Date 4. (2)

MAR 16 2000

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 628671

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Distribution	Retrieval Support Operations	N/A
5. Proj./Prog./Dept./Div.:	6. Design Authority/Design Agent/Cog. Engr.:	7. Purchase Order No.:
AZ-101 Mixer Pump Demonstration	GR Tardiff	N/A
8. Originator Remarks:		9. Equip./Component No.:
For approval and release No usq Screening Required P.P. Carlson 3/16/00		N/A
		10. System/Bldg./Facility:
		N/A
		12. Major Assm. Dwg. No.:
		N/A
11. Receiver Remarks:	11A. Design Baseline Document? (●) Yes ( ) No	13. Permit/Permit Application No.:
		N/A
		14. Required Response Date:
		N/A

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	RPP-6006		0	Acceptance Test Report	SQ	1	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D OR N/A (See WHC-CM-3-5, Sec. 12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	1	Design Authority	Daryl Jaffe	03/14/00	S5-05	1	1	PJ Fuller	Pat Fuller	3/9/00	H1-19
1		Design Agent N/A									
1	1	Cog. Eng.		03/10/00	S5-05						
1	1	Cog. Mgr		3-15-00	S5-05						
1	1	QA	W K Adams	3-15-00	S6-15						
1	1	Safety		3/15/00							
		Env. N/A									

18.	19.	20.	21. DOE APPROVAL (if required)
Pat Fuller 3/9/00	N/A	3-15-00	Ctrl No. N/A
Signature of EDT Originator / Date	Authorized Representative for Receiving Organization / Date	Design Authority/ Cognizant Manager / Date	( ) Approved ( ) Approved w/comments ( ) Disapproved w/comments

BD-7400-172-2 (10/97)

BD-7400-172-1

Acceptance Test Report for Gamma Carts A and B

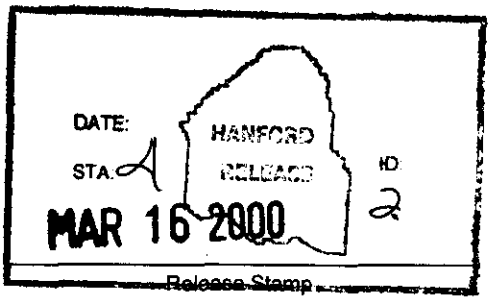
Pat Fuller for
CH2M Hill Hanford Group
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 628671 UC:
Org Code: Charge Code:
B&R Code: Total Pages: 135

Key Words: W-151, AZ, AZ-101, 241-AZ-101, Mixer Pumps, Gamma Cart, Spectrum Analyzer, ATR, QTR, Test Report

Abstract: Report of Shop Test of the Gamma Cart System to be used in the AZ-101 Mixer Pump Demonstration Test. Reports of the hardware and software tests.

3/15/00
Release Approval Date



Approved For Public Release

RPP-6006, Rev. 0

Acceptance Test Report

for

Gamma Carts A and B

TABLE OF CONTENTS

1.0 INTRODUCTION

This document presents the results of Acceptance Testing of the 241-AZ-101 Gamma Carts A and B. Testing of the gamma carts was performed in accordance with RPP-5577, *241-AZ-101 Mixer Pump Demonstration Test Gamma Cart ATP/QTP*. The objective of the testing was to verify in the shop that the hardware and software operated according to design specifications before field-testing and installation.

2.0 TEST DESCRIPTION

Testing of the gamma carts was performed in the 306E Building, Room 173, in the 300 Area. The Gamma Cart System equipment includes Gamma Carts A and B, a probe, computer control consoles A and B, a riser extension for each cart, and inter-connecting wiring. A mock riser was fabricated and placed over the 13-foot deep pit in room 173. For each test, a riser extension was placed into the mock riser and all system wiring was connected. A person was utilized in the pit to simulate lengths over 13 feet. This was accomplished by clamping the cable and hanging the probe and cable weight freely at each test depth. Gamma Cart B was tested first and then Cart A. The test procedure, RPP-5577, required one revision to add steps for clarification and to adjust sample times before cart A was tested.

3.0 TEST RESULTS

All testing of the 241-AZ-101 Gamma Carts A and B was completed satisfactory. Gamma Cart B had no exceptions and two performance log entries. One entry for when the control system failed in which the system was rebooted and the test continued. The second entry was for depths out of tolerance. The scaling factors were adjusted and were retest to within tolerances. Gamma Cart A had no exceptions and one performance log entry. The performance log entry noted an incorrect switch label in the test procedure. Completed copies of the test procedures and be found in attachments 1 and 2. As stated in the test procedure, RPP-5577, the test procedure does not test the accuracy of the data acquisition software. Therefore, the charts attached to each completed test procedure are only to verify that data was collected at each sample point. Test data for Cart B differs from that of Cart A due to the amount of time that samples were collected during each test. Since the collection time for the samples for Cart A are short, comparison of the spectra can not be made due to the poor statistical time for the source in the probe. Also, ground changes in the data collection wiring and changes to the pre-amp electronics in the probe were made between testing Cart B and Cart A. The accuracy of the acquisition software will be tested during the operational test in the field.

4.0 CONCLUSIONS

The test procedure is acceptable as written and performed. As a result of the testing performed under RPP-5577, it can be concluded that the Gamma Cart Systems A and B are ready for Operational testing.

APPENDIX 1. COMPLETED COPY OF RPP-5577 FOR GAMMA CART A

RPP-5577 Rev 1

241-AZ-101 Mixer Pump Demonstration Test Gamma Cart ATP/QTP

CH2M Hill Hanford Group

January 2000

RPP-6006, Rev 0
~~RPP-5577, Rev 1~~ BAW 3/15/00

Execution and Test Approval

EXECUTED BY

Test Director — Date: 3-1-00

WITNESSES

QA/QC — Date: 3-1-00

Authorized Inspector — Date: 3/1/00

RPP-6006, Rev 0
~~RPP-5597, Rev 1~~

TABLE OF CONTENTS PAGE

1.0 PURPOSE AND SCOPE

1.1 PURPOSE

This procedure provides instructions for performing a Shop Acceptance Test Procedure for the Sludge Mobilization Cart System.

1.2 SCOPE

This procedure involves testing the Instrumentation involved with the Gamma Cart System, local and remote, including: depth indicators, speed controls, interface to data acquisition software and the raising and lowering functions. This Procedure will be performed twice, once for each Gamma Cart System. This procedure does not test the accuracy of the data acquisition software.

2.0 INFORMATION

2.1 TERMS AND DEFINITIONS

2.1.1 ALARA - As Low As Reasonably Achievable

2.2 RESPONSIBILITIES

2.2.1 Test Engineer is responsible for the following:

- Ensuring all preparations for this Test have been completed
- Support Test Director and Test Personnel with the technical information and support necessary to complete this procedure.

2.2.2 Test Director has the option of assigning a designated Recorder to fulfill the following recording criteria.

- Record, check off, initial, enter N/A, and ensure verification signatures are obtained as each step and section completes.

2.2.3 Operation Personnel are responsible for operating the equipment per the Test Engineer and Test director's direction.

2.2.4 QC Inspector is responsible for witnessing test execution and signing the completed sections of the test.

2.2.5 The Authorized Inspector is responsible for the following:

- Witnessing test execution
- Approval and signature of acceptance upon completion of this procedure.

2.2 RESPONSIBILITIES (cont.)

2.2.6 Test Director is responsible for the following:

- The safe, efficient, and productive performance of the test
- Coordination of all testing activities
- Scheduling and conducting a pre-test meeting with test participants
- Notification of the persons performing and witnessing the test prior to the start of testing
- Notification of all involved test personnel when a change is made in the testing schedule
- Act as liaison between the participants involved with the testing
- Stopping any test or section which may cause damage to the system
- Obtaining revisions to the Test Procedure, to comply with authorized field changes or to accommodate existing field conditions
- Taking actions to resolve exceptions to the Test Procedure
- Signing the Acceptance Test Procedure Exception Record when a test exception has been resolved
- Evaluating recorded data, discrepancies, and exceptions
- Signing Test Execution Sheet when this Test Procedure has been performed
- Signing Exception Record when a retest to clear an exception has been executed and accepted
- Obtaining required signatures on the Test Procedure Working Copy prior to reproduction and distribution
- Preparing and issuing an Acceptance Test Report for the approved, accepted and completed Test Procedure

2.3 REFERENCES

- HNF-SD-WM-PTP-027, Rev 3 Mixer Pump Test Plan for Double Shell Tank AZ-101
- HNF-3839 Data Collection Plan for AZ-101 Mixer Pump Tests
- RPP-5576 Gamma Cart System Description
- H-2-79215, R2 TWRS SLUDGE CART ENCL ELC ASEMBLY
- H-2-79215, R2 TWRS SLUDGE CART ENCL ELEMENTARY DIAGRAM
- H-2-79233, R0 TWRS SLUDGE CART ENCL WIRING DIAGRAM
- H-2-79234, R3 TWRS SLUDGE MOBILIZATION CART ARRANGEMENT

2.4 GENERAL INFORMATION

2.4.1 All entries recorded in this procedure shall be made in black ink.

2.4.2 Procedural and technical requirement changes must be processed by Engineering Change Notice in accordance with approved procedures. If a need for such a change is discovered in the course of running the test, Test Director must decide:

- If the applicable portion of the test shall be stopped, an exception written, and if the test equipment shall be placed in a safe configuration, until the Engineering Change Notice is approved

OR

- If the integrity of the test will not be jeopardized and continuation of test can occur safely, the continuation of and/or the running of the test portions unaffected by the change.

2.4.3 Acceptance Test steps detailed in individual Tests in Section 5.0 shall be performed sequentially, unless otherwise noted or as directed by the Test Director.

- Individual Test Procedure Sections may be performed out of sequence at the direction of the Test Director, if the intent of the test is not compromised

- As as each step is completed, each step will be checked off (or enter "N/A" for), as required in the spaces provided on the Working Copy of this Acceptance Test Procedure

- Any step that requires verification of data must include recording data on the Working Copy.

2.4 GENERAL INFORMATION (Cont).

2.4.4 Any non-conformance of the instrumentation, unexpected results or exceptions during testing shall be sequentially numbered and recorded in the Acceptance Test Procedure Exception Log and on individual Acceptance Test Procedure Exception Records. Thus, case-by-case resolution, recording, approval, and distribution of each exception will be achieved.

2.4.5 Resolve test exceptions in the following manner:

- After successful resolution of an exception, record the action taken to resolve the exception in the "Resolution of Exception" section of the Acceptance Test Procedure Exception Record.

- When the action taken results in an acceptable retest, initial and date the Correction Approval section of the Exception Sheet

- When the action taken does not result in an acceptable retest, provide in the performance log, a detailed explanation of why the retest action was not acceptable, and what additional plans are required.

2.4.6 Upon completion of the Acceptance Test Procedure, obtain approval of the test performance. Each Test Execution Sheet will stand alone as approval for the system under test. The Acceptance Test will be complete when all the outstanding tests have been performed and the Acceptance Test Report is prepared. The test will be approved by checking the proper response, with or without exceptions, on the Test Execution Sheet under the "Approval and Acceptance of Test Results" section of the Test Execution Sheet.

2.4 GENERAL INFORMATION (Cont).

NOTE - The following steps detail the possible conditions that may exist at the completion of the Acceptance Test Procedure, and the steps necessary to complete acceptance in those conditions.

2.4.7 The completed test may be approved without test exceptions:

- Check applicable space on Test Execution Sheet to show that the Acceptance Test Procedure has been performed and no exceptions have been recorded
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided
- Distribute requisite copies as directed by the client
- Send the Master Copy of the completed Acceptance Test Procedure to the client.

2.4.8 The completed test may be approved with exceptions resolved:

- Check applicable space on Test Execution Sheet to show that this procedure has been performed with exceptions recorded and resolved
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided
- Distribute requisite copies as directed by the client
- Send the Master Copy of the completed Acceptance Test Procedure to the client.

2.5 RECORDS

2.5.1 All personnel involved in the performance of this test shall sign in Procedure Signature Sheet.

2.5.2 Test results shall be recorded. Unless specific data is required, the signature or initials as applicable, of the person accepting the item will be entered in the blank provided to indicate compliance with the stated requirements or the successful completion of the given test step. Errors shall be corrected by crossing out the incorrect data with a single line and the correct response shall be written in the direct vicinity of the original item. The person making the correction shall initial and date the correction. A complete working copy of this procedure and any exception records generated shall be maintained as a permanent record.

2.5.3 An Exception Log and Exception Record sheet is attached in the event exceptions to the test are made when the test is being performed. All exceptions to the test are to be dispositioned and agreed to by all witnesses. Actions taken regarding disposition are noted on the exception sheet. During the performance of this test, errors in test may be encountered which require correction or adjustment to complete the test. Such corrections are to be noted in the procedure and listed as an exception.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 PERSONNEL SAFETY

3.1.1 If the performance of this procedure is suspended for any reason, ensure the equipment is left in a safe state.

3.1.2 If any equipment problem is observed during the performance of this procedure, immediately notify the Test Director.

3.1.3 Proper lifting techniques shall be utilized throughout the procedure and personnel shall take precautions to ensure back strain, pinchpoints and protective clothing are observed.

4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Tape Measure/Ruler

4.2 CONDITIONS AND ACTIONS

NOTE- All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.2.1 All field testing and inspection of the system or portions of the system to be tested has been completed.

Pat Fuller — Test Engineer Signature — 3-1-00 — Date

4.2.2 A pre-job briefing has been held and all participants have been thoroughly briefed on job safety, hazards and their responsibilities before performing this ATP.

Pat Fuller — Test Director Signature — 3-1-00 — Date

4.2.3 Test Director VERIFY "ZERO" data collection time is set to 60 seconds.

Pat Fuller — Test Director Signature — 3-1-00 — Date

5.0 PROCEDURE

5.1 SETUP

5.1.1 **RECORD** the Gamma Cart Identifier letter and CPU number for the system being tested.

Gamma Cart = A CPU = WC68789

5.1.2 **ENSURE** the GAMMA CART riser extension tool is mounted on the test riser.

5.1.3 **ENSURE** the Gamma CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.4 **ENSURE** the "Raise-Off-Lower" selector switch is in the "OFF" position.

5.1.5 **ENSURE** the Emergency Stop button is pulled out.

5.1.6 **POSITION** the speed control potentiometer to zero speed (fully counter clockwise).

5.1.7 **ENSURE** the Local/~~Control~~ Remote button is in the "Local" position. 3-1-00 see performance log

5.1.8 **ENSURE** probe, limit switch, communication and power cables are connected.

5.2 LOCAL CONTROL

	5.2.1	**ENSURE** the Local/~~Control~~ button is in the "Local" position. Remote 17 3-1-00 See Performance log
	5.2.2	**MOVE** the RAISE-OFF-LOWER selector switch to the LOWER position.
	5.2.3	**SET** the speed control knob to approximately 20%.
	5.2.4	**PRESS AND HOLD** the Reset button on the cart.
	5.2.5	**Ensure** the probe begins to lower.
	5.2.6	**RELEASE** the Reset button on the cart.
	5.2.7	**Ensure** the speed changes as the speed controller is adjusted from 0-100%.
	5.2.8	**SET** the speed control knob to approximately 20%.
	5.2.9	**PRESS** the Emergency Stop button on the cart as the probe is lowering.
	5.2.10	**ENSURE** the cable has stopped moving.
	5.2.11	**PULL** the Emergency Stop button.
	5.2.12	**PRESS** the Reset button on the cart.
	5.2.13	**ENSURE** the probe continues to lower.
	5.2.14	**MOVE** the RAISE-OFF-LOWER selector switch to the OFF position.
	5.2.15	**ENSURE** the probe stops.
	5.2.16	**MOVE** the RAISE-OFF-LOWER selector switch to the RAISE position.
	5.2.17	**ENSURE** the probe begins to raise.
	5.2.18	**Ensure** the speed changes as the speed controller is adjusted from 0-100%.
	5.2.19	**SET** the speed control knob to approximately 20%.
	5.2.20	**ENSURE** the probe trips the limit switch and stops.
	5.2.21	**ENSURE** the local depth indicator indicates 0, by hitting reset if necessary.
	5.2.22	**MOVE** the RAISE-OFF-LOWER selector switch to the OFF position.
	5.2.23	**SET** the speed control knob to 0%.

5.3 LOGIN

5.3.1 At the operating system login screen, **PRESS** cancel.

5.3.2 **ENSURE** Gamma Cart Spectrum Analyzer and Control System Login screen loads.

5.3.3 **CLICK** on login button.

5.3.4 On the login window **INPUT** the following data obtained from the test director:

- Valid System Engineer Username
- Correct Password

5.3.5 **EXIT** necessary programs **AND ENSURE** directory of the format "C:\A-00mmdd" or "C:\B-00mmdd" (depending on cart tested) does not exist.

5.3.6 **RESTART** the system.

5.3.7 At the operating system login screen, **PRESS** cancel.

5.3.8 On the login window **INPUT** the following data obtained from the test director:

- Valid Operator Username
- Incorrect Password

5.3.9 **ENSURE** the login fails.

5.3.10 **CLICK** on "RETRY".

5.3.11 Using the same Username **INPUT** a valid password ("gcart").

5.3.12 **CLICK** on "OK" button.

5.3.13 **ENSURE** the screen changes to the Gamma Cart Display screen.

5.3.14 **UNPLUG** the communication cable **AND ENSURE** the "Communication Failure" message is flashing.

5.3.15 **PLUG** the communication cable back in **AND ENSURE** the "Communication Failure" message disappears.

5.3.16 On the control screen, **ENSURE** the Local/Remote switch displays in the LOCAL position.

5.3.17 On the control screen, **ENSURE** Start, Stop, Zero, Emergency Stop buttons and depth indication is not visible.

5.4 Incremental Sample Mode

5.4.1 **SET** the Local/Remote switch on the gamma cart to Remote.

5.4.2 **ENSURE** Start, Stop, Zero, and Emergency Stop buttons appear.

5.4.3 On the control screen, **ENSURE** the Local/Remote switch displays in the REMOTE position.

5.4.4 On the Gamma Cart Control screen, **SELECT** the "Config." button.

5.4.5 On the Data Collection Configuration window, **SELECT** the "Incremental" button.

5.4.6 **SELECT/ENTER** the following data:

Tank Number	AZ-101
Cart	(step 5.1.1)
Probe Type	1
Riser ID: ft	14D: 55.410
Sample Time:	180 sec

5.4.7 **ENSURE** the Real/Live toggle button indicates "REAL".

5.4.8 **INPUT** the following Sample Collection Data:

Sample Start Depth:	12.0 ft
Interval Size:	1.5 ft
Sample End Depth:	3.5 ft

5.4.9 **CLICK** on "SAVE" button.

5.4.10 **CLICK** on "EXIT" button.

5.4.11 On the control screen, **SELECT** the Start button.

5.4.12 **ENSURE** the Start, Zero and logout buttons are not visible.

5.4.13 **ENSURE** the probe zeroes and data acquisition software indicates a sample time of 60 seconds.

5.4.14 **ENSURE** the on screen depth display **AND** local display indicate zero.

5.4.15 **MEASURE AND RECORD** the distance at each point in Table 5.4A.

5.4.16 **ENSURE** the data collection software screen appears at each point AND indicates Preset Limit Real = 180 sec.

5.4.17 **CLICK** on the "Probe Location" on the control screen.

5.4.18 **ENSURE** the Probe Location screen appears and indicates the probe location.

5.4.19 **CLICK** on the "Back" button.

5.4.20 **ENSURE** the Probe Location screen closes.

Note: The cable is labeled in 1 foot increments.

Table 5.4A

Depth (ft)	Local Depth Indicator	Remote Depth Indicator	Expected Cable Reading	Measured Cable Reading	Difference (inches) (Expected - Measured)	Data Collection Screen Appeared W/correct time (Y/N)
12	12.06	12.00	12'	12' 1/4"	1/4"	Y
10.5	10.55	10.50	10'6"	10' 6 1/2"	1/2"	Y
9	9.04	9.00	9'	9' 1/2"	1/2"	Y
7.5	7.53	7.50	7'6"	7' 6 1/4"	1/4"	Y
6	6.03	6.00	6'	6' 1/2"	1/2"	Y
4.5	4.52	4.50	4'6"	4' 6 1/2"	1/2"	Y

5.4.21 **ENSURE** the probe raises and trips the limit switch.

5.4.22 **ENSURE** sample is collected at zero position.

5.4.23 **ENSURE** Data Collection is Complete.

5.4.24 **CLICK** on "OK".

5.4.25 **ENSURE** the local and remote depth indicators agree ± 1".

5.4.26 **ENSURE** the Probe stopped within 1 inch of each programmed stopping point.

NOTE: The following steps will require the use of a drywell or a person in the pit to maintain weight on the cable.

5.4.27 On the Gamma Cart Control screen, **SELECT** the "Config." button.

5.4.28 On the Data Collection Configuration window, **SELECT** the "Incremental" button.

5.4.29 **INPUT** the following Sample Collection Data:

Sample Start Depth:	50.0 ft
Interval Size:	10.0 ft
Sample End Depth:	0.0 ft

5.4.30 **CLICK** on "SAVE" button.

5.4.31 **CLICK** on "EXIT" button.

5.4.32 On the control screen, **SELECT** the Start button.

5.4.33 **ENSURE** the probe zeroes and data acquisition software indicates a sample time of 60 seconds.

5.4.34 After the probe has lowered approximately 3 feet, **SELECT** the Stop button on the control screen.

5.4.35 **ENSURE** the probe stopped.

5.4.36 **SELECT** the "ZERO" button.

5.4.37 **SELECT** the Emergency Stop button on the control screen.

5.4.38 **ENSURE** the probe stopped.

5.4.39 **ENSURE** the "Probe not zeroed" message appears.

5.4.40 **CLICK** on "OK".

5.4.41 **SELECT** the Reset Emergency Stop button on the control screen.

5.4.42 **ENSURE** the Start, Stop and Zero buttons appear on the control screen.

5.4.43 **SELECT** the "ZERO" button.

5.4.44 **ENSURE** the limit switch is tripped.

5.4.45 **PRESS** "Start".

5.4.46 **ENSURE** the probe zeroes and data acquisition software indicates a sample time of 60 seconds.

5.4.47 **MEASURE AND RECORD** the distance at each point in Table 5.4B.

5.4.48 **ENSURE** the data acquisition software appears AND REAL time indicates 180 secs.

Note: The cable is labeled in 1 foot increments.

Table 5.4B

Depth (ft)	Local Depth Indicator	Remote Depth Indicator	Measured Cable Reading (Actual)	Difference (inches) (Expected - Measured)	Data Collection Screen Appeared W/correct time (Y/N)
50	50.18	50.00	50'	0	Y
40	40.15	40.00	40'	0	Y
30	30.10	30.00	29' 11 7/8"	1/8"	Y
20	20.08	20.00	19' 11 3/4"	1/4"	Y
10	10.02	10.00	10'	0	Y

5.4.49 **ENSURE** the probe zeroes and data acquisition software indicates a sample time of 60 seconds.

5.4.50 **CLICK** on "OK" when "Data Collection Complete" window appears.

5.4.51 **ENSURE** the Probe stopped within 2 inches of each programmed stopping point.

5.4.52 **ENSURE** the stop depth is ±1/4 inch from the starting point.

5.4.53 On the Gamma Cart Control screen, **SELECT** the "Config." button.

5.4.54 On the Data Collection Configuration window, **SELECT** the "Incremental" button.

5.4.55 **INPUT** a Sample Start Depth, Interval Size and Sample End depth of -2.0 ft.

5.4.56 **CLICK** on the "SAVE" button.

5.4.57 **ENSURE** the data boxes are in red and an out of range message appears then **EXIT**.

5.4.58 **SELECT** the config button and confirm that the "-2.0" values were not saved.

5.5 User Defined Mode

5.5.1 On the Data Collection Configuration window, **SELECT** the "User Defined" button.

5.5.2 **SELECT/ENTER** the following data:

Tank Number	AZ-101
Cart	(step 5.1.1)
Riser ID: ft	14G: 55.370
Probe Type	2
Sample Time	150 sec

5.5.3 **ENSURE** the Real/Live toggle button indicates "LIVE".

5.5.4 **INPUT** the following Depths From Table 5.5:

Table 5.5

Sample	Depth	Expected Cable Reading	Actual Cable Reading	Difference (Expected-Actual)
1	11.25	11' 3"	11' 3 1/8"	1/8"
2	10.00	10'	10' 3/8"	3/8"
3	9.50	9' 6"	9' 6 1/4"	1/4"
4	8.75	8' 9"	8' 9 3/8"	3/8"
5	7.50	7' 6"	7' 6 1/4"	1/4"
6	7.25	7' 3"	7' 3 3/8"	3/8"
7	6.50	6' 6"	6' 6 1/2"	1/2"
8	4.25	4' 3"	4' 3 1/4"	1/4"
9	3.25	3' 3"	3' 3 1/4"	1/4"
10	3.00	3'	3' 1/8"	1/8"
11	2.25	2' 3"	2' 3 1/8"	1/8"
12	1.75	1' 9"	1' 9"	0
13	1.25	1' 3"	1' 2 7/8"	1/8"
14	2.75	2' 9"	2' 9"	0
15	4.00	4'	4' 1/4"	1/4"
16	7.00	7'	7' 3/8"	3/8"
17	4.75	4' 9"	4' 9 3/8"	3/8"
18	11.00	11'	11' 1/4"	1/4"
19	7.50	7' 6"	7' 6 3/8"	3/8"
20	8.25	8' 3"	8' 3 1/4"	1/4"

Note: The cable is labeled in 1 foot increments.

5.5.5 **CLICK** on "SAVE".

5.5.6 **CLICK** on "EXIT".

5.5.7 On the control screen **SELECT** the Start button.

5.5.8 **ENSURE** the data acquisition software appears AND Preset Limits LIVE time indicates 60 secs.

5.5.9 **MEASURE AND RECORD** (in Table 5.5) the distance at each stopping point.

5.5.10 **ENSURE** sample is collected at zero position.

5.5.11 **ENSURE** Data Collection is Complete.

5.5.12 **CLICK** on "OK".

5.5.13 **ENSURE** the Probe stopped within 1 inch of each programmed stopping point **AND INITIAL** the appropriate space in the table above.

5.6 LOGOUT

5.6.1 On Gamma Cart Display screen, **CLICK** on logout.

5.6.2 ENSURE the screen changes to the Login screen.

5.6.3 CLICK on Exit.

5.6.4 ENSURE system reboots to operating system login.

5.7 DATA COLLECTION VERIFICATION

5.7.1 Check the directory for the day was created, and **ENSURE** the data from this test was recorded.

5.7.2 **PRINT** out charts of the data gathered from this test.

5.8 RESET ZERO SAMPLE TIME

5.7.1 **ENSURE** the data collection time is returned to 600 secs.

ATP PERFORMANCE LOG

This page may be reproduced as necessary. Page _____ of _____

ATP PERFORMANCE EVENT	DATE	INITIALS
Switch labeled local / Remote not	3-1-00	MJ
Local / control	3-1-00	PAW

ATP EXCEPTION LOG

This page may be reproduced as necessary. Page _____ of _____

Number	Date	Description

RPP-6006, Rev 0
~~RPR-5577, Rev 1~~

ATP EXCEPTION RECORD

This page may be reproduced as necessary. Page _____ of _____

ATP STEP NUMBER:	ATP EXCEPTION LOG#:
DESCRIPTION OF EXCEPTION:	
INITIATOR NAME/ORGANIZATION:	
DATE OF EXCEPTION:	
RESOLUTION OF EXCEPTION:	
CORRECTION APPROVAL:	
TEST DIRECTOR INITIAL: DATE:	
DATE OF RESOLUTION:	
TEST DIRECTOR SIGNATURE:	DATE:
TEST ENGINEER SIGNATURE:	DATE:
QUALITY ASSURANCE SIGNATURE:	DATE:

NO EXCEPTIONS
PHW 3-1-00

RPP-6006, Rev 0
~~RPP-6006, Rev 1~~

PROCEDURE SIGNATURE SHEET

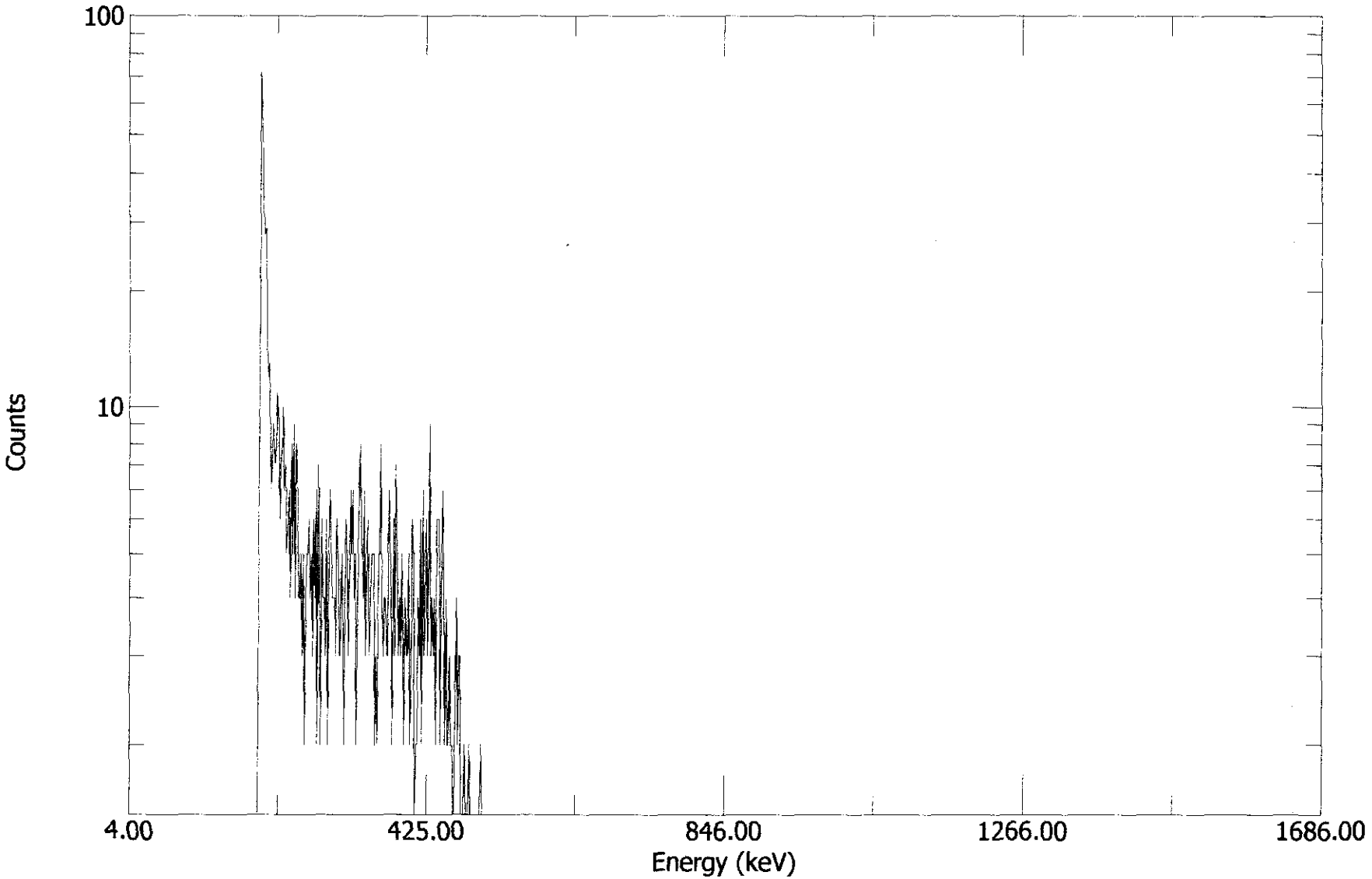
PRINT NAME	SIGNATURE	INITIALS
Paul A. Werner	Paul A. Werner	PAW
William L. Brasie	WILLIAM L. BRASIE	WLB
Pat Fuller	Pat Fuller	PF

RPP-6006, Rev 0
~~RPP-5579, Rev 1~~

PROCEDURE HISTORY SIGNATURE SHEET

A-000301S1

AZ-101, Riser-14D, .0ft, Probe-1, Cart-A

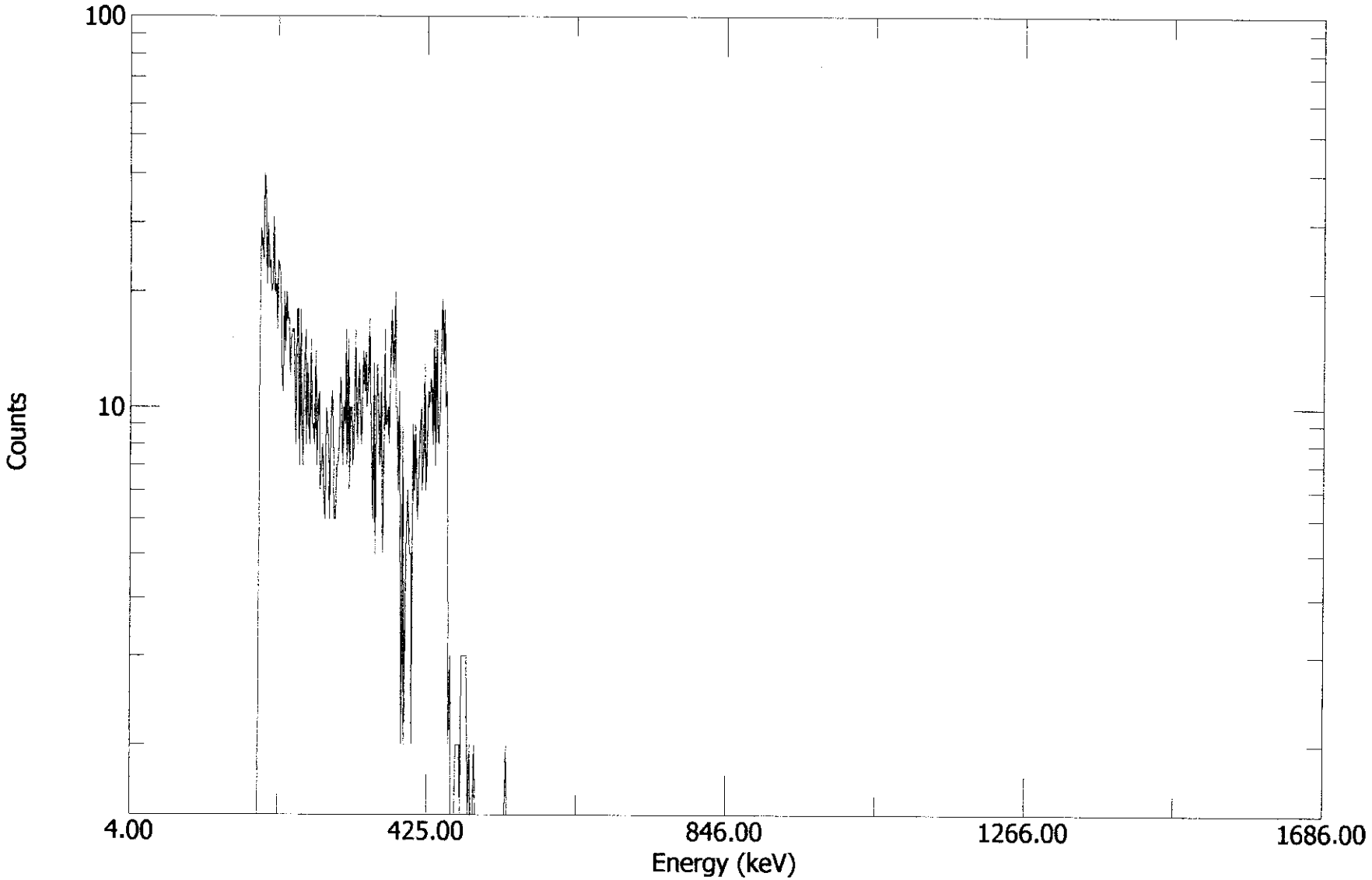


Acquired: 03/01/2000 09:36:56
File: A:\A-000301\A-000301S1.chn
Detector: #1 WC68789 MCB 25

Real Time: 61.06 s. Live Time: 60.00 s.
Channels: 1024

A-000301S2

AZ-101, Riser-14D, 12.0ft, Probe-1, Cart-A

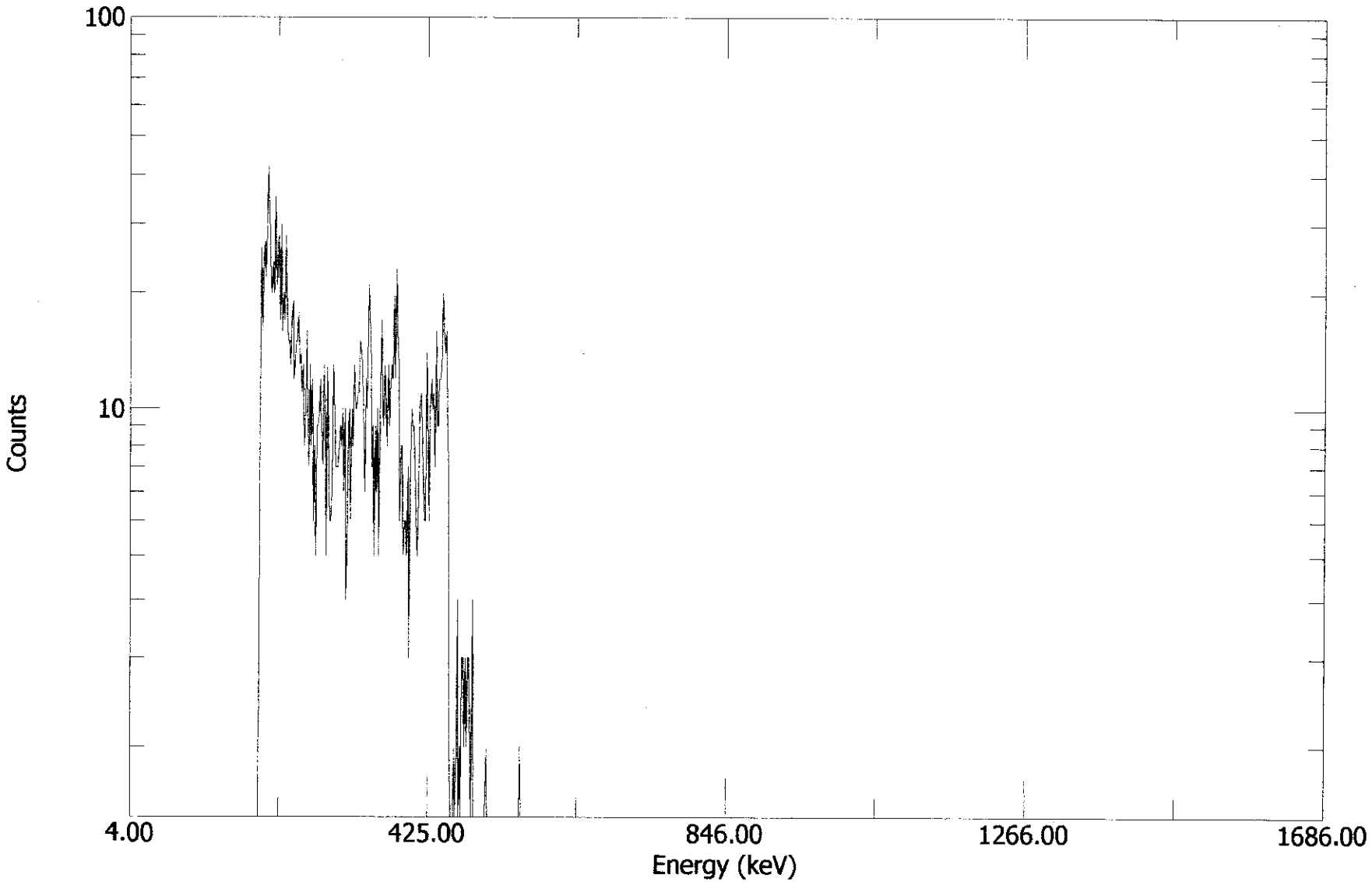


Acquired: 03/01/2000 09:40:33
File: A:\A-000301\A-000301S2.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.56 s.
Channels: 1024

A-000301S3

AZ-101, Riser-14D, 10.5ft, Probe-1, Cart-A

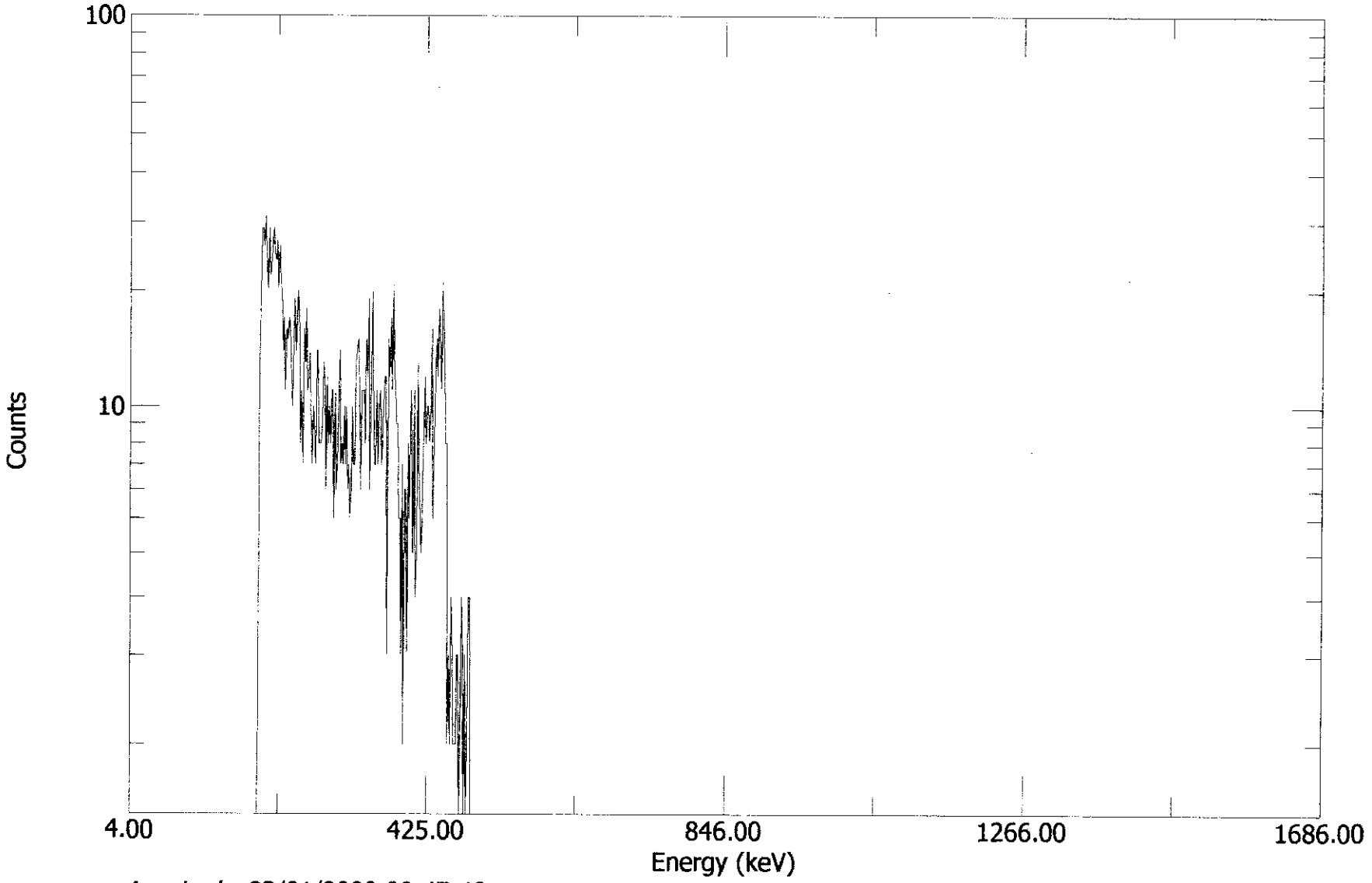


Acquired: 03/01/2000 09:44:07
File: A:\A-000301\A-000301S3.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.56 s.
Channels: 1024

A-000301S4

AZ-101, Riser-14D, 9.0ft, Probe-1, Cart-A

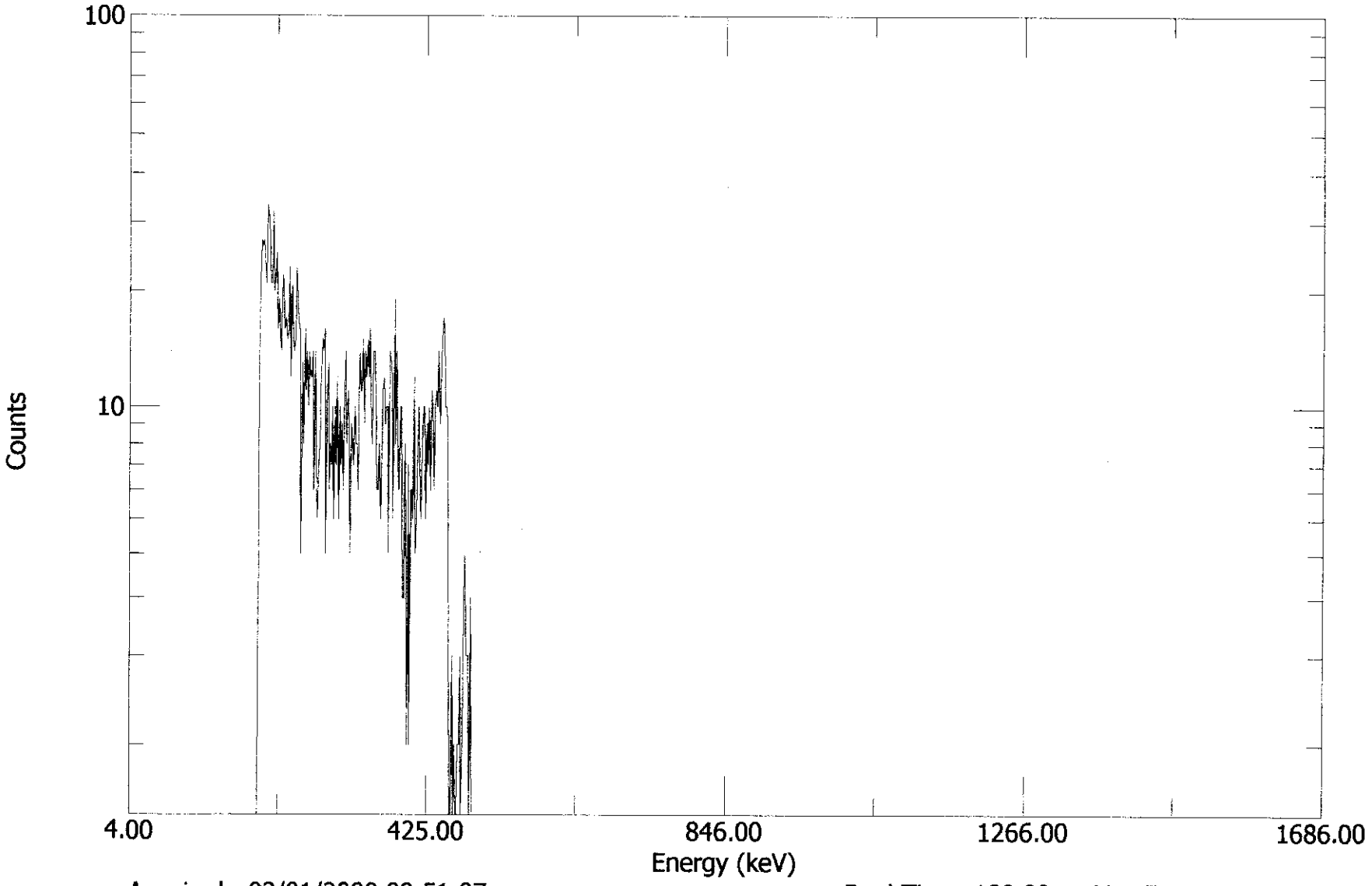


Acquired: 03/01/2000 09:47:40
File: A:\A-000301\A-000301S4.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.54 s.
Channels: 1024

A-000301S5

AZ-101, Riser-14D, 7.5ft, Probe-1, Cart-A

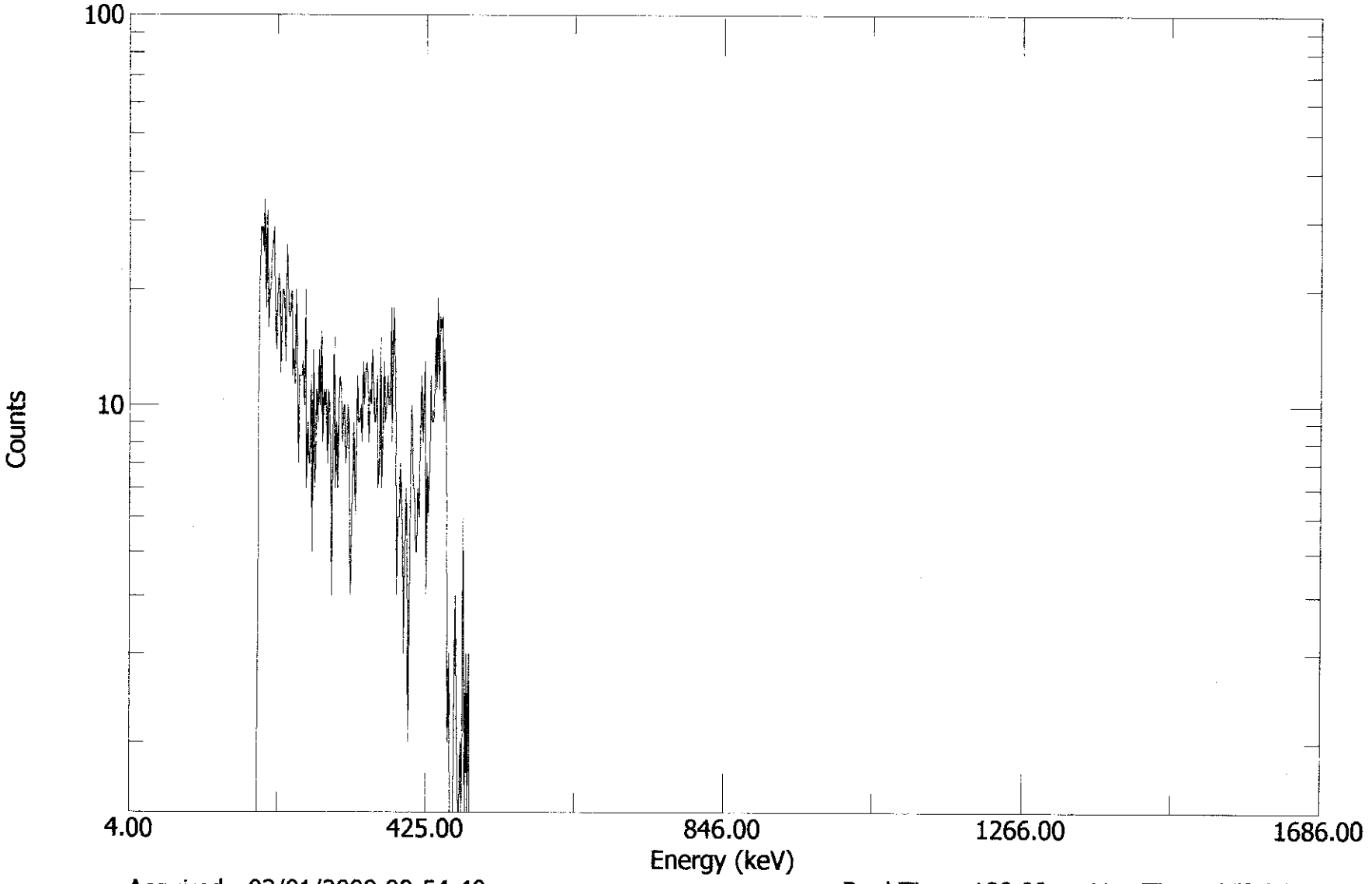


Acquired: 03/01/2000 09:51:07
File: A:\A-000301\A-000301S5.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.54 s.
Channels: 1024

A-000301S6

AZ-101, Riser-14D, 6.0ft, Probe-1, Cart-A

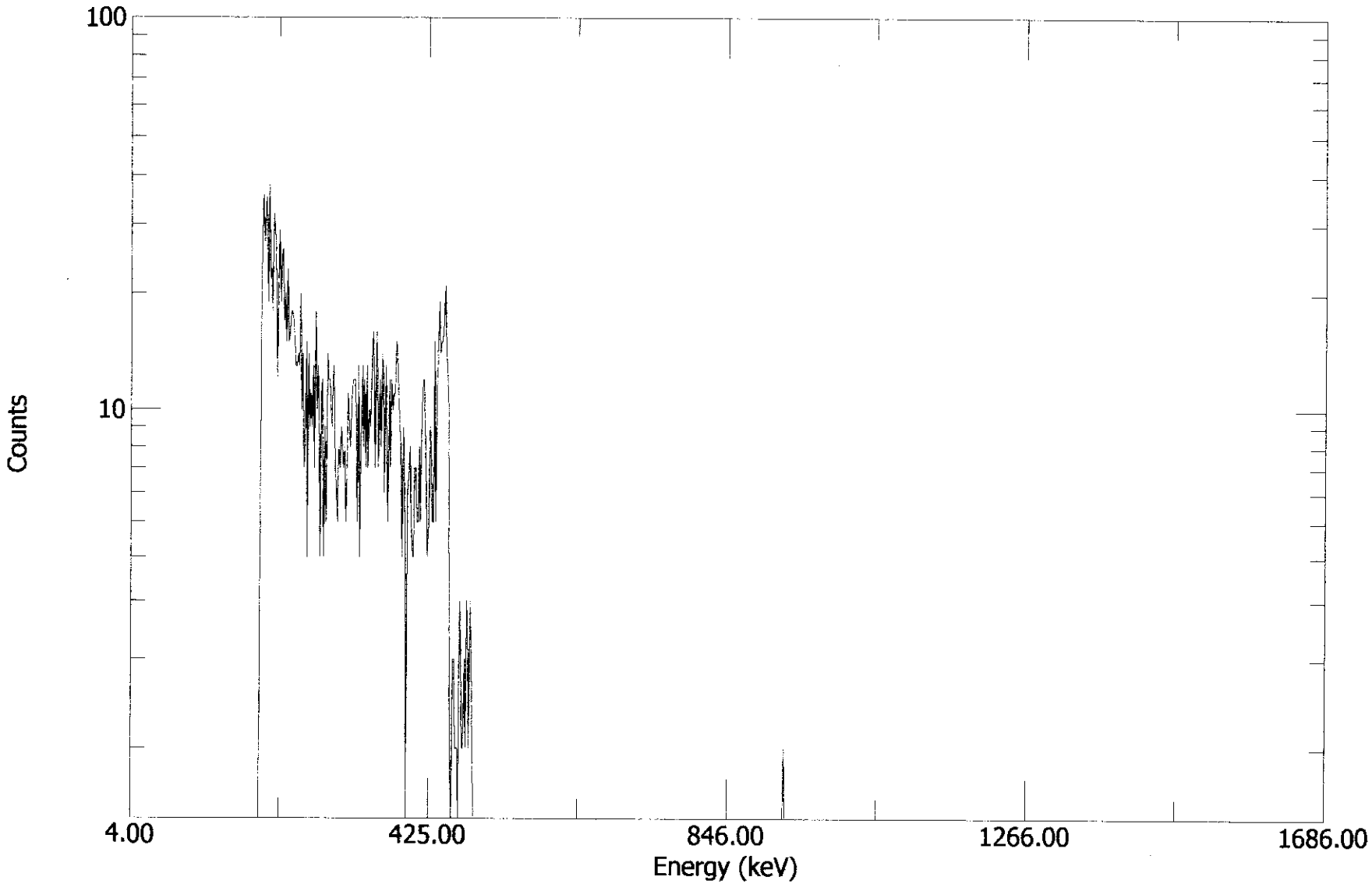


Acquired: 03/01/2000 09:54:40
File: A:\A-000301\A-000301S6.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.54 s.
Channels: 1024

A-000301S7

AZ-101, Riser-14D, 4.5ft, Probe-1, Cart-A

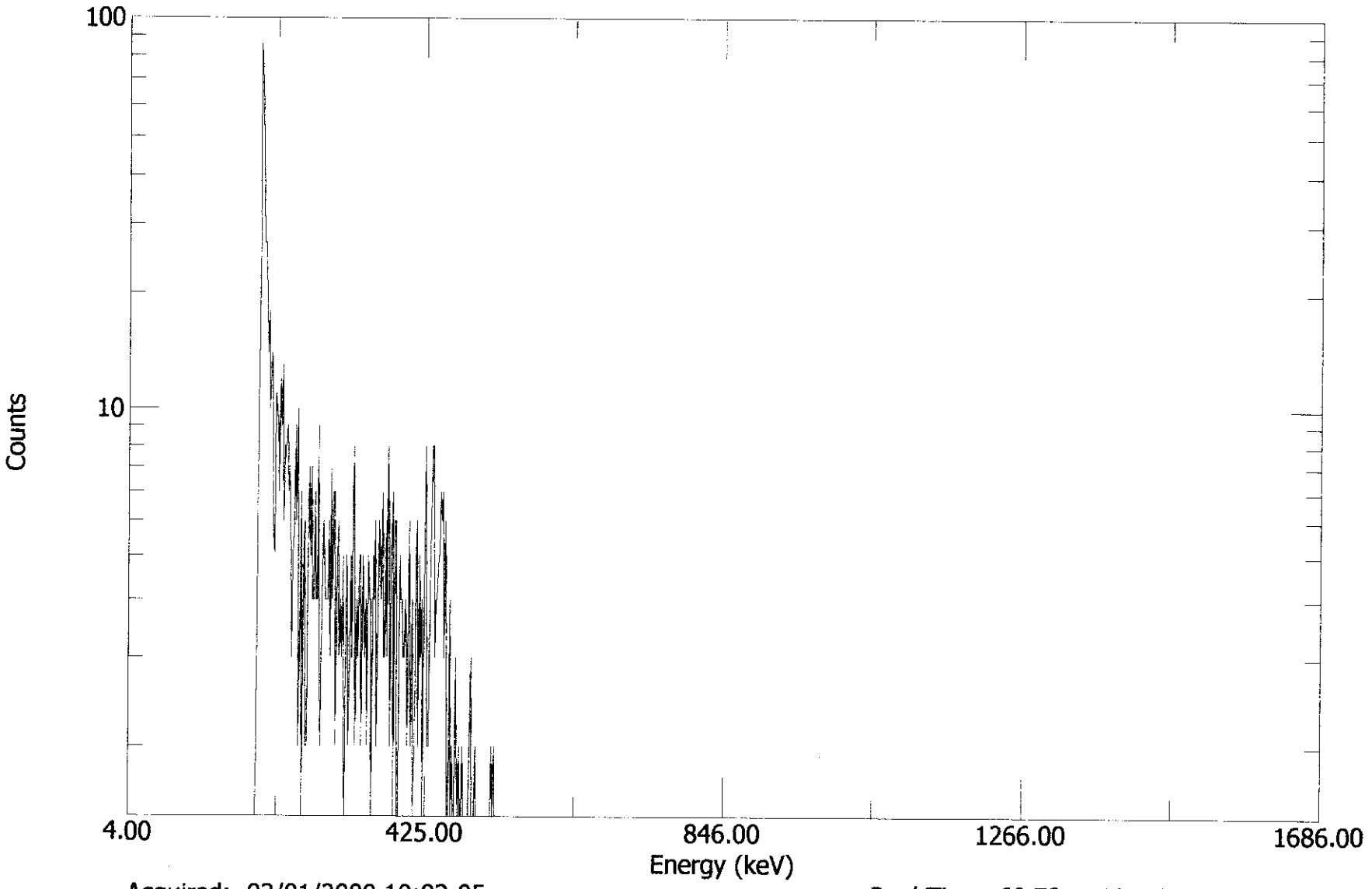


Acquired: 03/01/2000 09:58:52
File: A:\A-000301\A-000301S7.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.54 s.
Channels: 1024

A-000301S8

AZ-101, Riser-14D, .0ft, Probe-1, Cart-A

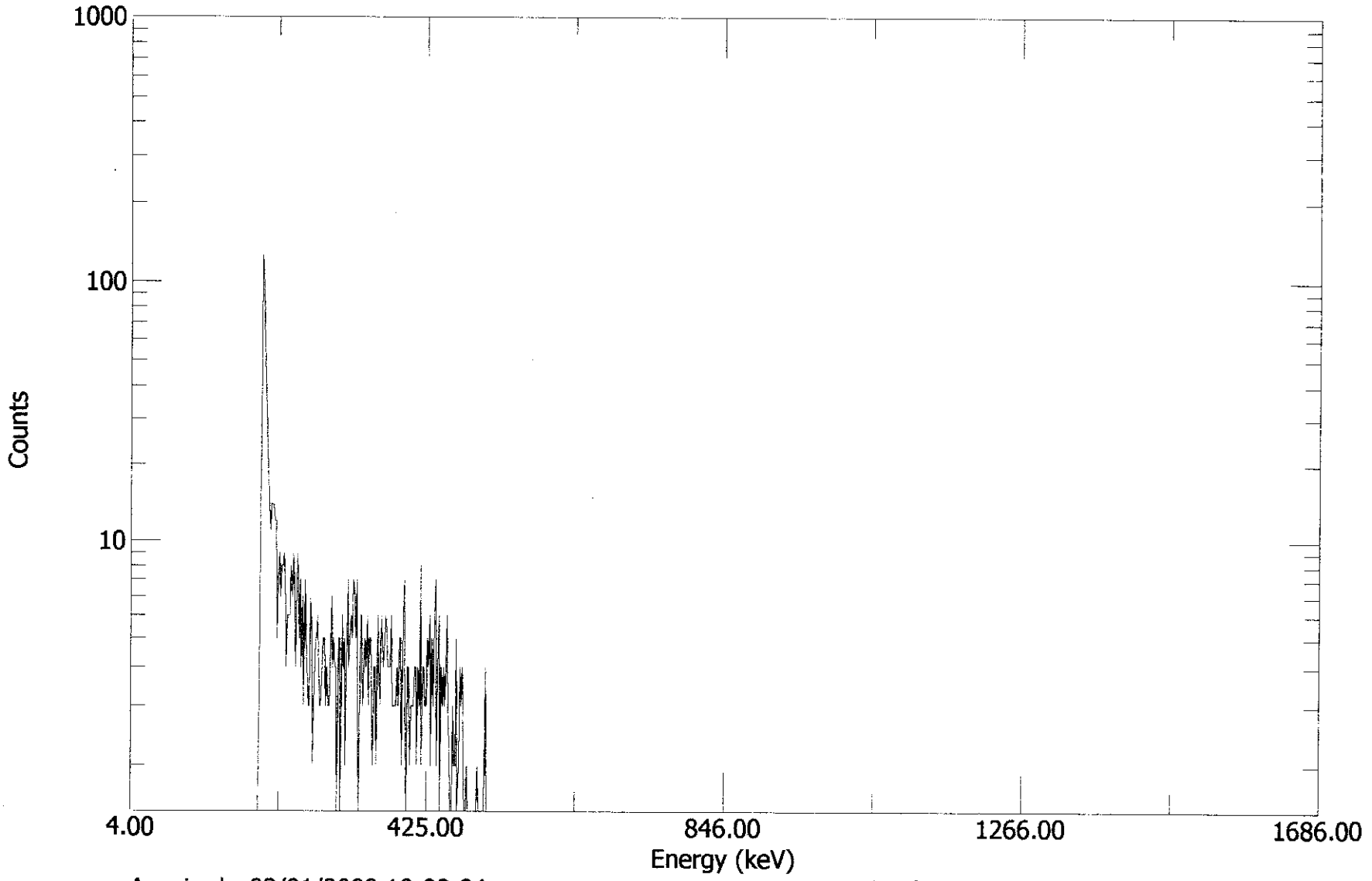


Acquired: 03/01/2000 10:03:05
File: A:\A-000301\A-000301S8.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.78 s. Live Time: 60.00 s.
Channels: 1024

A-000301S9

AZ-101, Riser-14D, .0ft, Probe-1, Cart-A

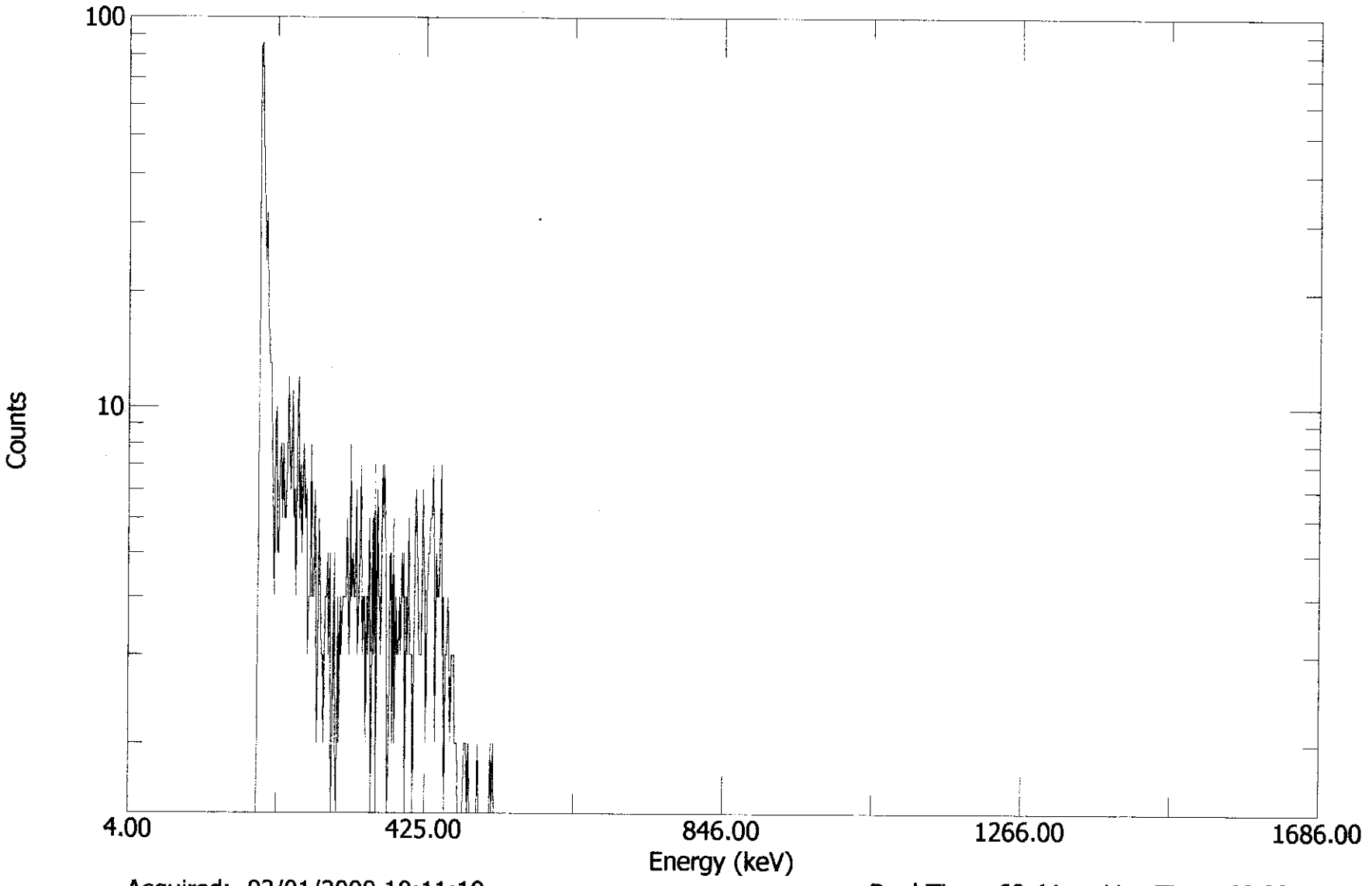


Acquired: 03/01/2000 10:08:04
File: A:\A-000301\A-000301S9.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.44 s. Live Time: 60.00 s.
Channels: 1024

A-000301S10

AZ-101, Riser-14D, .0ft, Probe-1, Cart-A

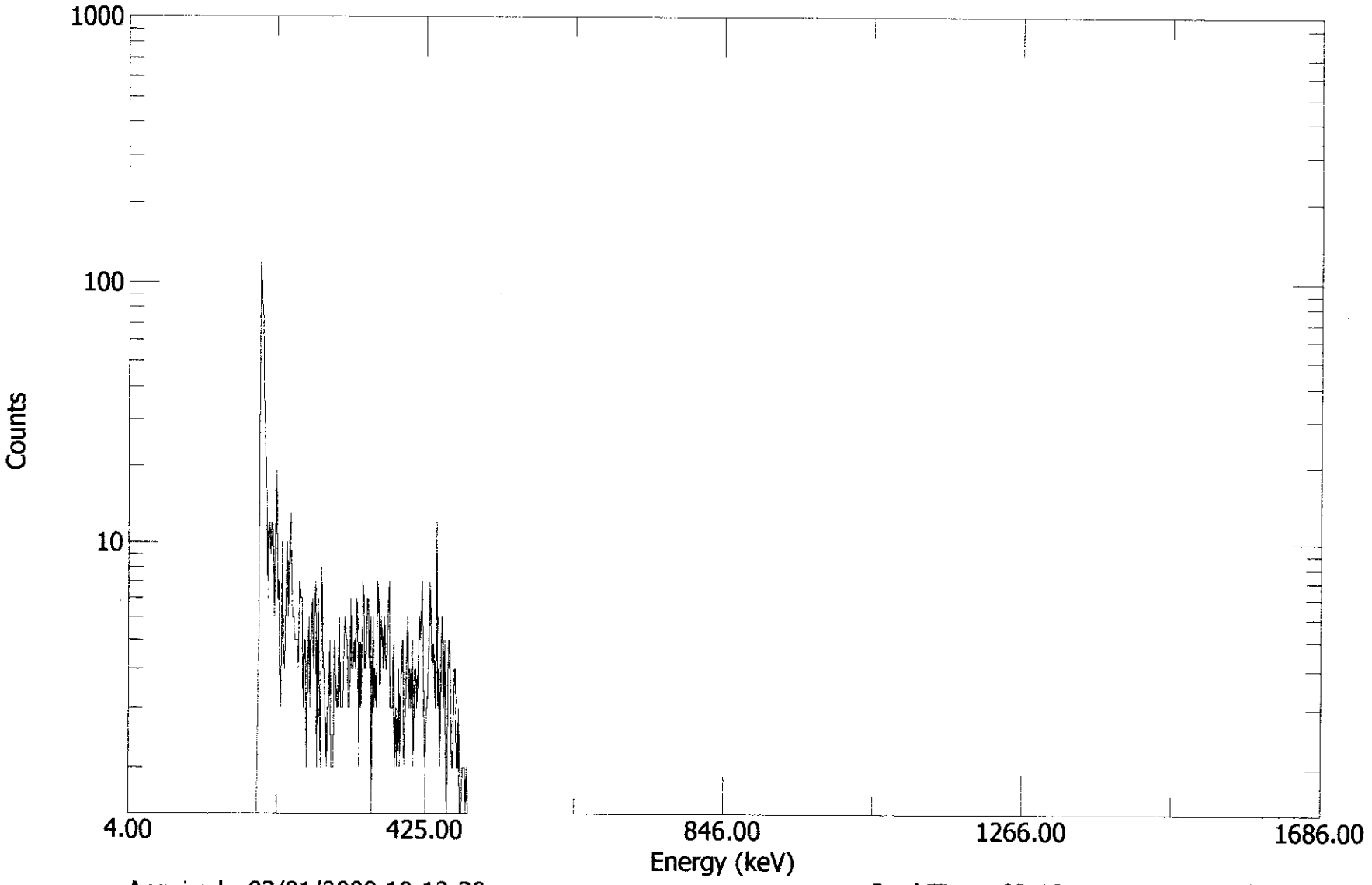


Acquired: 03/01/2000 10:11:19
File: A:\A-000301\A-000301S10.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.44 s. Live Time: 60.00 s.
Channels: 1024

A-000301S11

AZ-101, Riser-14D, .0ft, Probe-1, Cart-A

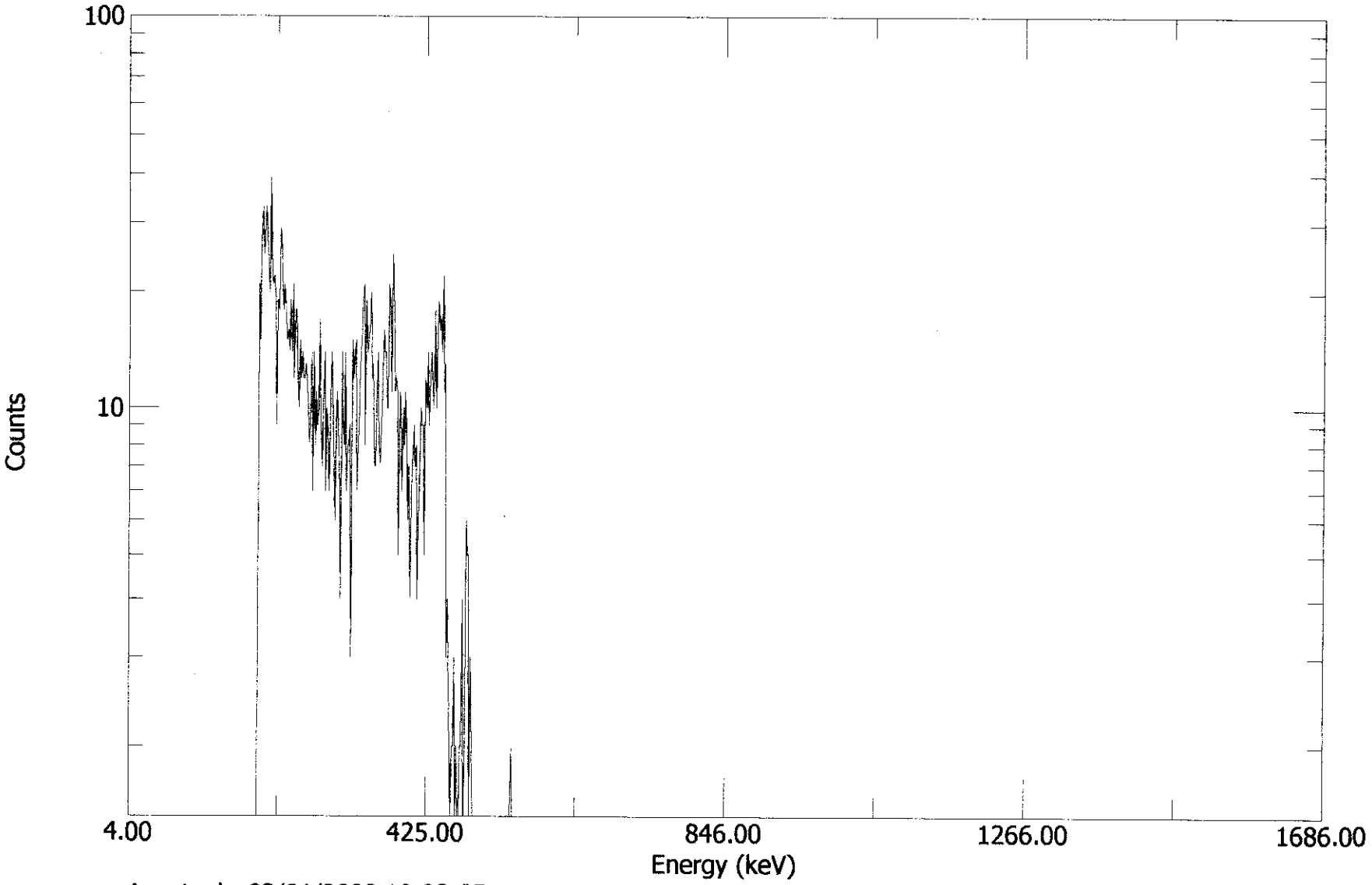


Acquired: 03/01/2000 10:12:30
File: A:\A-000301\A-000301S11.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.46 s. Live Time: 60.00 s.
Channels: 1024

A-000301S12

AZ-101, Riser-14D, 50.0ft, Probe-1, Cart-A

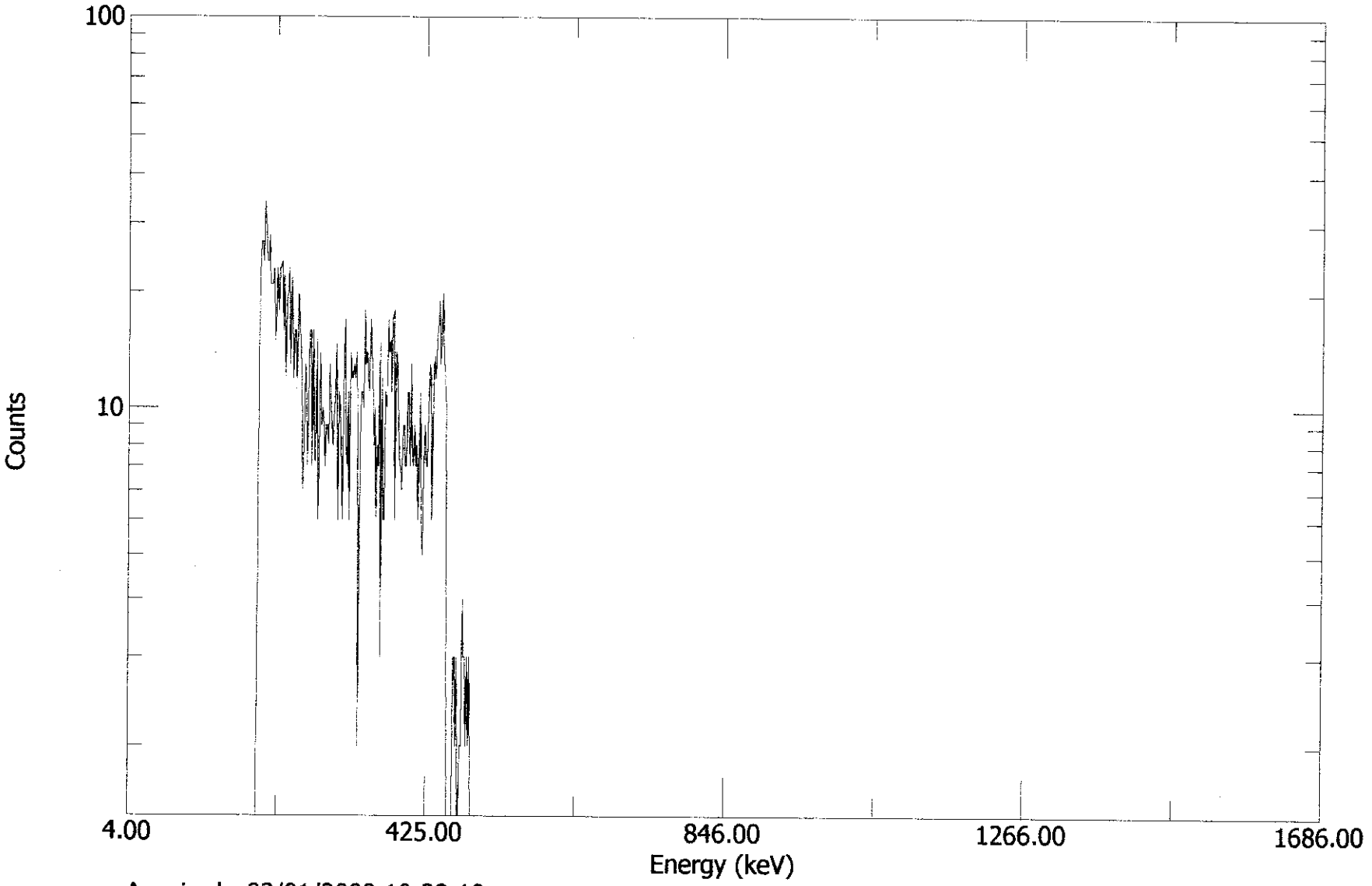


Acquired: 03/01/2000 10:23:05
File: A:\A-000301\A-000301S12.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.52 s.
Channels: 1024

A-000301S13

AZ-101, Riser-14D, 40.0ft, Probe-1, Cart-A

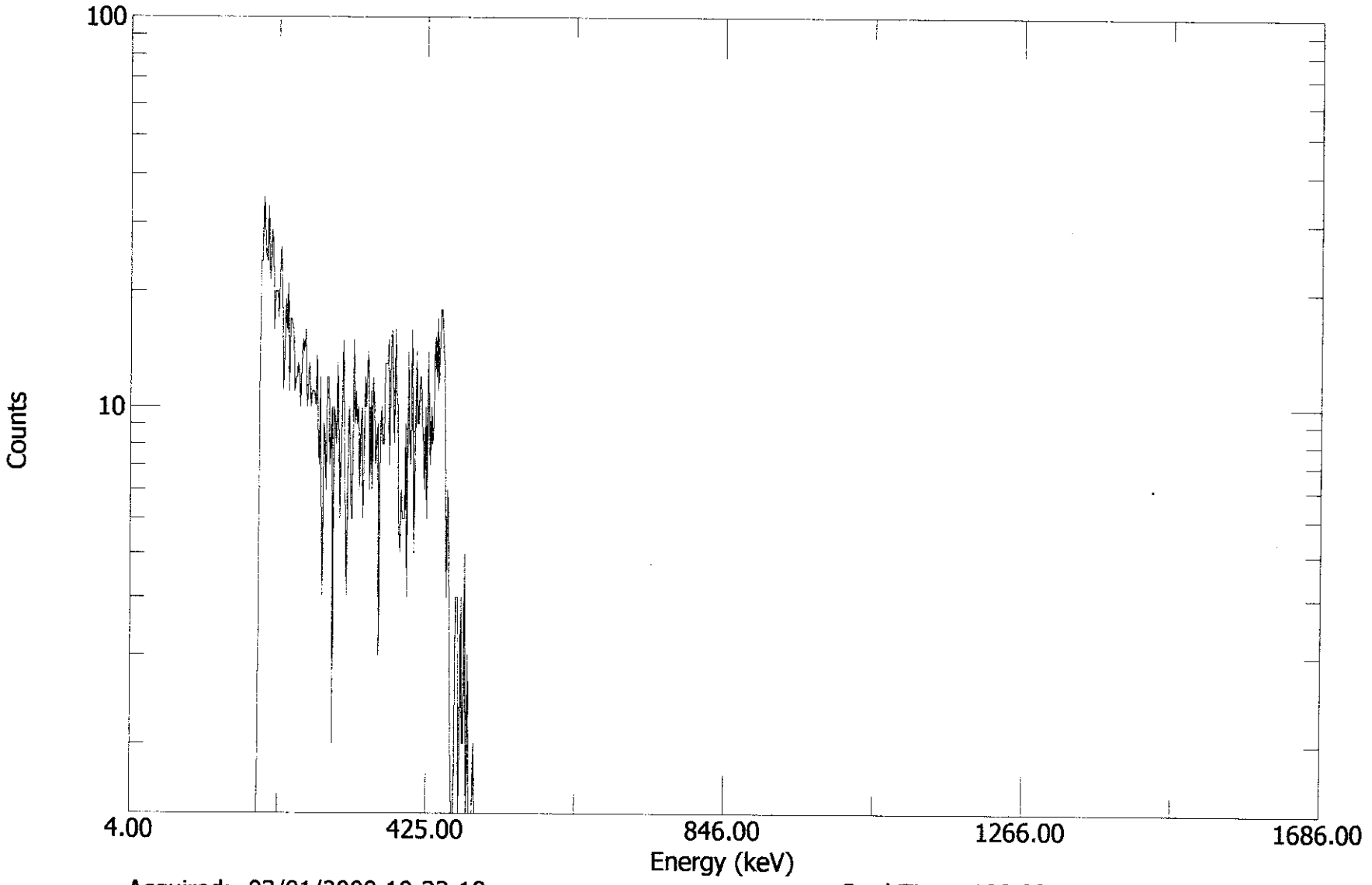


Acquired: 03/01/2000 10:28:10
File: A:\A-000301\A-000301S13.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.54 s.
Channels: 1024

A-000301S14

AZ-101, Riser-14D, 30.0ft, Probe-1, Cart-A

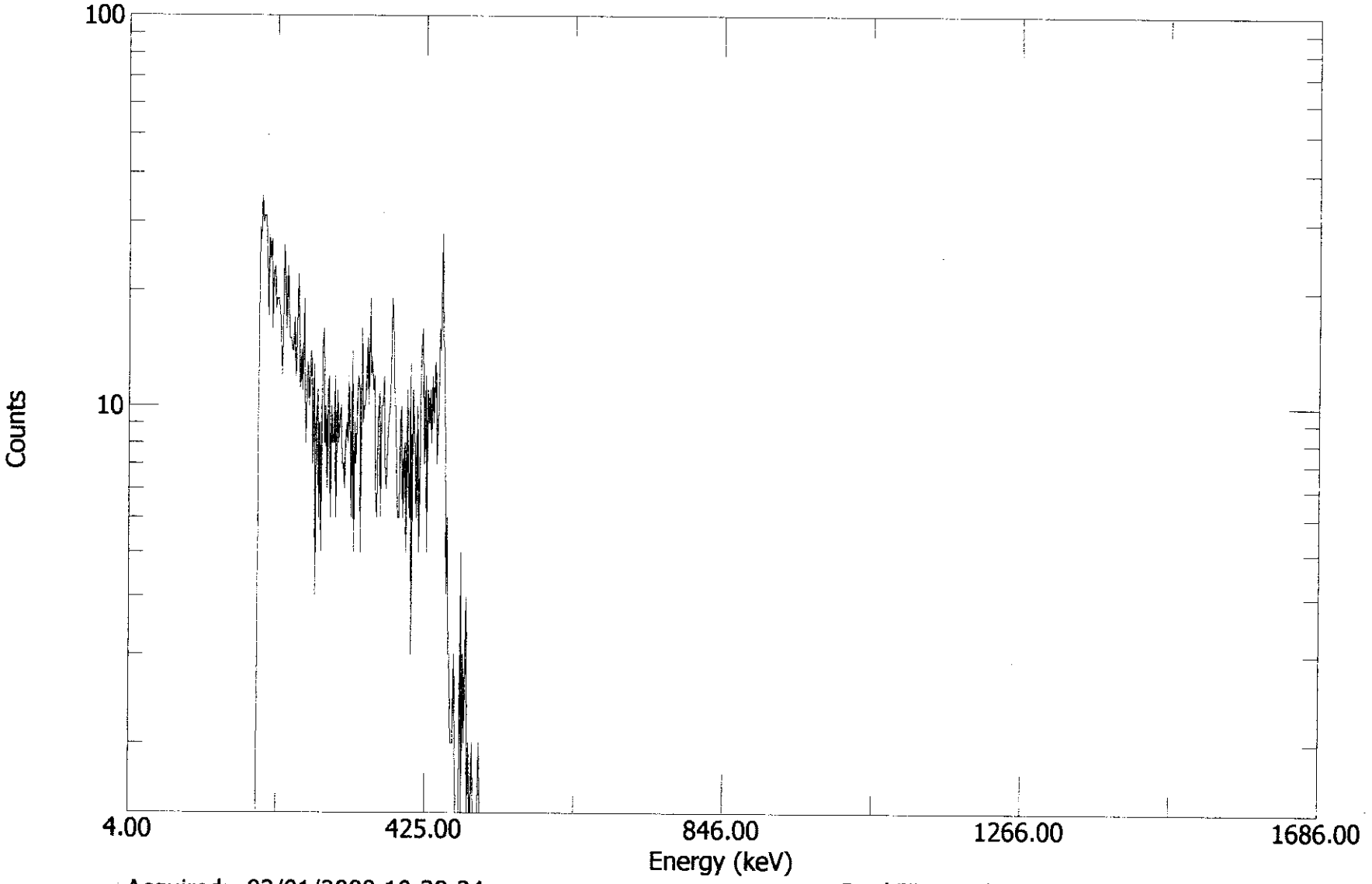


Acquired: 03/01/2000 10:33:18
File: A:\A-000301\A-000301S14.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.54 s.
Channels: 1024

A-000301S15

AZ-101, Riser-14D, 20.0ft, Probe-1, Cart-A

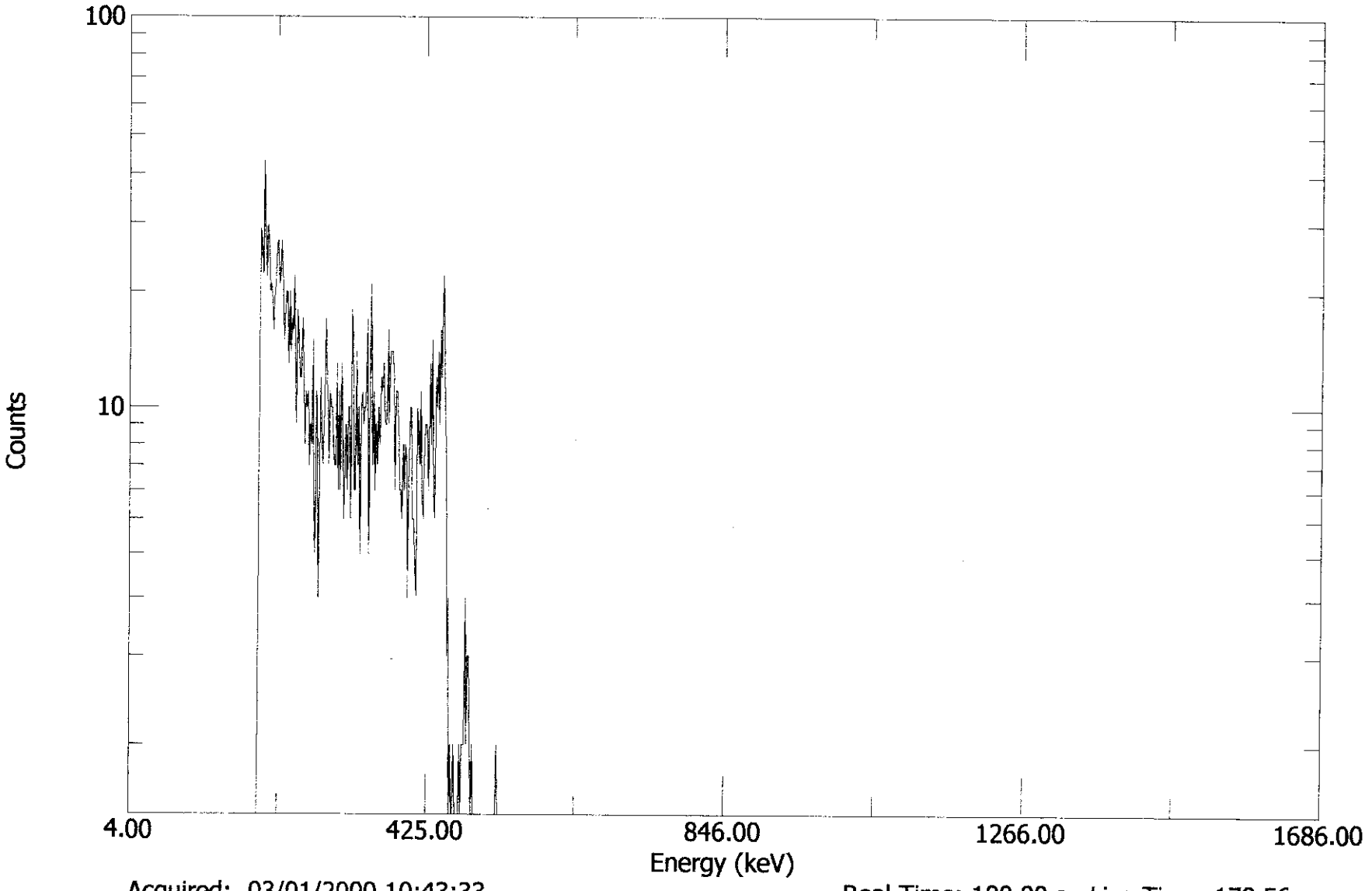


Acquired: 03/01/2000 10:38:24
File: A:\A-000301\A-000301S15.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.56 s.
Channels: 1024

A-000301S16

AZ-101, Riser-14D, 10.0ft, Probe-1, Cart-A

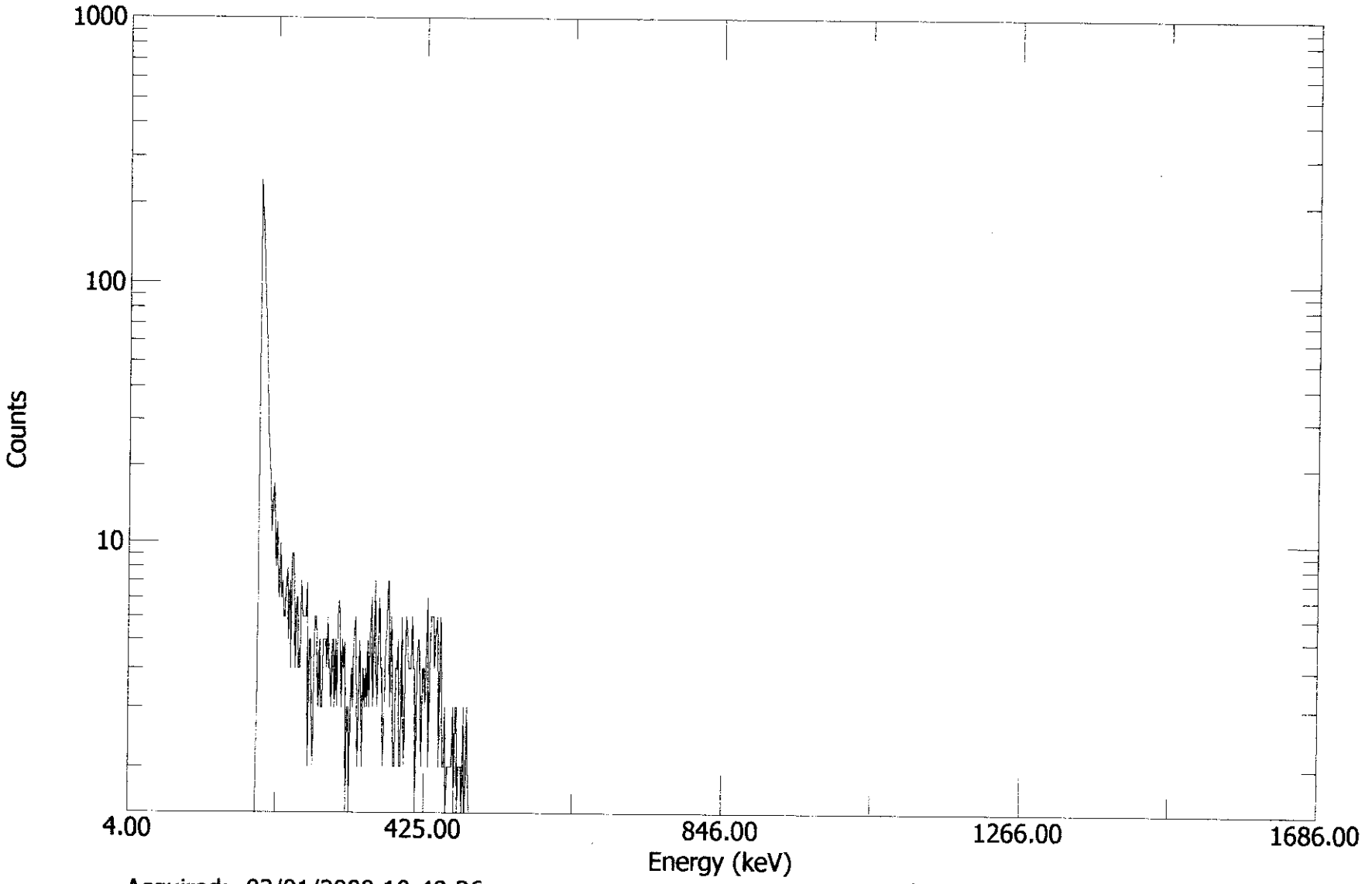


Acquired: 03/01/2000 10:43:33
File: A:\A-000301\A-000301S16.chn
Detector: #1 WC68789 MCB 25

Real Time: 180.00 s. Live Time: 179.56 s.
Channels: 1024

A-000301S17

AZ-101, Riser-14D, .0ft, Probe-1, Cart-A

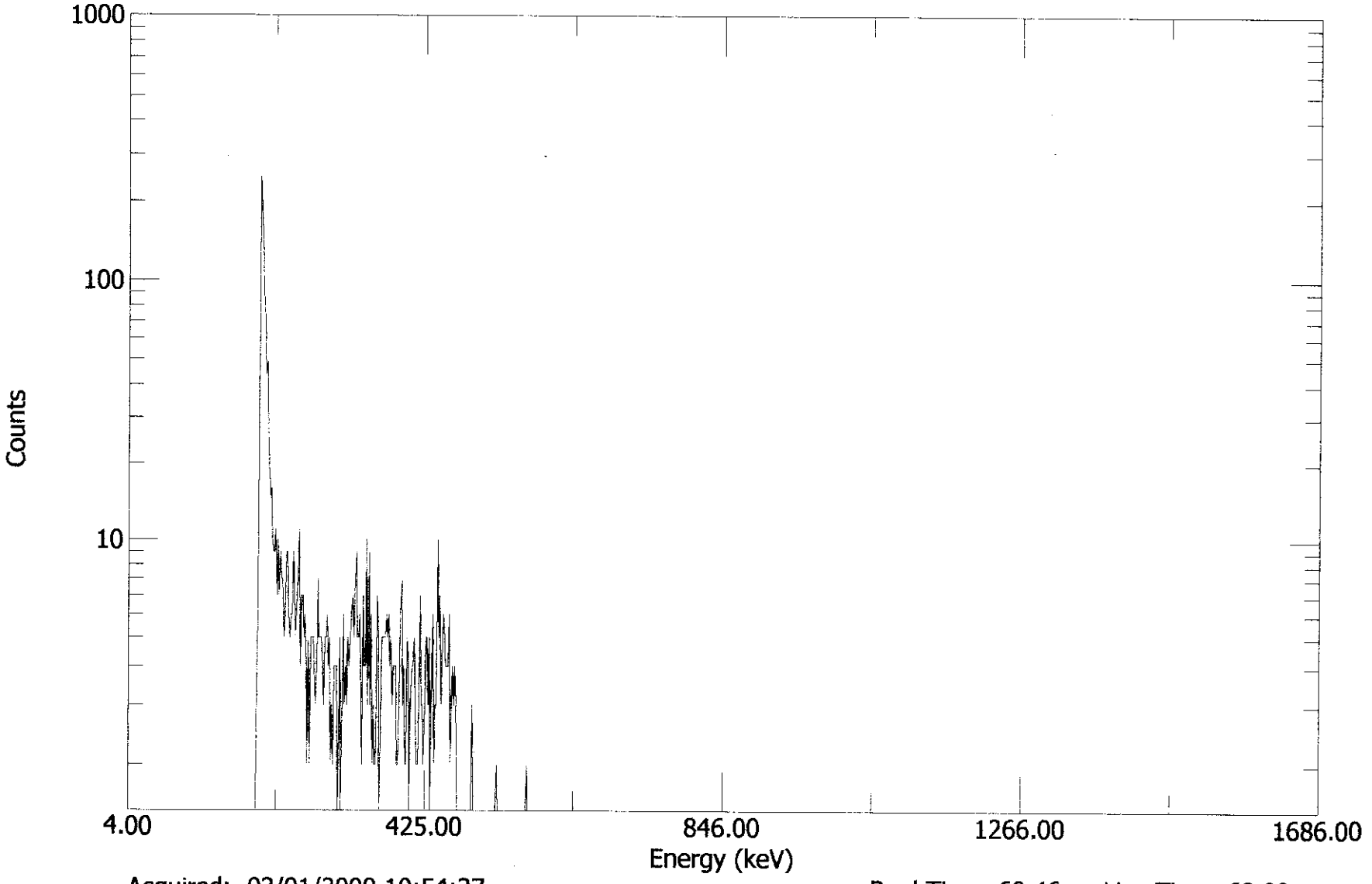


Acquired: 03/01/2000 10:48:36
File: A:\A-000301\A-000301S17.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.60 s. Live Time: 60.00 s.
Channels: 1024

A-000301S18

AZ-101, Riser-14G, .0ft, Probe-2, Cart-A

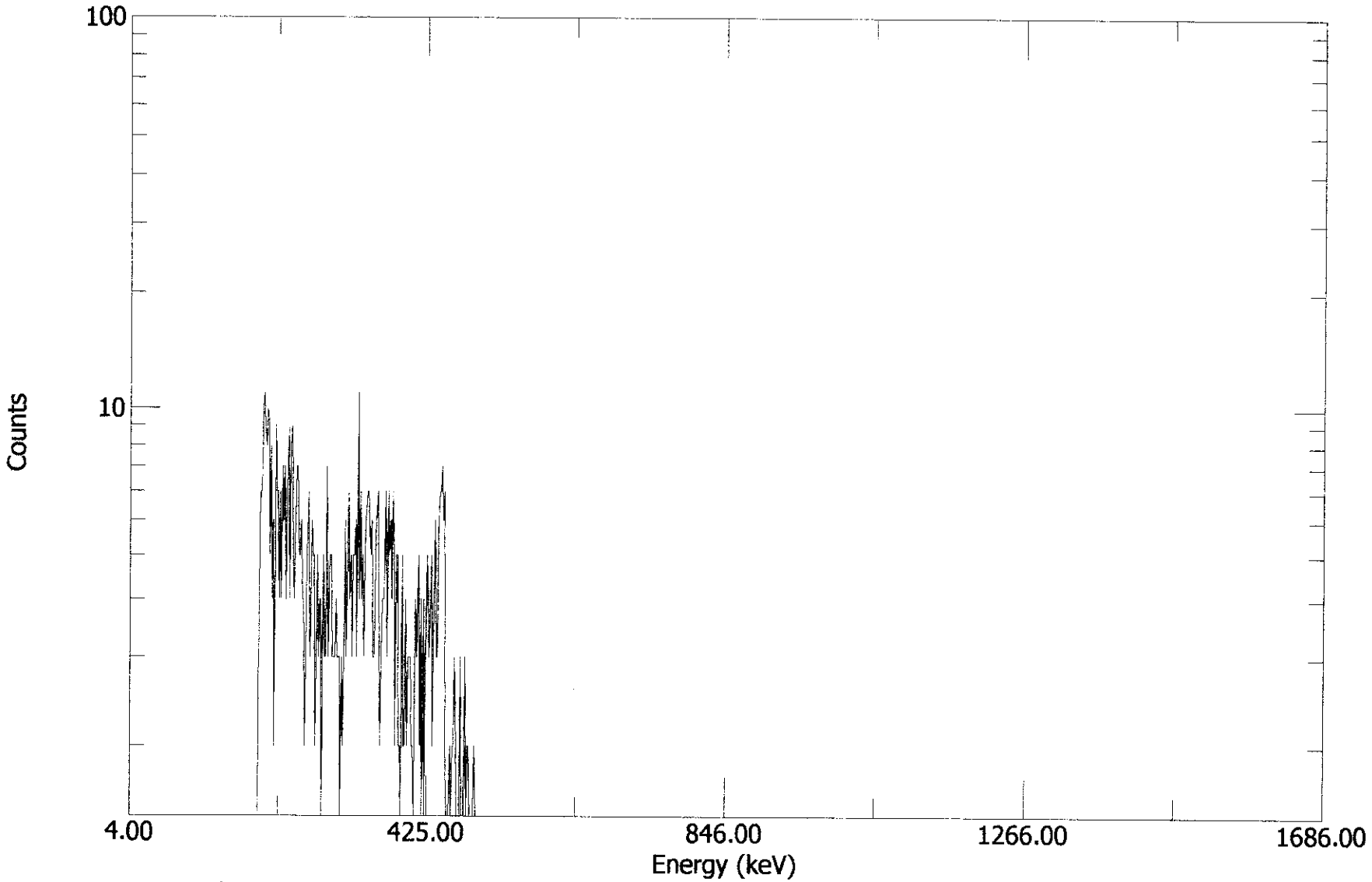


Acquired: 03/01/2000 10:54:37
File: A:\A-000301\A-000301S18.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.46 s. Live Time: 60.00 s.
Channels: 1024

A-000301S19

AZ-101, Riser-14G, 11.25ft, Probe-2, Cart-A

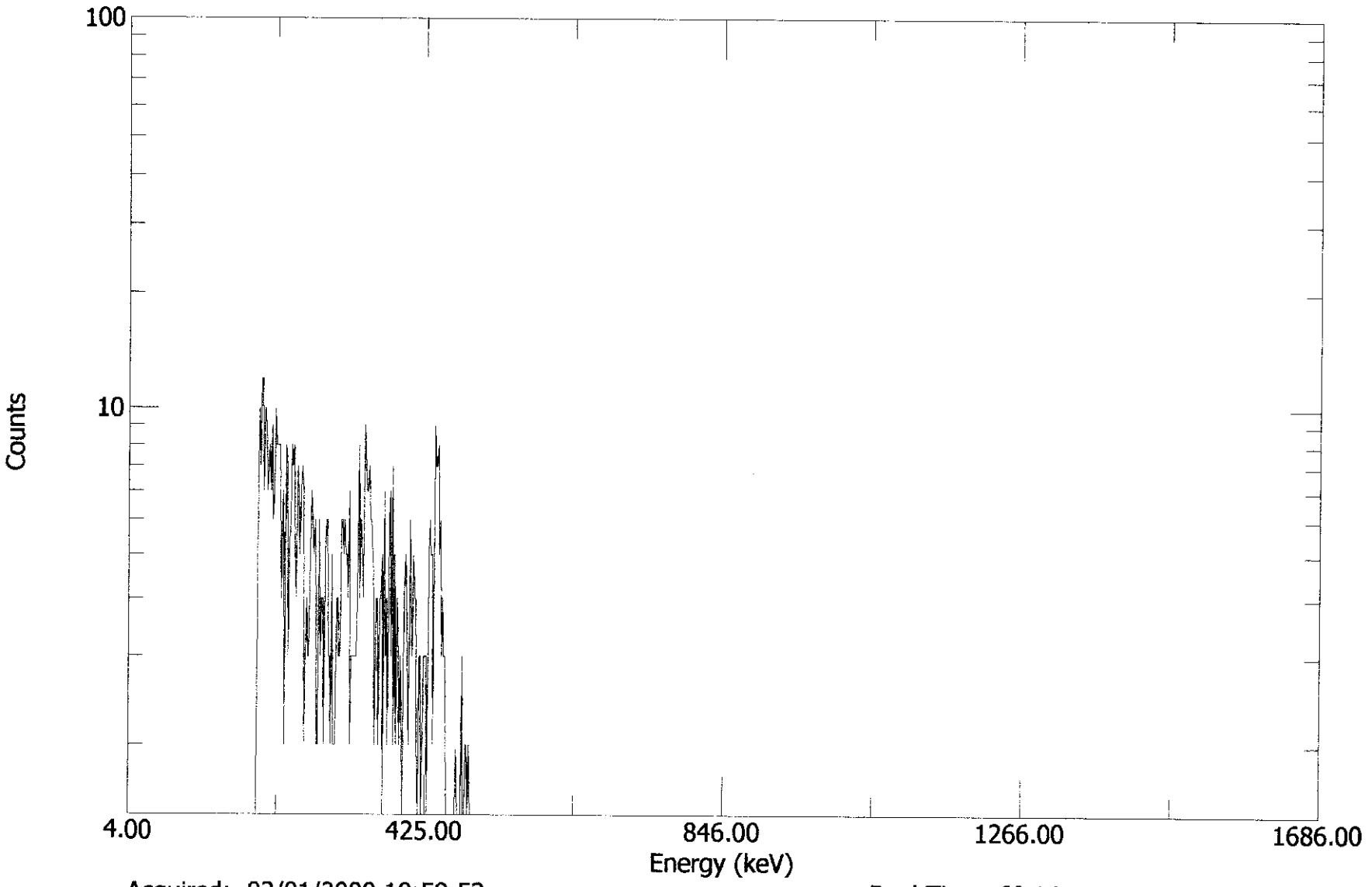


Acquired: 03/01/2000 10:58:04
File: A:\A-000301\A-000301S19.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S20

AZ-101, Riser-14G, 10.0ft, Probe-2, Cart-A

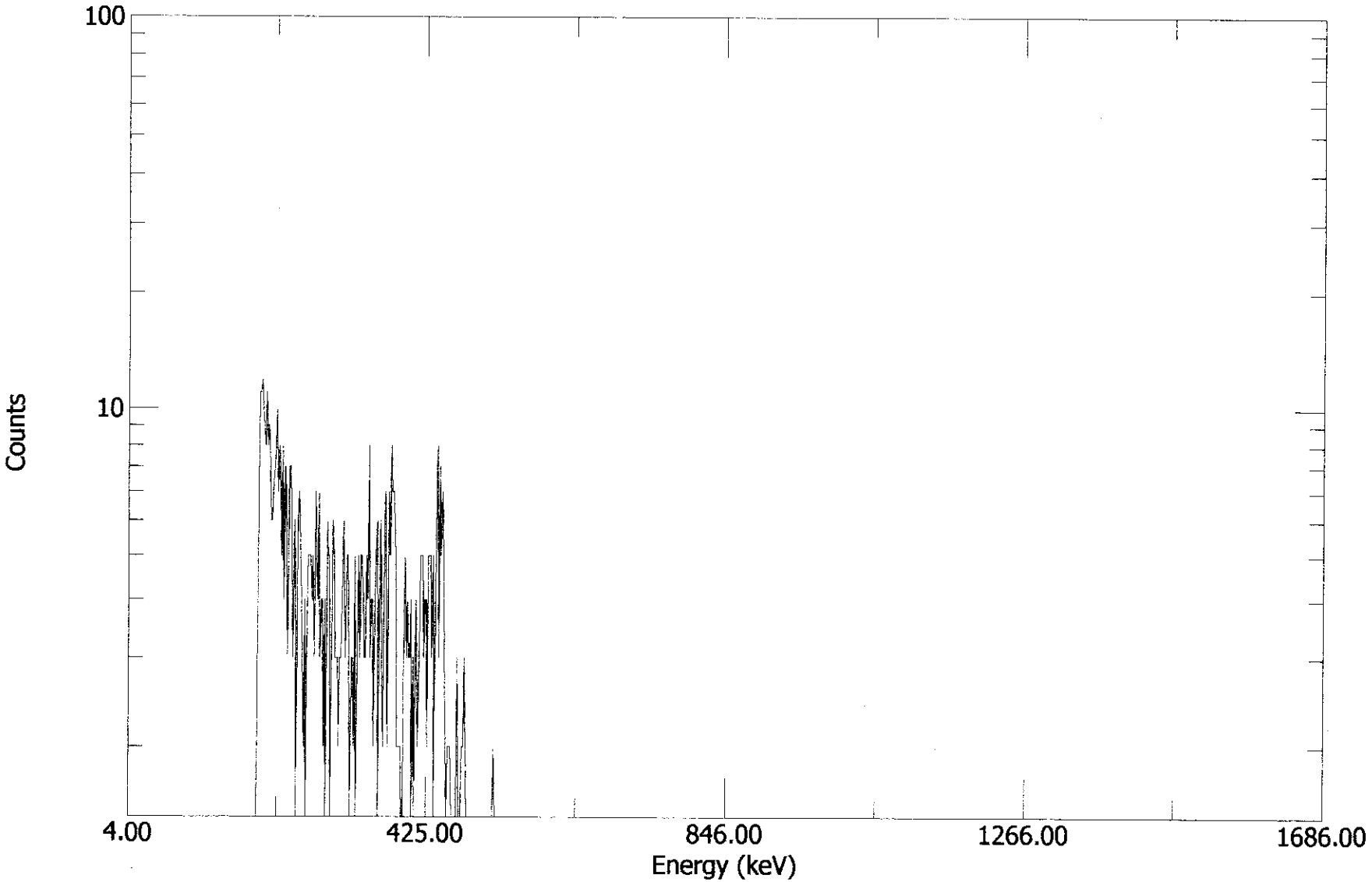


Acquired: 03/01/2000 10:59:53
File: A:\A-000301\A-000301S20.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S21

AZ-101, Riser-14G, 9.5ft, Probe-2, Cart-A

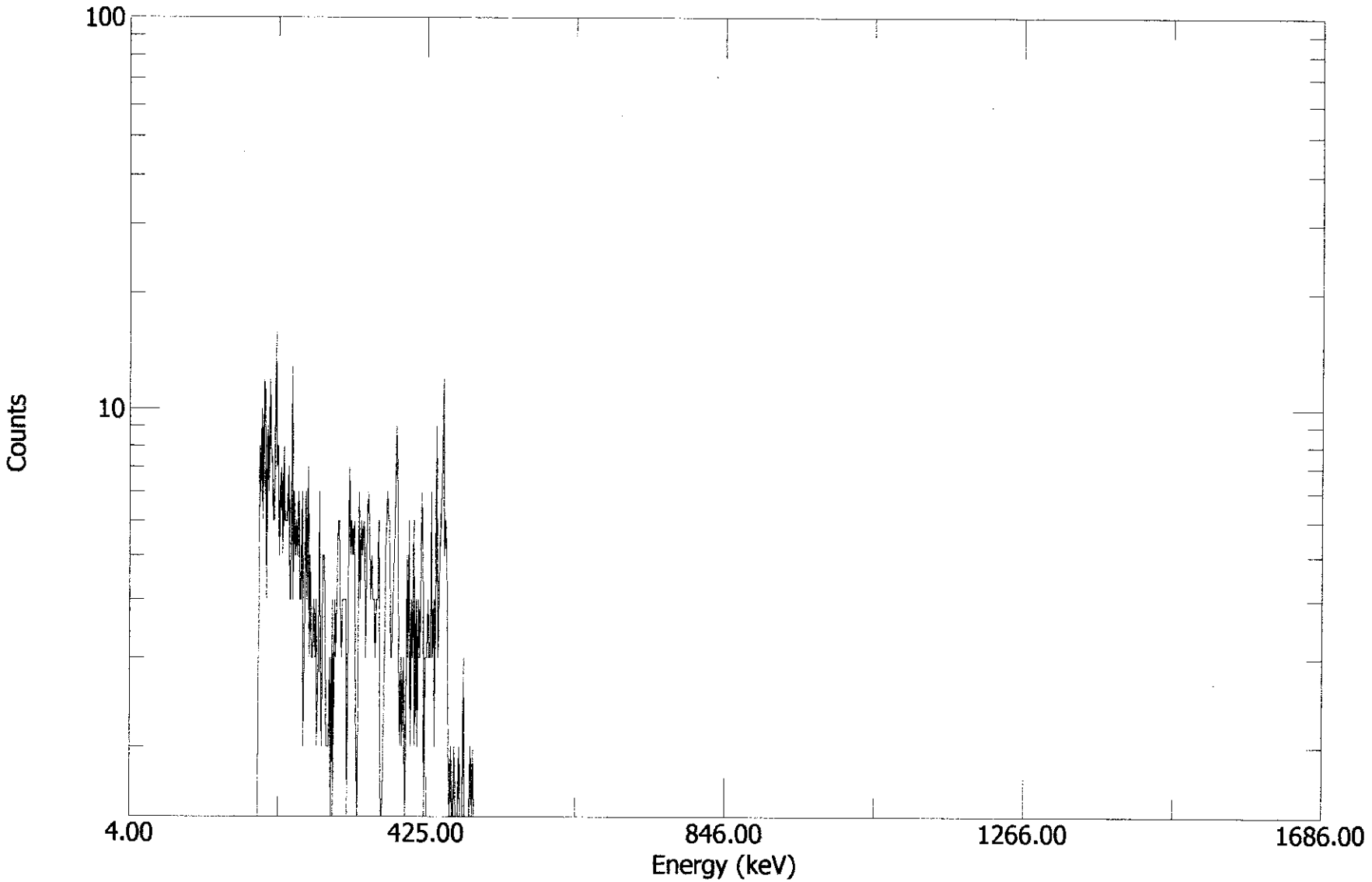


Acquired: 03/01/2000 11:01:11
File: A:\A-000301\A-000301S21.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S22

AZ-101, Riser-14G, 8.75ft, Probe-2, Cart-A

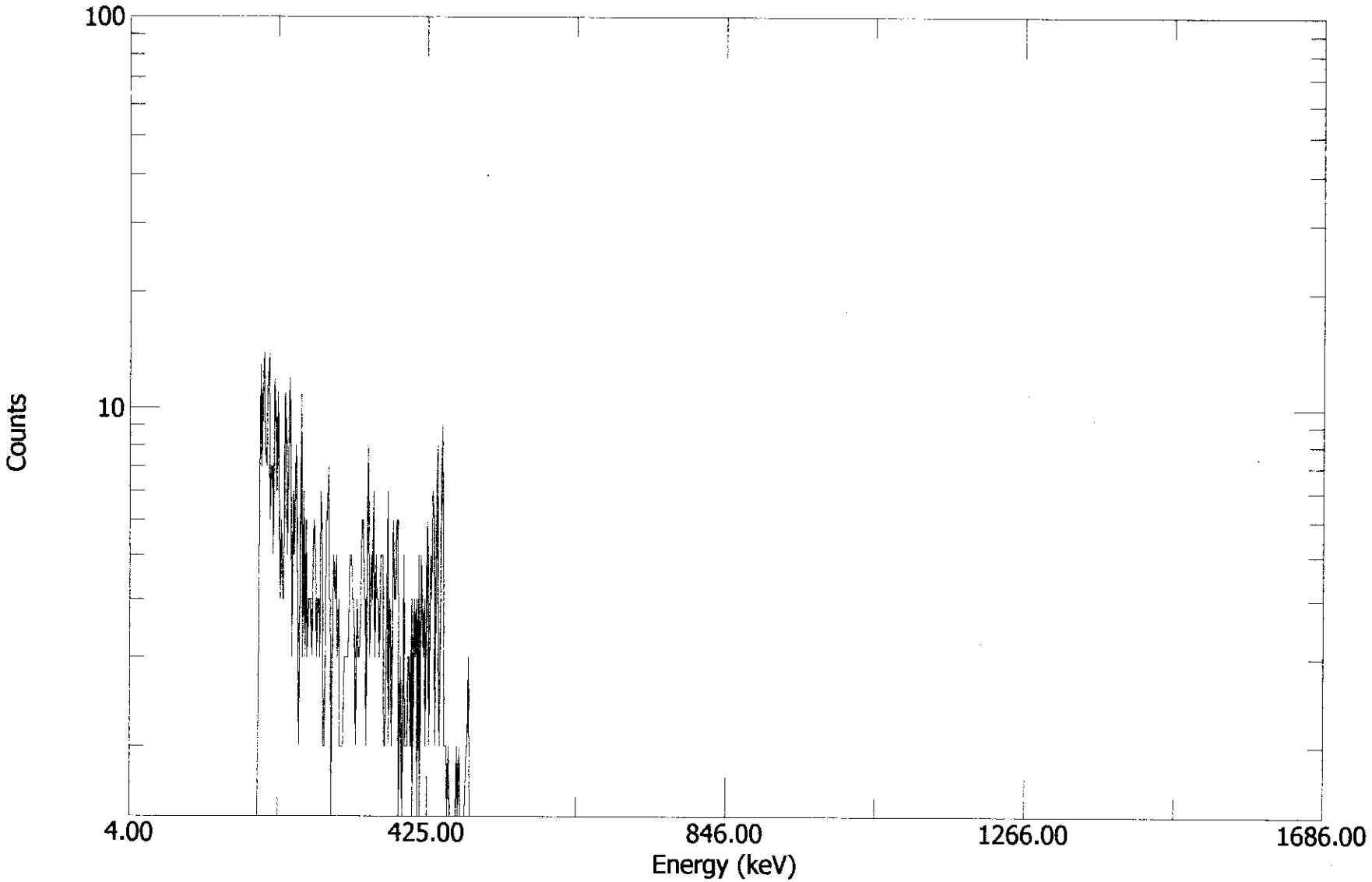


Acquired: 03/01/2000 11:02:46
File: A:\A-000301\A-000301S22.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S23

AZ-101, Riser-14G, 7.5ft, Probe-2, Cart-A

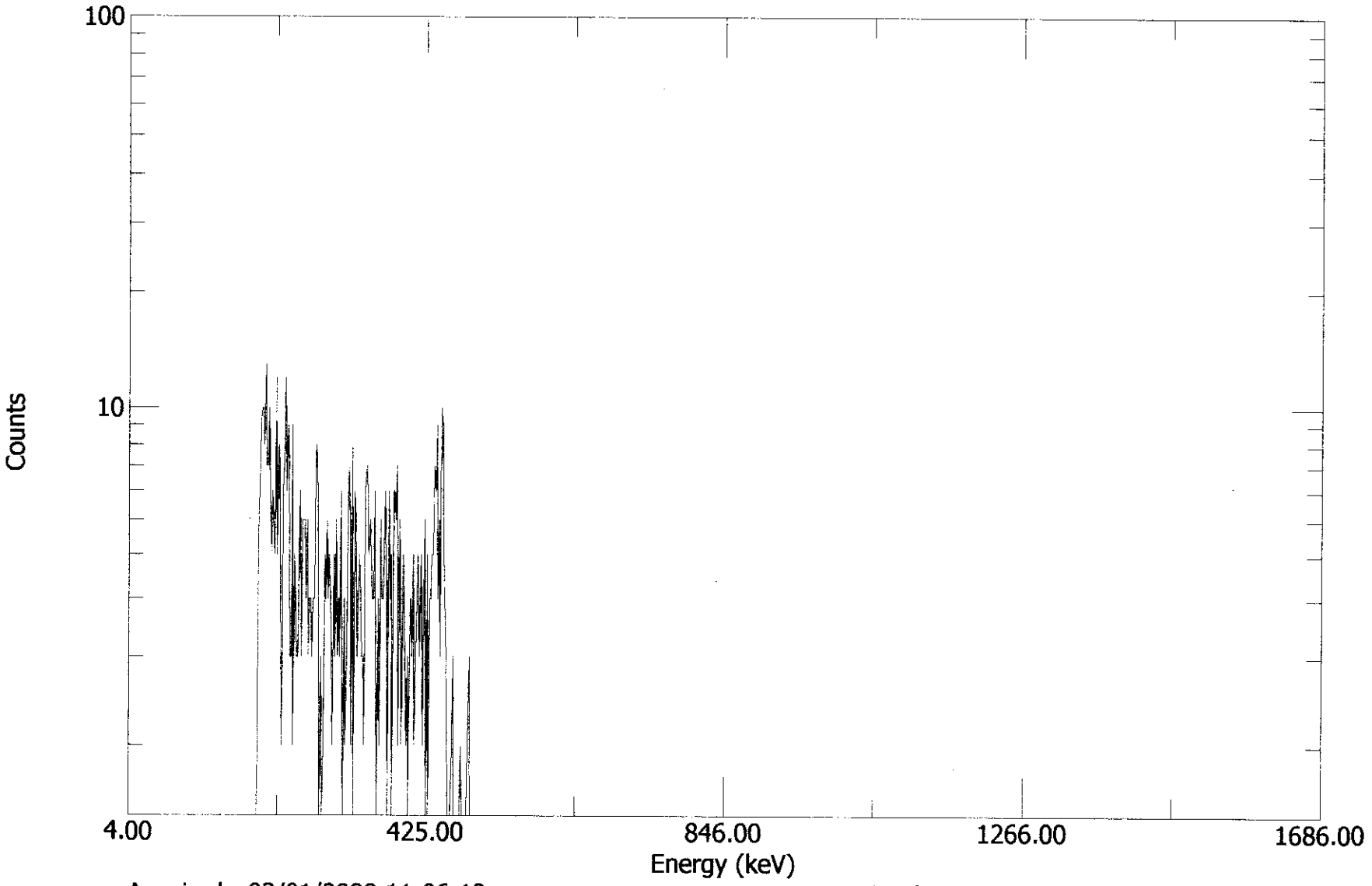


Acquired: 03/01/2000 11:04:35
File: A:\A-000301\A-000301S23.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S24

AZ-101, Riser-14G, 7.25ft, Probe-2, Cart-A

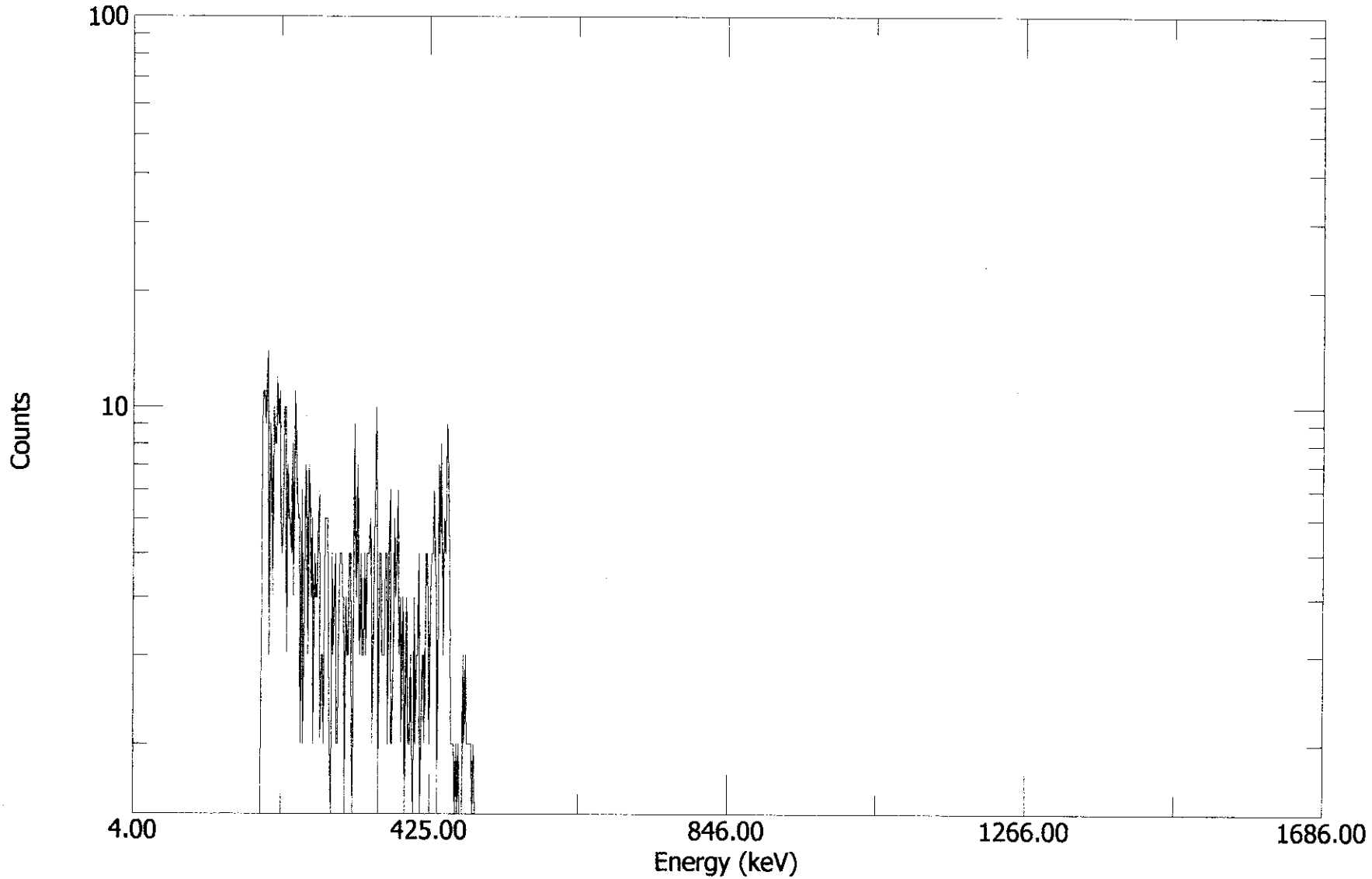


Acquired: 03/01/2000 11:06:12
File: A:\A-000301\A-000301S24.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S25

AZ-101, Riser-14G, 6.5ft, Probe-2, Cart-A

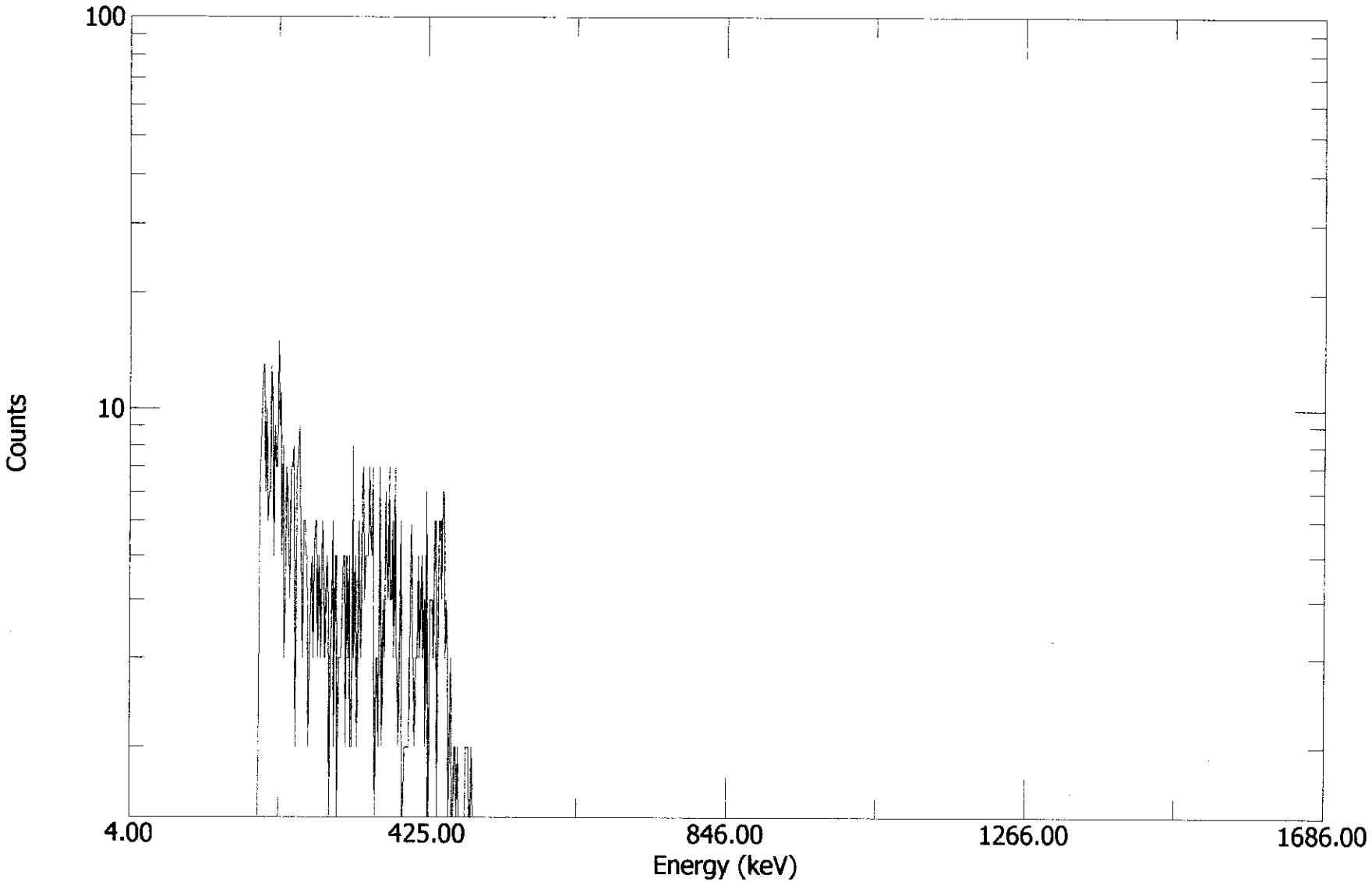


Acquired: 03/01/2000 11:07:54
File: A:\A-000301\A-000301S25.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S26

AZ-101, Riser-14G, 4.25ft, Probe-2, Cart-A

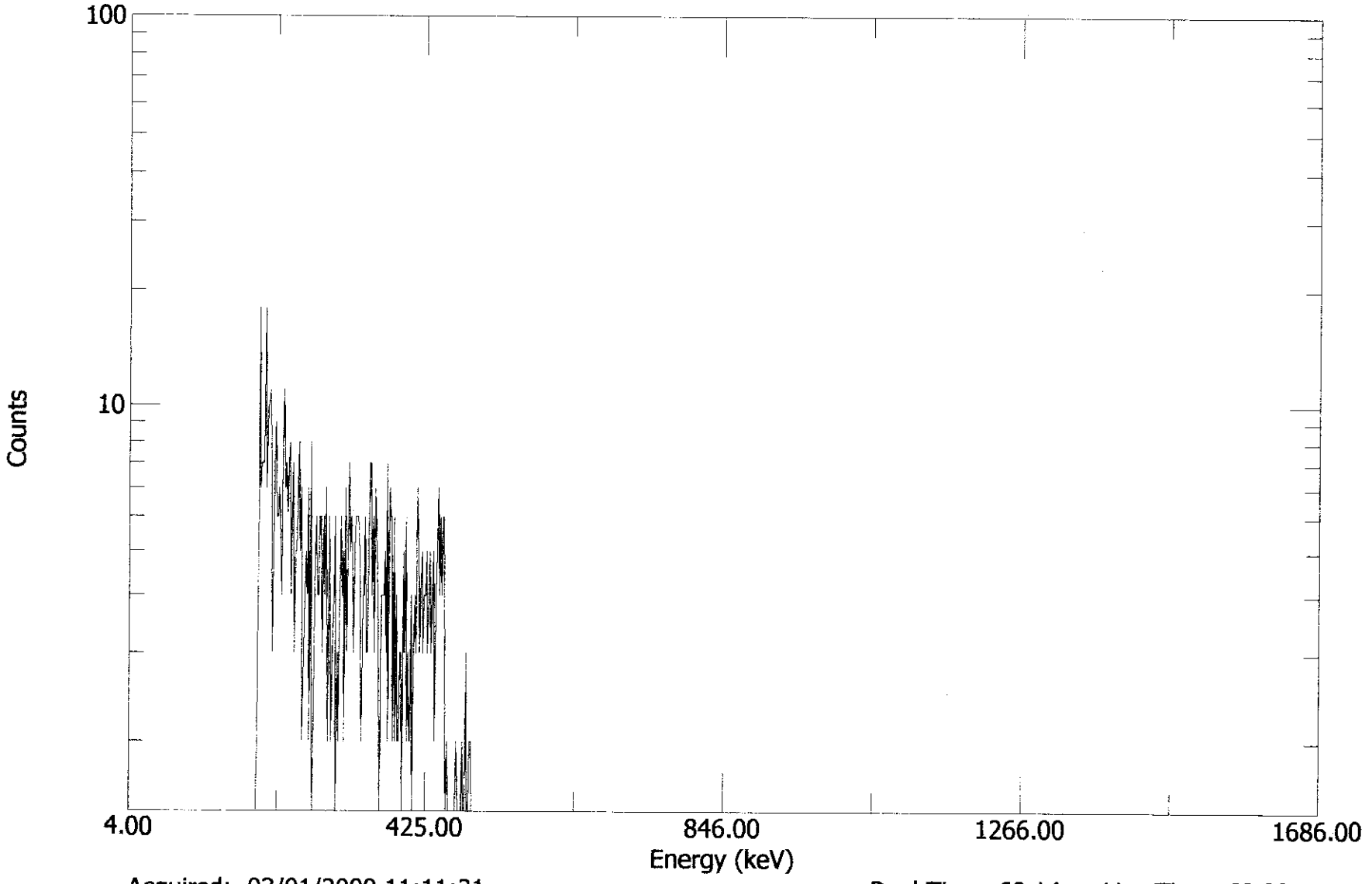


Acquired: 03/01/2000 11:09:50
File: A:\A-000301\A-000301S26.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S27

AZ-101, Riser-14G, 3.25ft, Probe-2, Cart-A

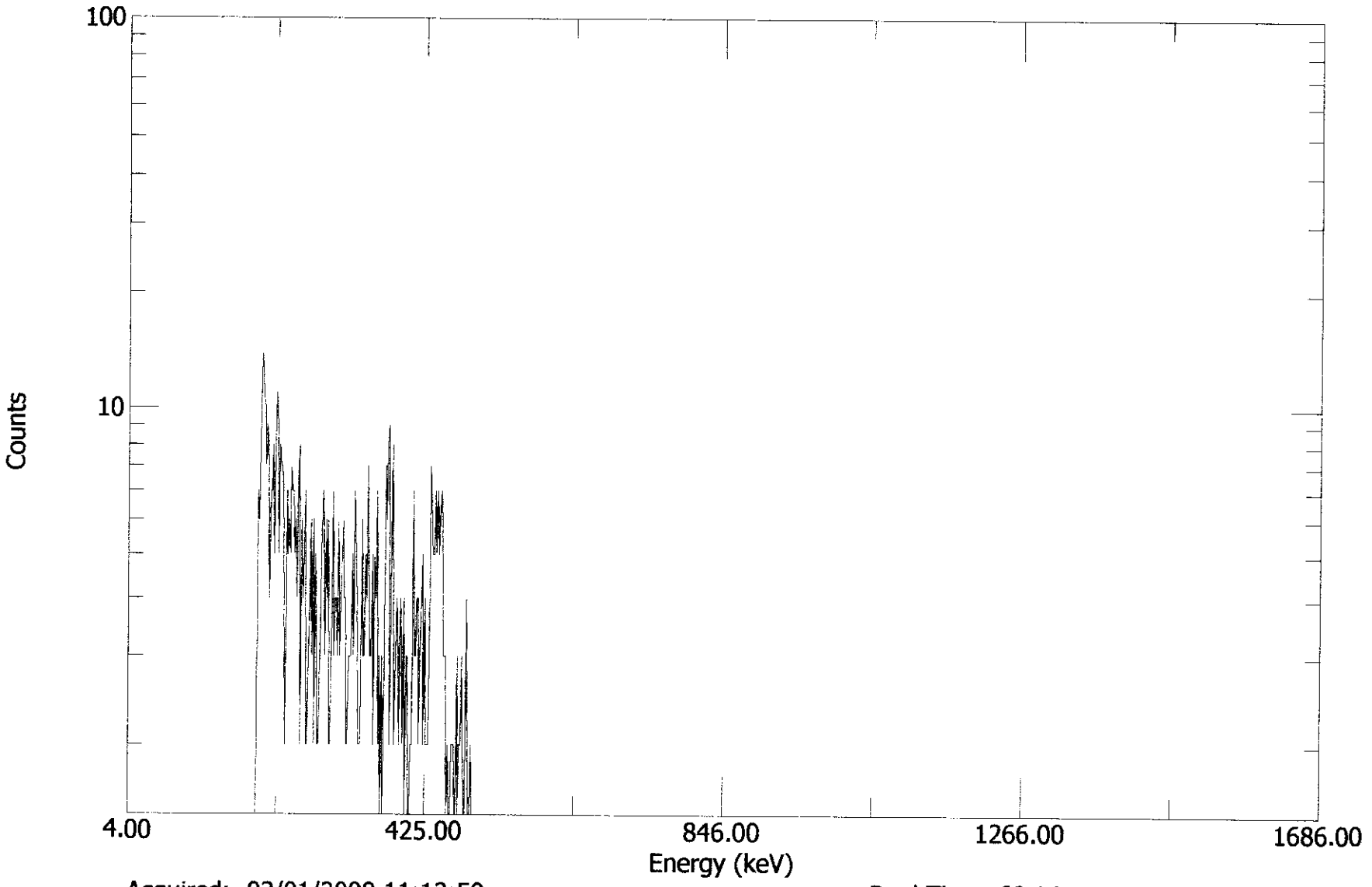


Acquired: 03/01/2000 11:11:21
File: A:\A-000301\A-000301S27.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S28

AZ-101, Riser-14G, 3.0ft, Probe-2, Cart-A

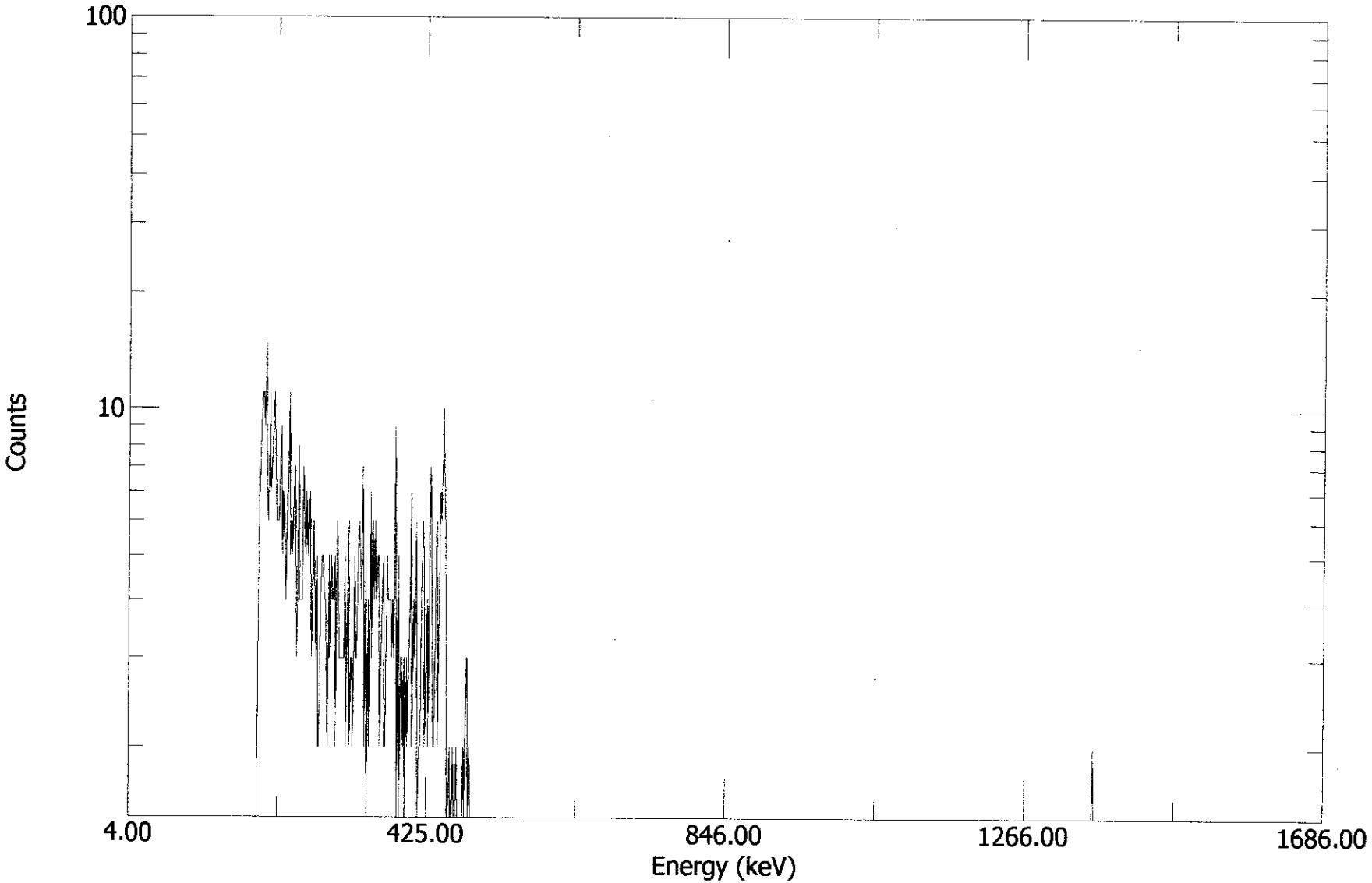


Acquired: 03/01/2000 11:12:59
File: A:\A-000301\A-000301S28.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S29

AZ-101, Riser-14G, 2.25ft, Probe-2, Cart-A

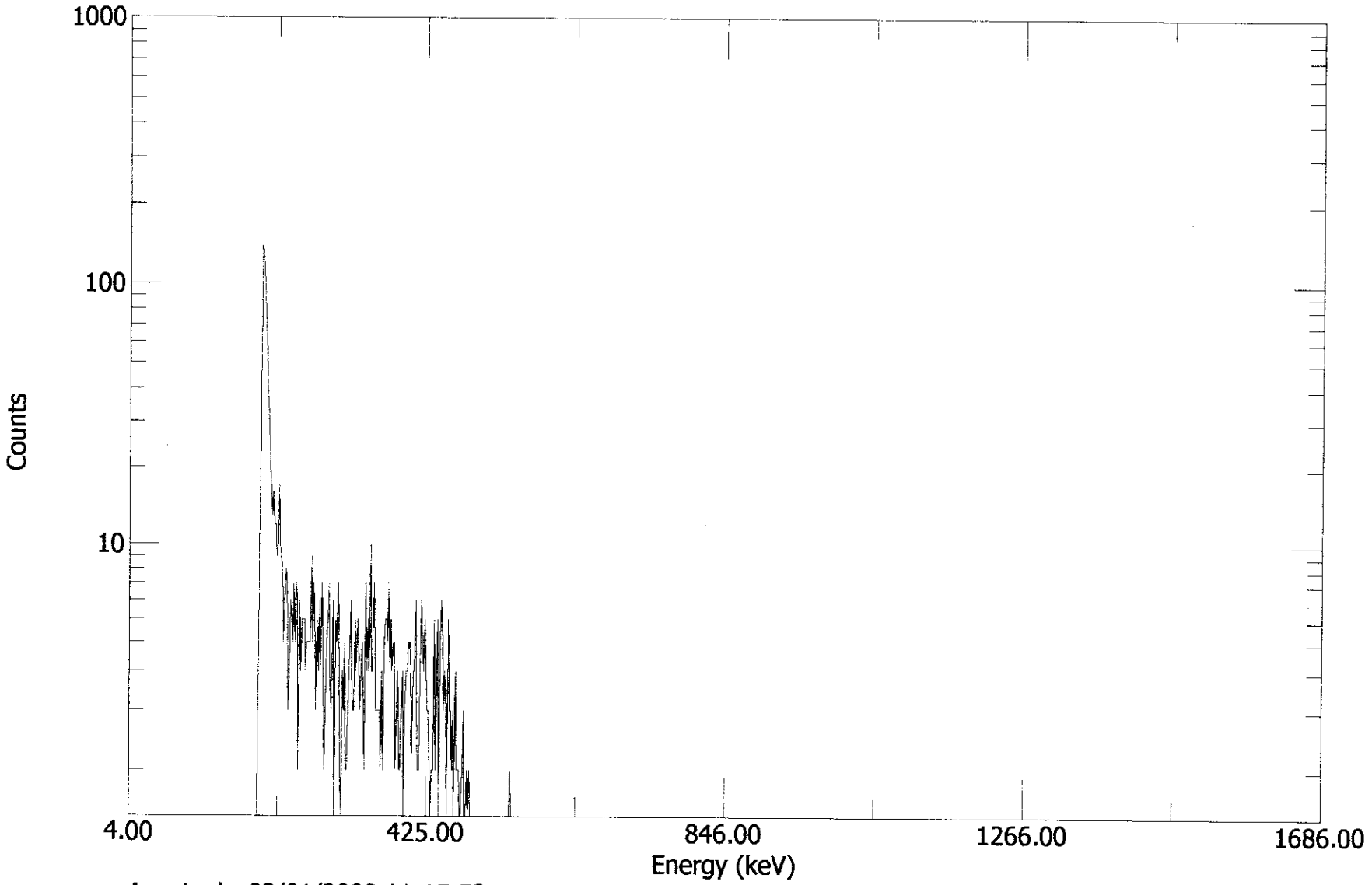


Acquired: 03/01/2000 11:14:37
File: A:\A-000301\A-000301S29.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S30

AZ-101, Riser-14G, 1.75ft, Probe-2, Cart-A

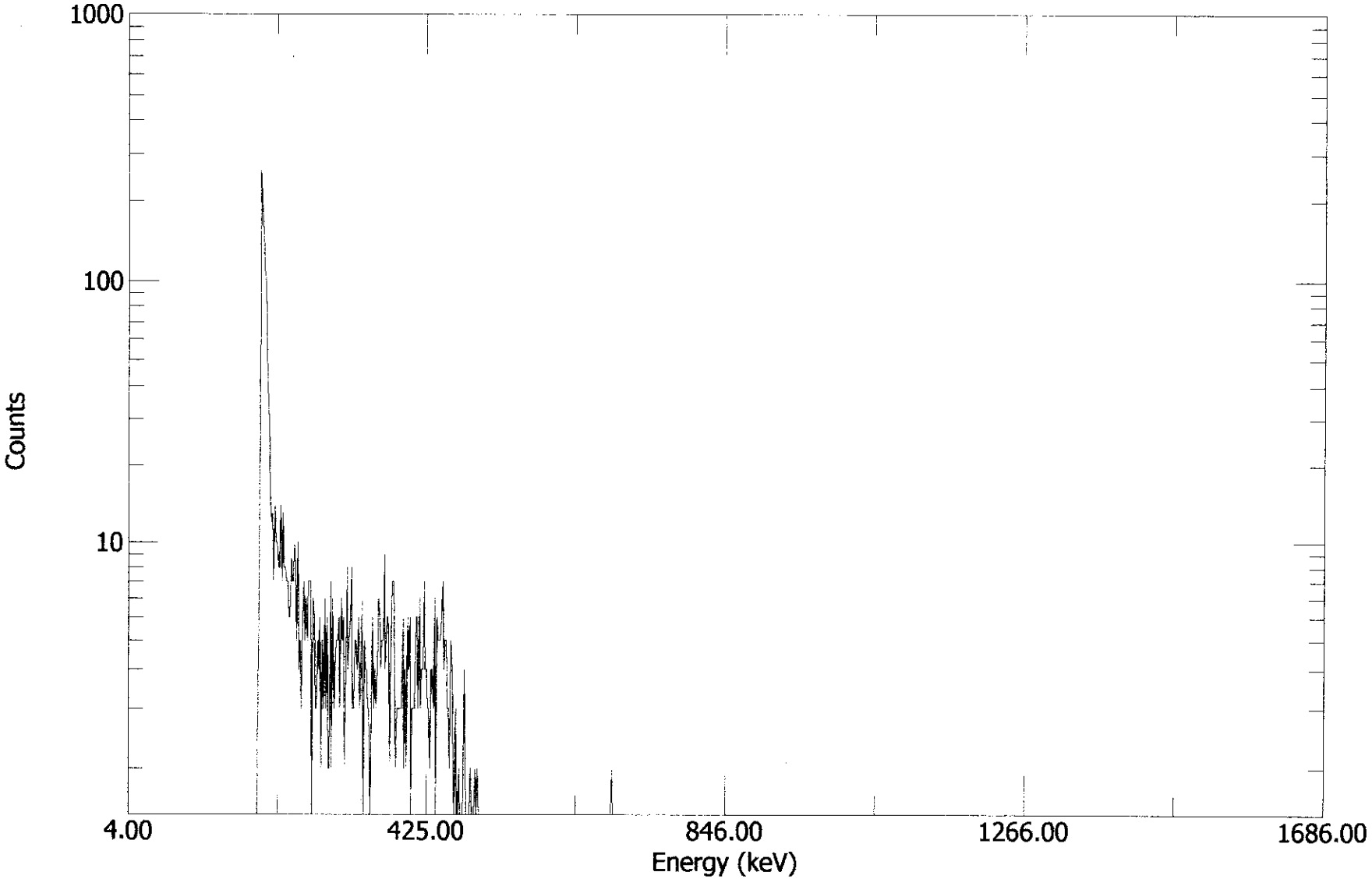


Acquired: 03/01/2000 11:15:53
File: A:\A-000301\A-000301S30.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.62 s. Live Time: 60.00 s.
Channels: 1024

A-000301S31

AZ-101, Riser-14G, 1.25ft, Probe-2, Cart-A

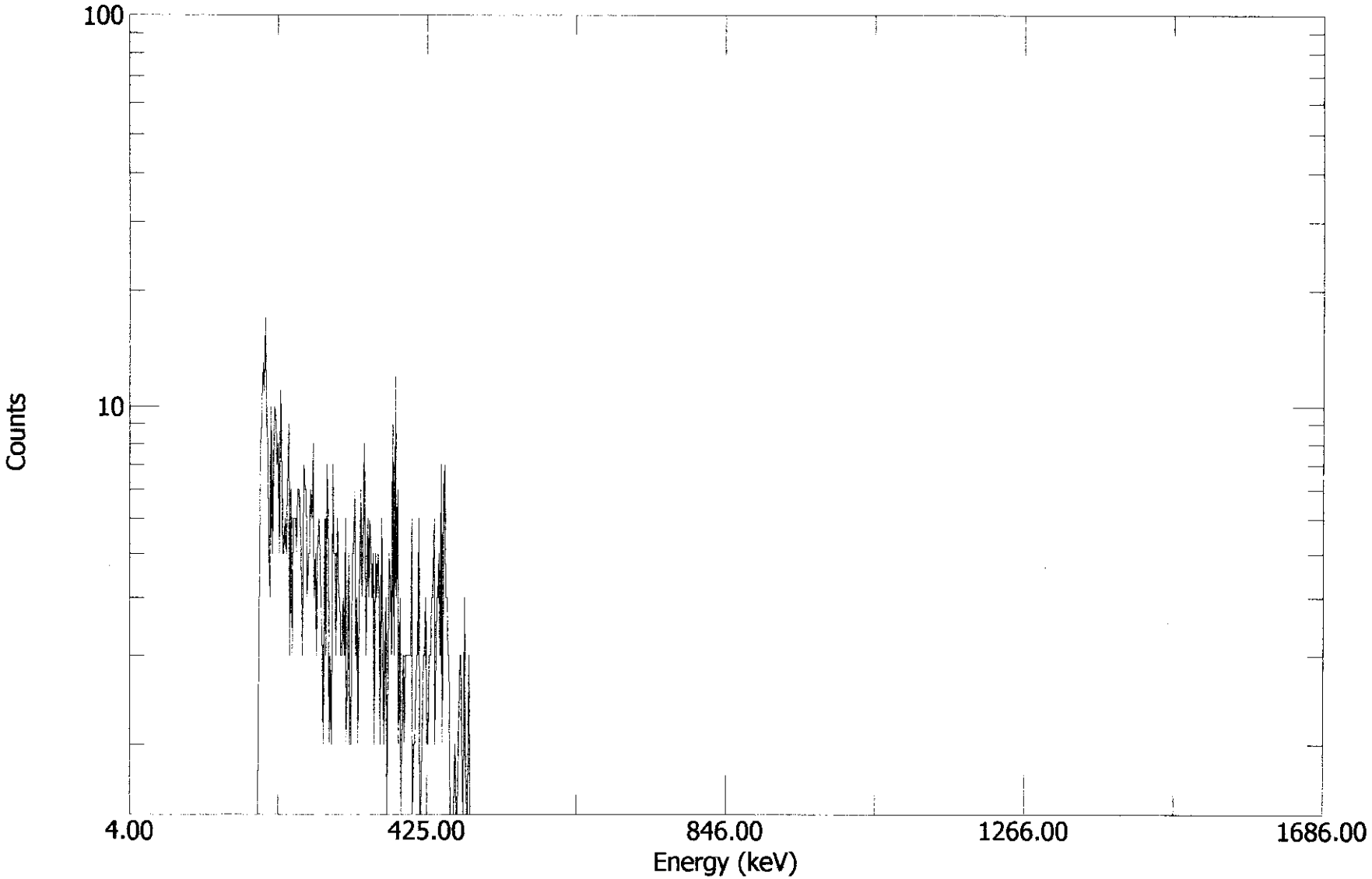


Acquired: 03/01/2000 11:17:09
File: A:\A-000301\A-000301S31.chn
Detector: #1 WC68789 MCB 25

Real Time: 61.04 s. Live Time: 60.00 s.
Channels: 1024

A-000301S32

AZ-101, Riser-14G, 2.75ft, Probe-2, Cart-A

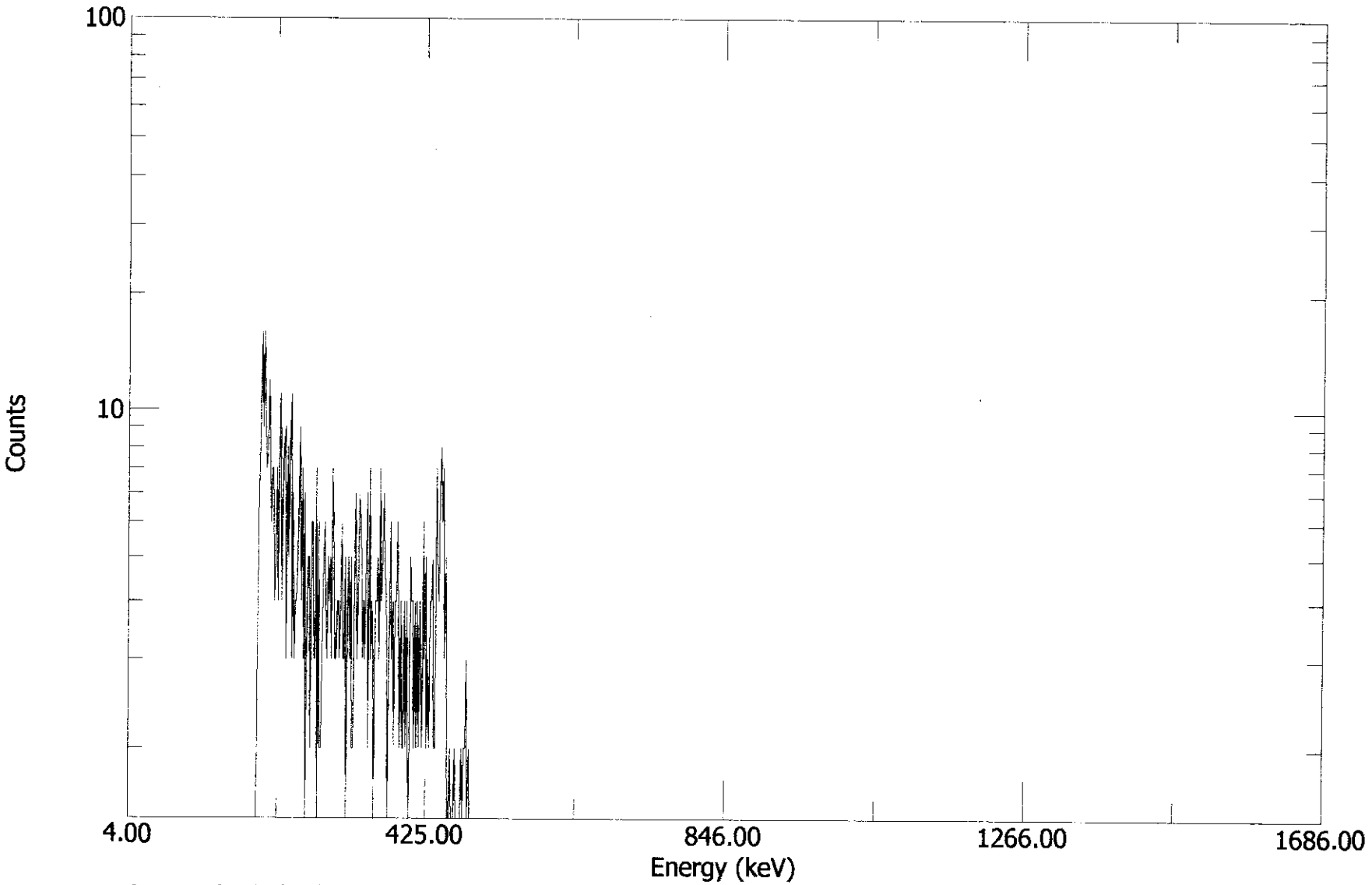


Acquired: 03/01/2000 11:18:58
File: A:\A-000301\A-000301S32.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S33

AZ-101, Riser-14G, 4.0ft, Probe-2, Cart-A

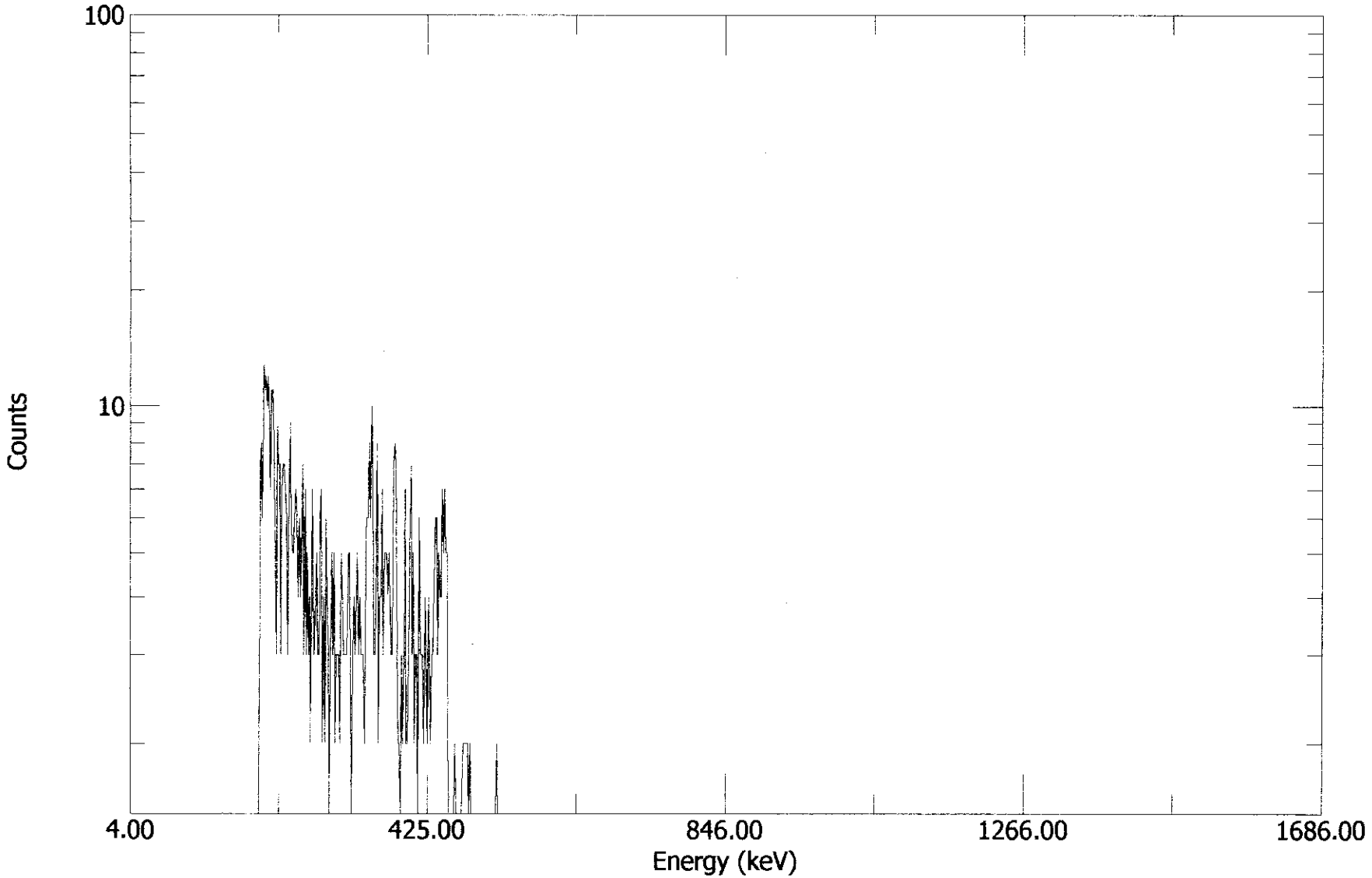


Acquired: 03/01/2000 11:21:00
File: A:\A-000301\A-000301S33.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S34

AZ-101, Riser-14G, 7.0ft, Probe-2, Cart-A

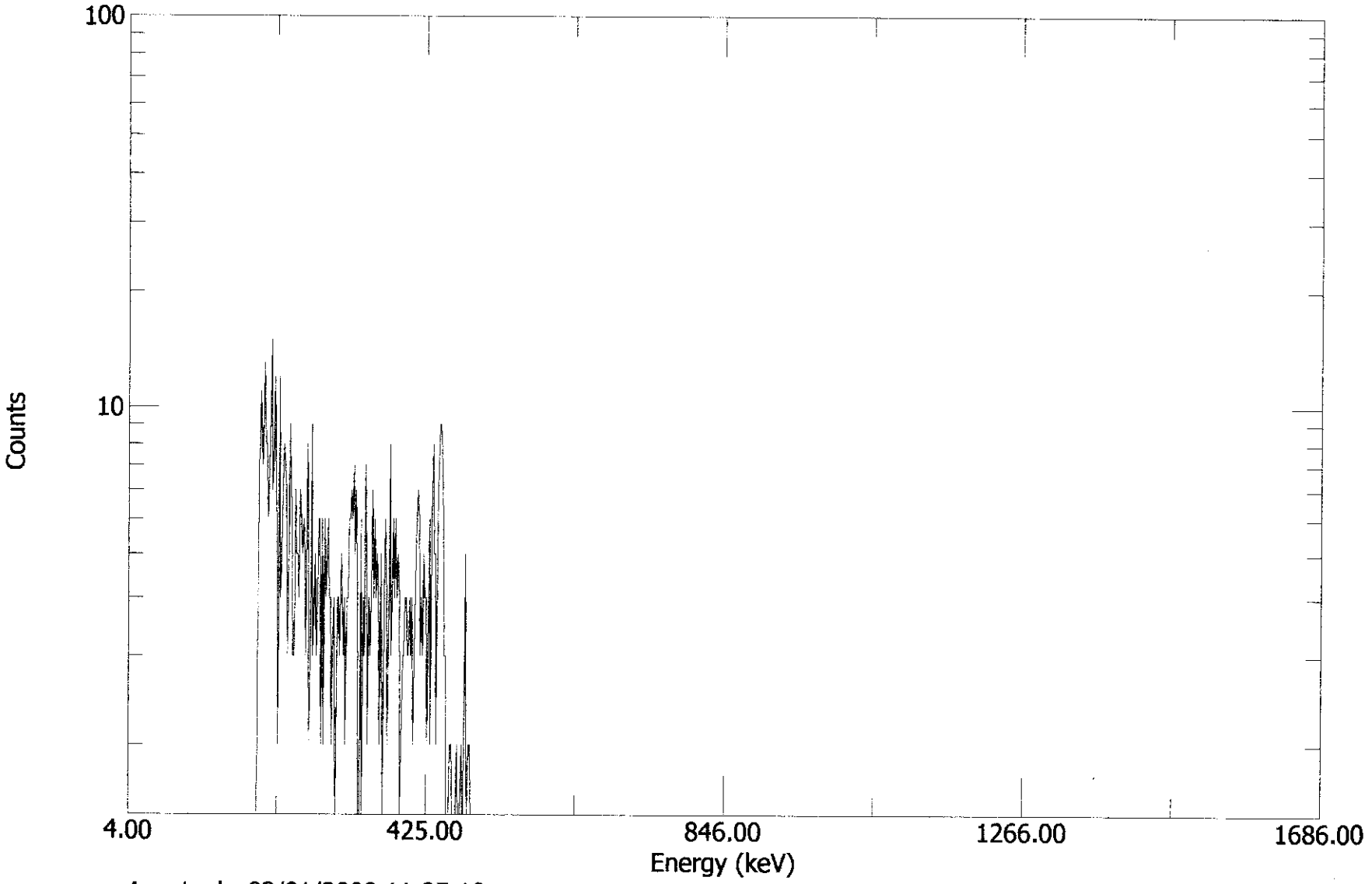


Acquired: 03/01/2000 11:23:16
File: A:\A-000301\A-000301S34.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S35

AZ-101, Riser-14G, 4.75ft, Probe-2, Cart-A

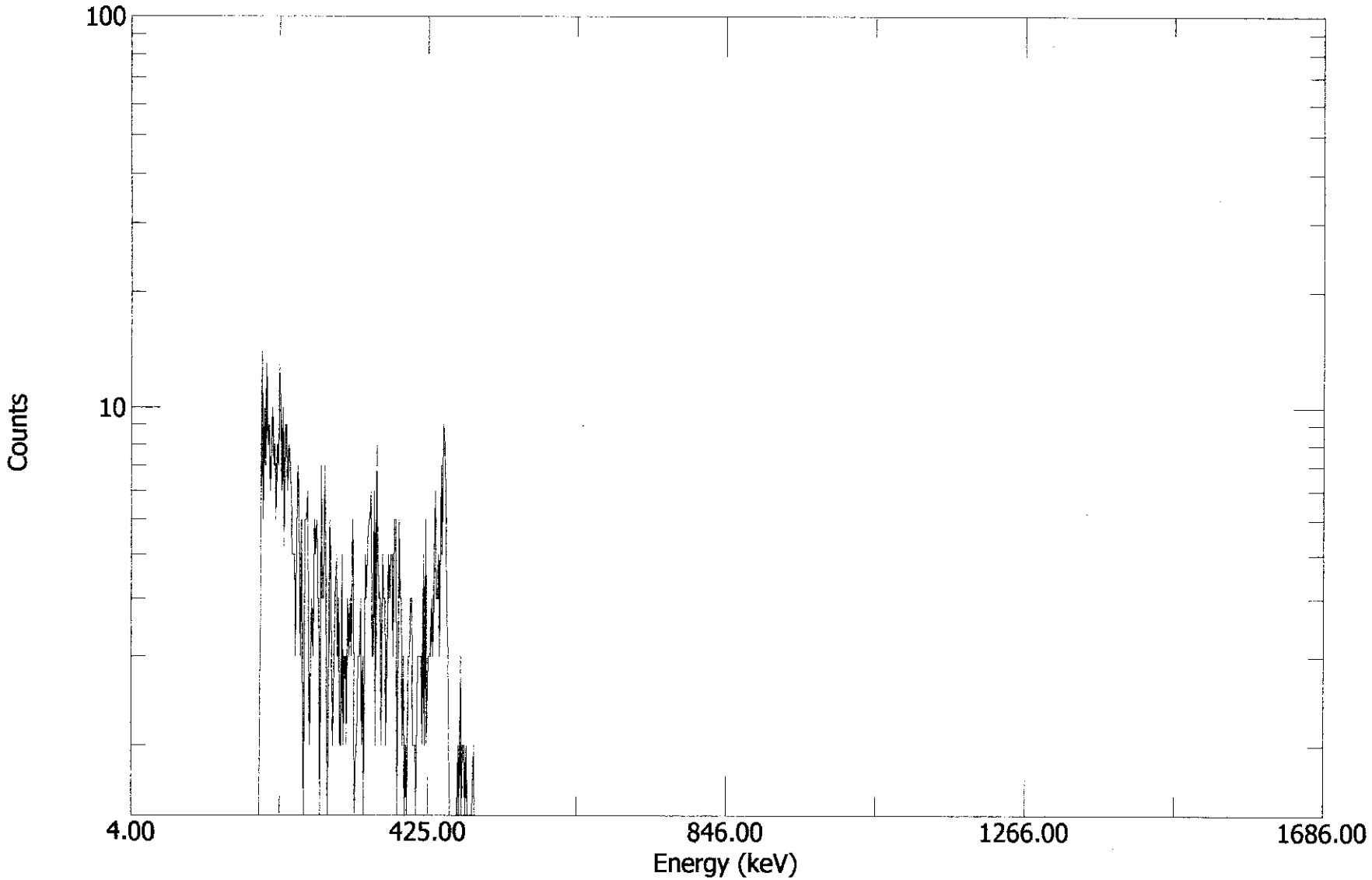


Acquired: 03/01/2000 11:25:10
File: A:\A-000301\A-000301S35.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S36

AZ-101, Riser-14G, 11.0ft, Probe-2, Cart-A

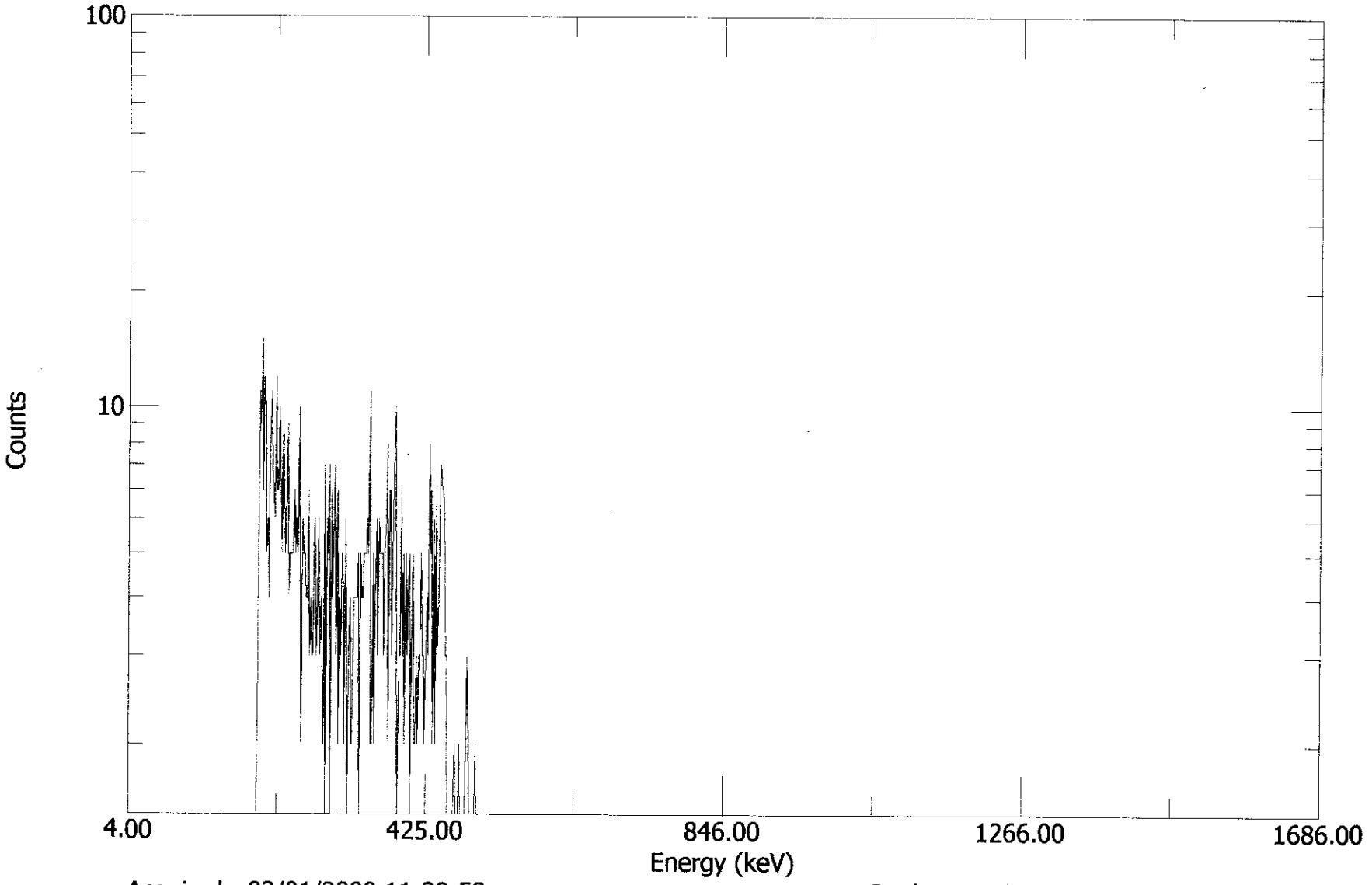


Acquired: 03/01/2000 11:28:12
File: A:\A-000301\A-000301S36.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S37

AZ-101, Riser-14G, 7.5ft, Probe-2, Cart-A

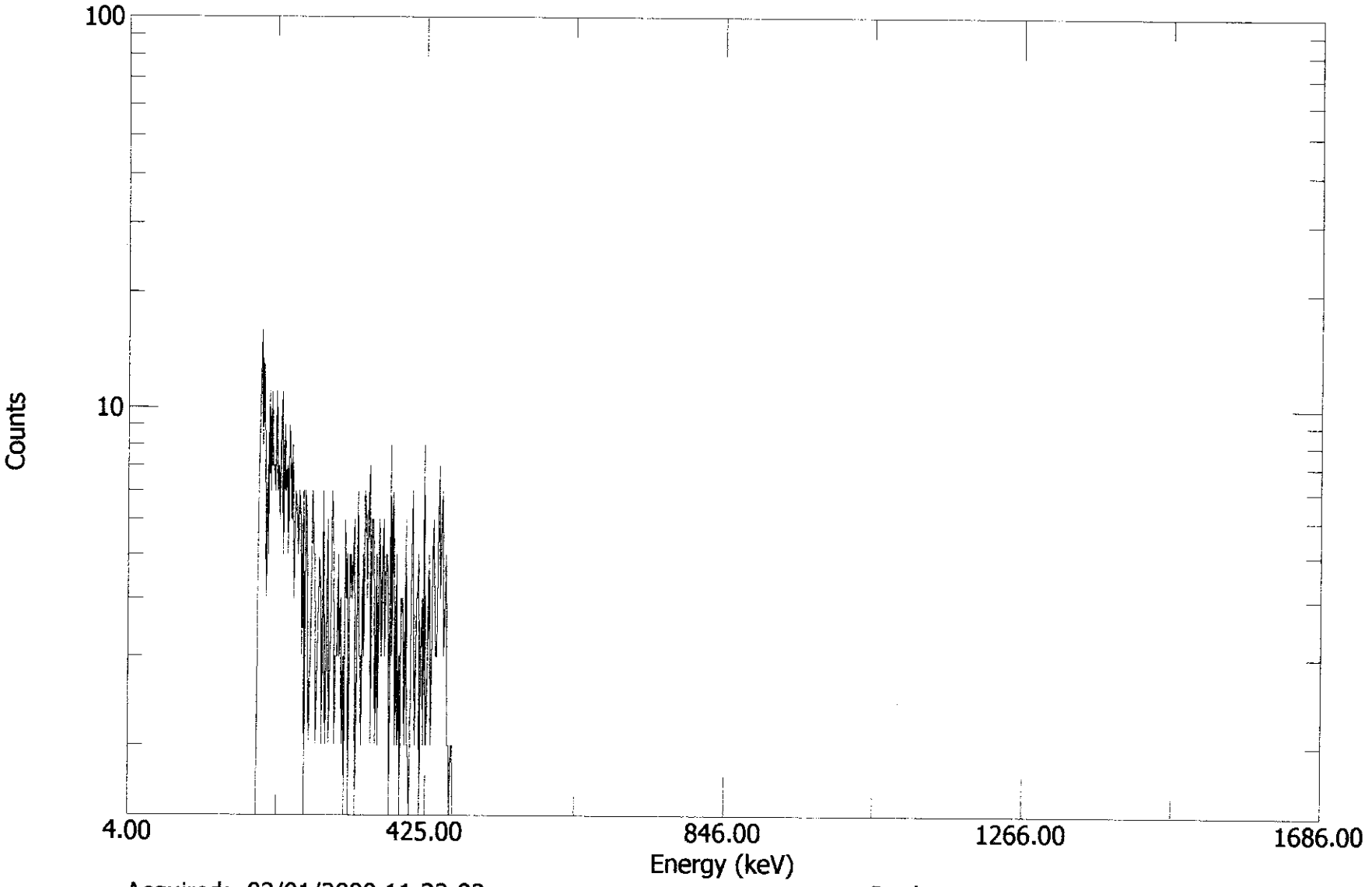


Acquired: 03/01/2000 11:29:58
File: A:\A-000301\A-000301S37.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S38

AZ-101, Riser-14G, 8.25ft, Probe-2, Cart-A

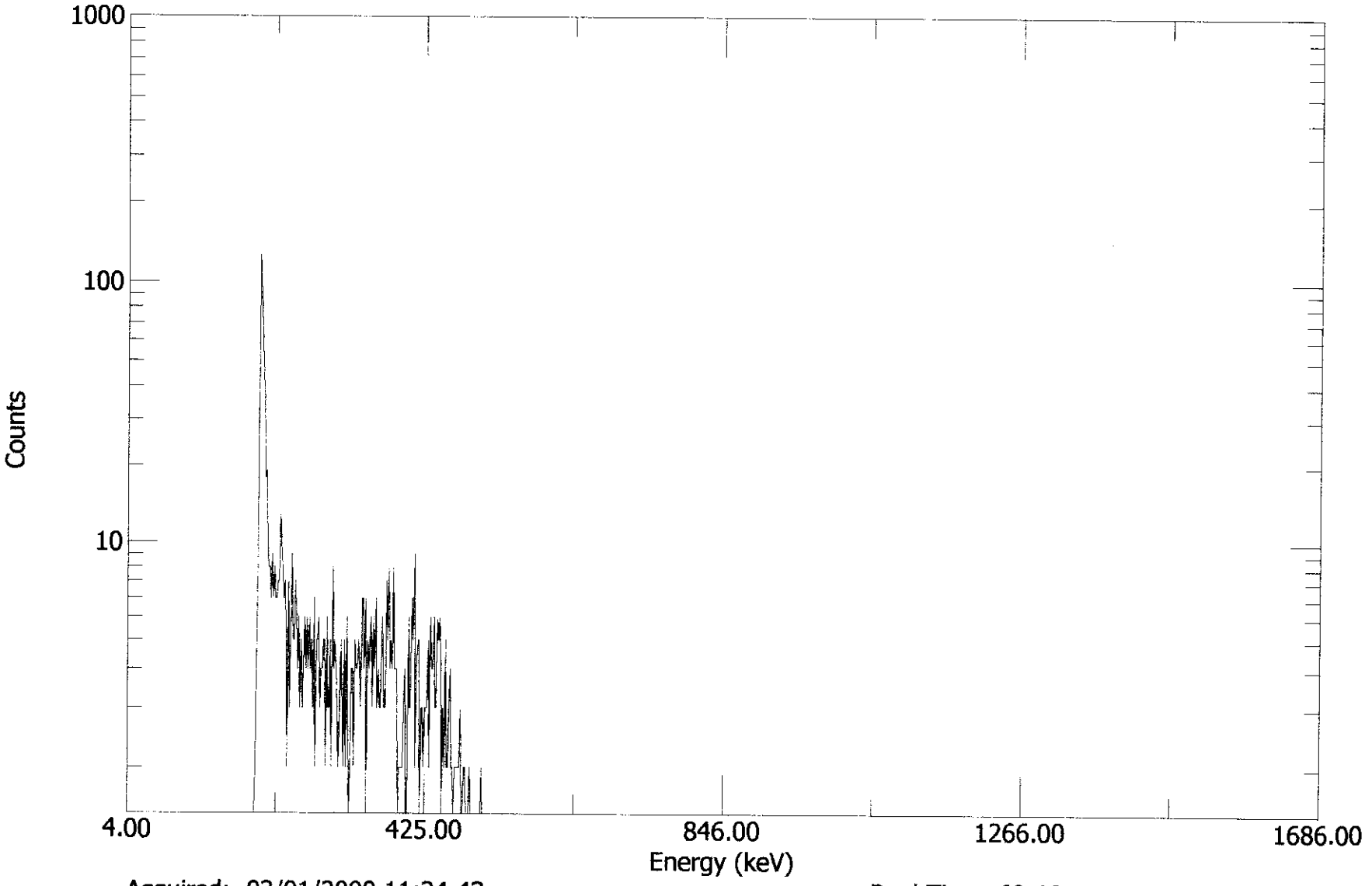


Acquired: 03/01/2000 11:32:02
File: A:\A-000301\A-000301S38.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.14 s. Live Time: 60.00 s.
Channels: 1024

A-000301S39

AZ-101, Riser-14G, .0ft, Probe-2, Cart-A



Acquired: 03/01/2000 11:34:43
File: A:\A-000301\A-000301S39.chn
Detector: #1 WC68789 MCB 25

Real Time: 60.46 s. Live Time: 60.00 s.
Channels: 1024

APPENDIX 2. COMPLETED COPY OF RPP-5577 FOR GAMMA CART B

RPP-6086, Rev 0

RPP-5577 Rev 0

241-AZ-101 Mixer Pump Demonstration Test Gamma Cart ATP/QTP

CH2M Hill Hanford Group

January 2000

Execution and Test Approval

EXECUTED BY

Pat Tuller — Test Director — 2/3/00 — Date

WITNESSES

Paul R. Wemm — QA/QC — 2-3-00 — Date

G L Clarke — Authorized Inspector — 2/03/00 — Date

TABLE OF CONTENTS PAGE

1.0 PURPOSE AND SCOPE

1.1 PURPOSE

This procedure provides instructions for performing a Shop Acceptance Test Procedure for the Sludge Mobilization Cart System.

1.2 SCOPE

This procedure involves testing the Instrumentation involved with the Gamma Cart System, local and remote, including: depth indicators, speed controls, interface to data acquisition software and the raising and lowering functions. This Procedure will be performed twice, once for each Gamma Cart System. This procedure does not test the accuracy of the data acquisition software.

2.0 INFORMATION

2.1 TERMS AND DEFINITIONS

2.1.1 ALARA - As Low As Reasonably Achievable

2.2 RESPONSIBILITIES

2.2.1 Test Engineer is responsible for the following:

- Ensuring all preparations for this Test have been completed
- Support Test Director and Test Personnel with the technical information and support necessary to complete this procedure.

2.2.2 Test Director has the option of assigning a designated Recorder to fulfill the following recording criteria.

- Record, check off, initial, enter N/A, and ensure verification signatures are obtained as each step and section completes.

2.2.3 Operation Personnel are responsible for operating the equipment per the Test Engineer and Test director's direction.

2.2.4 QC Inspector is responsible for witnessing test execution and signing the completed sections of the test.

2.2.5 The Authorized Inspector is responsible for the following:

- Witnessing test execution
- Approval and signature of acceptance upon completion of this procedure.

2.2 RESPONSIBILITIES (cont.)

2.2.6 Test Director is responsible for the following:

- The safe, efficient, and productive performance of the test
- Coordination of all testing activities
- Scheduling and conducting a pre-test meeting with test participants
- Notification of the persons performing and witnessing the test prior to the start of testing
- Notification of all involved test personnel when a change is made in the testing schedule
- Act as liaison between the participants involved with the testing
- Stopping any test or section which may cause damage to the system
- Obtaining revisions to the Test Procedure, to comply with authorized field changes or to accommodate existing field conditions
- Taking actions to resolve exceptions to the Test Procedure
- Signing the Acceptance Test Procedure Exception Record when a test exception has been resolved
- Evaluating recorded data, discrepancies, and exceptions
- Signing Test Execution Sheet when this Test Procedure has been performed
- Signing Exception Record when a retest to clear an exception has been executed and accepted
- Obtaining required signatures on the Test Procedure Working Copy prior to reproduction and distribution
- Preparing and issuing an Acceptance Test Report for the approved, accepted and completed Test Procedure

2.3 REFERENCES

- HNF-SD-WM-PTP-027, Rev 3 Mixer Pump Test Plan for Double Shell Tank AZ-101
- HNF-3839 Data Collection Plan for AZ-101 Mixer Pump Tests
- RPP-5576 Gamma Cart System Description
- H-2-79215, R2 TWRS SLUDGE CART ENCL ELC ASEMBLY
- H-2-79215, R2 TWRS SLUDGE CART ENCL ELEMENTARY DIAGRAM
- H-2-79233, R0 TWRS SLUDGE CART ENCL WIRING DIAGRAM
- H-2-79234, R3 TWRS SLUDGE MOBILIZATION CART ARRANGEMENT

2.4 GENERAL INFORMATION

2.4.1 All entries recorded in this procedure shall be made in black ink.

2.4.2 Procedural and technical requirement changes must be processed by Procedure Change Authorization in accordance with approved procedures. If a need for such a change is discovered in the course of running the test, Test Director must decide:

- If the applicable portion of the test shall be stopped, an exception written, and if the test equipment shall be placed in a safe configuration, until the Procedure Change Authorization is approved

OR

- If the integrity of the test will not be jeopardized and continuation of test can occur safely, the continuation of and/or the running of the test portions unaffected by the change.

2.4.3 Acceptance Test steps detailed in individual Tests in Section 5.0 shall be performed sequentially, unless otherwise noted or as directed by the Test Director.

- Individual Test Procedure Sections may be performed out of sequence at the direction of the Test Director, if the intent of the test is not compromised

- As as each step is completed, each step will be checked off (or enter "N/A" for), as required in the spaces provided on the Working Copy of this Acceptance Test Procedure

- Any step that requires verification of data must include recording data on the Working Copy.

2.4 GENERAL INFORMATION (Cont).

2.4.4 Any non-conformance of the instrumentation, unexpected results or exceptions during testing shall be sequentially numbered and recorded in the Acceptance Test Procedure Exception Log and on individual Acceptance Test Procedure Exception Records. Thus, case-by-case resolution, recording, approval, and distribution of each exception will be achieved.

2.4.5 Resolve test exceptions in the following manner:

- After successful resolution of an exception, record the action taken to resolve the exception in the "Resolution of Exception" section of the Acceptance Test Procedure Exception Record.

- When the action taken results in an acceptable retest, initial and date the Correction Approval section of the Exception Sheet

- When the action taken does not result in an acceptable retest, provide in the performance log, a detailed explanation of why the retest action was not acceptable, and what additional plans are required.

2.4.6 Upon completion of the Acceptance Test Procedure, obtain approval of the test performance. Each Test Execution Sheet will stand alone as approval for the system under test. The Acceptance Test will be complete when all the outstanding tests have been performed and the Acceptance Test Report is prepared. The test will be approved by checking the proper response, with or without exceptions, on the Test Execution Sheet under the "Approval and Acceptance of Test Results" section of the Test Execution Sheet.

2.4 GENERAL INFORMATION (Cont).

NOTE - The following steps detail the possible conditions that may exist at the completion of the Acceptance Test Procedure, and the steps necessary to complete acceptance in those conditions.

2.4.7 The completed test may be approved without test exceptions:

- Check applicable space on Test Execution Sheet to show that the Acceptance Test Procedure has been performed and no exceptions have been recorded
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided
- Distribute requisite copies as directed by the client
- Send the Master Copy of the completed Acceptance Test Procedure to the client.

2.4.8 The completed test may be approved with exceptions resolved:

- Check applicable space on Test Execution Sheet to show that this procedure has been performed with exceptions recorded and resolved
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided
- Distribute requisite copies as directed by the client
- Send the Master Copy of the completed Acceptance Test Procedure to the client.

2.5 RECORDS

2.5.1 All personnel involved in the performance of this test shall sign in Procedure Signature Sheet.

2.5.2 Test results shall be recorded. Unless specific data is required, the signature or initials as applicable, of the person accepting the item will be entered in the blank provided to indicate compliance with the stated requirements or the successful completion of the given test step. Errors shall be corrected by crossing out the incorrect data with a single line and the correct response shall be written in the direct vicinity of the original item. The person making the correction shall initial and date the correction. A complete working copy of this procedure and any exception records generated shall be maintained as a permanent record.

2.5.3 An Exception Log and Exception Record sheet is attached in the event exceptions to the test are made when the test is being performed. All exceptions to the test are to be dispositioned and agreed to by all witnesses. Actions taken regarding disposition are noted on the exception sheet. During the performance of this test, errors in test may be encountered which require correction or adjustment to complete the test. Such corrections are to be noted in the procedure and listed as an exception.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 PERSONNEL SAFETY

3.1.1 If the performance of this procedure is suspended for any reason, ensure the equipment is left in a safe state.

3.1.2 If any equipment problem is observed during the performance of this procedure, immediately notify the Test Director.

3.1.3 Proper lifting techniques shall be utilized throughout the procedure and personnel shall take precautions to ensure back strain, pinchpoints and protective clothing are observed.

4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Tape Measure/Ruler

4.2 CONDITIONS AND ACTIONS

NOTE- All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.2.1 All field testing and inspection of the system or portions of the system to be tested has been completed.

Pat Fuller — Test Engineer Signature — 2/3/00 — Date

4.2.2 A pre-job briefing has been held and all participants have been thoroughly briefed on job safety, hazards and their responsibilities before performing this ATP.

Pat Fuller — Test Director Signature — 2/3/00 — Date

4.2.3 Test Director VERIFY section 4.2 has been COMPLETED.

Pat Fuller — Test Director Signature — 2/3/00 — Date

5.0 PROCEDURE

5.1 SETUP

RT 5.1.1 **RECORD** the Gamma Cart Identifier letter and CPU number for the system being tested.

Gamma Cart = B CPU = WC68790

RT 5.1.2 **ENSURE** the GAMMA CART riser extension tool is mounted on the test riser.

RT 5.1.3 **ENSURE** the Gamma CART is placed in line with riser extension tool to facilitate installation of probe and cables.

RT 5.1.4 **ENSURE** the "Raise-Off-Lower" selector switch is in the "OFF" position.

RT 5.1.5 **ENSURE** the Emergency Stop button is pulled out.

RT 5.1.6 **POSITION** the speed control potentiometer to zero speed *(fully counter clockwise)*.

RT 5.1.7 **ENSURE** the Local/Control button is in the "Local" position.

RT 5.1.8 **ENSURE** probe, limit switch, communication and power cables are connected.

5.2 LOCAL CONTROL

BT 5.2.1 **ENSURE** the Local/Control button is in the "Local" position.

BT 5.2.2 **MOVE** the RAISE-OFF-LOWER selector switch to the LOWER position.

BT 5.2.3 **SET** the speed control knob to approximately 20%.

BT 5.2.4 **PRESS AND HOLD** the Reset button on the cart.

BT 5.2.5 **Ensure** the probe begins to lower.

BT 5.2.6 **RELEASE** the Reset button on the cart.

BT 5.2.7 **Ensure** the speed changes as the speed controller is adjusted from 0-100%.

BT 5.2.8 **SET** the speed control knob to approximately 20%.

BT 5.2.9 **PRESS** the Emergency Stop button on the cart as the probe is lowering.

BT 5.2.10 **ENSURE** the cable has stopped moving.

BT 5.2.11 **PULL** the Emergency Stop button.

* BT 5.2.12 **PRESS** the Reset button on the cart.

* Problem corrected w/ reset button. ATP restarted. BT 2/3/00

~~(See performance log)~~ BT 2/3/00

BT 5.2.13 **ENSURE** the probe continues to lower.

BT 5.2.14 **MOVE** the RAISE-OFF-LOWER selector switch to the OFF position.

BT 5.2.15 **ENSURE** the probe stops.

BT 5.2.16 **MOVE** the RAISE-OFF-LOWER selector switch to the RAISE position.

BT 5.2.17 **ENSURE** the probe begins to raise.

BT 5.2.18 **Ensure** the speed changes as the speed controller is adjusted from 0-100%.

BT 5.2.19 **SET** the speed control knob to approximately 20%.

BT 5.2.20 **ENSURE** the probe trips the limit switch and stops.

BT 5.2.21 **ENSURE** the local depth indicator indicates 0, by hitting reset if necessary.

BT 5.2.22 **MOVE** the RAISE-OFF-LOWER selector switch to the OFF position.

BT 5.2.23 **SET** the speed control knob to 0%.

5.3 LOGIN

PZ 5.3.1 At the operating system login screen, **PRESS** cancel.

PZ 5.3.2 **ENSURE** Gamma Cart Spectrum Analyzer and Control System Login screen loads.

PZ 5.3.3 **CLICK** on login button.

PZ 5.3.4 On the login window **INPUT** the following data obtained from the test director:

- Valid System Engineer Username
- Correct Password

PZ 5.3.5 **EXIT** necessary programs **AND ENSURE** directory of the format "C:\A-00mmdd" or "C:\B-00mmdd" (depending on cart tested) does not exist.

PZ 5.3.6 **RESTART** the system.

PZ 5.3.7 At the operating system login screen, **PRESS** cancel.

PZ 5.3.8 On the login window **INPUT** the following data obtained from the test director:

- Valid Operator Username
- Incorrect Password

PZ 5.3.9 **ENSURE** the login fails.

PZ 5.3.10 **CLICK** on "RETRY".

PZ 5.3.11 Using the same Username **INPUT** a valid password ("gcart").

PZ 5.3.12 **CLICK** on "OK" button.

PZ 5.3.13 **ENSURE** the screen changes to the Gamma Cart Display screen.

PZ 5.3.14 **UNPLUG** the communication cable **AND ENSURE** the "Communication Failure" message is flashing.

PZ 5.3.15 **PLUG** the communication cable back in **AND ENSURE** the "Communication Failure" message disappears.

PZ 5.3.16 On the control screen, **ENSURE** the Local/Remote switch displays in the LOCAL position.

PZ 5.3.17 On the control screen, **ENSURE** Start, Stop, Zero, Emergency Stop buttons and depth indication is not visible.

5.4 Incremental Sample Mode

PT 5.4.1 **SET** the Local/Remote switch on the gamma cart to Remote.

PT 5.4.2 **ENSURE** Start, Stop, Zero, and Emergency Stop buttons appear.

PT 5.4.3 On the control screen, **ENSURE** the Local/Remote switch displays in the REMOTE position.

PT 5.4.4 On the Gamma Cart Control screen, **SELECT** the "Config." button.

PT 5.4.5 On the Data Collection Configuration window, **SELECT** the "Incremental" button.

PT 5.4.6 **SELECT/ENTER** the following data:

Tank Number	AZ-101
Cart	(step 5.1.1)
Probe Type	1
Riser ID: ft	14D: 55.410
Sample Time:	120 sec

PT 5.4.7 **ENSURE** the Real/Live toggle button indicates "REAL".

PT 5.4.8 **INPUT** the following Sample Collection Data:

Sample Start Depth:	12.0 ft
Interval Size:	1.5 ft
Sample End Depth:	3.5 ft

PT 5.4.9 **CLICK** on "SAVE" button.

PT 5.4.10 **CLICK** on "EXIT" button.

PT 5.4.11 On the control screen, **SELECT** the Start button.

PT 5.4.12 **ENSURE** the Start, Zero and logout buttons are not visible.

PT 5.4.13 **ENSURE** the probe zeroes and data acquisition software indicates a sample time of 600 seconds.

PT 5.4.14 **ENSURE** the on screen depth display **AND** local display indicate zero.

* PT 5.4.15 **MEASURE AND RECORD** the distance at each point in Table 5.4A.

* 12 ft depth on table 5.4A out of tolerance. See Performance log PT 2/3/00

* PJ 5.4.16 **ENSURE** the data collection software screen appears at each point AND indicates Preset Limit Real = ~~60~~ 120 (TYPO) PJ (2/3/00) sec.

PJ 5.4.17 **CLICK** on the "Probe Location" on the control screen.

PJ 5.4.18 **ENSURE** the Probe Location screen appears and indicates the probe location.

PJ 5.4.19 **CLICK** on the "Back" button.

PJ 5.4.20 **ENSURE** the Probe Location screen closes.

Note: The cable is labeled in 1 foot increments.

Table 5.4A

Depth (ft)	Local Depth Indicator	Remote Depth Indicator	Expected Cable Reading	Measured Cable Reading	Difference (inches) (Expected - Measured)	Data Collection Screen Appeared W/correct time (Y/N)
12	12.01	12.0	PJ ~~10.7~~ 12 2/3/00	11' 10 5/8"	1 3/8"	Y
10.5	10.51	10.49	10.5	10' 7"	1/4"	Y
9	9.02	9.0	9	9' 1/4"	1/4"	Y
7.5	7.53	7.51	7.5	7' 6 1/2"	1/2"	Y
6	6.02	6.01	6	6' 1/4"	1/4"	Y
4.5	4.52	4.50	4.5	4' 6 1/4"	1/4"	Y

PJ 5.4.21 **ENSURE** the probe raises and trips the limit switch.

PJ 5.4.22 **ENSURE** sample is collected at zero position.

PJ 5.4.23 **ENSURE** Data Collection is Complete.

PJ 5.4.24 **CLICK** on "OK".

PJ 5.4.25 **ENSURE** the local and remote depth indicators agree ± 1".

* PJ 5.4.26 **ENSURE** the Probe stopped within 1 inch of each programmed stopping point.

* Δ Tolerance out of limits, adjusted scaling factor and retested. See ATP performance log. PRW 2-3-00

NOTE: The following steps will require the use of a drywell or a person in the pit to maintain weight on the cable.

PJ 5.4.27 On the Gamma Cart Control screen, **SELECT** the "Config." button.

PJ 5.4.28 On the Data Collection Configuration window, **SELECT** the "Incremental" button.

PJ 5.4.29 **INPUT** the following Sample Collection Data:

Sample Start Depth:	50.0 ft
Interval Size:	10.0 ft
Sample End Depth:	0.0 ft

* Astricks on this Page denote corrections to ATP.
PJ 2/3/00

PJ 5.4.30 **CLICK** on "SAVE" button.

PJ 5.4.31 **CLICK** on "EXIT" button.

PJ 5.4.32 On the control screen, **SELECT** the Start button.

PJ 5.4.33 **ENSURE** the probe zeroes and data acquisition software indicates a sample time of 600 seconds.

* PJ 5.4.34 After the probe has lowered approximately 3 feet, ~~**SELECT** the "ZERO" button.~~ (Not an option) PJ 2/3/00

PJ 5.4.35 **SELECT** the Stop button on the control screen.

PJ 5.4.36 **ENSURE** the probe stopped.

PJ 5.4.37 **SELECT** the "ZERO" button.

PJ 5.4.38 **SELECT** the Emergency Stop button on the control screen.

PJ 5.4.39 **ENSURE** the probe stopped.

PJ 5.4.40 **ENSURE** the "Probe not zeroed" message appears.
click on OK (Note: Added step) PJ 2/3/00

* PJ 5.4.41 **SELECT** the Reset Emergency Stop button on the control screen.

PJ 5.4.42 **ENSURE** the Start, Stop and Zero buttons appear on the control screen.

PJ 5.4.43 **SELECT** the "ZERO" button.

PJ 5.4.44 **ENSURE** the limit switch is tripped.

* Note: Sample Time was changed to 2005ec on Zero, Acquire for 600
* Press Start
* Ensure probe lowers 6.16

(Note: Added steps)
PJ 2/3/00

PJ 5.4.45 **MEASURE AND RECORD** the distance at each point in Table 5.4B.

PJ 5.4.46 **ENSURE** the data acquisition software appears AND REAL time indicates ~~60~~ 300 secs. (Time increased for safety to simulate river depths) PJ 2/3/00

added in error PJ 2/3/00

Note: The cable is labeled in 1 foot increments.

Table 5.4B

Depth (ft)	Local Depth Indicator	Remote Depth Indicator	Expected Cable Reading Marks on cable ↘	Measured Cable Reading Actual →	Difference (inches) (Expected – Measured)	Data Collection Screen Appeared W/correct time (Y/N)
50	50.03	50.02	69	49' 8½"	3 ½"	Y
40	40.02	40.01	79	39' 9¾"	2 ¼"	Y
30	30.03	30.02	89	29' 11⅞"	1/8"	Y
20	20.01	20.00	99	19' 11¾"	1/4"	Y
10	10.00	10.01	109	10' ½"	1/2"	Y

* ~~[illegible]~~ Probe zeros at this point. PJ (2/3/00)

~~PJ~~ 5.4.47 **ENSURE** the Probe stopped within 2 inches of each programmed stopping point.

PJ 5.4.48 **ENSURE** the stop depth is ±1/4 inch from the starting point.

* PJ Data collection complete, ok (added step) PJ 2/3/00

5.4.49 On the Gamma Cart Control screen, **SELECT** the "Config." button.

PJ 5.4.50 On the Data Collection Configuration window, **SELECT** the "Incremental" button.

PJ 5.4.51 **INPUT** a Sample Start Depth, Interval Size and Sample End depth of -2.0 ft.

PJ 5.4.52 **CLICK** on the "SAVE" button.

PJ 5.4.53 **ENSURE** the data boxes are in red and an out of range message appears then **EXIT**.

PJ 5.4.54 **SELECT** the config button and confirm that the "-2.0" values were not saved.

△1 Originally out of tolerance. Scaling factor adjusted and retested, see ATP performance log.
PAW
2-3-00

* Asterisk's denotes corrections to ATP. PJ 2/3/00

5.5 User Defined Mode

BT 5.5.1 On the Data Collection Configuration window, **SELECT** the "User Defined" button.

BT 5.5.2 **SELECT/ENTER** the following data:

Tank Number	AZ-101
Cart	(step 5.1.1)
Riser ID: ft	14G: 55.370
Probe Type	2
Sample Time	150 sec

BT 5.5.3 **ENSURE** the Real/Live toggle button indicates "LIVE".

BT 5.5.4 **INPUT** the following Depths From Table 5.5:

Table 5.5

Sample	Depth	Expected Cable Reading	Actual Cable Reading	Difference (Expected-Actual)
1	11.25	11' 3"	11' 3"	0
2	10.00	10'	10' 1/4"	1/4"
3	9.50	9' 6"	9' 6 1/4"	1/4"
4	8.75	8' 9"	8' 9 1/8"	1/8"
5	7.50	7' 6"	7' 6 3/8"	3/8"
6	7.25	7' 3"	7' 3 3/8"	3/8"
7	6.50	6' 6"	6' 6 3/8"	3/8"
8	4.25	4' 3"	4' 3 3/8"	3/8"
9	3.25	3' 3"	3' 3 1/4"	1/4"
10	3.00	3'	3' 1/4"	1/4"
11	2.25	2' 3'	2' 3 1/8"	1/8"
12	1.75	1' 9'	1' 9 1/16"	1/16"
13	1.25	1' 3"	1' 3 1/8"	1/8"
14	2.75	2' 9"	2' 9"	0
15	4.00	4'	4' 1/4"	1/4"
16	7.00	7'	7' 1/8"	1/8"
17	4.75	4' 9"	4 9 1/8"	1/8"
18	11.00	11'	11'	0
19	7.50	7' 6"	7' 6 1/4"	1/4"
20	8.25	8' 3"	8' 3 1/8"	1/8"

Note: The cable is labeled in 1 foot increments.

PZ 5.5.5 **CLICK** on "SAVE".

PZ 5.5.6 **CLICK** on "EXIT".

PZ 5.5.7 On the control screen **SELECT** the Start button.

PZ 5.5.8 **ENSURE** the data acquisition software appears AND Preset Limits LIVE time indicates 600 secs.

PZ 5.5.9 **MEASURE AND RECORD** (in Table 5.5) the distance at each stopping point.

PZ 5.5.10 **ENSURE** sample is collected at zero position.

PZ 5.5.11 **ENSURE** Data Collection is Complete.

PZ 5.5.12 **CLICK** on "OK".

PZ 5.5.13 **ENSURE** the Probe stopped within 1 inch of each programmed stopping point **AND INITIAL** the appropriate space in the table above.

5.6 LOGOUT

PT 5.6.1 On Gamma Cart Display screen, **CLICK** on logout.

PT 5.6.2 ENSURE the screen changes to the Login screen.

PT 5.6.3 CLICK on Exit.

PT 5.6.4 ENSURE system reboots to operating system login.

5.7 DATA COLLECTION VERIFICATION

PT 5.7.1 Check the directory for the day was created, and **ENSURE** the data from this test was recorded.

PT 5.7.2 **PRINT** out charts of the data gathered from this test.

ATP PERFORMANCE LOG

This page may be reproduced as necessary. Page _____ of _____

ATP PERFORMANCE EVENT	DATE	INITIALS
Section 5.4.37. System failed. System rebooted, test continued	1/28/00	AT
Table 5.4A - 12ft Depth, Table 5.4B - 50 Ft depth and 40 Ft depth out of tolerance. Scaling factor adjusted and re-tested at 50, 40, 30, 20, 12, 10 foot depths.	1/28/00	AT
Depth (Ft) / Expected / Actual / Difference	2/3/00	AD
50 / 50.0 / 50' 1/4" / 1/4"		
40 / 40.0 / 40.0 / 0		
30 / 30.0 / 30' 5/8" / 5/8"		
20 / 20.0 / 20' 3/8" / 3/8"		
12 / 12.0 / 12' 5/8" / 5/8"		
10 / 10.0 / 10' 5/8" / 5/8"		
Verified above readings PAW 2-3-00		

ATP EXCEPTION LOG

This page may be reproduced as necessary. Page _____ of _____

Number	Date	Description

NO Exceptions
PAW 2-3-00

ATP EXCEPTION RECORD

This page may be reproduced as necessary. Page _____ of _____

ATP STEP NUMBER:	ATP EXCEPTION LOG#:
DESCRIPTION OF EXCEPTION:	
INITIATOR NAME/ORGANIZATION:	
DATE OF EXCEPTION:	
RESOLUTION OF EXCEPTION:	
CORRECTION APPROVAL:	
TEST DIRECTOR INITIAL: DATE:	
DATE OF RESOLUTION:	
TEST DIRECTOR SIGNATURE:	DATE:
TEST ENGINEER SIGNATURE:	DATE:
QUALITY ASSURANCE SIGNATURE:	DATE:

NO Exceptions 3.00 PAP

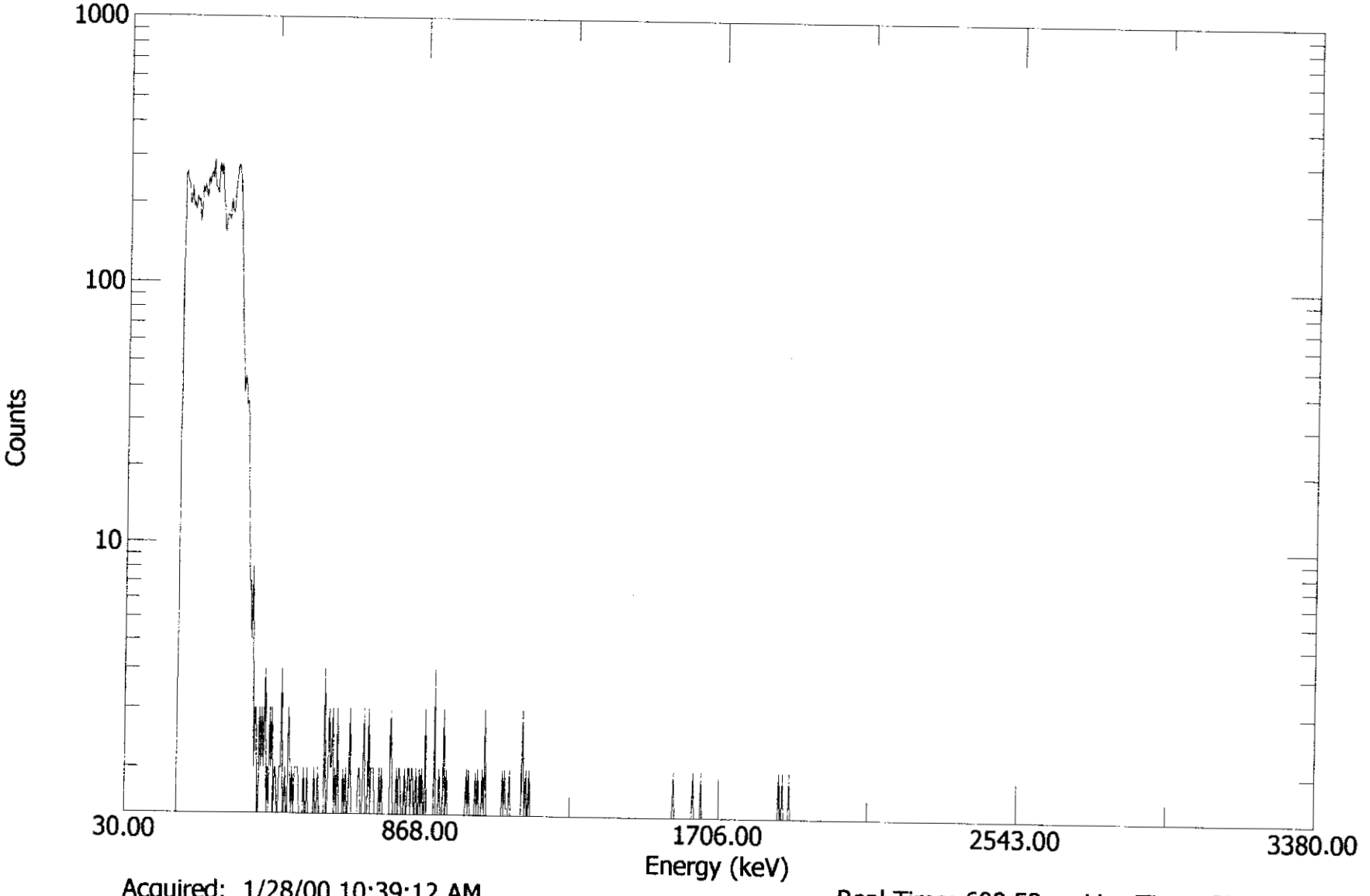
PROCEDURE SIGNATURE SHEET

PRINT NAME	SIGNATURE	INITIALS
Paul A Werner CHG QC	Paul A. Werner	PAW
Pat Fuller COGEMA	Pat Fuller	PF
Tom Clarke	T L Clarke	TC

PROCEDURE HISTORY SIGNATURE SHEET

B-000128S1

AZ-101, Riser-14D, .0ft, Probe-1, Cart-B

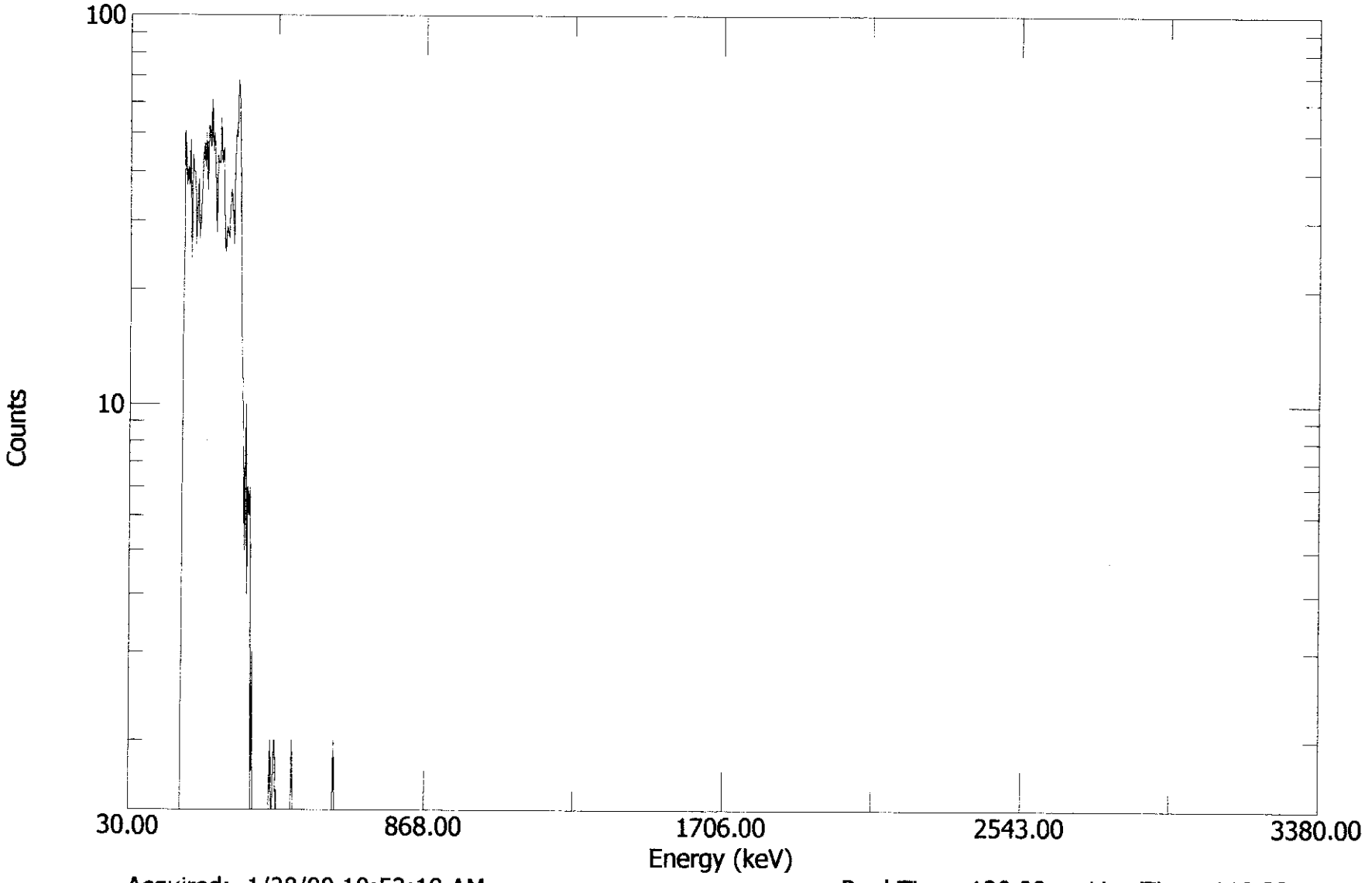


Acquired: 1/28/00 10:39:12 AM
File: C:\B-000128\B-000128S1.chn
Detector: #1 WC68790 MCB 25

Real Time: 600.52 s. Live Time: 600.00 s.
Channels: 1024

B-000128S2

AZ-101, Riser-14D, 12.0ft, Probe-1, Cart-B

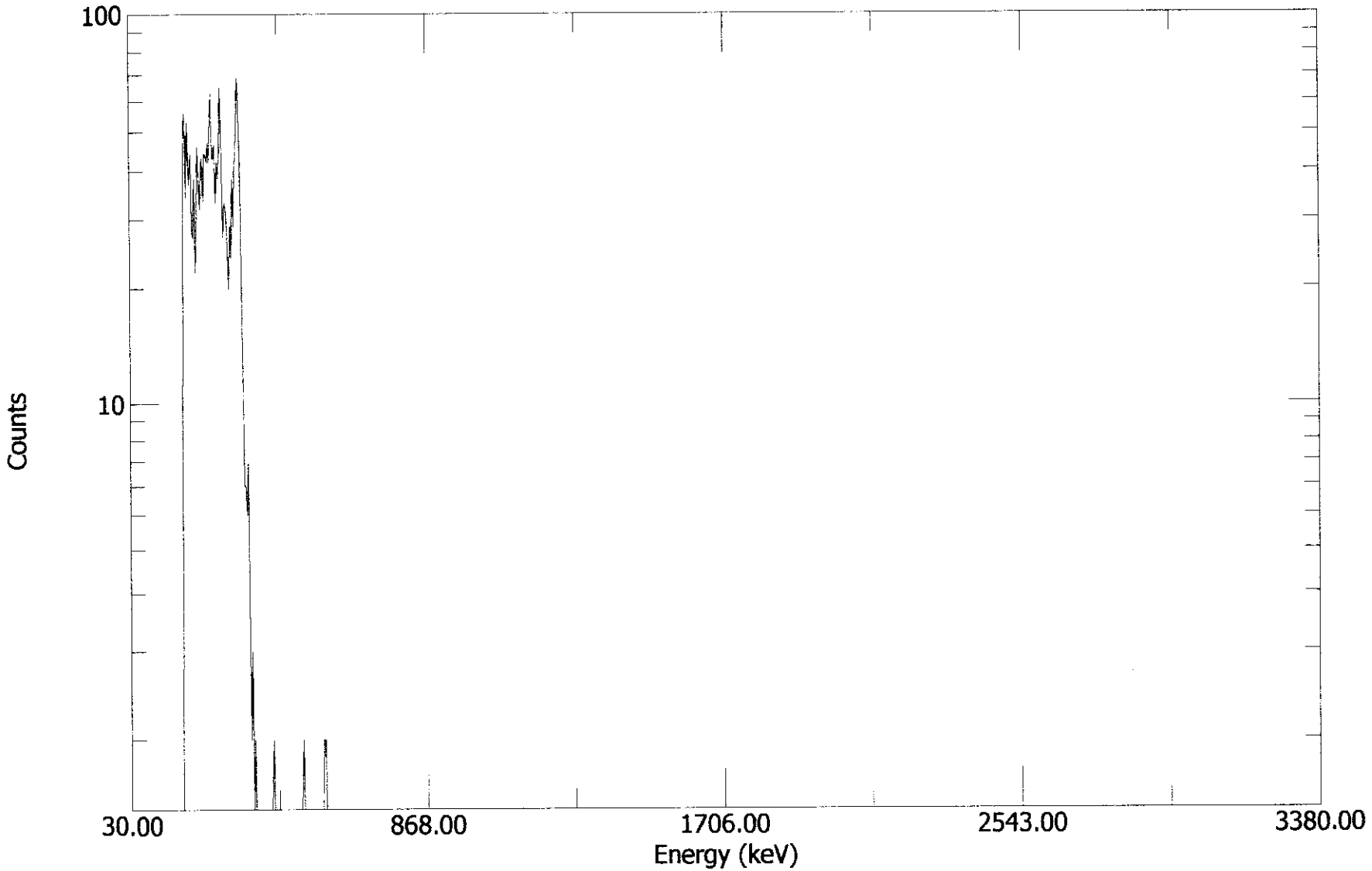


Acquired: 1/28/00 10:52:10 AM
File: C:\B-000128\B-000128S2.chn
Detector: #1 WC68790 MCB 25

Real Time: 120.00 s. Live Time: 119.90 s.
Channels: 1024

B-000128S3

AZ-101, Riser-14D, 10.49ft, Probe-1, Cart-B

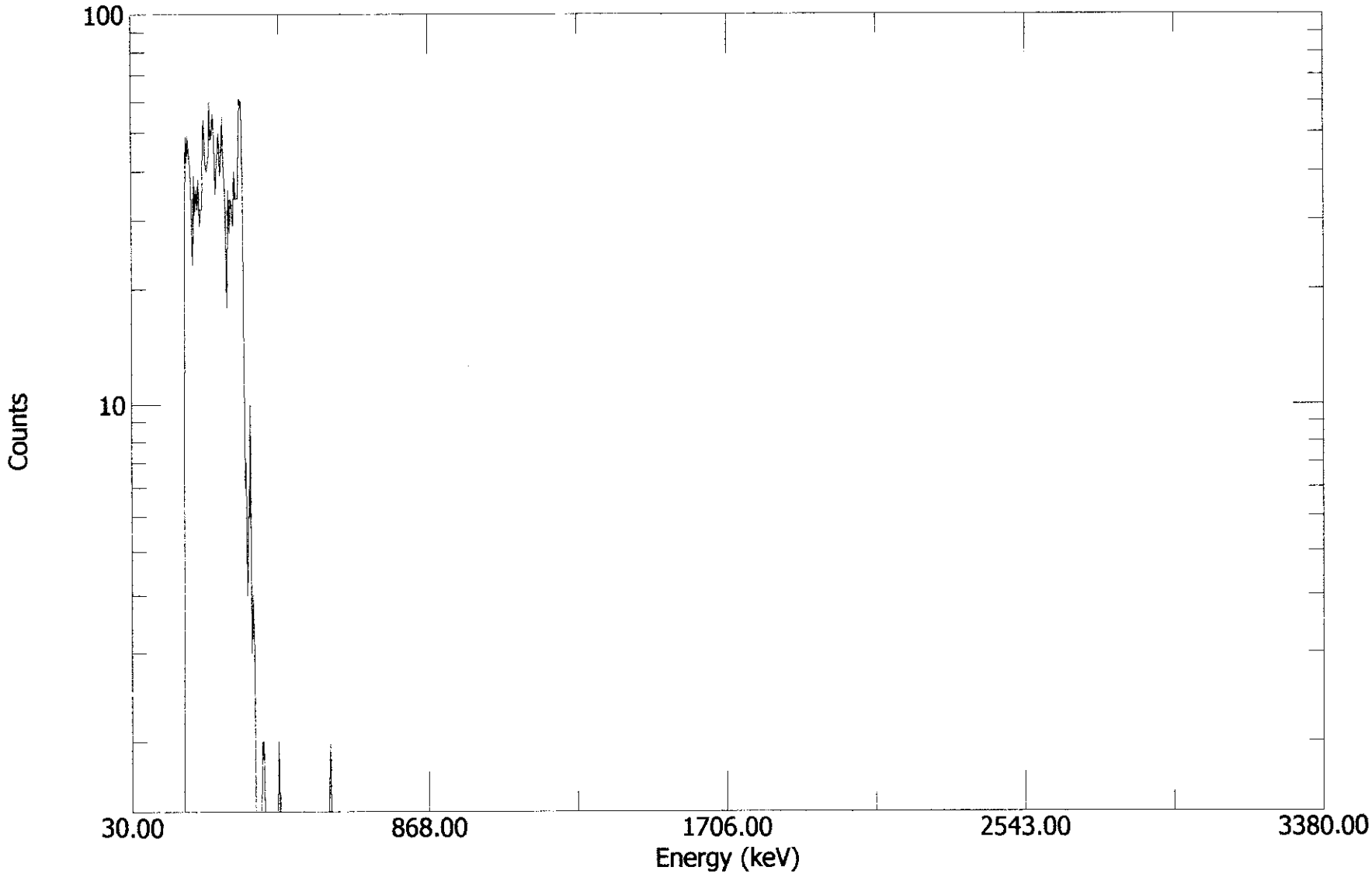


Acquired: 1/28/00 10:54:38 AM
File: C:\B-000128\B-000128S3.chn
Detector: #1 WC68790 MCB 25

Real Time: 120.00 s. Live Time: 119.90 s.
Channels: 1024

B-000128S4

AZ-101, Riser-14D, 9.0ft, Probe-1, Cart-B

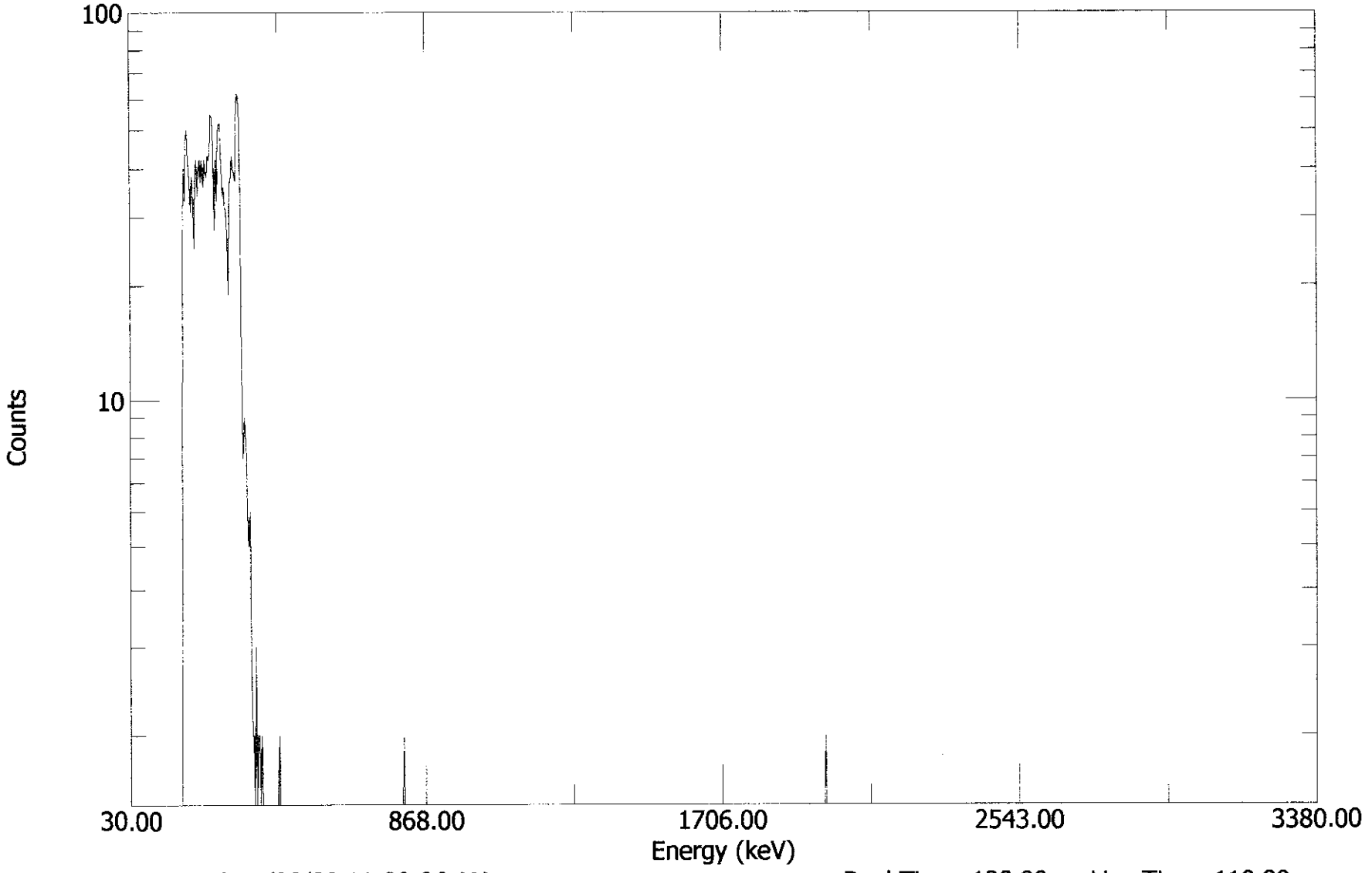


Acquired: 1/28/00 10:57:21 AM
File: C:\B-000128\B-000128S4.chn
Detector: #1 WC68790 MCB 25

Real Time: 120.00 s. Live Time: 119.90 s.
Channels: 1024

B-000128S5

AZ-101, Riser-14D, 7.51ft, Probe-1, Cart-B

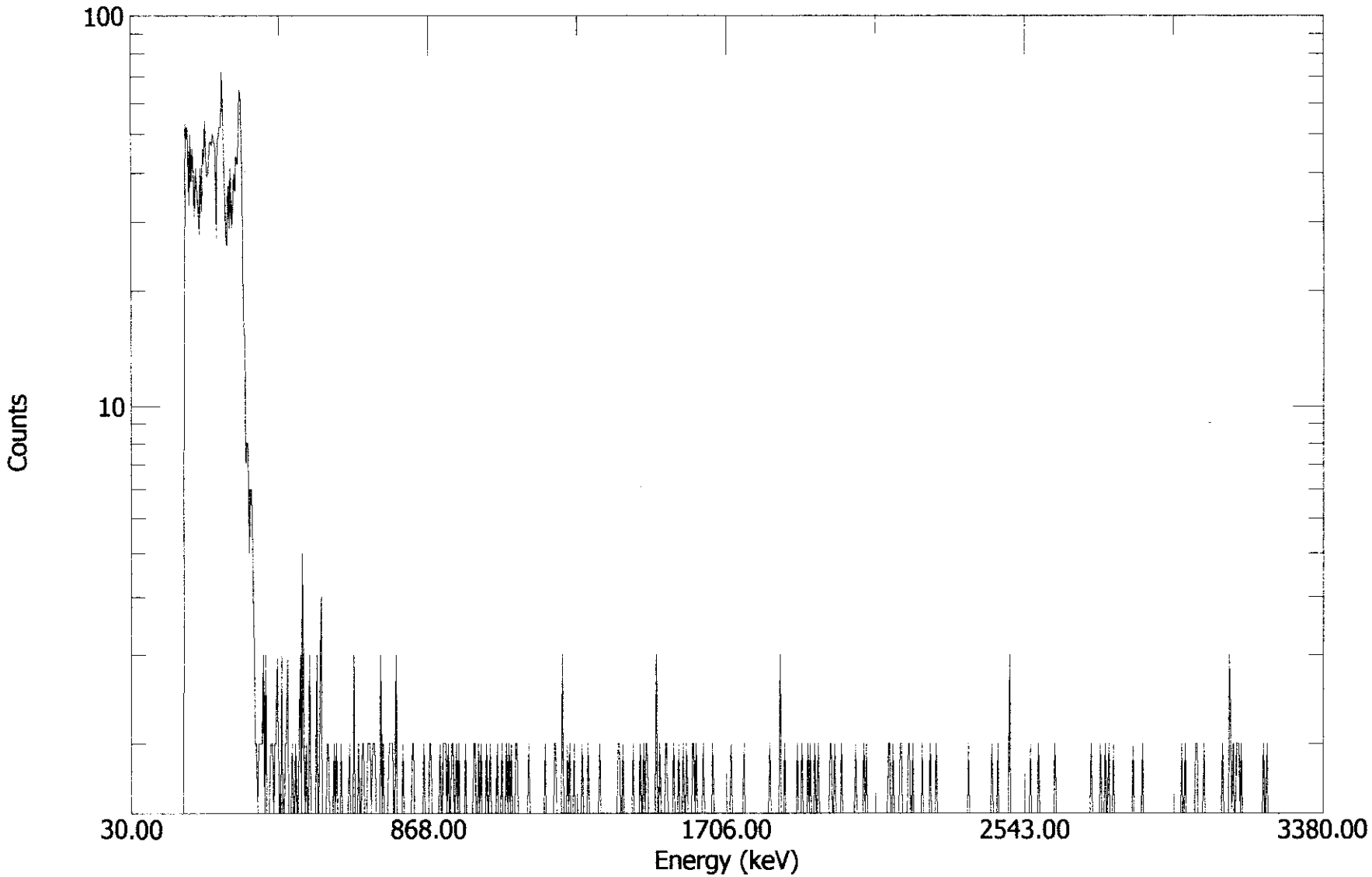


Acquired: 1/28/00 11:00:06 AM
File: C:\B-000128\B-000128S5.chn
Detector: #1 WC68790 MCB 25

Real Time: 120.00 s. Live Time: 119.90 s.
Channels: 1024

B-000128S6

AZ-101, Riser-14D, 6.01ft, Probe-1, Cart-B

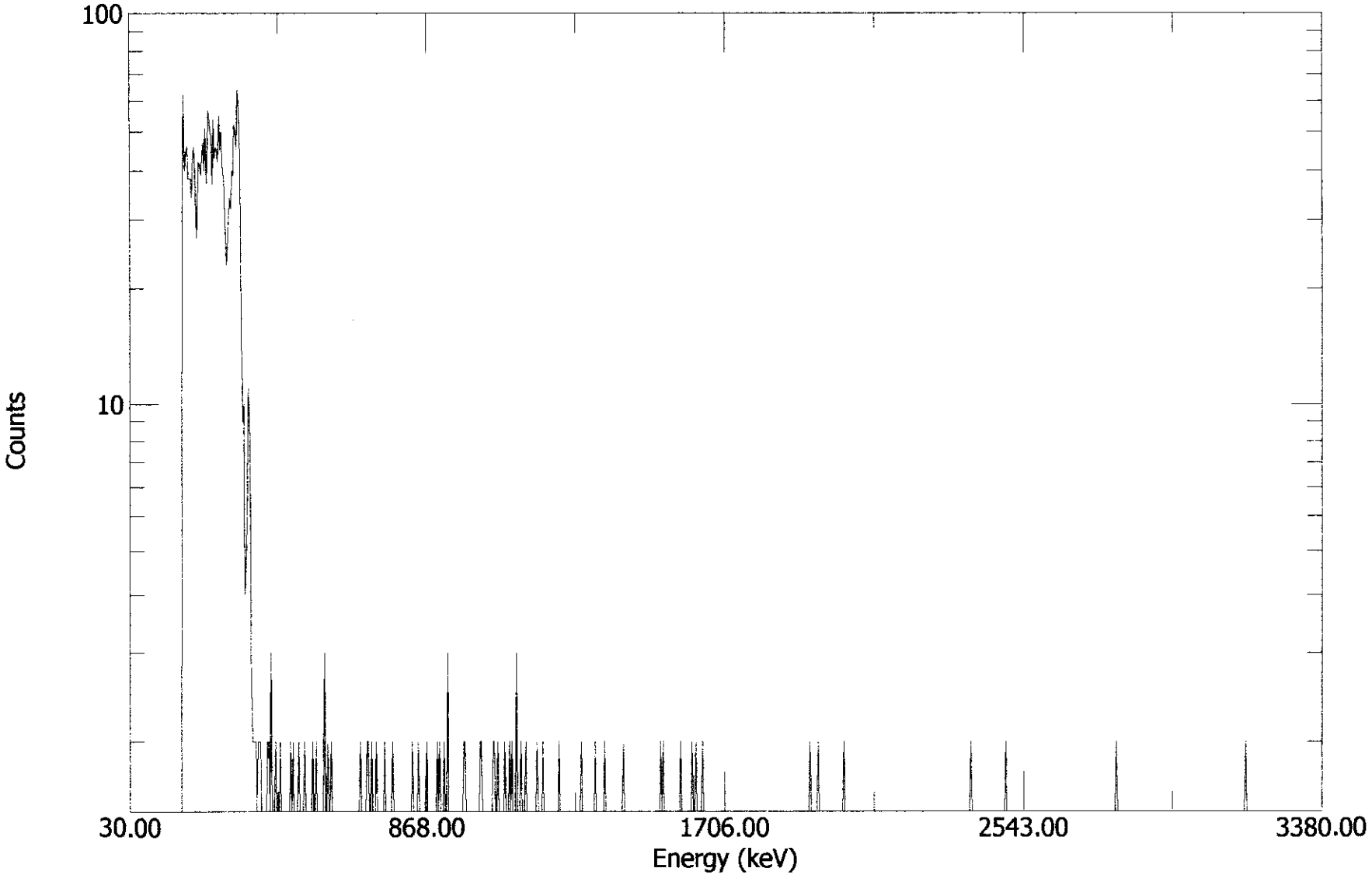


Acquired: 1/28/00 11:02:59 AM
File: C:\B-000128\B-000128S6.chn
Detector: #1 WC68790 MCB 25

Real Time: 120.00 s. Live Time: 119.86 s.
Channels: 1024

B-000128S7

AZ-101, Riser-14D, 4.5ft, Probe-1, Cart-B

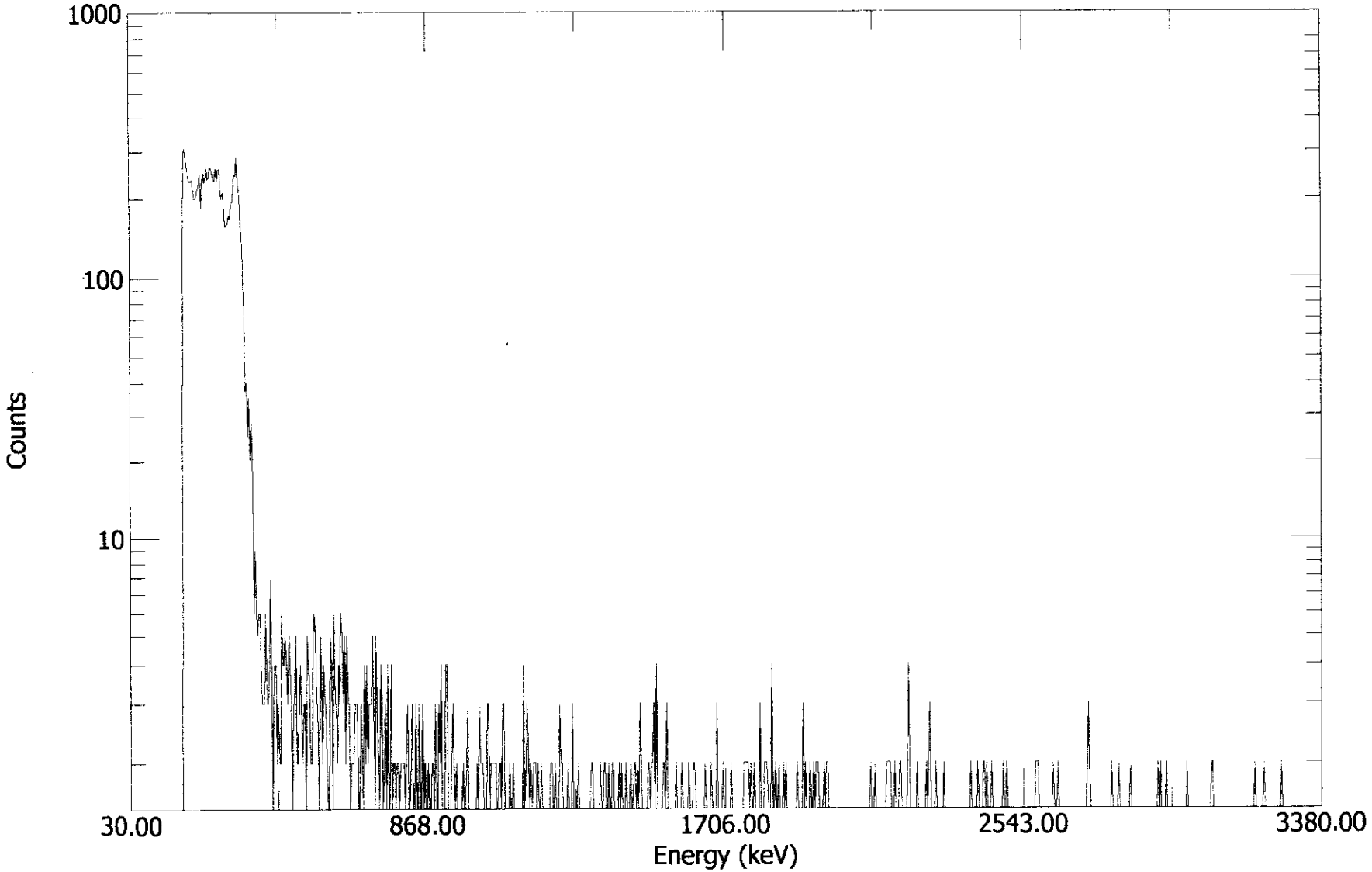


Acquired: 1/28/00 11:05:52 AM
File: C:\B-000128\B-000128S7.chn
Detector: #1 WC68790 MCB 25

Real Time: 120.00 s. Live Time: 119.88 s.
Channels: 1024

B-000128S8

AZ-101, Riser-14D, .01ft, Probe-1, Cart-B

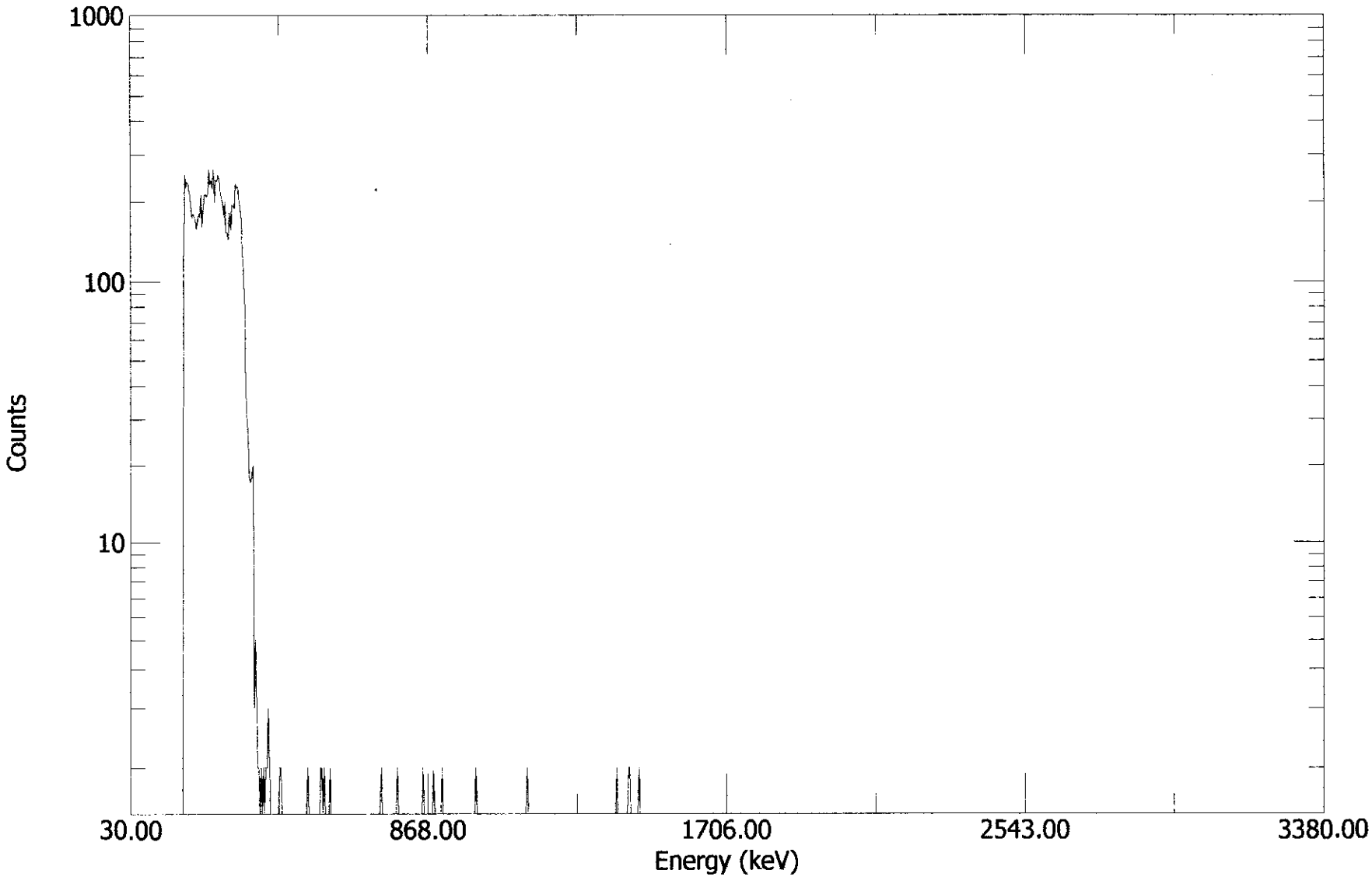


Acquired: 1/28/00 11:09:18 AM
File: C:\B-000128\B-000128S8.chn
Detector: #1 WC68790 MCB 25

Real Time: 603.46 s. Live Time: 600.00 s.
Channels: 1024

B-000128S9

AZ-101, Riser-14C, .0ft, Probe-1, Cart-B

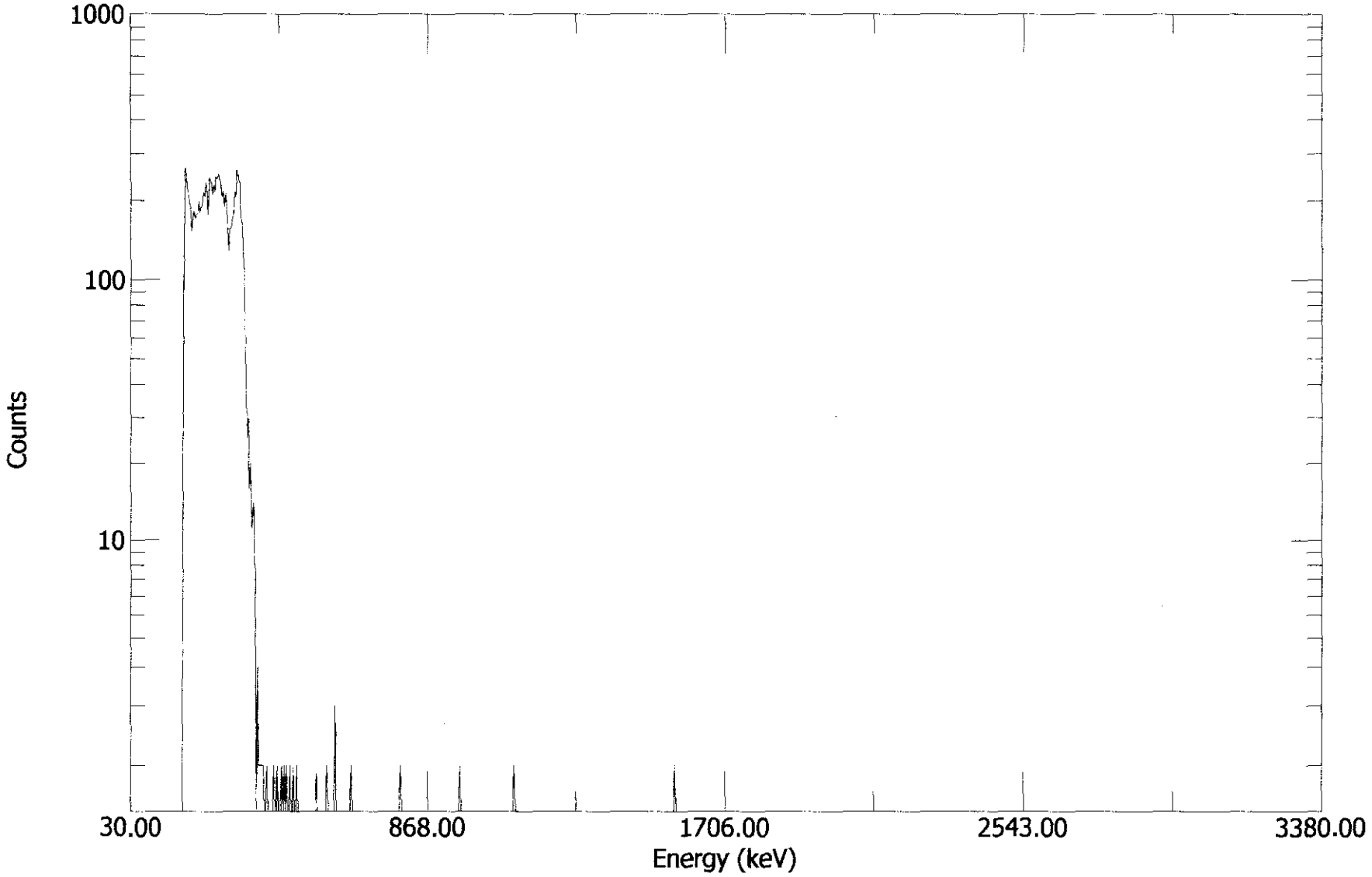


Acquired: 1/28/00 11:52:14 AM
File: C:\B-000128\B-000128S9.chn
Detector: #1 WC68790 MCB 25

Real Time: 600.46 s. Live Time: 600.00 s.
Channels: 1024

B-000128S10

AZ-101, Riser-14C, .0ft, Probe-1, Cart-B

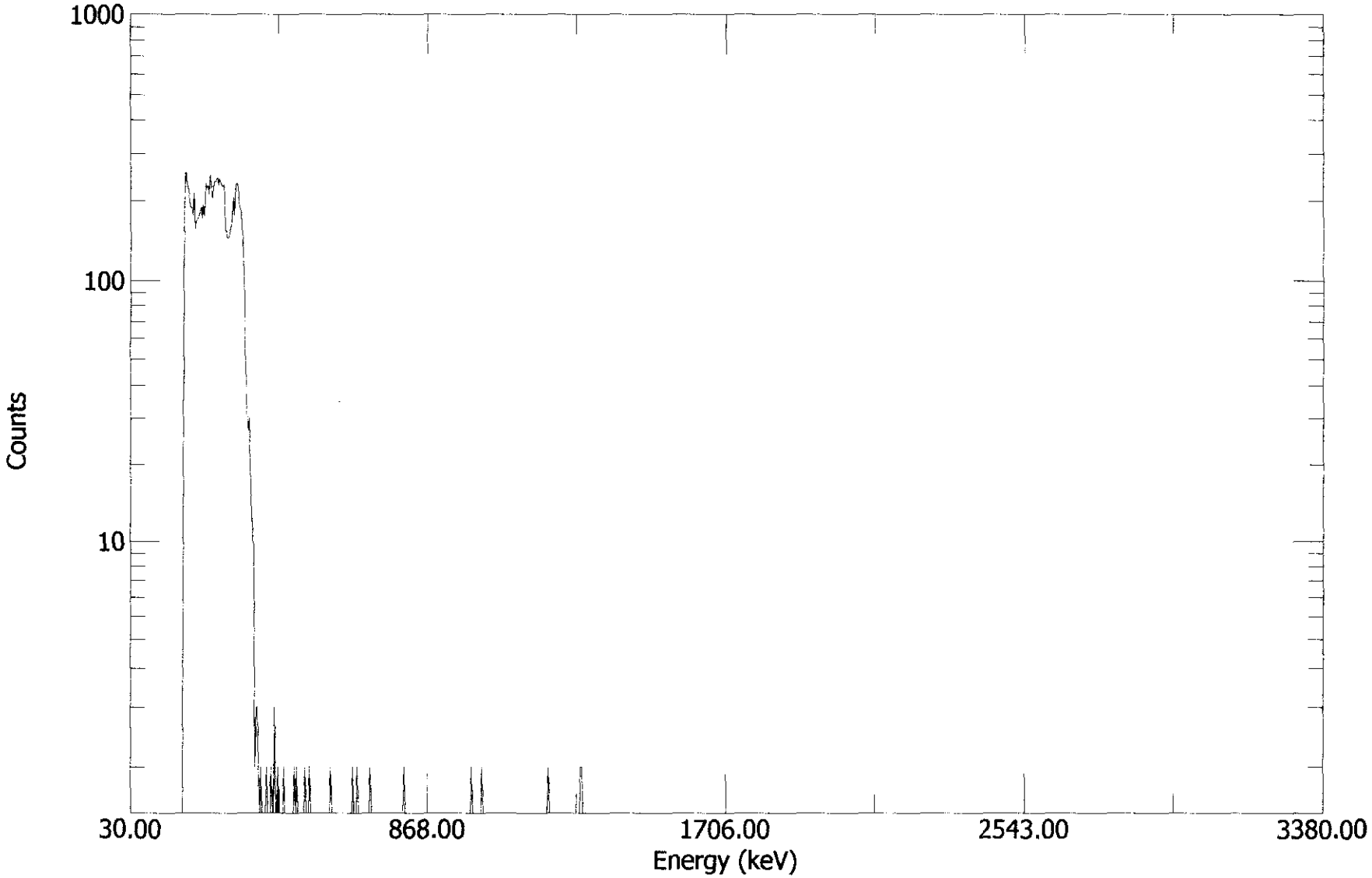


Acquired: 1/28/00 12:06:53 PM
File: C:\B-000128\B-000128S10.chn
Detector: #1 WC68790 MCB 25

Real Time: 600.46 s. Live Time: 600.00 s.
Channels: 1024

B-000128S11

AZ-101, Riser-14C, .0ft, Probe-1, Cart-B

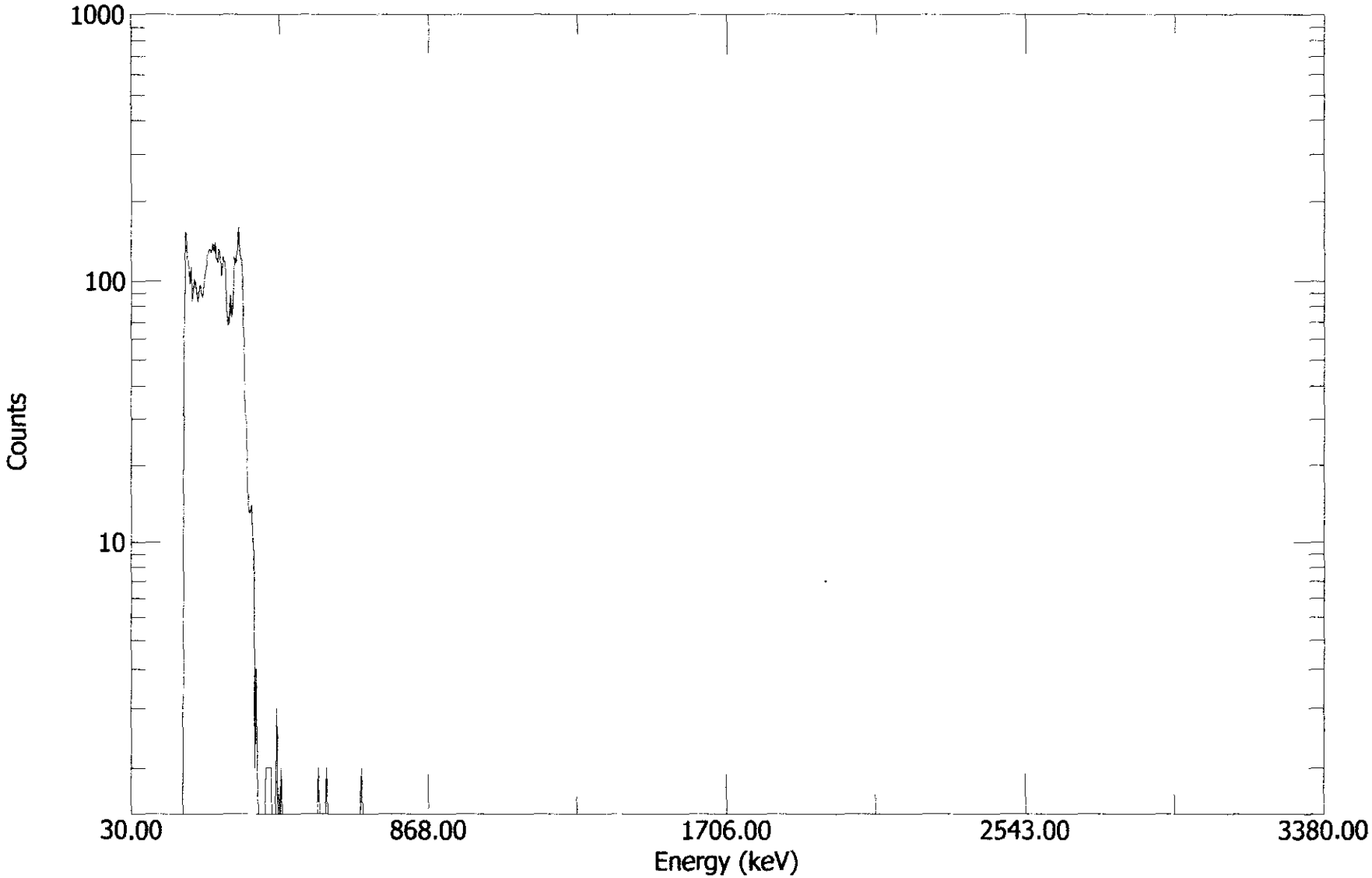


Acquired: 1/28/00 12:17:31 PM
File: C:\B-000128\B-000128S11.chn
Detector: #1 WC68790 MCB 25

Real Time: 600.46 s. Live Time: 600.00 s.
Channels: 1024

B-000128S12

AZ-101, Riser-14C, 50.0ft, Probe-1, Cart-B

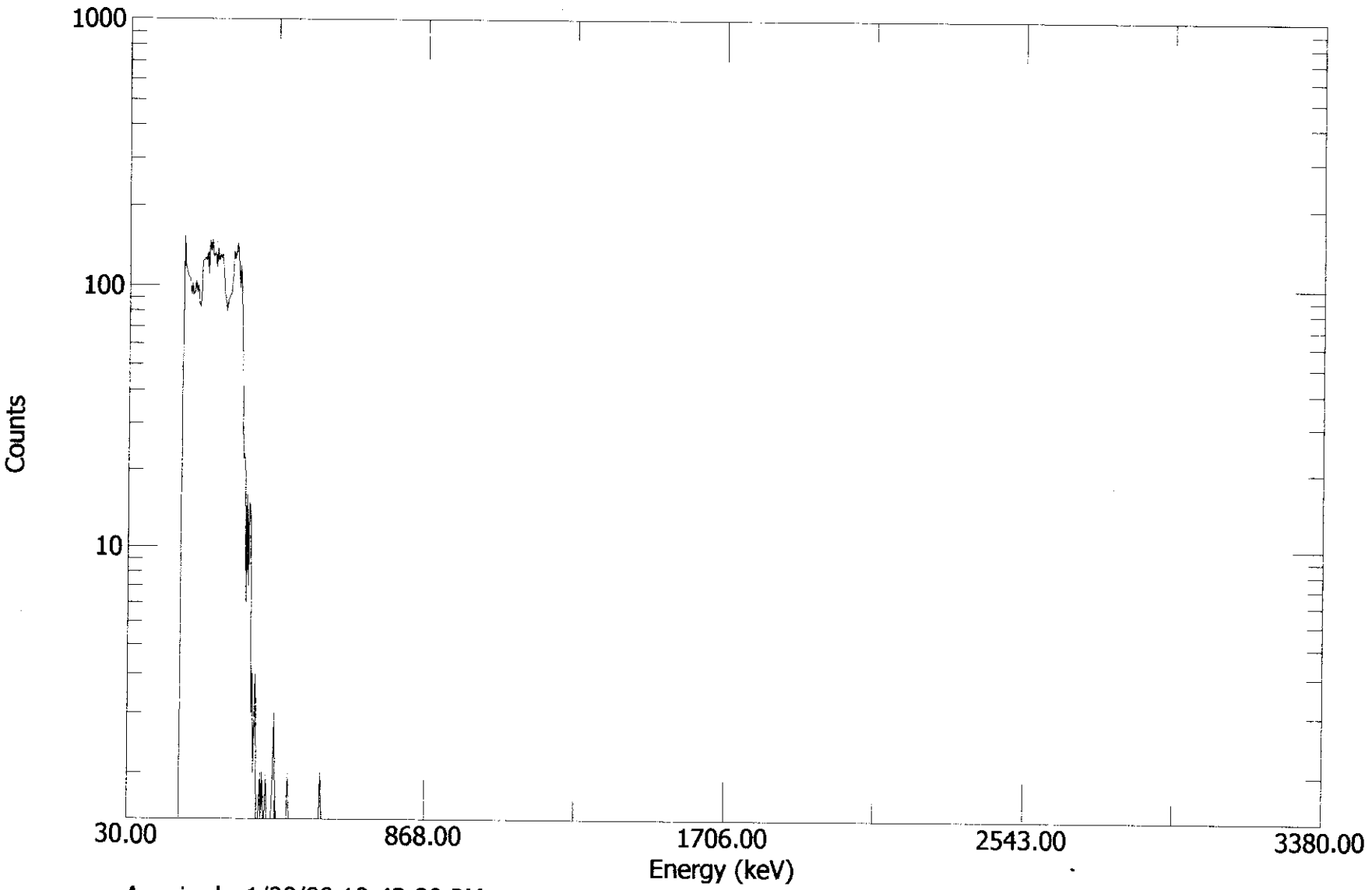


Acquired: 1/28/00 12:36:34 PM
File: C:\B-000128\B-000128S12.chn
Detector: #1 WC68790 MCB 25

Real Time: 300.00 s. Live Time: 299.74 s.
Channels: 1024

B-000128S13

AZ-101, Riser-14C, 40.0ft, Probe-1, Cart-B

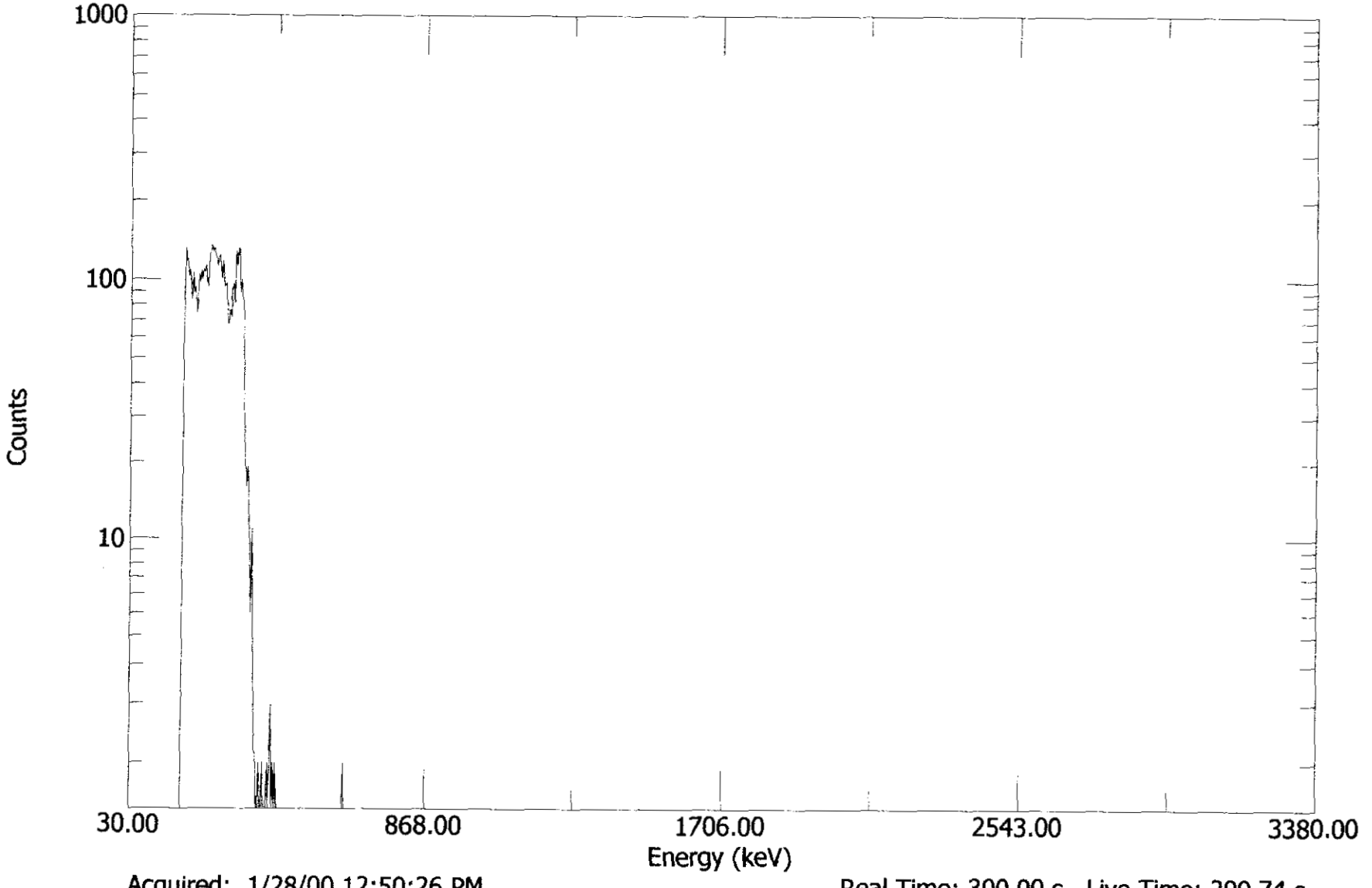


Acquired: 1/28/00 12:43:29 PM
File: C:\B-000128\B-000128S13.chn
Detector: #1 WC68790 MCB 25

Real Time: 300.00 s. Live Time: 299.70 s.
Channels: 1024

B-000128S14

AZ-101, Riser-14C, 30.0ft, Probe-1, Cart-B

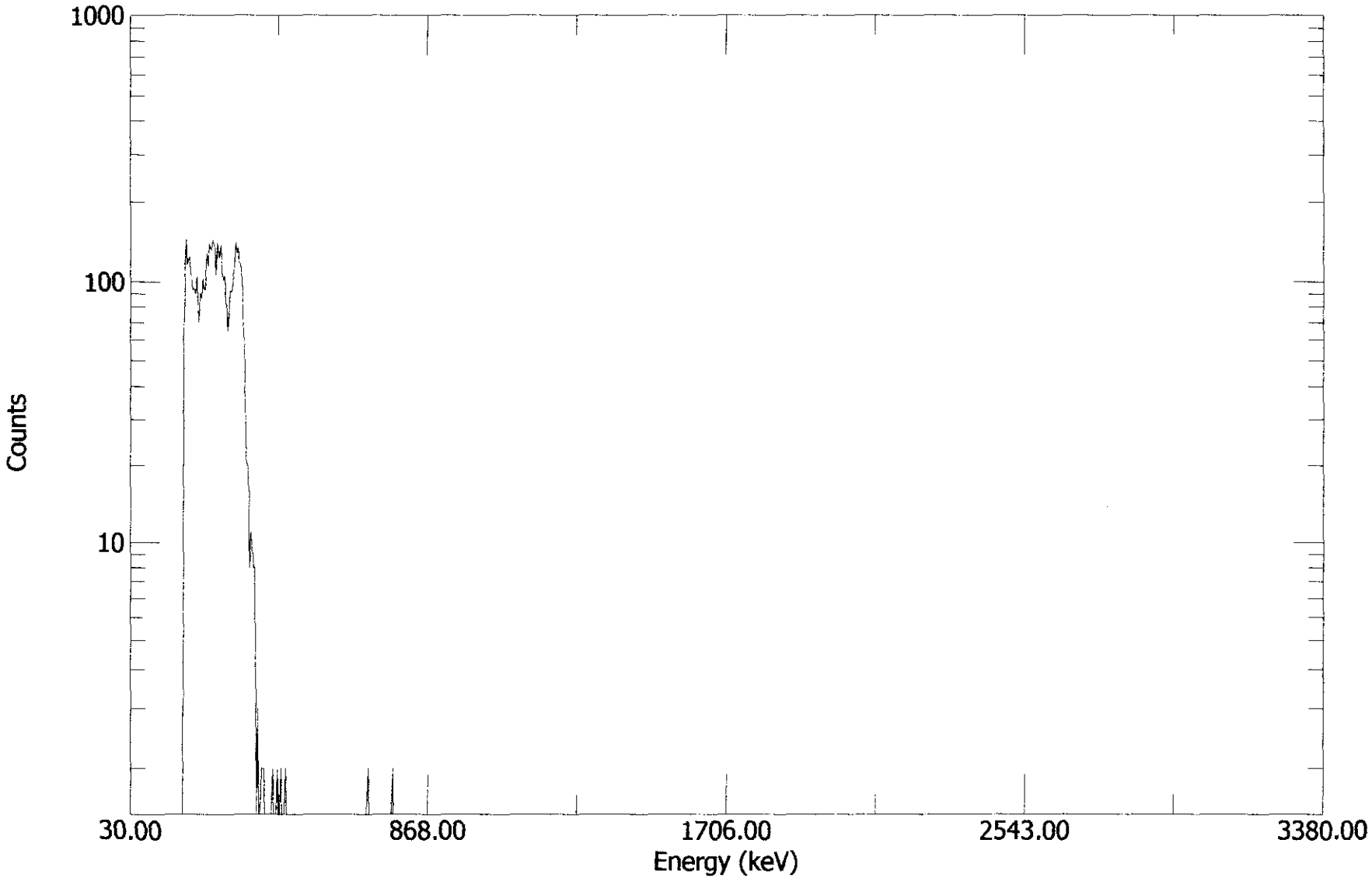


Acquired: 1/28/00 12:50:26 PM
File: C:\B-000128\B-000128S14.chn
Detector: #1 WC68790 MCB 25

Real Time: 300.00 s. Live Time: 299.74 s.
Channels: 1024

B-000128S15

AZ-101, Riser-14C, 20.0ft, Probe-1, Cart-B

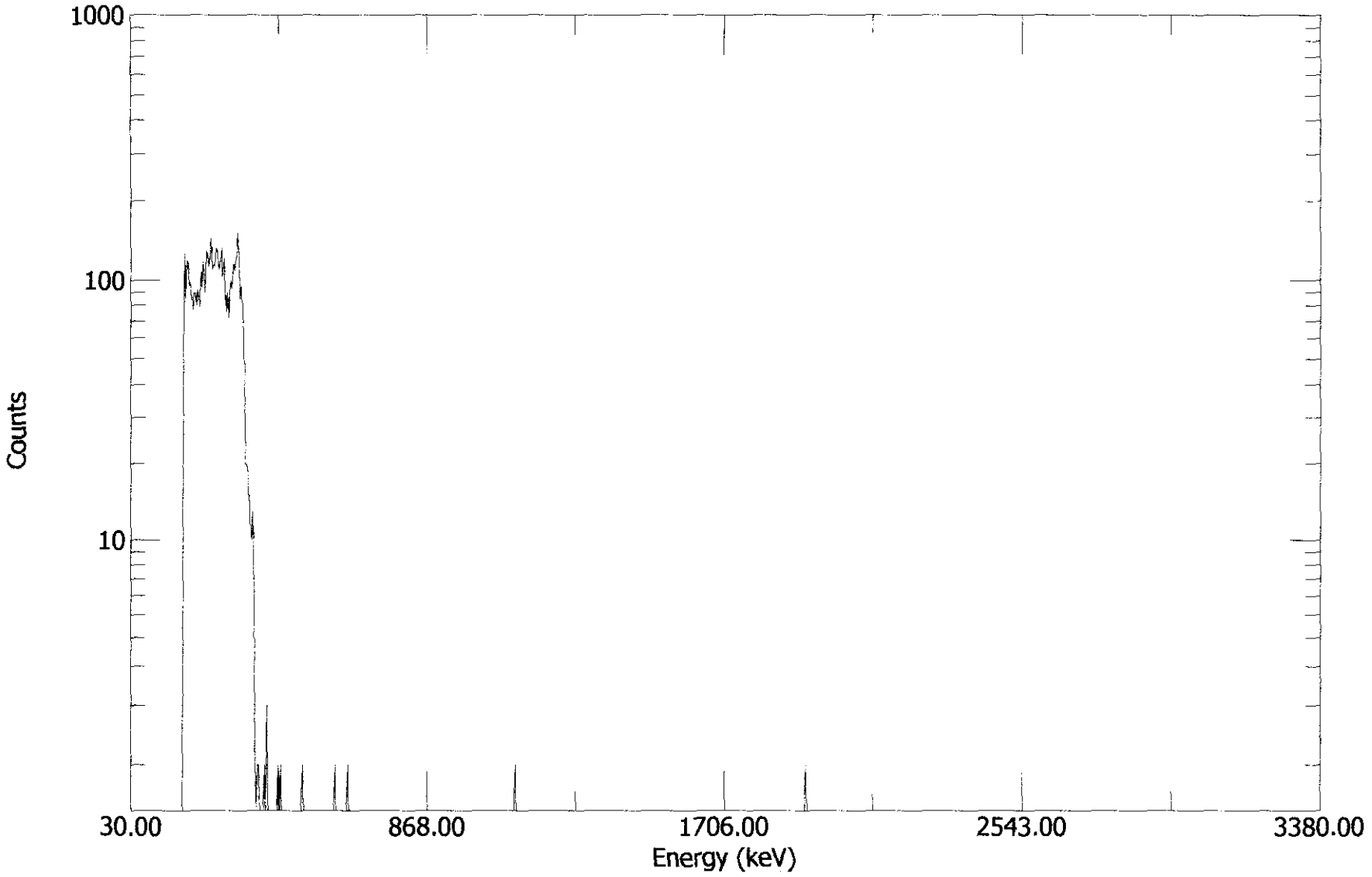


Acquired: 1/28/00 12:57:20 PM
File: C:\B-000128\B-000128S15.chn
Detector: #1 WC68790 MCB 25

Real Time: 300.00 s. Live Time: 299.74 s.
Channels: 1024

B-000128S16

AZ-101, Riser-14C, 10.0ft, Probe-1, Cart-B

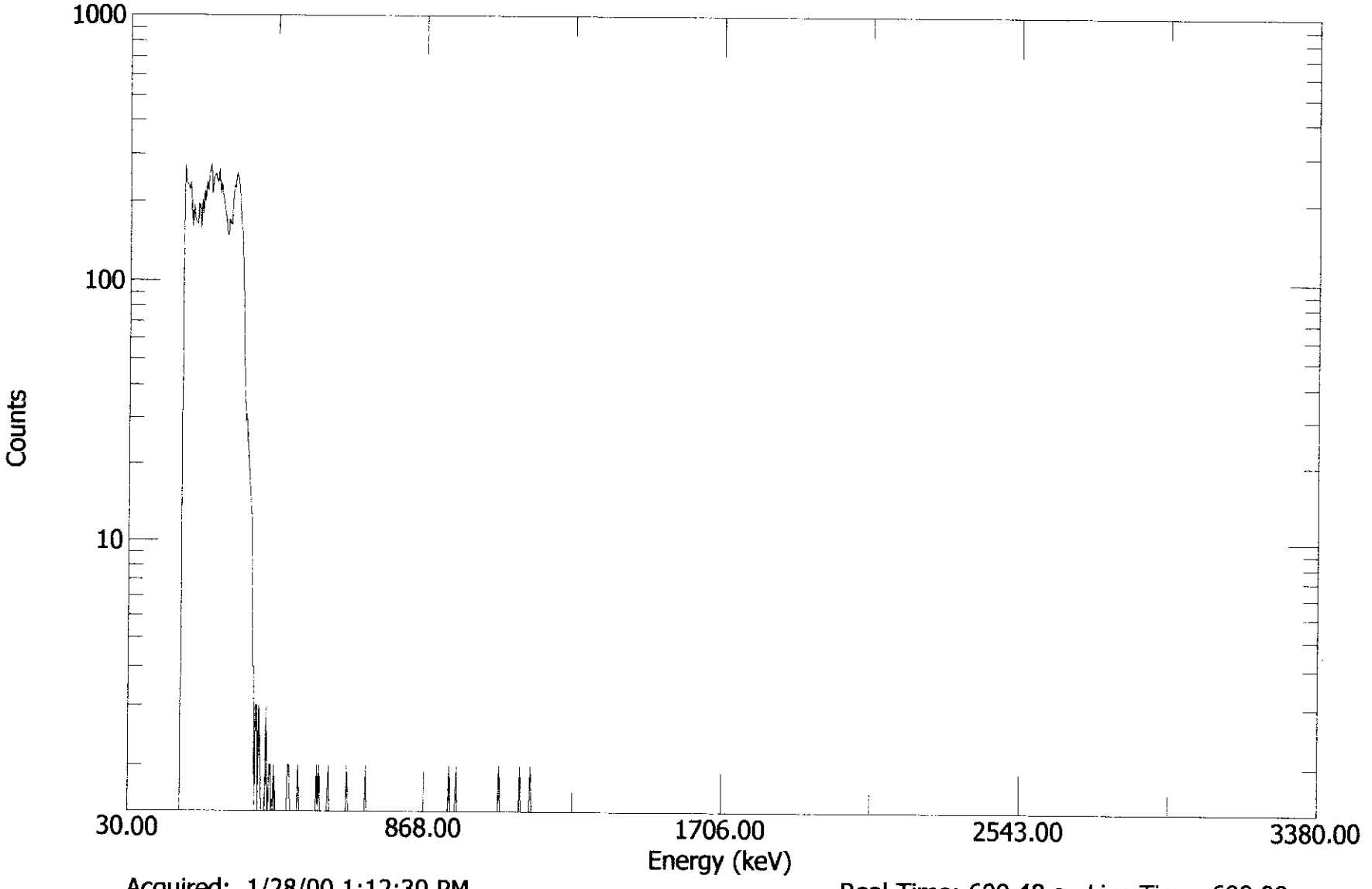


Acquired: 1/28/00 1:04:44 PM
File: C:\B-000128\B-000128S16.chn
Detector: #1 WC68790 MCB 25

Real Time: 300.00 s. Live Time: 299.74 s.
Channels: 1024

B-000128S17

AZ-101, Riser-14C, .0ft, Probe-1, Cart-B

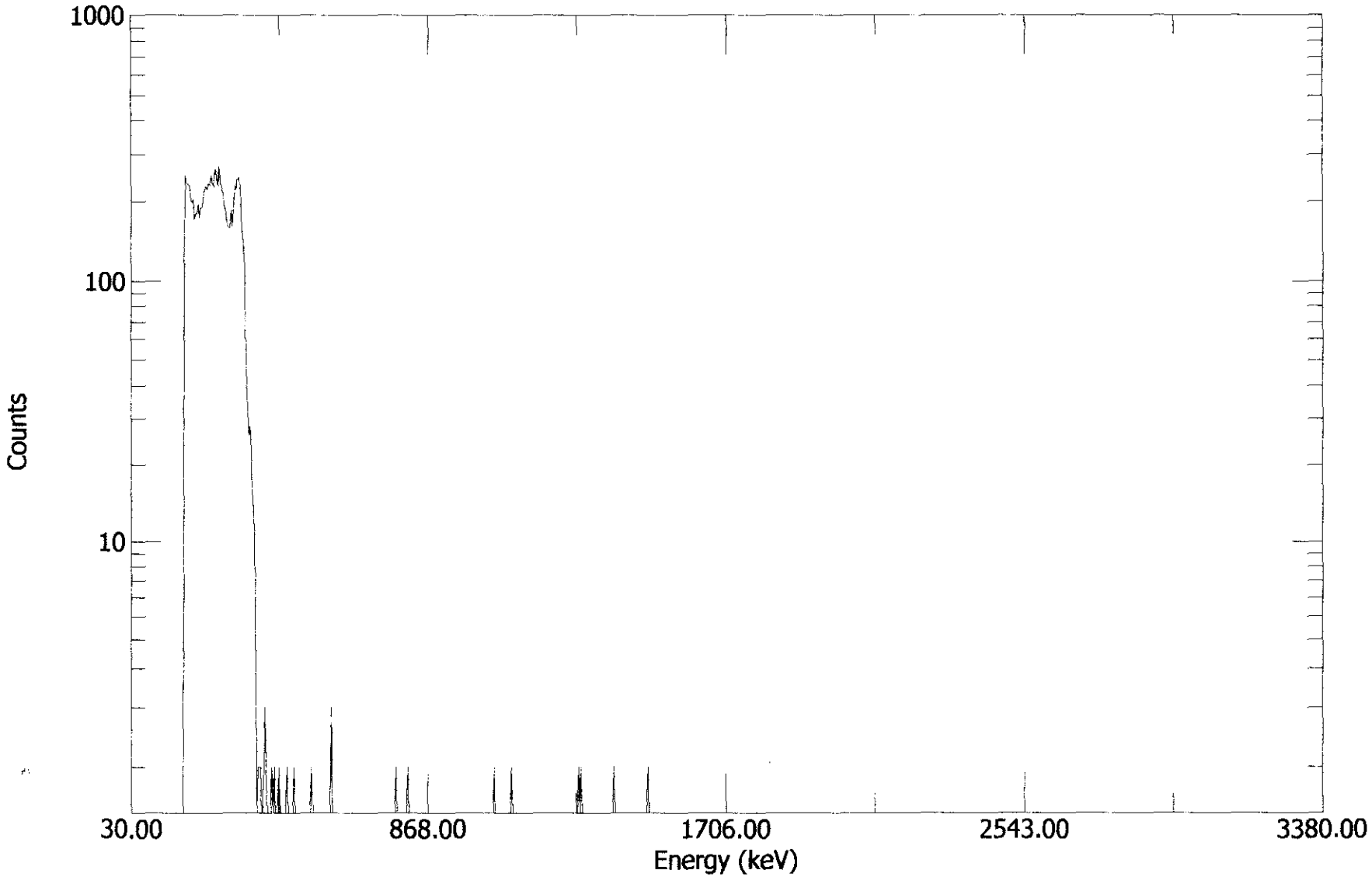


Acquired: 1/28/00 1:12:30 PM
File: C:\B-000128\B-000128S17.chn
Detector: #1 WC68790 MCB 25

Real Time: 600.48 s. Live Time: 600.00 s.
Channels: 1024

B-000128S18

AZ-101, Riser-14G, .0ft, Probe-2, Cart-B

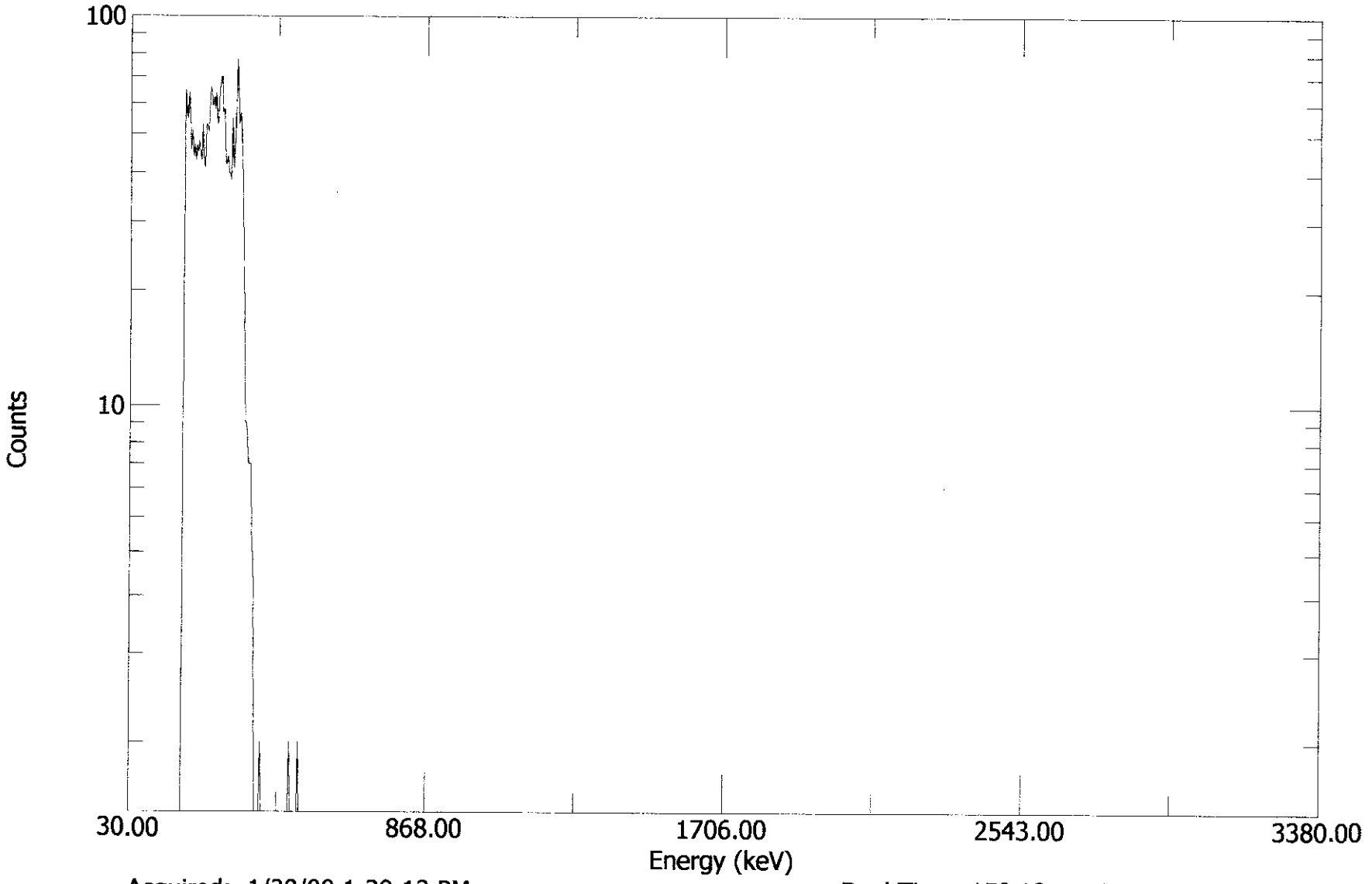


Acquired: 1/28/00 1:27:00 PM
File: C:\B-000128\B-000128S18.chn
Detector: #1 WC68790 MCB 25

Real Time: 600.48 s. Live Time: 600.00 s.
Channels: 1024

B-000128S19

AZ-101, Riser-14G, 11.25ft, Probe-2, Cart-B

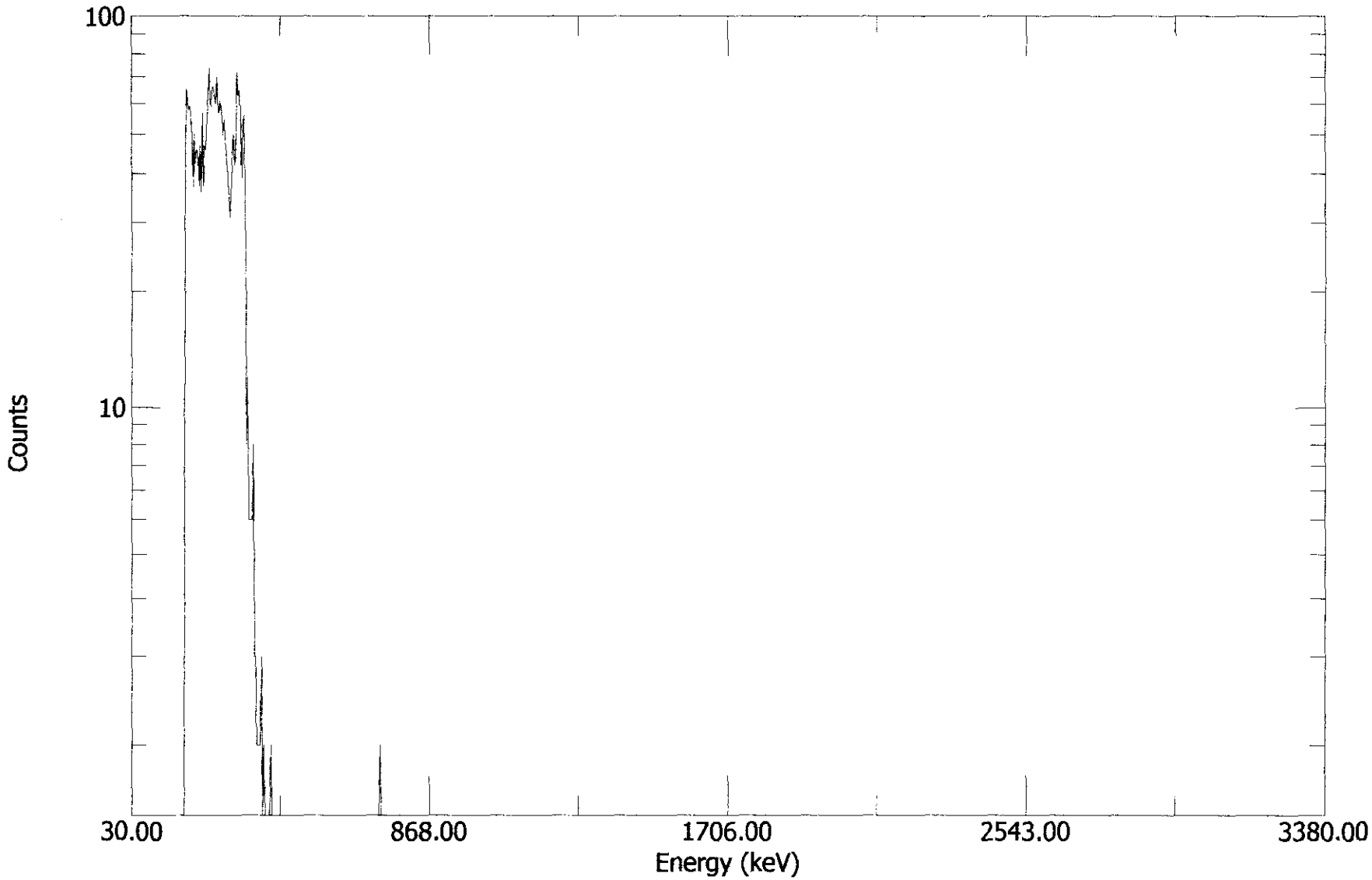


Acquired: 1/28/00 1:39:12 PM
File: C:\B-000128\B-000128S19.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S20

AZ-101, Riser-14G, 10.0ft, Probe-2, Cart-B

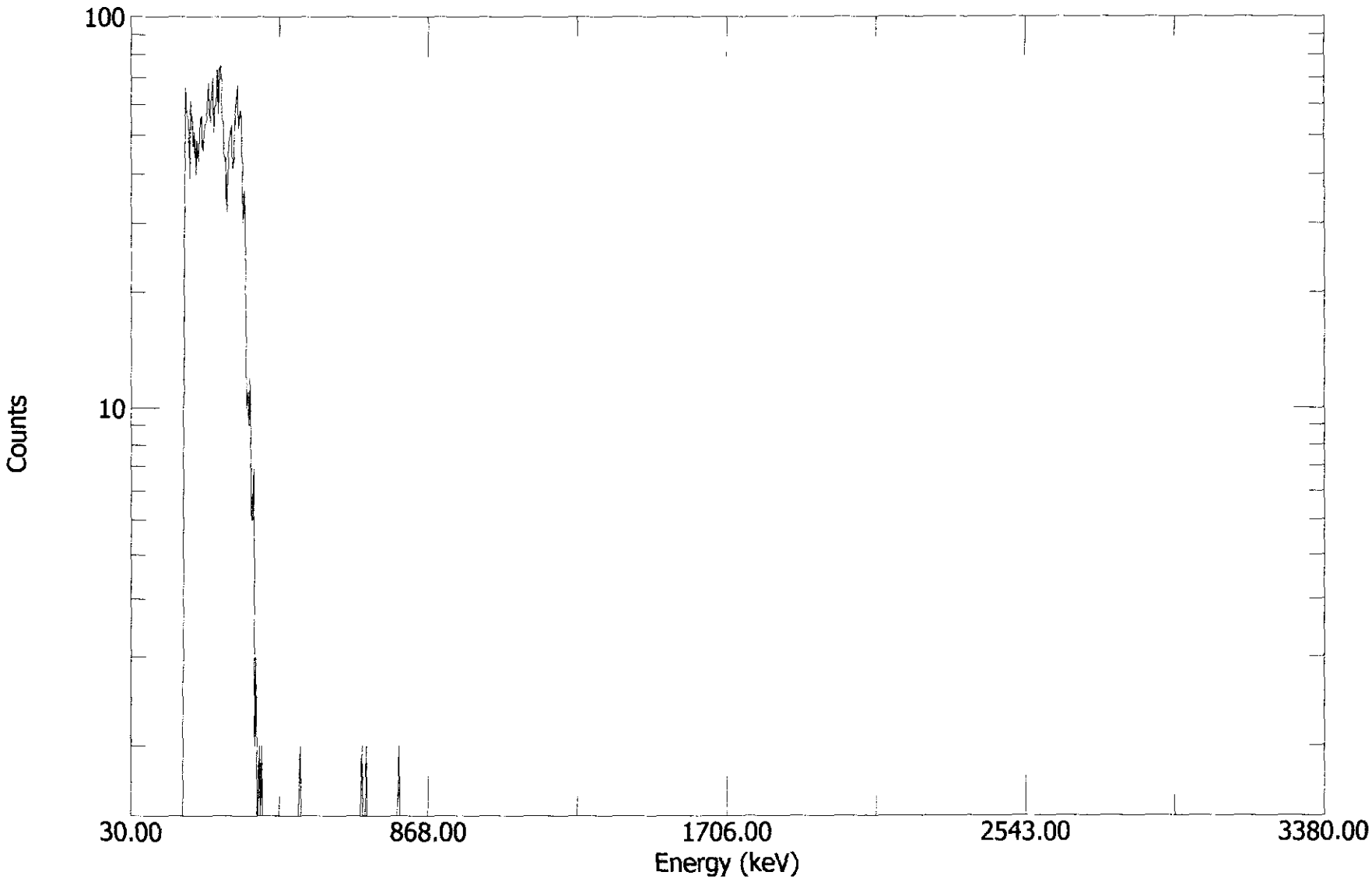


Acquired: 1/28/00 1:42:35 PM
File: C:\B-000128\B-000128S20.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S21

AZ-101, Riser-14G, 9.51ft, Probe-2, Cart-B

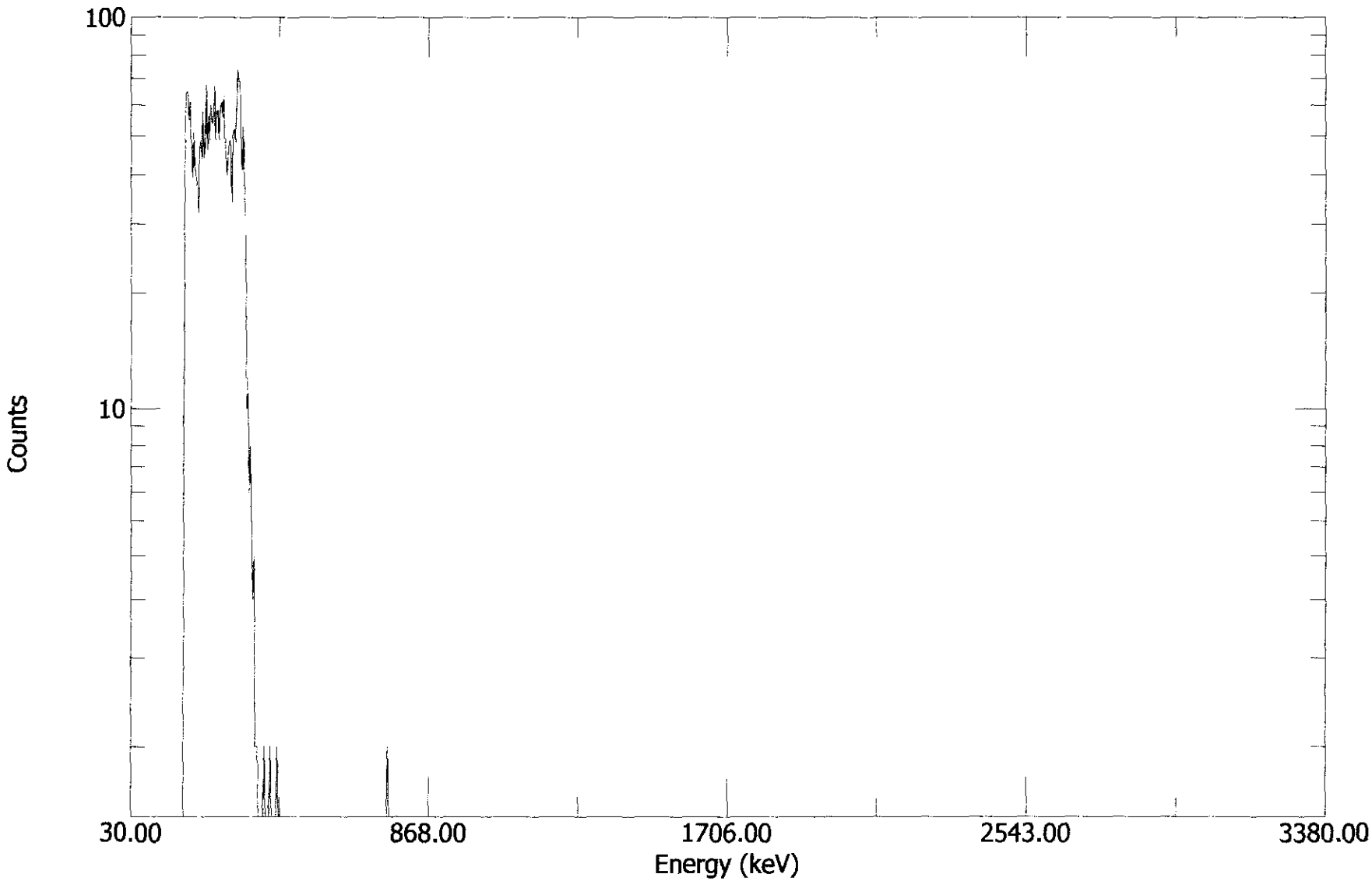


Acquired: 1/28/00 1:45:22 PM
File: C:\B-000128\B-000128S21.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S22

AZ-101, Riser-14G, 8.76ft, Probe-2, Cart-B

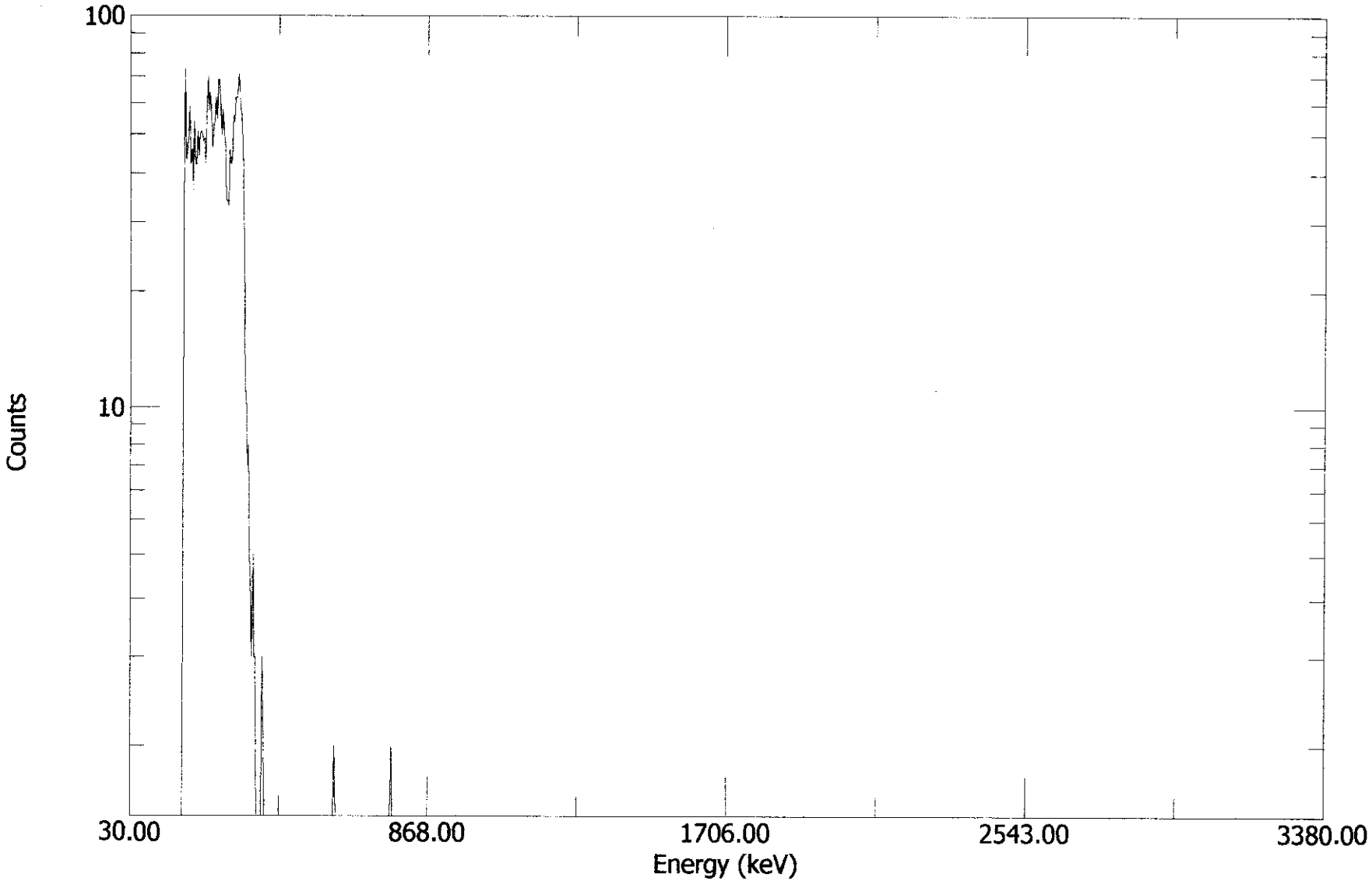


Acquired: 1/28/00 1:48:48 PM
File: C:\B-000128\B-000128S22.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S23

AZ-101, Riser-14G, 7.5ft, Probe-2, Cart-B

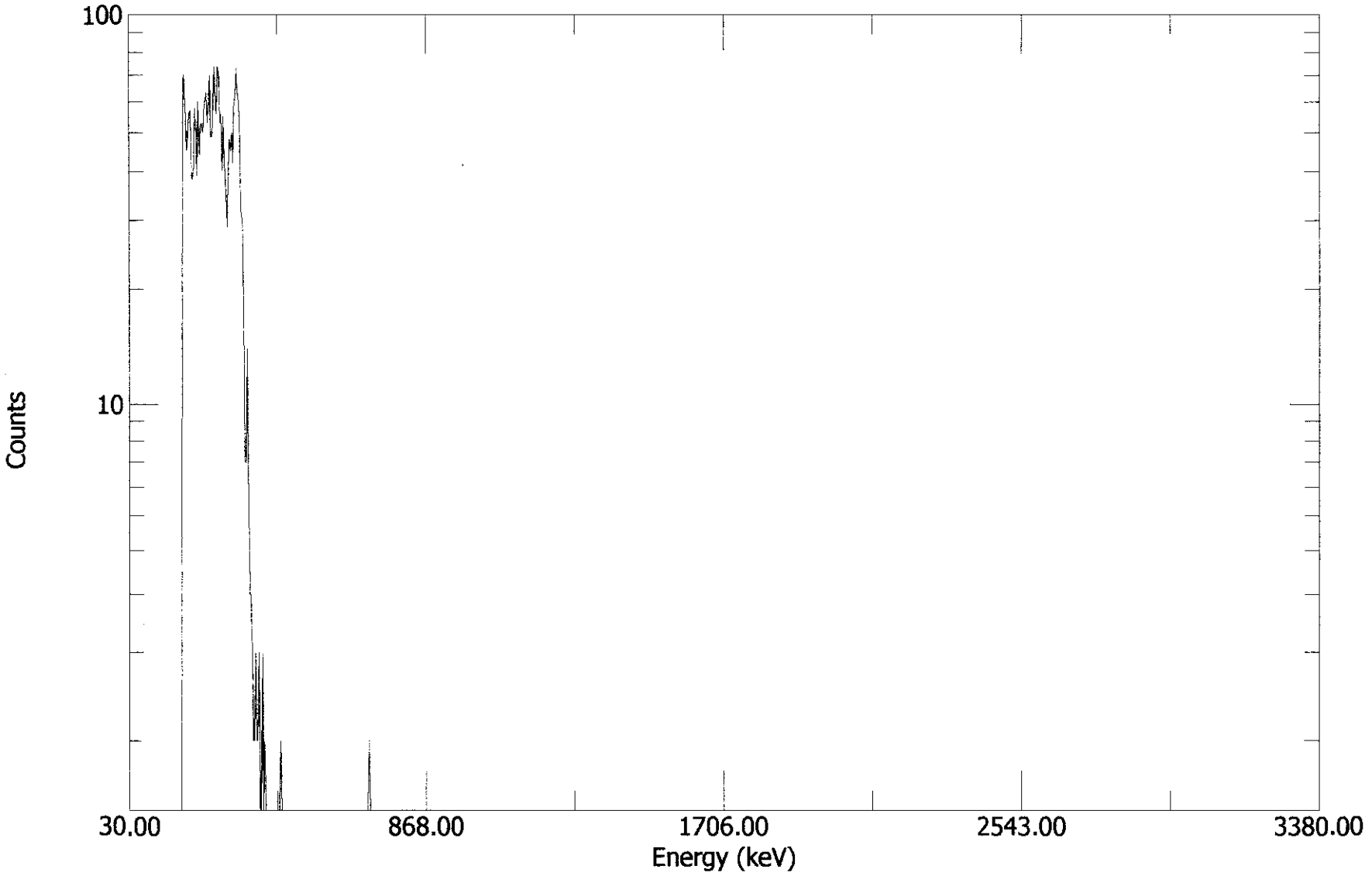


Acquired: 1/28/00 1:52:08 PM
File: C:\B-000128\B-000128S23.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S24

AZ-101, Riser-14G, 7.25ft, Probe-2, Cart-B

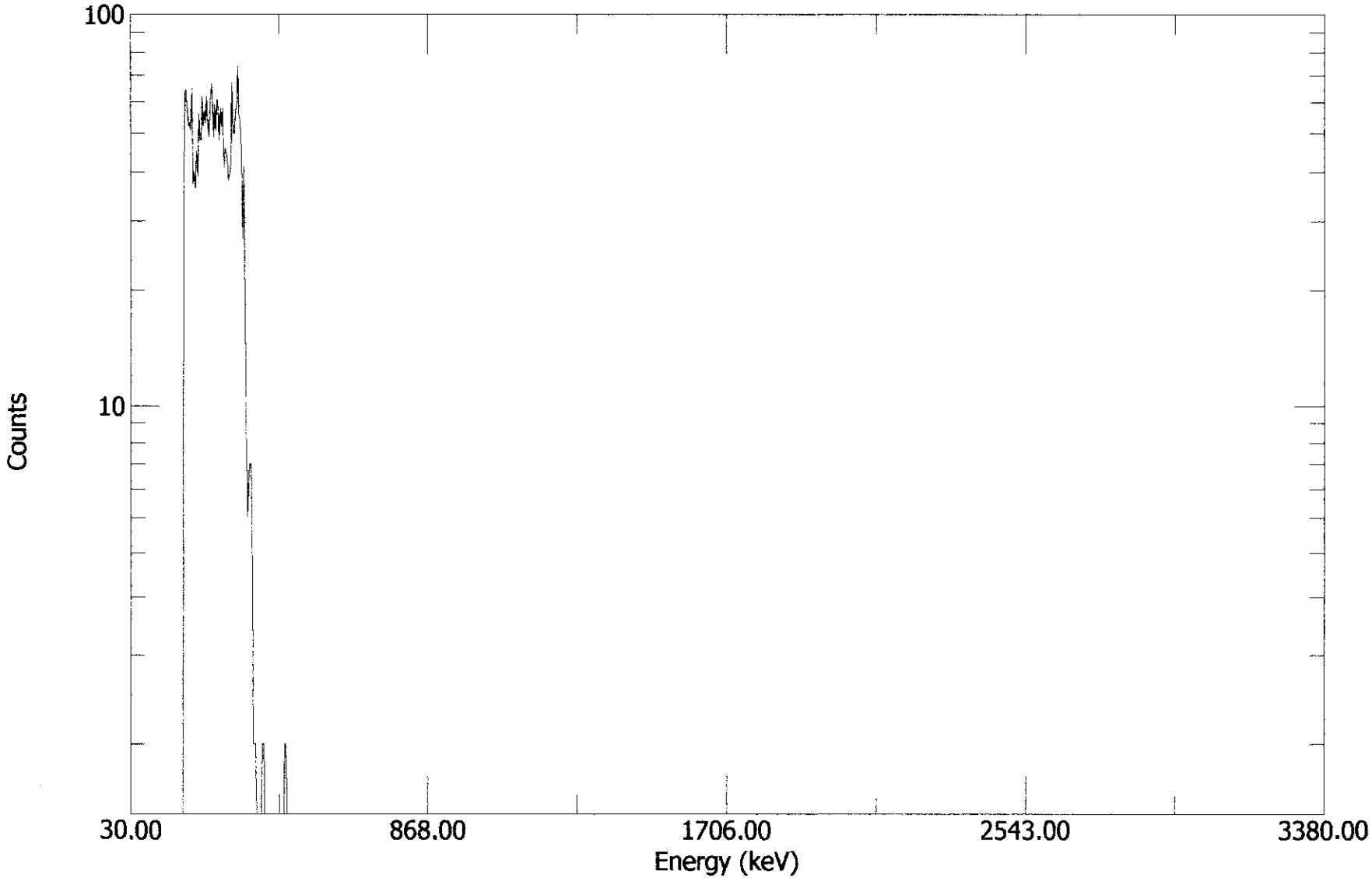


Acquired: 1/28/00 1:55:31 PM
File: C:\B-000128\B-000128S24.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S25

AZ-101, Riser-14G, 6.5ft, Probe-2, Cart-B

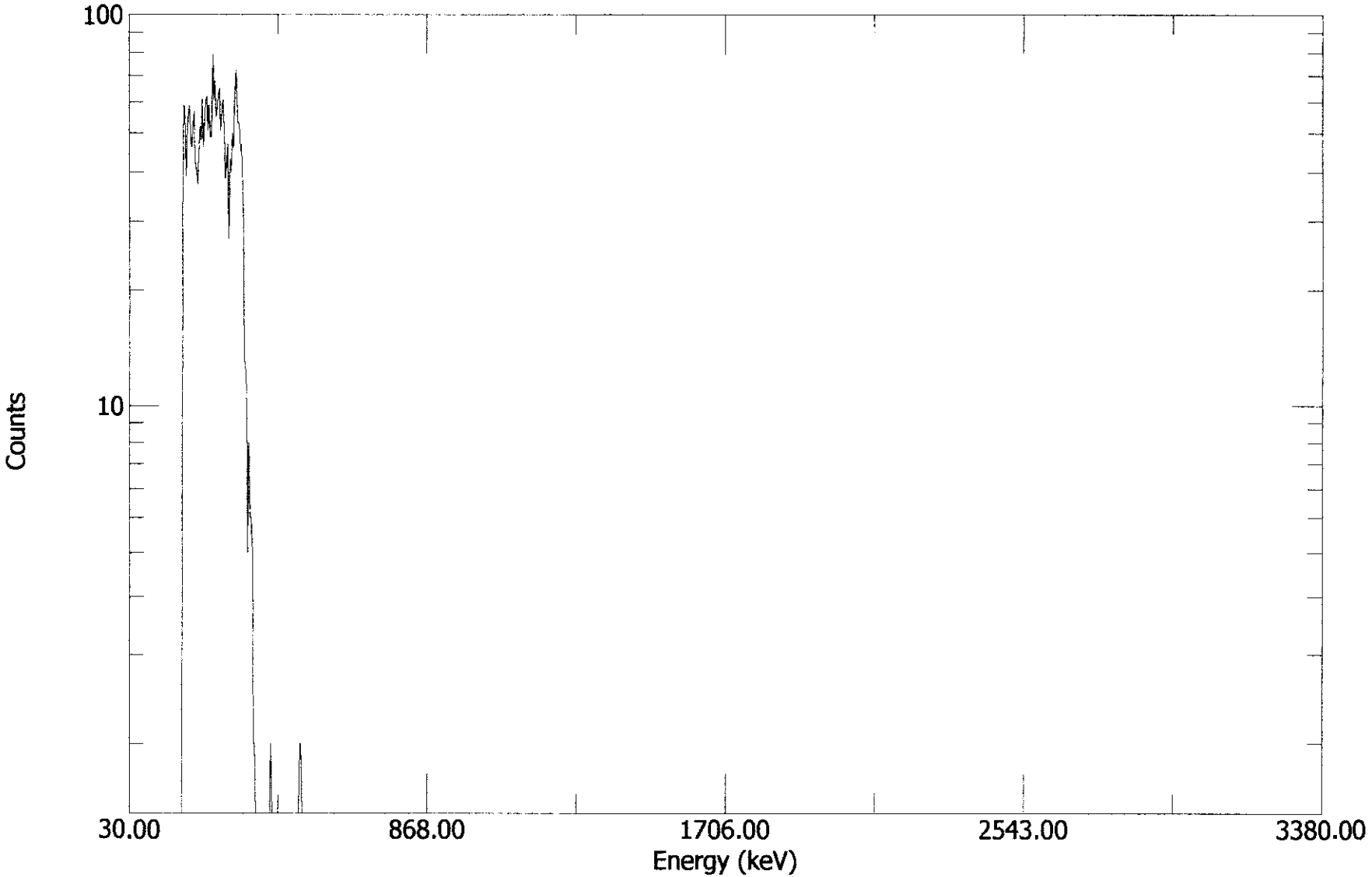


Acquired: 1/28/00 1:58:58 PM
File: C:\B-000128\B-000128S25.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S26

AZ-101, Riser-14G, 4.25ft, Probe-2, Cart-B

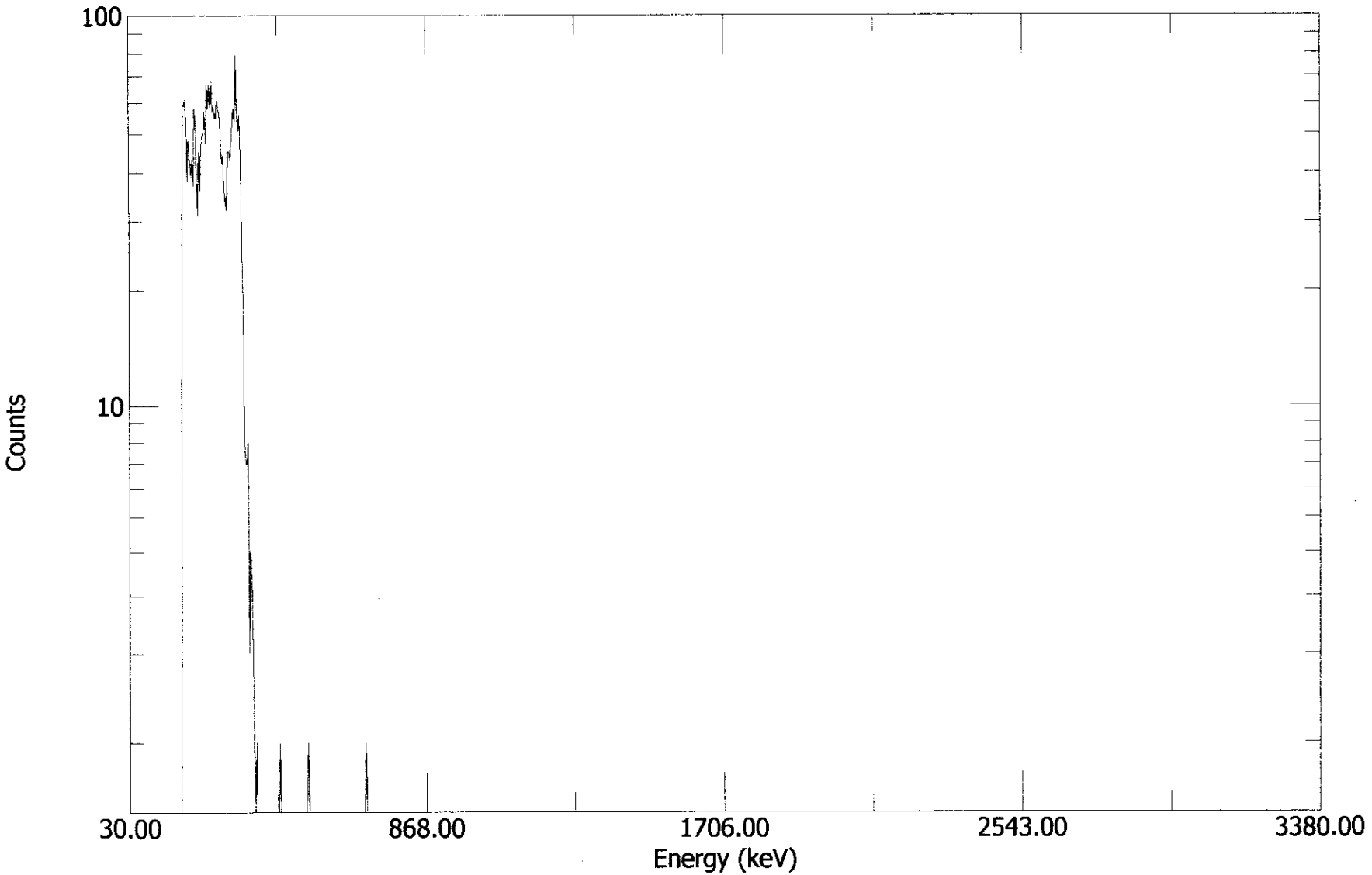


Acquired: 1/28/00 2:02:22 PM
File: C:\B-000128\B-000128S26.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S27

AZ-101, Riser-14G, 3.26ft, Probe-2, Cart-B

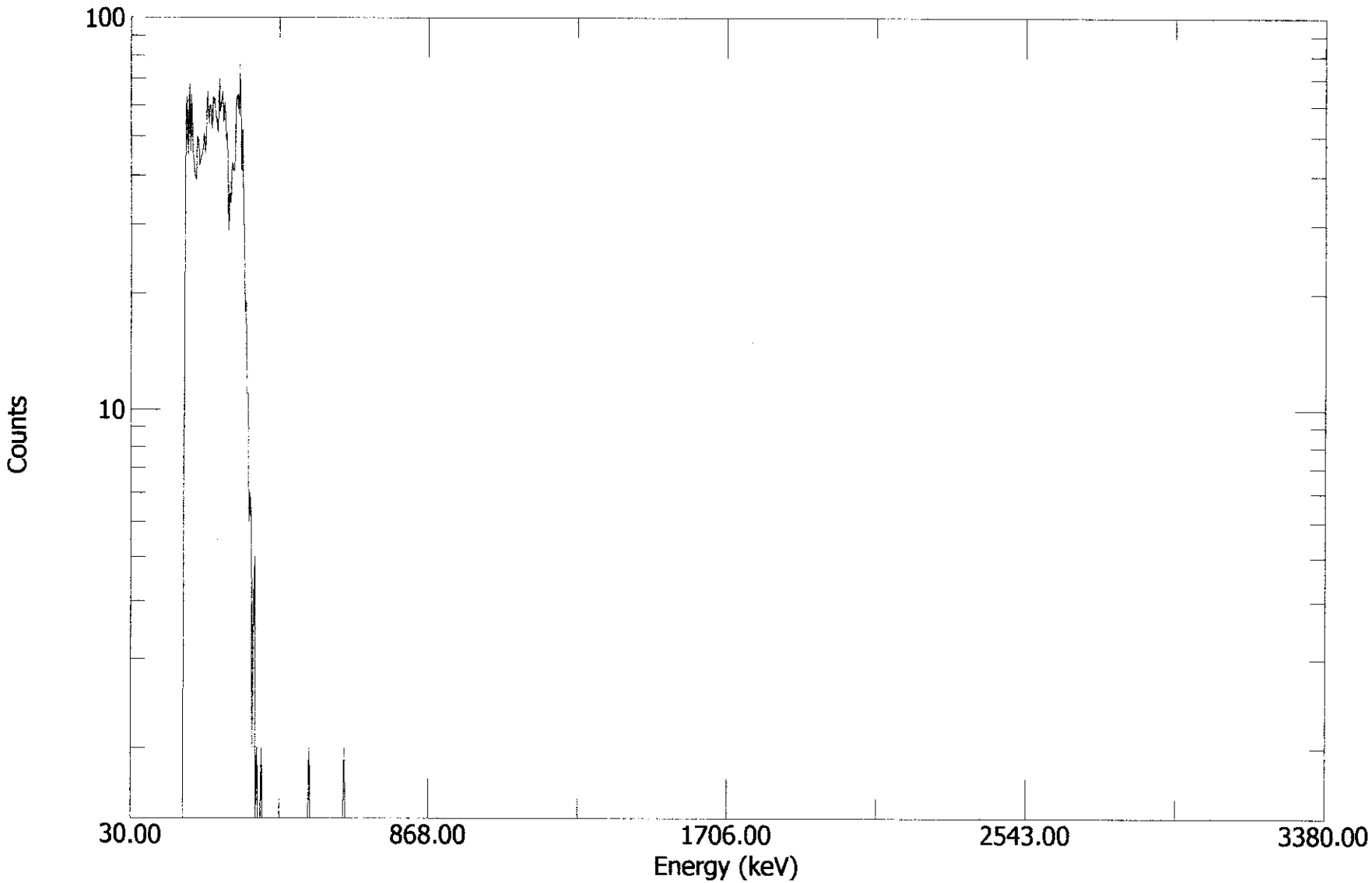


Acquired: 1/28/00 2:05:48 PM
File: C:\B-000128\B-000128S27.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.10 s. Live Time: 150.00 s.
Channels: 1024

B-000128S28

AZ-101, Riser-14G, 3.01ft, Probe-2, Cart-B

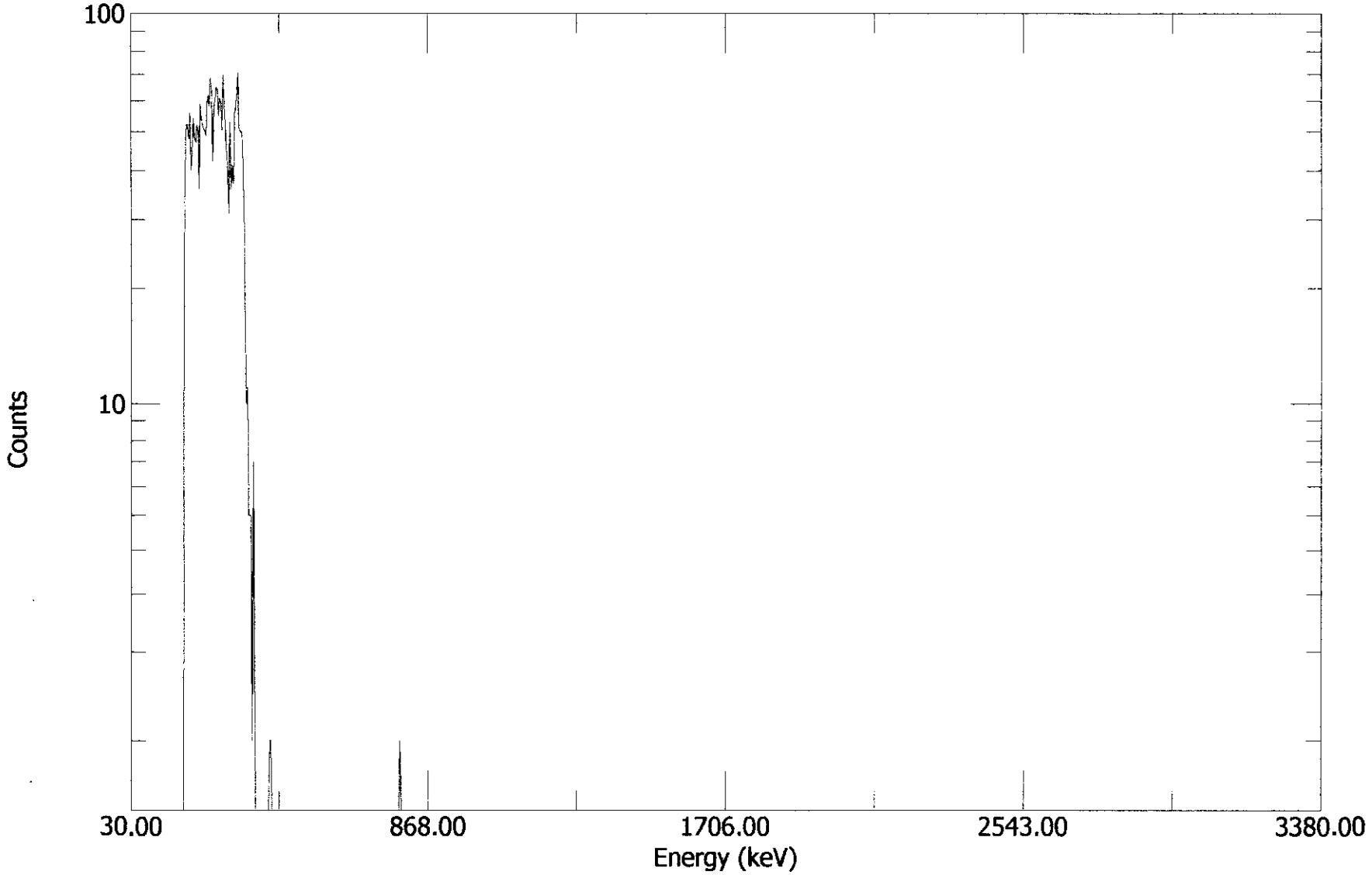


Acquired: 1/28/00 2:09:14 PM
File: C:\B-000128\B-000128S28.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S29

AZ-101, Riser-14G, 2.25ft, Probe-2, Cart-B

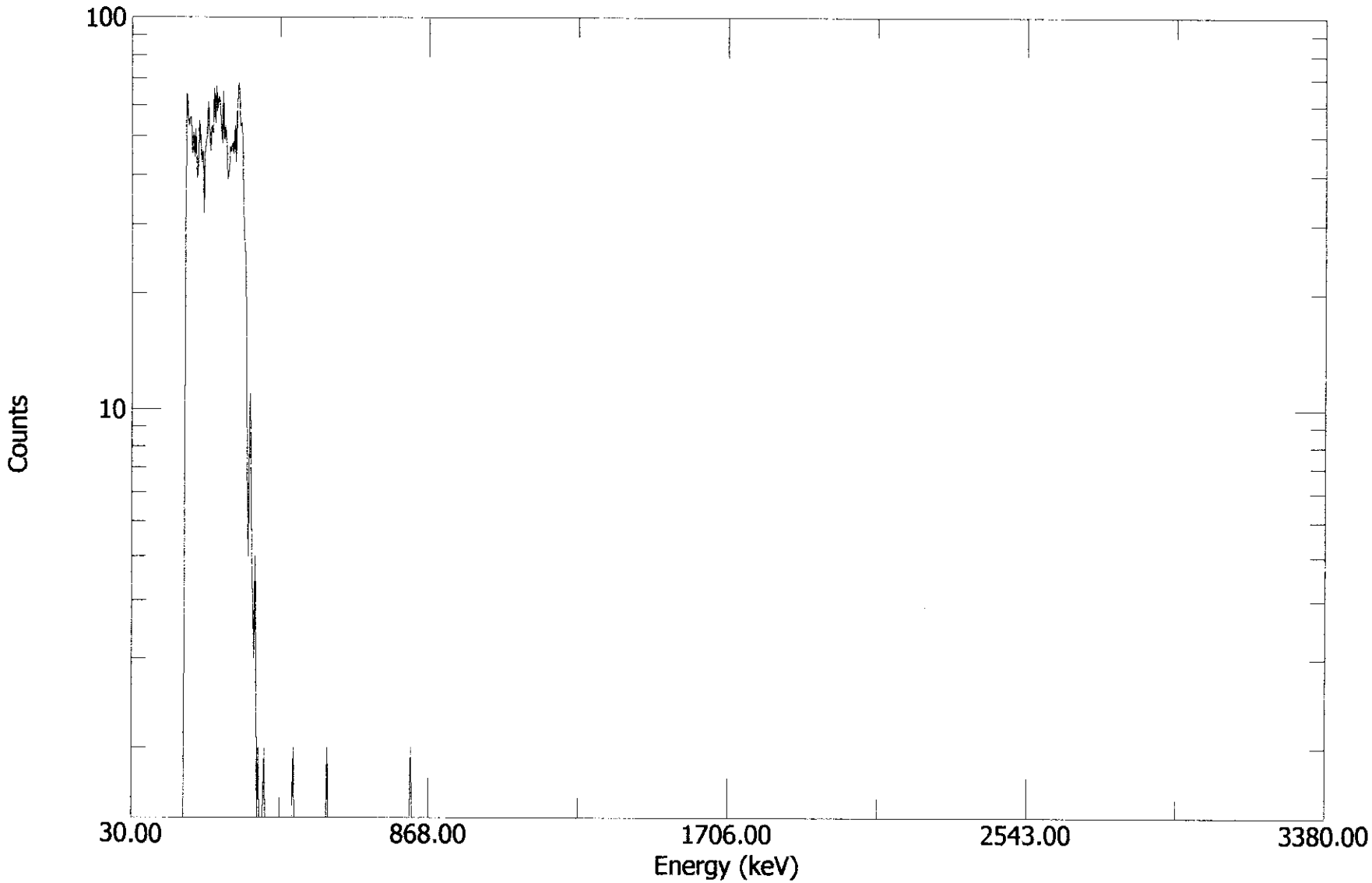


Acquired: 1/28/00 2:12:37 PM
File: C:\B-000128\B-000128S29.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S30

AZ-101, Riser-14G, 1.76ft, Probe-2, Cart-B

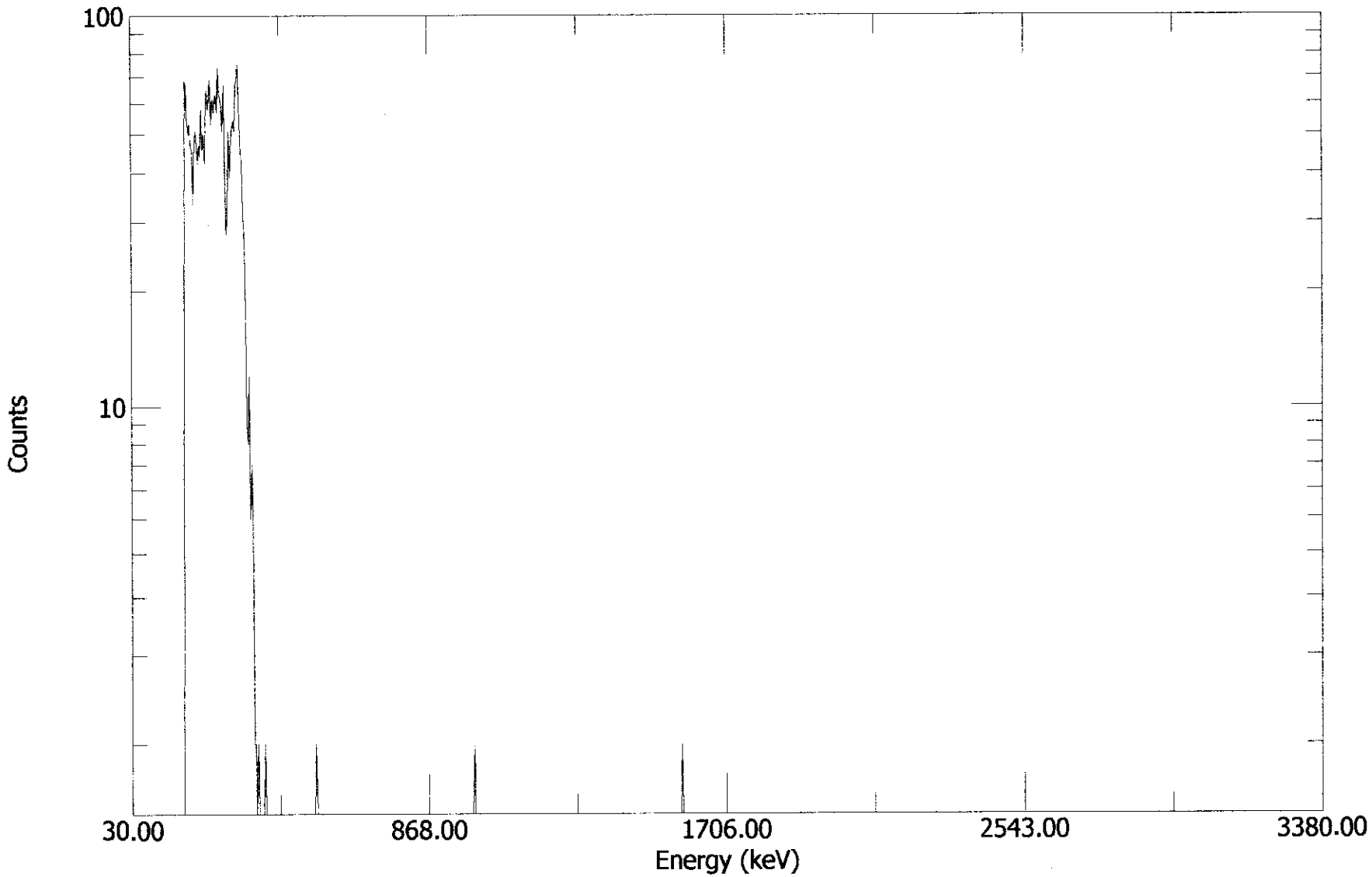


Acquired: 1/28/00 2:15:59 PM
File: C:\B-000128\B-000128S30.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.10 s. Live Time: 150.00 s.
Channels: 1024

B-000128S31

AZ-101, Riser-14G, 1.25ft, Probe-2, Cart-B

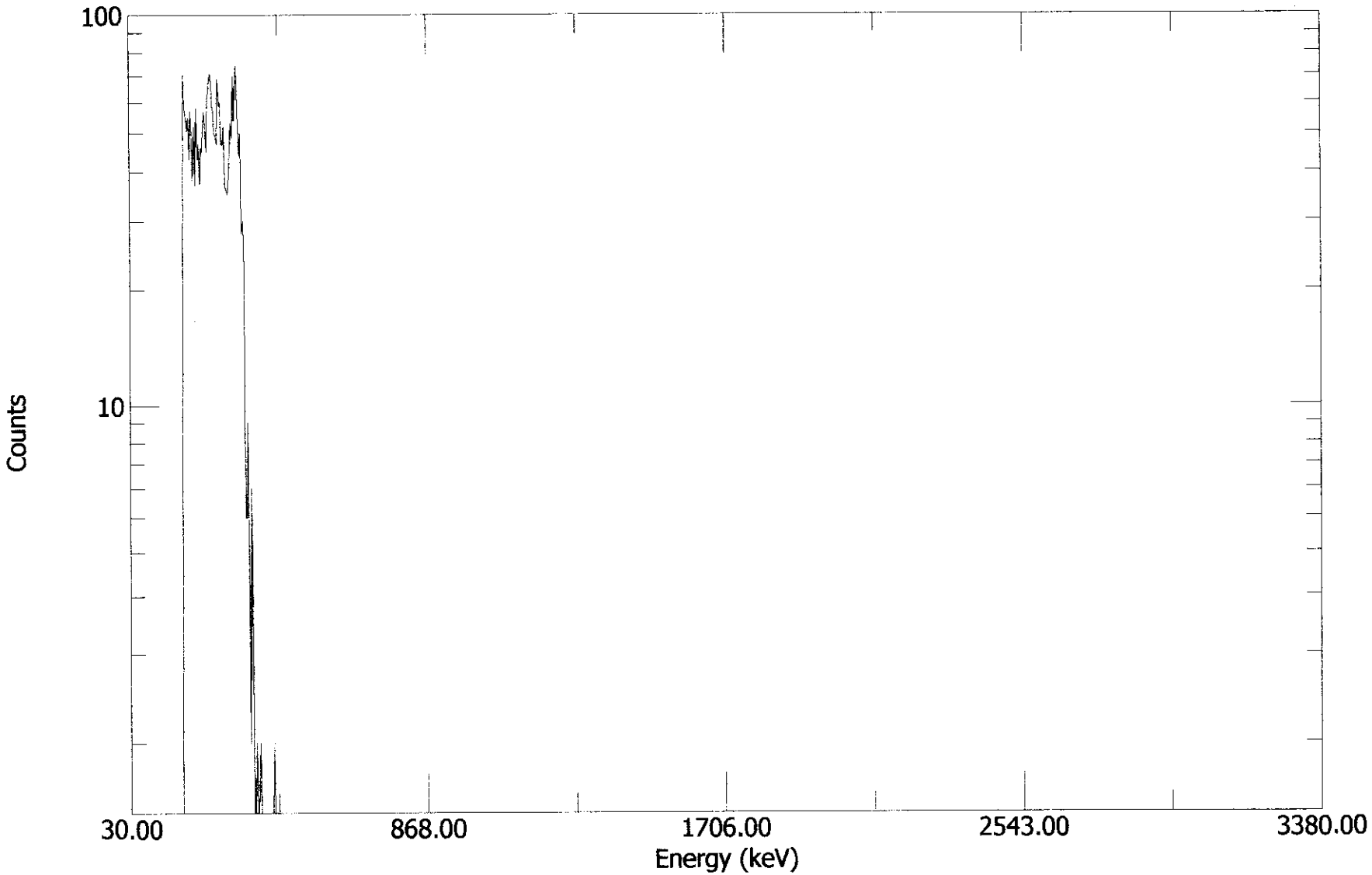


Acquired: 1/28/00 2:19:23 PM
File: C:\B-000128\B-000128S31.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S32

AZ-101, Riser-14G, 2.76ft, Probe-2, Cart-B

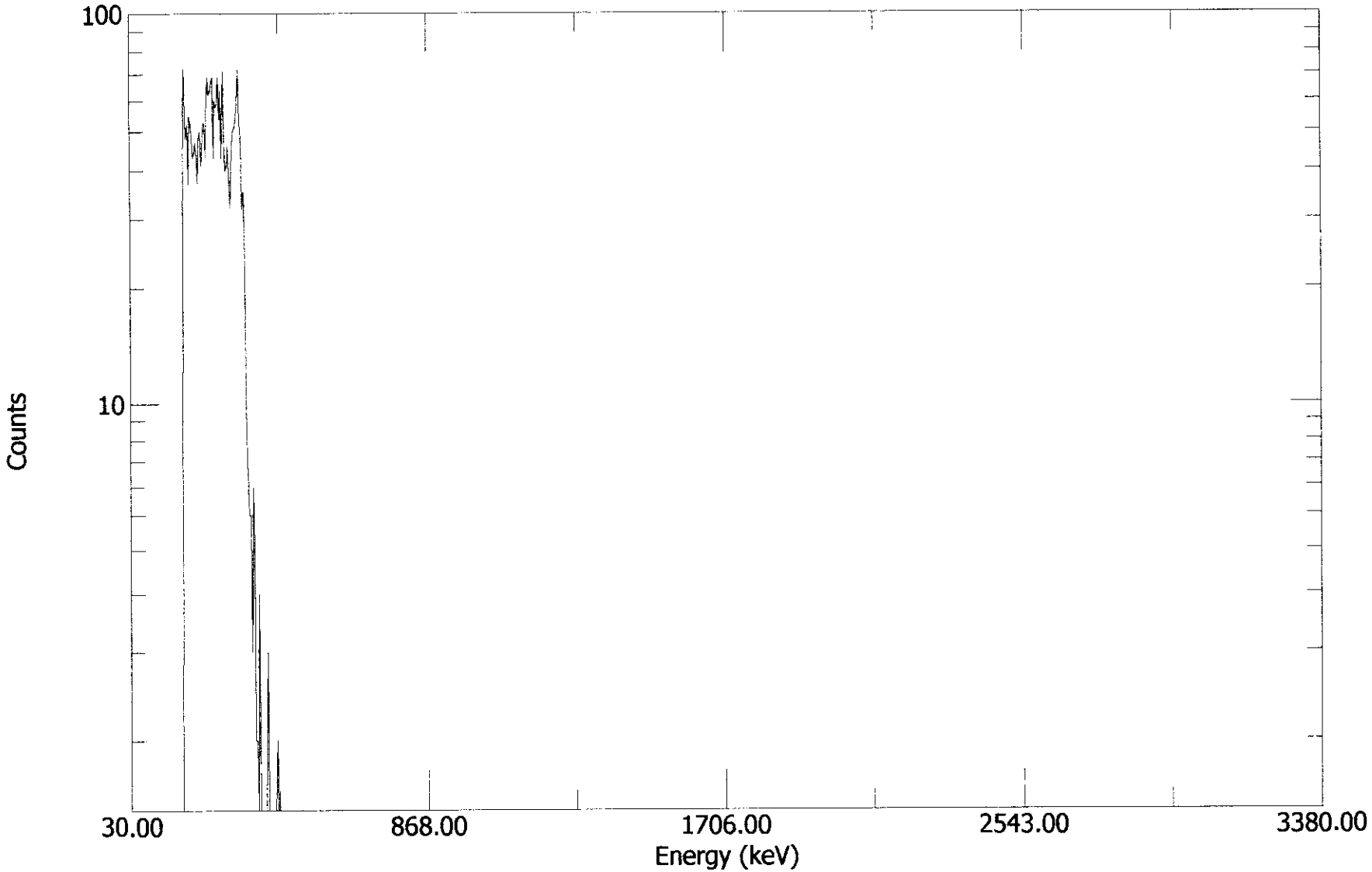


Acquired: 1/28/00 2:22:43 PM
File: C:\B-000128\B-000128S32.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S33

AZ-101, Riser-14G, 4.0ft, Probe-2, Cart-B

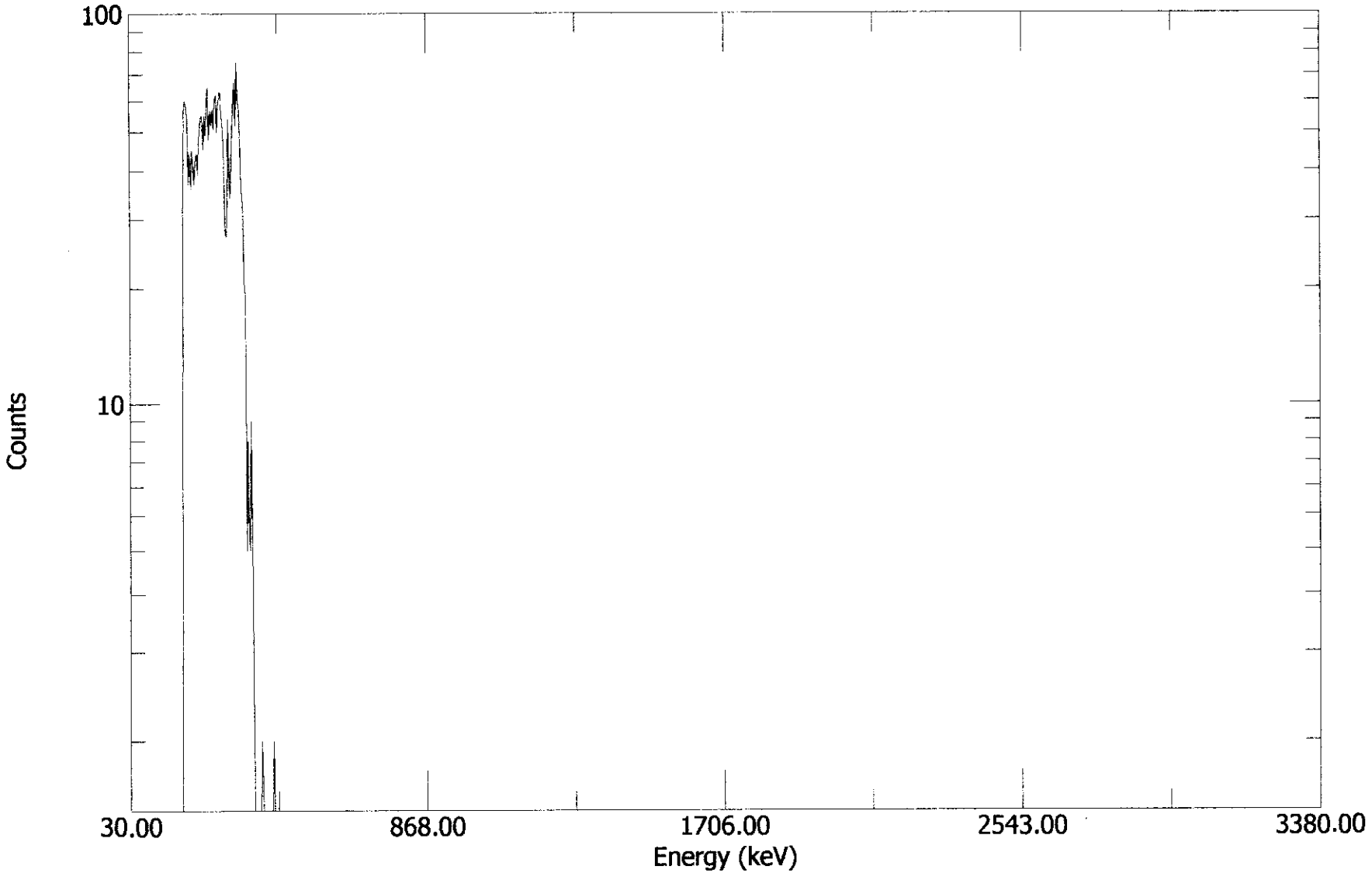


Acquired: 1/28/00 2:25:46 PM
File: C:\B-000128\B-000128S33.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S34

AZ-101, Riser-14G, 7.0ft, Probe-2, Cart-B

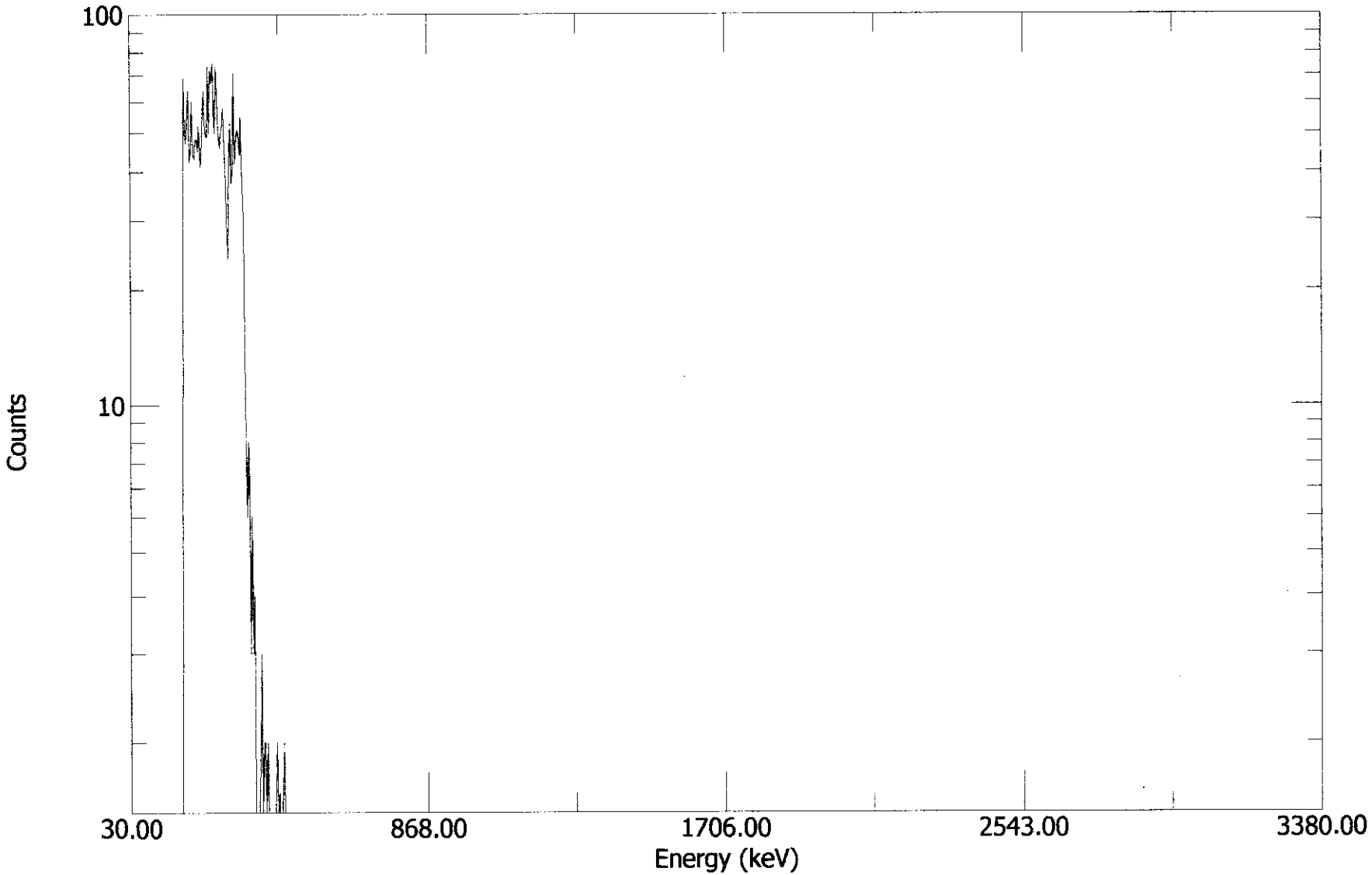


Acquired: 1/28/00 2:29:10 PM
File: C:\B-000128\B-000128S34.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.10 s. Live Time: 150.00 s.
Channels: 1024

B-000128S35

AZ-101, Riser-14G, 4.75ft, Probe-2, Cart-B

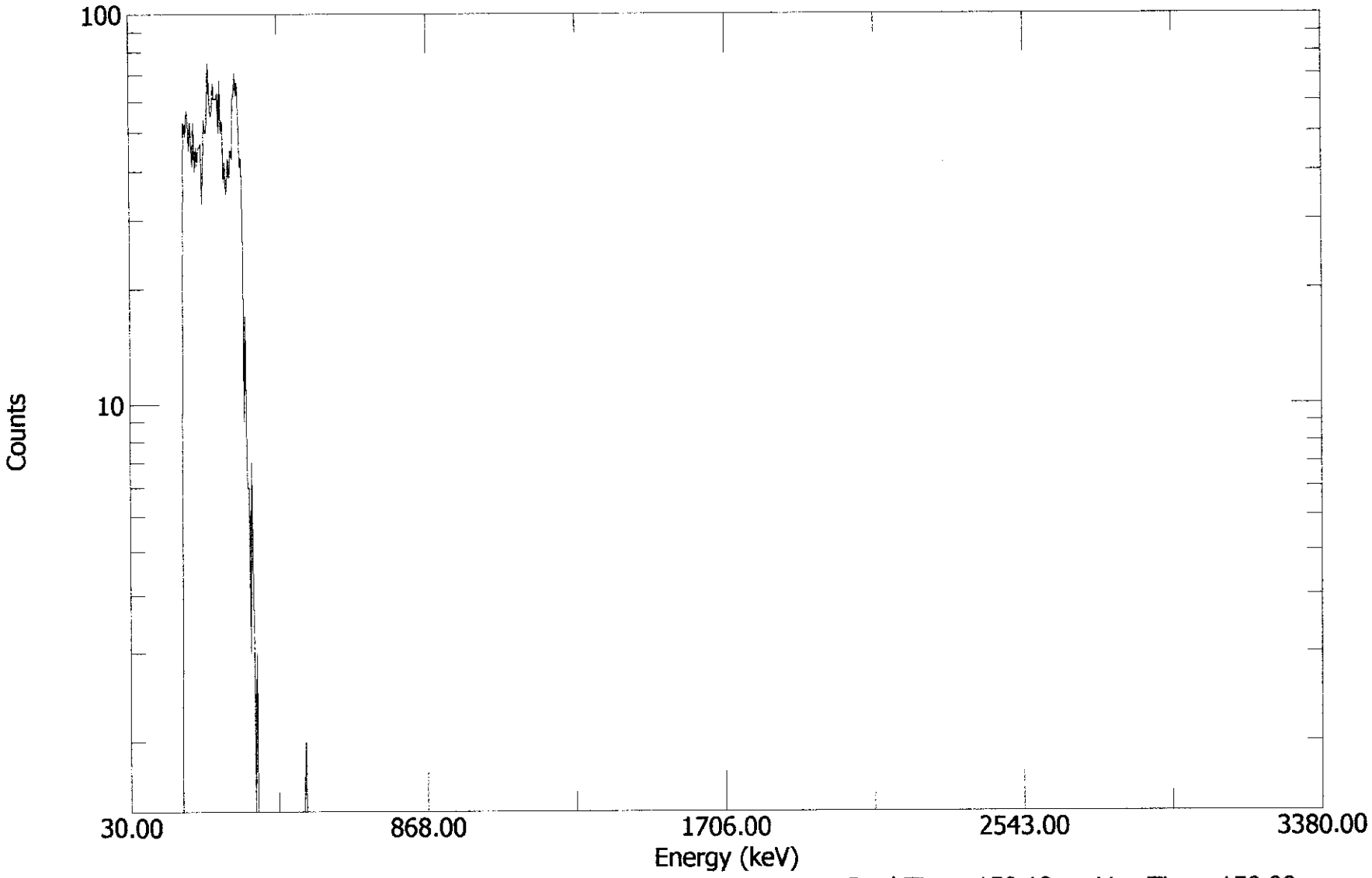


Acquired: 1/28/00 2:32:39 PM
File: C:\B-000128\B-000128S35.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.10 s. Live Time: 150.00 s.
Channels: 1024

B-000128S36

AZ-101, Riser-14G, 11.0ft, Probe-2, Cart-B

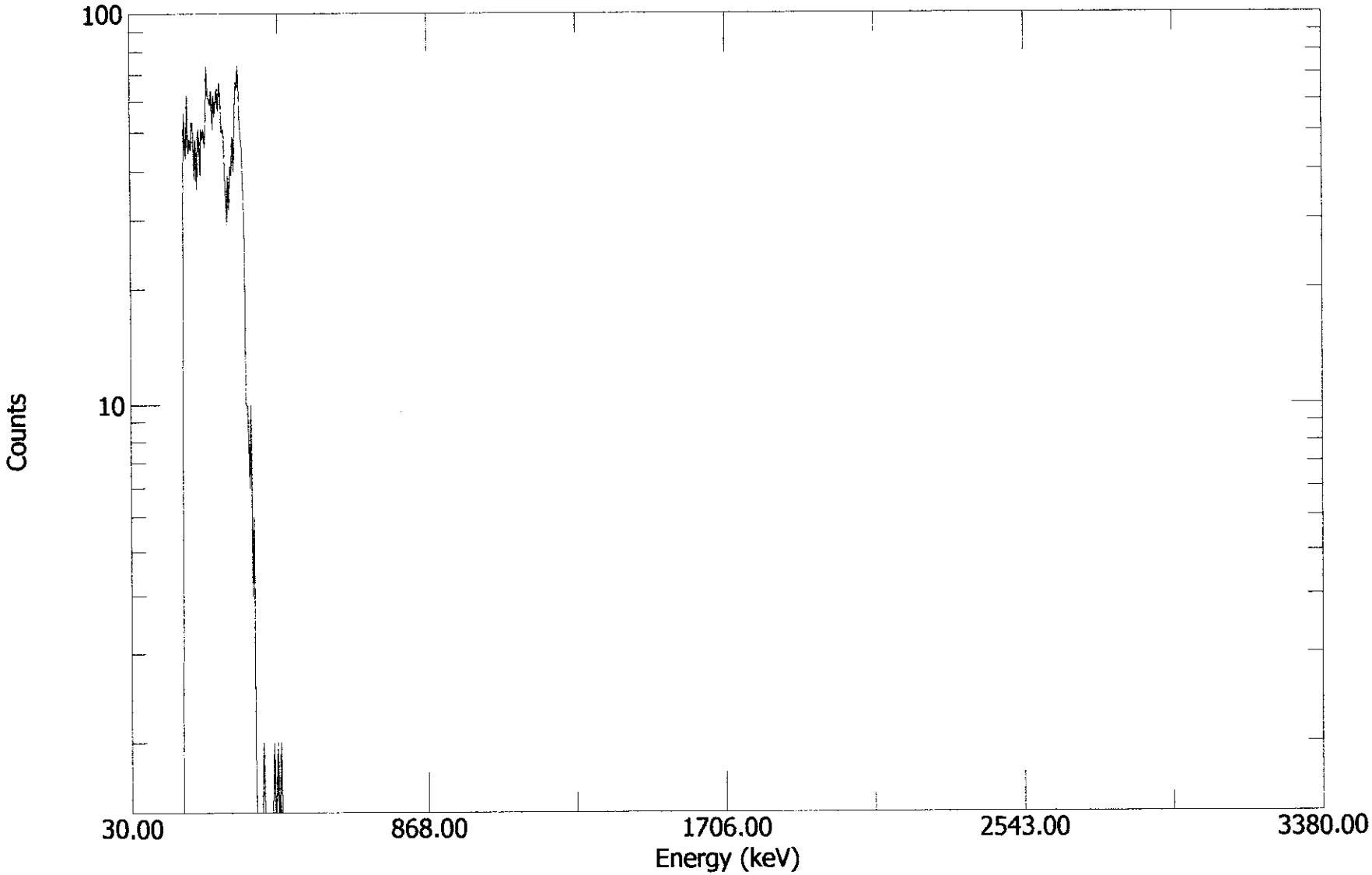


Acquired: 1/28/00 2:36:43 PM
File: C:\B-000128\B-000128S36.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S37

AZ-101, Riser-14G, 7.51ft, Probe-2, Cart-B

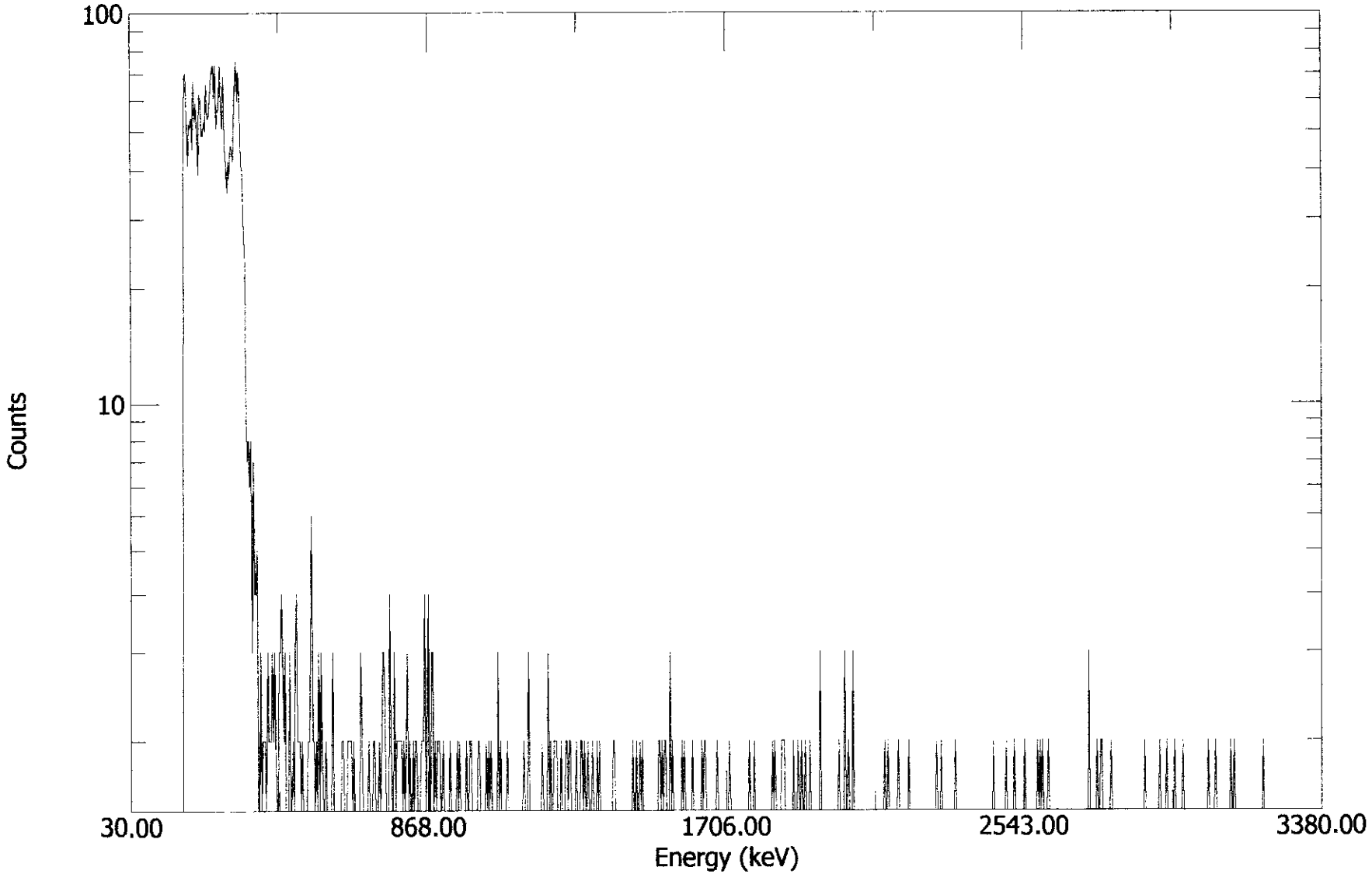


Acquired: 1/28/00 2:40:06 PM
File: C:\B-000128\B-000128S37.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S38

AZ-101, Riser-14G, 8.26ft, Probe-2, Cart-B

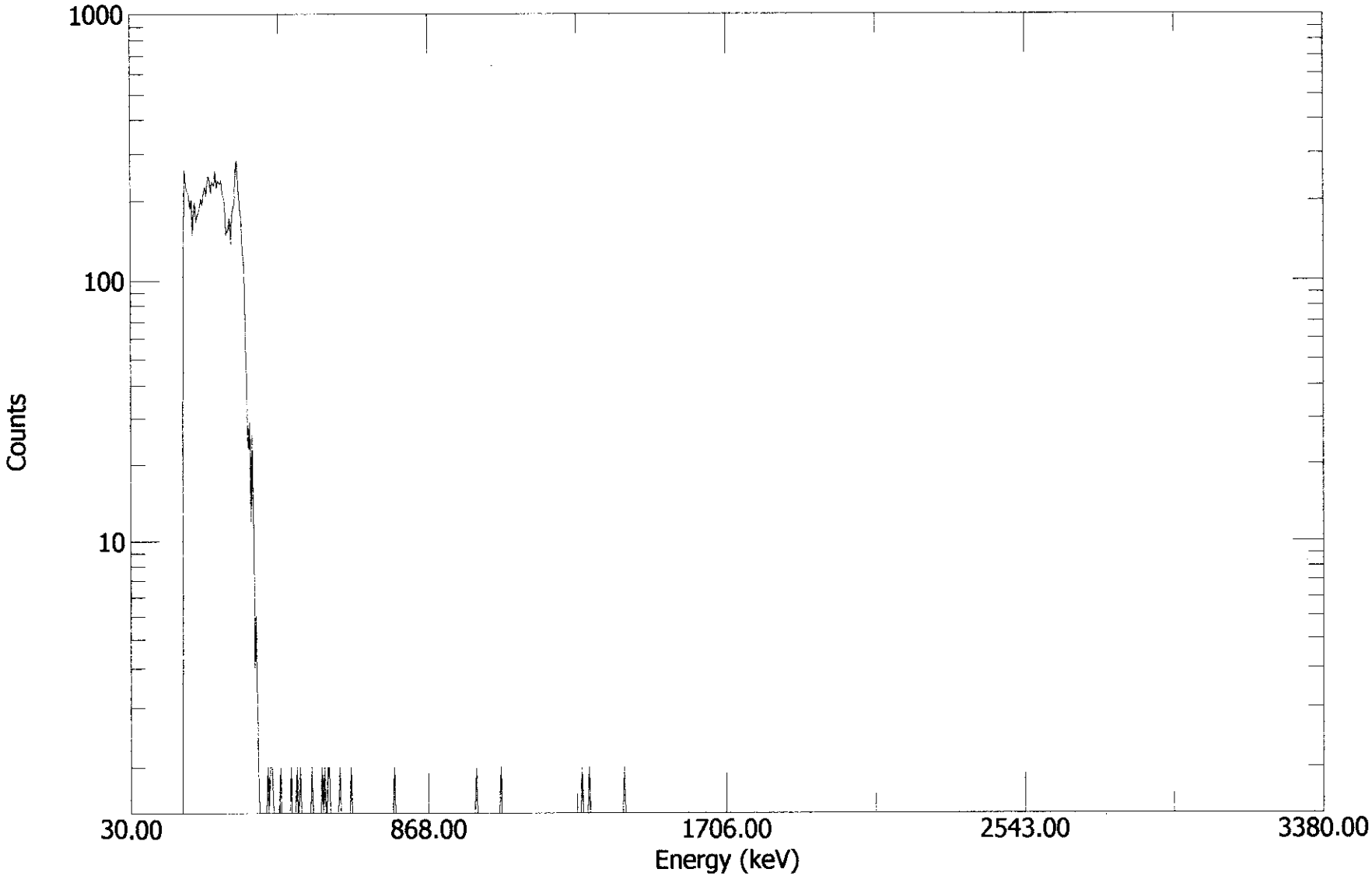


Acquired: 1/28/00 2:43:09 PM
File: C:\B-000128\B-000128S38.chn
Detector: #1 WC68790 MCB 25

Real Time: 150.12 s. Live Time: 150.00 s.
Channels: 1024

B-000128S39

AZ-101, Riser-14G, .01ft, Probe-2, Cart-B



Acquired: 1/28/00 2:48:00 PM
File: C:\B-000128\B-000128S39.chn
Detector: #1 WC68790 MCB 25

Real Time: 600.48 s. Live Time: 600.00 s.
Channels: 1024