Instrument Log - Alpha system

06/01/95 →

TM = Terry McKibbin

File Conventions:

Calibration files saved as __ __ __ __ __ . CAL
Month Day yr Spectrometer #
~~"AL" for all~~ TM 5/31/97

Background files saved as: __ __ __ __ __ . BGD
Month Day Yr Spect. #
~~"AL" for all~~ TM 5/31/97

Best Available Copy

ADMIN RECORD

06/15/95 - System set up after move from Chauvenet Hall. All electronics connected. Fresh oil change in vacuum pump. System not currently in use. ~~ATM~~

- 8/30/96 - Software upgrade performed on system (see gamma log book for addtn detail)
  - DOS 6.22 loaded
  - Warp/os2 loaded
  - Genie PC loaded
  - MCA set up performed. Currently we are set up for the 4 x-chambers originally purchased.

5/22/97 S100 Data Buffer Card transferred to a Compudyne 4DX/33 Computer

5/23/97 RAM put back to original 8MB after discovering that new 16 MB memory chips were not compatible - "parity error".

Canberra Software - ~~VS~~ System 100 V3.1 S/N 23101847
Loaded AlphaWerks V2.1a S/N 22000306
ODE Option for App. Mgr S/N 23100585

Installed as per S100 Manual instructions

5/24/97 System Settings established:

ADC Settings	Zero - no change		
	LLD - no change	1.0	
	~~Off~~		
	ULD - no change		
	Gain -	4K	
	Offset (2^N)	1-4 ON	5,6 off
Mixer/Router	MCA Memory Size	4K	
	Inputs	4	
	Mode	Route	

Software Settings to match electronics completed

All four 7401 Alpha Spectrometers Voltages set at +40 V as per the vendor recommendations.

Calibration (Energy) Spectrometer #1 Mixed Alpha Source 7400-SRC-0189 (U-238, U-234, Pu-239, Am-241) Calibrated from ~3.8 - 5.6 MeV
see calibration file for supporting information ~~including calibration source~~. TM 5/28/97

Calibration data saved as C:\Windows\S100\052497#1.CAL ~~052497.Cal~~ TM 5/28/97

5/28/97 Spectrometer #2 Calibration from ~3.8 MeV - 5.7 MeV
see calibration file for supporting information. ~~including~~ TM 5/28/97
Spectrum and Calibration file saved as C:\Windows\S100\052497#2.CAL

Spectrometer #3 Calibration from ~3.8 MeV - 5.7 MeV 052897#3.CAL
spectrum and Calibration file saved as C:\Window\S100\~~052897~~ TM 5/28/97

Spectrometer #4 Calibration from ~3.8 MeV - 5.7 MeV
spectrum & calibration file saved as C:\windows\S100\052897#4.CAL

16 hr background count started with empty chambers (sample holders only)
3:00 PM TM

5/29/97 Saved as 052997AL.BGD
File 052997AL.BGD deleted due to discovery that only one input (one spectrometer output) is saved in a given file. The spectrum saved is the one in which the cursor resides as indicated by the sub heading "Region" when saving a file. For example: Click on File then Save As and note the phrase following the sub header "Region:" e.g. "Input #1". TM

6/4/97 16 hour background with blank filters on planchets
Started at ~2:45 PM
Will be saved as 060497#__.BGD for future reference
detector #

6/12/97 16 hour background w blank filters on planchets
Started @ ~ 8:45 AM saved as 061297#__.BGD

TM 6/12/97

6/25/97 Calibration cks

Det #1 Count began 5:05 PM

	Pk1	Pk2	Pk 3	Pk 4
Calibration Std Energy	4.20	4.77	5.15	5.49
Spectrum Energy file: 062597#1.CCK	4.19	4.77	5.15	5.49

Det #2

TM 6/25/97

7/11/97 Collection of Spectra

Time	Sample	Count Time	Detector #	File Name
7/10/97 4:30 PM	Blank Soil Exc	1000 m	1	Blank01. SAM
	97L1879-001 Exc		2	1879-01. SAM
	" 1D Exc		3	1879-01D. SAM
	" 2		4	1879-02. SAM
7/11/97 4:40 PM	97L1879-002 Exc	1000 m	1	1879-02. SAM
	002D Exc		2	1879-02D. SAM
	003 Exc		3	1879-03. SAM
	003D Exc		4	1879-03D. SAM
7/16/97	Bkgnd 1	100 m	1	071697#1. BGD
	Bkgnd 2		2	" 2 "
	Bkgnd 3		3	" 3 "
	Bkgnd 4		4	" 4 "
7/16/97	97L1879-004 Exc	1000 m	1	1879-04. SAM
	4D Exc		2	7/17/97 0716-04D. SAM
8:45 PM	5 Exc		3	-05. SAM
	6 Exc		4	-06. SAM
7/17/97 2:21 PM	97L1879-001 Ex	1000 m	1	1879-1X. SAM
	1DX		2	1879-1DX. SAM
	2		3	1879-2X. SAM
	2D		4	1879-2DX. SAM
7/18/97	Calibration Check			
	Cal. Std.	15 m	1	071897#1. CCK
			2	" #2 "
			3	" #3 "
			4	" #4 "

Oct #1

Known Pk Energy ↓	Pk 1	Pk 2	Pk 3	Pk 4
	4.20	4.77	5.15	5.49
Acq. Spectrum Energy	4.16	4.75	5.13	5.47
Accepted: (Y, N)	Y	Y	Y	Y

7/17/97

5

7/17/97 Det #2

	Pk 1	Pk 2	Pk 3	Pk 4
Known Pk Energy	4.20	4.77	5.15	5.49
Acq. Pk Energy	4.21	4.78	5.17	5.50
Acceptable (Y, N)	Y	Y	Y	Y
Det #3 Acq. Pk Energy	4.20	4.77	5.15	5.49
Acceptable (Y, N)	Y	Y	Y	Y
Det #4 Acq Pk Energy	4.15	4.74	5.13	5.47
Acceptable (Y, N)	Y	Y	Y	Y

~~7/17/97~~ Collection of Spectra
7/23/97 10:40 AM Spectra saved from 7/21/97 Count Start

Time	Sample	Count Time	Detector #	File Name
	97L1879-003	1000 m	1	1879-3X.SAM
	003D	↓	2	1879-3DX.SAM
	004		3	1879-4X.SAM
	004D		4	1879-4DX.SAM
10:45 AM	Background	100 m	1	072397#1.BGD
↓	↓	↓	2	— #2 —
			3	— #3 —
			4	— #4 —
5:00 PM	97L1879-005	1000 m	1	1879-5X.SAM
↓	006	↓	2	1879-6X.SAM
	Blank		3	Blank-X.SAM
			4	~~07/25 072597#4.BGD~~

Count Lost due to power failure
Restarted 7/24/97 8:00 PM 7/25 TM1 97

7/25/97

2:15 PM	97L1879-001	0x	150 m ~~1000~~ TM	1 1879-1H.SAM
	001D	↓	↓	2 1879-1DH.SAM
	002			3 1879-2H.SAM
	002D			4 1879-2DH.SAM

7/28/97 Collection of Spectra

Time Sample	Sample	Count Duration	Detector #	Filename
1:00 PM	97L1879-003 0x	270 m	1	1879-3H.SAM
	3D 0x		2	1879-3DH.SAM
	4 0x		3	1879-4H.SAM
	4D 0x		4	1879-4DH.SAM
5:50 PM	~~97~~L1879-005 0x	800 m	1	1879-5H.SAM
	6 0x		2	1879-6H.SAM
	Blank ~~8~~ 0x TTM		3	Blank-H.SAM

7/29/97

1:45 PM	~~97L1871~~ Background 1	120 m	1	072997#1.BGD
	Background 2		2	— #2 —
	Background 3		3	— #3 —
	Background 4		4	— #4 —
5:50 PM	97L1879-001 Org	150	1	1879-1G.SAM
	001D	~~155~~ 154 TTM 7/29/97	2	1879-1DG.SAM
	003		3	1879-3G.SAM
	003D		4	1879-3DG.SAM
9:30 PM	97L1871-002 Org	TTM 7/29/97 ~~240~~ 30	1	1879-2G.SAM
	004	1000	2	1879-4G.SAM
	004D		3	1879-4DG.SAM
	005		4	1879-5G.SAM
10:00 PM	~~97L1879~~ Blank Org	1000	1	~~Key~~ Blank-G.SAM — TTM 7/29/97

7/30/97

2:45 PM	97L1879-002D Org	55 m	3	1879-2DG.SAM
	006 Org	640	4	1879-6G.SAM

7/31/97

12:00 noon not correctly initiated TTM restarted 4:35 PM	~~97L1879-00~~ TTM 7/31/97 BK0	1000 m	1	073197#1.BGD
			2	— #2 —
			3	— #3 —
			4	— #4 —

TTM 7/31/97

8/25/97	Sample		Count Duration	Det. #	Filename
8:05 PM	Bkd	1	1000 m	1	082597#1. BGD
		2		2	#2. BGD
		3		3	#3. BGD
		4		4	#4. BGD
9/31 4:47 PM.	C2 #3	Ex	1000 m	1	C2 #3 - X. SAM
	C2 #5			2	C2 #5 - X. SAM
	SID 25			3	SID 25 - X. SAM
	SID 27			4	SID 27 - X. SAM
9/1 6:20 PM	SID 25	Carb	1000 m	1	SID 25 - C. SAM
	SID 27			2	SID 27 - C. SAM
	SID 39			3	SID 39 - C. SAM
	Blank			4	Blank - C. SAM
9/2 5:40 PM	SID 39	Ex	1000 m	1	SID 39 - X. SAM
	Blank	Ex		2	Blank - X. SAM
	C2 #3	Carb		3	C2 #3 - C. SAM
	C2 #5	Carb		4	C2 #5 - C. SAM
			Count lost due to power outage 9/12/97		
9/12 12:07	SID 31	Ex	1000 m	1	
	Blank	Ex		2	
	C2 #3	Carb		3	
	C2 #5	Carb		4	
9/13 9:55 PM	Background		1000 m	1	
				2	
				3	091797#3. BGD
				4	091797#4. BGD
9/17 11:05 PM	C2 #3	Seq.	1000 m	2	C2 #3 - H. SAM
	C2 #5			3	C2 #5 - H. SAM
	SID 25			4	SID 25 - H. SAM
	Blank			1	Blank - H. SAM
1/15 9:23 PM	SID 27	Seq	1000 m	1	SID 27 - H. SAM
	SID 39	Seq		2	SID 39 - H. SAM
	C2 #3	Dig		3	C2 #3 - G. SAM
	C2 #5	Dig		4	C2 #5 - G. SAM

	Sample		Count Duration	Det #	File name
4/22 10:12 PM	SID 25 Orig		1000 m	1	SID25-G.SAM
	SID 27 Orig		↓	2	SID27-G.SAM
	SID 39 Orig			3	SID39-G.SAM
	Blank Orig			4	Blank2-G.SAM

	Sample		Count Duration	Det #	File name
9/28 12:13 AM	97L1879-01	Res	500 ~~1000~~ m	1	1879-1R.SAM
	-02	↓	↓	2	1879-2R.SAM
	-05		TM 4/28/97	3	1879-5R.SAM
	-06			4	1879-6R.SAM
9/29 11:50 AM	Blank 1	Res	500 m	1	Blank1-R.SAM
	C2 #3	↓	↓	2	C2 #3-R.SAM
	C2 #5			3	C2 #5-R.SAM
	971879-04			4	1879-4R.SAM
10:04 PM	Blank 2	Res	500 m	1	Blank2-R.SAM
	97L1879-03	↓	↓	2	1879-3R.SAM
	SID 25			3	SID25-R.SAM
	SID 27			4	SID27-R.SAM
12/9/97 9:28 AM (time saved)	Background		1000 m	1	120997#1.BKG
	↓		↓	2	120997#2.BKG
				3	120997#3.BKG
				4	120997#4.BKG
12/9/97 9:30	1879-3D	Res	500 m	1	1879-3DR.SAM
	1879-4D	↓	↓	2	1879-4DR.SAM
	SID 39			3	SID39-R.SAM
	Reagent Blank			4	ReagBLK.SAM
12/10/97 8:45	1879-1D	Res		1	1879-1DR.SAM
	1879-2D	Res		2	1879-2DR.SAM

5/12/98

5/12/98 Calibration of Detectors 1-4

Det 1

Pk	Channel	Known Pk Energy	Calibrated Energy	Saved as:
U-238	175	4.20	4.20	051298#1.CAL
U-234	510	4.77	4.77	
Pu-239	733	5.15	5.15	
Am241	928	5.49	5.49	

Det 2

pk	Channel	Known Pk Energy	Calibrated Energy
U-238	215	4.20	4.20
U-234	543	4.77	4.77
Pu-239	761	5.15	5.15
Am-241	950	5.49	5.49

Saved As. 051298#2.CAL

Det 3

pk	Channel	Known R Energy	Cal Energy
U-238	195	4.20	4.20
U-234	517	4.77	4.77
Pu-239	730	5.15	5.15
Am-241	915	5.49	5.49

Saved as: 051298#3.CAL

Det 4

pk	channel	Known R Energy	Cal Energy
U-238		4.20	
U-234		4.77	
Pu-239		5.15	
Am-241		5.49	

Saved As: 051298#4.CAL

5/15/98

	Sample	Count Duration	Det #	Element	File Name
	Background	1000m	1	NA	051598#1.BKG
			2		051598#2.BKG
			3		051598#3.BKG
			4		051598#4.BKG
	Blk 01	1000m	1	Pu	RDXBLK01.SAM
	NR01		2		RDXNR01.SAM
	NCS01		3		RDXNCS01.SAM
	SCS01		4		RDXSCS01.SAM
5/16	Blk-12	1000m	1	Pu	RBlk-12.SAM
	Electrode Wash	1000m	2	Pu	ElecWsh1.SAM
			2		

TM 5/16/98

5/21/98 Calibration Checks (Energy)

Det #	Pk Energy	Known Pk. Energy (MeV)	+/- (keV)	Accept?	File Name
1	4.199	4.20	0	Y	052198#1.CCK
↓	4.776	4.77	10	Y	↓
	5.158	5.15	10	Y	
	5.495	5.49	10	Y	
2	4.198	4.20	0	Y	052198#2.CCK
↓	4.774	4.77	10	Y	↓
	5.158	5.15	0	Y	
	5.495	5.49	10	Y	
3	4.171	4.20	30	Y	052198#3.CCK
↓	4.739	4.77	30	Y	↓
	5.113	5.15	40	Y	
	5.441	5.49	50	N	
4	4.157	4.20	40	Y	052198#4.CCK
↓	4.739	4.77	30	Y	↓
	5.126	5.15	20	Y	
	5.467	5.49	20	Y	

TM 5/27/98

5/21/98	Sample	Fxn	Ct. Duration	Det #	Element	Filename
	Blank Soil 98-01	Ox	1000 m	1	Pu	Blk.01 Ox. SAM
	97L1879-02 A	Ox	↓	2	↓	79-02A Ox. SAM
	↓ B	↓		3		79-02B Ox. SAM
	C			4		79-02C Ox. SAM

5/22/98	Sample	Fxn	Ct Duration	Det #	Element	File Name
	97L1879-02 D	Ox	1000 m	1	Pu	79-02D Ox. SAM
	E	Ox	↓	2	↓	79-02E Ox. SAM
	A	Ex		3		79-02A Ex. SAM
	B	Ex		4		79-02B Ex. SAM

5/26/98	BKGND	NA	1000 m	1	NA	052598#1. BGD
	↓	↓	↓	2	↓	#2. BGD
				3		#3. BGD
				4		#4. BGD
5/26/98	Blk-01 [B(ox)1]	~~Am~~ NA	1000m	1	Am	RAm Blk 01. SAM ~~Am 01~~
	Blk-12	↓	↓	2	↓	RAm Blk 12. SAM
	Electrode Wash			3		RAm EW. SAM
	SCS01			4		RAm Sc S01. SAM
5/27/98	NR01	NA	1000m	1	Am	RAm NR01. SAM
	NCS01	↓	↓	2	↓	RAm NCS01. SAM

Recalibration with Detectors 3 + 4 used

Det #	pk	Channel	Known Pk energy	Calib. energy
3	U-238	145	4.20	4.200
↓	U-234	517	4.77	4.765
	Pu-239	733	5.15	5.152
	Am-241	918	5.49	5.487
			Saved As:	052798#3. CAL
4	U-238	185	4.20	4.198
↓	U-234	519	4.77	4.772
	Pu-239	740	5.15	5.152
	Am-241	935	5.49	5.487
			Saved As:	052798#4. CAL

TM 5/26/98

	Sample		Count Per	Det. #	Fxn	Element	File
5/28/98	Blank Soil 98-01		1000 m	1	Ex	Pu	~~Pu~~ BLK 98-01.
	97L1879-02	C	↓	2	Ex	↓	Pu 02CEx.
2:25 PM		D		3	Ex		Pu 02DEx.S
		E		4	Ex		Pu 02EEx.S
							Pu 9801Cb. BLK
	Blank Soil 98-01		1000m	1	Carb.	Pu	~~Pu BLK Cb. SA~~
	97L1879-02	A		2	↓	↓	~~Pu 02 A Cb. SA~~
		B		3			~~Pu 02 B Cb. SA~~
		C		4			~~Pu 02 C Cb. SA~~
5/30/98	Blank Soil 9801		1000m	1	Ex	Pu	Pu 9801R. BLK
	97L1879-02	D	↓	2	Carb.	↓	Pu 02 D Crb. S
		E		3	Carb.		Pu 02 E Crb. SA
	SCS01			4	Redox	Pu	Pu SCS01R. SA
6/1/98	Background		1000m	1	NA	NA	060198#1. BGL
	↓		↓	2	↓	↓	060198#2. BGD
				3			060198#3. BGD
				4			060198#4. BGD
	BlankSoil 98-01		1000m	1	Org	Pu	Pu 9801 Or. BLK
6/3/98	97L1879-02	A	↓	2	↓	↓	Pu 02 A Or. SAM
		B		3			Pu 02 B Or. SAM
		C		4			Pu 02 C Or. SAM
6/4/98	97L1879-02	D	1000 m	1	Org	Pu	Pu 02 D Or. SAM
		E	↓	2	Org	Pu	Pu 02 E Or. SAM
6/5/98	Blank Soil 98-01		1000m	1	Residual	Pu	Pu 9801 RS. BLK
	97L1879-02	C	↓	2	↓	↓	Pu 02 C RS. SAM
		D		3			Pu 02 D RS. SAM
		E		4			Pu 02 E RS. SAM

6/8/98 Calibration Checks

Det #	Pk Energy	Known Energy (MeV)	+/- KeV	Accept?	File Name
↓					060898#1. CCK
2					#2. CCK
3					#3. CCK

TTM 6/1/98

Pu9801Cb.BIK
Pu02ACrb.SAM
Pu02BCrb.SAM
Pu02CCrb.SAM

4

06 08 98 #4. CCK

6/8/98	Sample	Count Dur	Det #	Fxn	Element	File Name
	97L1879-02 A	1000m	1	Res.	Pu	Pu02ARs.SAM
	B	↓	2	Res.	Pu	Pu02BRs.SAM
	98-06 ~~97L1879-02~~ Blank Soil		3	Org	Am	Am9801Or.BIK (replaced)
1 TTM 6/8/98	97L1879-02 A		4	Org	Am	Am02AOr.SAM TTM 6/17/98
6/9/98						
	97L1879-02 B	1000m	1	Org	Am	Am02BOr.SAM
	C	↓	2	↓	↓	Am02COr.SAM
	D		3			Am02DOr.SAM
	E		4			Am02EOr.SAM
6/10/98	BKGND	1000m	1	NA	NA	061098#1.BGD
	↓	↓	2	↓	↓	061098#2.BGD
			3			061098#3.BGD
			4			061098#4.BGD

6/12/98	Sample	Count Dur	Det #	Fxn	Element	File Name
	Blk-13	1000m	1	NA	Pu	Pu BLK13.BIK
	N002	↓	2	↓	↓	Pu N002.SAM
	NR02		3			Pu NR02.SAM
	NR02B		4			Pu NR02B.SAM
6/15/98	Blk Soil 98-01	1000m	1	Org	Am	Am9801Or.BIK
6/17/98	Blk-13	1000m	1	NA	Am	Am98-13.BIK
	N002	↓	2	↓	↓	Am N002.SAM
	NR02		3			Am NR02.SAM
	NR02B		4			Am NR02B.SAM

6/19/98 Calibration Checks

Det #
1
2
3
4

Filename:
061998#1.CCK
#2.CCK
#3.CCK
#4.CCK

	Sample	Count Dur	Det #	Fxn	Element	Filename:
6/20/98	1-1	1000 m	1	NA	Pu	Pu 1-1. SAM
	1-2	↓	2	↓	↓	Pu 1-2. SAM
	1-3		3			Pu 1-3. SAM
	1-4		4			Pu 1-4. SAM
6/21/98	Bkgnds	1000 m	1	NA	NA	062198#1.BGD
	↓	↓	2	↓	↓	#2
			3			#3
			4			#4
6/22/98	1-5	1000 m	1	NA	Pu	Pu 1-5. SAM
	1-BLK	↓	2	↓	↓	1-BLK501.BLK
	1-LCS		3			Pu 1-LCS. SAM
6/23/98	97L1879-02 A	1000 m	1	Residual	Am	Am 02ARS. SAM
	B	↓	2	↓	↓	Am 02BRS. SAM
	C		3			Am 02CRS. SAM
	D		4			Am 02DRS. SAM
6/24/98	97L1879-02 E	1000 m	1	Residual	Am	Am 02ERS. SAM
	Blank Sol 98-01	↓	2	↓	↓	~~Am 98-01. SAM~~ TTM 6/24/98
						Am 98-01. BLK
7/2/98	Bkgnds	1000 m	1	NA	NA	070298#1.BGD
	↓	↓	2	↓	↓	#2
			3			#3
			4			#4
7/3/98	97L1879-02 3-1	~~1000 m~~ 216 m TTM 7/3/98	1	NA	Pu	Pu 3-1. SAM
	3-2	↓	2	↓	↓	Pu 3-2. SAM
	3-3		3			Pu 3-3. SAM
	3-4		4			Pu 3-4. SAM
7/3/98	97L1879-02 3-5	1000 m	1	NA	Pu	Pu 3-5. SAM
	MS	↓	2	↓	↓	Pu MS-1. SAM

7/6/98 Energy Calibration Check

Det #1	Pk Energy	Known	+/- # (keV)	Accept?	File Name
1	4.208	4.20	10	Y	070698#1.CCK
↓	4.790	4.77	20	Y	↓
	5.166	5.15	16	Y	
	5.509	5.49	20	Y	
2	4.197	4.20	3	Y	070698#2.CCK
↓	4.775	4.77	5	Y	↓
	5.157	5.15	7	Y	
	5.486	5.49	4	Y	
3	4.183	4.20	17	Y	070698#3.CCK
↓	4.767	4.77	3	Y	↓
	5.143	5.15	7	Y	
	5.474	5.49	16	Y	
4	4.151	4.20	49	N	070698#4.CCK
↓	4.730	4.77	47	N	↓
	5.122	5.15	28	Y	
	5.458	5.49	32	Y	

Recalibration of Det#4

11 TM 7/12/98

7/~~12~~/98

Sample	Count Dur	Det #	Exn	Element	Filename
~~97L1879-02~~					
Blank Soil 98-02	1000m	1	Ex	Pu	Pu 98-02.BIK
97L1879-02 F	↓	2	Ex	↓	Pu 02 F.SAM
↓ G		3	Ex		Pu 02 G.SAM
7/12/98					
97L1879-02 H	1000m	1	Ex	Pu	Pu ~~98~~ 02 H.SAM TM 7/12/98
↓ MS-2	↓	2	Ex	↓	Pu MS2.SAM
LCS2		3	Ex		Pu LCS2.SAM

7/13/98 TM

7/13/98 Cal Checks

Peak Energy	Known Energy (MeV)	+/- (KeV)	Accept?	Filename
Det #1				
~~4.159~~ 4.163	4.20	40	OK	071398#1.CCK
4.744	4.77	30	OK	↓
5.138	5.15	22	OK	
5.484	5.49	6	OK	
Det #2				
4.197	4.20	3	OK	071398#2.CCK
4.775	4.77	5	OK	↓
5.157	5.15	7	OK	
5.489	5.49	1	OK	
Det #3				
4.185	4.20	15	OK	071398#3.CCK
4.760	4.77	10	OK	↓
5.147	5.15	3	OK	
5.477	5.49	13	OK	
Det #4				
4.154	4.20	46	(N)	071398#4.CCK
4.735	4.77	35	OK	↓
5.125	5.15	25	OK	
5.463	5.49	27	OK	

~~Backg~~ 7/14/98

Recal Det #1				
4.195	4.20	5	OK	071498#1.CAL
4.767	4.77	3	↓	
5.146	5.15	4		
5.488	5.49	2		
Recal Det #4				
4.198	4.20	12	OK	071498#4.CAL
4.772	4.77	2	↓	
5.152	5.15	2		
5.487	5.49	3		

7/14/98

Backgrounds

Det	Count Dur.	Filename: 071498#1.BGD
1	10.00m	↓
2		#2
3		#3 ↓
4		#4

7/16/98

Sample (98-02)	Count Dir.	Det #	Fxn	Element	Filename
Soil Blank BLK-02	1000m	1	Ex	Am	Am BLK02. BLK
97L1879-02 F	↓	2	↓	↓	Am 02 F. SAM
G		3			Am 02 G. SAM
↓ H		4			Am 02 H. SAM
BLK Soil LCS 2	1000m	1	Ex	Am	Am LCS2. SAM
97L1879-02 MS 2	↓	2	Ex	↓	Am MS2. SAM
7/19/98 Soil Blank BLK 98-02	1000m	1	Carb	Am	Am 02 Carb. BLK
97L1879-02 F	↓	2	↓	↓	Am F Carb. SAM
G		3			Am G Carb. SAM
↓ H		4			Am H Carb. SAM
7/20 Blank Soil LCS2	1000m	1	Carb	Am	~~Am~~ LCS2 Cb. SAM
97L1879-02 MS2	↓	2	↓	↓	Am MS2 Cb. SAM
7/21 Backgrounds	1000m	1	—	—	07Z198#1. BGD
↓	↓	2	—	—	#2
		3	—	—	#3
		4	—	—	#4
7/22 Blk 98-02	1000m	1	Ox	Am	Ø2 Ox TM
97L1879-02 F	↓	2	↓	↓	Am ~~98-02~~. BLK
G		3			Am F Ox. SAM
↓ H		4			Am G Ox. SAM
					Am H Ox. SAM
97L1879-02 MS2	~~502m~~ 1000m TM	1	Ox	Am	Am MS2 Ox. SAM
Blank Soil LCS2	↓	2	Ox	↓	Am LCS2 Ox. SAM
Blank 98-02		3	Org		Am 02 Org. BLK
97L1879-02 F		4	Org		Am F Org. SAM
7/23 97L1879-02 G	450	1	Org	Am	Am G Org. SAM
H	↓	2	↓	↓	Am H Org. SAM
MS2		3			Am MS2 Org. SAM
Blank Soil ~~98-02~~ LCS2		4			Am LCS2 Or. SAM
~~97L1879-02~~					
Blank Soil 98-03	592	1	~~Total Org~~ TM 7/24/98	~~Pu Am~~	Renamed TO: Pu 98-03. BLK 3-5-98 TM
97L1879-02 1-6	↓	2	↓	Pu 1-6	~~Am 98-03 Or. Blk~~
↓ 1-7		3		Pu 1-7	~~Am 1-6 Org~~. SAM
Blank Soil LCS 3		4			~~Am 1-7 Org~~. SAM
					~~Am LCS 3 Or~~. SAM
					Pu LCS3 TM 3 4-99
7/24 Blank Soil 98-02	590	1	~~Res. dual Org~~ TM 7/24/98	Am	Am 9802 ~~Or~~ Rs. BLK
97L1879-02 F	↓	2	↓	↓	Am F ~~Org~~ Res. SAM
G		3			Am G ~~Org~~ Res. SAM
↓ H		4			Am H ~~Org~~ Res. SAM

7/25	Sample	Count Duration	Det #	Fxn	Element	Filename
	97L1879-02 MS2	926 m	1	Residual	Am	Am MS2 Rs. SAM
	Blank Soil LCS2	↓	2	↓	↓	Am LCS2 Rs. SAM
7/26	Blank Soil 98-03	366	1	—	Am	AM 98-03. BLK
	97L1879-02 1-6		2	—		Am 1-6. SAM
	↓ 1-7		3	—		Am 1-7. SAM
	Blank Soil LCS3		4	—		Am LCS3. SAM
7/27	BLK-14	4000m	1	—	Pu	Pu BLK-14. BLK
	NR04	↓	2	—	Pu	Pu NR04. SAM
	BLK-14		3	—	Am	Am BLK-14. BLK
	NR04		4	—	Am	Am NR04. SAM
9/13	BKGNDS	1500m	1	NA	NA	081498#1. BGD
	↓	↓	2	↓	↓	#2
			3			#3
			4			#4

9/14 Cal Check

Det #	Pk Energy	Known Energy	+/- (KeV) Diff	Accept?	Filename
1	4.144	4.20	56	No	NA
1	4.732	4.77	38	Y	↓
1	5.120	5.15	30	N	
1	5.462	5.49	28	Y	
2	4.198	4.200	2	Y	980914#2.CCK
2	4.776	4.770	6	Y	↓
2	5.147	5.150	3	Y	
2	5.485	5.490	5	Y	
3	4.192	4.200	8	Y	980914#3.CCK
3	4.773	4.770	3	Y	↓
3	5.142	5.150	8	Y	
3	5.487	5.490	3	Y	
4	4.158	4.200	42	N	NA
4	4.744	4.770	26	Y	↓
4	5.135	5.150	15	Y	
4	5.462	5.490	28	Y	

Recalib. of Det. #1 & Det. #4

Det #1 File: 091498#1.CAL

Det #4 File: 091498#4.CAL

4/14	Sample	Count Duration	Det #	Fxn TM	Element	Filename
NR04	Elec Sm	TM 3000m 9/15/98 1500	1	NA	Pu	98 ~~Pu~~ NR04ES.SAM
NR04	Elec Lg	↓	2	↓	↓	TM 9/18/98 Pu NR04EL.SAM
N003	0.45		3			Pu N00345.SAM
N003	10K mW		4			Pu N00310.SAM
9/15	NR04 Elec. SM	~~1500~~ ~~3000m~~ TM 9/16/98	1	NA	Am	Am NR04ES.SAM
	NR04 Elec. Lg	↓	2		↓	Am NR04EL.SAM
	N003 0.45		3	↓		Am N00345.SAM
	N003 10K mW		4			Am N00310.SAM
9/16	BLK-15	2500 TM ~~3000m~~ 9/16/98	1	NA	Pu	Pu BLK15.BLK
	BLK-15	↓	2	NA	Am	Am BLK15.BLK
	Backgrounds	3000m	1			091898#1.BGD
	↓	↓	2			091898#2.BGD
			3			091898#3.BGD
			4			091898#4.BGD
12	Eff-1	1000m	1	NA	Am	Am Eff 1-1.Eff
	Eff-2	↓	2	↓	↓	Am Eff 2-2.Eff
	Eff-3		3			Am Eff 3-3.Eff
	Eff-4		4			Am Eff 4-4.Eff
	Eff-2	100m	1	NA	Am	Am Eff 2-1.Eff
	Eff-3	↓	2	↓	↓	Am Eff 3-2.Eff
	Eff-4		3			Am Eff 4-3.Eff
	~~Eff-1~~ TM		4			Am Eff 1-4.Eff

12/10 Cal Check

Det #	Known Energy	Pk Known Energy	+/- Kev	Accept?	Filename
1	4.20	4.208	10	Y	121098#1.CCK
1	4.77	4.785	8	Y	↓
1	5.15	5.165	15	Y	
1	5.49	5.512	22	Y	
2	~~4~~ 4.20	4.207	7	Y	121098#2.CCK
2	4.77	4.784	14	Y	↓
2 TM	5.~~15~~	5.166	11	Y	
2	5.49	5.495	5	Y	

12/10/98 Cal Check (cont.)

Det #	Pk Energy	Known Energy	Δ keV	Accept ?	Filename
3	4.188	4.20	12	Y	121098#3.CCK
3	4.760	4.77	17	Y	↓
3	5.149	5.15	1	Y	
3	5.478	5.49	12	Y	
4	4.159	4.20	41	N	121098#4.CCK
4	4.741	4.77	36	Y	↓
4	5.122	5.15	28	Y	
4	5.464	5.49	26	Y	

Recal Det #4

12/21/98

4	4.202	4.200	2	Y	122198#4.CAL
4	4.778	4.773	5	Y	↓
4	5.157	5.156	1	Y	
4	5.496	5.499	3	Y	

12/12/98

	Sample	Ct Duration	Det #	Form	Element	Filename
	NR06 TM 1-21-99	3000 m	1	NA	Pu	PuNR05.SAM
	BIK-15 17 TM 1/22/98	↓	2	NA	Pu	PuBIK15.BIK
12/15/98	02J Res	60	1	Res	Pu	Pu02JRes.SAM
	02K Res	↓	2	↓	↓	Pu02KRes.SAM
	02L Res	↓	3	↓	↓	Pu02LRes.SAM
12/16	02N Res	60	1	Res	Pu	Pu02NRes.SAM
	BIK-98-04	60	2	Res	↓	Pu98-04.BIK
12/22	02M Res	60	4	Res	Pu	Pu02MRes.SAM
1/4/99	Backgrounds	1000 m	1	NA	NA	010499#1.BGD
	↓	↓	2	↓	↓	010499#2.BGD
			3			010499#3.BGD
			4			010499#4.BGD

1/8/99 Cal. Checks

Det #	Energy	Known Energy	+/- keV	Acceptable	Filename
1	4.203	4.200	3	Y	010899#1.cck
1	4.789	4.773	16	Y	↓
1	5.162	5.156	6	Y	
1	5.508	5.499	9	Y	
2	4.194	4.200	6	Y	010899#2.cck
2	4.772	4.773	1	Y	↓
2	5.157	5.156	1	Y	
2	5.485	5.499	14	Y	
3	4.195	4.200	15	Y	010899#3.cck
3	4.760	4.773	13	Y	↓
3	5.144	5.156	16	Y	
3	5.480	5.499	19	Y	
4	4.154	4.200	46	N	010899#4.cck
4	4.732	4.773	41	N	↓
4	5.120	5.156	36	Y	
4	5.464	5.499	35	Y	

2 Detector #4 Recalibrated Saved as 011299#4.CAL

4		4.200
4		4.773
4		5.156
4		5.499

Sample	Ct Duration	Det #	Exn	Element	Filename
Bkgnds	1000m	1	NA	NA	011399#1.BGD
↓	↓	2	↓	↓	#2.BGD
		3			#3.BGD
		4			#4.BGD

1/8/99 CAL. CHECKS

DET. #	ENERGY	KNOWN ENERGY	+/- KEV	ACCEPTABLE	FILENAME
1	4.206	4.200	6	Y	011899#1.CCK
1	4.780	4.773	7	Y	↓
1	5.167	5.156	11	Y	
1	5.499	5.499	0	Y	

1/18/99 CAL CHECK (CONT'D).

DET #	ENERGY	KNOWN ENERGY	+/- 1 KeV	ACCEPTABLE	FILENAME
2	4.194	4.200	6	Y	011899 #2.CCK
2	4.767	4.773	6	Y	↓
2	5.157	5.156	1	Y	
2	5.490	5.499	9	Y	
3	4.184 ~~4.199~~ SDW	4.200	16	Y	011899 #3.CCK
3	4.758	4.773	15	Y	↓
3	5.135	5.156	21	Y	
3	5.474	5.499	25	Y	
4	4.145	4.200	55	N	011899 #4.CCK
4	4.739	4.773	34	Y	↓
4	5.126	5.156	30	Y	
4	5.462	5.499	37	~~37~~ SDW Y	

1/19 DETECTOR #4 RECALIBRATED SAVED AS 011999 #4.CAL

4	4.200
4	4.773
4	5.156
4	5.499

Sample	Duration	Det#	FKA	Element	Filename
97L1879-02 NR06	1000m	1	NA	Am	Am NR06.SAM
BIK-17	1000m	2	NA	Am	Am BK17.BIK
BACKGROUNDS	1000M	1	NA	NA	012199 #1.BGD
	↓	2	↓	↓	#2.BGD
		3			#3.BGD
		4			#4.BGD
1/26 BACKGROUNDS	100CM	1	NA	NA	012699 #1.bgd
	↓	2	↓	↓	#2.bgd
		3			#3.bgd
		4			#4.bgd
		1			
		2			
		0			