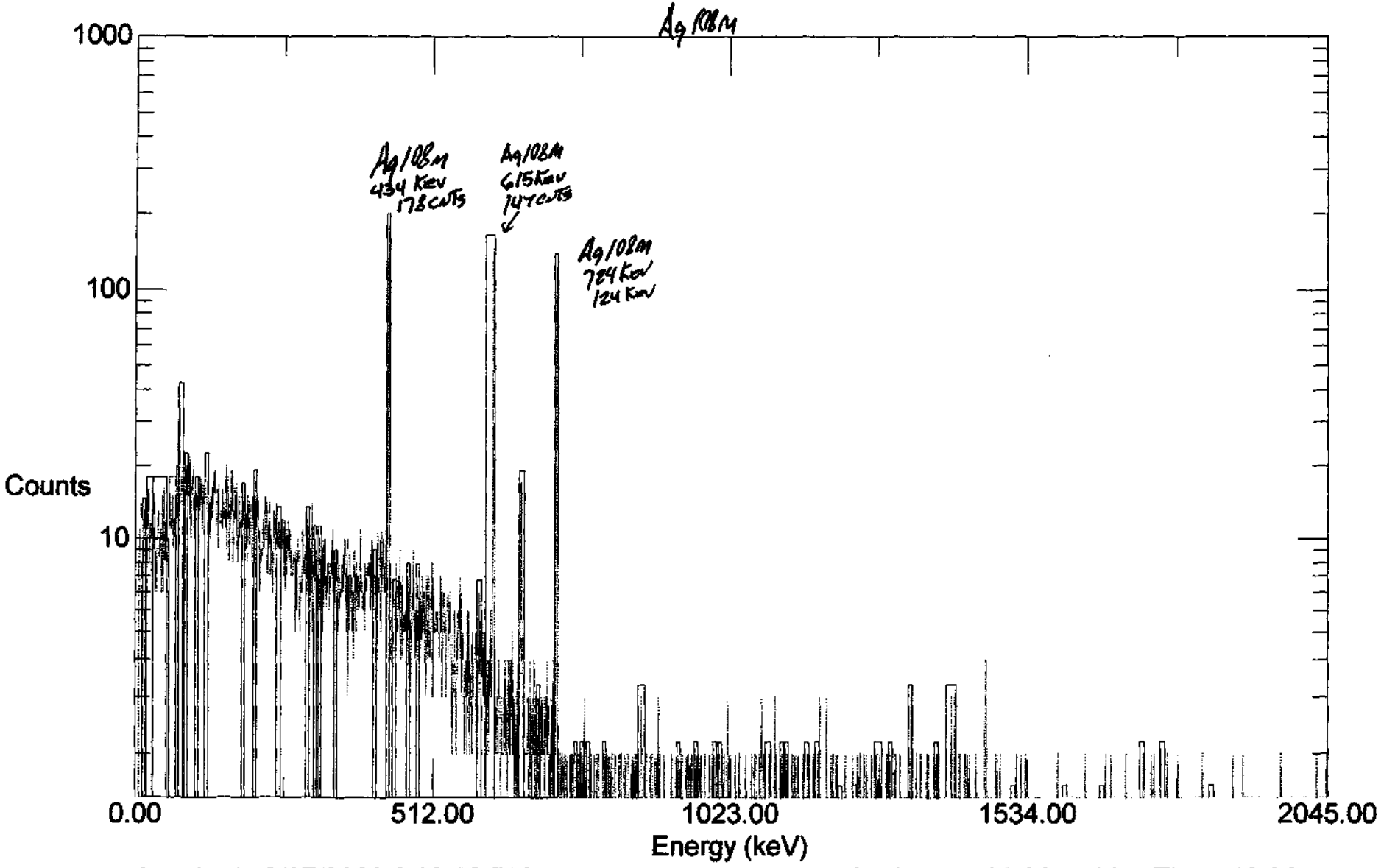
File: C:\User\GNIWEB~1\042 1SC-185 3-27-2002 5.59.18 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


DATE
TIME
LOCATION
NO.
186

043 1SC-186 3-27-2002 6.03.09 PM

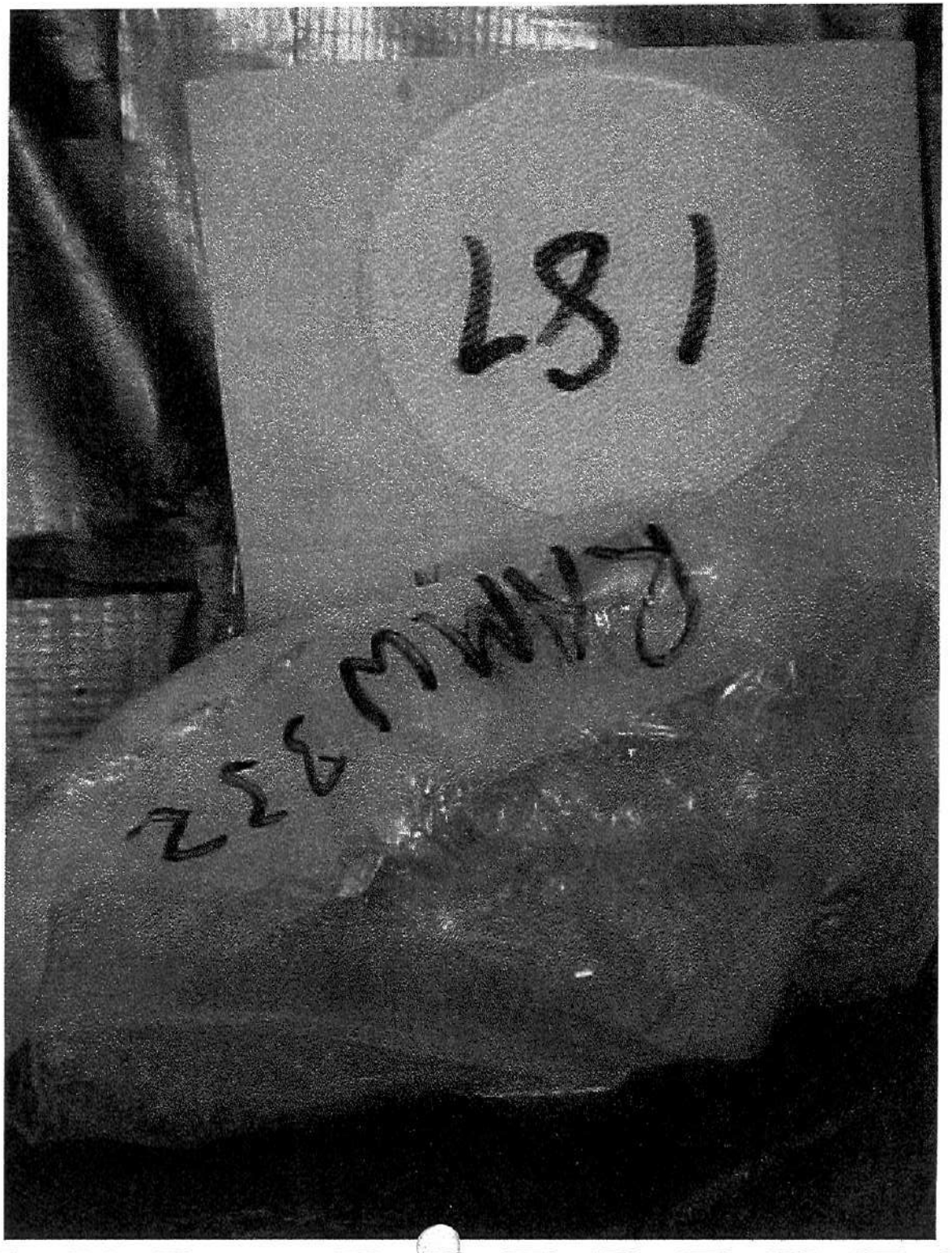
1SC-186



Acquired: 3/27/2002 6:03:09 PM Real Time: 20.00 s. Live Time: 19.26 s.

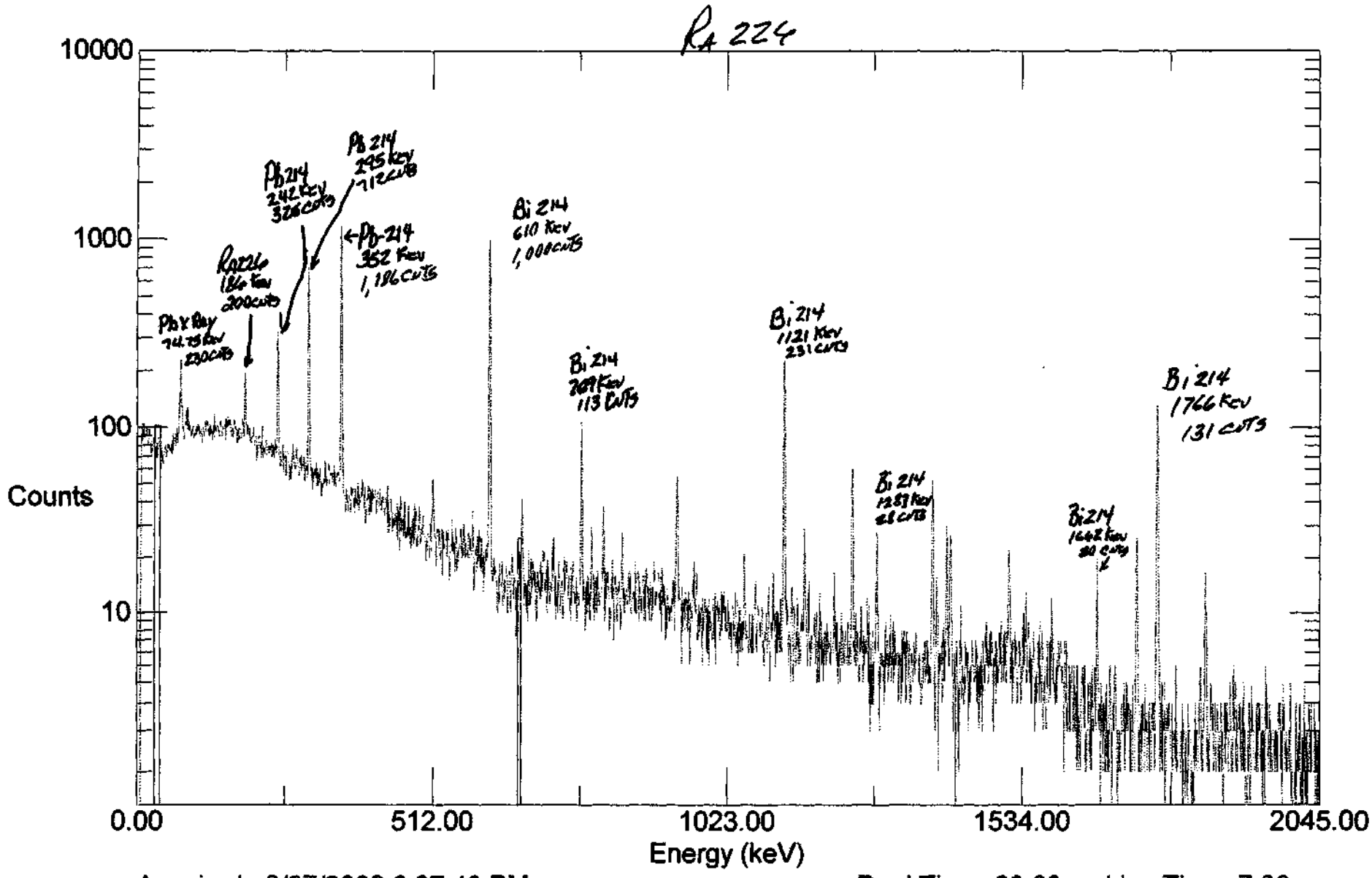
File: C:\User\GNIWEB~1\043 1SC-186 3-27-2002 6.03.09 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


L81
CHMW832

044 1SC-187 3-27-2002 6.07.50 PM

1SC-187



Acquired: 3/27/2002 6:07:49 PM Real Time: 20.00 s. Live Time: 7.06 s.

File: C:\User\GNIWEB~1\044 1SC-187 3-27-2002 6.07.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-4-02

BKG	mR/hr
6"	[illegible]
12"	
36"	

Container #	188	189	147	146	
External on pig in mR/hr			10 m	300	
External on pig Neutron mR/hr					
Contact open pig mR/hr			20,000	100,000	
Beta on open pig mR/hr O/N/					

Picture					

Table Readings

Source mR/hr @ 6 inchs			1,000	12,000	
Source mR/hr @ 12 inches			300	4,000	
Source mR/hr @ 36 inches			100	800	
Size of source in cc's				4	
Weight in grams				8	

CPM Alpha					
Direct Beta/Gamma					

Info on source: ISOTOPE	CS137	CS137	CS137	CS137	

Information on pig: DATE	7-80	2-68		PILL	
Smear DPM per 100 cm^2 Alpha				100	
Smear DPM per 100 cm^2 Beta				215	
CURIE	1000 mCI	2000 mCI	250 mCI	CI 2	

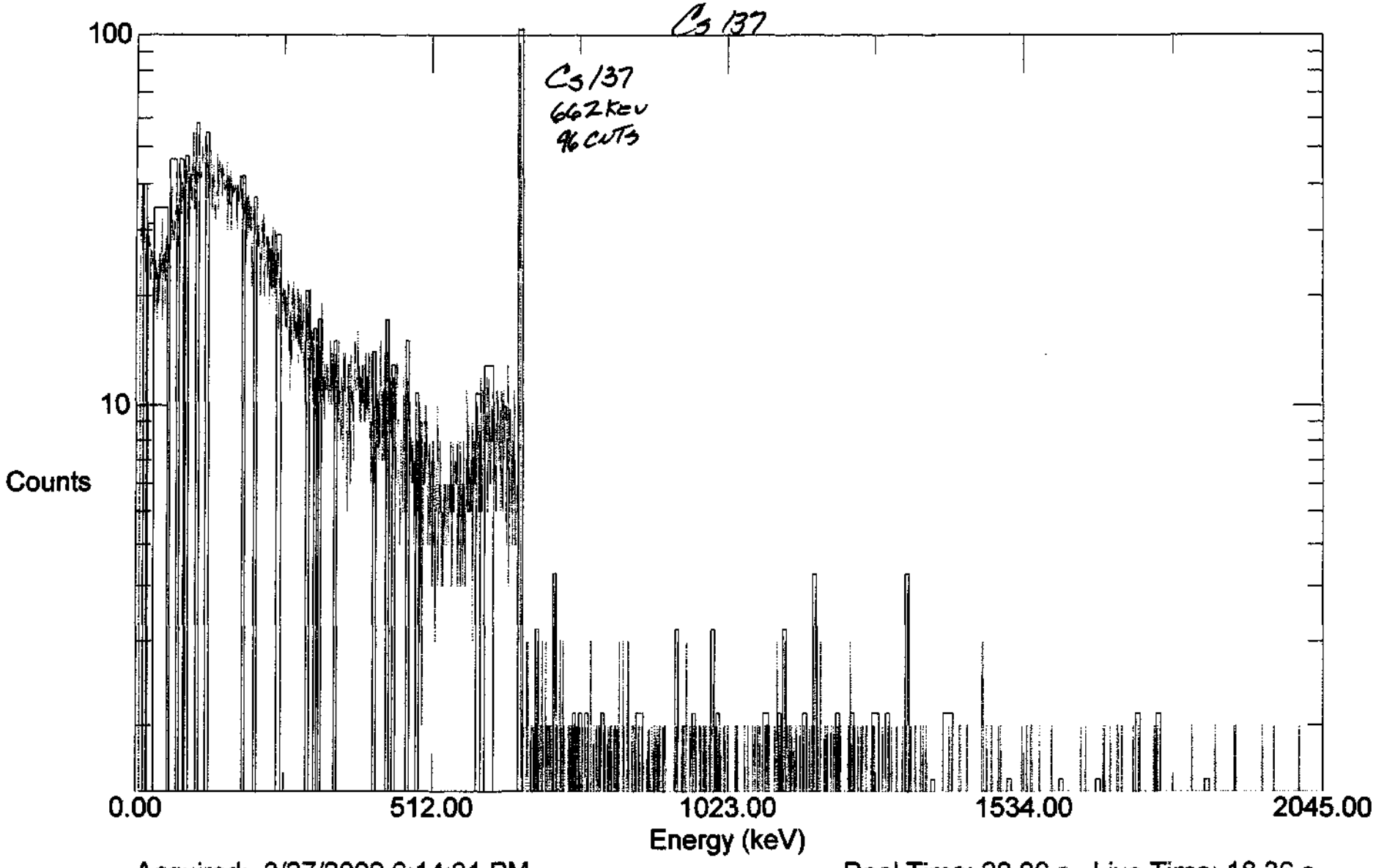
✓ ✓ 100mR DIRECT

189

CAUTION
RADIOACTIVE MATERIAL
S.O.
SOURCE HOLDER
ISOTOPE
SERIAL NO.
mCi
DATE
REMOVAL OF THIS LABEL IS PROHIBITED
THE OHMART CORP., CINCINNATI, OHIO, U.S.A.
188

045 1SC-188 3-27-2002 6.14.32 PM

1SC-188



Acquired: 3/27/2002 6:14:31 PM Real Time: 20.00 s. Live Time: 18.36 s.
File: C:\User\GNIWEB~1\045 1SC-188 3-27-2002 6.14.32 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 3-27-02

BKG	mR/hr
6"	<.2
12"	<.2
36"	<.1

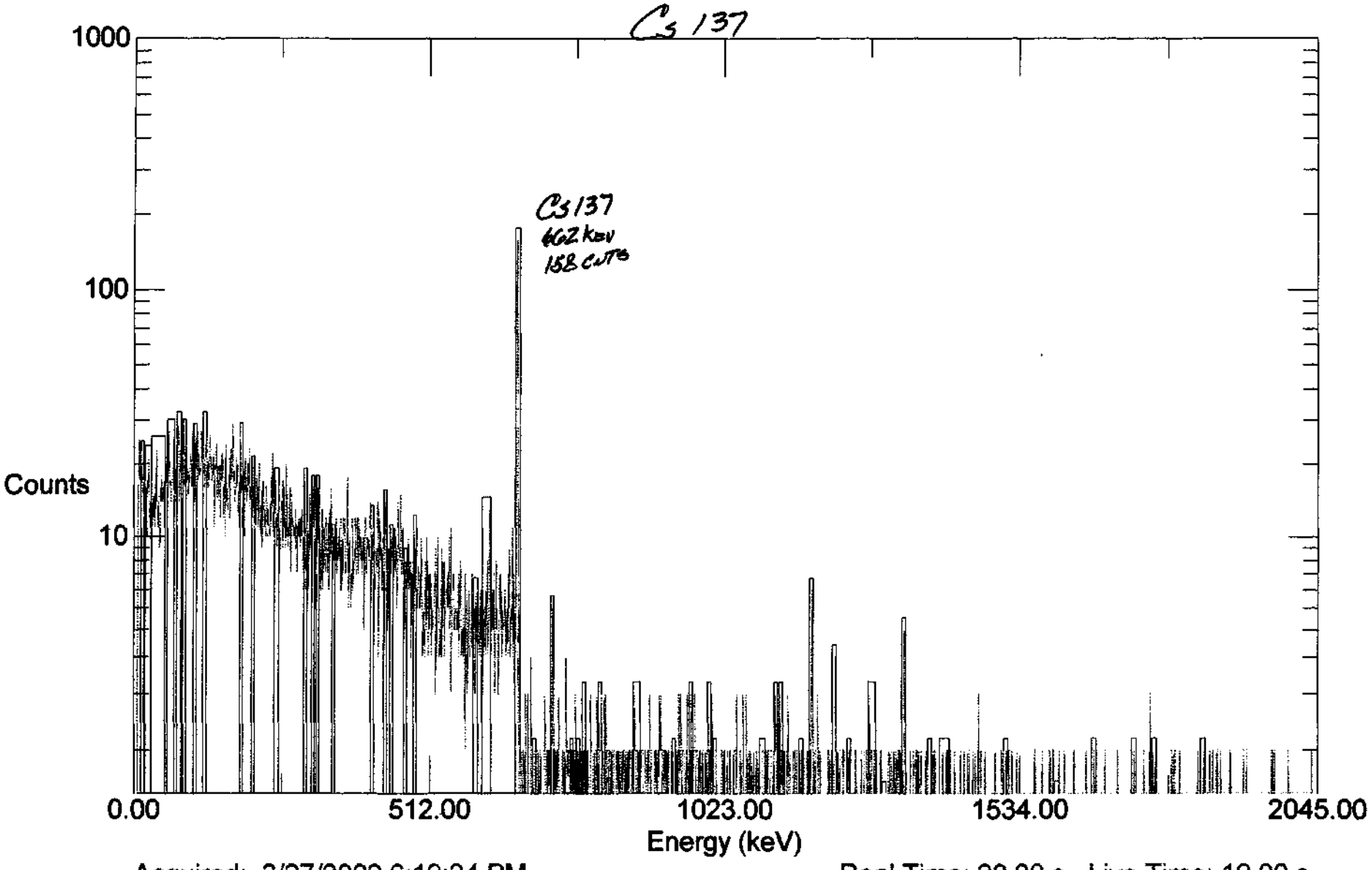
Container #	189	~~190~~			
External on pig in mR/hr	1.5				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	N/A				
Beta on open pig mR/hr O/W					
SMEAR	✓	✓			
Picture	✓	✓			
DIGET	✓	✓			
Table Readings					
Source mR/hr @ 6 inchs	0.3				
Source mR/hr @ 12 inches	BKG				
Source mR/hr @ 36 inches	BKG				
Size of source in cc's	1 1/2 FT³				
Weight in grams	75 Lbs				
CPM Alpha	1.1				
Direct Beta/Gamma	20.9				
Info on source:	DID NOT OPEN	MOD ~~HM-8~~ SER # 6884			
Information on pig:		Z-68 MAT. Cs137			
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
		2000 mCi			

MODEL # HM-8 A-2102
SO-17190

189

046 1SC-189 3-27-2002 6.19.24 PM

1SC-189



Acquired: 3/27/2002 6:19:24 PM Real Time: 20.00 s. Live Time: 19.00 s.

File: C:\User\GNIWEB~1\046 1SC-189 3-27-2002 6.19.24 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-2-02

BKG	mR/hr
6"	<0.2
12"	↓
36"	↓

SOURCES

Container #	190	191	192	193	194
External on pig in mR/hr	BKG	BKG	BKG	BKG	BKG
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	~~BKG~~	~~BKG~~	~~BKG~~	~~BKG~~	~~BKG~~
Beta on open pig mR/hr O/W	~~BKG~~	~~BKG~~	~~↓~~	~~BKG~~	~~↓~~

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	40 cc	20 cc	0.25 FT³	45 cc	35 cc
Weight in grams	300 g	450 g	10 Lb	423 g	160 g

CPM Alpha	<20	500	45	65	<20
Direct Beta/Gamma	BKG	→	~~→~~	→	100

Info on source:					Co60 Point Source 25mci. 2 BRASS PIECES SEVERAL SILVER pieces

Information on pig:	Shutters ~~is~~ (2)	(1) Shutter	Bucket of ~~rings~~ source Holders GDT	RAD MAT. DO NOT HANDLE CONTACT Civil Athorities	
Smear DPM per 100 cm^2 Alpha	27.3	1,450.4	175.4	86.9	2.3
Smear DPM per 100 cm^2 Beta	23.9	181.5	11.8	163.3	17.9

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN02-001 **4/3/02 TIME 1115**

ITEMS #90-213

Survey #

MDA Alpha DPM	MDA Beta DPM
10.7	66

BKG Alpha CPM	BKG Beta CPM
0.4	69.1

Alpha Eff 0.26

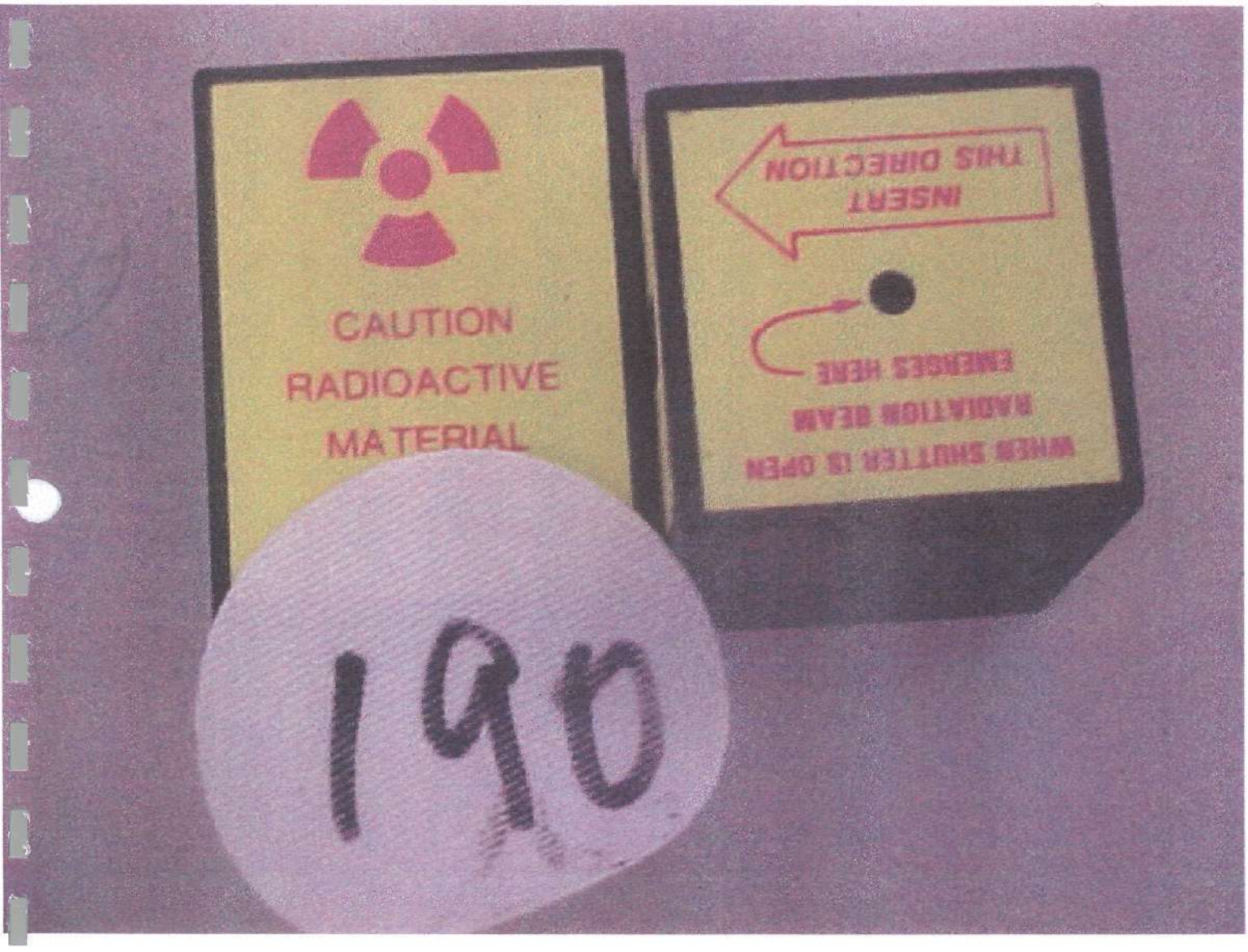
	2 Min CPM	DPM
90	22	40.8
99	64	121.5
100	48	90.8
101	19	35.0
190	15	27.3
191	755	1,450.4
192	92	175.4
193	46	86.9
194	2	2.3
195	4	6.2
196	10	17.7
197	2	2.3
198	6	10.0
199	3	4.2
205	3	4.2
206	178	340.8
208	214	410.0
213	0	-1.5
		-1.5
		-1.5
		-1.5
		-1.5
		-1.5
		-1.5
		-1.5

Items

Source

Beta/Gamma Eff 0.33

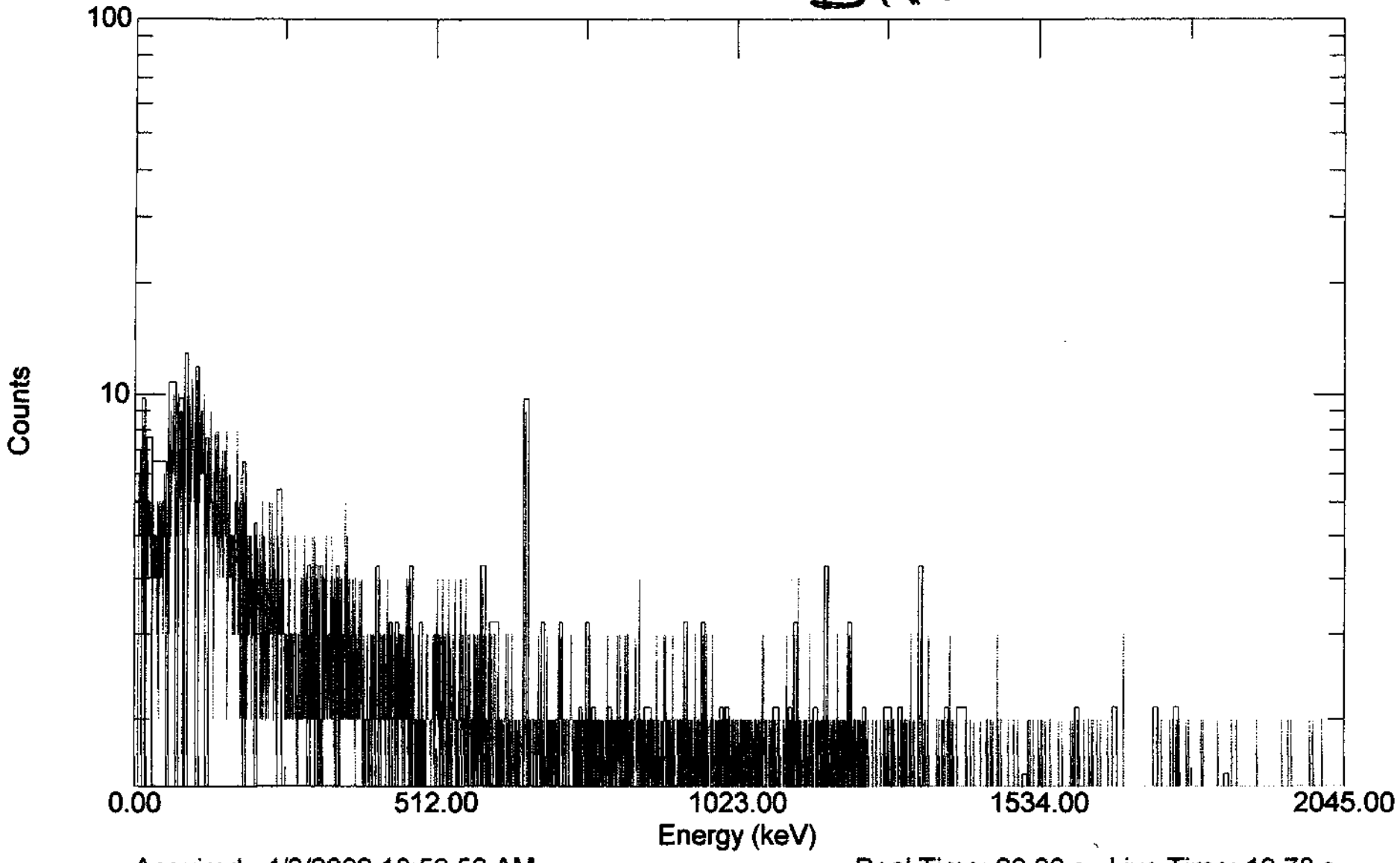
	2 Min CPM	DPM
90	190	78.5
99	225	131.5
100	169	46.7
101	1523	2,098.2
190	154	23.9
191	258	181.5
192	146	11.8
193	246	163.3
194	150	17.9
195	151	19.4
196	160	33.0
197	134	-6.4
198	156	27.0
199	176	57.3
205	142	5.8
206	799	1,001.2
208	1160	1,548.2
213	112	-39.7
		-209.4
		-209.4
		-209.4
		-209.4
		-209.4
		-209.4
		-209.4


CAUTION
RADIOACTIVE
MATERIAL
INSERT
THIS DIRECTION
WHEN SHUTTER IS OPEN
RADIATION BEAM
EMERGES HERE
190

002 S190 4-3-2002 10.59.56 AM

S190

BKG



Acquired: 4/3/2002 10:59:56 AM Real Time: 20.00 s. Live Time: 19.78 s.

File: C:\User\GNIWEB~1\002 S190 4-3-2002 10.59.56 AM.Spc Channels: 8192

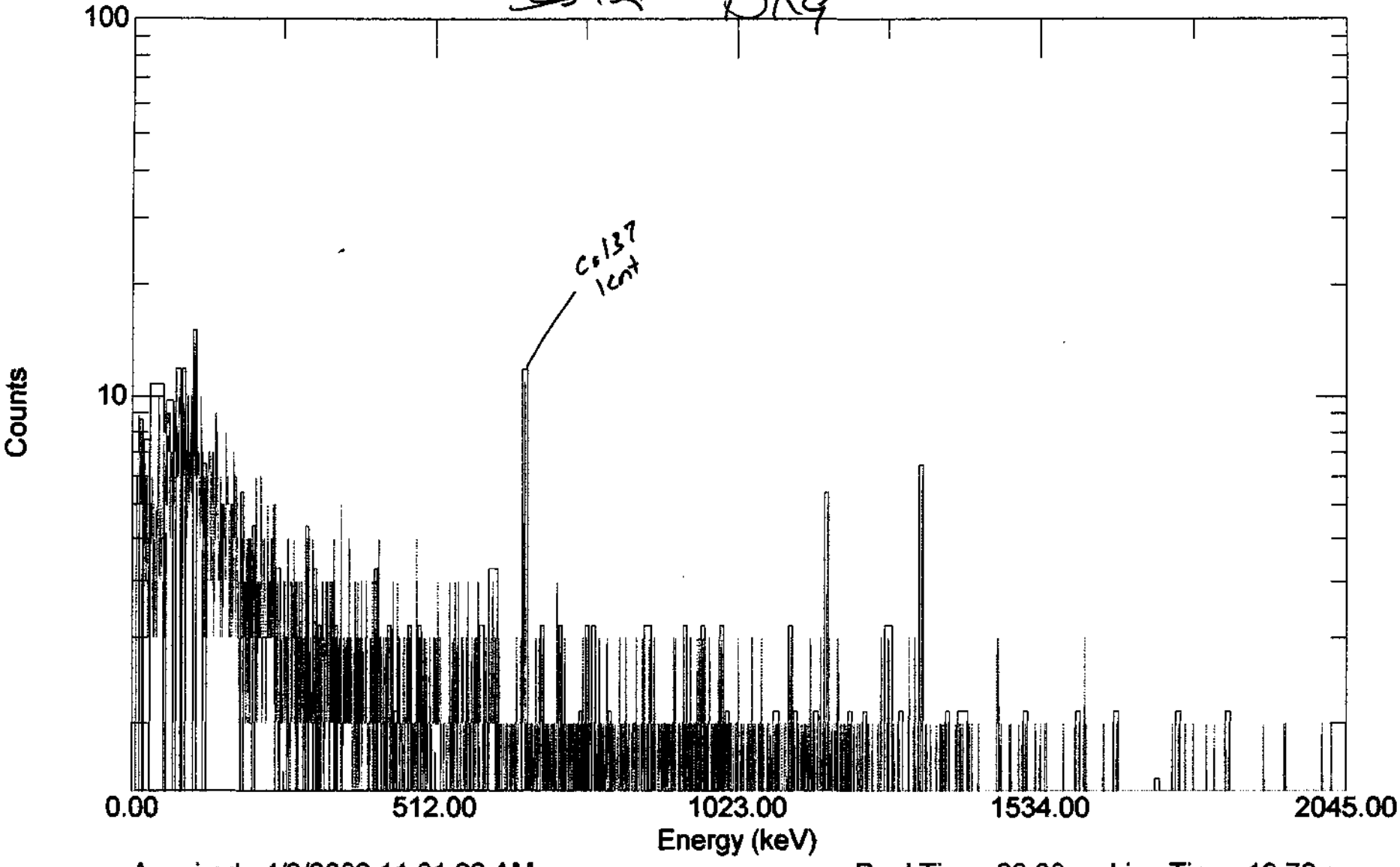
Detector: #1 digiDART USE 1b

CAUTION
RADIOACTIVE
MATERIAL
191

003 S191 4-3-2002 11.01.22 AM

S191

~~Cs137~~ BKg



Acquired: 4/3/2002 11:01:22 AM Real Time: 20.00 s. Live Time: 19.78 s.

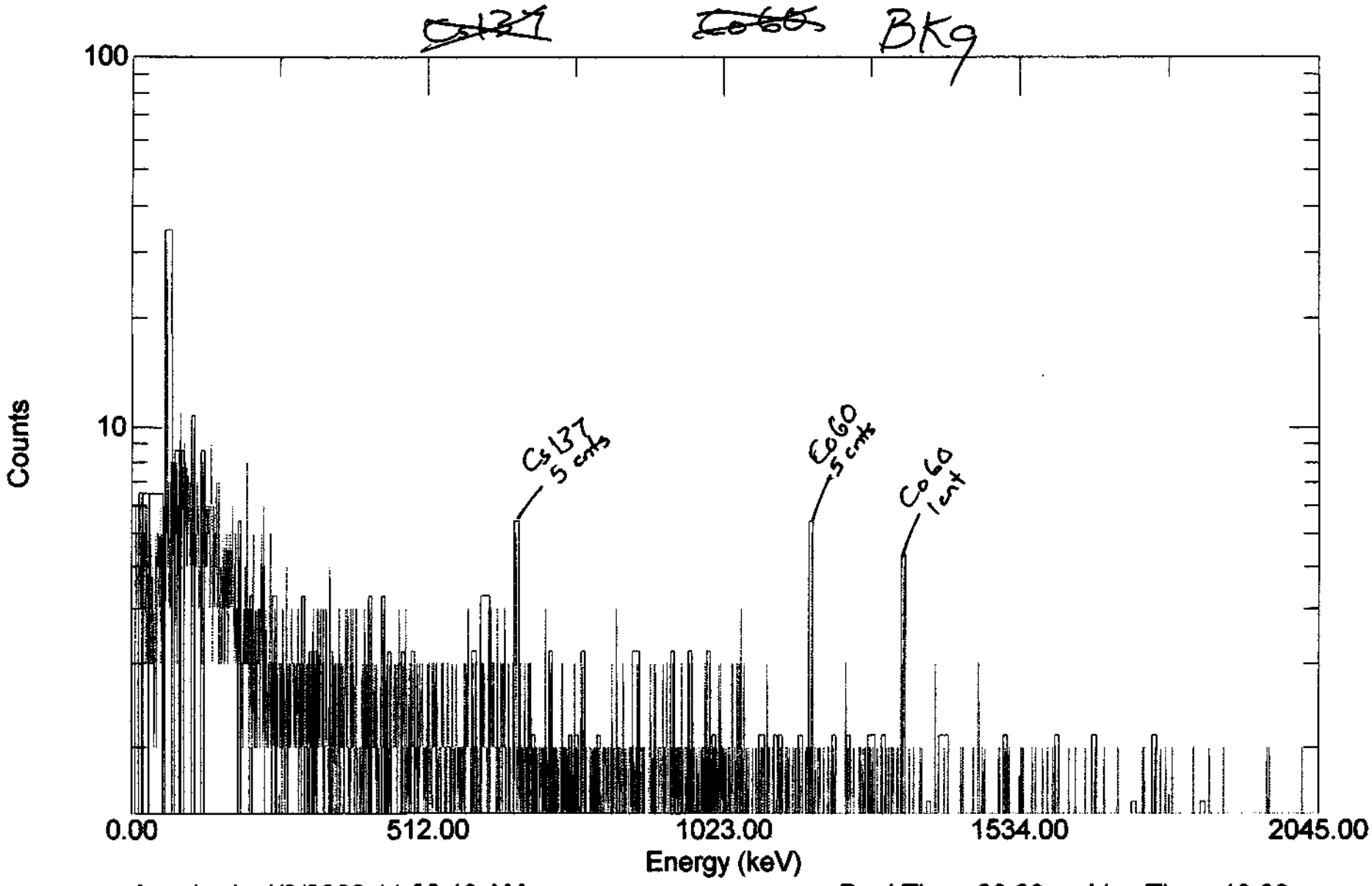
File: C:\User\GNIWEB~1\003 S191 4-3-2002 11.01.22 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

192

004 S192 4-3-2002 11.02.12 AM

S192



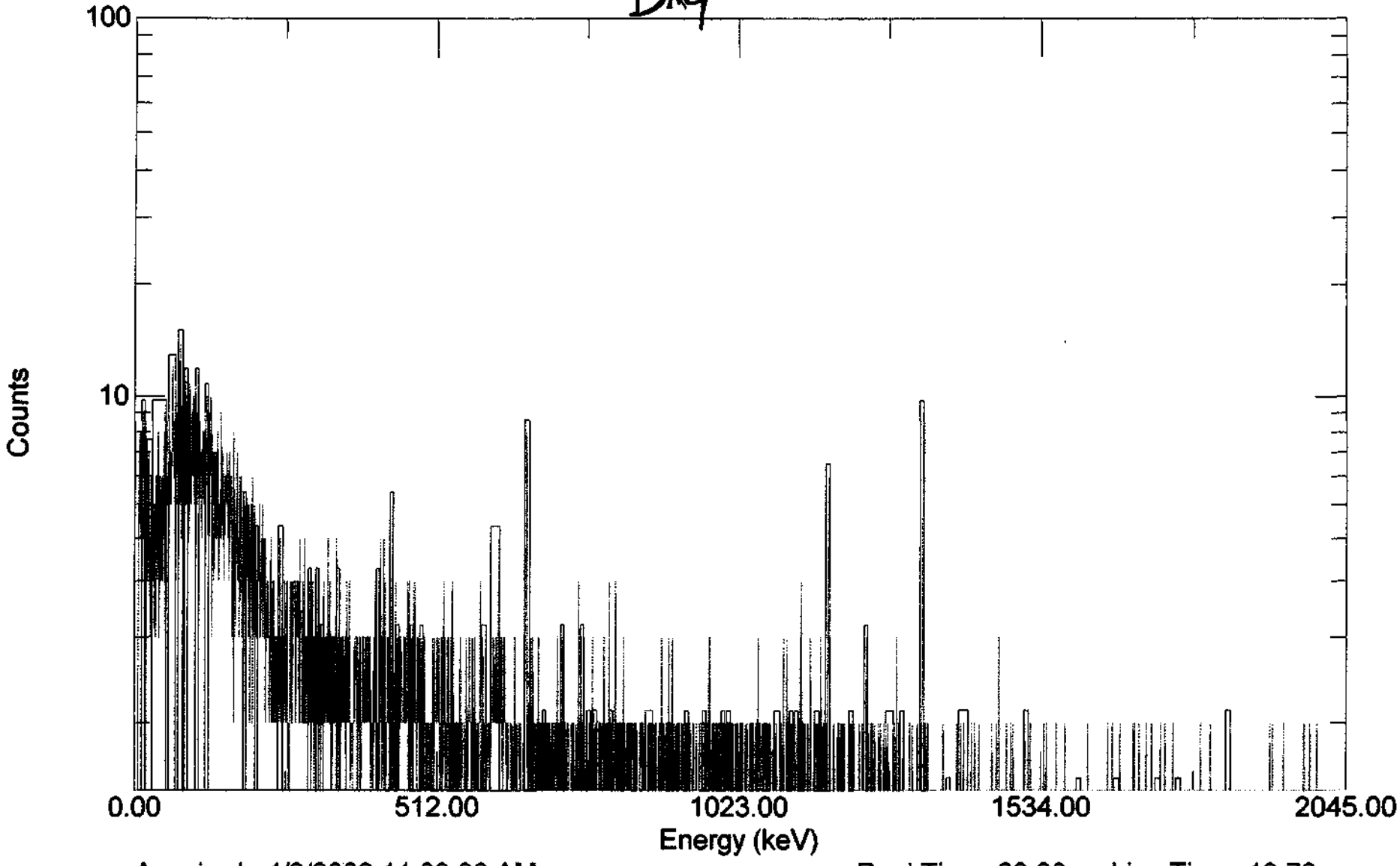
Acquired: 4/3/2002 11:02:13 AM Real Time: 20.00 s. Live Time: 19.80 s.
File: C:\User\GNIWEB~1\004 S192 4-3-2002 11.02.12 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

CAUTION
RADIOACTIVE
MATERIAL
DO NOT HANDLE
193

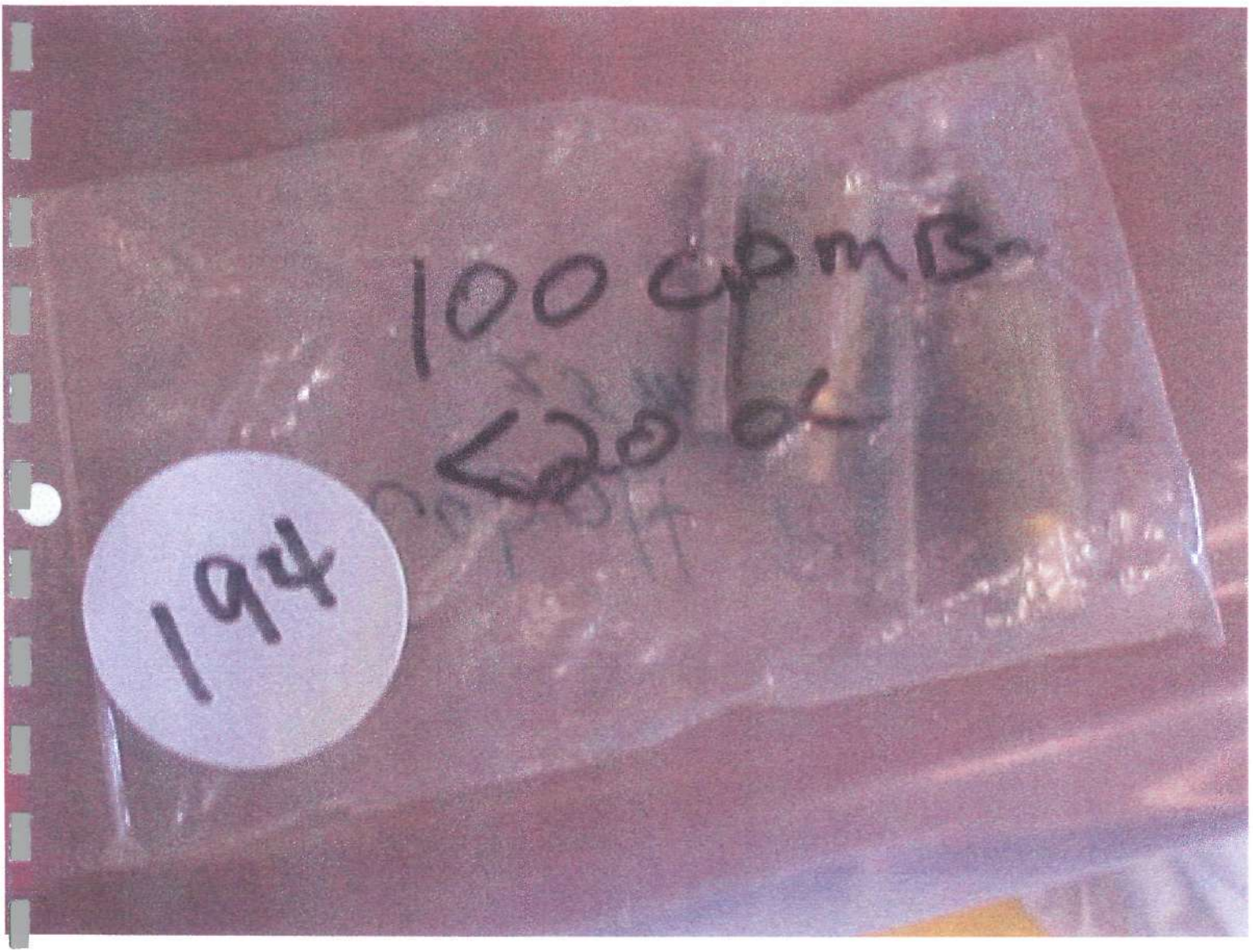
005 S193 4-3-2002 11.03.06 AM

S193

BKg

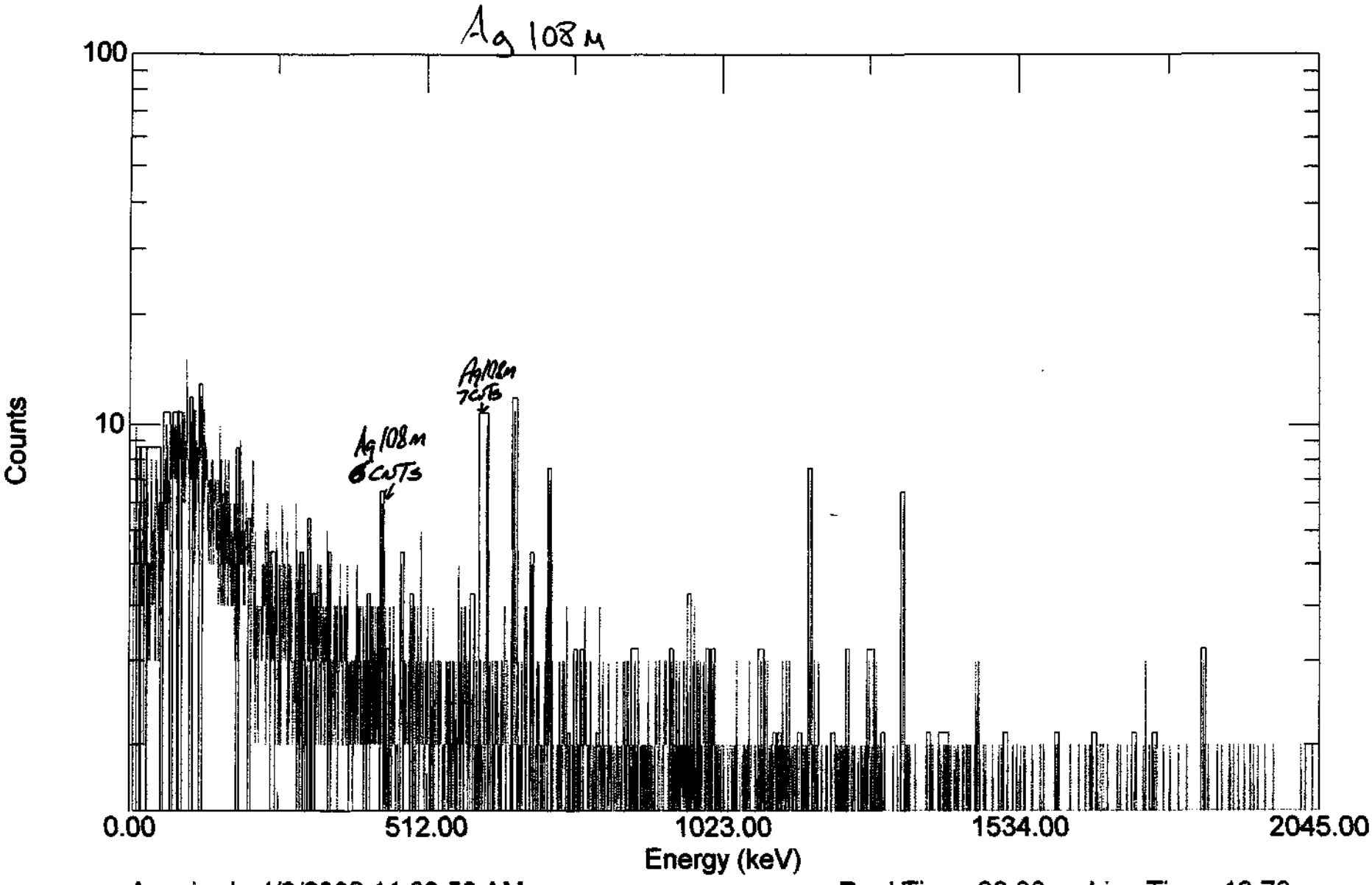


Acquired: 4/3/2002 11:03:06 AM Real Time: 20.00 s. Live Time: 19.78 s.
File: C:\User\GNIWEB~1\005 S193 4-3-2002 11.03.06 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


100 cpm B-
194

006 S194 4-3-2002 11.03.56 AM

S194



Acquired: 4/3/2002 11:03:56 AM Real Time: 20.00 s. Live Time: 19.70 s.

File: C:\User\GNIWEB~1\006 S194 4-3-2002 11.03.56 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4·2·02

BKG	mR/hr
6"	<0.2
12"	↓
36"	↓

SOURCES

Container #	195	196	197	198	199
External on pig in mR/hr	BKG	BKG	BKG	BKG	BKG
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	~~BKG~~	~~BKG~~	~~BKG~~	~~BKG~~	~~BKG~~
Beta on open pig mR/hr O/W	~~↓~~	~~↓~~	~~↓~~	~~↓~~	~~↓~~

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	BKG	BKG	BKG	BKG	BKG
Source mR/hr @ 12 inches	↓	↓	↓	↓	↓
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	40 cc	8 cc	5 cc	7 cc	18 cc
Weight in grams	223g	30g	33g	31g	34g

CPM Alpha	<20	<20	<20	<20	<20
Direct Beta/Gamma	200	100	100	100	100

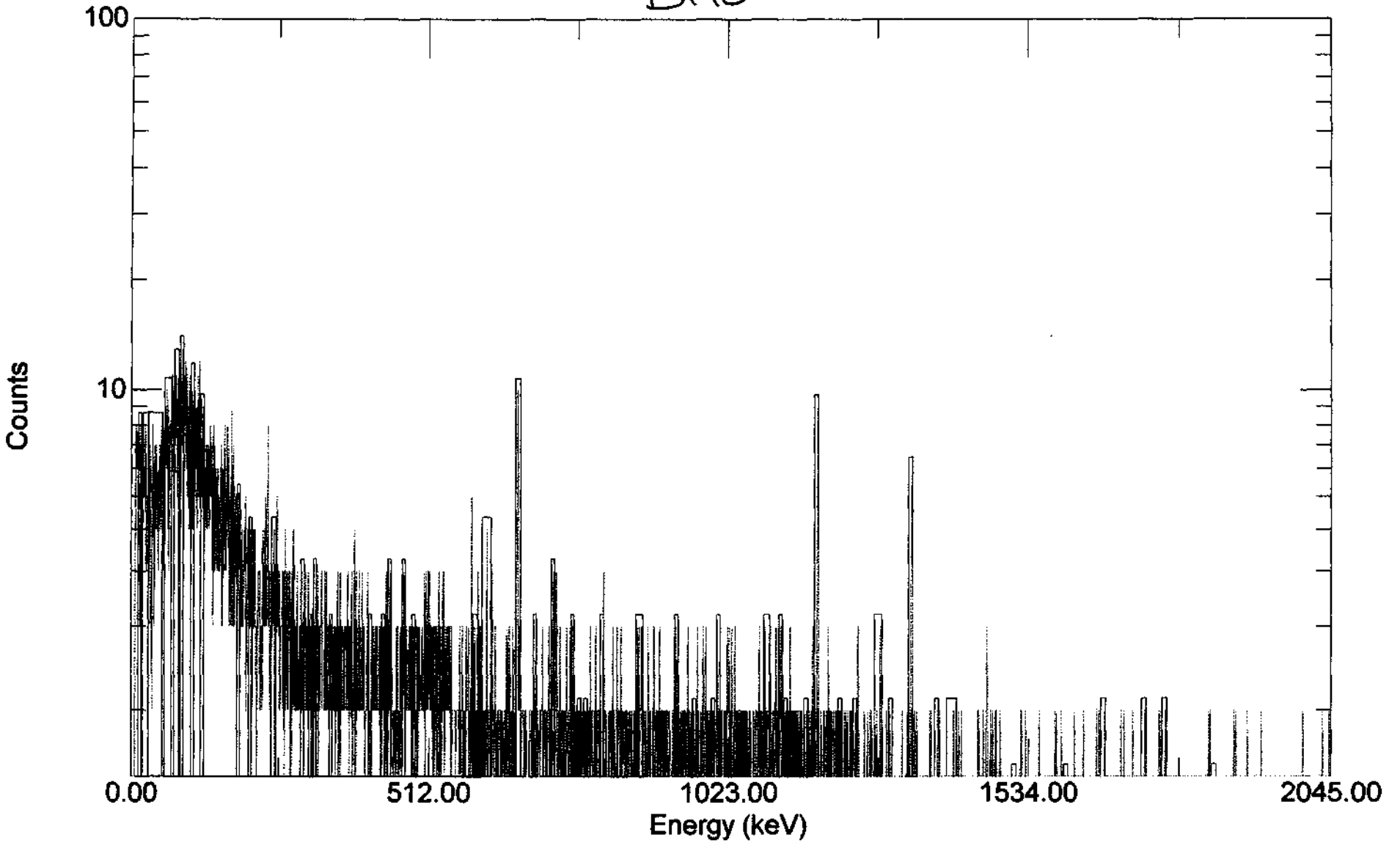
Info on source:	BAG OF SILVER BRASS tubes CAUTION RAD NOTIFY CIVIL Athorities	BAG c̄ LITTLE cylinder	BAG OF threaded METAL SIECEMENT 100mcl	BAG OF (3) Dummy ANSI VIBRATION TESTING	BAG OF PIECES
Information on pig:					
Smear DPM per 100 cm^2 Alpha	6.2	17.7	2.3	10.0	4.2
Smear DPM per 100 cm^2 Beta	19.4	33.0	-6.4	27.0	57.3

195

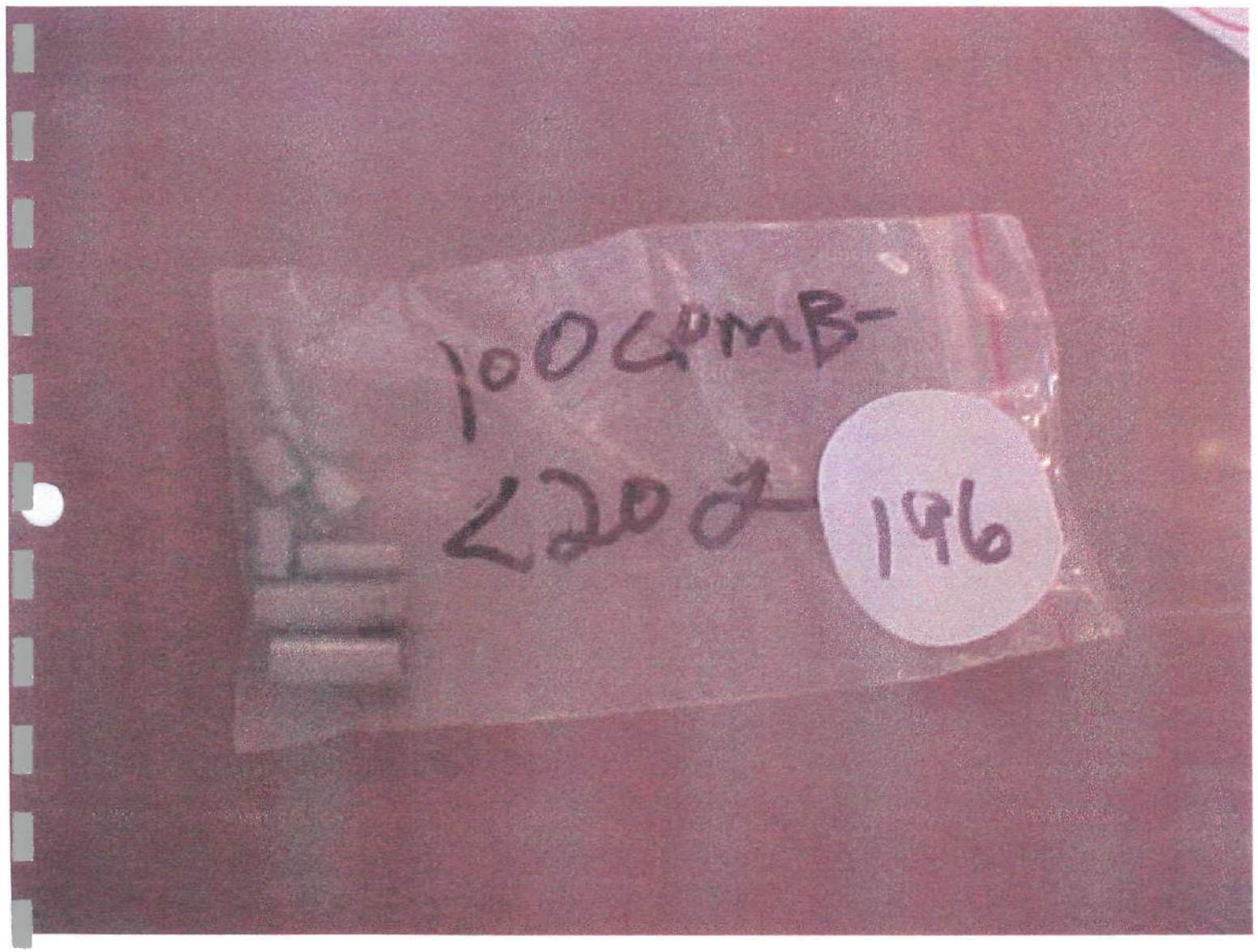
007 S195 4-3-2002 11.04.46 AM

S195

BKG

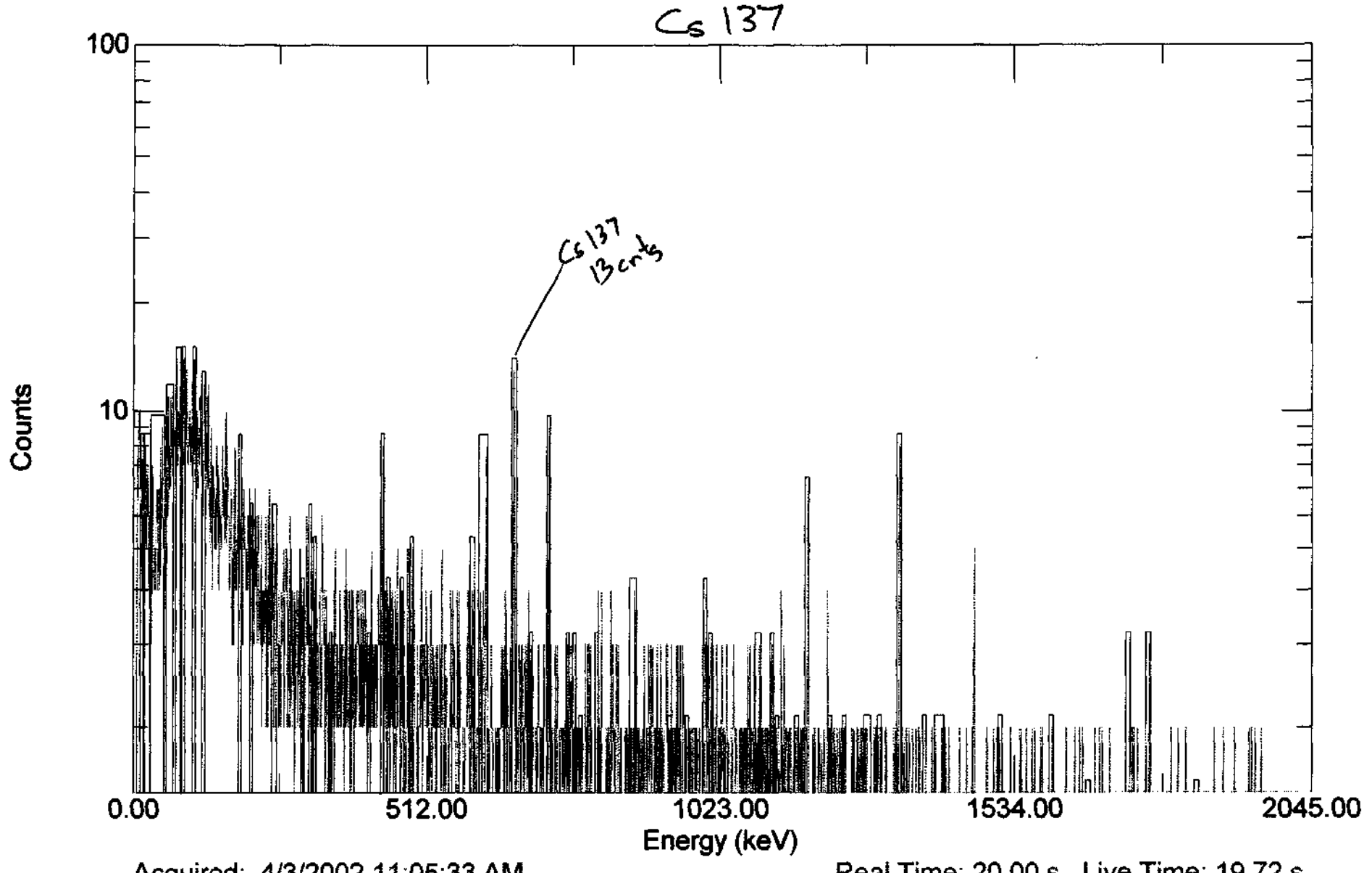


Acquired: 4/3/2002 11:04:46 AM Real Time: 20.00 s. Live Time: 19.76 s.
File: C:\User\GNIWEB~1\007 S195 4-3-2002 11.04.46 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


100 CMB-
220 g
196

008 S196 4-3-2002 11.05.32 AM

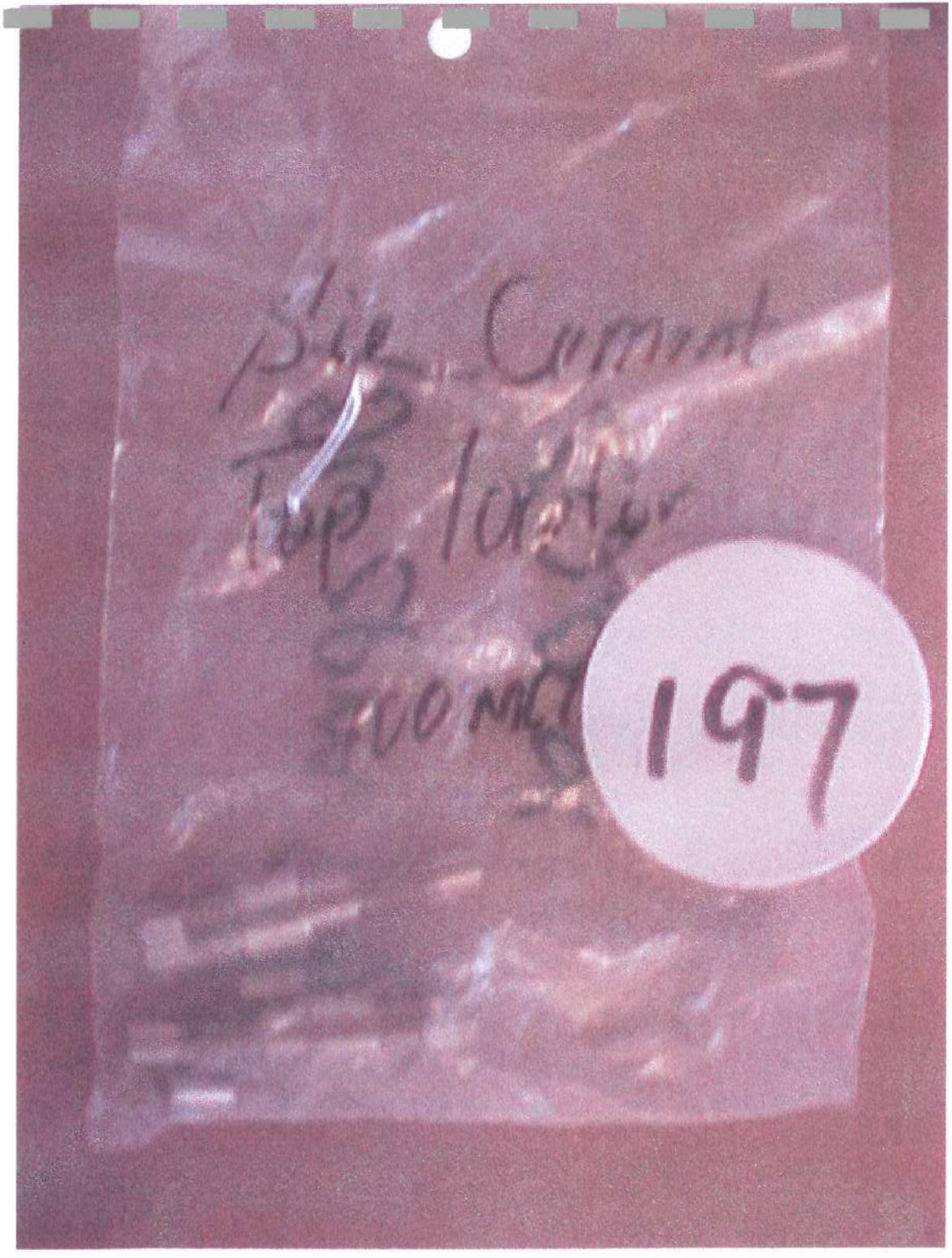
S196



Acquired: 4/3/2002 11:05:33 AM Real Time: 20.00 s. Live Time: 19.72 s.

File: C:\User\GNIWEB~1\008 S196 4-3-2002 11.05.32 AM.Spc Channels: 8192

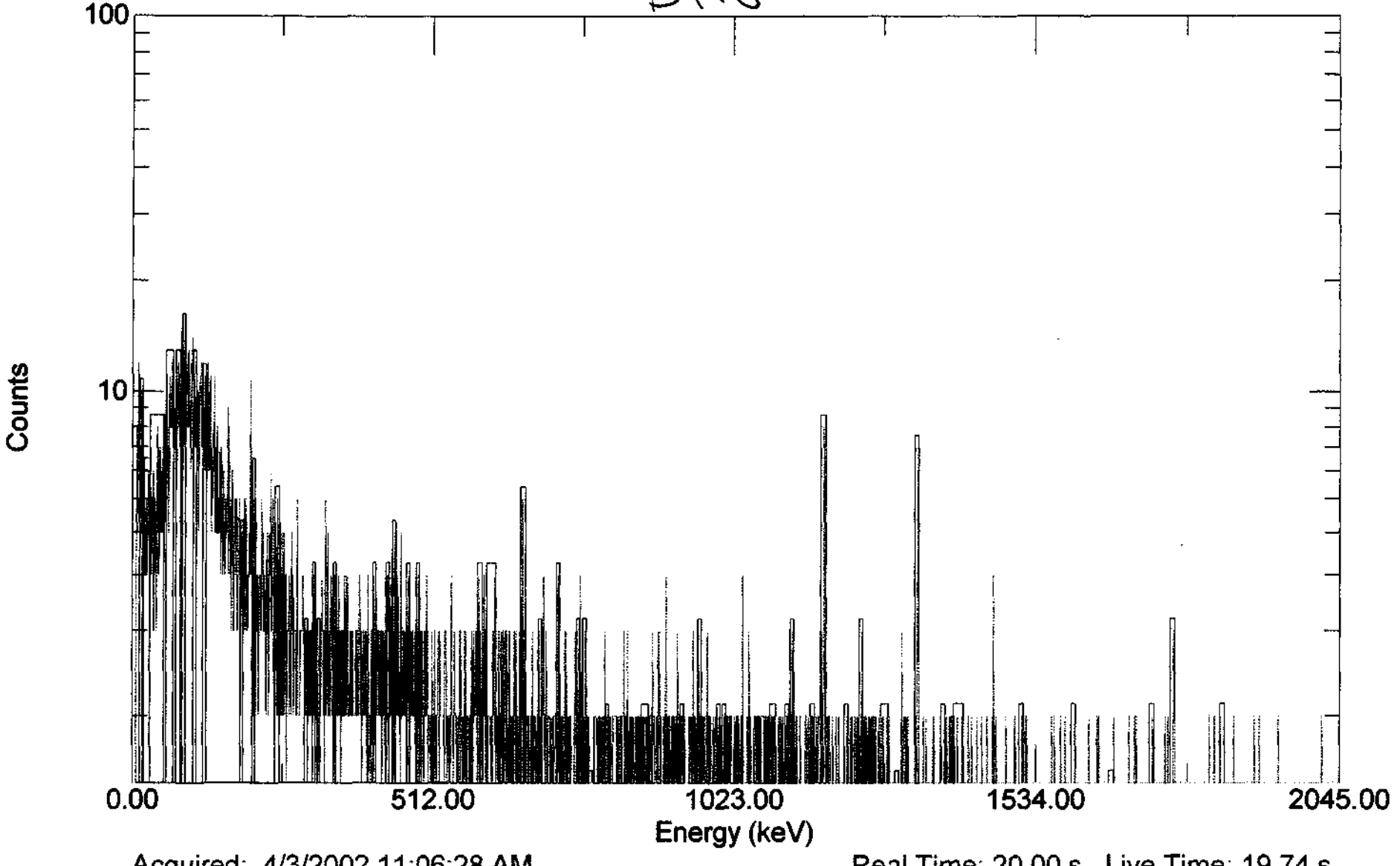
Detector: #1 digiDART USE 1b


197

009 S197 4-3-2002 11.06.28 AM

S197

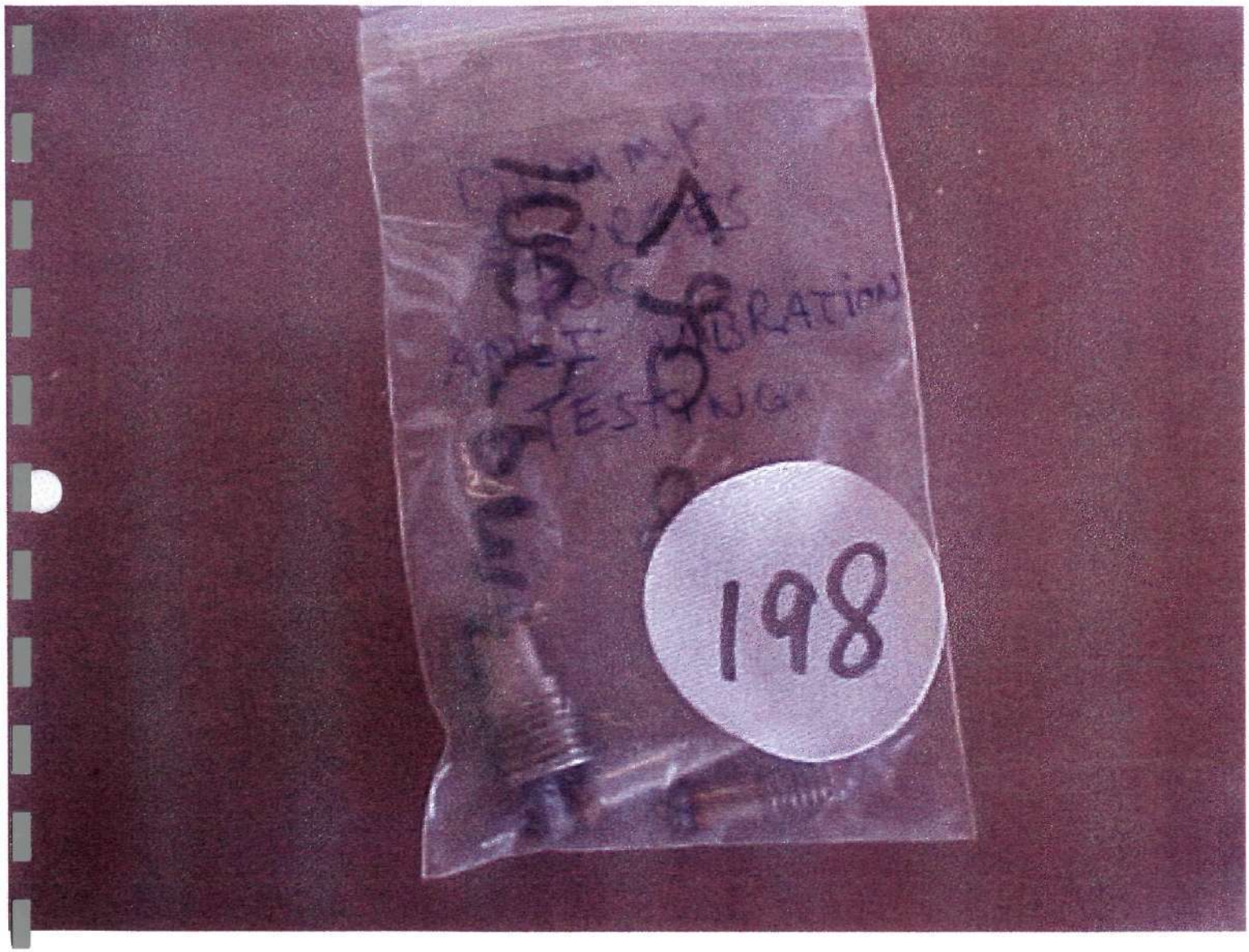
BKG



Acquired: 4/3/2002 11:06:28 AM Real Time: 20.00 s. Live Time: 19.74 s.

File: C:\User\GNIWEB~1\009 S197 4-3-2002 11.06.28 AM.Spc Channels: 8192

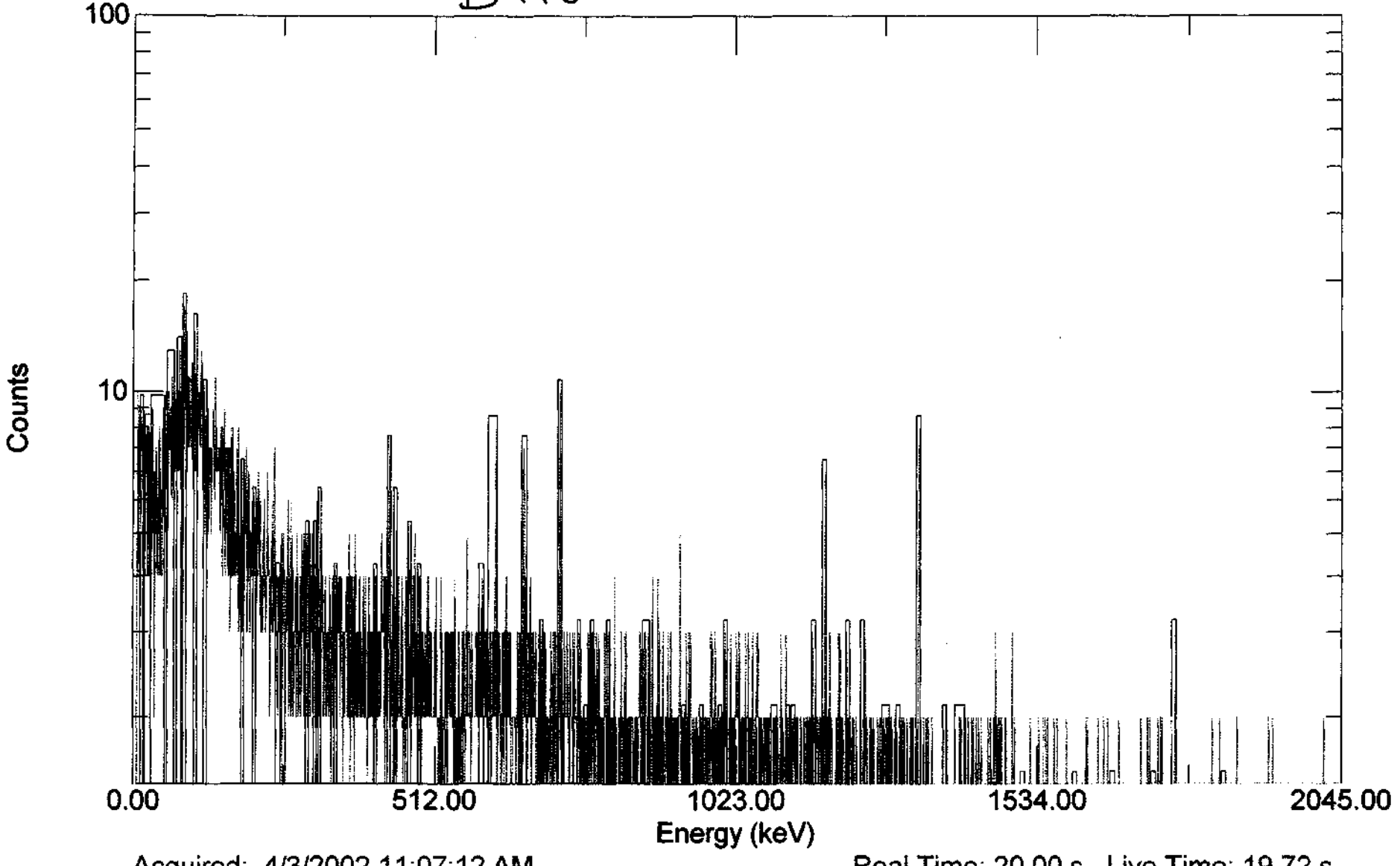
Detector: #1 digiDART USE 1b


198

010 S198 4-3-2002 11.07.12 AM

S198

BKG



Acquired: 4/3/2002 11:07:12 AM Real Time: 20.00 s. Live Time: 19.72 s.

File: C:\User\GNIWEB~1\010 S198 4-3-2002 11.07.12 AM.Spc Channels: 8192

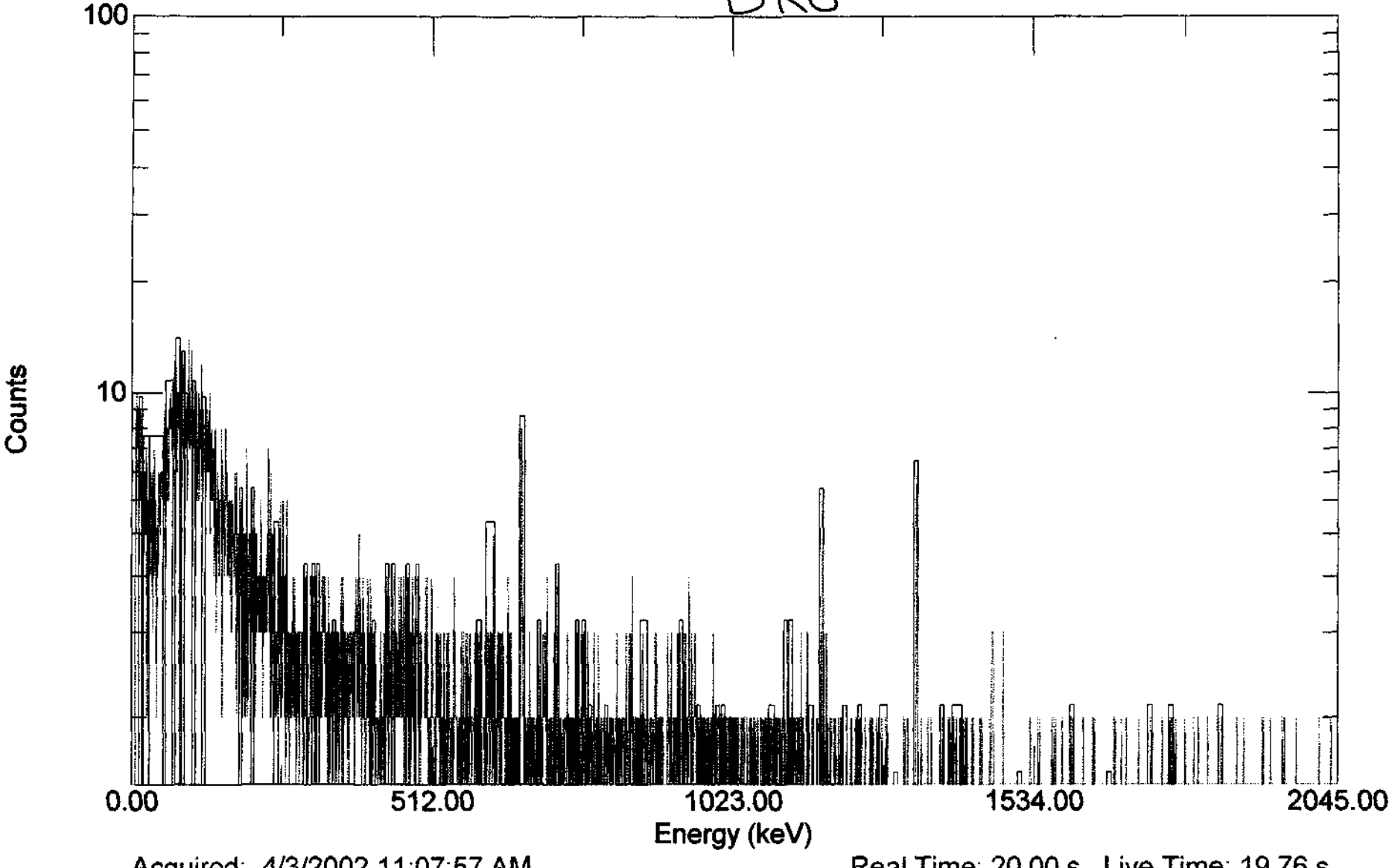
Detector: #1 digiDART USE 1b

199

011 S199 4-3-2002 11.07.57 AM

S199

BKG



Acquired: 4/3/2002 11:07:57 AM Real Time: 20.00 s. Live Time: 19.76 s.
File: C:\User\GNIWEB~1\011 S199 4-3-2002 11.07.57 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-2-02

BKG	mR/hr
6"	<0.2
12"	↓
36"	↓

SOURCES

Container #	200	201	202	203	204
External on pig in mR/hr	5	BKG	0.6	BKG	10
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	30	~~BKG~~	24	~~BKG~~	NO
Beta on open pig mR/hr O/W	420	~~[illegible]~~ NO PIG	32	~~[illegible]~~ NO PIG	

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

Table Readings

Source mR/hr @ 6 inchs	15	BKG	12	BKG	3
Source mR/hr @ 12 inches	5	↓	5	↓	1
Source mR/hr @ 36 inches	0.1	↓	<0.2	↓	0.4
Size of source in cc's	20 cc	300 cc	3 cc	25 cf	20 cc
Weight in grams	25 g	1 Lb	3 g	4 lbs	6 g

CPM Alpha	~~ZN/A~~		~~[illegible]~~	~~30~~	
Direct Beta/Gamma				750	

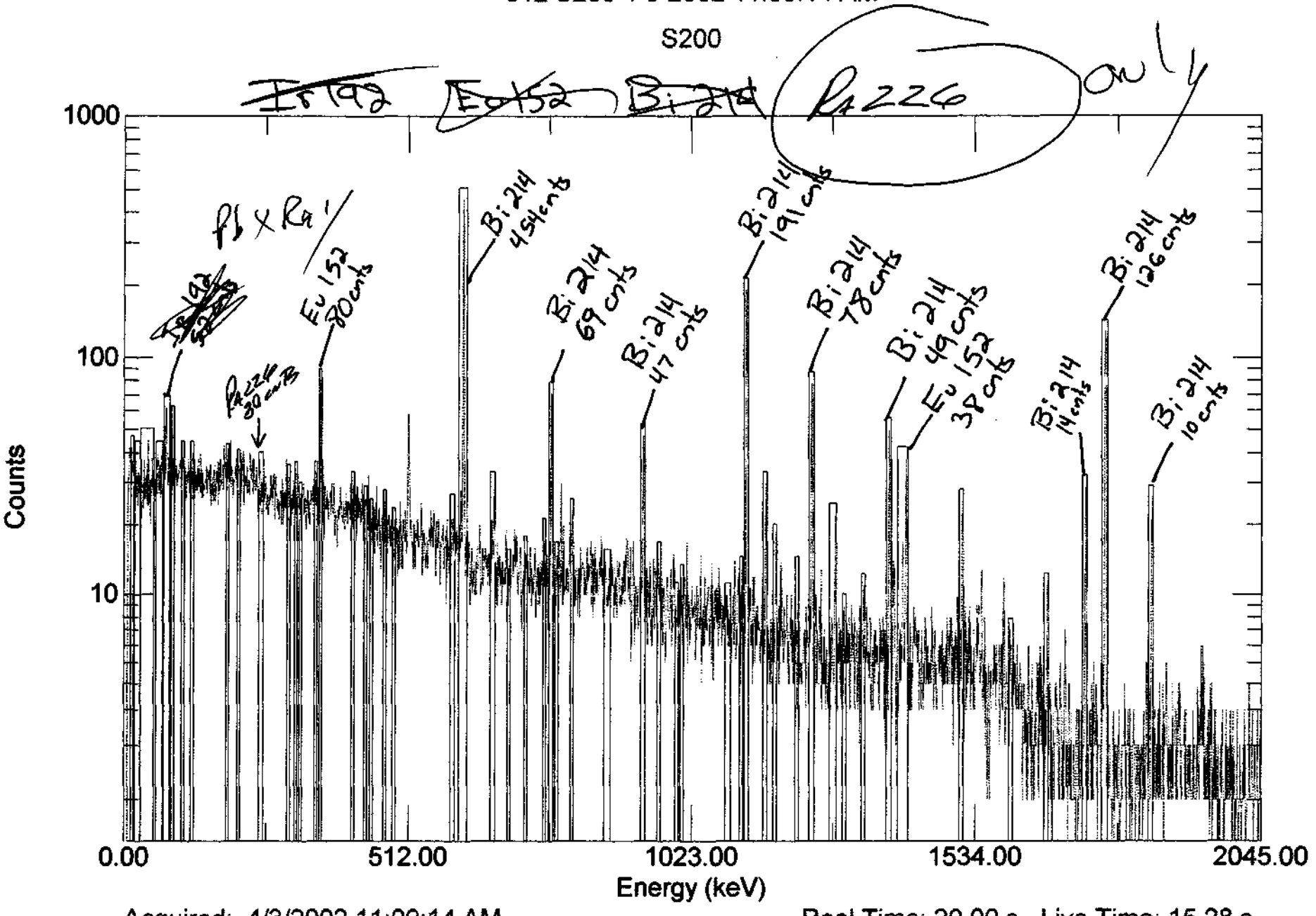
Info on source:	silver pieces (MANY)	CAT. # IR192 A78-192 20mci 1-31-1984 GULF NUC.	3 Little glass tubes	Hot Ag110 FRACT (SAND)	Co60 NEZ-024 9-14-88 Lot # 09881 Co EMPTY BOTTLE

Information on pig:		+			+
Smear DPM per 100 cm^2 Alpha	200 K	200	100	1200	
Smear DPM per 100 cm^2 Beta	10 K	35K	100K	235K	
		PAINT CAN OF SAND			DUPONT NEN PRODUCTS BOSTON MA.

200

012 S200 4-3-2002 11.09.14 AM

S200



Acquired: 4/3/2002 11:09:14 AM Real Time: 20.00 s. Live Time: 15.28 s.

File: C:\User\GNIWEB~1\012 S200 4-3-2002 11.09.14 AM.Spc Channels: 8192

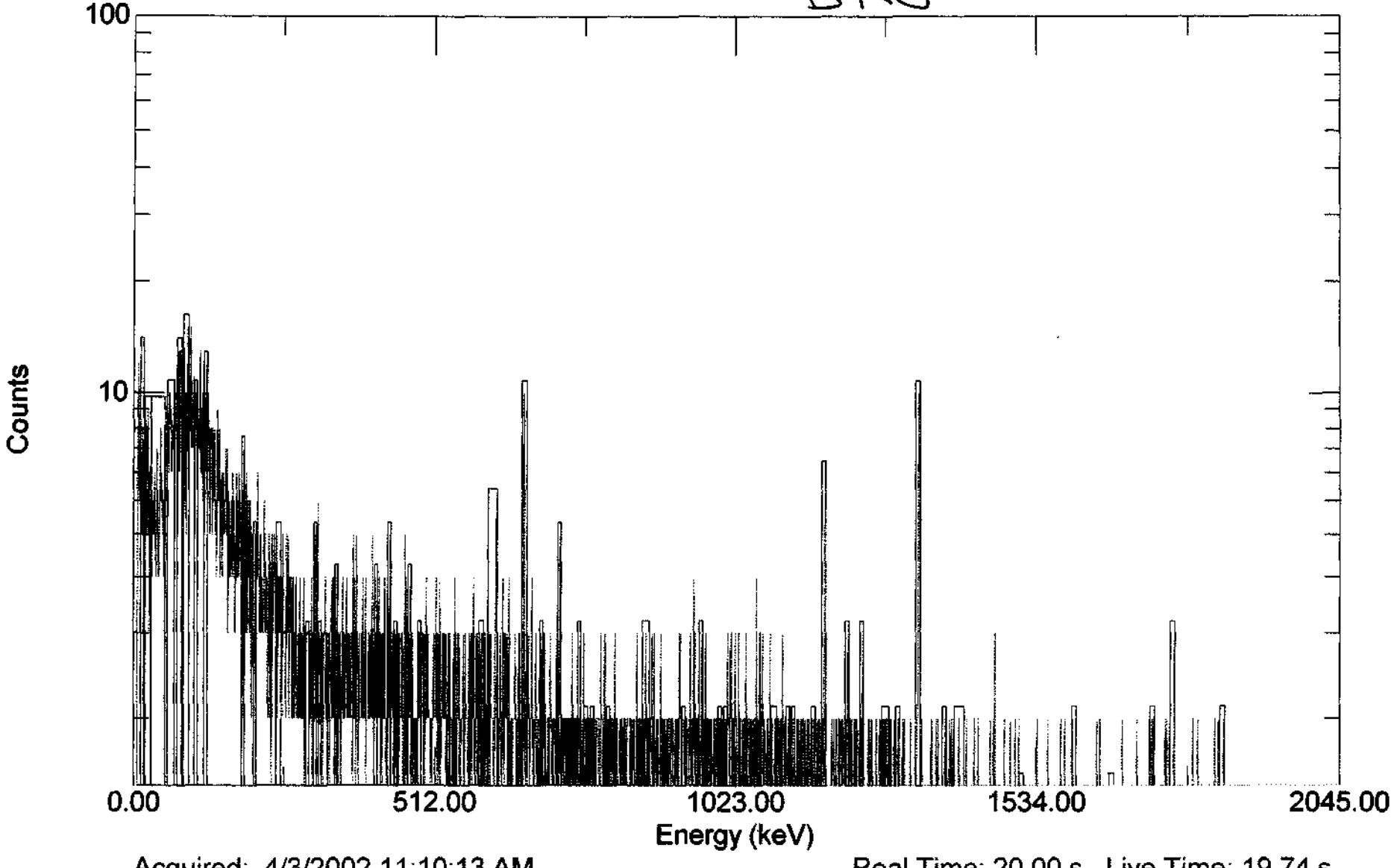
Detector: #1 digiDART USE 1b

201
CAUTION
RADIOACTIVE MATERIAL
JAN 31

013 S201 4-3-2002 11.10.12 AM

S201

BKG



Acquired: 4/3/2002 11:10:13 AM Real Time: 20.00 s. Live Time: 19.74 s.

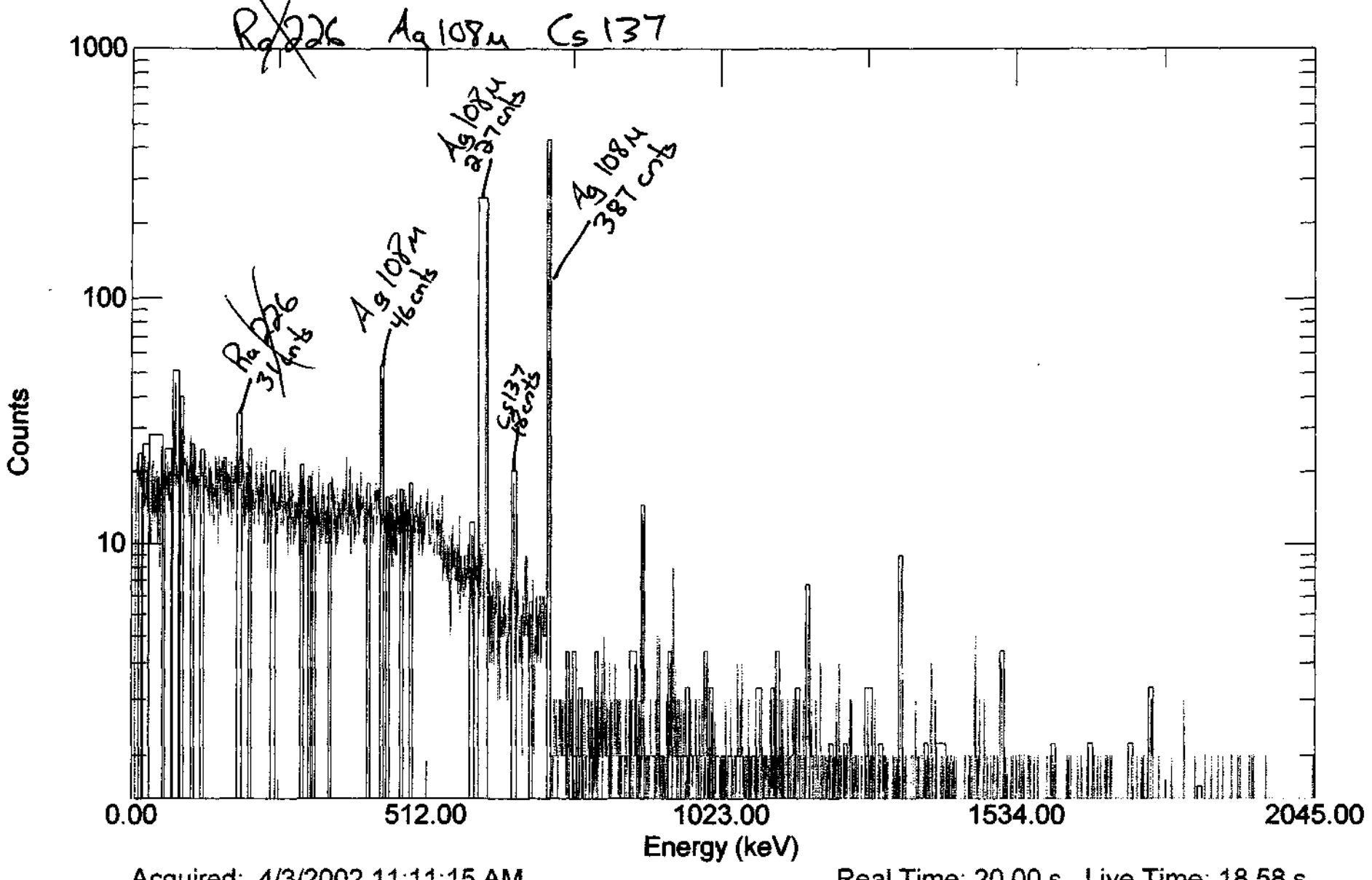
File: C:\User\GNIWEB~1\013 S201 4-3-2002 11.10.12 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

202

014 S202 4-3-2002 11.11.15 AM

S202



Acquired: 4/3/2002 11:11:15 AM Real Time: 20.00 s. Live Time: 18.58 s.

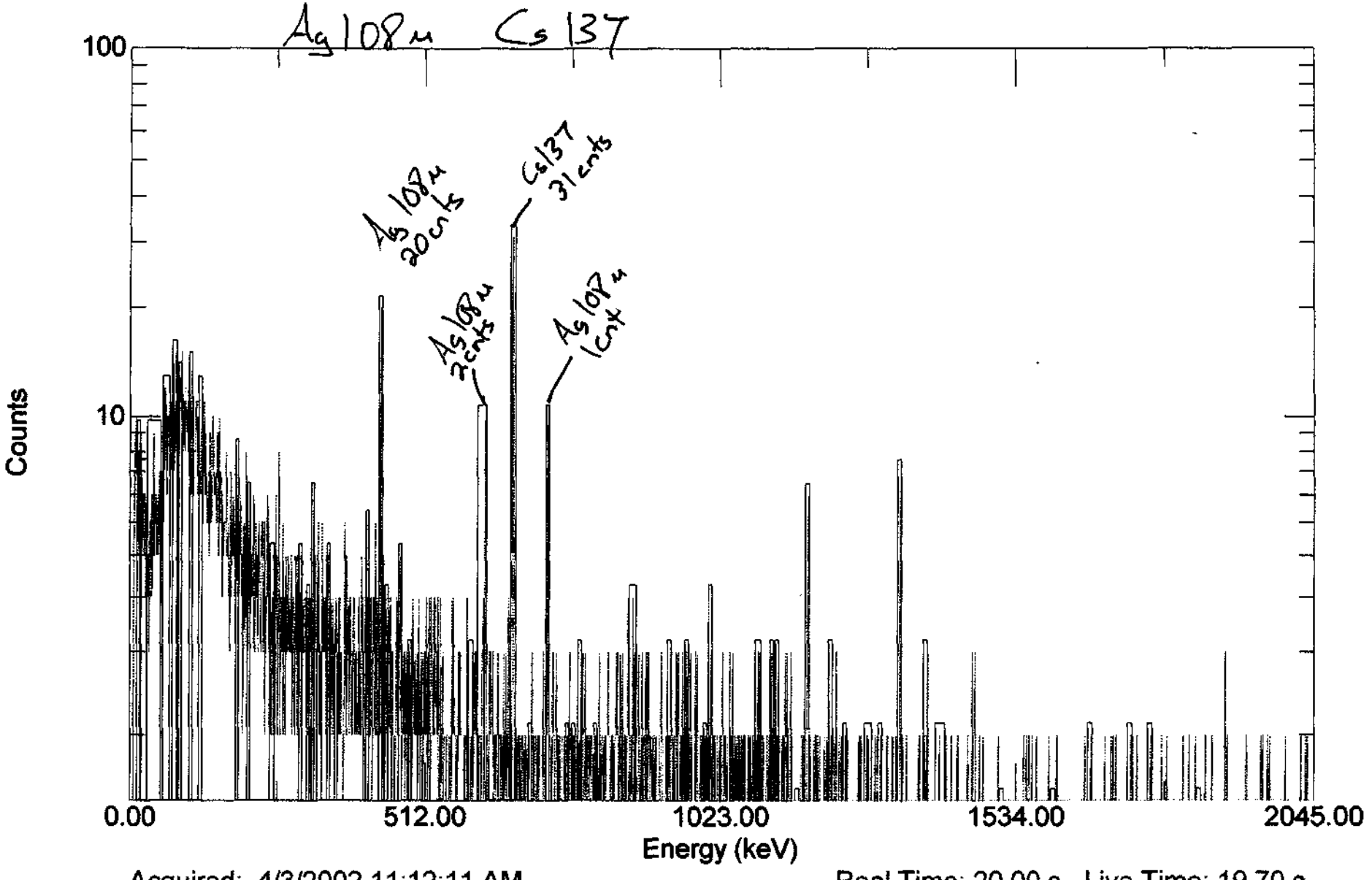
File: C:\User\GNIWEB~1\014 S202 4-3-2002 11.11.15 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

203

015 S203 4-3-2002 11.12.11 AM

S203



Acquired: 4/3/2002 11:12:11 AM Real Time: 20.00 s. Live Time: 19.70 s.

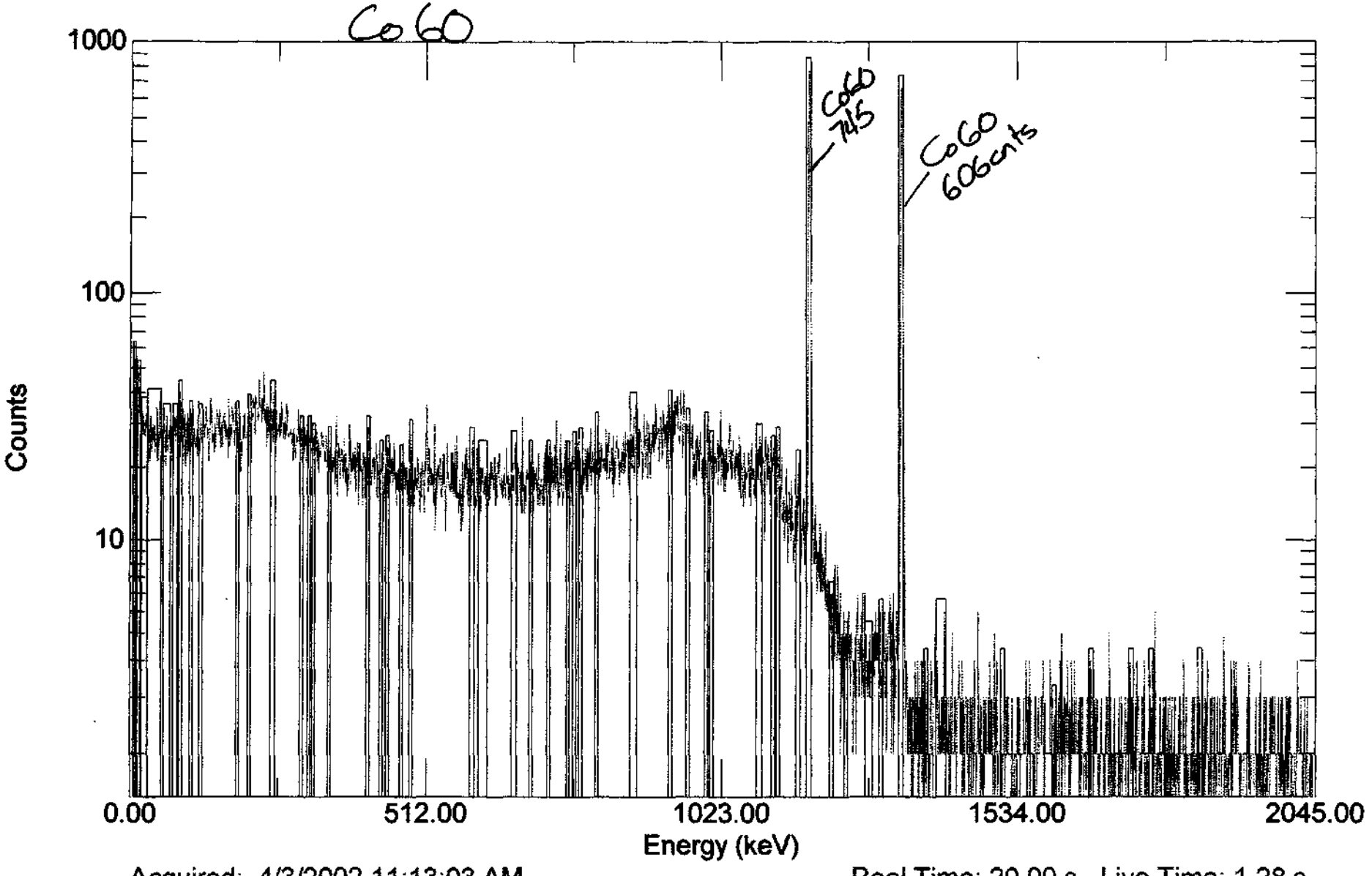
File: C:\User\GNIWEB~1\015 S203 4-3-2002 11.12.11 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

204
NE7-024
QUBICo

016 T204 4-3-2002 11.13.03 AM

S204



Acquired: 4/3/2002 11:13:03 AM Real Time: 20.00 s. Live Time: 1.28 s.

File: C:\User\GNIWEB~1\016 T204 4-3-2002 11.13.03 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-2-02

BKG	mR/hr
6"	<0.2
12"	↓
36"	↓

SOURCES

Container #	205	206	207	208	209
External on pig in mR/hr	BKG	BKG	0.2	BKG	2
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	NO Pig	NO Pig	NO Pig	NO Pig	NO Pig
Beta on open pig mR/hr O/W		0.50W			3.50W
Picture	✓	✓	✓	✓	✓
DIGET	✓	✓			✓

Table Readings

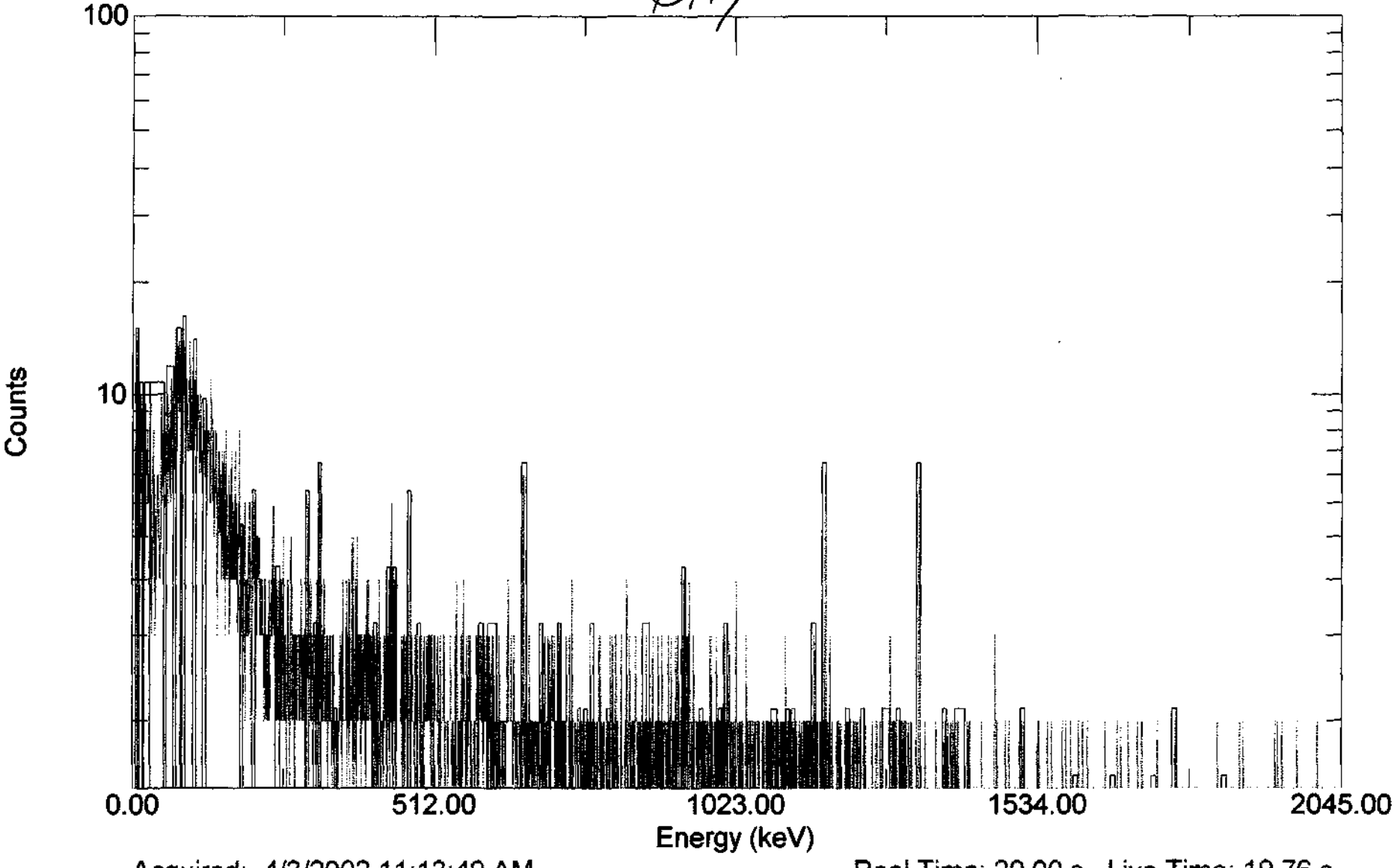
Source mR/hr @ 6 inchs	BKG	BKG	<0.2	BKG	0.4
Source mR/hr @ 12 inches	↓	↓	↓	↓	<0.2
Source mR/hr @ 36 inches	↓	↓	↓	↓	↓
Size of source in cc's	40 cc	40 ~~N.D.~~	20 cc	20 cc	40 cc
Weight in grams	35 g	~~3200~~ 28 g	16 g	14 g	40 g
CPM Alpha		N.D.	N.D.	N.D.	—
Direct Beta/Gamma		3200		2500	30000
Info on source:	Liq gray	Liq white =SC46"	Liq.	Liq (sm) ~~SB124~~ Sb 124	METAL cylinders (2) SOURCE HOLDERS
Information on pig:					
Smear DPM per 100 cm^2 Alpha	4.2	340.8	N.D.	410.0	400
Smear DPM per 100 cm^2 Beta	5.8	1,001.2	3000	1,548.2	150K

205

017 S205 4-3-2002 11.13.49 AM

S205

Bkg



Acquired: 4/3/2002 11:13:49 AM Real Time: 20.00 s. Live Time: 19.76 s.

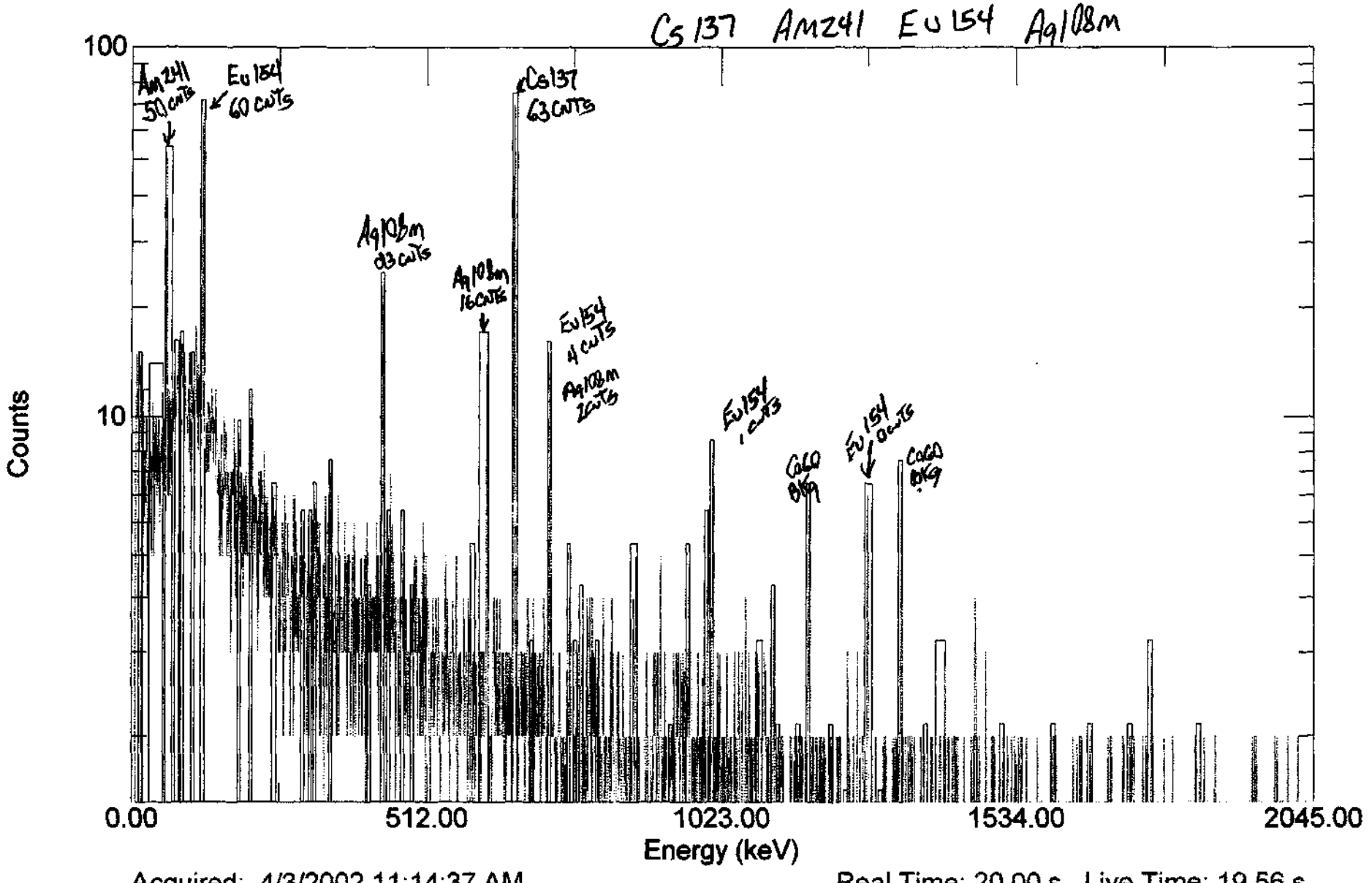
File: C:\User\GNIWEB~1\017 S205 4-3-2002 11.13.49 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

206

018 S206 4-3-2002 11.14.37 AM

S206



Acquired: 4/3/2002 11:14:37 AM Real Time: 20.00 s. Live Time: 19.56 s.

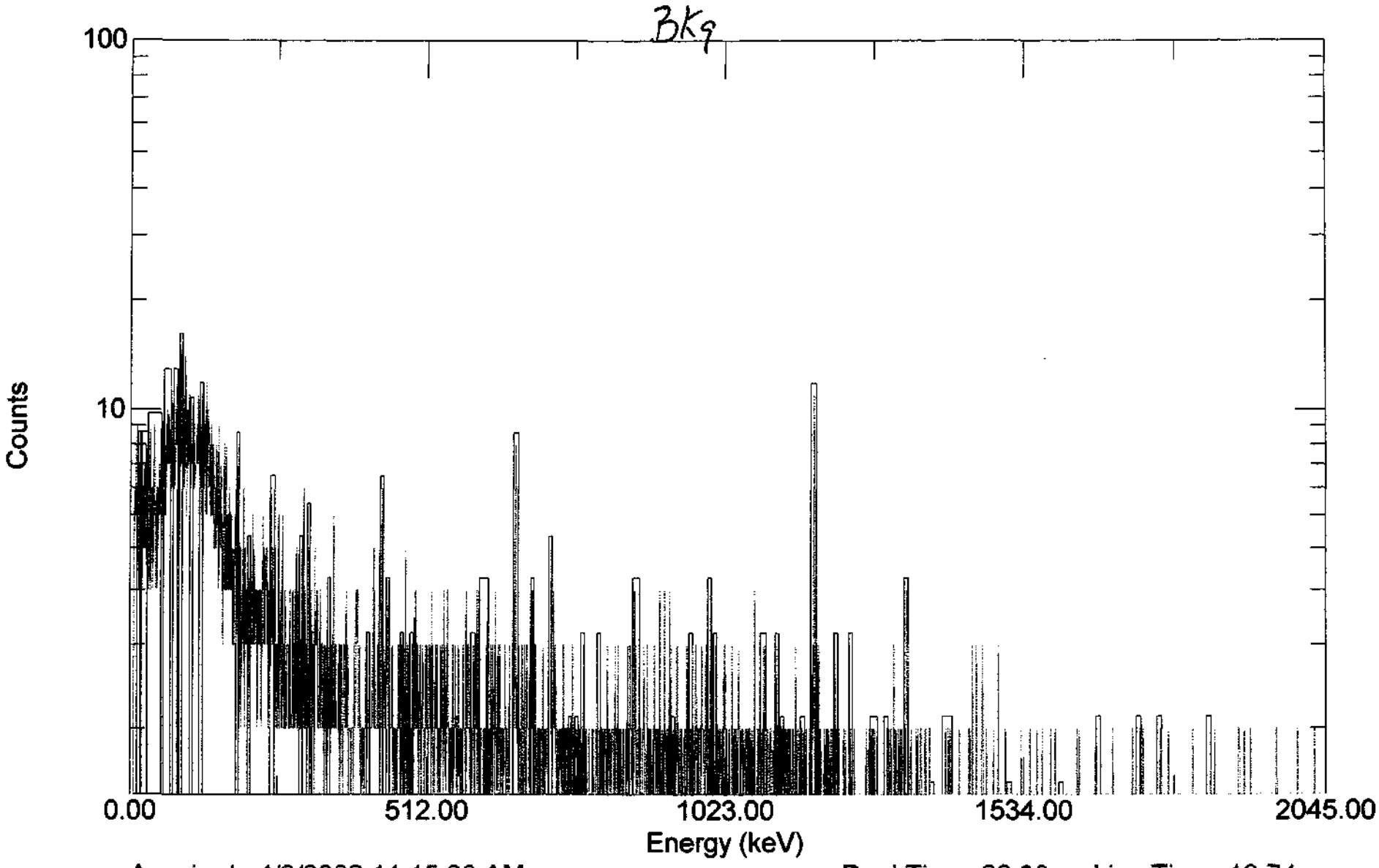
File: C:\User\GNIWEB~1\018 S206 4-3-2002 11.14.37 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

207

019 S207 4-3-2002 11.15.30 AM

S207



Acquired: 4/3/2002 11:15:30 AM Real Time: 20.00 s. Live Time: 19.74 s.

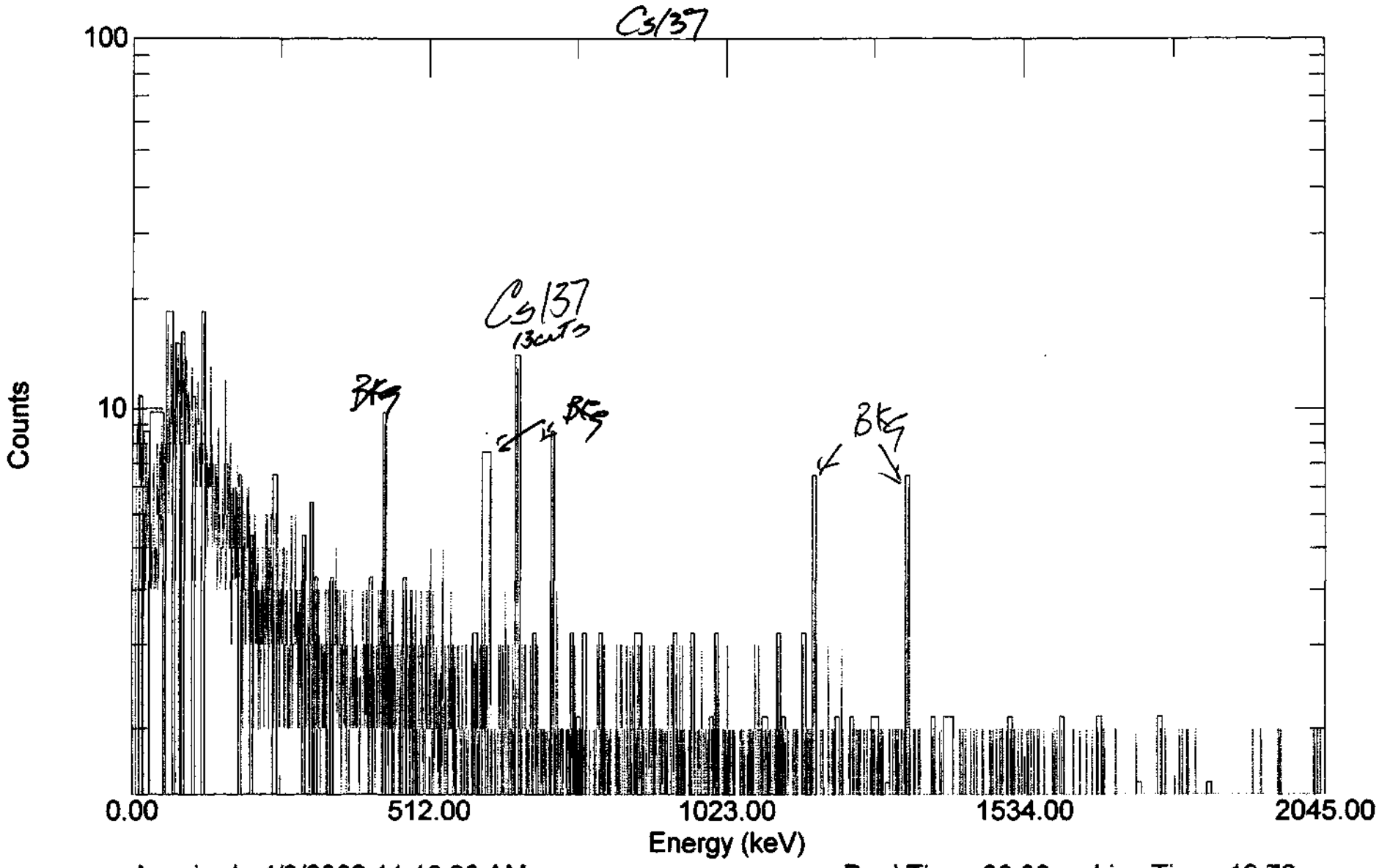
File: C:\User\GNIWEB~1\019 S207 4-3-2002 11.15.30 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

UTION
VE MATERIAL
208

020 S208 4-3-2002 11.16.20 AM

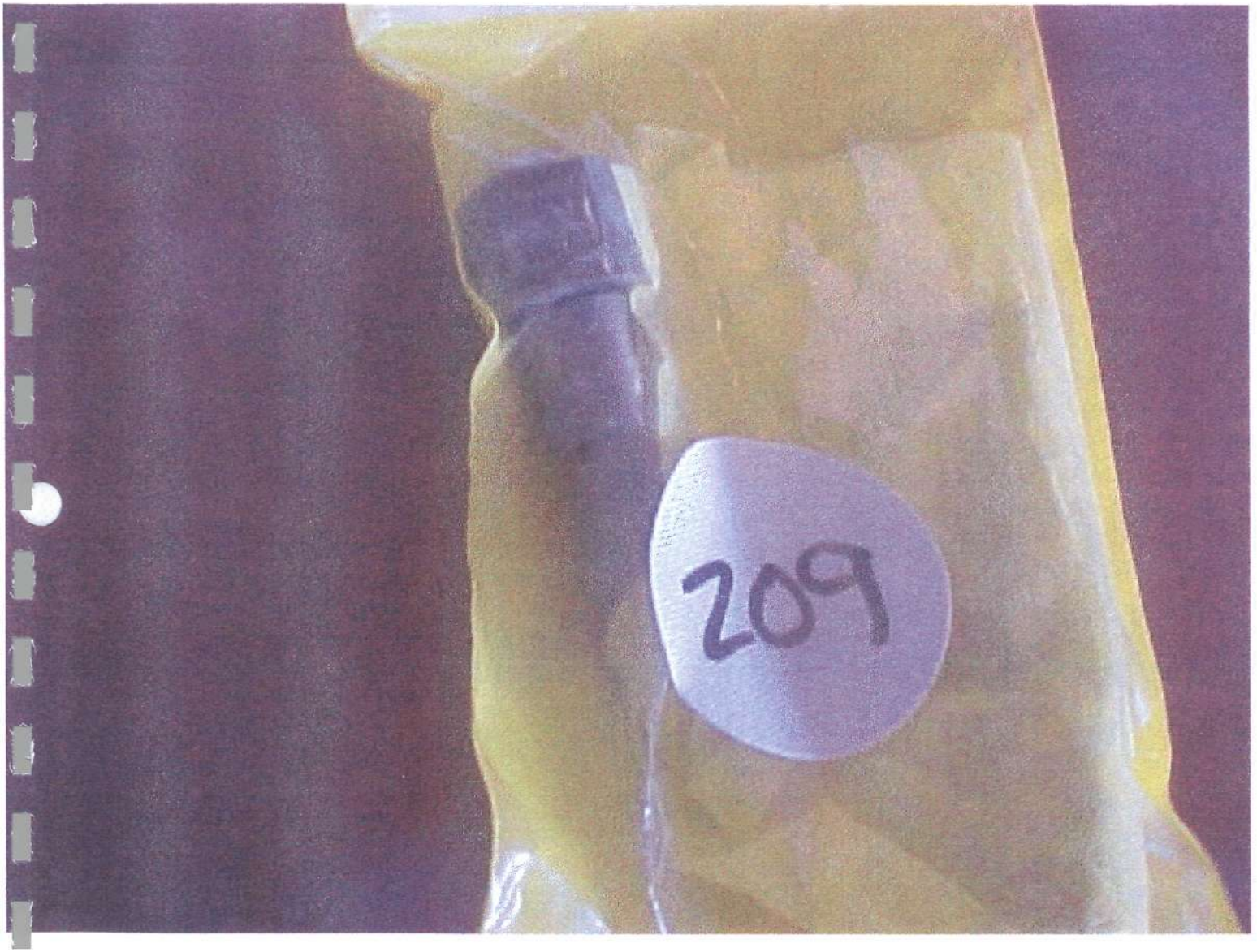
S208



Acquired: 4/3/2002 11:16:20 AM Real Time: 20.00 s. Live Time: 19.72 s.

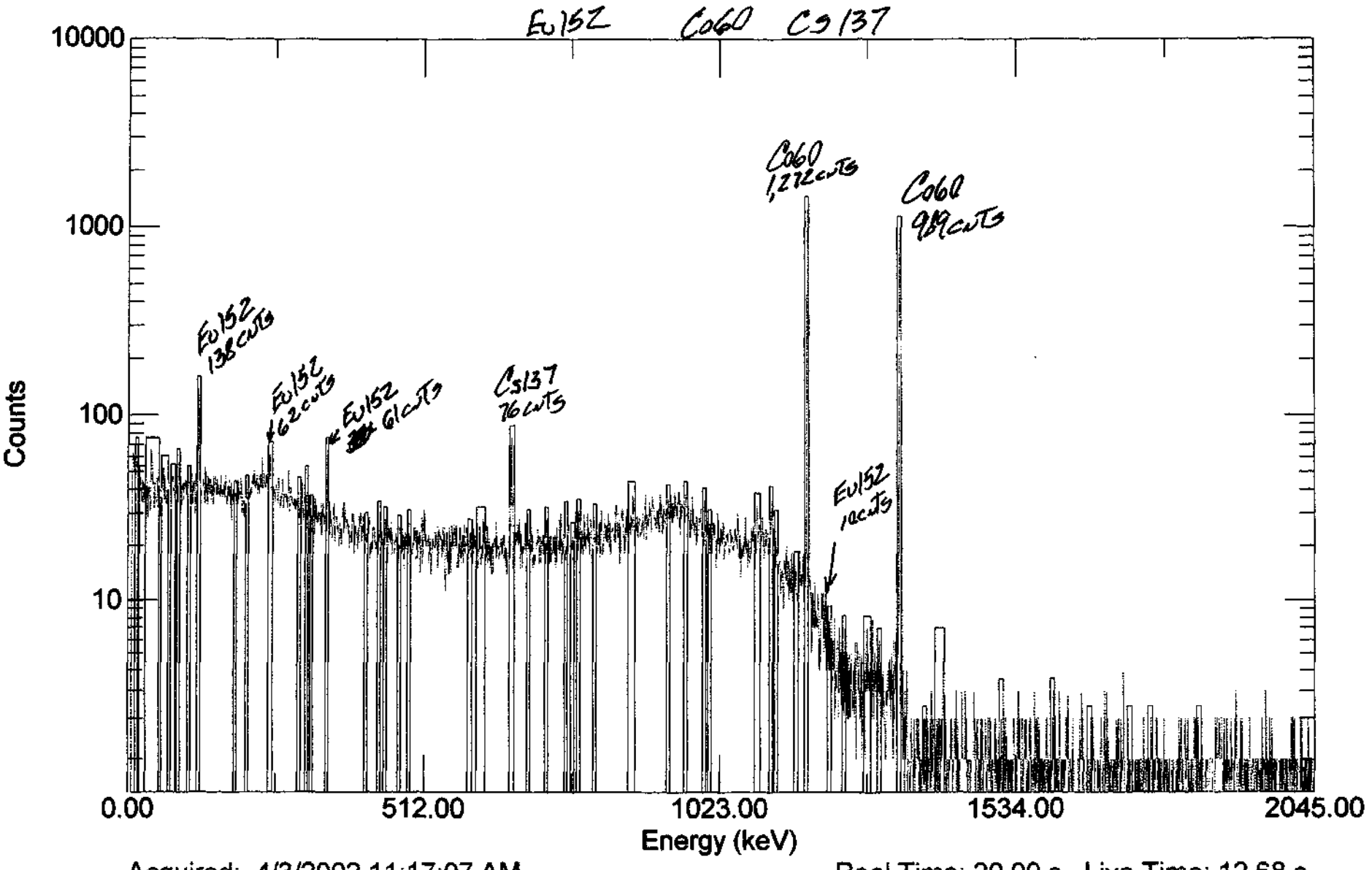
File: C:\User\GNIWEB~1\020 S208 4-3-2002 11.16.20 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


209

021 S209 4-3-2002 11.17.06 AM

S209



Acquired: 4/3/2002 11:17:07 AM Real Time: 20.00 s. Live Time: 12.68 s.

File: C:\User\GNIWEB~1\021 S209 4-3-2002 11.17.06 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-202

BKG	mR/hr
6"	<0.2
12"	↓
36"	↓

Sources

Container #	210	211	212	213	214
External on pig in mR/hr	1.5	0.5	BKG.	2.6	20
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	NO PIG	NO PIG	NO PIG	MOUNT	CAN IS PIC
Beta on open pig mR/hr O/W	80W	3 ~~0.5~~	BKG	OPEN →	
Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

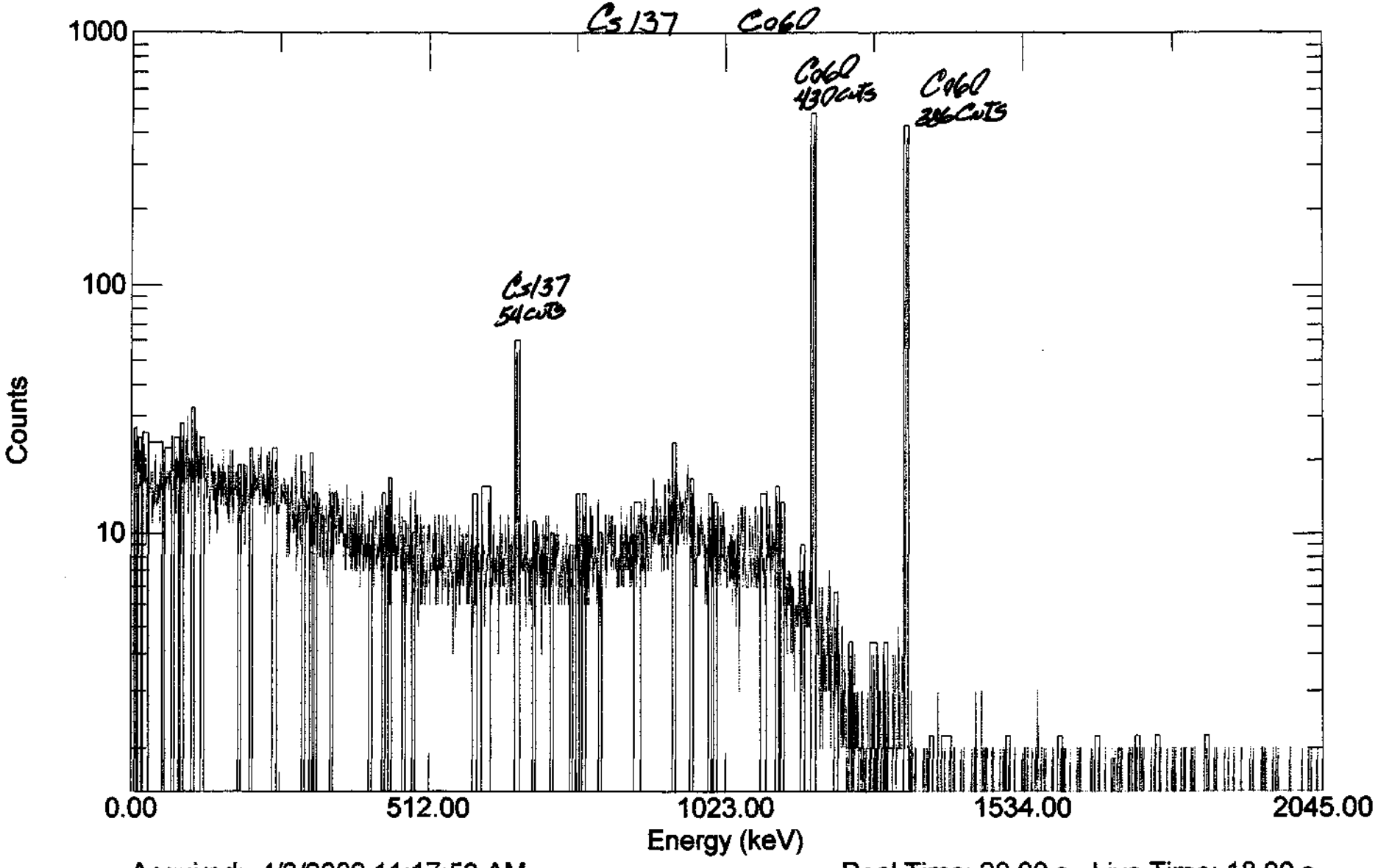
Table Readings

Source mR/hr @ 6 inchs	0.3	BKG	BKG	0.7	4.3
Source mR/hr @ 12 inches	<0.2		↓	0.3	2
Source mR/hr @ 36 inches	↓	↓	↓	<0.2	0.5
Size of source in cc's	20cc	1 cc	1 cc	4 cc	0.25 FT^3
Weight in grams	20 g	1 g	1 g	4 g	DAM HEAVY 25 Lb.
CPM Alpha	—	<20	—		
Direct Beta/Gamma	30000	0.5cw 30W	3500		
Info on source:	METAL cylinder (1) (SOURCE HOLDER)	Little GLASS tube (white) →			CAN 1 GAL. Σ LEAD GLUED BEADS
Information on pig:				MED APPLICATOR ICN - LIFESCIENCES. SR90 5mCi	
Smear DPM per 100 cm^2 Alpha	<200	1000	1000	2-75 DATE	
Smear DPM per 100 cm^2 Beta	150 K	80K	80K	-39.7	
				20R/hr @ 1' OW	

210

022 S210 4-3-2002 11.17.53 AM

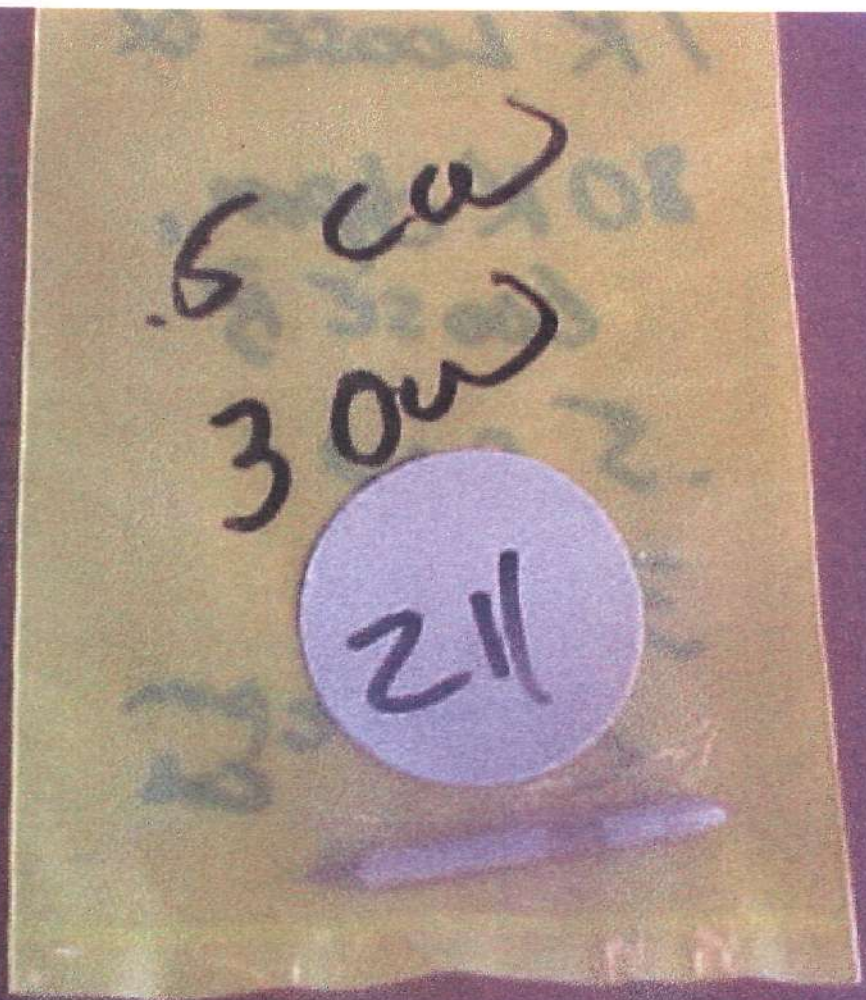
S210



Acquired: 4/3/2002 11:17:53 AM Real Time: 20.00 s. Live Time: 18.00 s.

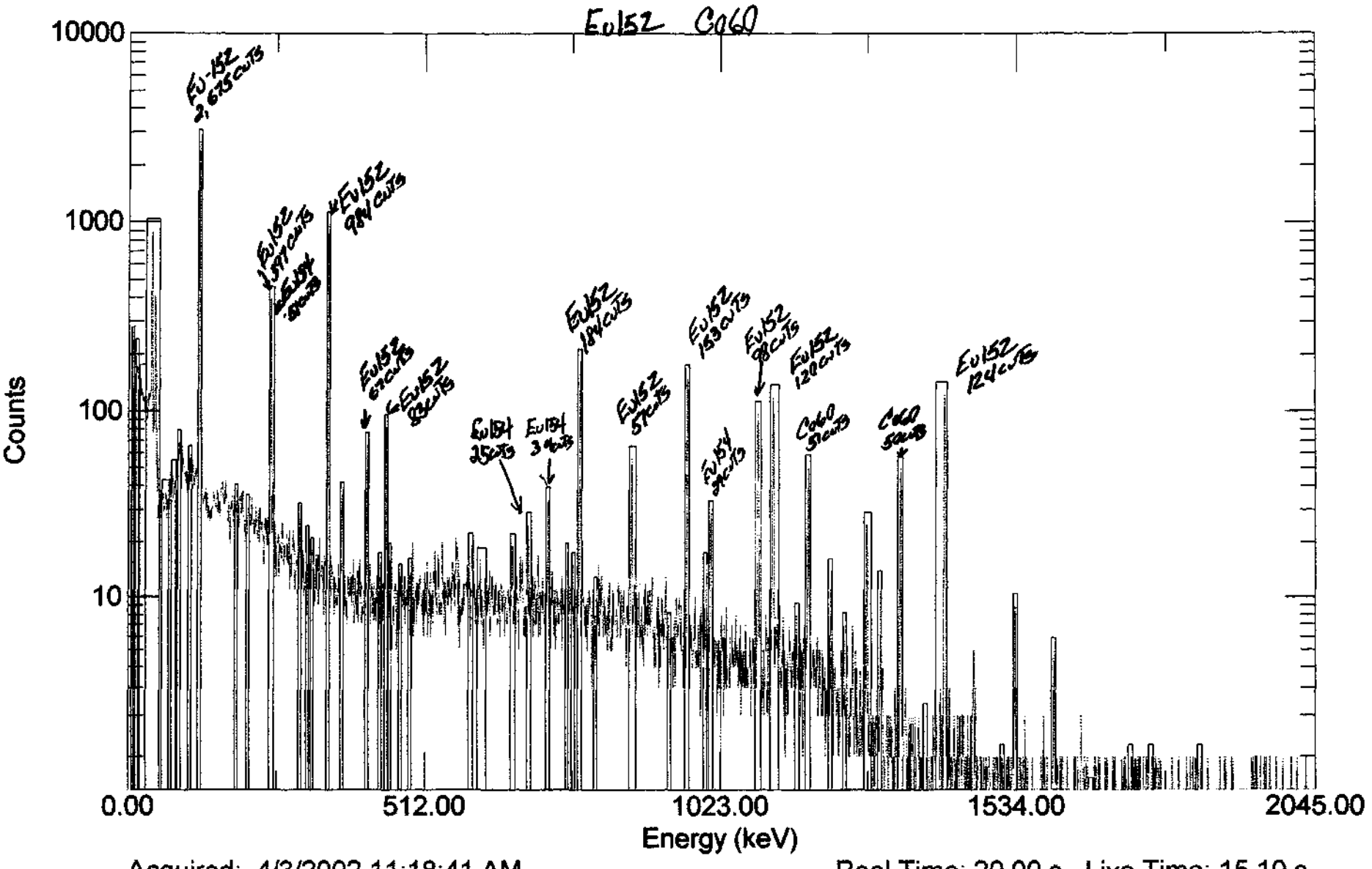
File: C:\User\GNIWEB~1\022 S210 4-3-2002 11.17.53 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


.5 cm
3 cm
21

023 S211 4-3 2002 11.18.41 AM

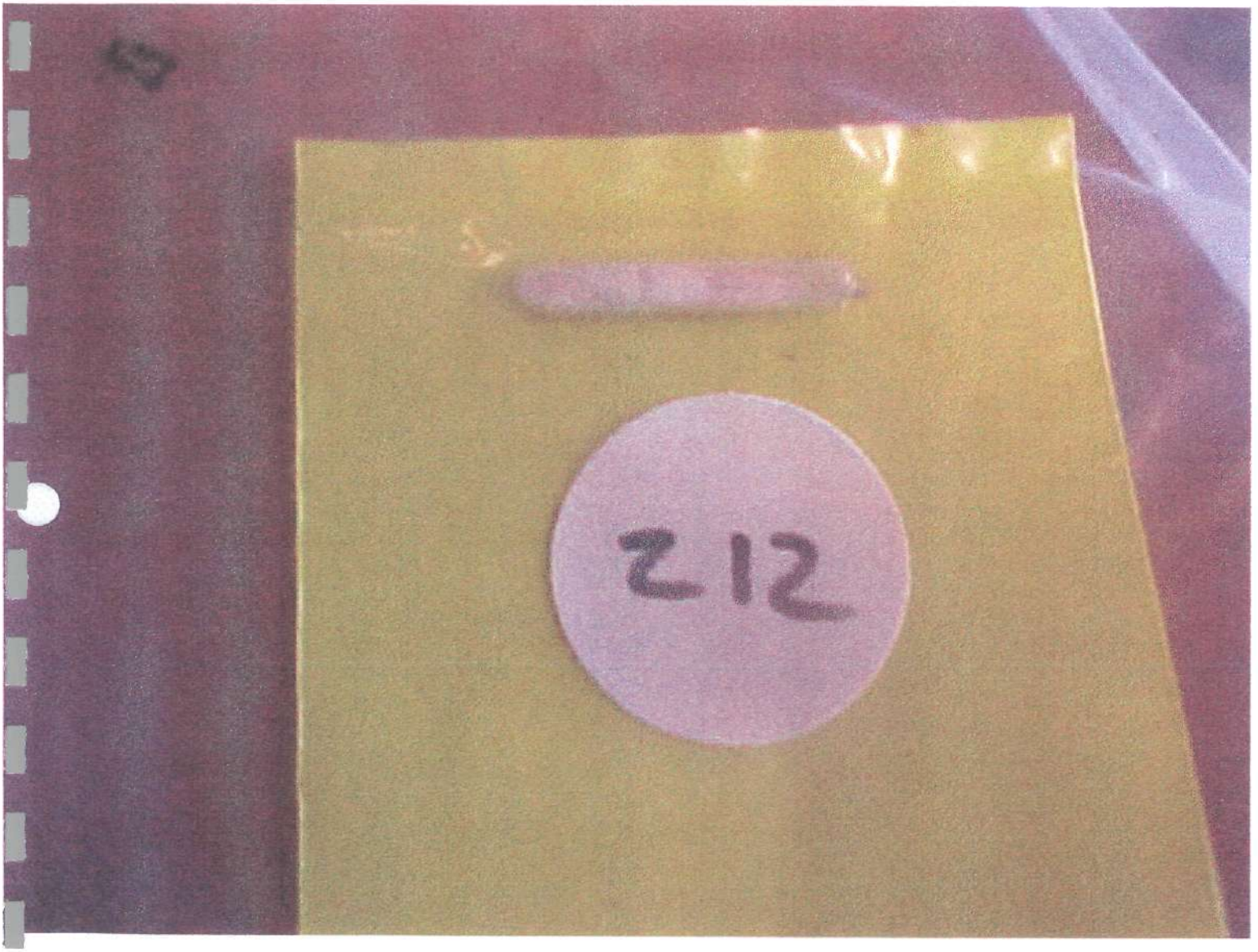
S211



Acquired: 4/3/2002 11:18:41 AM Real Time: 20.00 s. Live Time: 15.10 s.

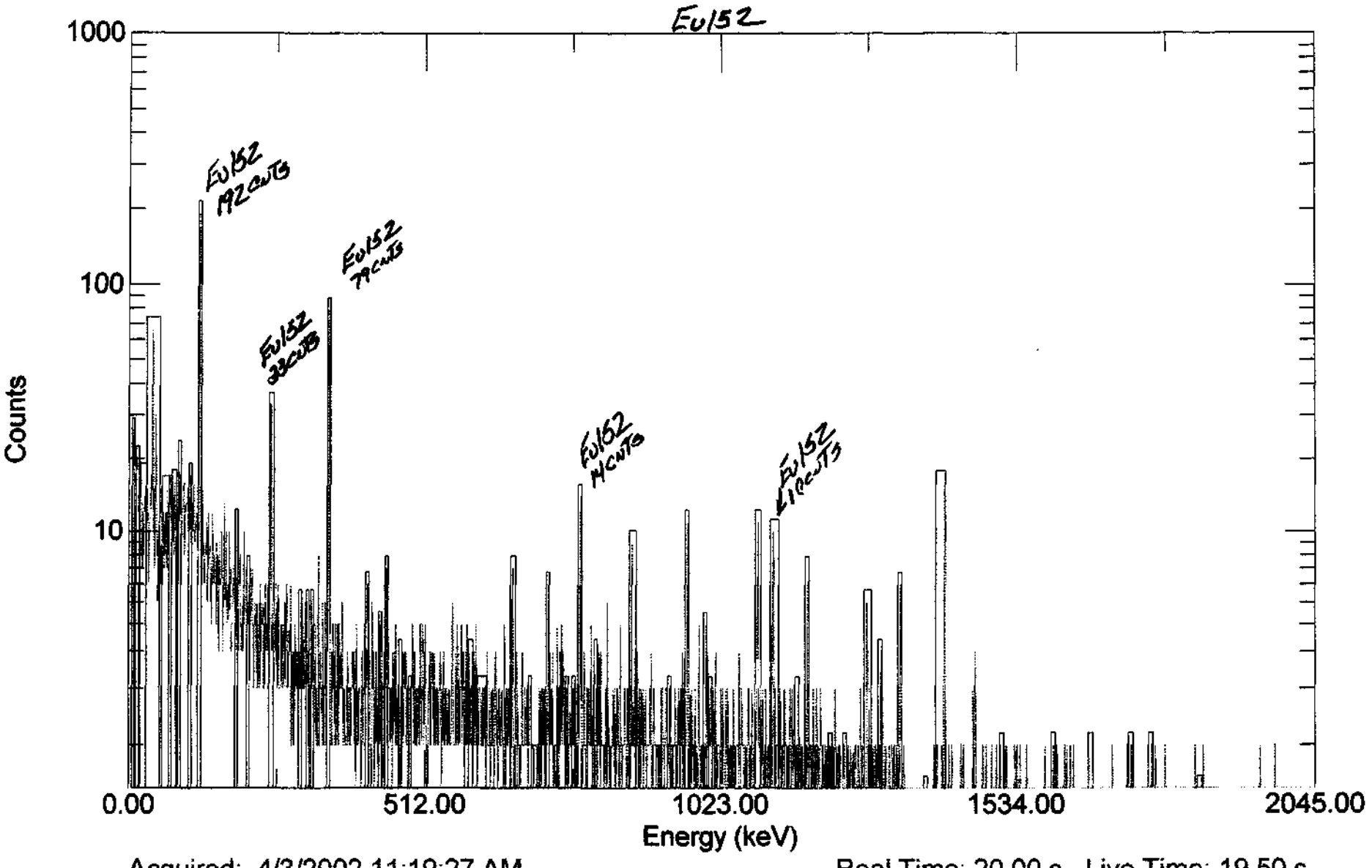
File: C:\User\GNIWEB~1\023 S211 4-3-2002 11.18.41 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


212

024 S212 4-3-2002 11.19.27 AM

S212



Acquired: 4/3/2002 11:19:27 AM Real Time: 20.00 s. Live Time: 19.50 s.

File: C:\User\GNIWEB~1\024 S212 4-3-2002 11.19.27 AM.Spc Channels: 8192

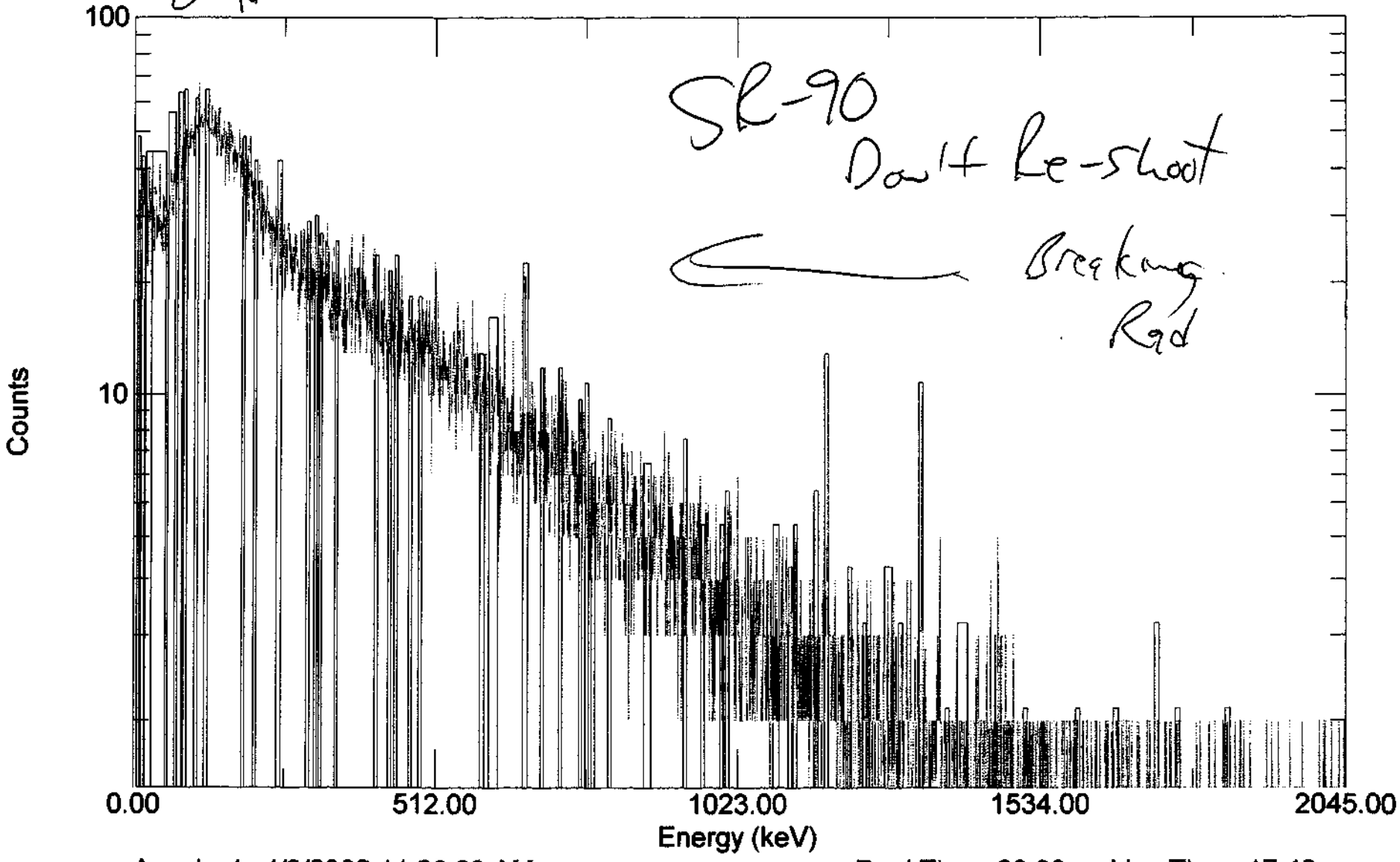
Detector: #1 digiDART USE 1b

20 R/HR OWCl'
Z13
MEDICAL
APPLICATO
ICN
LIFE SCIENCES

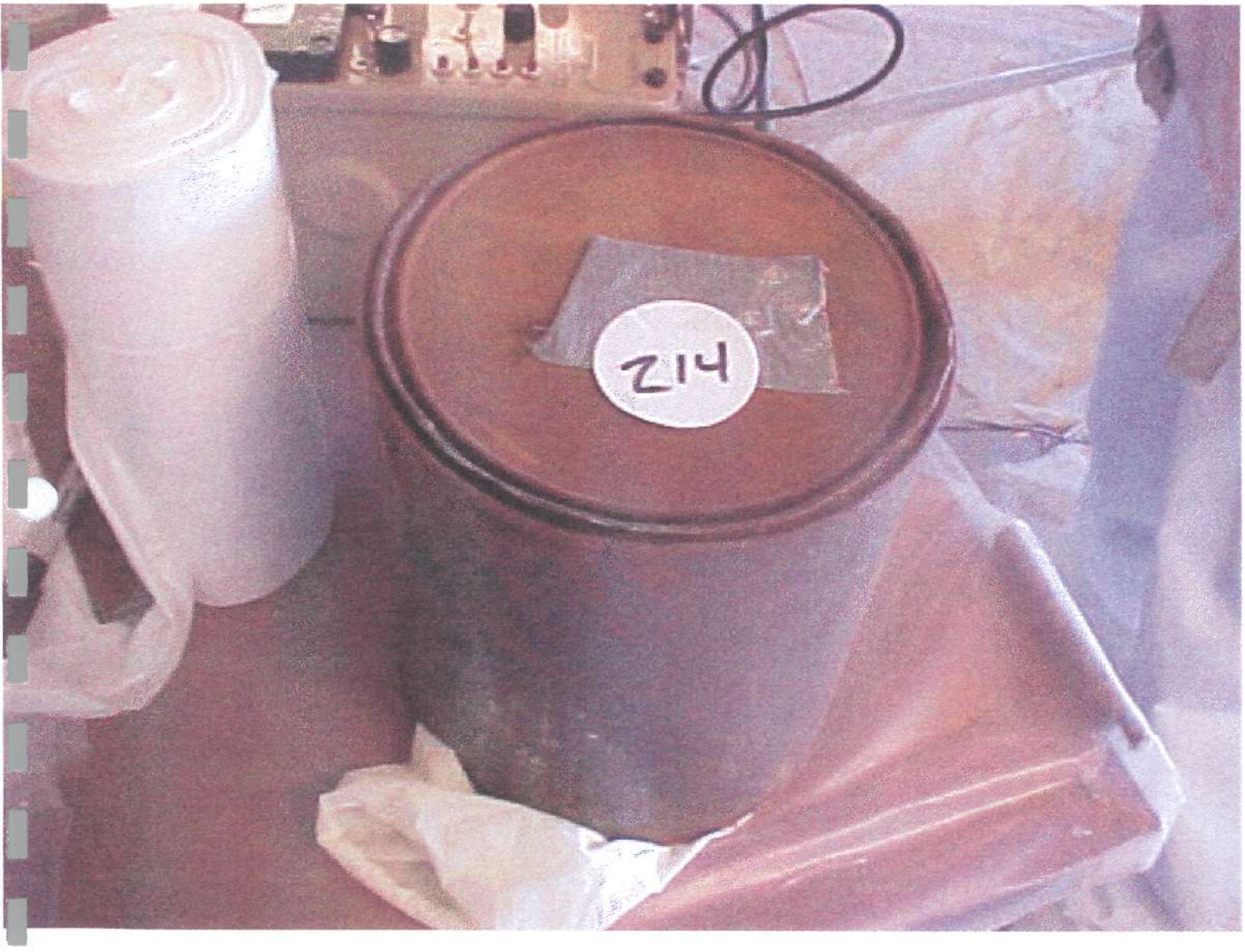
Reshoot
Count on Prude
For Better Peaks

025 S213 4-3-2002 11.20.23 AM

S213

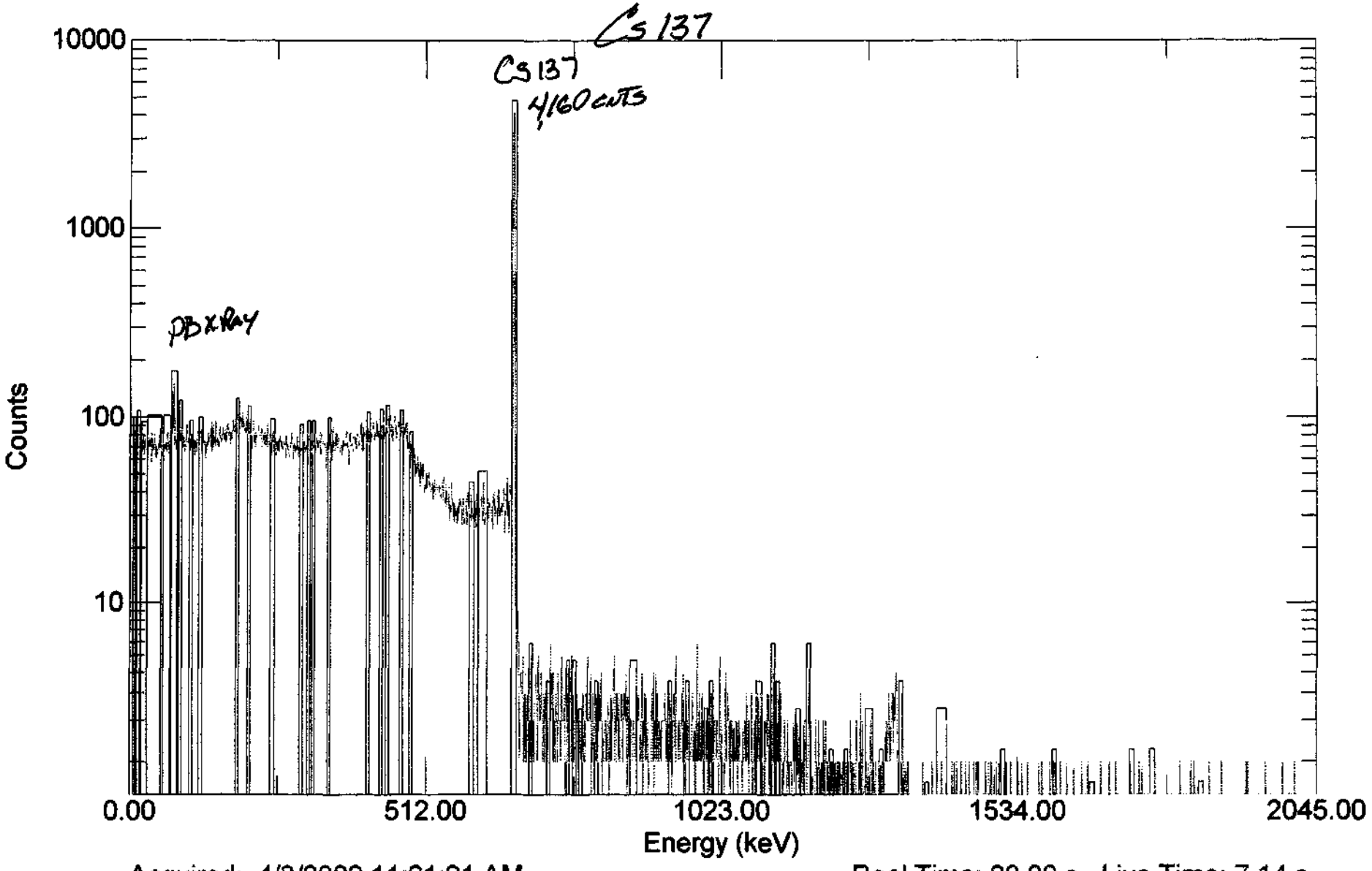


Acquired: 4/3/2002 11:20:23 AM Real Time: 20.00 s. Live Time: 17.48 s.
File: C:\User\GNIWEB~1\025 S213 4-3-2002 11.20.23 AM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


214

026 S214 4-3-2002 11.21.22 AM

S214



Acquired: 4/3/2002 11:21:21 AM Real Time: 20.00 s. Live Time: 7.14 s.

File: C:\User\GNIWEB~1\026 S214 4-3-2002 11.21.22 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 8/2/02

BKG	mR/hr
6"	
12"	
36"	

Sources

Container #	215				
External on pig in mR/hr	50				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	50				
Beta on open pig mR/hr O/W	140				

Picture	✓				
DIGET					

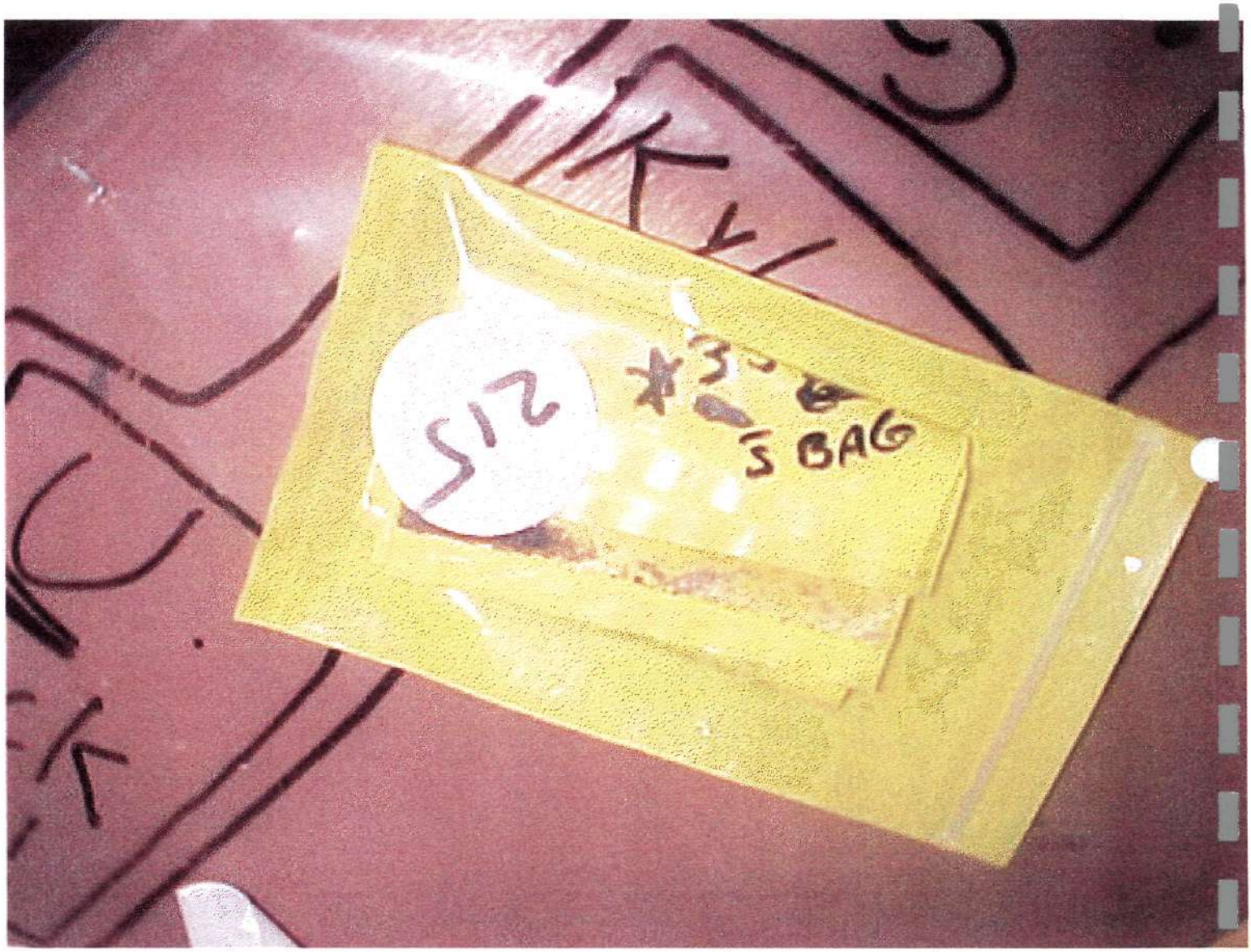
Table Readings

Source mR/hr @ 6 inchs	5				
Source mR/hr @ 12 inches	1.5				
Source mR/hr @ 36 inches	0.4				
Size of source in cc's	1				
Weight in grams	1				

CPM Alpha	—				
Direct Beta/Gamma	490848				

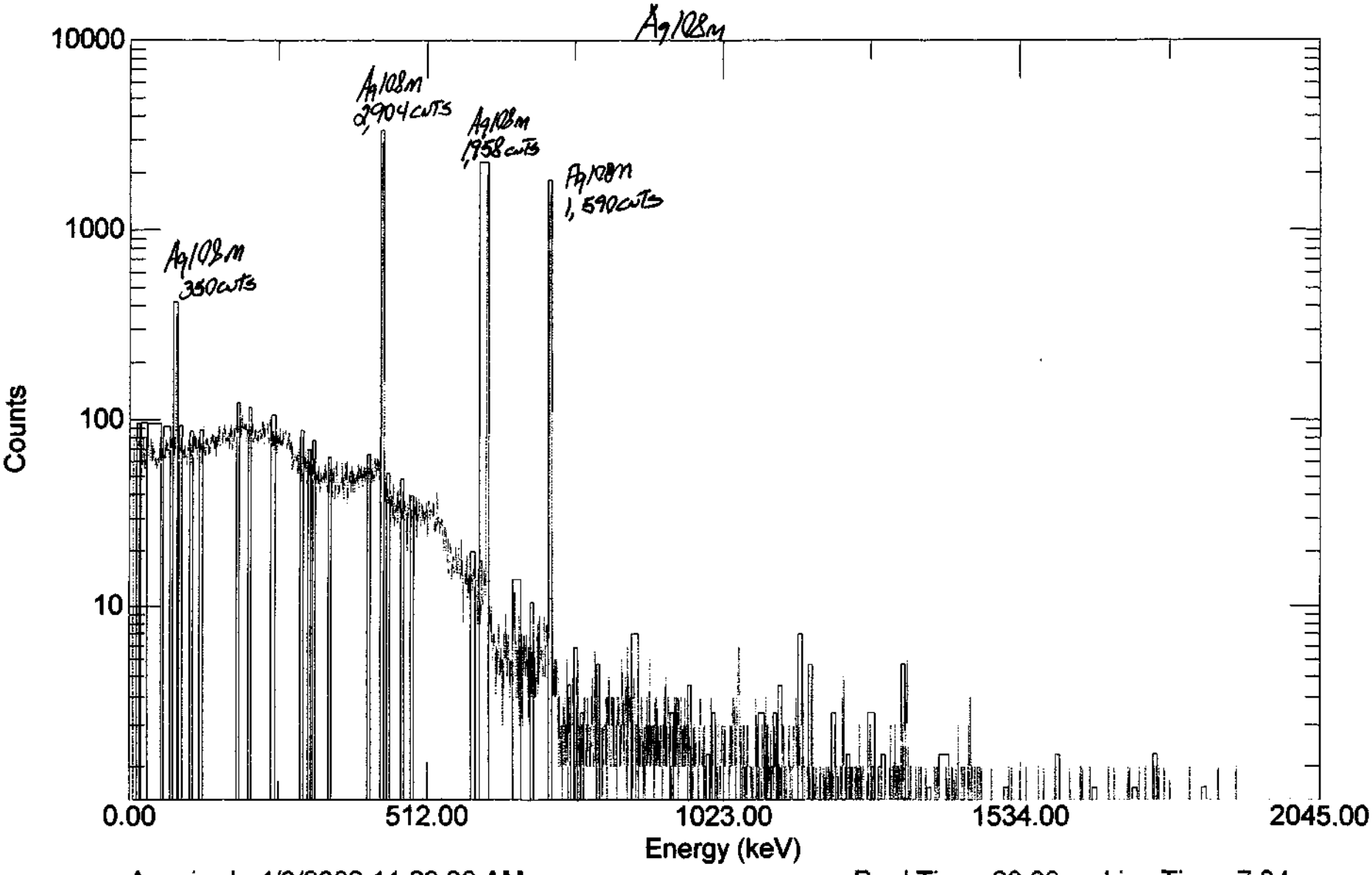
Info on source:	BAG OF KUST & SAND RM 2 OLB2				

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					


512
*3
S BAG

027 S215 4-3-2002 11.22.30 AM

S215



Acquired: 4/3/2002 11:22:30 AM Real Time: 20.00 s. Live Time: 7.34 s.

File: C:\User\GNIWEB~1\027 S215 4-3-2002 11.22.30 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-19-02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

Container #	216	217	~~218~~	218	~~220~~ 219
External on pig in mR/hr	460	250	50	190	1.6R
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact ~~open pig~~ mR/hr	~~25~~ 21R	50		190	8R 1.6R
Beta on open ~~pig~~ mR/hr O/W	25R	250	500	200	18R

Picture	✓	✓		✓	
DIGET	✓	✓		✓	✓

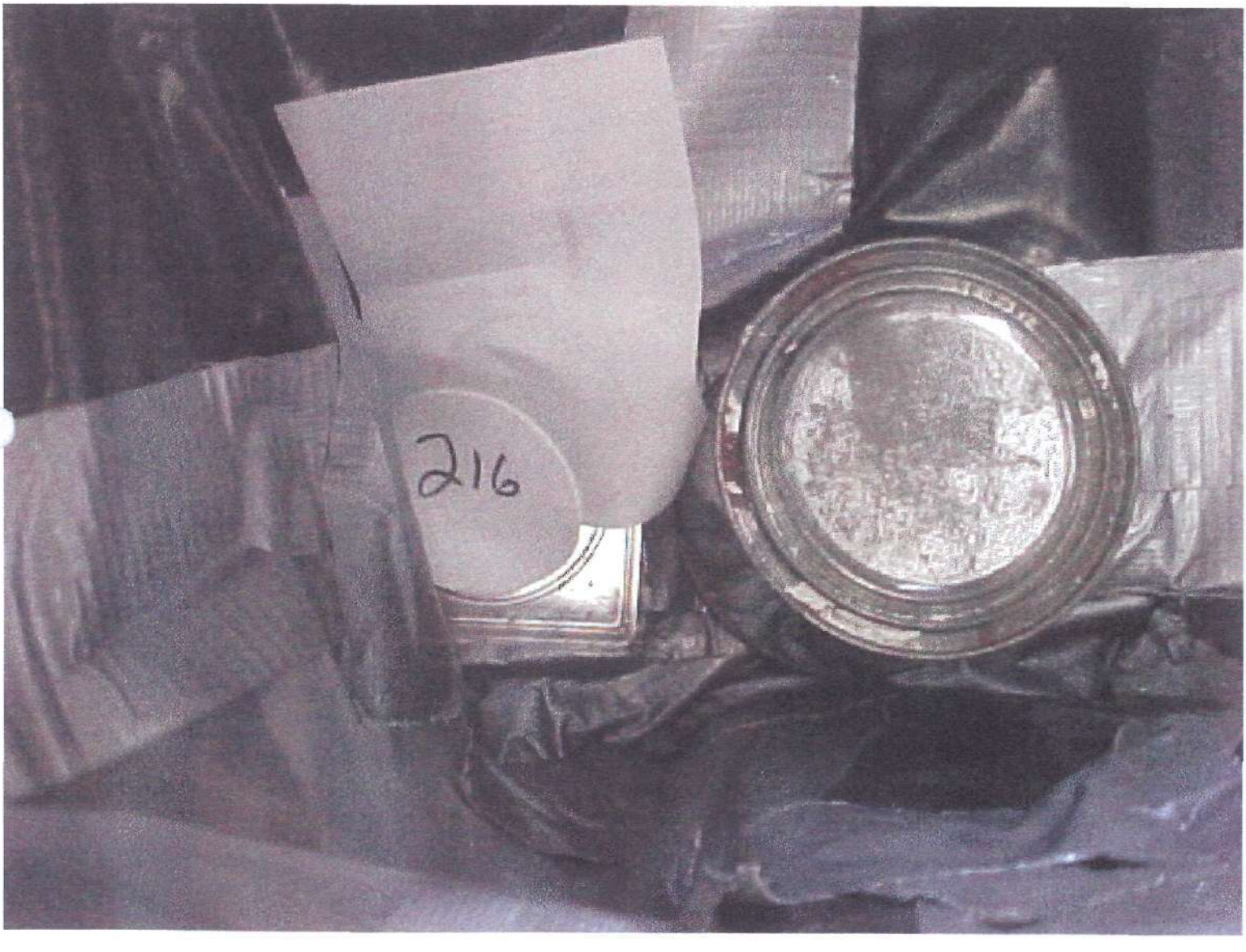
Table Readings

Source mR/hr @ 6 inchs	5.4R	5.2		1000	800
Source mR/hr @ 12 inches	3 R	4		500	400
Source mR/hr @ 36 inches		2.5		65	70
Size of source in cc's	100cc	10cc		5cc	20cc
Weight in grams	200gm	10gm		2g	3g

CPM Alpha	X	X		X	
Direct Beta/Gamma					

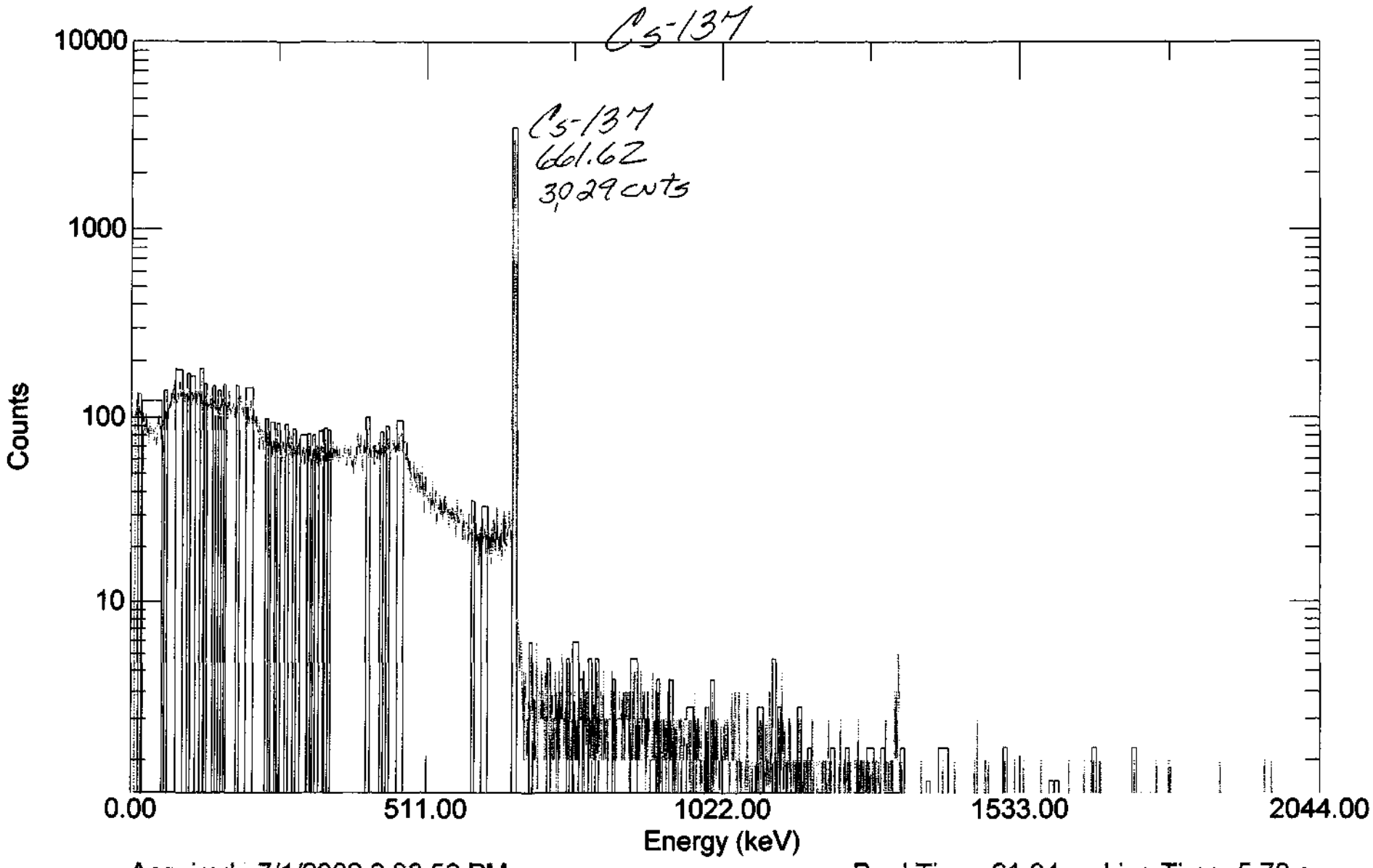
Info on source:	SM paint CAN	SM PAINT CAN		LITTLE metal (1)	Bottles (1)

Information on pig:				~~Wound~~ Wound not cut	
OW Smear ~~DPM per 100 cm^2 Alpha~~	2800	800		50	270
CW Smear ~~DPM per 100 cm^2 Beta~~	20	9		6	7
OW OPEN WINDOW RO20 CW CLOSED WINDOW RO20		6 BBs 10 NEEDS			


216

011 S216-2 7-1-2002 2.38.55 PM

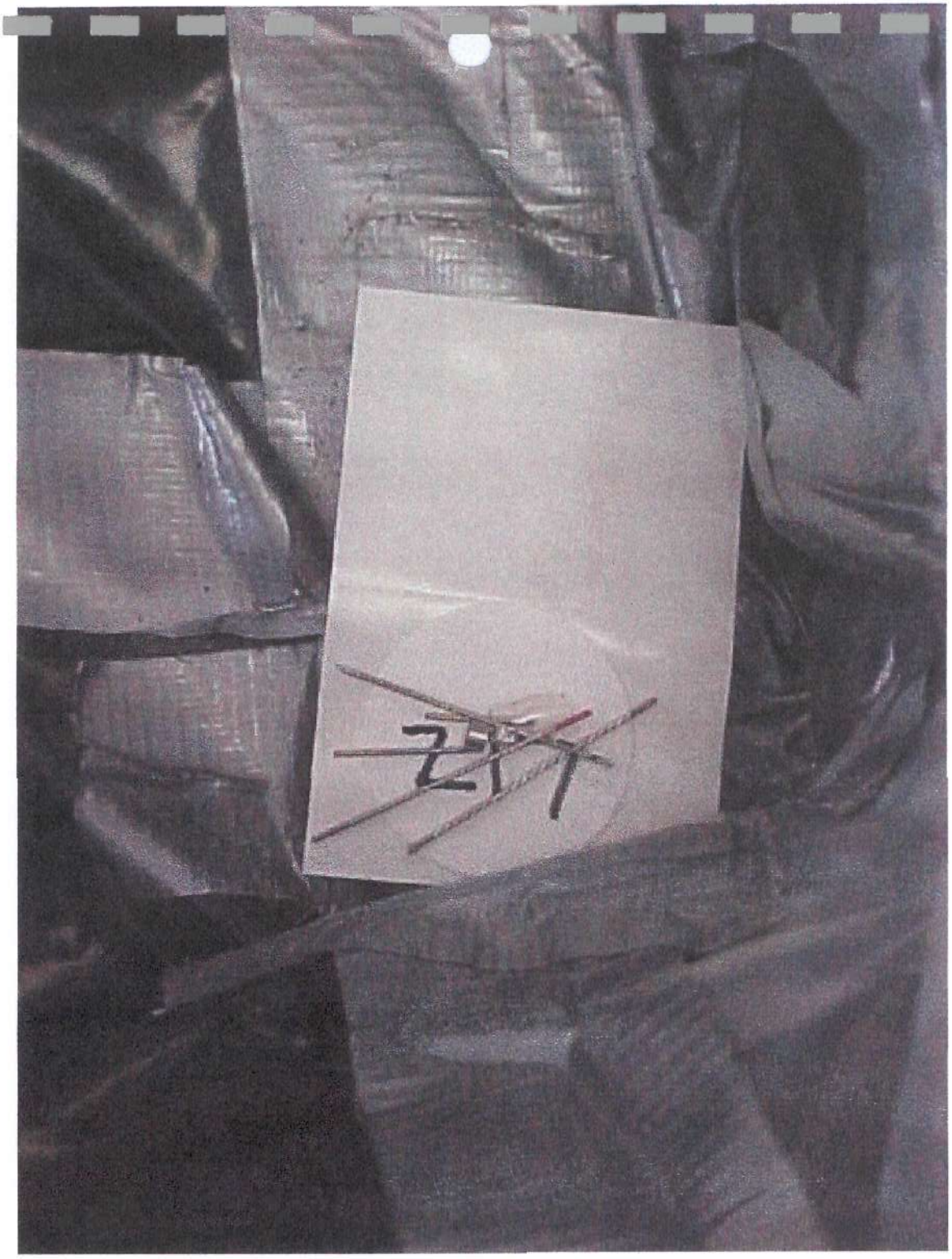
S216-2

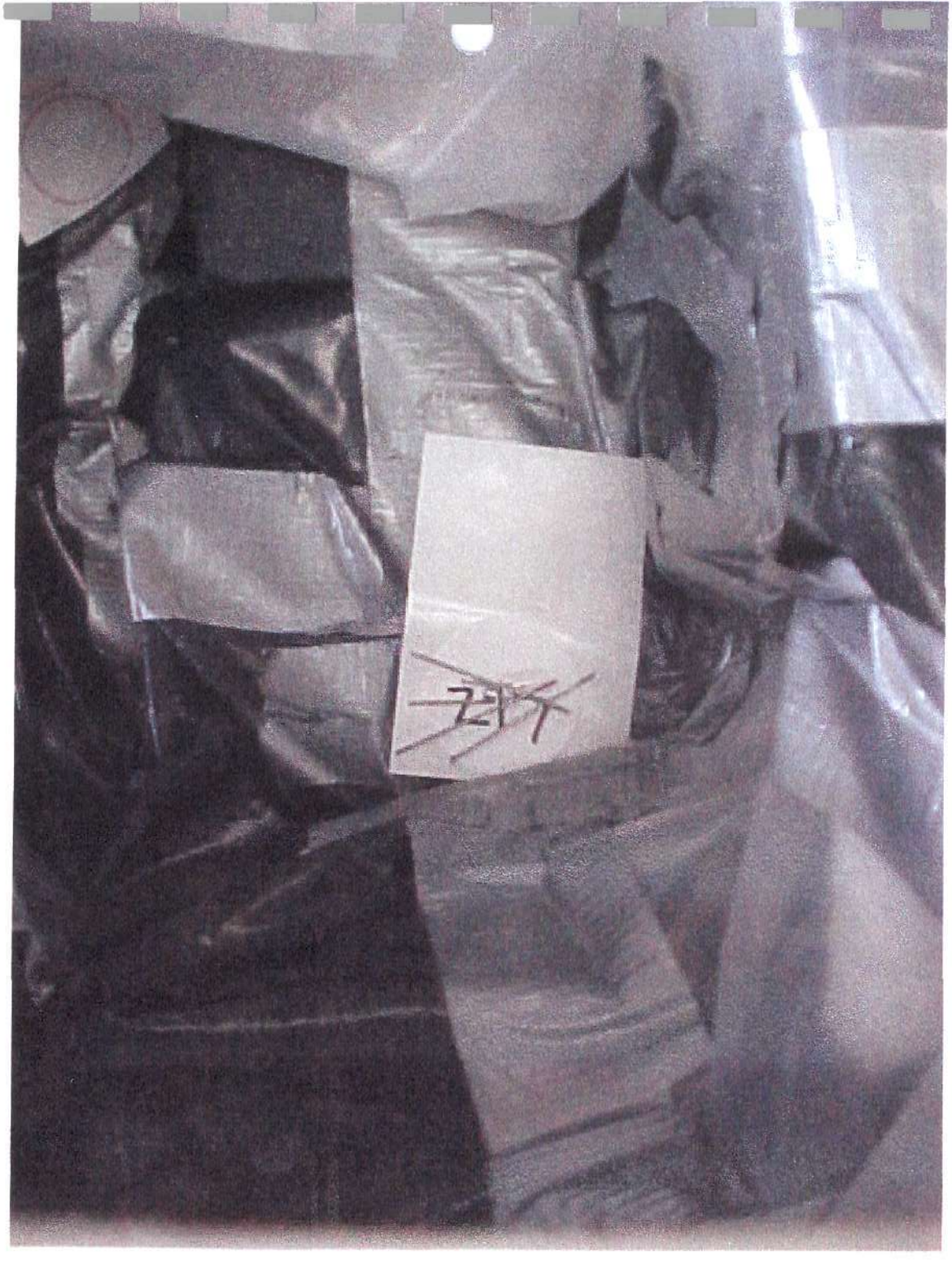


Acquired: 7/1/2002 2:38:56 PM Real Time: 21.04 s. Live Time: 5.78 s.

File: C:\User\GNIWEB~1\011 S216-2 7-1-2002 2.38.55 PM.Spc Channels: 8192

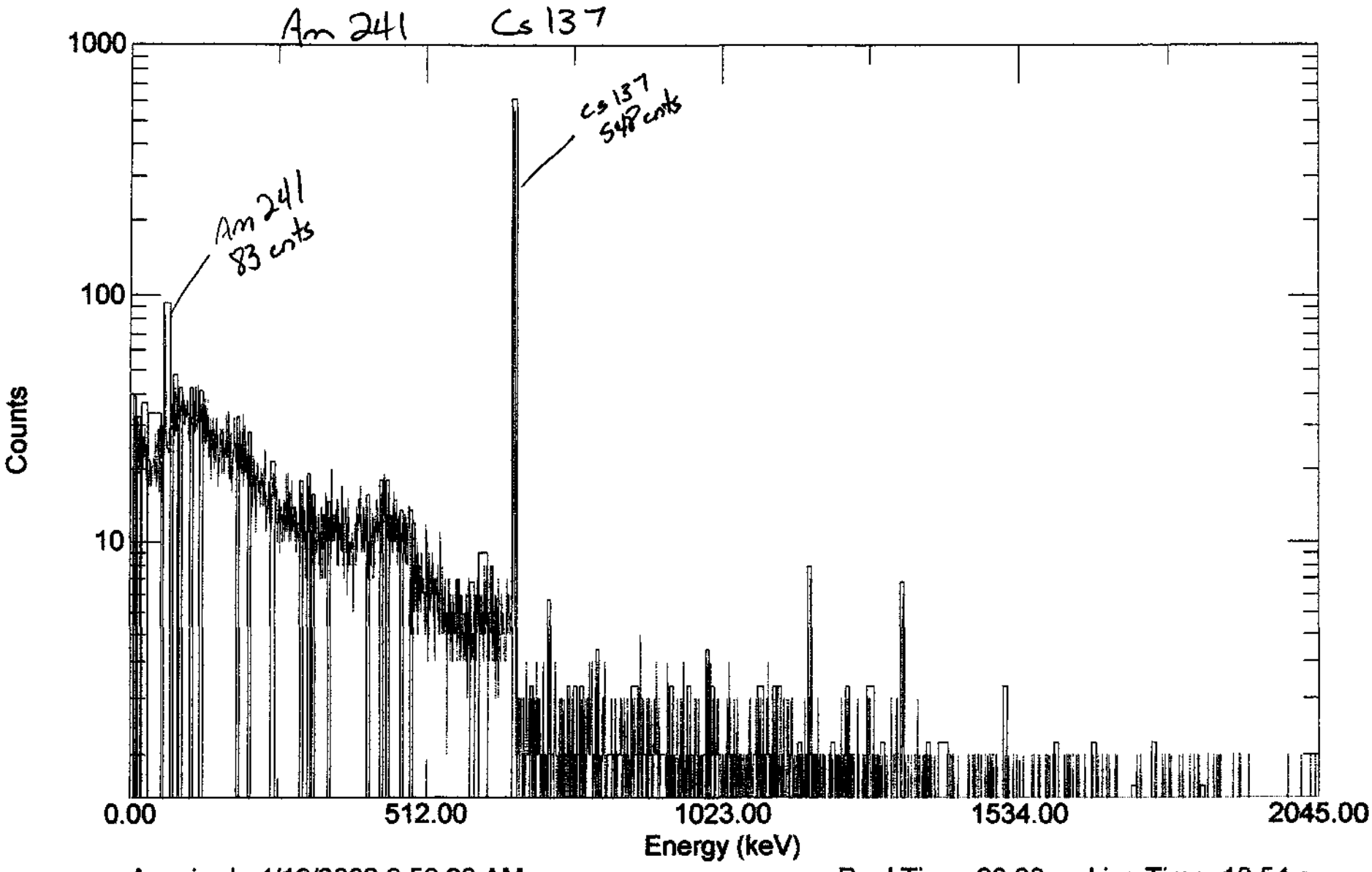
Detector: #1 digiDART USE 1b





003 S217 4-19-2002 9.56.27 AM

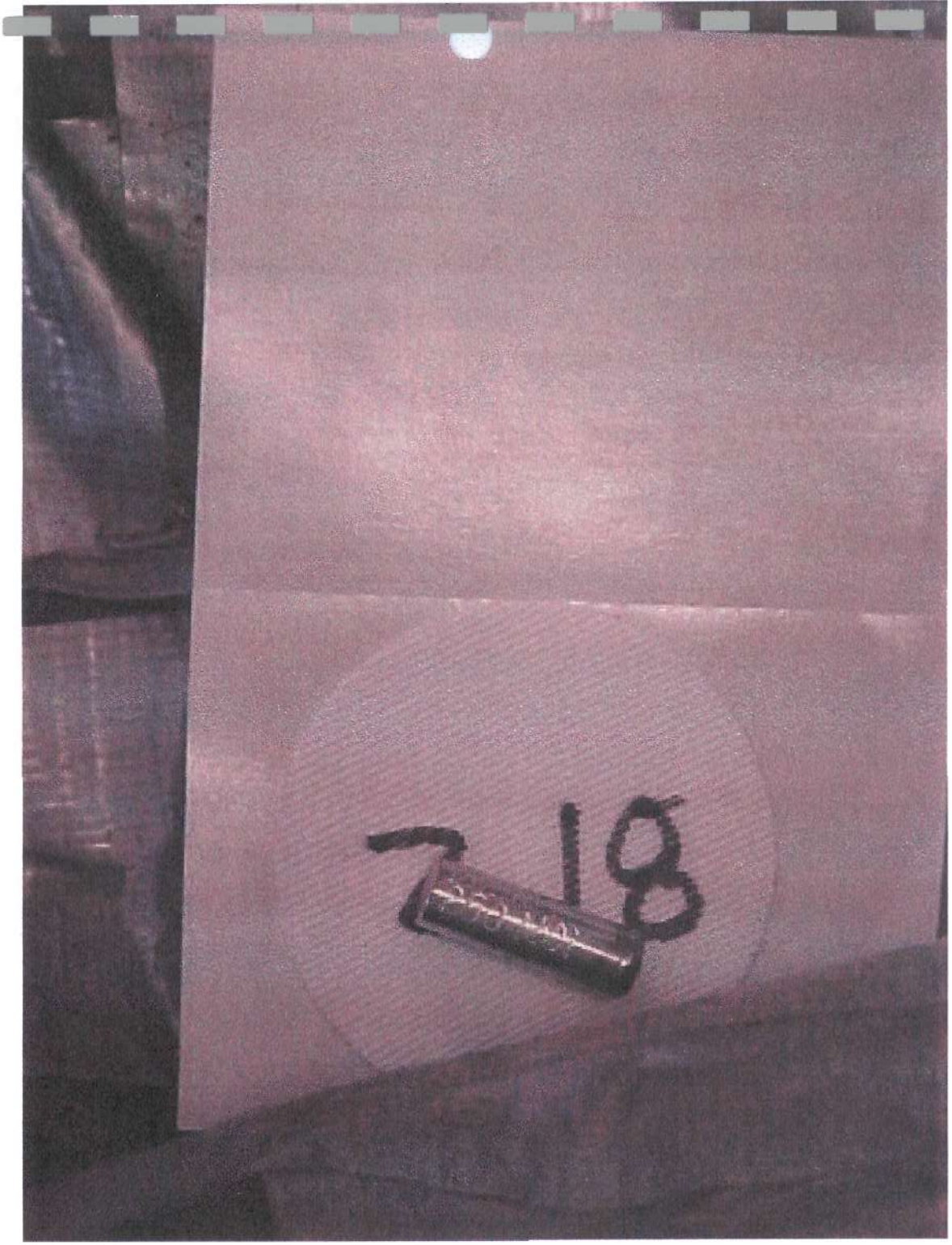
S217



Acquired: 4/19/2002 9:56:28 AM Real Time: 20.00 s. Live Time: 18.54 s.

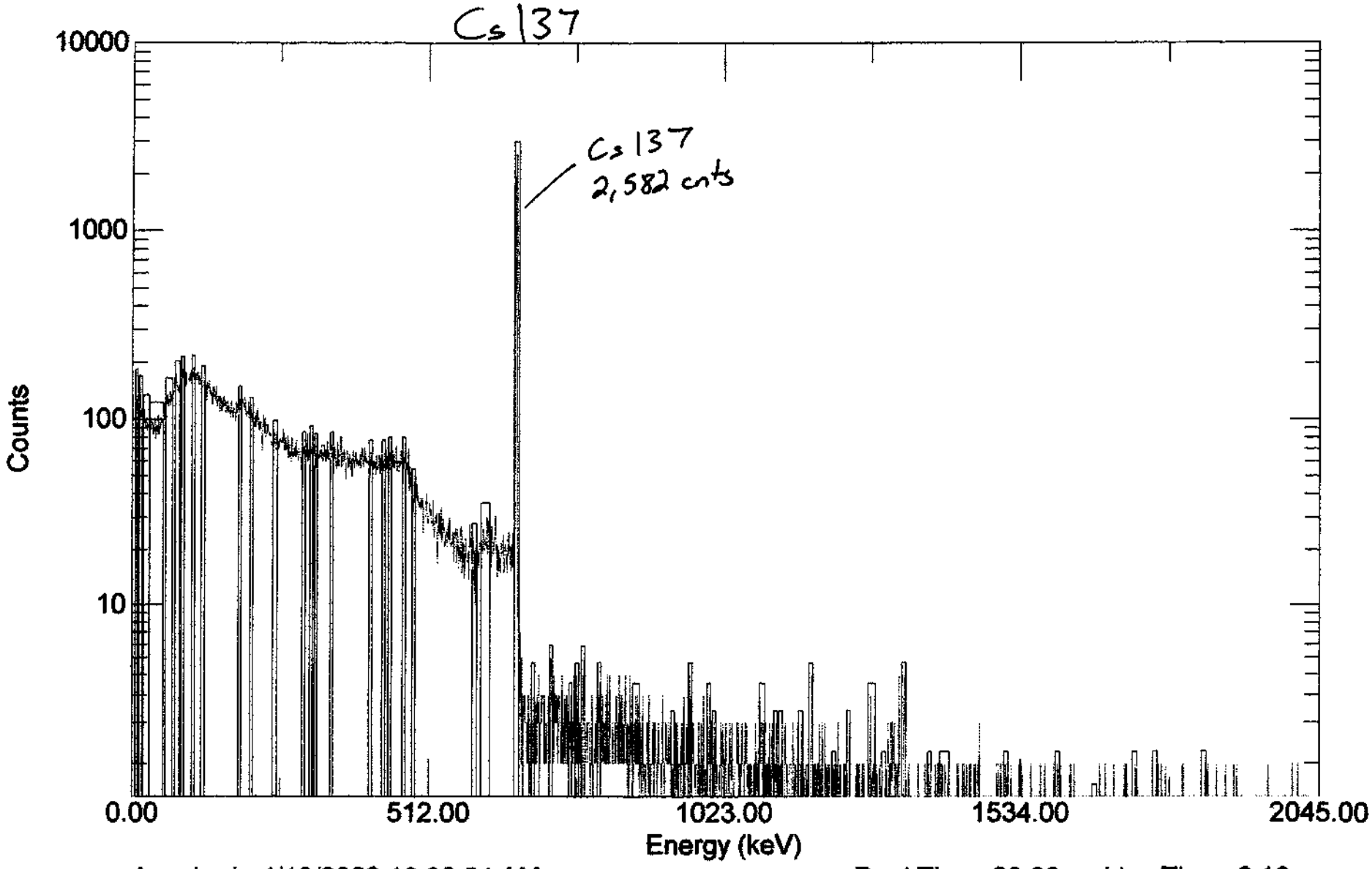
File: C:\User\GNIWEB~1\003 S217 4-19-2002 9.56.27 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


218

004 S218 4-19-2002 10.06.54 AM

S218



Acquired: 4/19/2002 10:06:54 AM Real Time: 20.00 s. Live Time: 8.16 s.

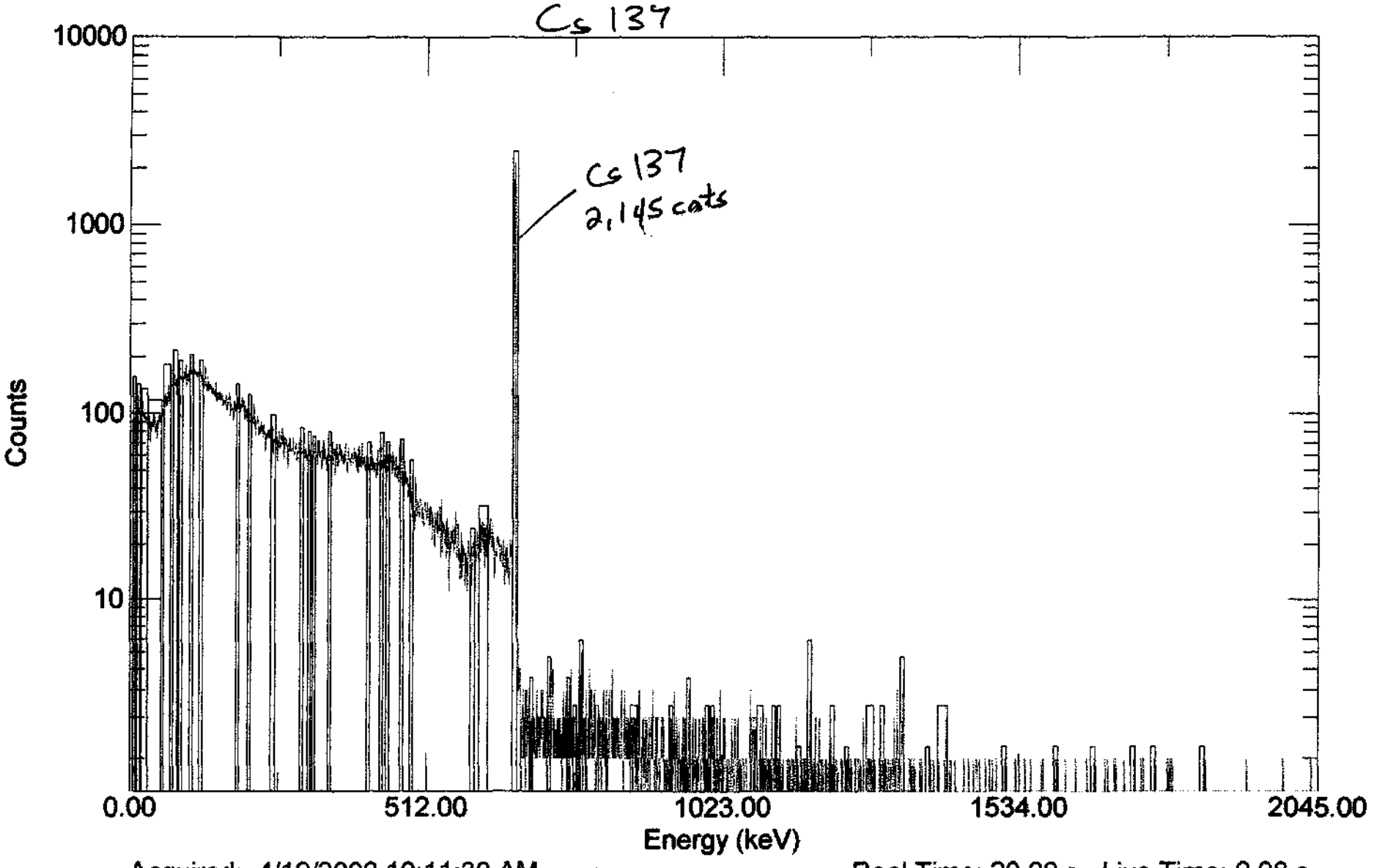
File: C:\User\GNIWEB~1\004 S218 4-19-2002 10.06.54 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

210

005 S219 4-19-2002 10.11.31 AM

S219



Acquired: 4/19/2002 10:11:30 AM Real Time: 20.00 s. Live Time: 9.98 s.

File: C:\User\GNIWEB~1\005 S219 4-19-2002 10.11.31 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-19-02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

Container #	220	221	222	223	224
External on pig in mR/hr	15 ~~100~~	50	17	350	32 mR
External on pig Neutron mR/hr	<1	<1	<1	<1	<1
Contact open pig mR/hr	100	1 R	25	22 ~~5 R~~ R	1.6 R
Beta on open pig mR/hr O/W	470	2.7 R	800	~~19 R~~ >50 R	~~1.7 R~~ 4 R
Picture	✓	✓	✓	✓	✓
DIGET	✓	✓		✓	✓

Table Readings

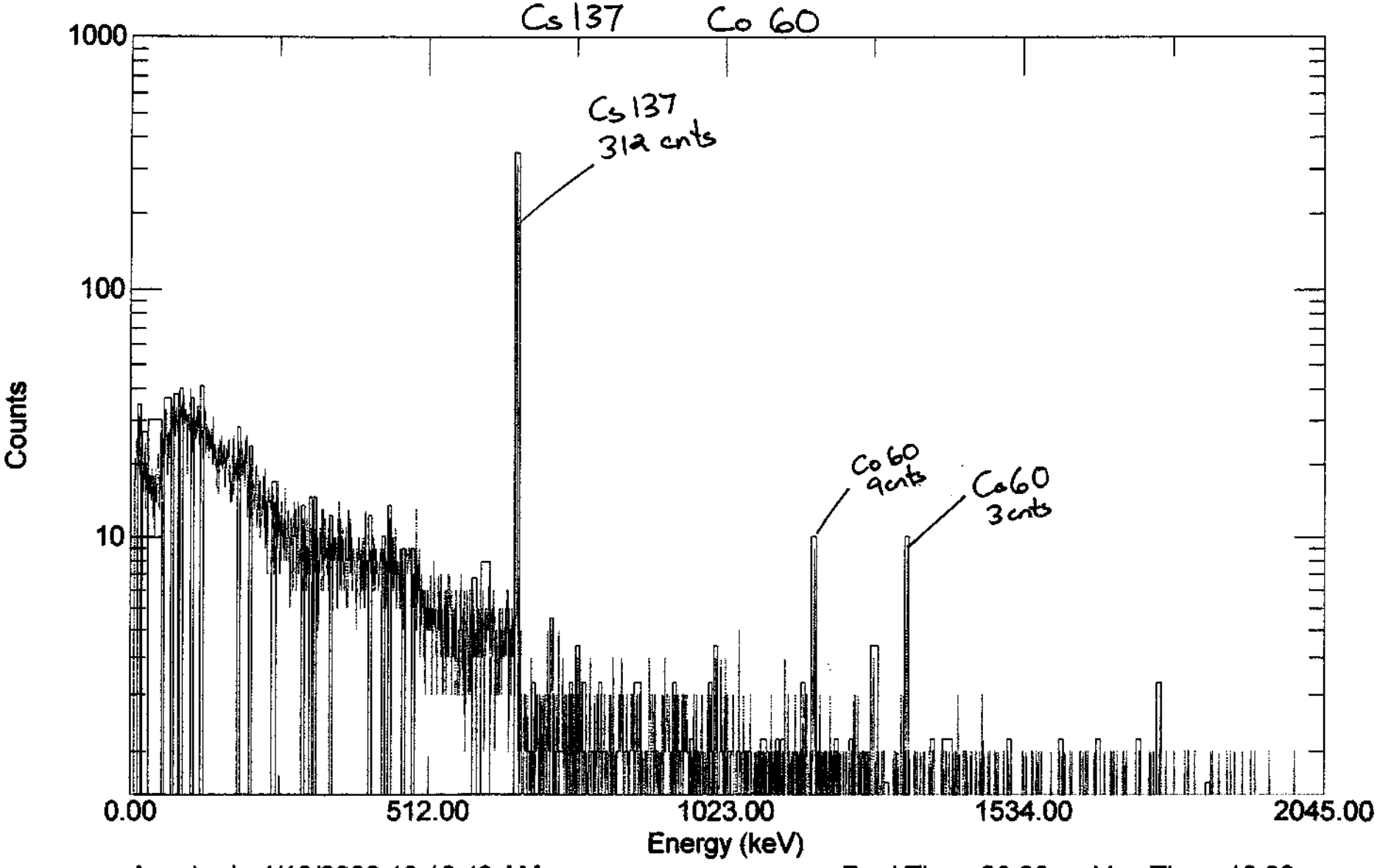
Source mR/hr @ 6 inchs	10	750	450	9 R	680
Source mR/hr @ 12 inches	7	300	170	3.9 R	180
Source mR/hr @ 36 inches	2	50	30	>	40
Size of source in cc's	.5 FT³	40cc	20cc	20cc	20cc
Weight in grams	5 Lbs	40 gm	5 gm	2 gm	2 gm
CPM Alpha	X	X	X		
Direct Beta/Gamma					

Info on source:	maybe B.B. I/S	(9) SOURCES	BROKEN GLASS PLASTIC CRISTAL		Bottle NEEDLE PLASTIC

	Information on pig:					
OW	Smear ~~DPM per 100 cm^2 Alpha~~	60	47	100	430	600
CW	Smear ~~DPM per 100 cm^2 Beta~~	7	5	6	8	8
	OW open window Ra26 CW closed window Ra26	~~MAYBE~~				

006 S220 4-19-2002 10.18.43 AM

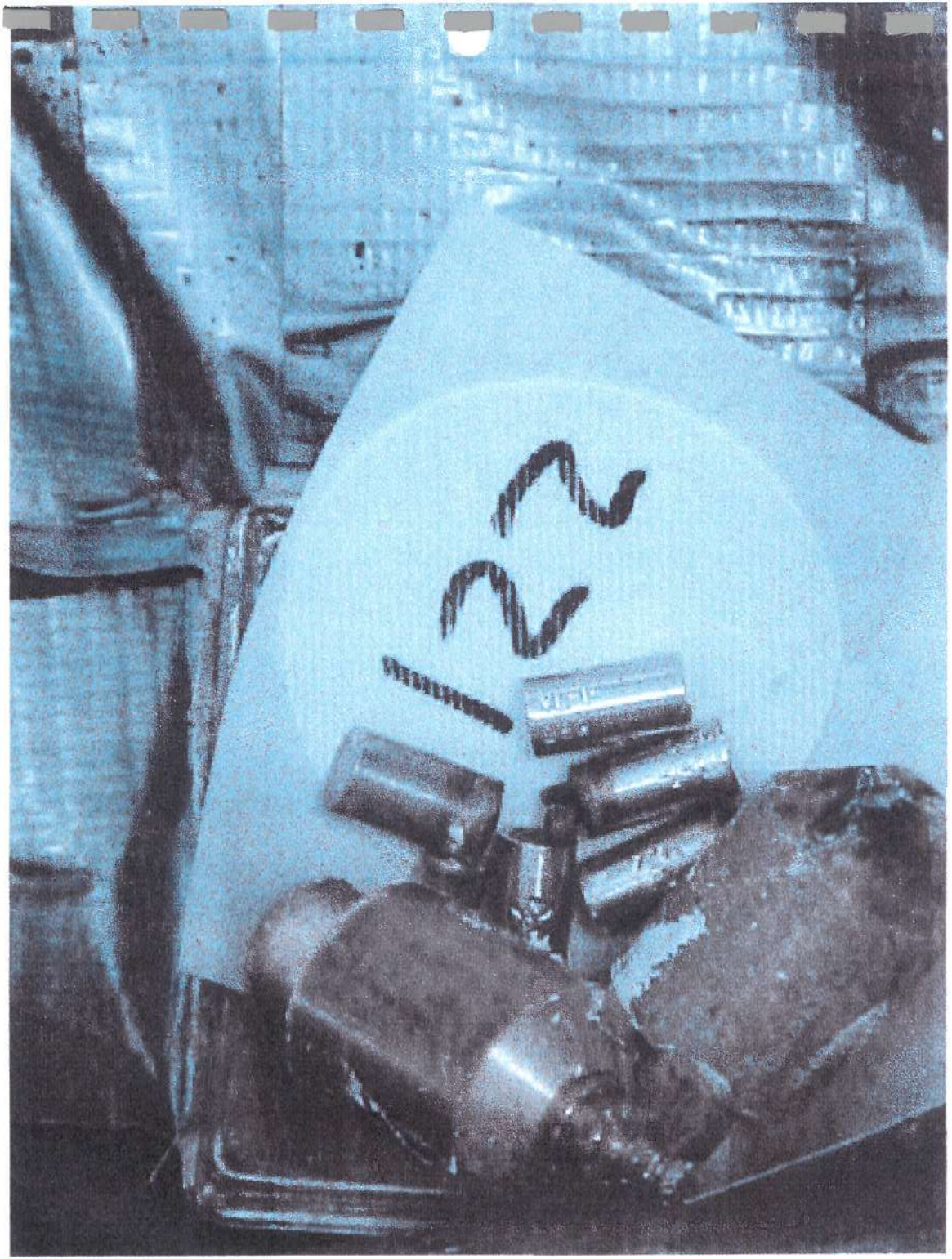
S220



Acquired: 4/19/2002 10:18:43 AM Real Time: 20.00 s. Live Time: 18.88 s.

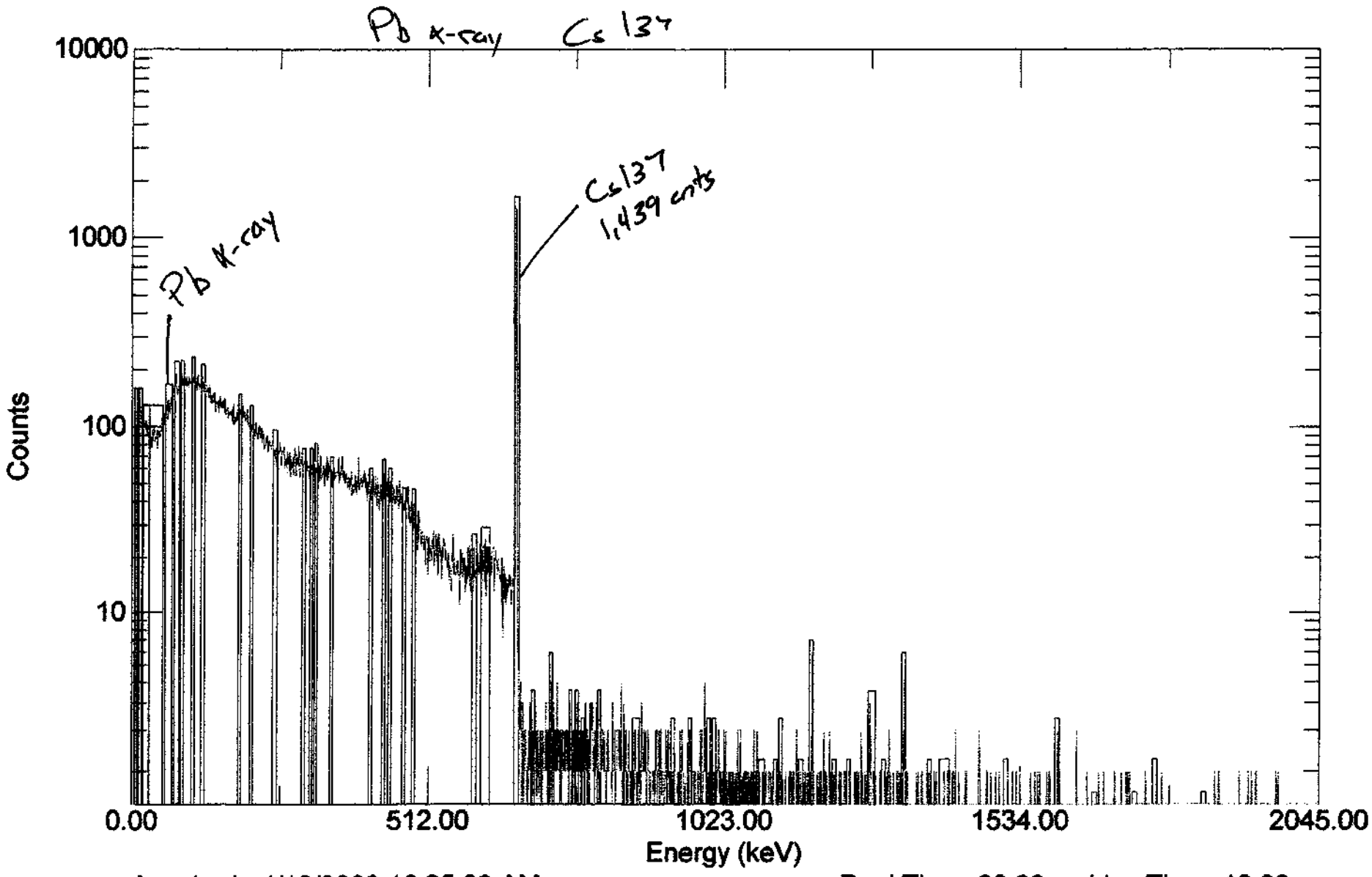
File: C:\User\GNIWEB~1\006 S220 4-19-2002 10.18.43 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b



007 S221 4-19-2002 10.25.24 AM

S221



Acquired: 4/19/2002 10:25:23 AM Real Time: 20.00 s. Live Time: 10.60 s.

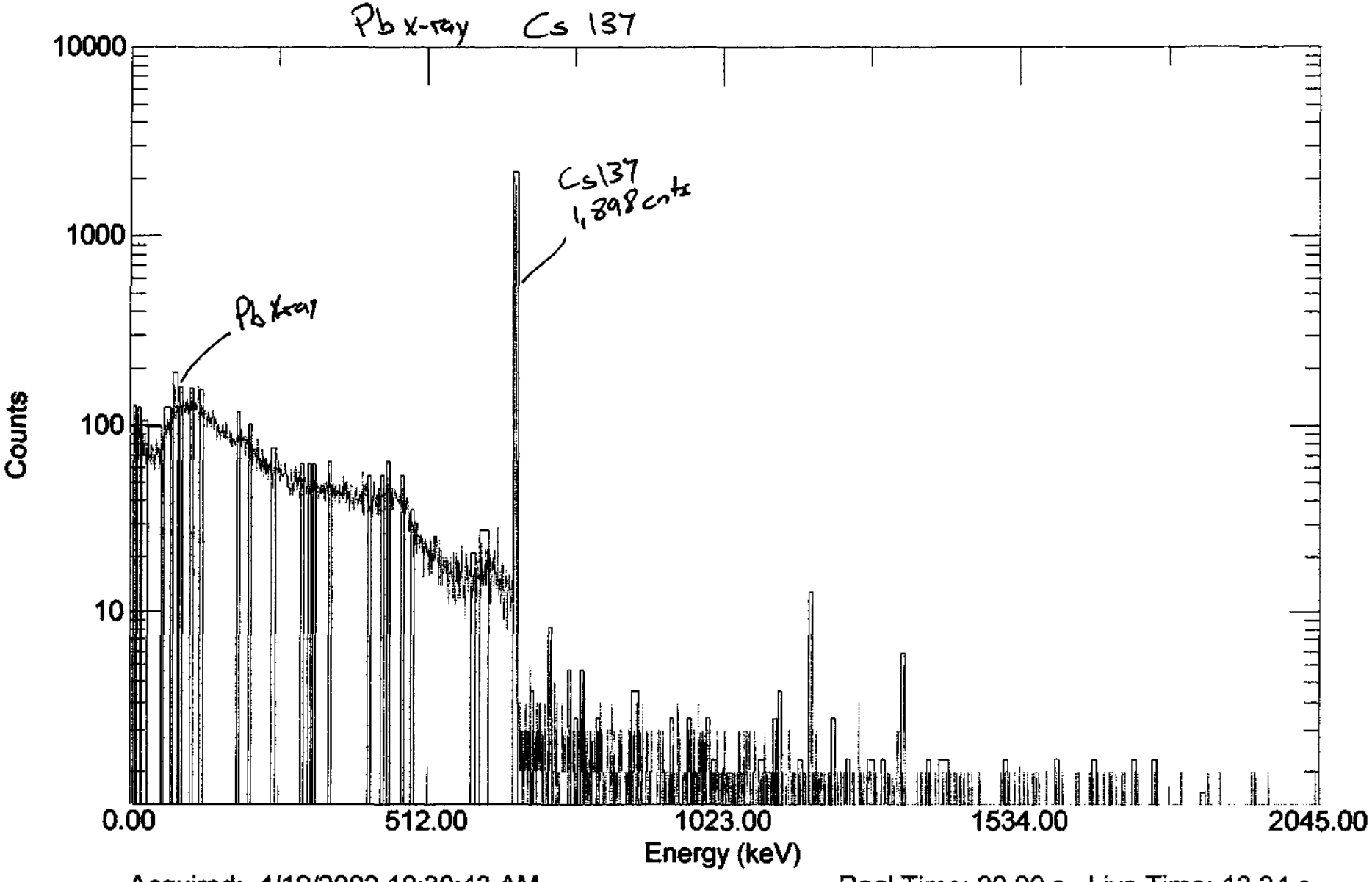
File: C:\User\GNIWEB~1\007 S221 4-19-2002 10.25.24 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

222

008 S222 4-19-2002 10.30.43 AM

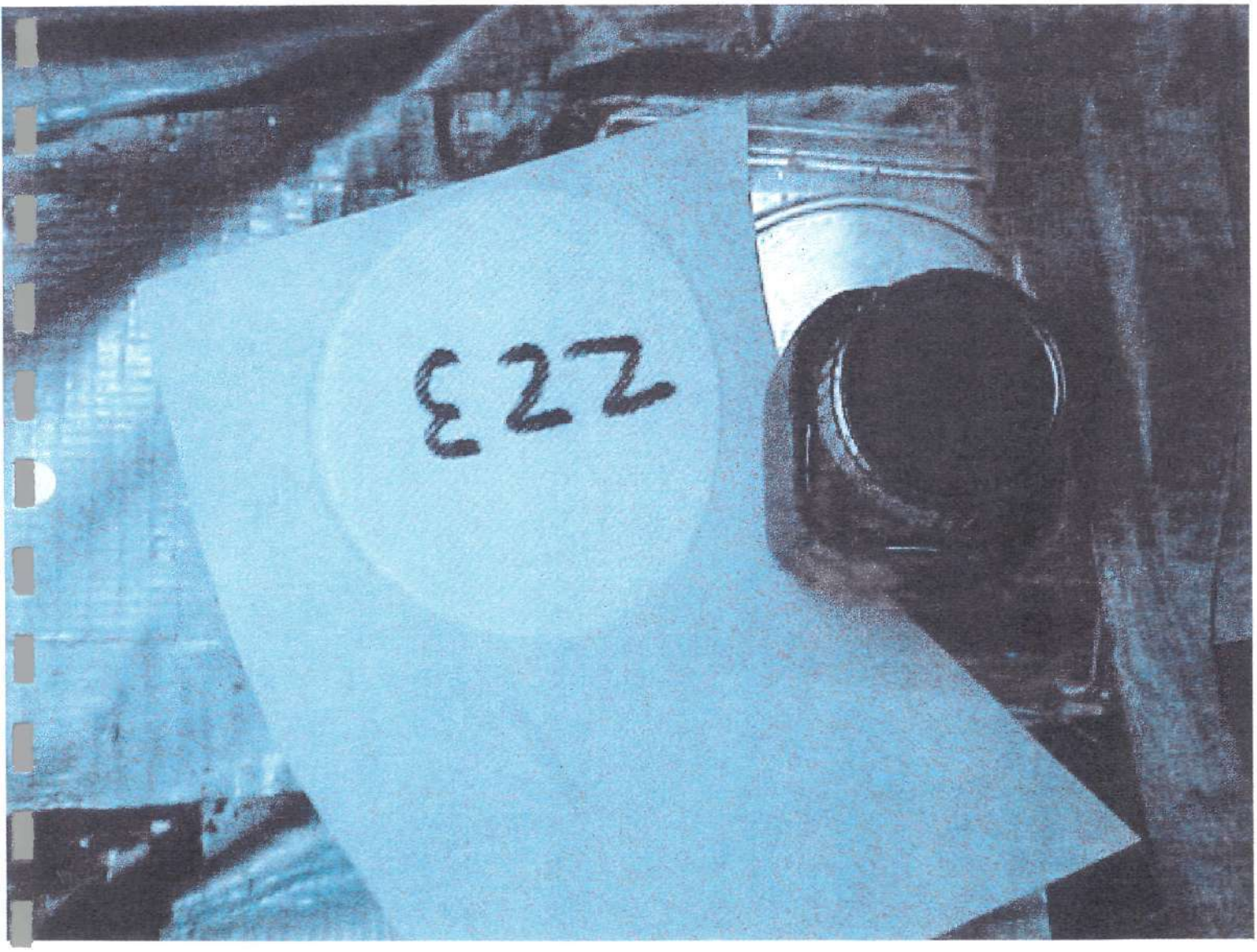
S222



Acquired: 4/19/2002 10:30:43 AM Real Time: 20.00 s. Live Time: 13.34 s.

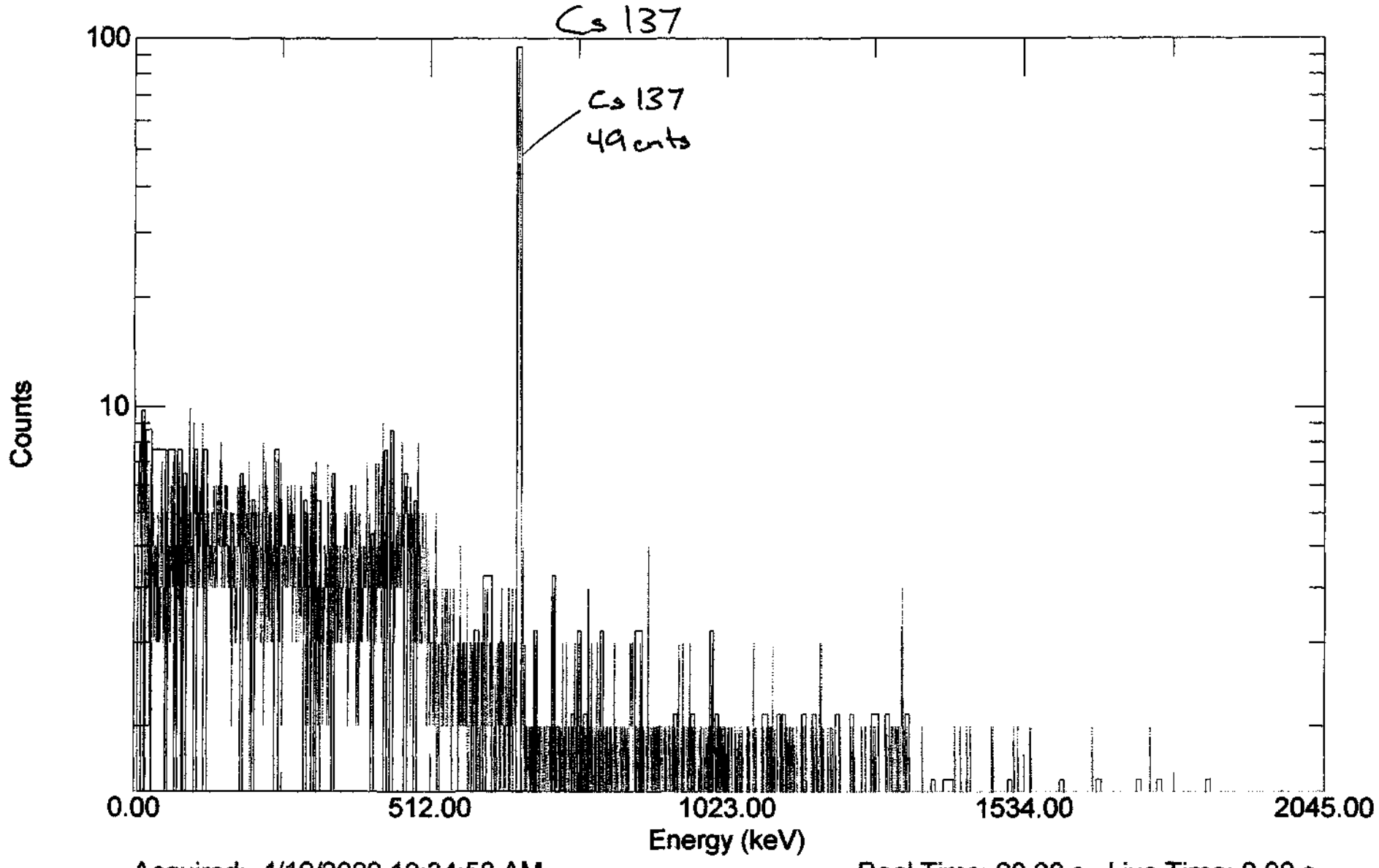
File: C:\User\GNIWEB~1\008 S222 4-19-2002 10.30.43 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


223

009 S223 4-19-2002 10.34.57 AM

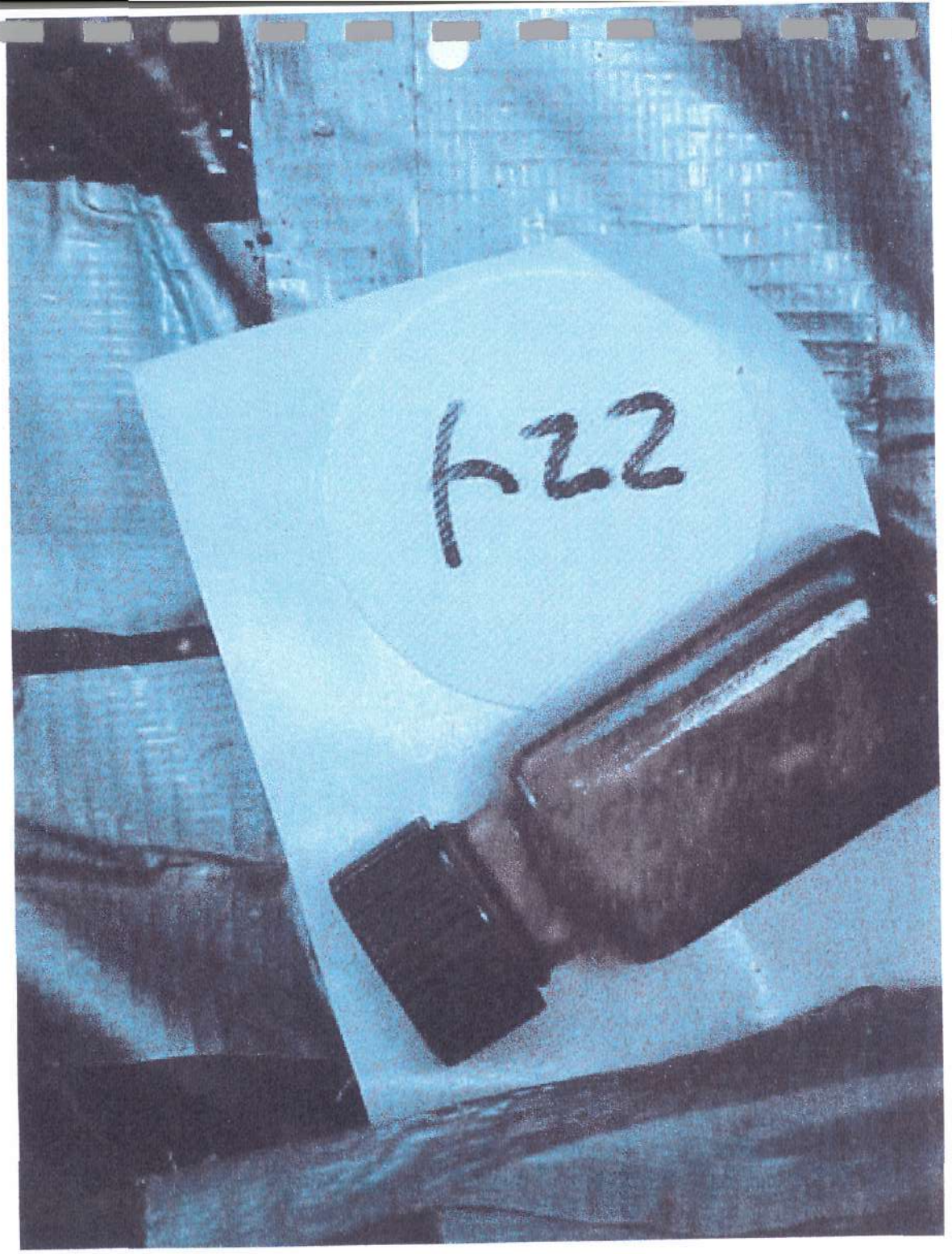
S223



Acquired: 4/19/2002 10:34:58 AM Real Time: 20.00 s. Live Time: 0.00 s.

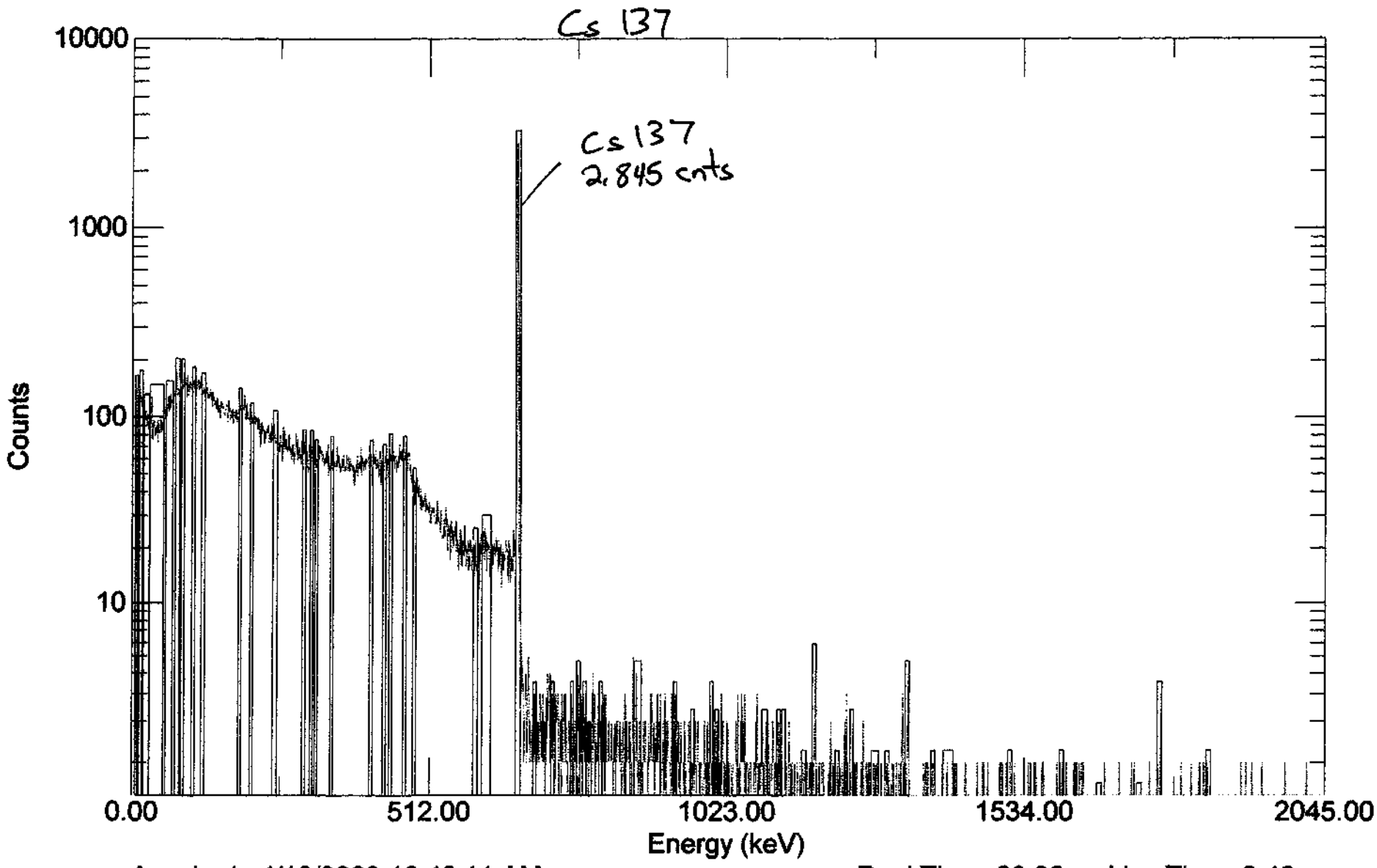
File: C:\User\GNIWEB~1\009 S223 4-19-2002 10.34.57 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


f22

010 S224 4-19-z002 10.40.11 AM

S224



Acquired: 4/19/2002 10:40:11 AM Real Time: 20.00 s. Live Time: 9.46 s.

File: C:\User\GNIWEB~1\010 S224 4-19-2002 10.40.11 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-19-02 ~~4-19-02~~

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

Container #	225	226	227	228	229
External on pig in mR/hr	NO LID	23 mR	NO LID	70 MR	NO LID
External on pig Neutron mR/hr	<1	<1	<1	<1	<
Contact open pig mR/hr	8 R	150	130	160	800 MR
Beta on open pig mR/hr O/W	> 50R	1.4R	1 R	1.9R	12 R

Picture	✓	✓	✓	✓	✓
DIGET	✓	✓	✓	✓	✓

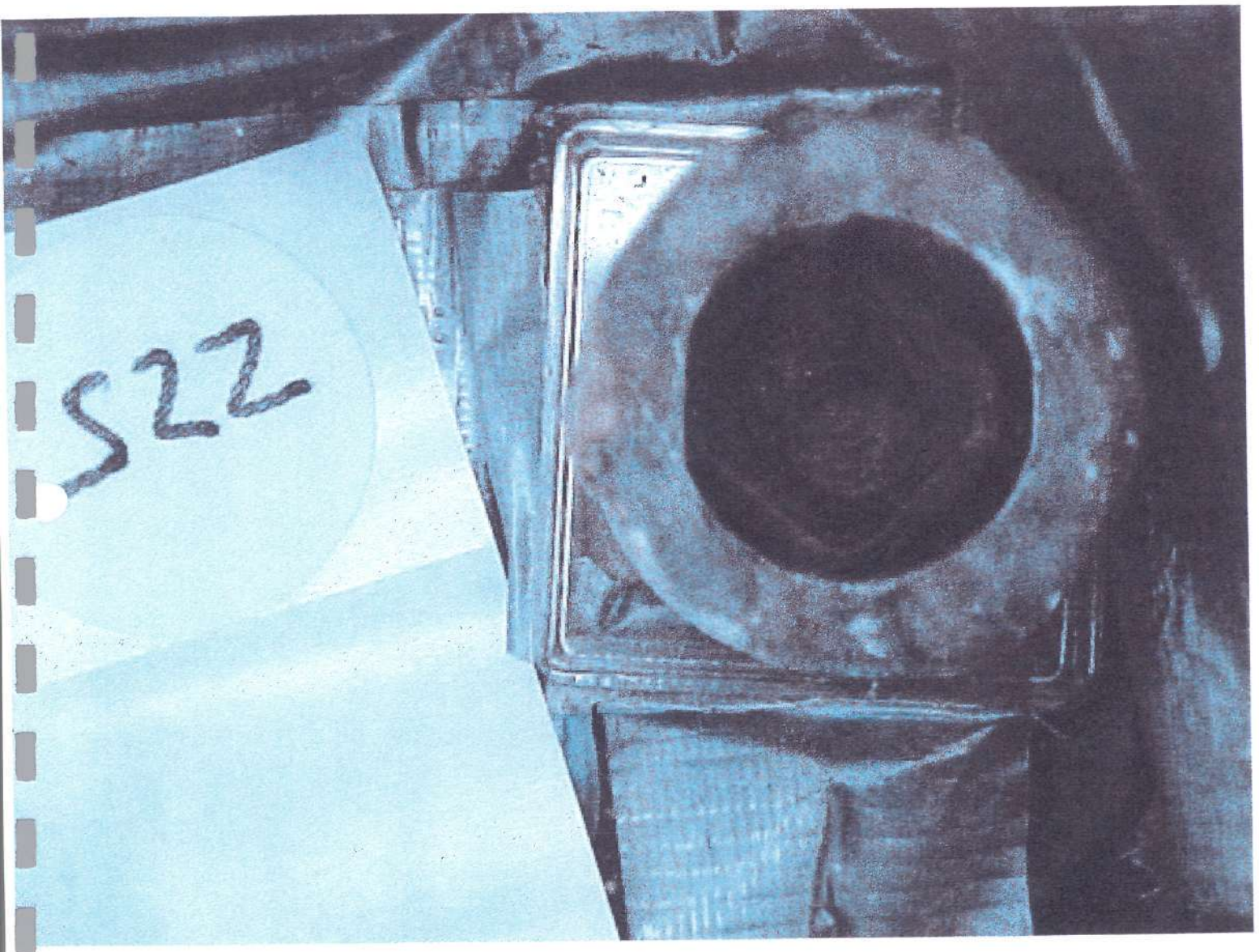
Table Readings

Source mR/hr @ 6 inchs	1.3R	84	120	540	260
Source mR/hr @ 12 inches	700	29	25	89	120
Source mR/hr @ 36 inches	95	9	3	15	10
Size of source in cc's	6 cc	20 cc	20 cc	10 cc	50 cc
Weight in grams	0.5 Lb	14 gm	15 gm	15 gm	300 gm

CPM Alpha	X	X	X	X	X
Direct Beta/Gamma					

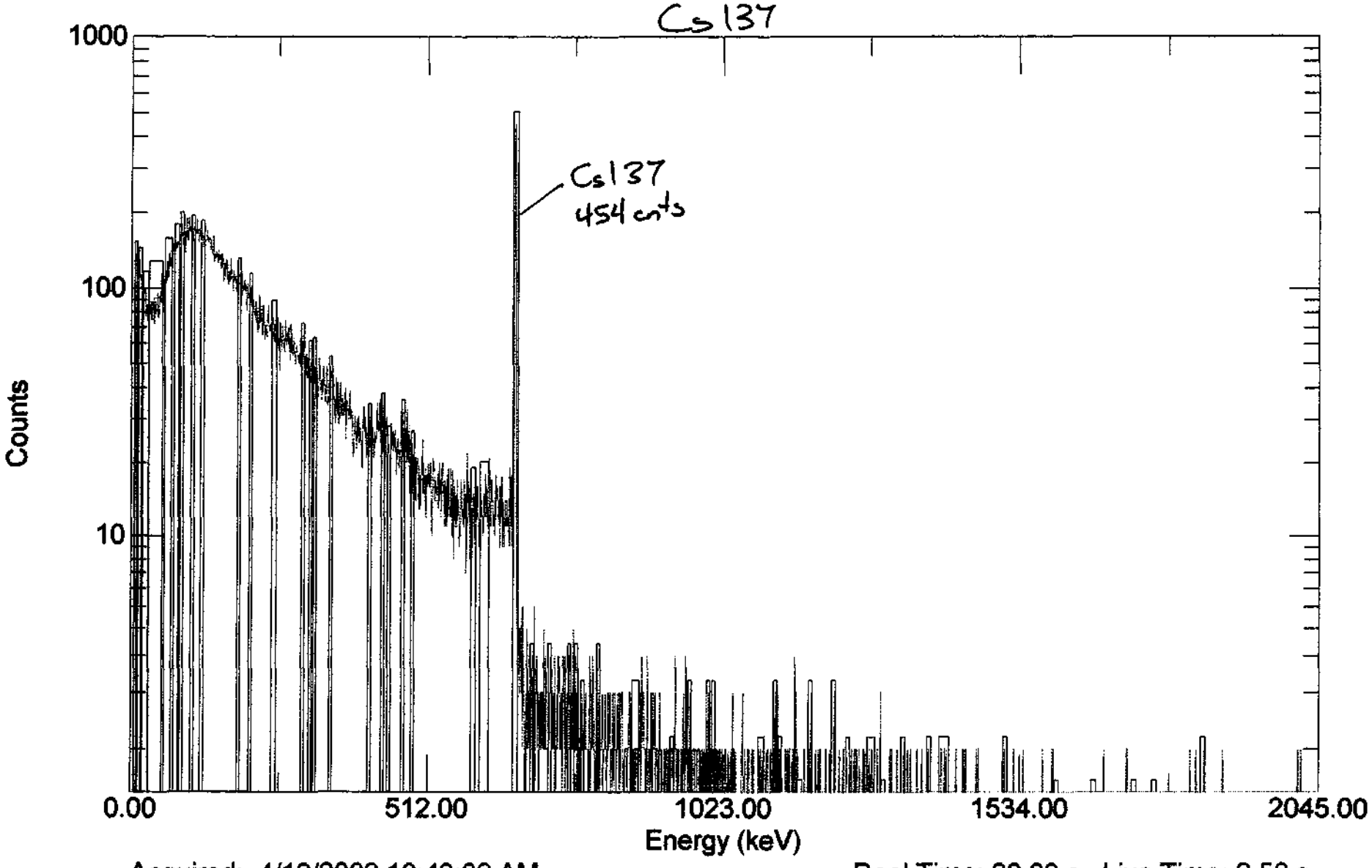
Info on source:	Streck glass	glass Bottle c̄ white cystrals Cs 137 10 uci -104	Bottle c̄ source	55 mci Cs 137 ~~[illegible]~~ on Bottle	

Information on pig:	NO LID				Short with Pig
OW Smear ~~DPM per 100 cm^2 Alpha~~	1000	90	280	80	1500
CW Smear ~~DPM per 100 cm^2 Beta~~	15	5	12	7	15
OW OPEN WINDOW RO20 CW CLOSED WINDOW RO20	Pig included in weight			source	


S22

011 S225 4-19-2002 10.43.09 AM

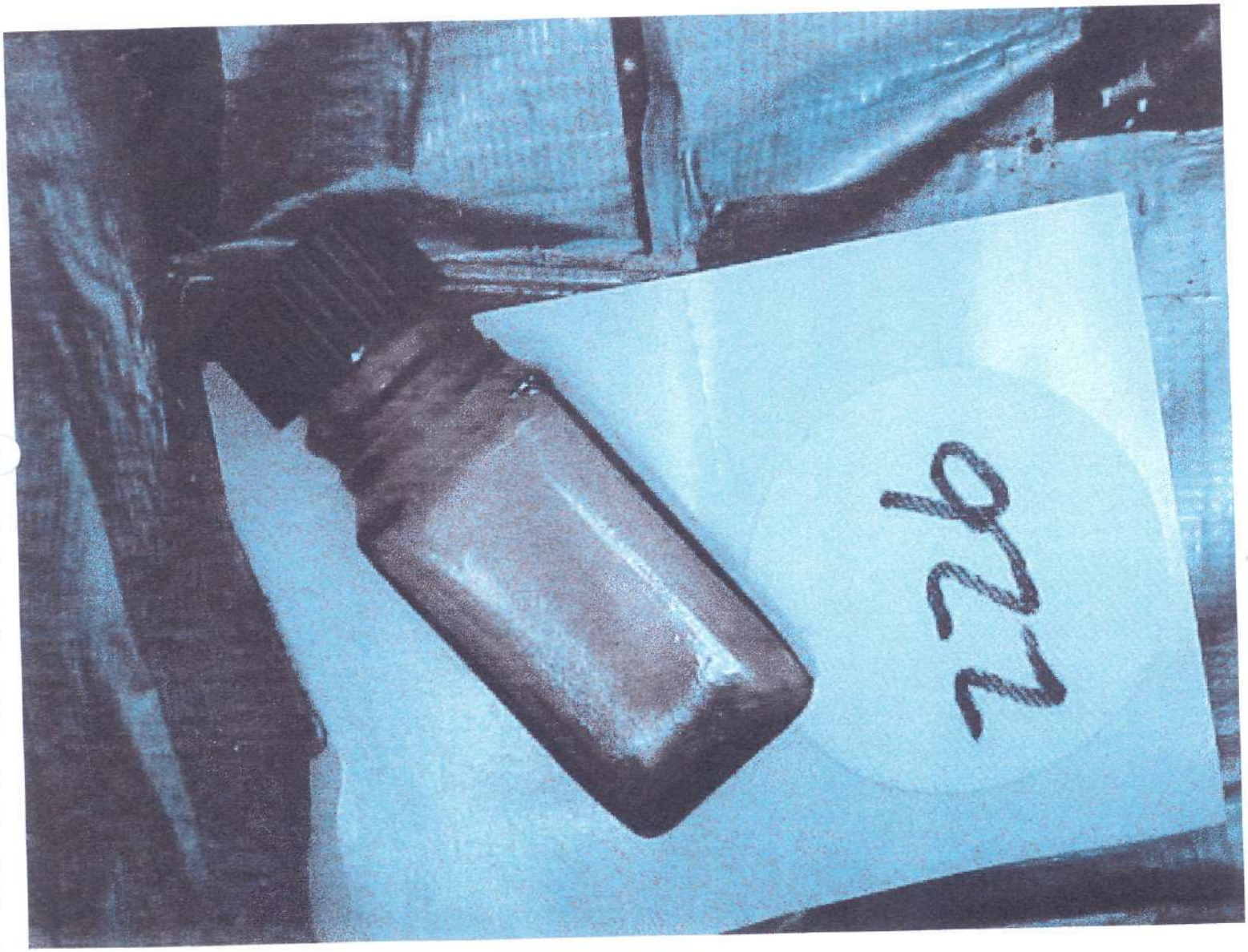
S225



Acquired: 4/19/2002 10:43:09 AM Real Time: 20.00 s. Live Time: 2.56 s.

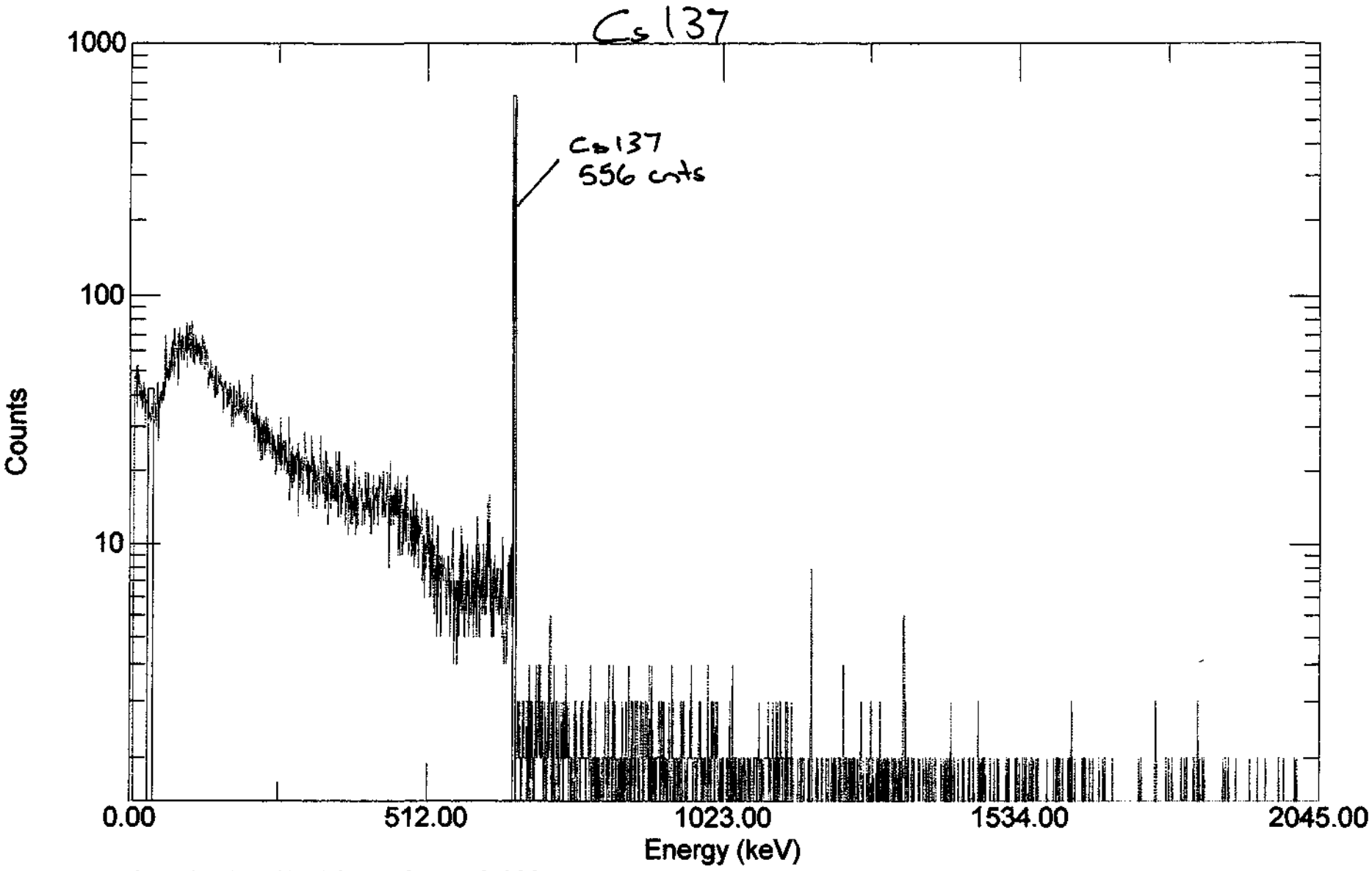
File: C:\User\GNIWEB~1\011 S225 4-19-2002 10.43.09 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


228

012 S226 4-19-2002 10.47.50 AM

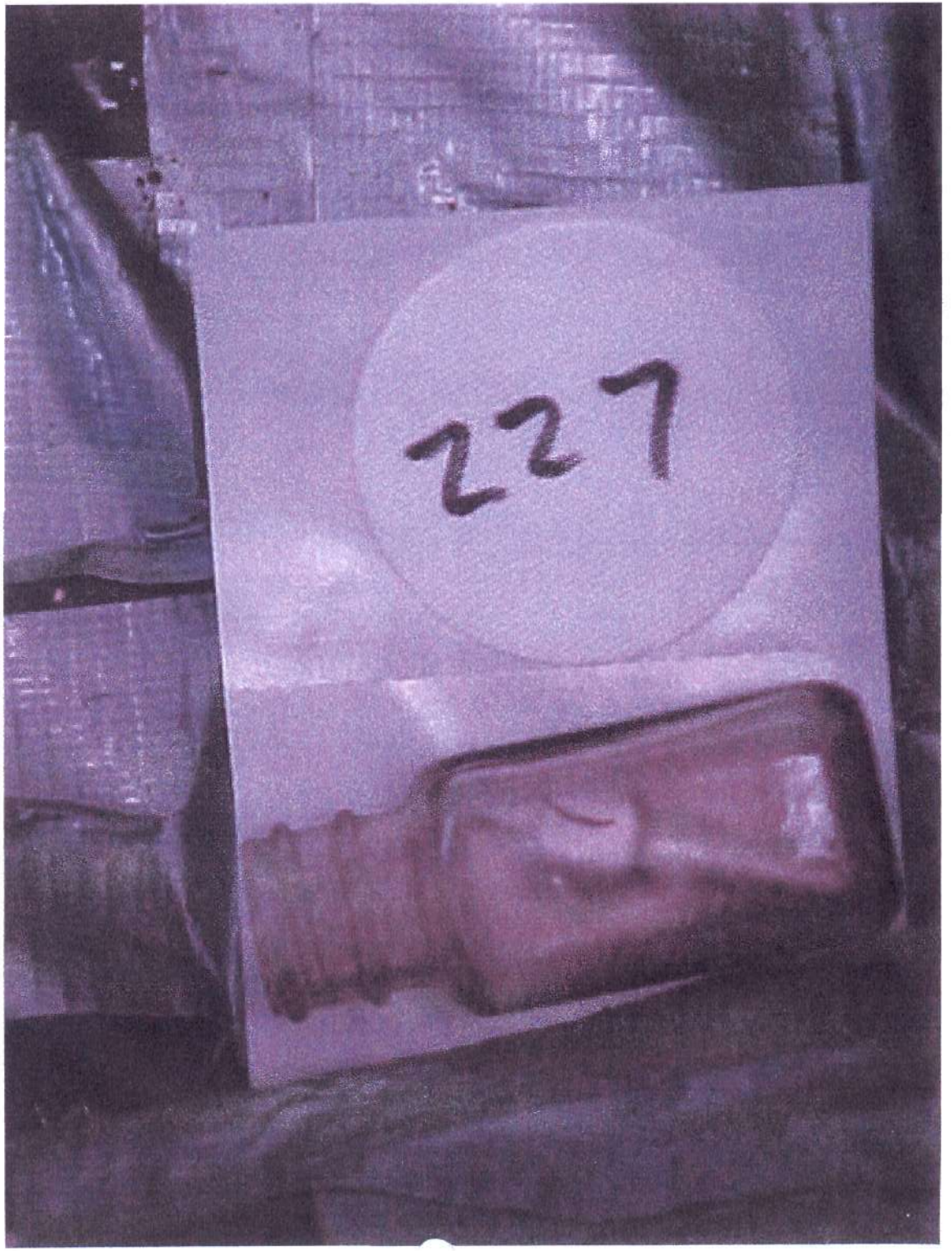
S226



Acquired: 4/19/2002 10:47:50 AM Real Time: 20.00 s. Live Time: 17.60 s.

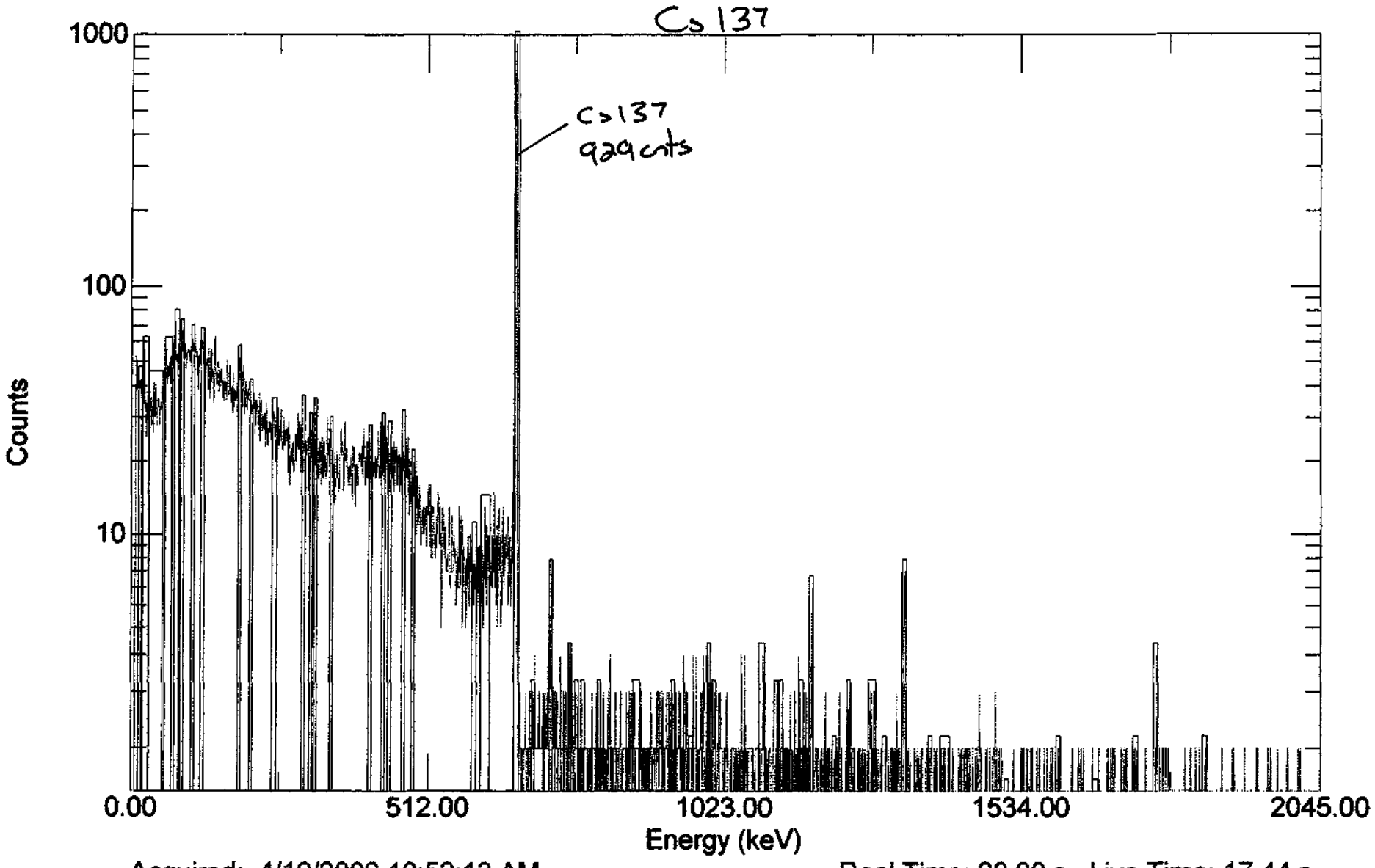
File: C:\User\GNIWEB~1\012 S226 4-19-2002 10.47.50 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


227

013 S227 4-19-2002 10.52.13 AM

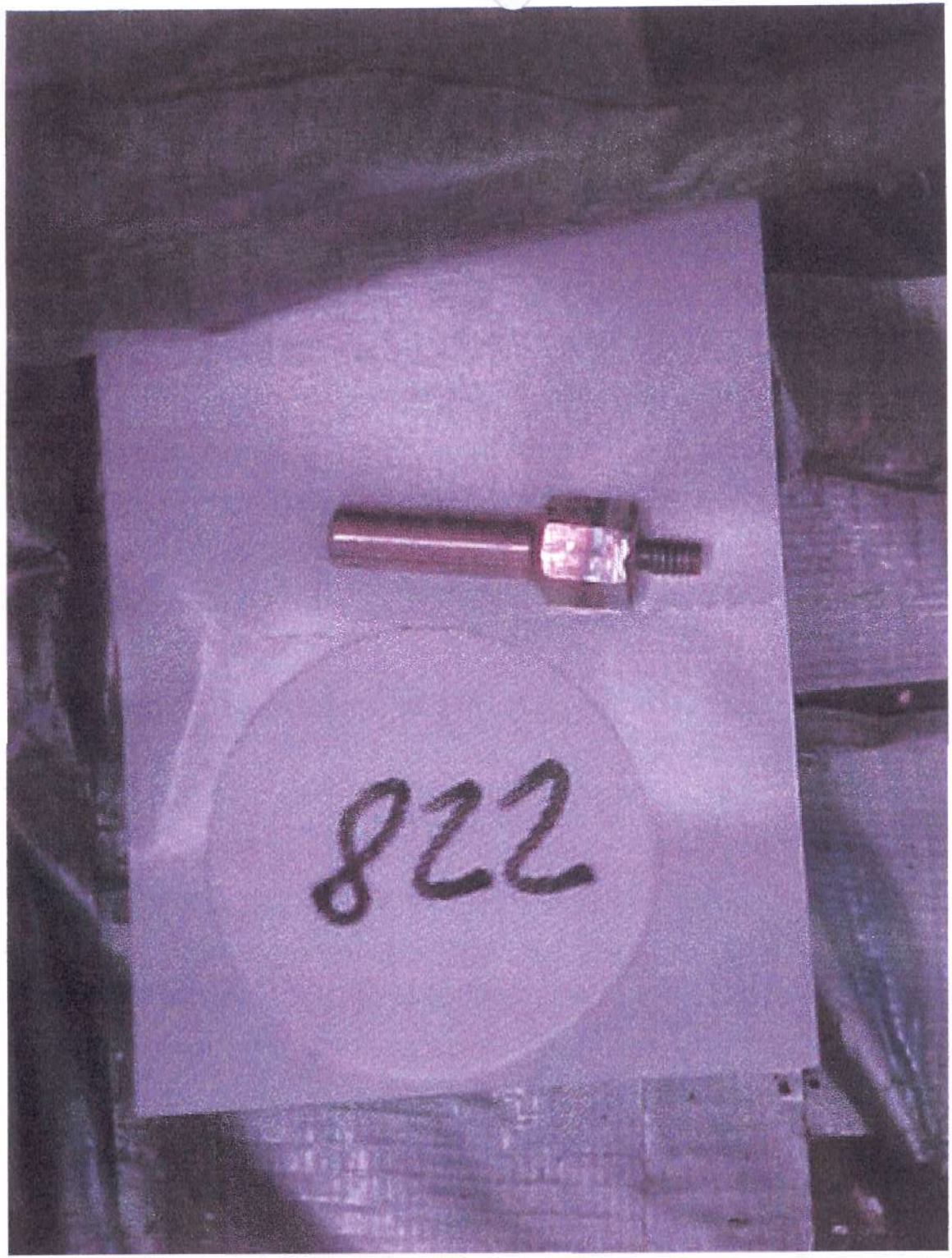
S227



Acquired: 4/19/2002 10:52:13 AM Real Time: 20.00 s. Live Time: 17.44 s.

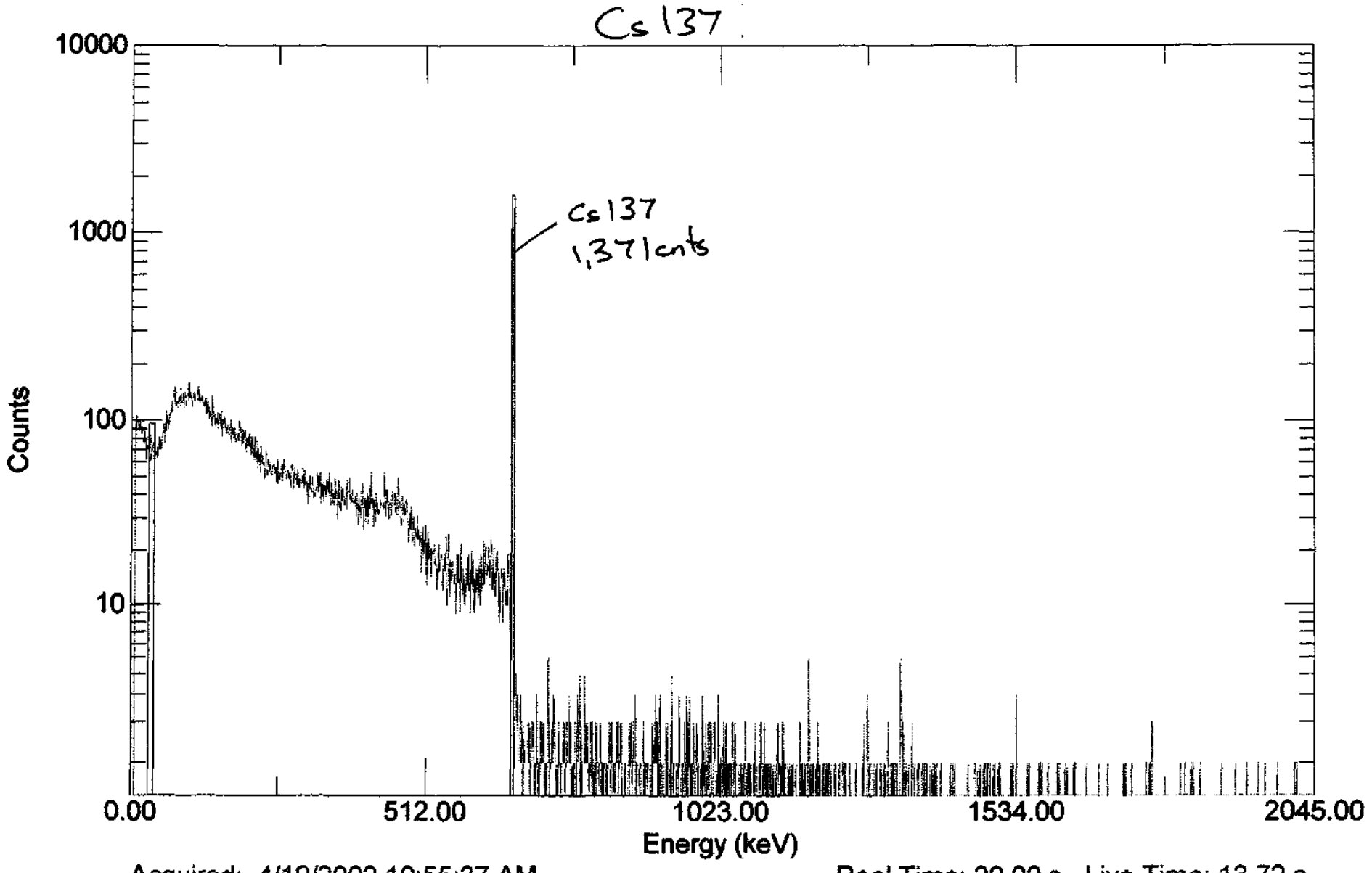
File: C:\User\GNIWEB~1\013 S227 4-19-2002 10.52.13 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b


822

014 S228 4-19-2002 10.55.38 AM

S228



Acquired: 4/19/2002 10:55:37 AM Real Time: 20.00 s. Live Time: 13.72 s.

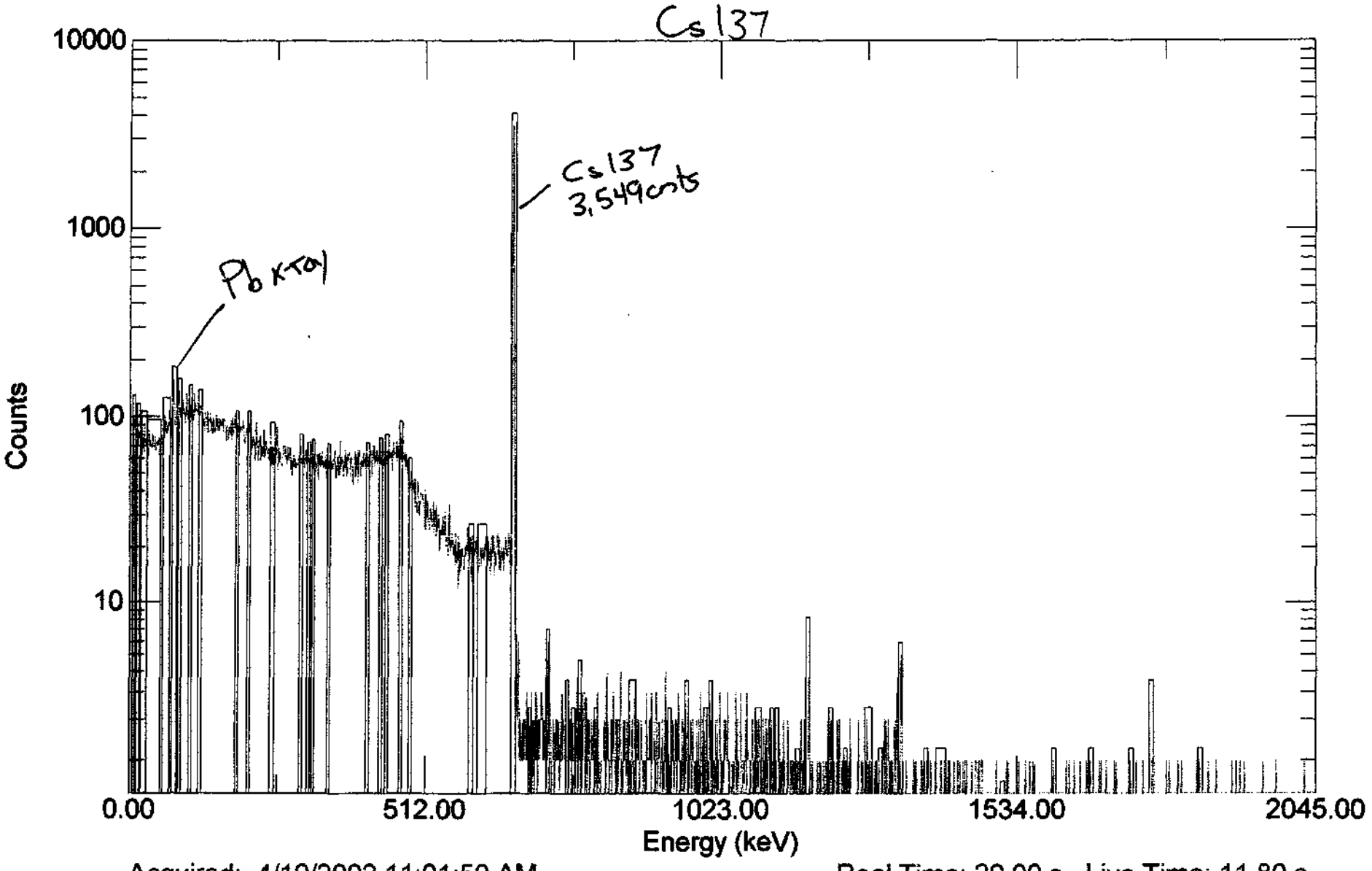
File: C:\User\GNIWEB~1\014 S228 4-19-2002 10.55.38 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

229

015 S229 4-19-2002 11.01.50 AM

S229



Acquired: 4/19/2002 11:01:50 AM Real Time: 20.00 s. Live Time: 11.80 s.

File: C:\User\GNIWEB~1\015 S229 4-19-2002 11.01.50 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 4-19-02

BKG	mR/hr
6"	0.2
12"	0.2
36"	0.2

Container #	230	231	232		
External on pig in mR/hr	40mR	N.L. ~~47mR~~	10		
External on pig Neutron mR/hr	<1	<1	<1		
Contact open pig mR/hr	42	700	450		
Beta on open pig mR/hr O/W	300	15R	13R		

Picture	✓	✓	✓		
DIGET	✓	✓	✓		

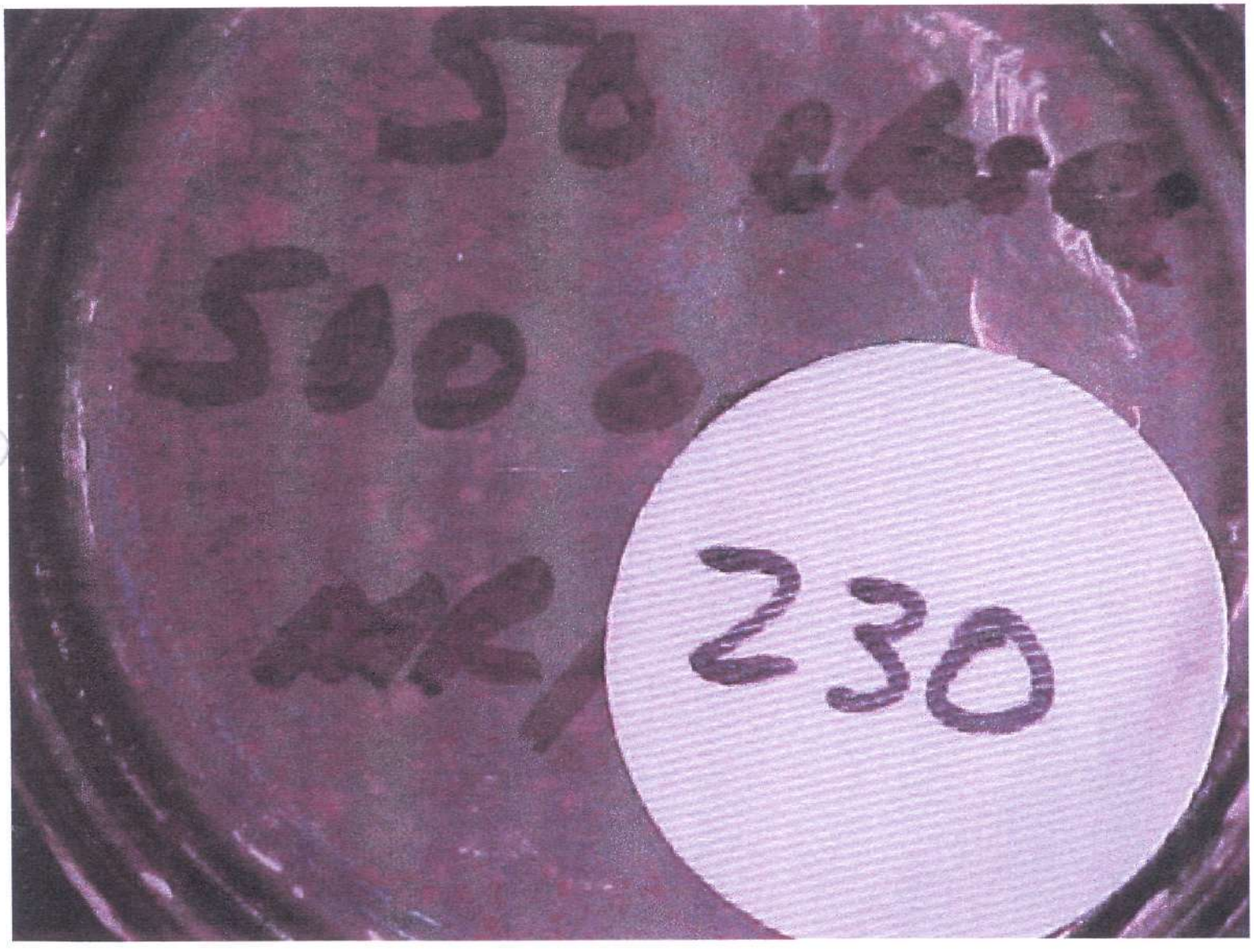
Table Readings

Source mR/hr @ 6 inchs	55	290	350		
Source mR/hr @ 12 inches	15	60	70		
Source mR/hr @ 36 inches	3	10	6		
Size of source in cc'	20cc	75cc	75cc		
Weight in grams	2Lb	2Lb	3L		

CPM Alpha					
Direct Beta/Gamma	X	X	X		

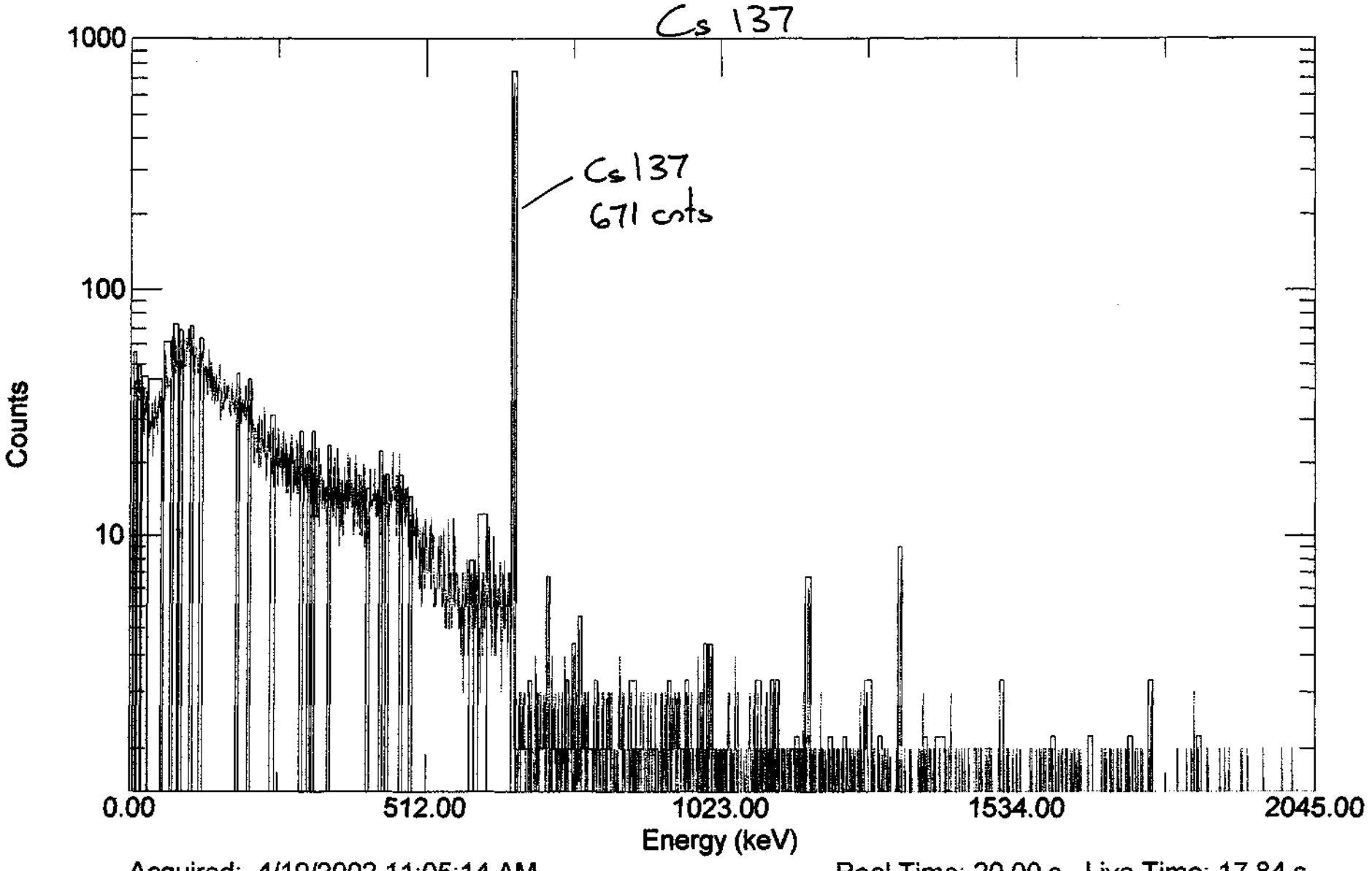
Info on source:	CAN AS IS	PAPER towels paint brush			

	Information on pig:	NO pig				
OW	Smear ~~DPM per 100 cm^2 Alpha~~	250		300		
CW	Smear ~~DPM per 100 cm^2 Beta~~	12		10		
	OW OPEN WINDOW R020 CW CLOSED WINDOW R020					


230

016 S230 4-19-2002 11.05.14 AM

S230



Acquired: 4/19/2002 11:05:14 AM Real Time: 20.00 s. Live Time: 17.84 s.

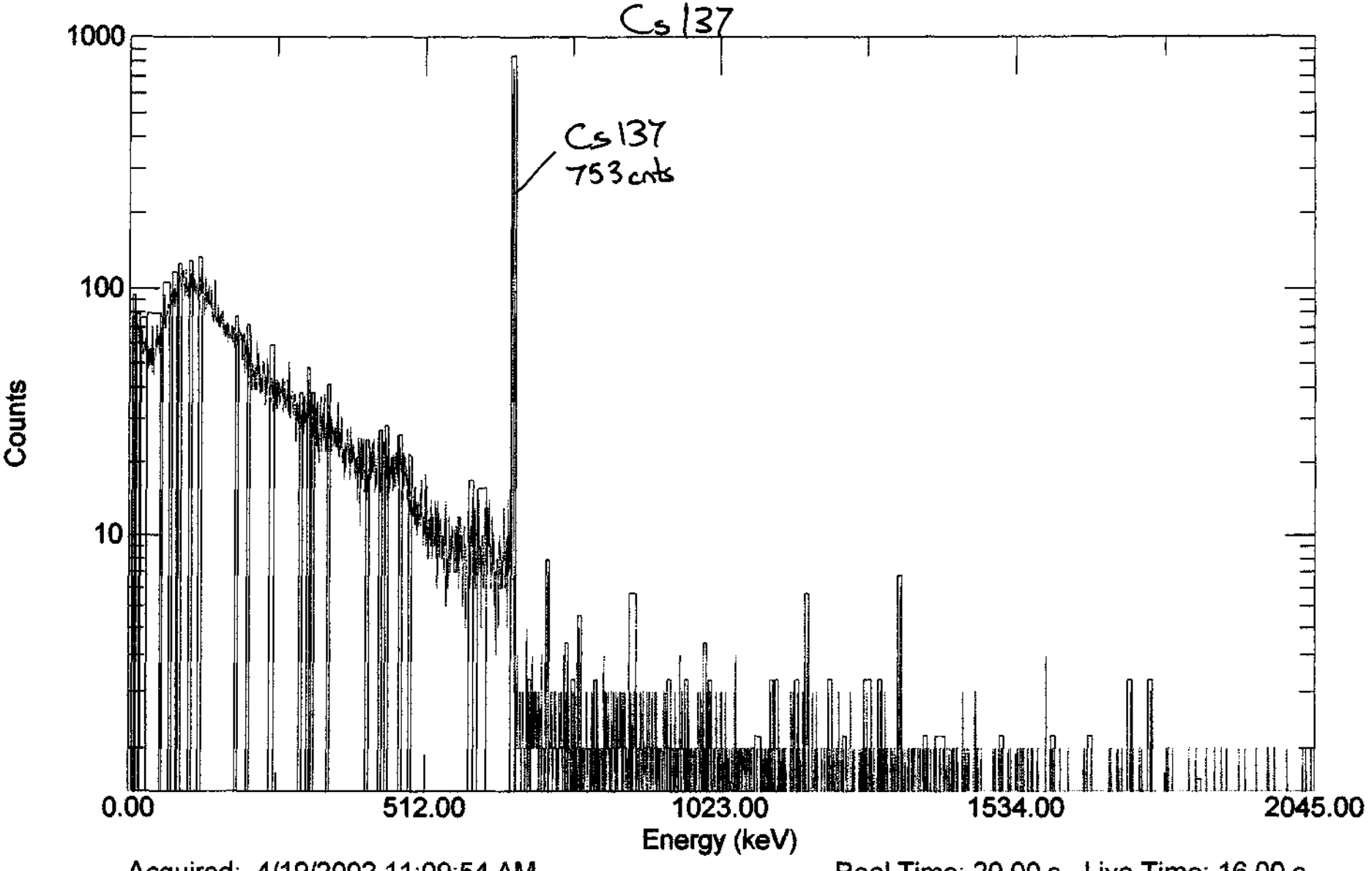
File: C:\User\GNIWEB~1\016 S230 4-19-2002 11.05.14 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

231

017 S231 4-19-2002 11.09.54 AM

S231



Acquired: 4/19/2002 11:09:54 AM Real Time: 20.00 s. Live Time: 16.00 s.

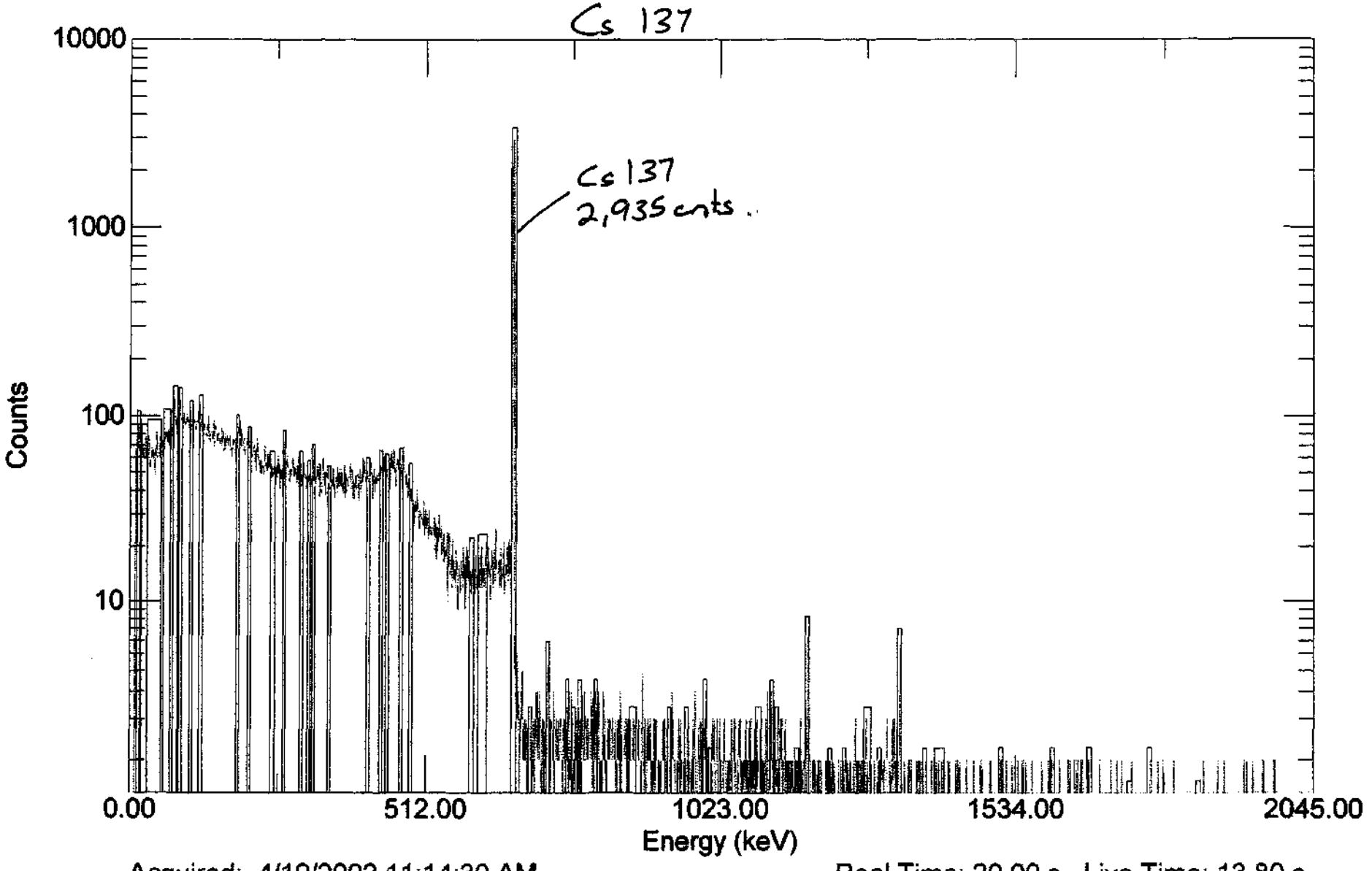
File: C:\User\GNIWEB~1\017 S231 4-19-2002 11.09.54 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

232

018 S232 4-19-2002 11.14.29 AM

S232



Acquired: 4/19/2002 11:14:30 AM Real Time: 20.00 s. Live Time: 13.80 s.

File: C:\User\GNIWEB~1\018 S232 4-19-2002 11.14.29 AM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 5-22-02

SOURCES BLDG 1 RM 10

BKG	mR/hr
6"	
12"	0 - 2
36"	

Container #	233	234	235	236	237
External on pig in mR/hr	NO PIG	NO PIG	NO PIG	NO PIG	NO PIG
External on pig Neutron mR/hr	↓ <0.1	<0.1	<1	<1	<1
Contact open pig mR/hr	0.2	0.2	8	0.2	0.2
Beta on open pig mR/hr O/W	0.2	0.4	40	0.4	0.4

Picture	—	✓	✓	✓	✓

Table Readings

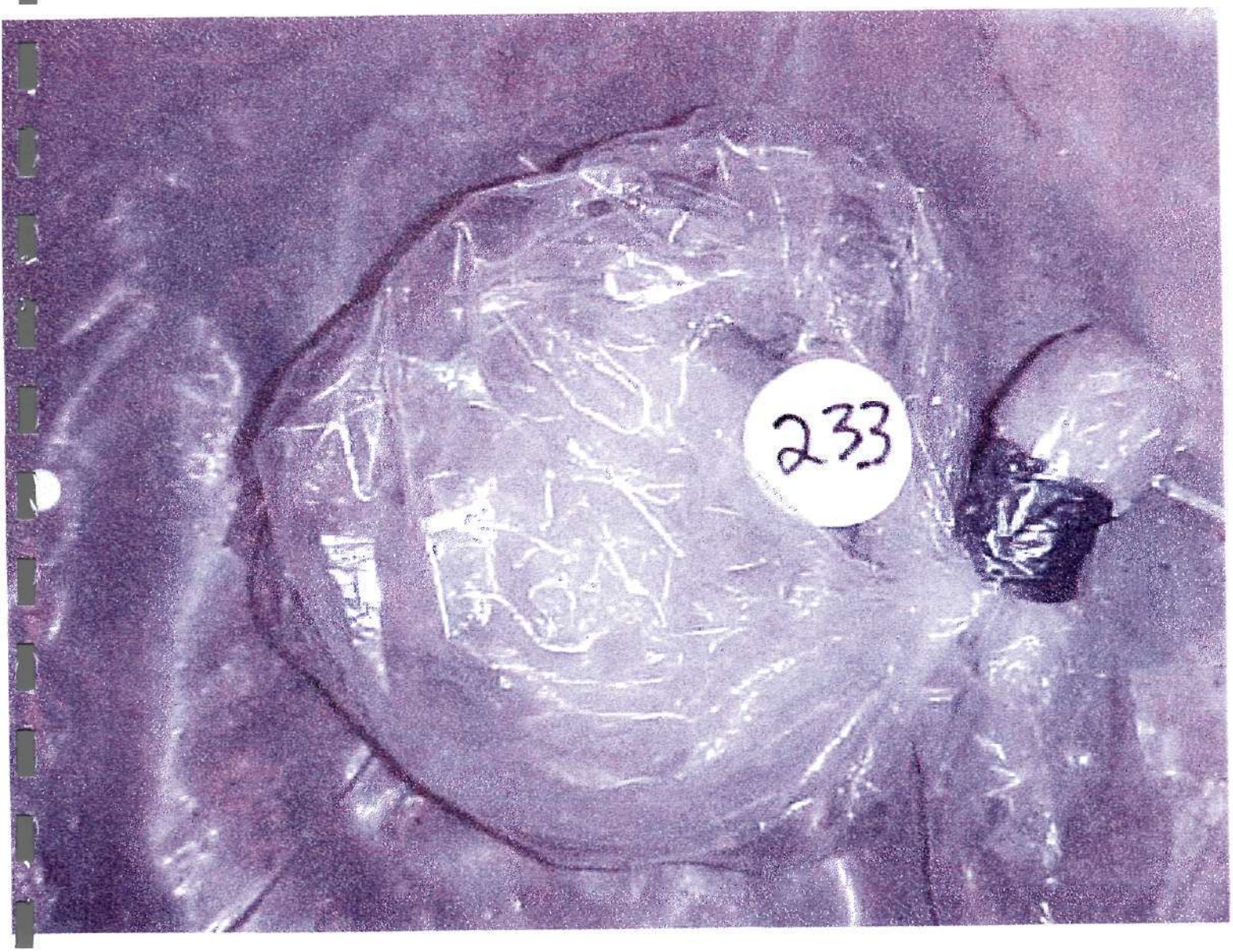
Source mR/hr @ 6 inchs	<0.2	<0.2	0.2	<0.2	<0.2
Source mR/hr @ 12 inches	↓	↓	0.4	↓	↓
Source mR/hr @ 36 inches			<0.2		
Size of source in cc's	100cc	400cc	50 cc	850 cc	850 cc
Weight in grams	45 gm	40 gm	20 gm	1 Lb	1 lb

CPM Alpha					
Direct Beta/Gamma	1000	2000		3000	~~3000~~

Info on source:	CAUTION RADMAT STD CATALOG H3 ISOTOPE	NO INFO	PAPER ~~PACKAGES~~ PACKAGES FULL OF SOURCE	H3 "WET" CARD BOARD Round CONTAINER →	H3 "WET" CARD BOA

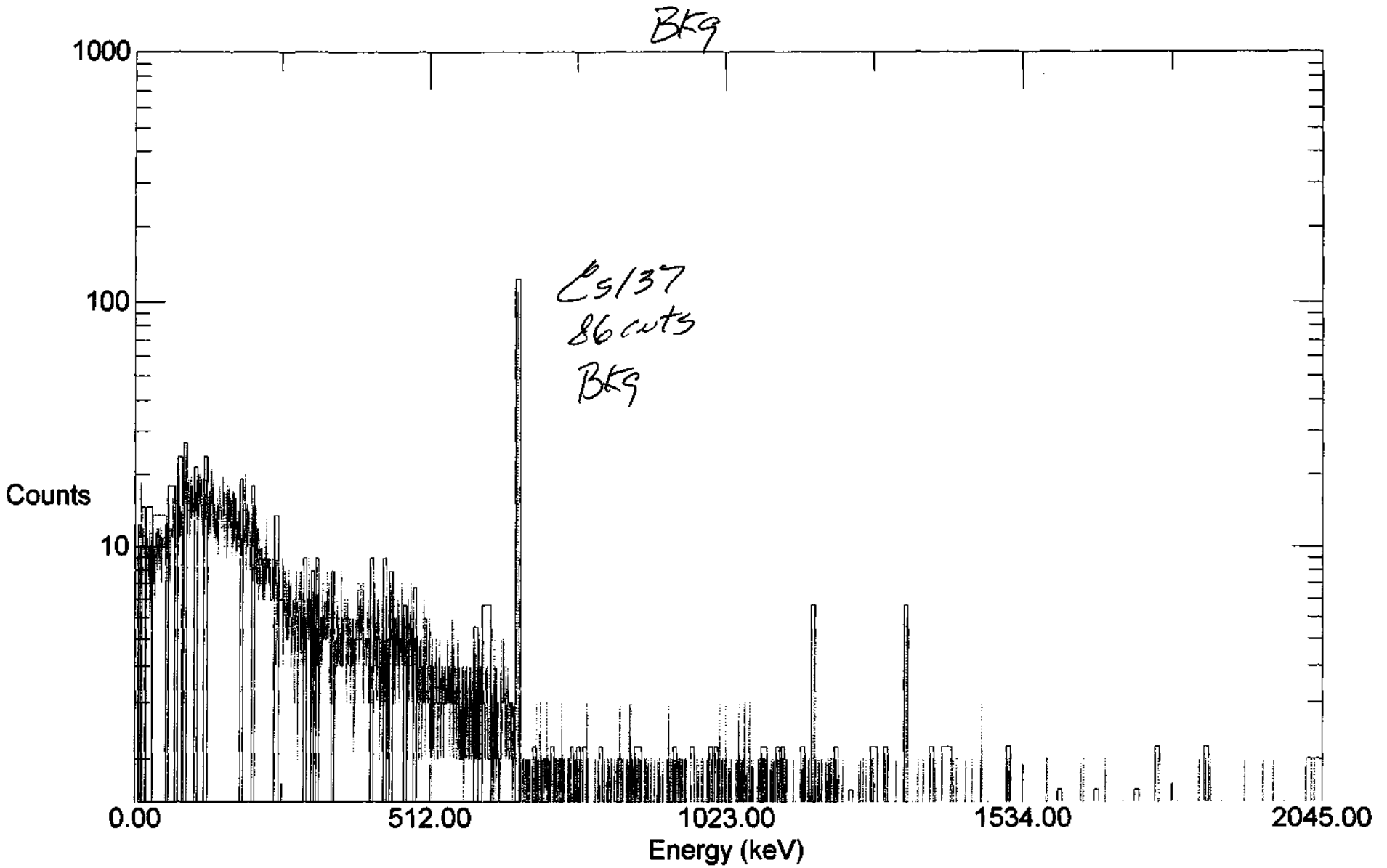
Information on pig:	CAN with SOME thing	tin CAN & BAG I/S BAGGED			~~LEAD PIG & WRITTING: VERY Highly Conta~~
Smear DPM per 100 cm^2 Alpha	310	200	2K		
Smear DPM per 100 cm^2 Beta	BKG	BKG.	2K		
	smaller solid NO Pig				

BKG B/γ 400 counts/m
α 5 cpm


233

040 Sour-233 6-18-2002 1.36.51 PM

S-233



Acquired: 6/18/2002 1:36:51 PM Real Time: 20.00 s. Live Time: 19.42 s.

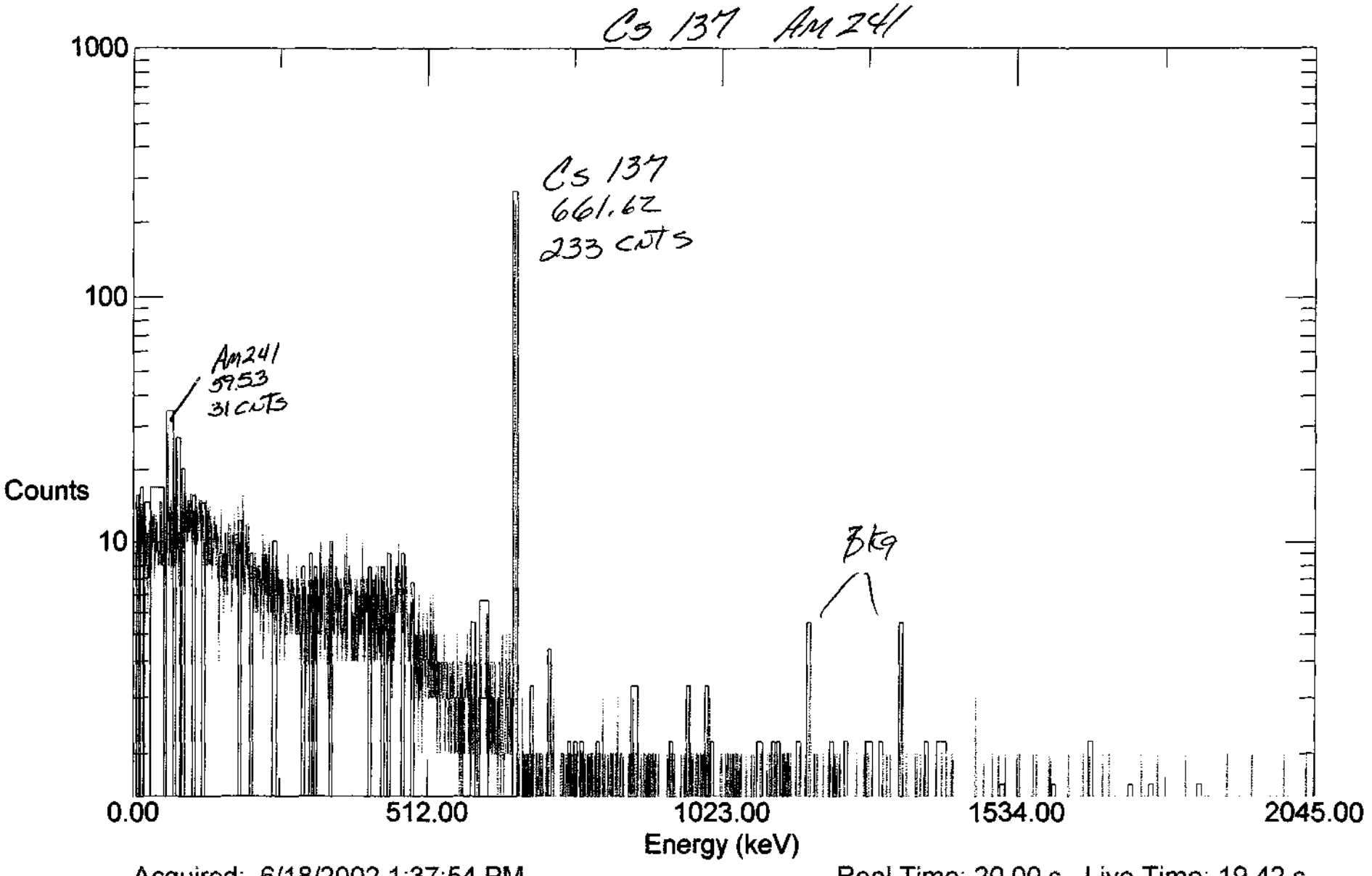
File: C:\User\GNIWEB~1\040 Sour-233 6-18-2002 1.36.51 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

234

041 Sour-234 6-18-2002 1.37.55 PM

S-234



Acquired: 6/18/2002 1:37:54 PM Real Time: 20.00 s. Live Time: 19.42 s.

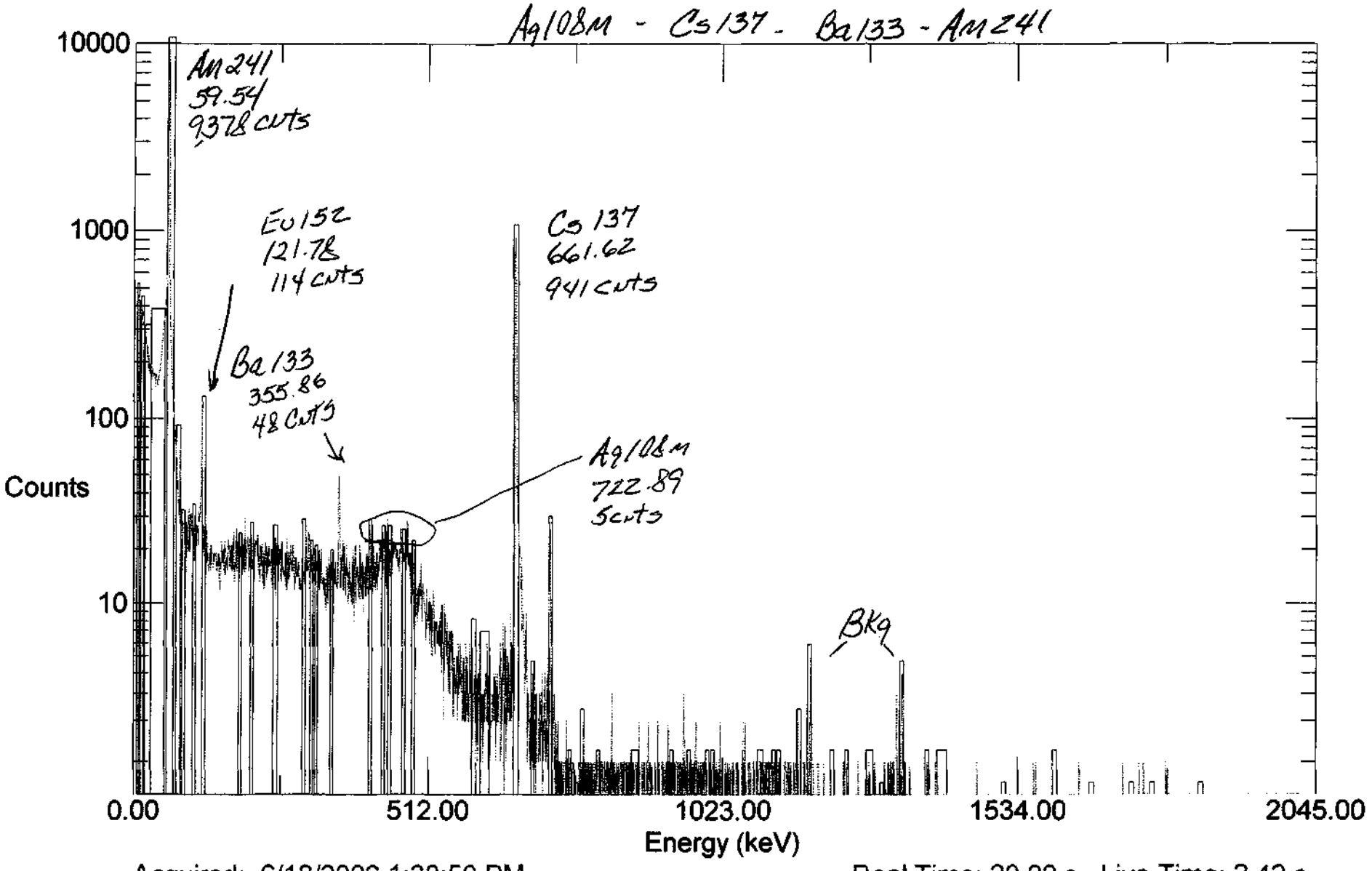
File: C:\User\GNIWEB~1\041 Sour-234 6-18-2002 1.37.55 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

235

042 Sour-235 6-18-2002 1.38.50 PM

S-235



Acquired: 6/18/2002 1:38:50 PM Real Time: 20.00 s. Live Time: 2.42 s.

File: C:\User\GNIWEB~1\042 Sour-235 6-18-2002 1.38.50 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 5-22-02

Sources Rm 10 B1D61

BKG	mR/hr
6"	
12"	0.2
36"	

Container #	236	239	~~238~~	240	238
External on pig in mR/hr	NO Pig	NO Pig	NO PIG	NO PIG	NO LID
External on pig Neutron mR/hr	~~0.2~~ <1	<1	~~0.2~~	<1	<1
Contact open pig mR/hr	<0.2	NO DOSE	~~0.2~~	0.2	1 MR ON TOP
Beta on open pig mR/hr O/W	1.5		~~1.5~~	15	2 MR
Picture	—	✓		✓	✓

Table Readings

Source mR/hr @ 6 inchs	<0.2	<0.2		<0.2	0.2
Source mR/hr @ 12 inches	↓	↓		↓	↓
Source mR/hr @ 36 inches	↓	↓		↓	↓
Size of source in cc's	190 cc	40cc		500cc	CANT SEE T/S with pig
Weight in grams	224 gm	24 g		1 Lb	25Lb
CPM Alpha					
Direct Beta/Gamma	3000	3000			
Info on source:	~~GAF~~ WOOD CASE PLASTIC DISC TAPED UP cylinder + taped up ROCK	2 Bottles URETHANE & CATALYST		LOTS OF Little METAL CAPS SPONGE 1 GAL Paint	
Information on pig:	LIKE thing hot at ONE END	1 BROWN Gel SYRUP	PIG SAYS VERY highly CONTAM.	CAN SPONGE LAB-glass NEL	TYPE Y PIG NO ~~LEAD~~ LID
Smear DPM per 100 cm^2 Alpha					14K
Smear DPM per 100 cm^2 Beta					12K
	NO PIG	1 white	ALPHA	NEW ENGLAND LAB 150KB <50α	HAND WRITTEN "VERY Highly contaminated ALPHA"

BK BKg 400 cpm
α β

Smear Survey Results

Model 2929 **S/N # 1716000** **Cal Due 7/14/02**

RWP GN03-002 **5/30/02** **Time** 1559

Location Sources #236,237,239,241

Survey # N/A

MDA Alpha DPM	MDA Beta DPM
7.6	68

BKG Alpha CPM	BKG Beta CPM
0.2	76.0

Alpha Eff 0.32

	2 Min CPM	DPM
236	1	0.9
237	23	35.3
239	224	349.4
241	261	407.2
105	2	2.5
106	1	1.0
107	5	7.2
108	10	15.0
109	2	2.5
110	1	0.9
111	2	2.5
112	1	0.9
113	2	2.5
114	0	-0.6
115	1	0.9
116	3	4.1
117	1	0.9
118	0	-0.6
119	0	-0.6
120	0	-0.6
121	0	-0.6
122	1	0.9
123	1	0.9
124	0	-0.6
125		-0.6

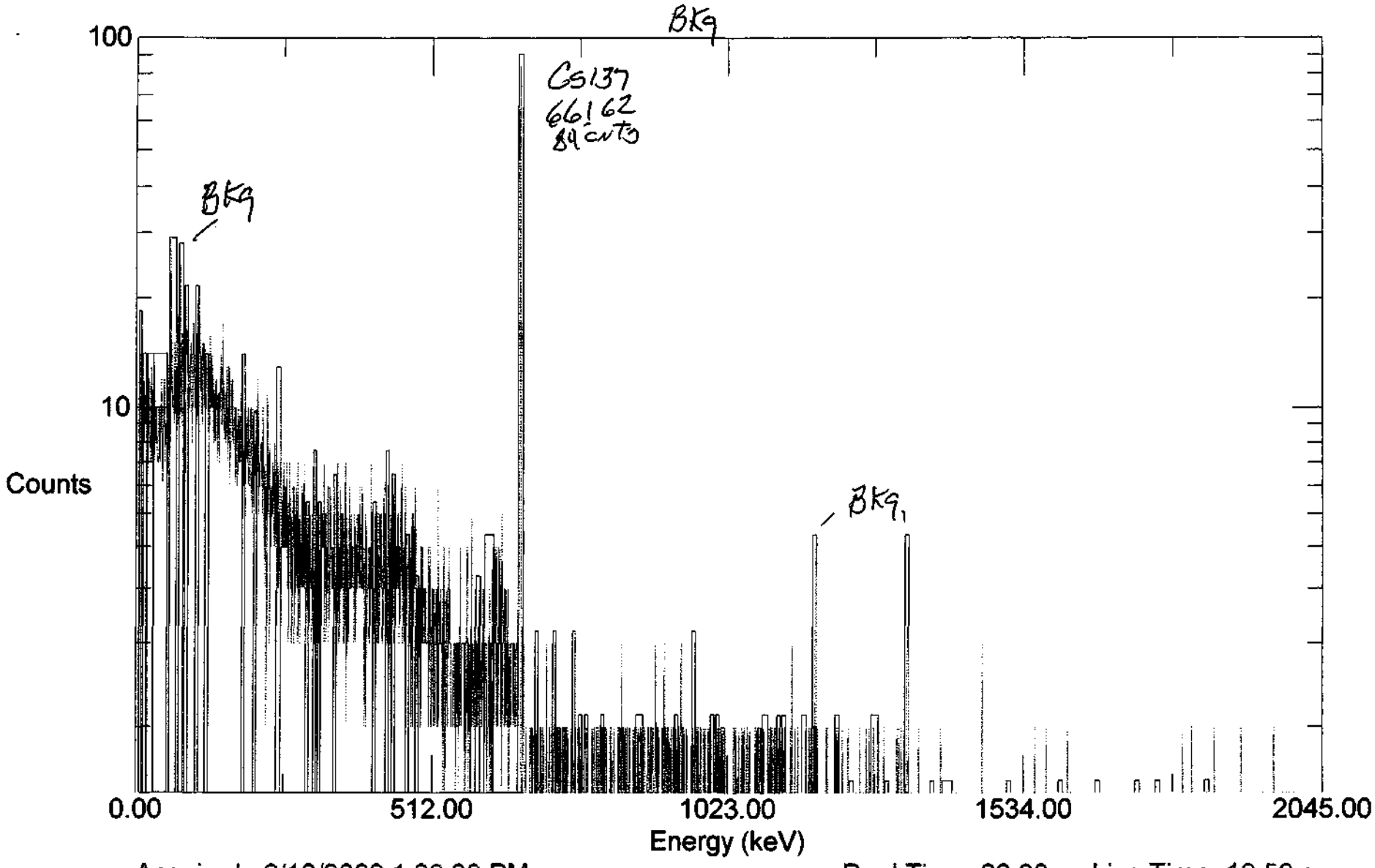
Beta/Gamma Eff 0.33

	2 Min CPM	DPM
236	173	31.8
237	371	331.8
239	1877	2,613.6
241	755	913.6
105	185	50.0
106	136	-24.2
107	165	19.7
108	321	256.1
109	133	-28.6
110	160	12.1
111	161	13.6
112	173	31.8
113	192	60.6
114	157	7.6
115	162	15.2
116	127	-37.9
117	158	9.1
118	187	53.0
119	169	25.8
120	159	10.6
121	138	-21.2
122	162	15.2
123	160	12.1
124	154	3.0
125		-230.3

236

043 Sour-236 6-18-2002 1.39.40 PM

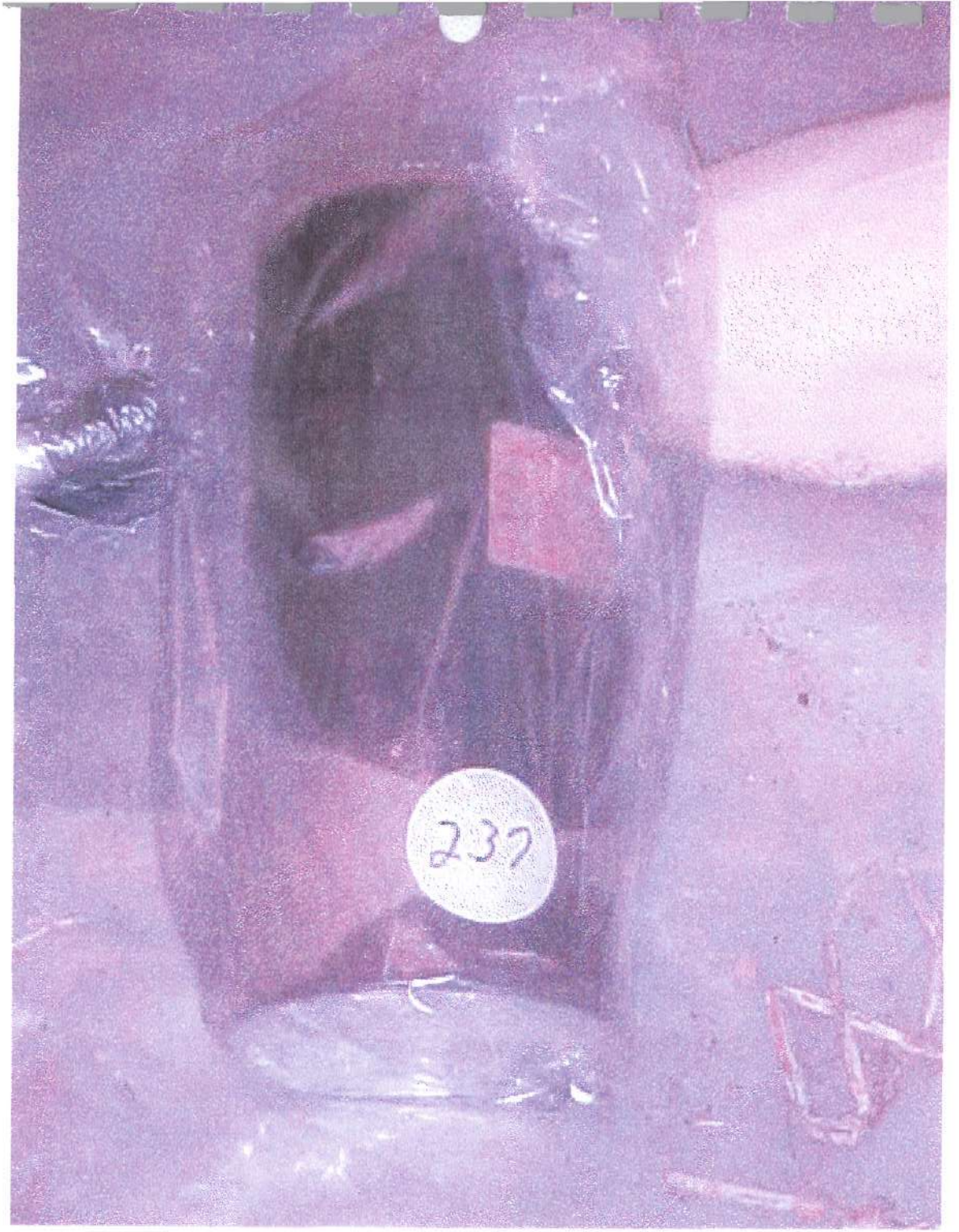
S-236



Acquired: 6/18/2002 1:39:39 PM Real Time: 20.00 s. Live Time: 19.56 s.

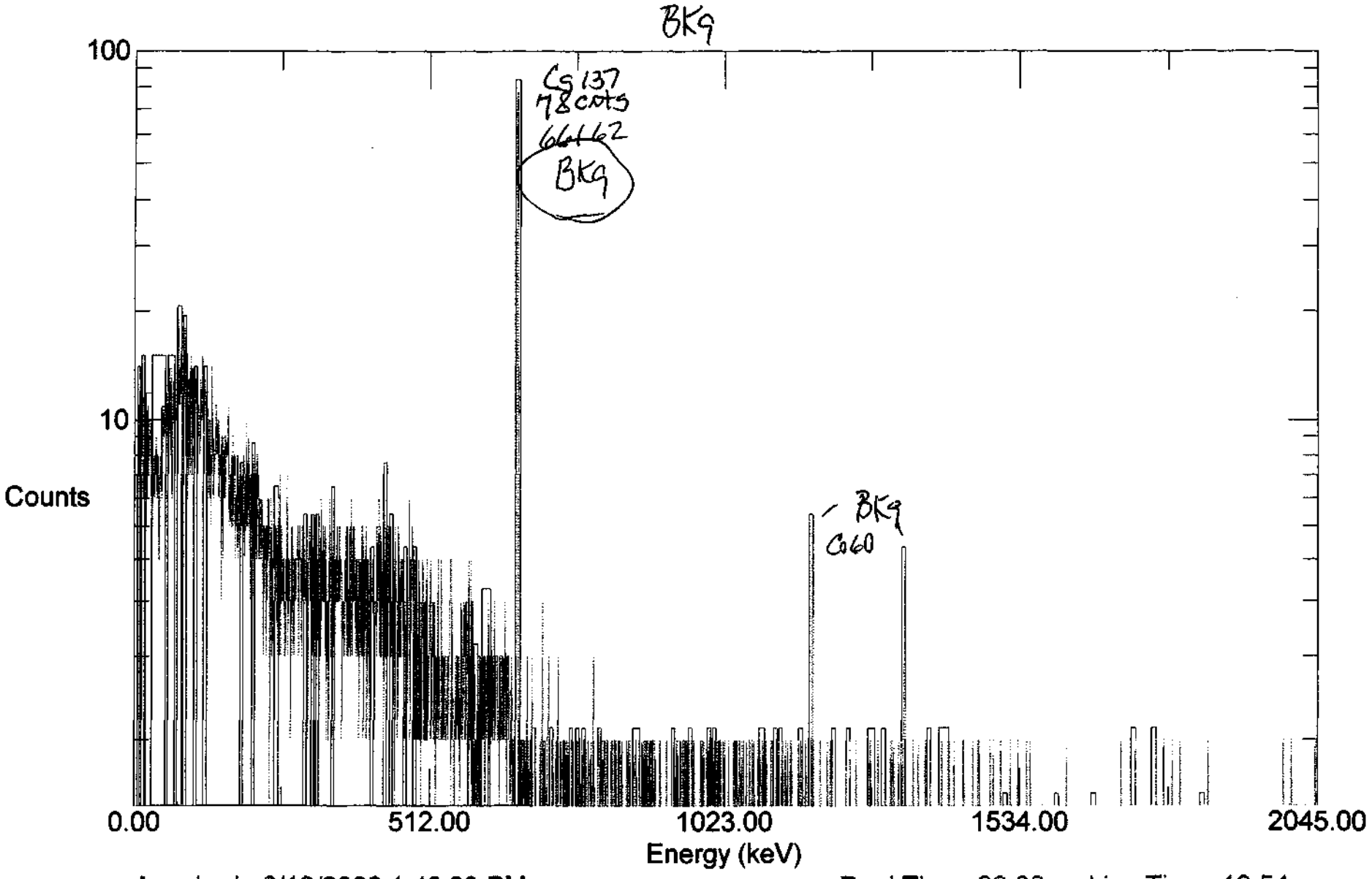
File: C:\User\GNIWEB~1\043 Sour-236 6-18-2002 1.39.40 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

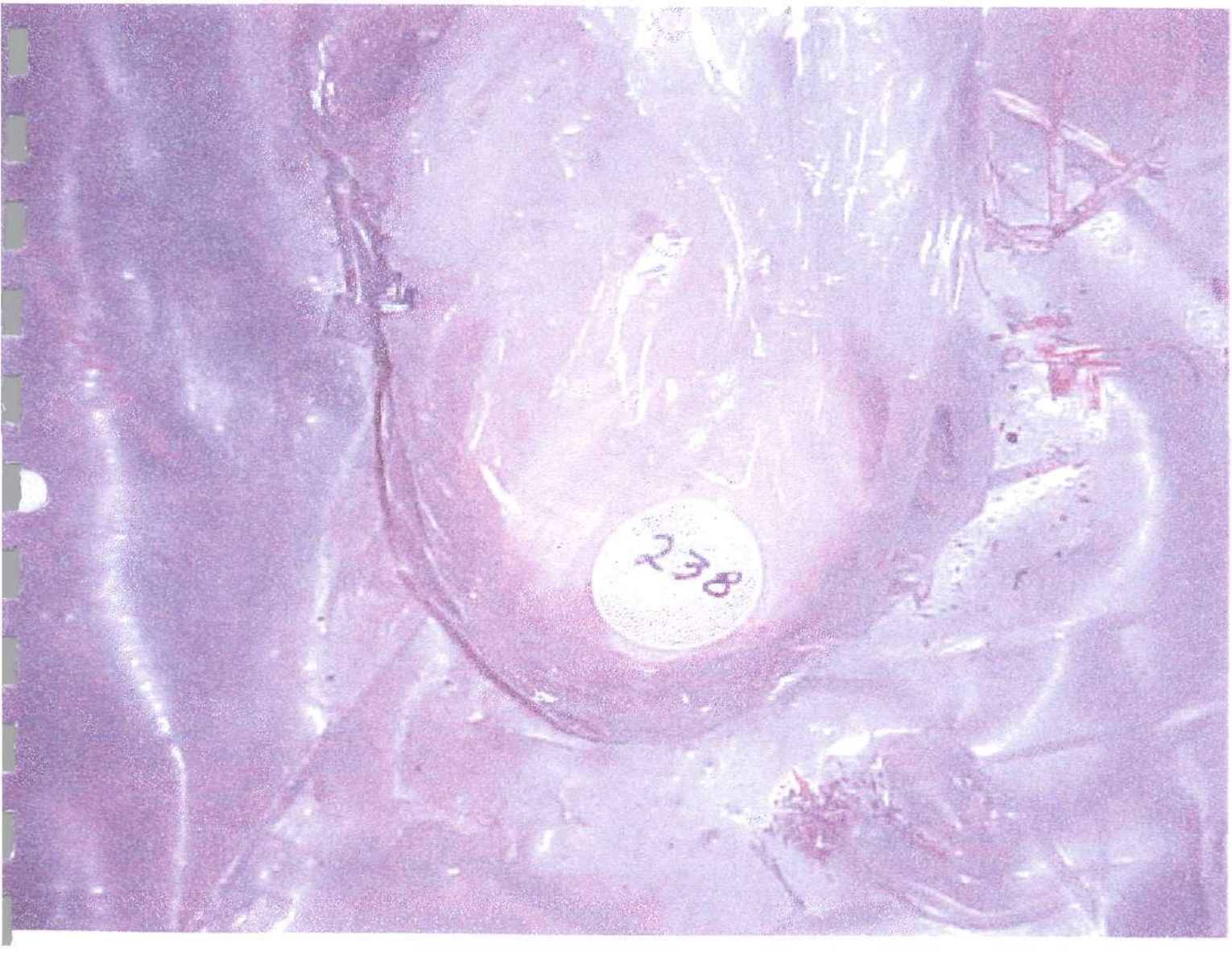

237

044 Sour-237 6-18-2002 1.40.34 PM

S-237

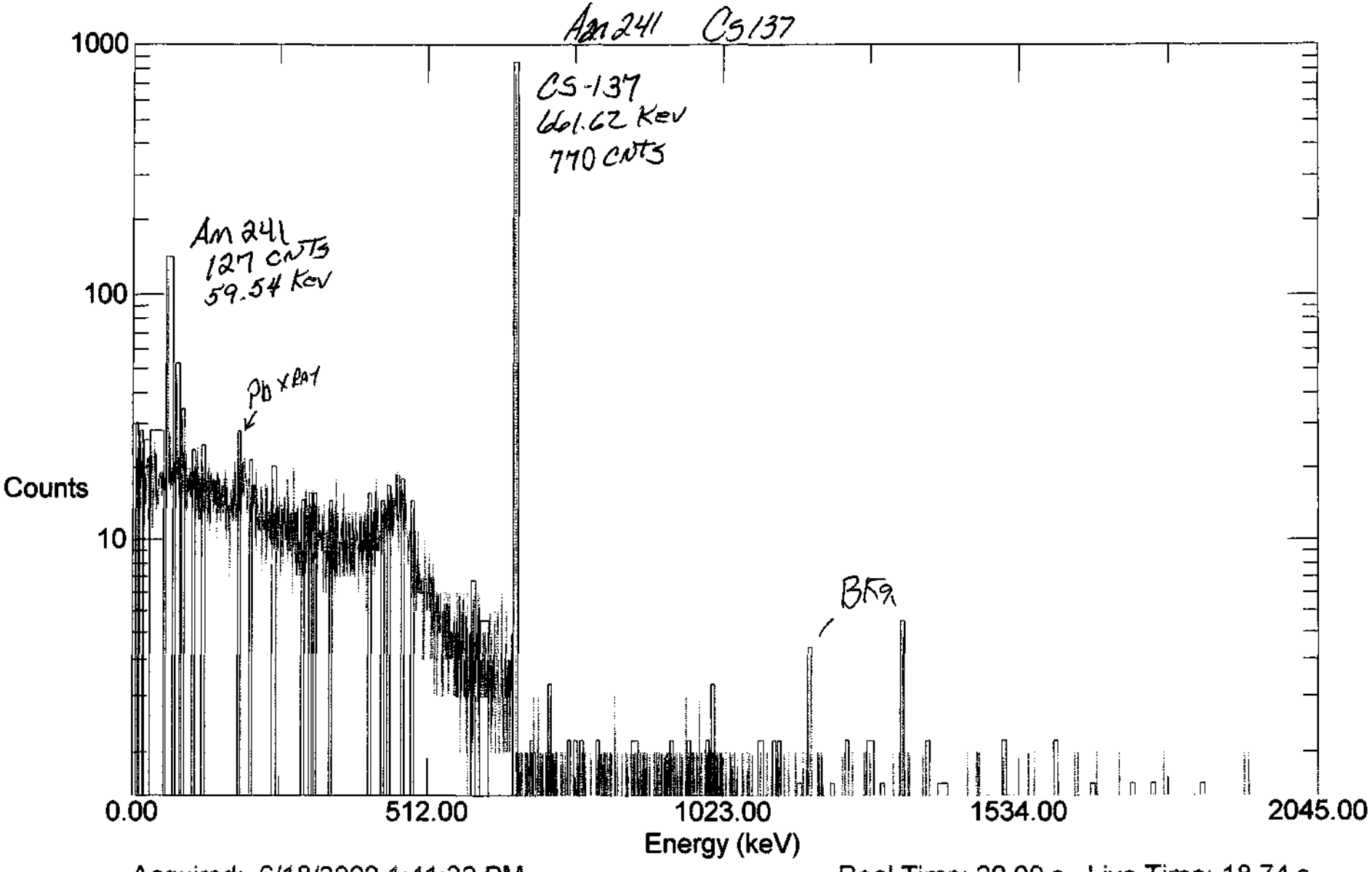


Acquired: 6/18/2002 1:40:33 PM Real Time: 20.00 s. Live Time: 19.54 s.
File: C:\User\GNIWEB~1\044 Sour-237 6-18-2002 1.40.34 PM.Spc Channels: 8192
Detector: #1 digiDART USE 1b


238

045 Sour-238 6-18-2002 1.41.31 PM

S-238



Acquired: 6/18/2002 1:41:32 PM Real Time: 20.00 s. Live Time: 18.74 s.

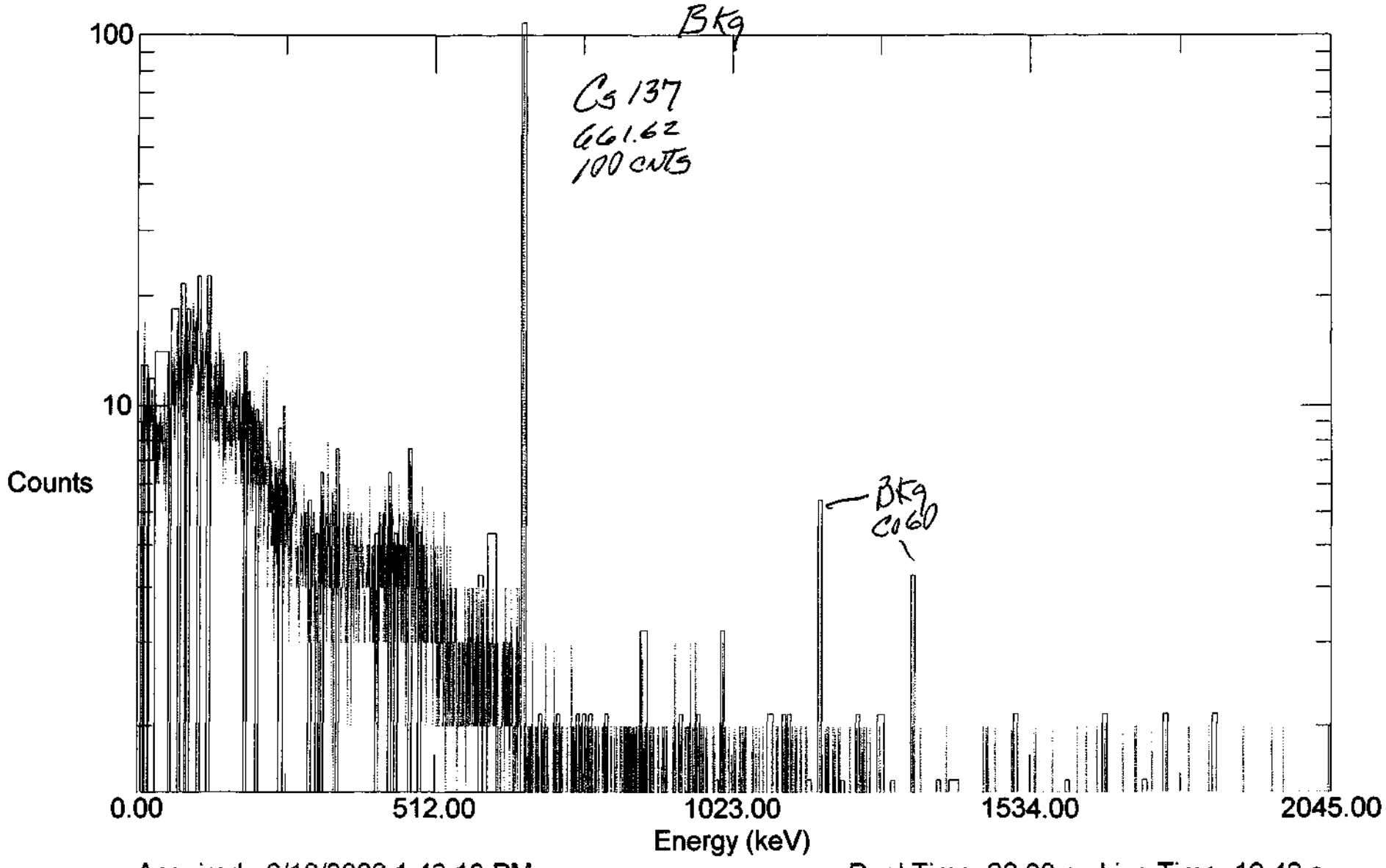
File: C:\User\GNIWEB~1\045 Sour-238 6-18-2002 1.41.31 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

23A

046 Sour-239 6-18-2002 1.42.20 PM

S-239



Acquired: 6/18/2002 1:42:19 PM Real Time: 20.00 s. Live Time: 19.42 s.

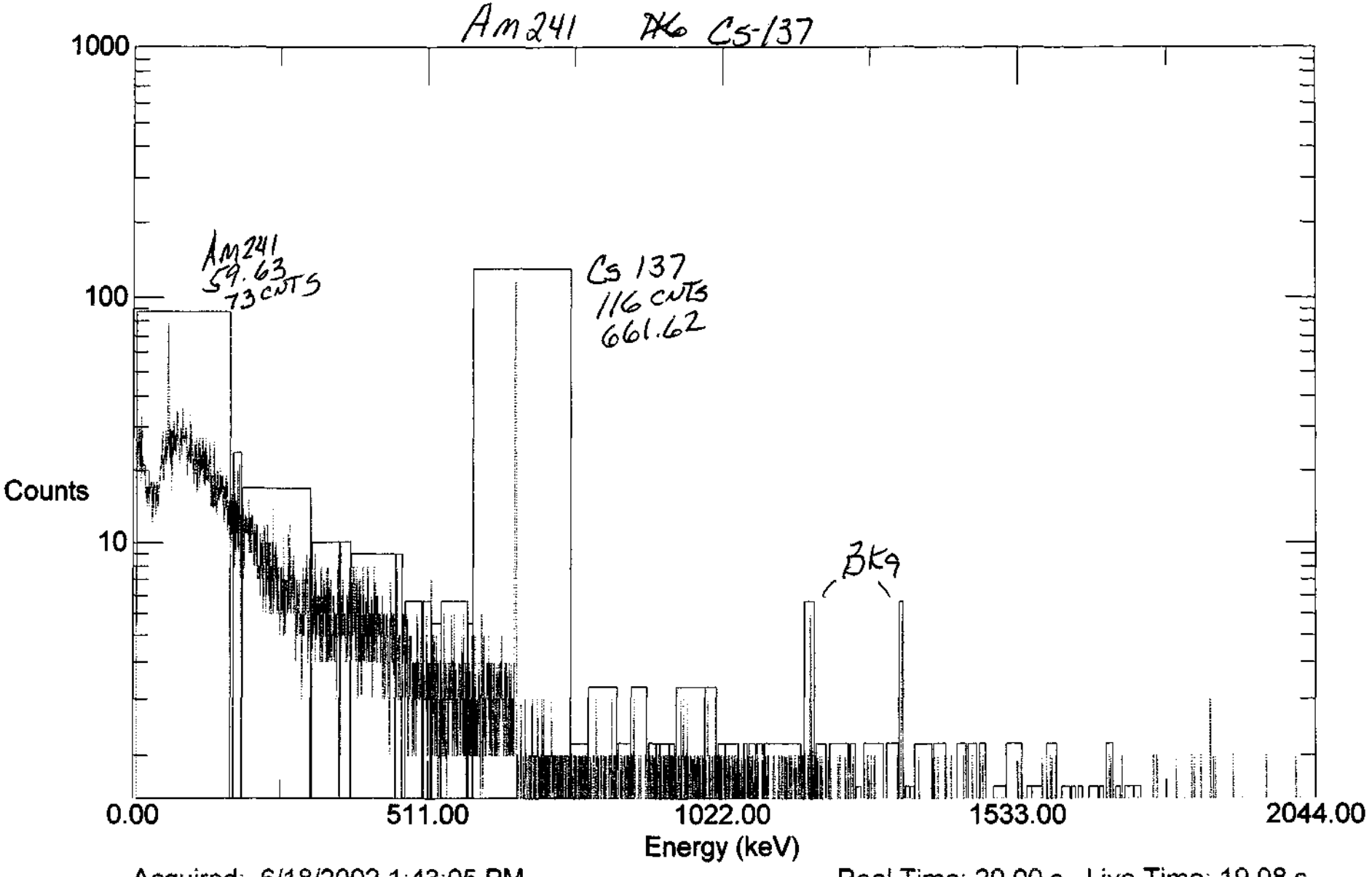
File: C:\User\GNIWEB~1\046 Sour-239 6-18-2002 1.42.20 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

240

047 Sour-240 6-18-2002 1.43.06 PM

S-240



Acquired: 6/18/2002 1:43:05 PM Real Time: 20.00 s. Live Time: 19.08 s.

File: C:\User\GNIWEB~1\047 Sour-240 6-18-2002 1.43.06 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 5-23-02

BLD61 10 SOURCES FROM Rm

BKG	mR/hr
6"	
12"	0.2
36"	

Container #	241				
External on pig in mR/hr	NO PIG				
External on pig Neutron mR/hr	< 1				
Contact open pig mR/hr	0.3				
Beta on open pig mR/hr O/W	0.4				

Picture					

Table Readings

Source mR/hr @ 6 inchs	0.3 ~~0.2~~				
Source mR/hr @ 12 inches	0.2				
Source mR/hr @ 36 inches	0.2				
Size of source in cc's	365				
Weight in grams	198				

CPM Alpha					
Direct Beta/Gamma	1200				

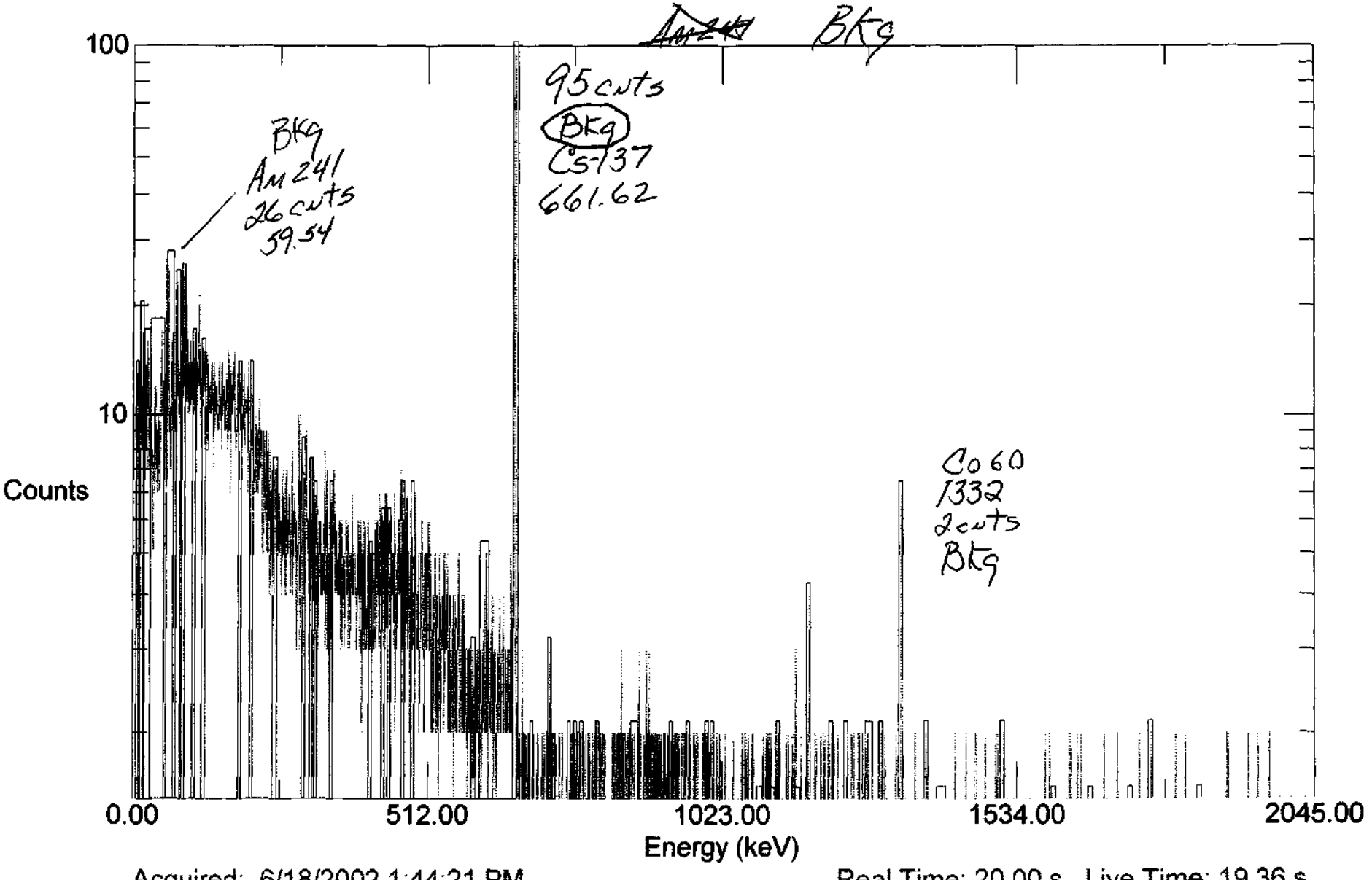
Info on source:	NO PIG OPEN BOX FULL OF PLASTIC DISCS				
Information on pig:	& cylinders				
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					

β γ BKG 400 cpm
α

241

048 Sour-241 6-18-2002 1.44.22 PM

S-241



Acquired: 6/18/2002 1:44:21 PM Real Time: 20.00 s. Live Time: 19.36 s.

File: C:\User\GNIWEB~1\048 Sour-241 6-18-2002 1.44.22 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 5-30-02

BKG	mR/hr
6"	
12"	
36"	

Container #	242	243	244	245	246
External [redacted] mR/hr	300R	20R	100R	4R	50R
External on pig Neutron mR/hr					
Contact open pig mR/hr					
Beta on open pig mR/hr O/W					

Picture					
DIGET					

Table Readings

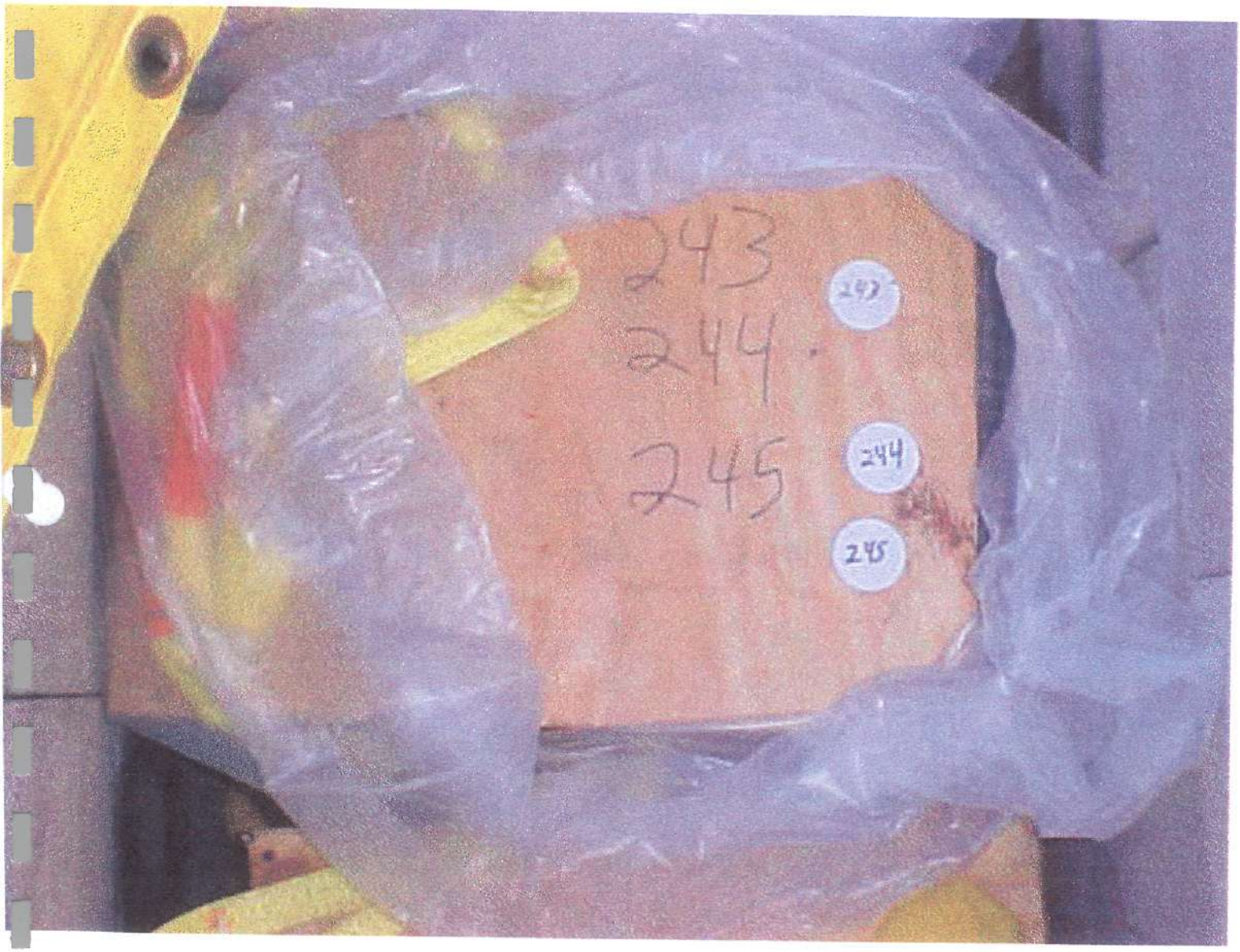
Source mR/hr @ 6 inchs					
Source mR/hr @ 12 inches	60R	500mR	6R	400MR	8R
Source mR/hr @ 36 inches					
Size of source in cc's	2"X6"X8"	#2 Pig	1"X 3/8"	#2 Pig	80 CI
Weight in grams	8				1.5LBS

CPM Alpha					
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha					
Smear DPM per 100 cm^2 Beta					
	TRAY 6"X10" X 2" Box 1	#2 Pig LID ON & BAGGED	#5 Pig LID OFF & BAGGED	#2 Pig SMALL No LID ~~on~~ BAGGED Empty	BROKEN GLASS RUSTED CAN BOTTLES Box #3

Box 2


243
244.
245
243
244
245

246
246

USEcology
FS-TX-02-01
Source Log

Room 17 sources

Date 6/1/02

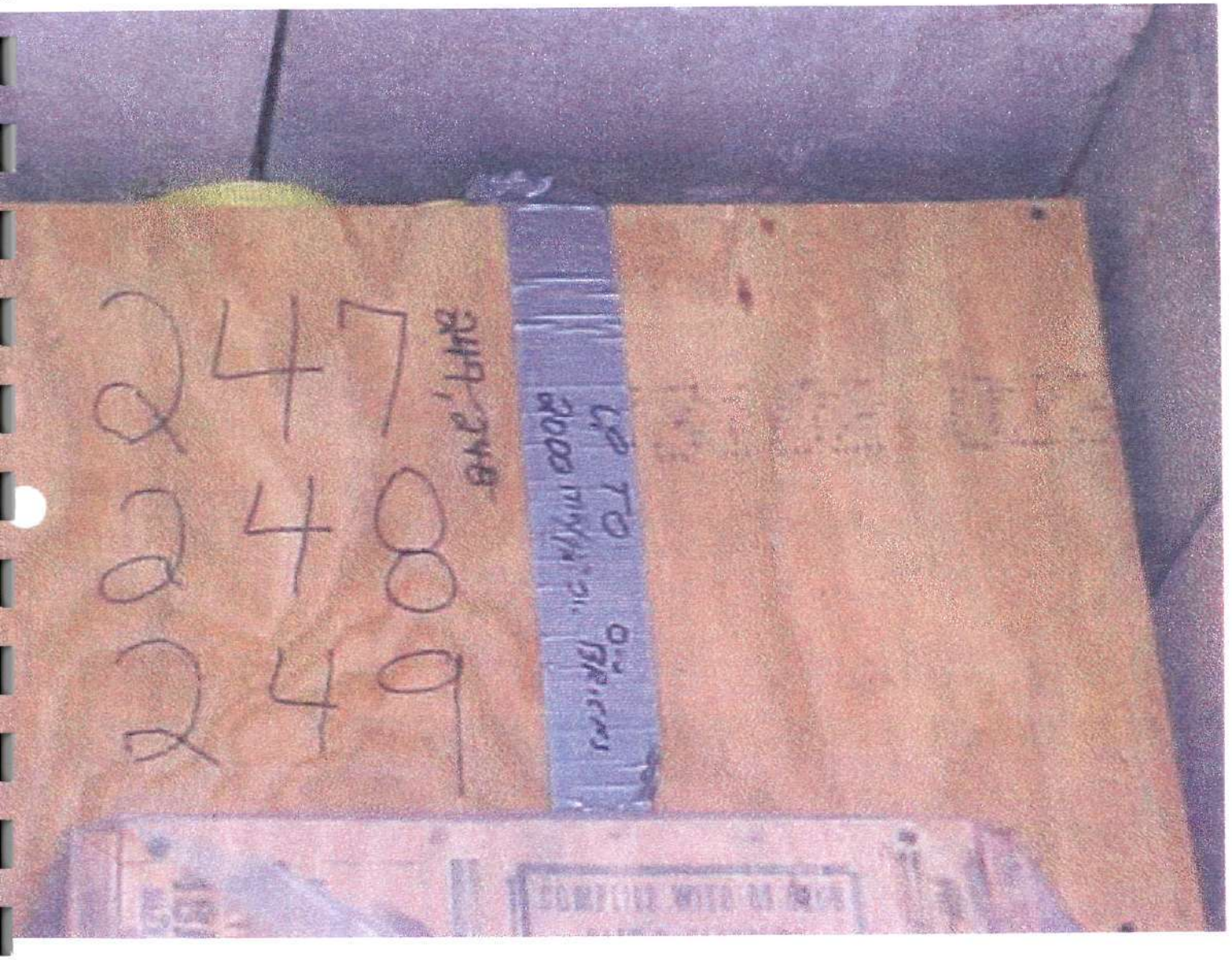
	247	248	249		
Container #					
Contact mR/hr	5R/hr	10R/hr	200mR/hr		

Picture of box					
Dig-I-Dart					

Table Readings

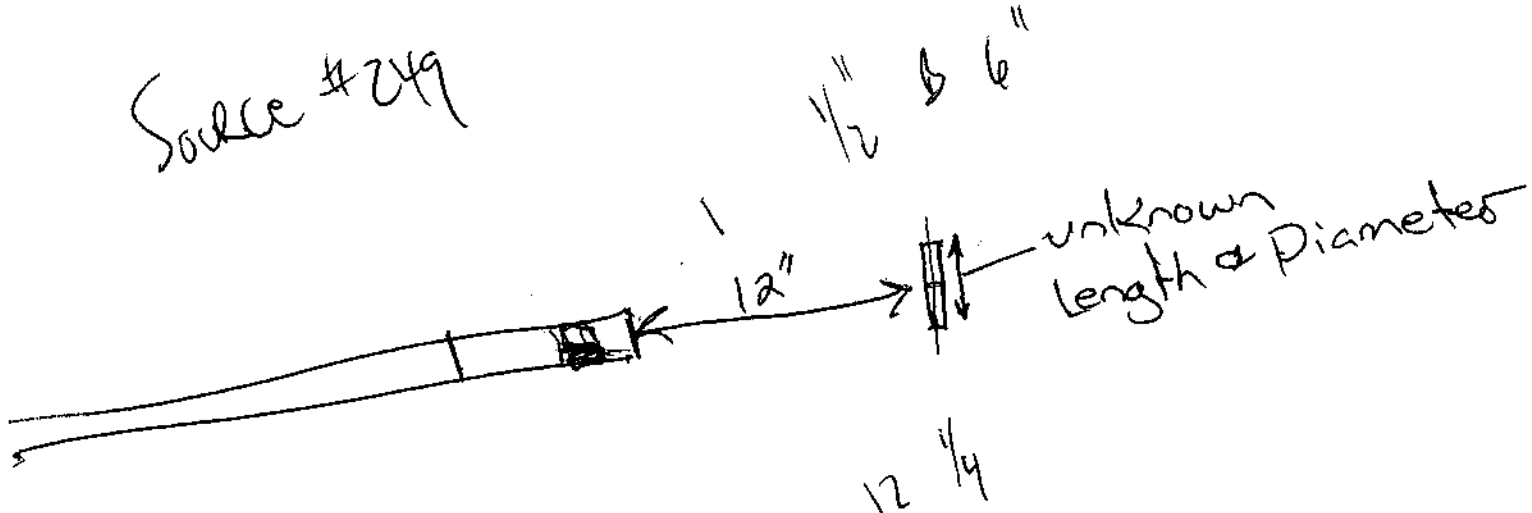
Source mR/hr @ 12 inches	300mR/hr	400mR/hr	100mR/hr		
Size of source in cc's	36 cc	36 cc	12 cc		
Weight in grams	1 LB	1 LB	1/3 LB		

Smear DPM per 100 cm^2 Alpha on box					
Smear DPM per 100 cm^2 Beta on box					
Info about item **Be Detailed!!**	Tubes	Tubes	Tubes		


247
248
249
249, 248
UP TO
2000 MYRTON BRICKS

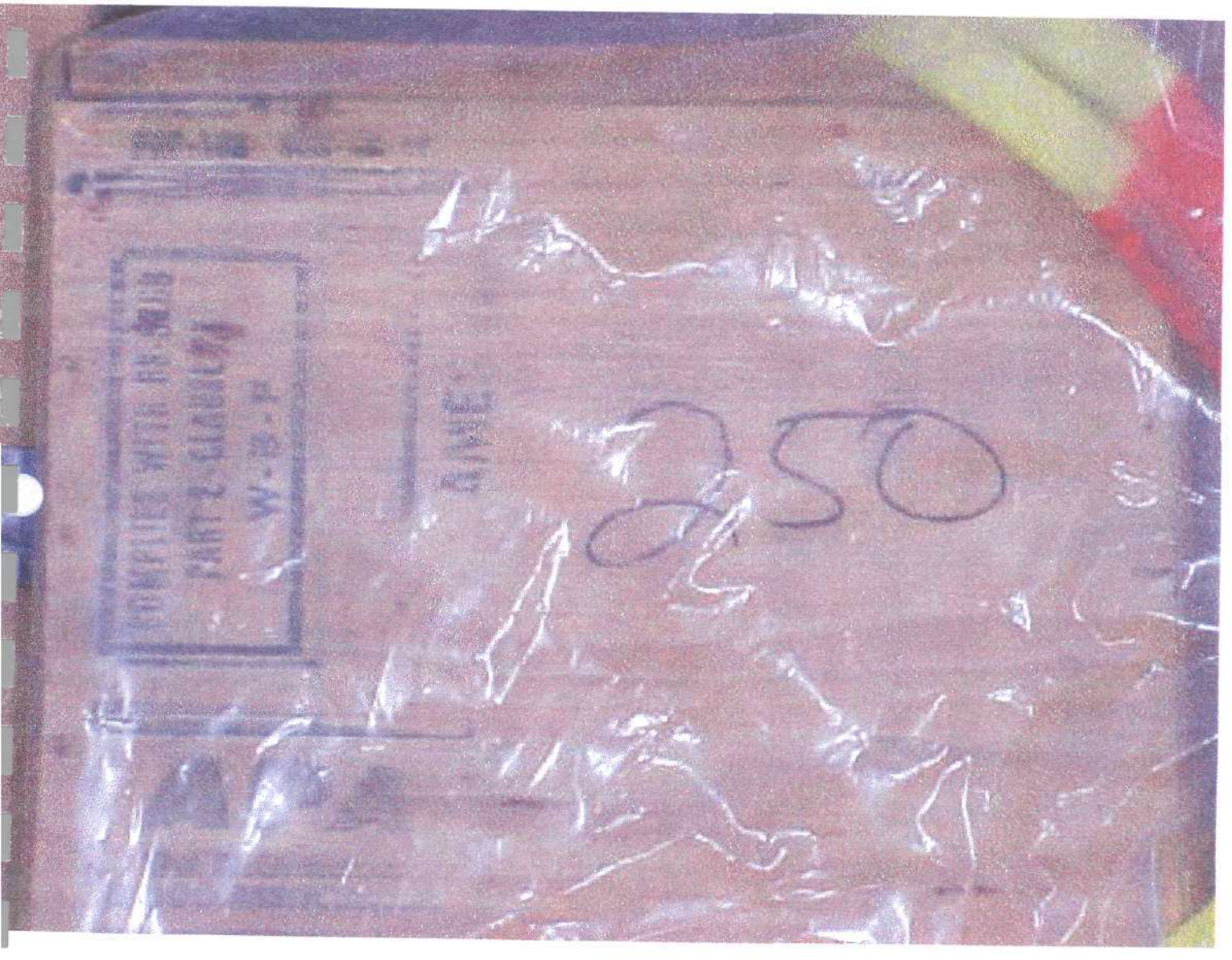
Cs 137 source 6/1/02

Source #249



1 + 12 1/4

50 R/HR 13 1/4


250

USEcology
FS-TX-02-01
Source Log

Room 17 sources

Date 6/1/02

Container #	251 ~~350~~				
Contact mR/hr	2 R/hr				

Picture of box					
Dig-I-Dart					

Table Readings

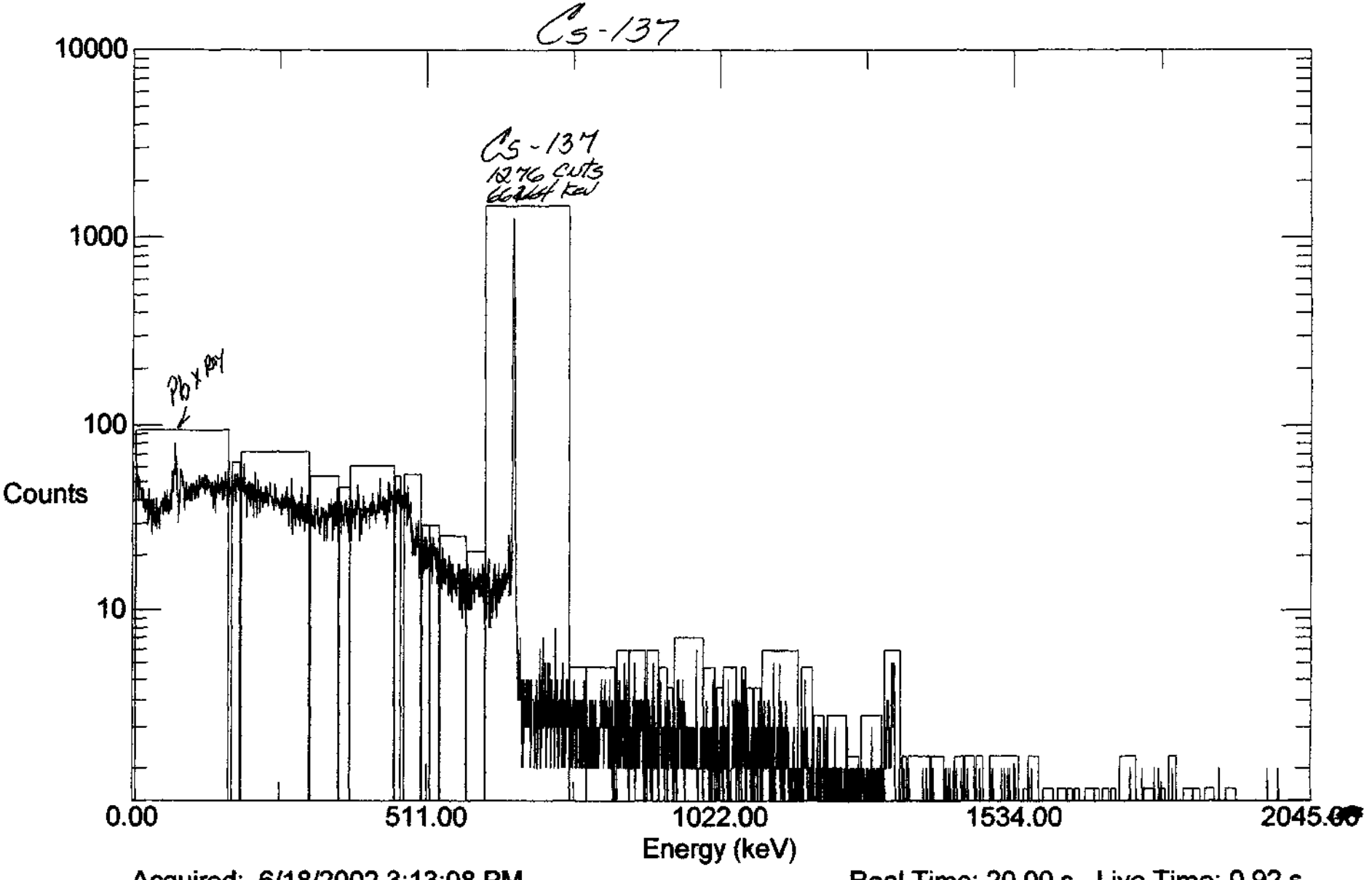
Source mR/hr @ 12 inches	300mR/hr				
Size of source in cc's	2 cc				
Weight in grams	9 gm				

Smear DPM per 100 cm^2 Alpha on box					
Smear DPM per 100 cm^2 Beta on box					
Info about item **Be Detailed!!**	#2 Pig Containing Screw Source				

251

001 1 Sour-251 6-18-2002 3.13.08 PM

S-251



Acquired: 6/18/2002 3:13:08 PM Real Time: 20.00 s. Live Time: 0.92 s.
File: C:\User\GNIWEB~1\001 1 Sour-251 6-18-2002 3.13.08 PM.An1 Channels: 8192
Detector: #1 digiDART USE 1b

USEcology
FS-TX-02-01
Source Log

Date 6-19-02

BKG	mR/hr
6"	
12"	
36"	

Container #	252				
External on pig in mR/hr	<1				
External on pig Neutron mR/hr	<1				
Contact open pig mR/hr	<1				
Beta on open pig mR/hr O/W	<1				

Picture					

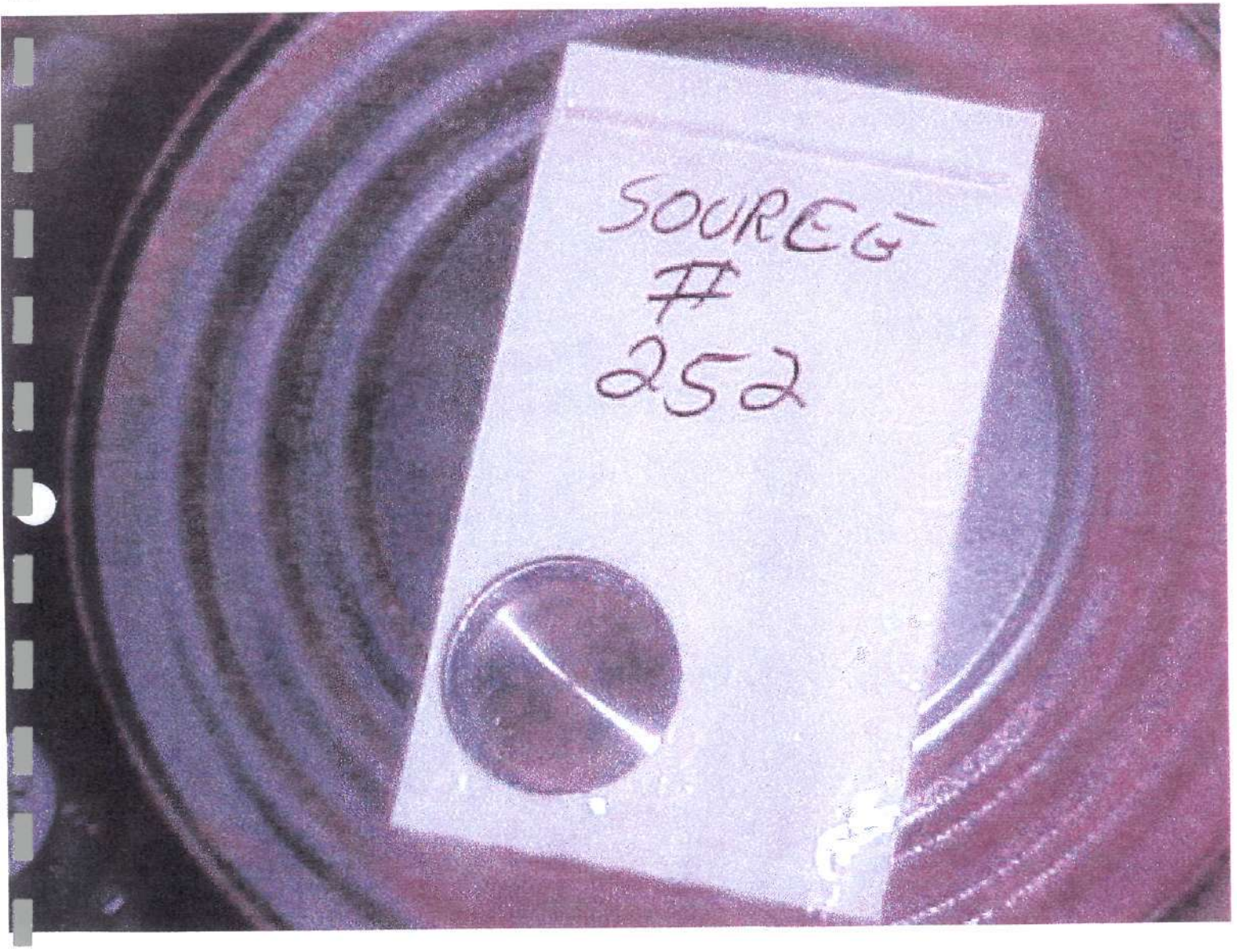
Table Readings

Source mR/hr @ 6 inchs	<1				
Source mR/hr @ 12 inches	<1				
Source mR/hr @ 36 inches	<1				
Size of source in cc's	2				
Weight in grams	2				

CPM Alpha					
Direct Beta/Gamma					

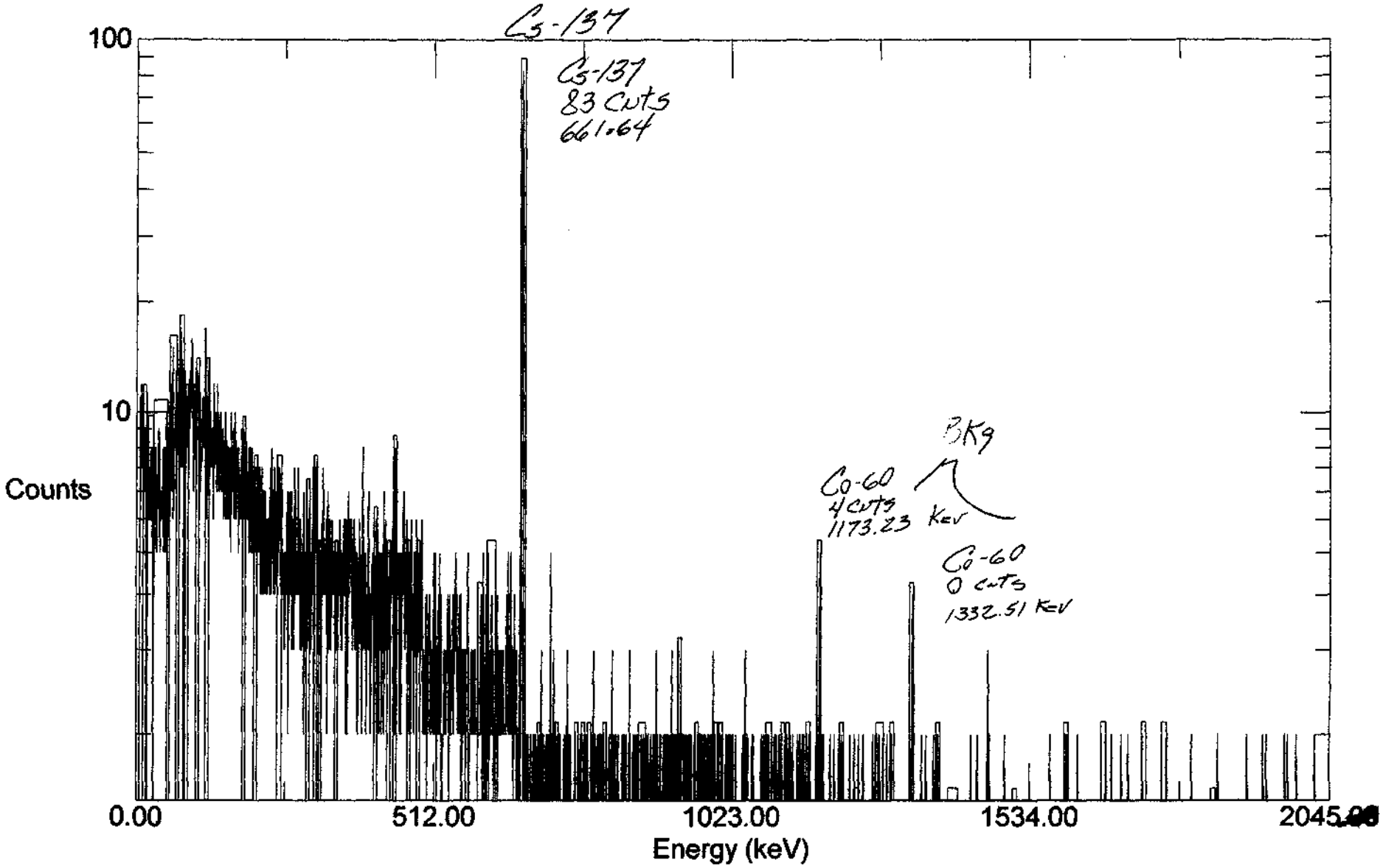
Info on source:	IPL TH230 5.0×10^3 dpm T-143				

Information on pig:					
Smear DPM per 100 cm^2 Alpha	< 20				
Smear DPM per 100 cm^2 Beta	<115				


SOURCE
#
252

002 Sour-252 6-18-2002 3.14.08 PM

S-252



Acquired: 6/18/2002 3:14:09 PM Real Time: 20.00 s. Live Time: 19.60 s.

File: C:\User\GNIWEB~1\002 Sour-252 6-18-2002 3.14.08 PM.Spc Channels: 8192

Detector: #1 digiDART USE 1b

SOURCE

USEcology
FS-TX-02-01
Source Log

Date 6-20-02

BKG	mR/hr
6"	N/A
12"	
36"	

Container #	253				
External [redacted] in mR/hr	900				
External [redacted] Neutron mR/hr	<1				
Contact open pig mR/hr	N/A				
Beta [redacted] mR/hr O/W	1100				

Picture	✓				
DART					

Table Readings

Source mR/hr @ 6 inchs	80				
Source mR/hr @ 12 inches	40				
Source mR/hr @ 36 inches	N/A				
Size of source in cc's	40				
Weight in grams	30				

CPM Alpha	N/A				
Direct Beta/Gamma					

Info on source:					

Information on pig:					
Smear DPM per 100 cm^2 Alpha	N/D				
Smear DPM per 100 cm^2 Beta	21K				

253

Waste Disposal Status

As of: May 2, 2003

Sort by Location

Waste Stream	Date Shipped	Amount	Roll-off Number	Manifest Number (Roll Off #)	Disposal Facility	
Class C	6/3/2002	1366 lbs		X020544	Barnwell	
Class C	11/13/2002	1380 lbs		WCS1	Barnwell	
Class C	12/13/2002	2598 lbs		GN017	Barnwell	
Class C	12/18/2002	12,000 lbs		GN015	Barnwell	
Class C	1/9/2003	528 lbs		GN014	Barnwell	
Class C	12/7/2002	14,200 lbs		GN010	Barnwell	
Class C	12/13/2002	1268 lbs		GN006	Barnwell	
Class C	12/5/2002	1354 lbs		GN005	Barnwell	
Class C	11/15/2002	2128 lbs		GN002	Barnwell	
Class C	11/8/2002	2215 lbs		GN001	Barnwell	
Class C	4/25/2003	261 lbs		0403-11825	Barnwell	
Class C	2/7/2003	1250 lbs		0203-11700	Barnwell	Total to this site:
Class C	1/28/2003	958 lbs		0103-11693	Barnwell	
Class C	5/2/2003	74 lbs	seavan	0503-11694	Barnwell	
Class C	5/3/2003	23800	MHF-IP2	0503-11799	Barnwell	
Cesium sources	6/3/2002	4 drums		11545	Barnwell	16
Construction Debris	8/7/2002	25cy		80702	Brazoria County	
Construction Debris	8/29/2002	20cy		67526	Brazoria County	
Construction Debris	8/29/2002	20cy		67439	Brazoria County	
Construction Debris	7/2/2002	25cy		4227	Brazoria County	
Construction Debris	8/28/2002	20cy		4226	Brazoria County	
Construction Debris	4/30/2003	20 cy		4224	Brazoria County	
Construction Debris	4/3/2003	20 cy		4223	Brazoria County	
Construction Debris	4/3/2003	20cy	274394	4223	Brazoria County	
Construction Debris	4/3/2003	20cy	274097	4222	Brazoria County	
Construction Debris	4/15/2003	20 cy		4221	Brazoria County	
Construction Debris	4/24/2003	20 cy		4220	Brazoria County	
Construction Debris	4/27/2003	20 cy		4219	Brazoria County	
Construction Debris	4/28/2003	20 cy	1 roll offs	4218	Brazoria County	
Construction Debris	4/28/2003	20 cy		4217	Brazoria County	
Construction Debris	4/27/2003	20 cy		4216	Brazoria County	
Construction Debris	4/23/2003	20 cy		4196	Brazoria County	
Construction Debris	4/15/2003	20 cy		4195	Brazoria County	
Construction Debris	4/14/2003	20 cy		4194	Brazoria County	
Construction Debris	9/20/2002	20cy		4193	Brazoria County	
Construction Debris	10/19/2002	20 cy		4192	Brazoria County	
Construction Debris	10/31/2002	20 cy		4190	Brazoria County	
Construction Debris	10/18/2002	20cy		4189	Brazoria County	
Construction Debris	6/21/2002	25cy		4064	Brazoria County	
Construction Debris	6/21/2002	25cy		4063	Brazoria County	
Construction Debris	6/24/2002	25cy		4062	Brazoria County	
Construction Debris	6/24/2002	25cy		4061	Brazoria County	
Construction Debris	3/9/2002	25cy		4041	Brazoria County	Total to this site:
Construction Debris	3/9/2002	50cy		4040	Brazoria County	
Construction Debris	3/9/2002	20cy		4039	Brazoria County	29
Construction Debris	4/14/2003	20 cy	274097	4038-07-0017	Envirocare Utah	
Soil	4/28/2003	20 cy	(BKRU026197)	4038-09-0002	Envirocare Utah	
Soil	4/28/2003	20 cy	BKRU026351	4038-09-0001	Envirocare Utah	
Construction Debris	4/28/2003	20 cy	(BKRU025759)	4038-07-0046	Envirocare Utah	
Construction Debris	4/28/2003	20 cy	(BKRU026268)	4038-07-0045	Envirocare Utah	
Construction Debris	4/28/2003	20 cy	274383	4038-07-0043	Envirocare Utah	
Construction Debris	4/28/2003	20 cy	(R2673ML)	4038-07-0042	Envirocare Utah	
Construction Debris	4/28/2003	20 cy	(BKRU025750)	4038-07-0041	Envirocare Utah	

Waste Disposal Status

As of: May 2, 2003

Waste Stream	Date Shipped	Amount	Roll-off Number	Manifest Number (Roll Off #)	Disposal Facility
Construction Debris	4/28/2003	20 cy	(BKRU012967)	4038-07-0040	Envirocare Utah
Construction Debris	4/28/2003	20 cy	(BKRU025724)	4038-07-0039	Envirocare Utah
Construction Debris	4/28/2003	20 cy	(BKRU026107)	4038-07-0038	Envirocare Utah
Construction Debris	4/24/2003	20 cy	(BKRU012687)	4038-07-0037	Envirocare Utah
Construction Debris	4/23/2003	20 cy	(BKRU025718)	4038-07-0036	Envirocare Utah
Construction Debris	4/23/2003	20 cy	(BKRU012622)	4038-07-0035	Envirocare Utah
Construction Debris	4/23/2003	20 cy	(BKRU012719)	4038-07-0034	Envirocare Utah
Construction Debris	4/23/2003	20 cy	(BKRU025740)	4038-07-0033	Envirocare Utah
Construction Debris	4/17/2003	20 cy	(BKRU026267)	4038-07-0032	Envirocare Utah
Construction Debris	4/16/2003	20 cy	(BKRU012714)	4038-07-0031	Envirocare Utah
Construction Debris	4/16/2003	20 cy	(BKRU025188)	4038-07-0030	Envirocare Utah
Construction Debris	4/16/2003	20 cy	(BKRU012626)	4038-07-0029	Envirocare Utah
Construction Debris	4/15/2003	20 cy	(BKRU012645)	4038-07-0028	Envirocare Utah
Construction Debris	4/15/2003	20 cy	(BKRU025843)	4038-07-0027	Envirocare Utah
Construction Debris	4/11/2003	20 cy	274273	4038-07-0026	Envirocare Utah
Construction Debris	4/14/2003	20 cy	(BKRU012534)	4038-07-0025	Envirocare Utah
Construction Debris	4/14/2003	20 cy	(BKRU012979)	4038-07-0024	Envirocare Utah
Construction Debris	4/14/2003	20 cy	274107	4038-07-0023	Envirocare Utah
Construction Debris	4/14/2003	20 cy	274123	4038-07-0022	Envirocare Utah
Construction Debris	4/14/2003	20 cy	274399	4038-07-0021	Envirocare Utah
Construction Debris	4/14/2003	20 cy	274388	4038-07-0020	Envirocare Utah
Construction Debris	4/14/2003	20 cy	(BKRU025766)	4038-07-0019	Envirocare Utah
Construction Debris	4/14/2003	20 cy	274624	4038-07-0018	Envirocare Utah
Construction Debris	4/10/2003	20cy	274001	4038-07-0016	Envirocare Utah
Construction Debris	4/10/2003	20 cy	274385	4038-07-0015	Envirocare Utah
Construction Debris	4/11/2003	20 cy	274383	4038-07-0014	Envirocare Utah
Construction Debris	4/10/2003	20 cy	274395	4038-07-0013	Envirocare Utah
Construction Debris	4/9/2003	20 cy	274108	4038-07-0012	Envirocare Utah
Construction Debris	4/7/2003	20cy	274033	4038-07-0011	Envirocare Utah
Construction Debris	4/7/2003	20cy	274103	4038-07-0010	Envirocare Utah
Construction Debris	4/4/2003	20cy		4038-07-0009	Envirocare Utah
Construction Debris	4/4/2003	20cy		4038-07-0008	Envirocare Utah
Oversized Debris	2/25/2003	20 cy	274383	4038-07-0007	Envirocare Utah
Oversized Debris	1/29/2003	20 cy	274395	4038-07-0006	Envirocare Utah
Oversized Debris	1/23/2003	20 cy	274102	4038-07-0005	Envirocare Utah
Oversized Debris	1/20/2003	20 cy	274273	4038-07-0004	Envirocare Utah
Oversized Debris	1/17/2003	20 cy	274032	4038-07-0003	Envirocare Utah
Oversized Debris	1/10/2003	20 cy	274631	4038-07-0002	Envirocare Utah
Oversized Debris	12/19/2002	20 cy	274032	4038-07-0001	Envirocare Utah
Construction Debris	3/1/2003	20 cy	(BKRU012979)	4038-02-0043	Envirocare Utah
Construction Debris	2/21/2003	20 cy	274107	4038-02-0042	Envirocare Utah
Construction Debris	2/21/2003	20 cy	(BKRU012601)	4038-02-0041	Envirocare Utah
Construction Debris	2/21/2003	20 cy	274102	4038-02-0040	Envirocare Utah
Construction Debris	2/20/2003	20 cy	278932	4038-02-0039	Envirocare Utah
Construction Debris	2/20/2003	20 cy	(274935A)	4038-02-0038	Envirocare Utah
Construction Debris	2/20/2003	20 cy	(R2673ML)	4038-02-0037	Envirocare Utah
Construction Debris	2/20/2003	20 cy	(BKRU026436)	4038-02-0036	Envirocare Utah
Construction Debris	2/19/2003	20 cy	((025267)	4038-02-0035	Envirocare Utah
Construction Debris	2/19/2003	20 cy	(R25980AL)	4038-02-0034	Envirocare Utah
Construction Debris	2/19/2003	20 cy	(BKRU026458)	4038-02-0033	Envirocare Utah
Construction Debris	2/13/2003	20 cy	(790F)	4038-02-0032	Envirocare Utah
Construction Debris	2/19/2003	20 cy	274113	4038-02-0031	Envirocare Utah
Construction Debris	2/12/2003	20 cy	274396	4038-02-0030	Envirocare Utah
Construction Debrs	2/13/2003	20 cy	274394	4038-02-0029	Envirocare Utah

Waste Disposal Status

As of: May 2, 2003

Waste Stream	Date Shipped	Amount	Roll-off Number	Manifest Number (Roll Off #)	Disposal Facility	
Construction Debris	2/13/2003	20 cy	274104	4038-02-0028	Envirocare Utah	
Construction Debris	2/11/2003	20 cy	274108	4038-02-0027	Envirocare Utah	
Construction Debris	2/11/2003	20 cy	274273	4038-02-0026	Envirocare Utah	
Construction Debris	2/10/2003	20 cy	274631	4038-02-0025	Envirocare Utah	
Construction Debris	2/10/2003	20 cy	274094	4038-02-0024	Envirocare Utah	
Construction Debris	2/10/2003	20 cy	274638	4038-02-0023	Envirocare Utah	
Construction Debris	2/10/2003	20 cy	274624	4038-02-0022	Envirocare Utah	
Construction Debris	2/4/2003	20 cy	(790F)	4038-02-0021	Envirocare Utah	
Construction Debris	2/3/2003	20 cy	278932	4038-02-0020	Envirocare Utah	
Construction Debris	2/20/2003	20 cy	274096	4038-02-0019	Envirocare Utah	
Construction Debris	1/23/2003	20 cy	274631	4038-02-0018	Envirocare Utah	
Construction Debris	1/23/2003	20 cy	274390	4038-02-0017	Envirocare Utah	
Construction Debris	1/20/2003	20 cy	274108	4038-02-0016	Envirocare Utah	
Construction Debris	1/17/2003	20 cy	274113	4038-02-0015	Envirocare Utah	
Construction Debris	1/15/2003	20 cy	274395	4038-02-0014	Envirocare Utah	
Construction Debris	1/15/2003	20 cy	274033	4038-02-0013	Envirocare Utah	
Construction Debris	1/9/2003	20 cy	274273	4038-02-0012	Envirocare Utah	
Construction Debris	12/17/2002	20 cy	274395	4038-02-0011	Envirocare Utah	
Construction Debris	11/20/2002	20cy	274273	4038-02-0010	Envirocare Utah	
Construction Debris	11/18/2002	20cy	274306	4038-02-0009	Envirocare Utah	
Construction Debris	11/14/2002	20cy	274033	4038-02-0008	Envirocare Utah	
Construction Debris	10/1/2002	20cy	274110	4038-02-0007	Envirocare Utah	
Construction Debris	9/24/2002	20cy	274389	4038-02-0006	Envirocare Utah	
Construction Debris	9/20/2002	20cy	274382	4038-02-0005	Envirocare Utah	
Construction Debris	8/16/2002	25cy	(R25567ML)	4038-02-0004	Envirocare Utah	
Construction Debris	8/16/2002	25cy	(R25558ML)	4038-02-0003	Envirocare Utah	
Construction Debris	7/24/2002	23cy	(MHFU-1644)	4038-02-0002	Envirocare Utah	
Construction Debris	7/24/2002	23cy	(MHFU-1784)	4038-02-0001	Envirocare Utah	**Total to this site:**
Oversized lead	5/7/2003	207 cf	BKRU025696	3104-01-0002	Envirocare Utah	
Oversized lead	5/7/2003	200 cf	BKRU025845	3104-01-0003	Envirocare Utah	
Oversized lead	5/7/2003	400 cf	BKRU025724	3104-01-0004	Envirocare Utah	
Oversized lead	5/7/2003	200 cf	BKRU012987	3104-01-0005	Envirocare Utah	
Tavenor Soil	5/8/2003	3 cy	NA (B-25)	4038-06-0001	Envirocare Utah	
Oversized Debris	5/8/2003	20 cy	274631	4038-07-0047	Envirocare Utah	
Oversized/lead debris (glove boxes)	12/12/2002	10 glove		3104-01-0001	Envirocare Utah	
Construction Debris	4/28/2003	20 cy	274108	4038-07-0044	Envirocare Utah	98
Am-241	2/10/2003	3 drums		LANL-02	LANL/Los Alamos, NM	1
Am-241 (Tavenor Sources)	2/20/2003	1 drum		LANL-03	NSSI/Houston	
PU-238	11/13/2002	1 drum		LANL-01	NSSI/Houston	2
Flammable Solid, organic	8/6/2002	18 lbs		2779872	SET Enviromental	
Oxidizing liquid,	8/6/2002	10 lbs		277972	SET Enviromental	
Hydrogen Peroxide	8/6/2002	18 lbs		2779872	SET Environmental	
Batteries, wet, filled with acid	8/6/2002	115 lbs		2779872	SET Environmental	
Corrosive liquid, acidic, inorganic	8/6/2002	110 lbs		2779872	SET Environmental	
Corrosive Liquid, acidic, organic	8/6/2002	50 lbs		2779872	SET Environmental	
Corrosive liquid, basic, inorganic	8/6/2002	12 lbs		2779872	SET Environmental	
Corrosive solid, acidic, inorganic	8/6/2002	18 lbs		2779872	SET Environmental	
Corrosive Solid, basic, inorganic	8/6/2002	20 lbs		2779872	SET Environmental	
Flammable Liquid	8/6/2002	250 lbs		2779872	SET Environmental	
Flammable Solid, inorganic	8/6/2002	10 lbs		2779872	SET Environmental	
Haz-waste solid	8/6/2002	30 lbs		2779872	SET Environmental	
Mercuric Acetate	8/6/2002	5 lbs		2779872	SET Environmental	
Mineral oil	8/6/2002	90 gallons		2779872	SET Environmental	
Non haz solid	8/6/2002	170 lbs		2779872	SET Environmental	

Waste Disposal Status

As of: May 2, 2003

Waste Stream	Date Shipped	Amount	Roll-off Number	Manifest Number (Roll Off #)	Disposal Facility	
Oxidizing solid, toxic	8/6/2002	30 lbs		2779872	SET Environmental	
Paint Related Material	8/6/2002	70 lbs		2779872	SET Environmental	
Phosphorous oxychloride	8/6/2002	8 lbs		2779872	SET Environmental	**Total to this site:**
Toxic liquids	8/6/2002	25 lbs		2779872	SET Environmental	
Toxic liquids, organic	8/6/2002	325 lbs		2779872	SET Environmental	**20**
Radium Needles	6/25/2002	5 drums		62502	US Ecology / Hanford	**1**
> Class C	12/10/2002	2085 lbs		GN016	WCS	
> Class C	11/15/2002	2353 lbs		GN009	WCS	
> Class C	1/17/2003	115 lbs		GN008	WCS	
> Class C	11/13/2002	2456 lbs		GN004	WCS	
> Class C	11/6/2002	2247 lbs		GN003	WCS	
> Class C	4/22/2003	1740 lbs		03-GNW-010	WCS	
> Class C	4/14/2003	1325 lbs		03-GNW-009	WCS	
> Class C	4/28/2003	1580 lbs		03-GNW-008	WCS	
> Class C	4/9/2003	3317 lbs		03-GNW-007	WCS	
> Class C	4/3/2003	1435.94 lbs		03-GNW-006	WCS	
> Class C	3/4/2003	1095.69 lbs		03-GNW-005	WCS	
> Class C	2/27/2003	955.99 lbs		03-GNW-004	WCS	**Total to this site:**
> Class C	2/12/2003	1449.8 lbs		03-GNW-003	WCS	
> Class C	1/23/2003	59.87 lbs		03-GNW-001	WCS	**14**

EPA

U.S. EPA Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

START2
Technical Direction Document

Roy F. Weston

TDD: 06-01-12-0030
Amendment: A
Contract: 68-W-01-005

TDD - Signed by Tobin Osterberg/R6/USEPA/US on 01/14/2002 03:11:04 PM, according to Deborah Gick/start6/rfw-start/u

Purpose: Work Assignment Initiation

Period: Base Period
Start Date:12/26/2001
Completion Date:02/08/2002

Project/Site Name: Webster-Gulf Nuclear
Project Address: 202 W. Medical Center Blvd
County: Harris
City, State Zip: Webster, TX
SSID: 06md **CERCLIS:** TX0000605420

WorkArea: CERCLA ASSESSMENT ACTIVITIES
Activity: Enforcement Support
Section of SOW: II.A.11
Performance Based: No

Authorized TDD Ceiling:	**Cost/Fee**	**LOE**
Previous Action(s):	$48,750.00	(b) (4)
This Action:	$0.00	0.0
New Total:	$48,750.00	(b) (4)

Specific Elements
Description of Work:

Ammendment A is to change the completion date to 2/08/2002 due to work conditions at the site.

This TDD is under Work Assignment WA0112

1.) Coordinate with Steve Wyman (214-665-2792) or Verne McFarland (214-665-6617) of EPA to assure the proper format for the files, index, and structure. The files shall be in the proper EPA format.

2.) Scan all pertinent documents located in the Webster - Gulf Nuclear facility. (See # 1) Pertinent documents are those that demonstrate a link to potentially responsible parties: ownership, operating, generation of waste, decision regarding the disposal of waste, arranging the disposal of waste, or those documents linking a radioactive source to a entity.

3.) Store all the scanned files on CDs, with appropriate index. (See #1)

4.) Provide 4 copies of each CD created.

5.) Return paper to bldg for disposal by clean-up contractor.

6.) Documents are suspected of being contaminated with Radioactivity take the necessary steps to isolate the contamination and minimize any migration. (I.e. barriers, tents, disposables, etc.)

NOTE: This TDD originally executed manually by C. Stanley, CO on 12/21/01 and faxed to contractor.

Coordinate with Task Monitor Greg Fife 214.665.6773

Accounting and Appropriation Information

Line	DCN	IFMS	Budget/ FY	Appropriation Code	Budget Org Code	Program Element	Object Class	Site Project	Cost Org Code	SFO: Amount
1	SCR001	AAA	01	T	6ASOP	50102D	2505	06MD	-	$0.00

Funding Summary	Funding
Previous:	$48,750.00
This Action:	$0.00
Total:	$48,750.00

Funding Category
CERCLA General

Task Monitor Section

- Signed by Henry Thompson/R6/USEPA/US on 01/11/2002 03:35:20 PM, according to Deborah Gick/start6/rfw-s

Task Monitor: Greg Fife **Date:** 01/11/2002
Co-WAMs: Greg Fife/R6/USEPA/US

Project Officer Section - Signed by Linda Carter/R6/USEPA/US on 01/14/2002 09:49:35 AM, according to Debora

Project Officer: Linda Carter **Date:** 01/14/2002

Contracting Officer Section - Signed by Tobin Osterberg/R6/USEPA/US on 01/14/2002 03:11:04 PM, according to

Contracting Officer: Tobin Osterberg **Date:** 01/14/2002

Contractor Section - Signed by Robert Beck/start6/rfw-start/us on 01/15/2002 09:43:39 AM, according to /rfw-st

● No
○ Yes

During the past three (3) calendar years has your company, or any of your employees that will be working at this site, previously performed work at this site/facility?

Contractor Contact: Robert Beck **Date:** 01/15/2002