

**Final
Final Status Survey Report
EPA National Enforcement
Investigations Center
Denver Federal Center
Lakewood, Colorado**

**Volume 2 of 3
Appendix F**

**Contract No. DACA45-96-D-0007
Task Order No. 0043**

In Support of:



**EPA National Enforcement
Investigations Center
Environmental Due Diligence Process
Denver Federal Center
Lakewood, Colorado**

Prepared For:



**US Army Corps
of Engineers
Omaha District**

**106 S. 15th Street
Omaha, Nebraska 68102-1618**

June 2004

APPENDIX F
DATA

APPENDIX F

Table of Contents

Survey Units

- Laboratory A1209
- Laboratory A1505/1507
- Laboratory A1902
- Laboratory B2109
- Laboratory D2205

Equipment and Material Release Surveys

Reference Material Background Data

Note:

Appendix F is organized as follows:

Survey units required judgmental beta and alpha scanning, systematic direct alpha and beta radiation measurements, and systematic wipe samples analyzed for removable alpha and beta radiation. These sections will present a summary table of detailed survey and analytical results followed by the alpha and beta scan survey forms, direct alpha and beta measurement survey forms, the alpha and beta wipe sample survey/collection forms, and the wipe sample data package(s) respectively.

Equipment and material release surveys required judgmental direct measurement of alpha and beta radiation as well as the collection of wipe samples for removable alpha and beta radiation from associated locations.

Reference material background data contains the survey data forms used for the determination of material specific backgrounds.

Laboratory A1209

Final Status Data Summary Table - Alpha and Beta Scan Data
Survey Unit: Laboratory A1209
Building 53, Denver Federal Center

(1 of 5)

Laboratory ID		Action Criteria		Individual Measurements													
Beta Scan																	
A1209		Bkg. Value	MDCR _{Surveyor}														
Concrete floor		357.5	500.0	341.0	298.0	337.0	351.0	326.0	426.0	366.0	388.0	353.0	402.0	375.0	400.0	No. of meas./locs	12
																Maximum	426.0
																Mean	363.6
																Standard Deviation	36.47
																No. > MDCR _{Surveyor}	0
Alpha Scan																	
A1209		Bkg. Value															
Concrete floor		3.5	4.0	3.0	1.0	5.0	3.0	3.0	2.0	3.0	2.0	2.0	4.0	1.0	No. of meas./locs	12	
																Maximum	5.0
																Mean	2.8
																Standard Deviation	1.22
																No. > Scan MDC	0

Notes:

Bold values exceed respective criteria.

Kcpm - Thousand counts per minute.

Bkg. - Background.

MDC - Minimum detectable concentration

Final Status Data Summary Table: Direct Beta Measurements
Survey Unit: Laboratory A1209
Building 53, Denver Federal Center

(2 of 5)

Laboratory ID	Administrative Goal	Release Criteria	Individual Measurements														
Systematic Direct Read Locations																	
A1209															No. of meas./locs	36	
Wall	1,000 dpm/100cm ²	1,000 dpm/100cm ²	394	381	-169	-15	-181	234	-247	-61	-34	143	-126	204	Maximum	394.0	
Wall	1,000 dpm/100cm ²	1,000 dpm/100cm ²	113	43	-137	89	-440	-549	281	320	379	363	381		Mean	-458.0	
Floor	1,000 dpm/100cm ²	1,000 dpm/100cm ²	-1356	-1810	-1734	-1595	-1625	-1585	-1612	-1398	-1446	-1436	-1540		Standard Deviation	793.5	
Floor	1,000 dpm/100cm ²	1,000 dpm/100cm ²	-1646	-1350											No. > Administrative Goal	0	
															No. > Release Criteria	0	
Bias Direct Read Locations																	
A1209															No. of meas./locs	10	
Wall	1,000 dpm/100cm ²	1,000 dpm/100cm ²	96	-19	25										Maximum	96.0	
Floor	1,000 dpm/100cm ²	1,000 dpm/100cm ²	-460	-228	-313	-259	-1198	-1180	-1529						Mean	-506.5	
Counter Top	1,000 dpm/100cm ²	1,000 dpm/100cm ²													Standard Deviation	581.1	
Other	1,000 dpm/100cm ²	1,000 dpm/100cm ²													No. > Administrative Goal	0	
															No. > Release Criteria	0	
Quality Control; Field Duplicate Performance (Criteria <20%)																	
	1st	2nd	RPD														
A1209																	
Location C-2	381	311	20														
Location C-22	363	360	1														
Location BS-1209-01	-460	-486	-5														

Notes:

Bold values exceed respective criteria.

cm² - Square centimeters.

DCGL - Derived concentration value representing the upper limit criteria.

RPD - Relative percent difference.

dpm - Disintegrations per minute.

ALARA - As low as reasonably achievable.

Final Status Data Summary Table Direct Alpha Measurements
Survey Unit: Laboratory A1209
Building 53, Denver Federal Center

(3 of 5)

Laboratory ID	Administrative Goal	Release Criteria	Individual Measurements														
Systematic Direct Read Locations																	
A1209																No. of meas./locs	36
Wall	30 ^a dpm/100cm ²	100 dpm/100cm ²	-34	-33	-48	-48	-50	-40	-40	-39	-37	-43	-39	-47		Maximum	-4.0
Wall	30 ^a dpm/100cm ²	100 dpm/100cm ²	-36	-39	-54	-43	-9	-13	-20	-7	-8	-4	-15			Mean	-36.3
Floor	30 ^a dpm/100cm ²	100 dpm/100cm ²	-41	-44	-41	-44	-52	-42	-44	-50	-45	-44	-42			Standard Deviation	14.2
Floor	30 ^a dpm/100cm ²	100 dpm/100cm ²	-41	-35												No. > Administrative Goal	0
																No. > Release Criteria	0
Bias Direct Read Locations																	
A1209																No. of meas./locs	10
Wall	30 ^a dpm/100cm ²	100 dpm/100cm ²	-59	-48	-34											Maximum	-34.0
Floor	30 ^a dpm/100cm ²	100 dpm/100cm ²	-55	-60	-72	-70	-37	-48	-41							Mean	-52.4
Counter Top	30 ^a dpm/100cm ²	100 dpm/100cm ²														Standard Deviation	13.1
Other	30 ^a dpm/100cm ²	100 dpm/100cm ²														No. > Administrative Goal	0
																No. > Release Criteria	0
Quality Control; Field Duplicate Performance (Criteria <20%)																	
			1st	2nd		RPD											
A1209																	
Location C-2			-34		-36	-6											
Location C-22			-4		-6	-40											
Location BS-1209-01			-55		-55	0											

Notes:

Bold values exceed respective criteria.

cm² - Square centimeters.

DCGL - Derived concentration value representing the upper limit criteria.

RPD - Relative percent difference.

dpm - Disintegrations per minute.

ALARA - As low as reasonably achievable.

^a - Approximate sensitivity of field instrument

Final Status Data Summary Table: Beta Wipe Sample Results
Survey Unit: Laboratory A1209
Building 53, Denver Federal Center

(4 of 5)							
Laboratory ID	Administrative Goal	Release Criteria	Individual Measurements				
<i>Systematic Direct Read Locations</i>							
<u>A1209</u>						No. of meas./locs	36
Wall	200 dpm/100cm ²	200 dpm/100cm ²	All sample results were reported as non-detected at < 1.7 dpm/100cm ²			Maximum	na
Wall	200 dpm/100cm ²	200 dpm/100cm ²				Mean	na
Floor	200 dpm/100cm ²	200 dpm/100cm ²				Standard Deviation	na
						No. > Administrative Goal	0
						No. > Release Criteria	0
<i>Bias Direct Read Locations</i>							
<u>A1209</u>						No. of meas./locs	10
Wall	200 dpm/100cm ²	200 dpm/100cm ²	All sample results were reported as non-detected at < 1.7 dpm/100cm ²			Maximum	na
Floor	200 dpm/100cm ²	200 dpm/100cm ²				Mean	na
						Standard Deviation	na
						No. > Administrative Goal	0
						No. > Release Criteria	0
<i>Quality Control; Field Duplicate Performance (Criteria <20%)</i>							
<u>A1209</u>							
Location C-20	Regular	Field Duplicate	Field Splits	RPD			
Location C-36	nd	nd	nd	nc			
Location BS-1209-09	nd	nd	nd	nc			

Notes:

Bold values exceed respective criteria.

cm² - Square centimeters.

DCGL - Derived concentration value representing the upper limit criteria.

RPD - Relative percent difference.

dpm - Disintegrations per minute.

ALARA - As low as reasonably achievable.

nd - non-detected

nc - not calculated

Final Status Data Summary Table: Alpha Wipe Sample Results
Survey Unit: Laboratory A1209
Building 53, Denver Federal Center

(5 of 5)						
Laboratory ID	Administrative Goal	Release Criteria	Individual Measurements			
Systematic Direct Read Locations						
A1209					No. of meas./locs	36
Wall	1.1 dpm/100cm ²	20 dpm/100cm ²	All sample results were reported as non-detected at < 0.90 dpm/100cm ²		Maximum	na
Wall	1.1 dpm/100cm ²	20 dpm/100cm ²			Mean	na
Floor	1.1 dpm/100cm ²	20 dpm/100cm ²			Standard Deviation	na
					No. > Administrative Goal	0
					No. > Release Criteria	0
Bias Direct Read Locations						
A1209					No. of meas./locs	10
Wall	1.1 dpm/100cm ²	20 dpm/100cm ²	All sample results were reported as non-detected at < 0.90 dpm/100cm ²		Maximum	na
Floor	1.1 dpm/100cm ²	20 dpm/100cm ²			Mean	na
					Standard Deviation	na
					No. > Administrative Goal	0
					No. > Release Criteria	0
Quality Control; Field Duplicate Performance (Criteria <20%)						
	Regular	Field Duplicate	Field Splits	RPD		
A1209						
Location C-20	nd	nd	nd	nc		
Location C-36	nd	nd	nd	nc		
Location BS-1209-09	nd	nd	nd	nc		

Notes:

Bold values exceed respective criteria.

cm² - Square centimeters.

DCGL - Derived concentration value representing the upper limit criteria.

RPD - Relative percent difference.

dpm - Disintegrations per minute.

ALARA - As low as reasonably achievable.


nd - non-detected

nc - not calculated


Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT		PROJECT NUMBER: 101115		DATE: 030104	TIME START: 1100	TIME COMPLETE: 1125	PAGE 1 OF 10																
LOCATION: EPA NEIC <i>Rm A 1209</i>		SURVEYOR: <i>Stephens / Trant</i>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Alpha</th> <th colspan="2">Beta-Gamma</th> <th>Alpha cpm</th> <th rowspan="3">Item or Location</th> </tr> <tr> <th>Loose</th> <th>Total</th> <th>Loose</th> <th>Total</th> <th>Beta cpm</th> </tr> <tr> <th>dpm/100cm²</th> <th>dpm/100cm²</th> <th>dpm/100cm²</th> <th>dpm/100cm²</th> <th>Material</th> </tr> </table>		Alpha		Beta-Gamma		Alpha cpm	Item or Location	Loose	Total	Loose	Total	Beta cpm	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material		
Alpha		Beta-Gamma				Alpha cpm	Item or Location																
Loose	Total	Loose	Total	Beta cpm																			
dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material																			
Denver Federal Center, CO		SURVEY NUMBER: 030104-27																					
Denver, CO		MAP ID: LAB A1209																					
ACCEPTABLE SURFACE CONTAMINATION LEVELS Loose 20 dpm/100cm ² Alpha 200 dpm/100cm ² Beta-Gamma Total 100 dpm/100cm ² Alpha 1,000 dpm/100cm ² Beta-Gamma				ACCEPTABLE SCAN LIMITS MDCR _{surveyor} Beta MDCR _{surveyor} Alpha																			
Source Check Date	Contamination Surveys			Radiation Surveys																			
	a	a	B-1	B-1	Beta-Gamma																		
	(TOTAL)	(TOTAL)	(TOTAL)	(TOTAL)																			
Instrument	184904 / 185768	185774	184904 / 185768	185774	NA																		
Source Type and I.D.	Th-230, 1170/88	Th-230, 1170/88	Ca-137, 82C85000	Ca-137, 82C85000																			
Source Strength in dpm	13800	13800	789563	789563	CA																		
Efficiency	0.13 / 0.15	0.15	0.16 / 0.17	0.18																			
MDC in dpm/100 cm ²	See attached Instrument sheets for material specific backgrounds and MDC's.			Set. <input type="checkbox"/> Unset. <input type="checkbox"/> verify or prompt																			
Background in cpm																							
REASON FOR SURVEY	<input checked="" type="checkbox"/> PROCEDURE NO. FINAL STATUS SURVEY PLAN <input type="checkbox"/> SPECIAL <input type="checkbox"/> ROUTINE																						
Contamination	<input checked="" type="checkbox"/> By SHR <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>																						
Radiation	<input type="checkbox"/> By SHR <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>																						
COMMENTS:																							
1-5 # 185768 6-10 # 185774																							
SADS - See Attached Data Sheet																							
Contamination Survey	ALPHA (TOTAL) 2360 185774		BETA-GAMMA (TOTAL) 2360 185774																				
INSTRUMENT / SERIAL #	ALPHA (TOTAL) 2360 185768		BETA-GAMMA (TOTAL) 2360 185768																				
	ALPHA (TOTAL) N/A		BETA-GAMMA (TOTAL) N/A																				
THE KNOWING & WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.																							
RCS REVIEW: <i>[Signature]</i>				DATE 3.4.04																			

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: A 1209	/ Laboratory-Room	PAGE 2 OF 10
COMMENTS:		SURVEYOR(S): Stephens / Trent	SURVEY NUMBER: 030104-27
		DATE: 03-01-04	
RCS REVIEW:  DATE: 3.4.04		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.	

Grid Intersection __, __




Bkgd Check (cpm)

185768

4 / 341

Grid Intersection __, __



Bkgd Check (cpm)

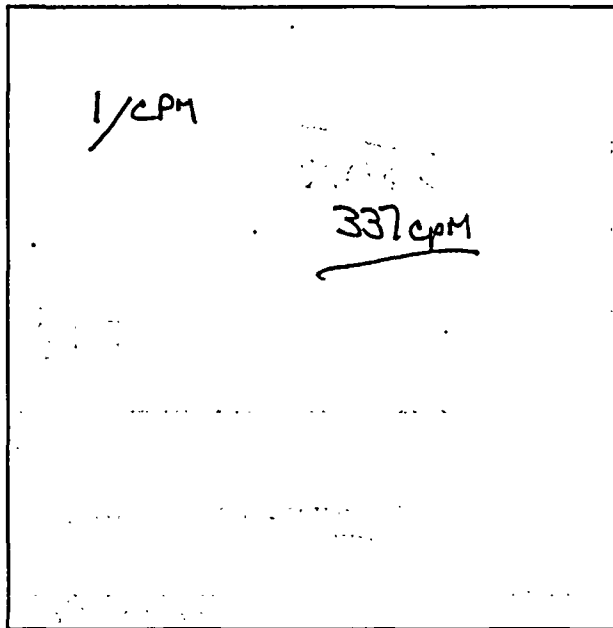
185774

3 / 298

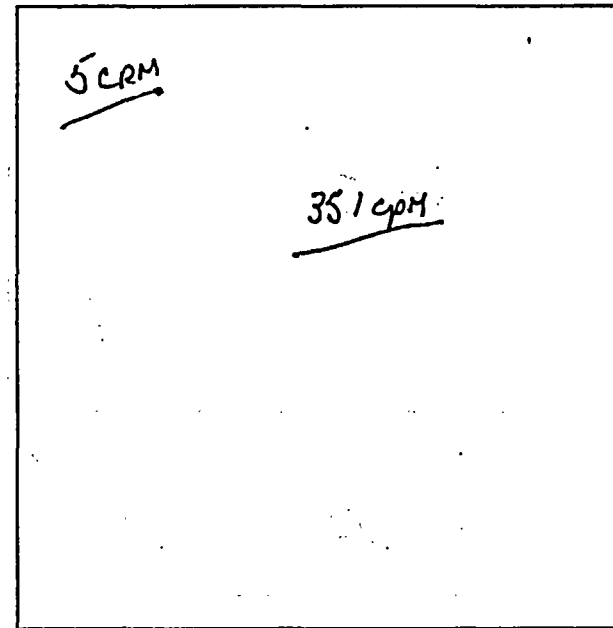
Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: Laboratory-Room A 1209	PAGE 3 OF 10
COMMENTS:	SURVEYOR(S): Stephens/Trent	SURVEY NUMBER: 030104-37
	DATE: 03-01-04	
NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <i>[Signature]</i>	DATE: 3-4-04	

Grid Intersection M.9



Grid Intersection K.7



Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: A 1209	/ Laboratory-Room		PAGE 4 OF 10
COMMENTS:		SURVEYOR(S): Stephens / Trant	SURVEY NUMBER: 030104-27	DATE: 0301-04
		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <i>[Signature]</i> DATE: 3.4.04				

Grid Intersection J, 8

3cpm

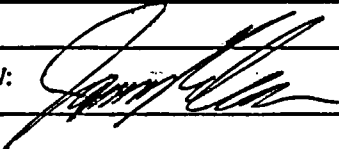
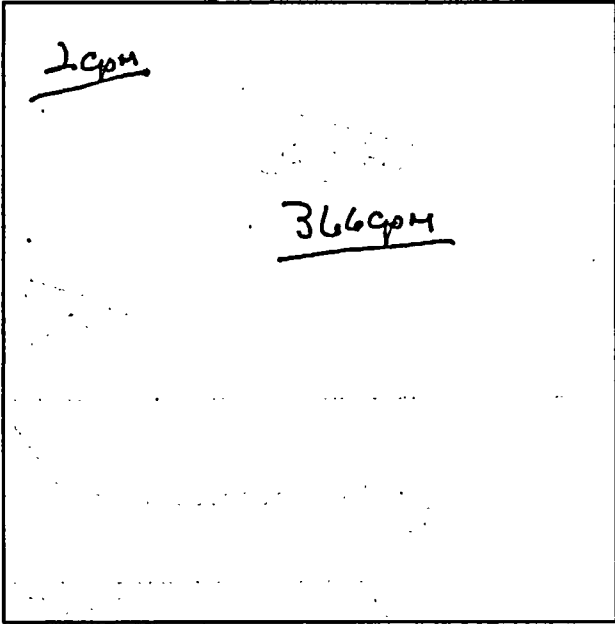
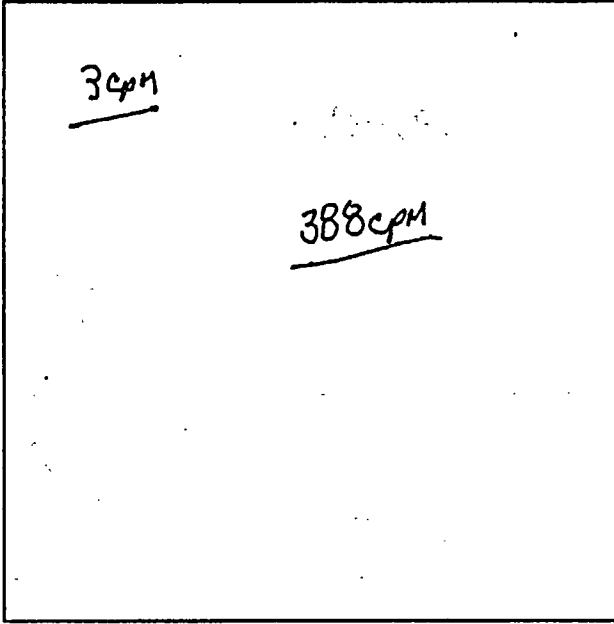
326cpm

Grid Intersection I, 7

3cpm

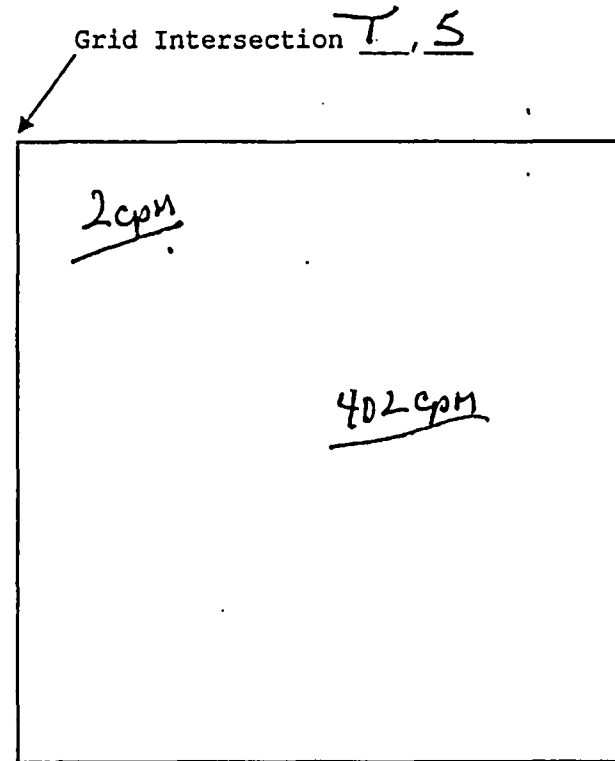
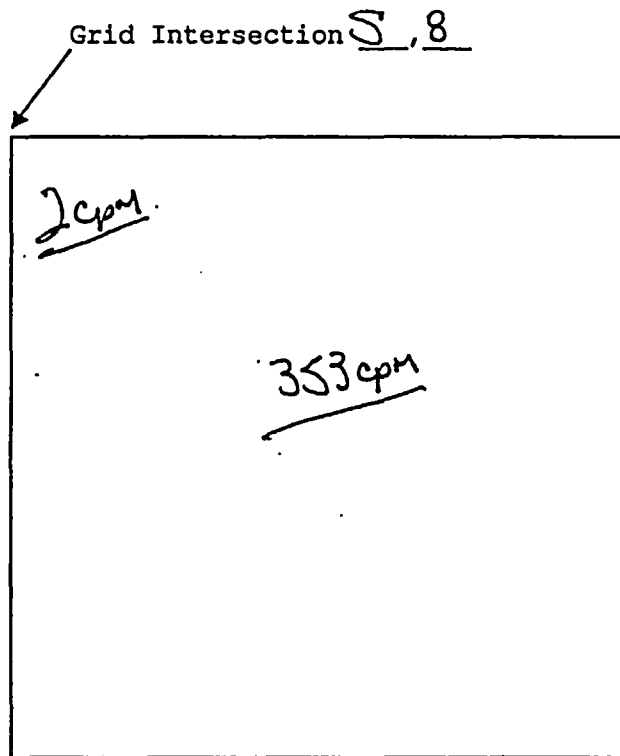
426cpm

Contamination / I nstallation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: A 1209 / Laboratory-Room	PAGE 5 OF 10	
COMMENTS:		SURVEYOR(S): Stephens / Trent	SURVEY NUMBER: 030104-27
		DATE: 03-01-04	
RCS REVIEW:  DATE: 3.7.04		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.	
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Grid Intersection <u>T, 3</u></p>  </div> <div style="text-align: center;"> <p>Grid Intersection <u>Q, 4</u></p>  </div> </div>			

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room <u>A 1209</u>	PAGE <u>6</u> OF <u>10</u>	
COMMENTS:		SURVEYOR(S): <u>Trent / Stephens</u>	SURVEY NUMBER: <u>030104-27</u>
		DATE: <u>030104</u>	
RCS REVIEW: <u>[Signature]</u> DATE: <u>3.4.04</u>		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.	



Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: <u>Room A 1209</u>	/ Laboratory-Room		PAGE 7 OF 10
COMMENTS:		SURVEYOR(S): <u>Stephens / Trent</u>	SURVEY NUMBER: <u>030104-27</u>	DATE: <u>030104</u>
		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <u>[Signature]</u> DATE: <u>3.4.04</u>				

Grid Intersection N, 5

4cpm

375cpm

Grid Intersection E, 8

1cpm

400cpm

MDCRsurveyor Scanning Levels for Specific Materials

23-60

185774

/

Instr. Eff.

0.18 / Setup MDC

1711

Wall Board (WB)

BKGD CPM	271.18	MDCR surveyor	396	gross cpm
----------	--------	------------------	-----	--------------

Floor Tile (FT)

BKGD CPM	347.86	MDCR surveyor	489	gross cpm
----------	--------	------------------	-----	--------------

Wood (wo)

BKGD CPM	250.42	MDCR surveyor	370	gross cpm
----------	--------	------------------	-----	--------------

Concrete Floor (CF)

BKGD CPM	498.62	MDCR surveyor	667	gross cpm
----------	--------	------------------	-----	--------------

Metal (ME)

BKGD CPM	325.46	MDCR surveyor	462	gross cpm
----------	--------	------------------	-----	--------------

Concrete Block (CB)

BKGD CPM	530.62	MDCR surveyor	705	gross cpm
----------	--------	------------------	-----	--------------

Glass (GL)

BKGD CPM	370.34	MDCR surveyor	516	gross cpm
----------	--------	------------------	-----	--------------

Countertop (CT)

BKGD CPM	286.78	MDCR surveyor	415	gross cpm
----------	--------	------------------	-----	--------------

Handwritten:
 198 of 10
 03.04-27
 3.4.04

MDCR surveyor Scanning Levels for Specific Materials

23-60

185768

/

Instr. Eff.

0.17 / Setup MDC

1641

Wall Board (WB)

BKGD CPM	230.00	MDCR surveyor	345	gross cpm
----------	--------	---------------	-----	-----------

Floor tile (FT)

BKGD CPM	275.22	MDCR surveyor	401	gross cpm
----------	--------	---------------	-----	-----------

Wood (wo)

BKGD CPM	210.12	MDCR surveyor	320	gross cpm
----------	--------	---------------	-----	-----------

Concrete Floor (CF)

BKGD CPM	357.50	MDCR surveyor	500	gross cpm
----------	--------	---------------	-----	-----------

Metal (ME)

BKGD CPM	256.10	MDCR surveyor	377	gross cpm
----------	--------	---------------	-----	-----------

Concret Block (CB)

BKGD CPM	446.00	MDCR surveyor	606	gross cpm
----------	--------	---------------	-----	-----------

Glass (GL)

BKGD CPM	304.00	MDCR surveyor	436	gross cpm
----------	--------	---------------	-----	-----------

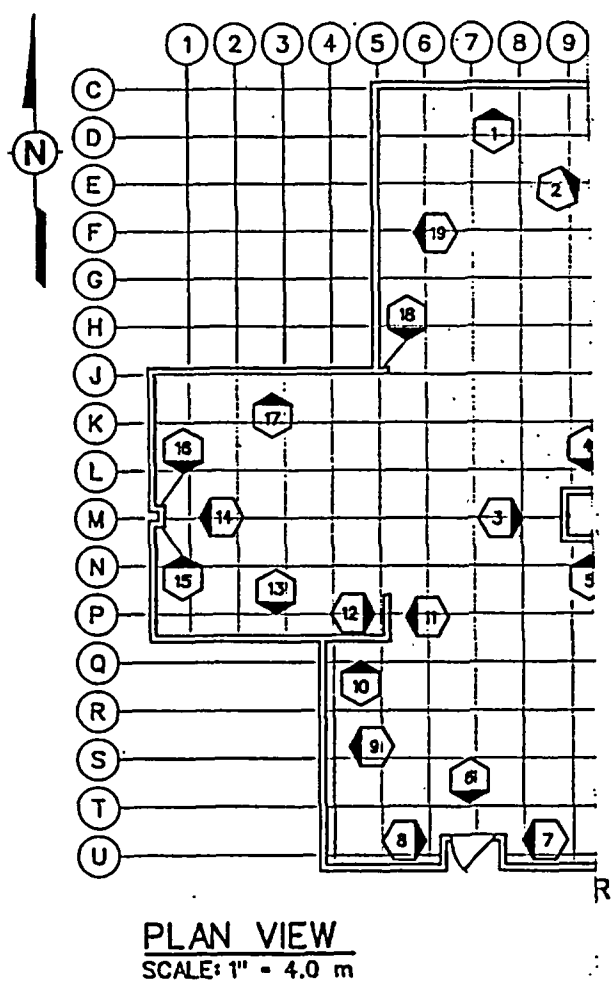
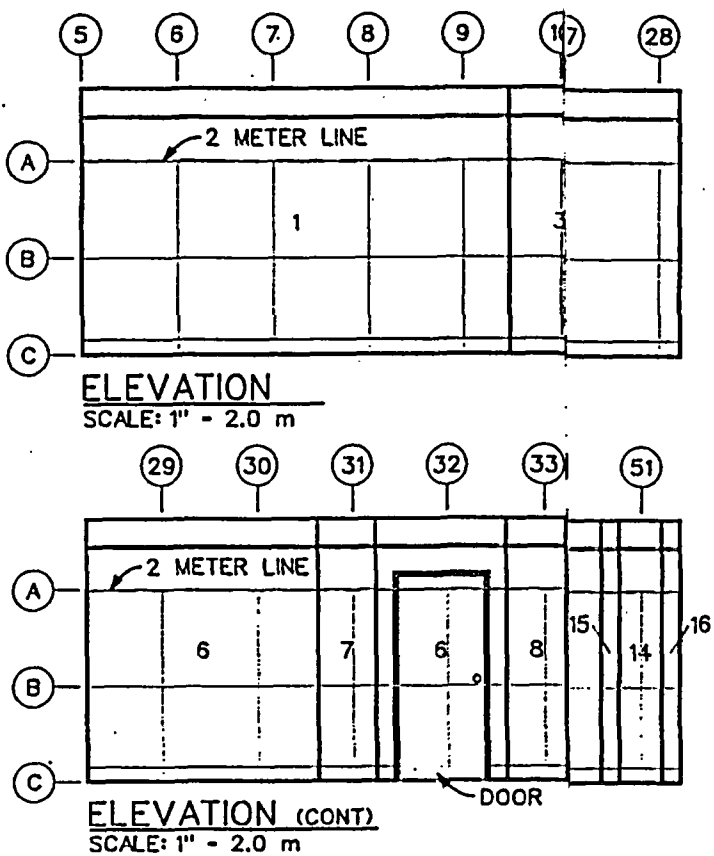
Countertop (CT)

BKGD CPM	232.08	MDCR surveyor	347	gross cpm
----------	--------	---------------	-----	-----------

19 9 of
03 0104-27
3.4.14

030104-27

r2d2-b&w-to-bld.plt
 Standard_Color_Mod.tbl
 12/2/2003
 1:32:59 PM
 2:0.0000 mm / IN.
 ctumlin
 101115_neic_0001.dgn
 DWG. NO.: 101115_neic_0001.dgn
 PROJ. NO.: 101115
 TECH. REVIEW: R. COLLINS
 PROJ. MGR.: R.L. ROGERS
 INITIATOR: R. COLLINS
 CADD REVIEW: C. BENTLEY
 STARTING DATE: 25NOV03
 DRAWN BY: C.E. TUMLIN



NOTES

1. WALL SURFACE AREA: 120.4935 SQ. M.
FLOOR SURFACE AREA: 109.2629 SQ. M.
TOTAL SURFACE AREA: 229.7564 SQ. M.
2. WALL GRID A-1 THROUGH A-4 AND B-1 THROUGH B-4 NOT USED IN ORDER TO MATCH WALL GRID TO FLOOR GRID.

FIGURE 3-3
REFERENCE GRID FOR
LABORATORY A1209

EPA NEIC
DENVER FEDERAL CENTER
LAKEWOOD, COLORADO



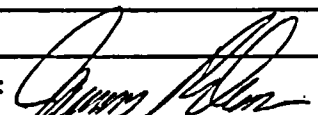
Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT		PROJECT NUMBER: 101115		DATE: 03-01-04		TIME START: 1240		TIME COMPLETE: 1700		PAGE 1 OF 10	
LOCATION: EPA NEIC		SURVEYOR(S): J. STEPHENS / T. TRENT		Alpha		Beta-Gamma		Alpha cpm		Item or Location	
Denver Federal Center, CO		SURVEY NUMBER: 030104-28						Beta cpm			
Denver, CO		MAP ID: LAB A1209						Material			
ACCEPTABLE SURFACE CONTAMINATION LEVELS Loose 20 dpm/100cm ² Alpha 200 dpm/100cm ² Beta-Gamma Total 100 dpm/100cm ² Alpha 1000 dpm/100cm ² Beta-Gamma				ACCEPTABLE SCAN LIMITS MDCR _{survey} Beta MDCR _{survey} Alpha							
Source Check Date		Contamination Surveys				Radiation					
						Surveys					
		a		b		c		d			
		(TOTAL)		(TOTAL)		(TOTAL)		(TOTAL)			
Instrument		184904 / 185768		185774		184904 / 185768		185774		NA	
Source Type and I.D.		Th-230, 1170/88		Th-230, 1170/88		Cs-137, 62CS5000		Cs-137, 62CS5000			
Source Strength in dpm		13800		13800		769505		769505		CS	
Efficiency		0.13 / 0.15		0.15		0.16 / 0.17		0.18			
MDC in dpm/100 cm ²		See attached instrument sheets for material specific backgrounds and MDC's.				Set. <input type="checkbox"/>		Unset. <input type="checkbox"/>			
Background in cpm						Type or grade					
REASON FOR SURVEY											
<input checked="" type="checkbox"/> PROCEDURE NO. FINAL STATUS SURVEY PLAN - DIRECT READINGS											
<input type="checkbox"/> SPECIAL											
<input type="checkbox"/> ROUTINE											
Contamination <input checked="" type="checkbox"/> By Shift <input type="checkbox"/> Day <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>											
Radiation <input type="checkbox"/> By Shift <input type="checkbox"/> Day <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>											
COMMENTS: Item # 1-18 - 2360 185768 19-36 - 2360 185774											
37 - 2360 185768 38 - 2360 185774											
39-43 - 2360 - 185768 44-48 - 2360 185774											
49 - 2360 185768											
SADS - See Attached Data Sheet											
Contamination Survey		ALPHA (TOTAL) 2360, 185768		BETA-GAMMA (TOTAL) 2360, 185768							
INSTRUMENT / SERIAL #		ALPHA (TOTAL) 2360, 185774		BETA-GAMMA (TOTAL) 2360, 185774							
		ALPHA (TOTAL) N/A		BETA-GAMMA (TOTAL) N/A							
THE KNOWING & WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.											
RCS REVIEW [Signature] DATE 3-16-04											

Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT (CONTINUATION SHEET)							PROJECT NUMBER: 101115	DATE: 03-01-04	PAGE 2 OF 10				
LOCATION: EPA NEIC				SURVEYOR(S): J STEPHENS / T. TRENT			COMMENTS:						
Denver Federal Center, Building 53				SURVEY NUMBER: 030104-28									
Denver, CO				MAP ID: LAB A1209									
RCS REVIEW: <i>[Signature]</i>				DATE: 3/16/04									
Item #	Alpha		Beta-Gamma		Alpha cpm	Item or Location	Item #	Alpha		Beta-Gamma		Alpha cpm	Item or Location
	LOOSE	TOTAL	LOOSE	TOTAL	Beta cpm			LOOSE	TOTAL	LOOSE	TOTAL	Beta cpm	
dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material		dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material		
26	NA	-41	NA	-1734	CF	C-26	51						
27	1	-44		-1595		C-27	52						
28		-52		-1625		C-28	53						
29		-42		-1585		C-29	54						
30		-44		-1612		C-30	55						
31		-50		-1398		C-31	56						
32		-45		-1446		C-32	57						
33		-44		-1436		C-33	58						
34		-42		-1540		C-34	59						
35		-41		-1646		C-35	60						
36		-35		-1350	CF	C-36	61						
37		-36		311	WBD	Replicate C-2	62						
38		-6		360	WBD	Replicate C-22	63						
39		-55	-460	-834	CF	BS-1209-01	64						
40		-59		96	WBD	BS-1209-02	65						
41		-60		-228	CF	BS-1209-03	66						
42		-72		-313	CF	BS-1209-04	67						
43		-70		-259	CF	BS-1209-05	68						
44		-37		-1198	CF	BS-1209-06	69						
45		-48		-19	WBD	BS-1209-07	70						
46		-34		25	WBD	BS-1209-08	71						
47		-48		-1180	CF	BS-1209-09	72						
48		-41		-1529	CF	BS-1209-10	73						
49		-55		-486	CF	Replicate BS-1209-01	74						
50	NA						75						

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room LAB A1209	PAGE 3 OF 10
COMMENTS:	SURVEYOR(S): J. Stephens/T. Trent	SURVEY NUMBER: 030104-28 DATE: 03-04-04
RCS REVIEW:  DATE: 3.16.04		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.


Background Checks (cpm)

2360	185774	
Alpha	Beta	Time
3	298	0800
3	353	1630

Background Checks (cpm)

2360	185768	
Alpha	Beta	Time
4	341	0800
4	317	1630

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room LAB A1209	PAGE 4 OF 10
COMMENTS:	SURVEYOR(S): T. TRENT / J. STEPHENS	SURVEY NUMBER: 030104-28
	DATE: 03-01-04	
NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: 	DATE: 3.16.04	

Replicate Count C-2

Gross Total Counts

ORIGINAL

28 / 4898

Replicate

26 / 4787

Replicate Count C-22

Gross Total Counts


ORIGINAL

28 / 5217

Replicate

27 / 5212

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room LAB A1209	PAGE 5 OF 10
COMMENTS:	SURVEYOR(S): T. TRENT. / J. STEPHENS	SURVEY NUMBER: 030104-28
	DATE: 03-01-04	
NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: 	DATE: 3.16.04	

Replicate Count BS-1209-01

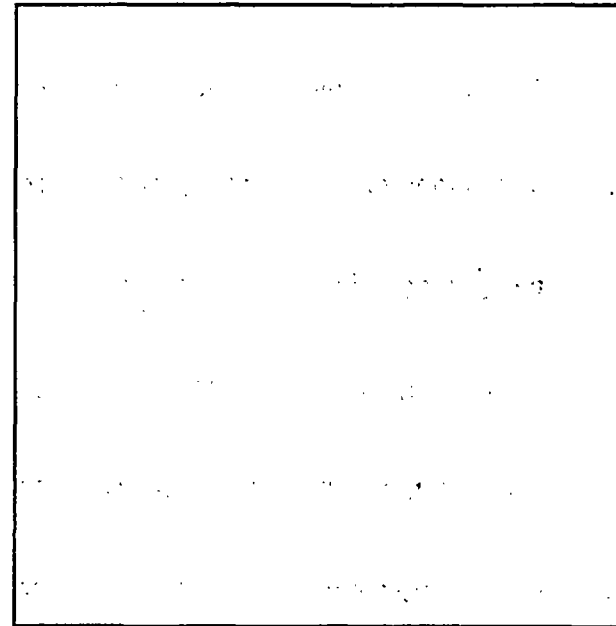
Gross Total Counts

ORIGINAL

44 / 4623

Replicate

44 / 4582



kg 6 of 10

030104-28

John
3.16.04

Material Specific Background and MDC Sheet for Alpha Measurements

Instrument/SN:

Ludlum 2360 / 185774

Background count time 5 minutes

Probe/SN:

Ludlum 43-68 / RN012713

Total Instrument Efficiency 0.0375 dpm/cpm

Wall Board	WB	2.30	cpm	MDC	59	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	FT	1.96	cpm	MDC	55	dpm/100cm2	Sample Count Time	15.00	min
Wood	WO	2.24	cpm	MDC	58	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	CF	3.54	cpm	MDC	72	dpm/100cm2	Sample Count Time	15.00	min
Metal	ME	1.10	cpm	MDC	42	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	CB	1.72	cpm	MDC	51	dpm/100cm2	Sample Count Time	15.00	min
Glass	GL	3.74	cpm	MDC	74	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	CT	2.30	cpm	MDC	59	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	5.04	cpm	MDC	85	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	2.06	cpm	MDC	56	dpm/100cm2	Sample Count Time	15	min

Material Specific Background and MDC Sheet for Beta Measurements

Pa 1 of 10
30104-28
J. Miller
3.16.04

Instrument/SN: Ludlum 2360 / 185774

Background Count Time 5.00 minutes

Probe/SN: Ludlum 43-68 / RN012713

Total Instrument Efficiency 0.0900 dpm/cpm

Wall Board	(WB)	271.18	cpm	MDC	248	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	(FT)	347.86	cpm	MDC	281	dpm/100cm2	Sample Count Time	15.00	min
Wood	(WO)	250.42	cpm	MDC	239	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	(CF)	498.62	cpm	MDC	336	dpm/100cm2	Sample Count Time	15.00	min
Metal	(ME)	325.46	cpm	MDC	272	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	(CB)	530.62	cpm	MDC	347	dpm/100cm2	Sample Count Time	15.00	min
Glass	(GL)	370.34	cpm	MDC	290	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	(CT)	286.78	cpm	MDC	255	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	393.98	cpm	MDC	299	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	306.64	cpm	MDC	264	dpm/100cm2	Sample Count Time	15.00	min

Material Specific Background and MDC Sheet for Alpha Measurements

Pg 8 of 10
030104-28

John
3.16.04

Instrument/SN: Ludlum 2360 / 185768

Background count time 5 minutes

Probe/SN: Ludlum 43-68 / RN012714

Total Instrument Efficiency 0.0375 dpm/cpm

Wall Board	WB	1.82	cpm	MDC	53	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	FT	2.22	cpm	MDC	58	dpm/100cm2	Sample Count Time	15.00	min
Wood	WO	3.10	cpm	MDC	68	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	CF	5.52	cpm	MDC	89	dpm/100cm2	Sample Count Time	15.00	min
Metal	ME	1.84	cpm	MDC	53	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	CB	2.50	cpm	MDC	61	dpm/100cm2	Sample Count Time	15.00	min
Glass	GL	4.38	cpm	MDC	79	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	CT	1.68	cpm	MDC	51	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	16.10	cpm	MDC	149	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	3.42	cpm	MDC	71	dpm/100cm2	Sample Count Time	15	min

Material Specific Background and MDC Sheet for Beta Measurements

Pg 4 of 10
30104-28
J. Miller
3.16.04

Instrument/SN: Ludlum 2360 / 185768

Background Count Time 5.00 minutes

Probe/SN: Ludlum 43-68 / RN012714

Total Instrument Efficiency 0.0850 dpm/cpm

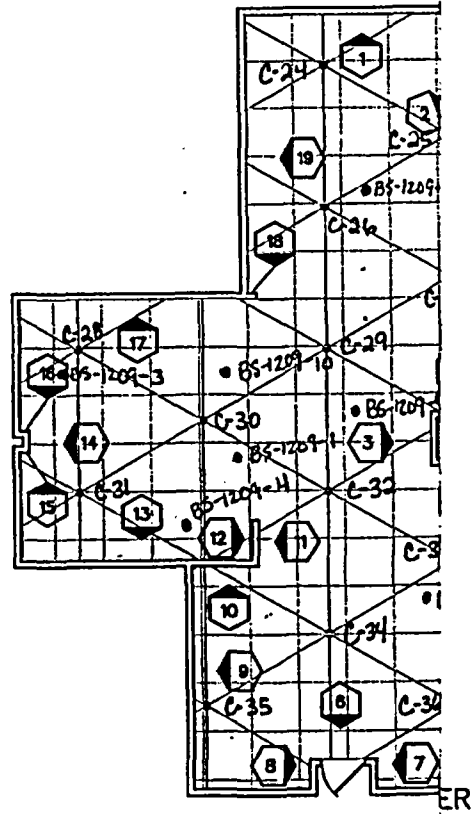
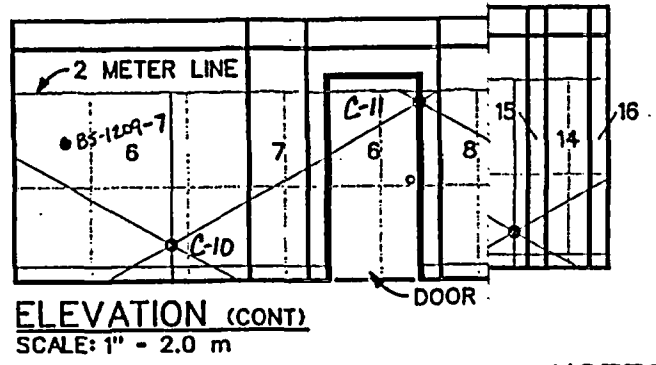
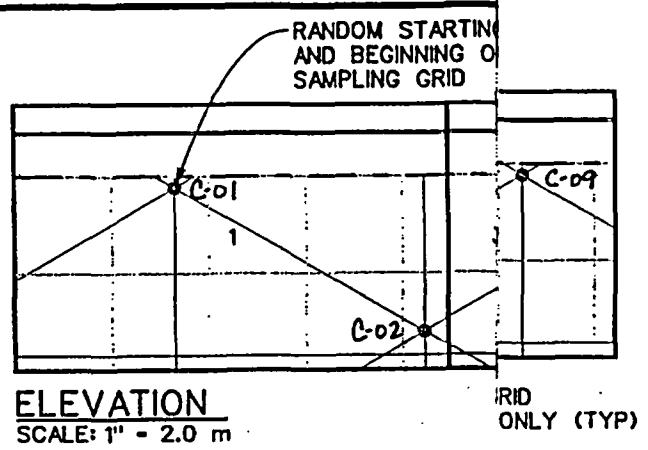
Wall Board	(WB)	230.00	cpm	MDC	242	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	(FT)	275.22	cpm	MDC	265	dpm/100cm2	Sample Count Time	15.00	min
Wood	(WO)	210.12	cpm	MDC	232	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	(CF)	357.50	cpm	MDC	302	dpm/100cm2	Sample Count Time	15.00	min
Metal	(ME)	256.10	cpm	MDC	256	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	(CB)	446.00	cpm	MDC	337	dpm/100cm2	Sample Count Time	15.00	min
Glass	(GL)	304.00	cpm	MDC	278	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	(CT)	232.08	cpm	MDC	244	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	385.38	cpm	MDC	313	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	285.78	cpm	MDC	270	dpm/100cm2	Sample Count Time	15.00	min

030104-28
3/16/04

STARTING DATE: 25NOV03	INITIATOR: R. COLLINS	TECH. REVIEW: R. COLLINS	DWG. NO.: 101115_neic_0002.dgn
DRAWN BY: C.E. TUMLIN	CADD REVIEW: C. BENTLEY	PROJ. MGR.: R.L. ROGERS	PROJ. NO.: 101115

r2d2-b&w-tablet.dgn
Standard_Color_Mod.tbl
12/2/2003
1:33:40 PM

2:0.0000 m:mm / IN.
ctumlin
101115_neic_0002.dgn



NOTES

1. WALL SURFACE AREA: 120.4935 SQ. M.
FLOOR SURFACE AREA: 109.2629 SQ. M.
TOTAL SURFACE AREA: 229.7564 SQ. M.
2. THE LENGTH OF EACH LEG OF THE TRIANGULAR SAMPLING GRID IS 2.974 METERS

FIGURE 3-4
TRIANGULAR GRID FOR
LABORATORY A1209

EPA NEIC
DENVER FEDERAL CENTER
LAKEWOOD, COLORADO

Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT		PROJECT NUMBER: 101115		DATE: 030104	TIME START: 1300	TIME COMPLETE: 1320	PAGE 1 OF 3
LOCATION: EPA NEIC <i>RM A1209</i>		SURVEYOR(S): <i>Stephens / Trembl</i>		Alpha		Beta-Gamma	Item or Location
Denver Federal Center, CO		SURVEY NUMBER: 030104-29		Loose		Total	
Denver, CO		MAP ID: LAB A1209		Loose		Total	
ACCEPTABLE SURFACE CONTAMINATION LEVELS Loose 20 dpm/100cm² Alpha 200 dpm/100cm² Beta-Gamma Total 100 dpm/100cm² Alpha 1,000 dpm/100cm² Beta-Gamma				ACCEPTABLE SCAN LIMITS			
Source Check Data		Contamination Surveys		Radiation Surveys			
Instrument		*NOTE	NA	*NOTE	NA	NA	
Source Type and ID.							
Source Strength in dpm						µCi	
Efficiency							
MDC in dpm/100 cm²						Set. <input type="checkbox"/> Unset. <input type="checkbox"/>	
Background in cpm						min/hr or per/hr	
REASON FOR SURVEY: <input checked="" type="checkbox"/> PROCEDURE NO. <u>FINAL STATUS SURVEY PLAN</u> <input type="checkbox"/> SPECIAL <u>SMEARS</u> <input type="checkbox"/> ROUTINE _____ Contamination: <input checked="" type="checkbox"/> By SHR <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Radiation: <input type="checkbox"/> By SHR <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>							
COMMENTS: NOTE: SEE DATA PACKAGE FROM PARAGON ANALYTICS, INC. FOR REMOVABLE ACTIVITY RESULTS AND INSTRUMENT INFORMATION.							
Contamination Survey		ALPHA (LOOSE)		BETA-GAMMA (LOOSE)			
INSTRUMENT / SERIAL #		PERFORMED BY PARAGON ANALYTICS, INC.		PERFORMED BY PARAGON ANALYTICS, INC.			
		ALPHA (TOTAL) N/A		BETA-GAMMA (TOTAL) N/A			
Radiation Survey		BETA-GAMMA Meter		BETA-GAMMA Probe			
INSTRUMENT / SERIAL #		N/A		N/A			
THE KNOWING & WILLFUL RECORDING OF FALSE, FETTEROUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.							
RCS REVIEW: <i>[Signature]</i>				DATE: 3-4-04			

Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT (CONTINUATION SHEET)						PROJECT NUMBER: 101115		DATE: 030/04		PAGE 2 OF 3	
LOCATION: EPA NEIC				SURVEYOR(S): Stephens / Truett		COMMENT:					
Denver Federal Center, Building 53				SURVEY NUMBER: 030/04-29							
Denver, CO				MAP ID: LAB A1209							
RCS REVIEW <i>[Signature]</i>						DATE 3-4-04					

Item #	Alpha		Beta-Gamma		Alpha cpm	Item or Location	Item #	Alpha		Beta-Gamma		Alpha cpm	Item or Location
	LOOSE	TOTAL	LOOSE	TOTAL	Beta cpm			LOOSE	TOTAL	LOOSE	TOTAL	Beta cpm	
	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material			dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material	
26						C26	51						
27						C-27	52						
28						C-28	53						
29						C-29	54						
30						C-30	55						
31						C-31	56						
32						C-32	57						
33						C-33	58						
34						C-34	59						
35						C-35	60						
36						C-36	61						
37						Duplicate #20	62						
38						Duplicate #36	63						
39						BS A1209-01	64						
40						02	65						
41						03	66						
42						04	67						
43						05	68						
44						06	69						
45						07	70						
46						08	71						
47						09	72						
48						10	73						
49							74						
50							75						

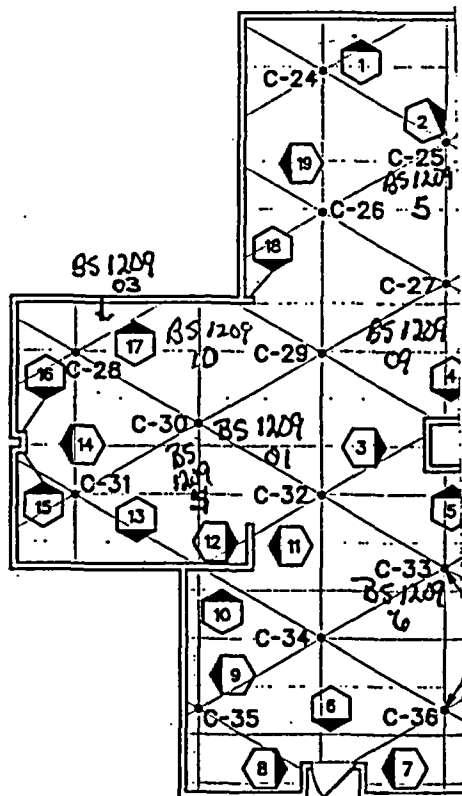
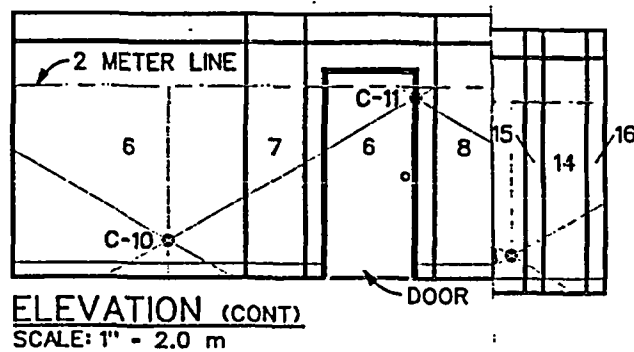
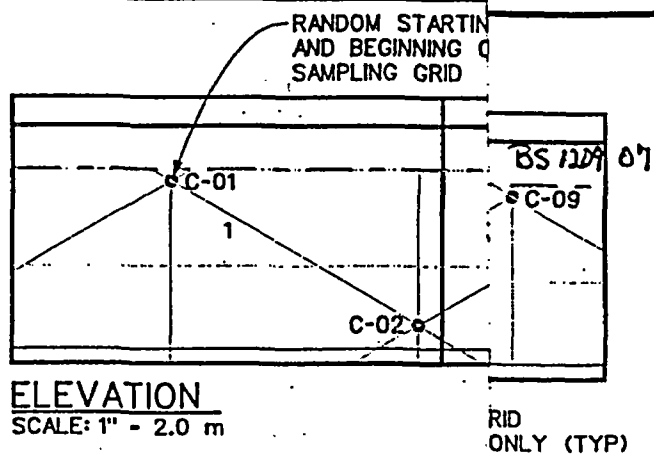
Handwritten signature

STARTING DATE: 25NOV03	INITIATOR: R.COLLINS	TECH. REVIEW: R.COLLINS	DWG. NO.: 101115_rele_0002.dgn
DRAWN BY: C.E.TUMLIN	CADD REVIEW: C.BENTLEY	PROJ. MGR.: R.L.ROGERS	PROJ. NO.: 101115

```

r2d2=bw=tblord.plt
Standard_Color_Mod.tbl
12/17/03
11:32:06 AM
101115_netc_0002.dgn
tblord
2:0.0000 mimm / IN.

```



NOTES

1. WALL SURFACE AREA: 120.4935 SQ. M.
FLOOR SURFACE AREA: 109.2629 SQ. M.
TOTAL SURFACE AREA: 229.7564 SQ. M.
2. THE LENGTH OF EACH LEG OF THE
TRIANGULAR SAMPLING GRID IS
2.974 METERS

FIGURE 3-4
TRIANGULAR SAMPLING GRID FOR
LABORATORY A1209

EPA NEIC
DENVER FEDERAL CENTER
LAKEWOOD, COLORADO



Shaw Shaw Environmental, Inc.

PLAN VIEW
SCALE: 1" = 4.0 m



PARAGON ANALYTICS

225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

March 26, 2004

Mr. Eddie Weaver
Shaw E & I
312 Directors Drive
Knoxville, TN 37923

Re: Paragon Workorder: 04-03-062
Client Project Name: EPA NEIC EDDP
Client Project Number: 101115

Dear Mr. Weaver:

Fifty wipe samples were received from Shaw E & I on March 8, 2004. The samples were scheduled for Gross Alpha/Beta (pages 1-205) analysis. The results for this analysis are contained in the enclosed reports.

Thank you for your confidence in Paragon Analytics. Should you have any questions, please call.

Sincerely,

Paragon Analytics
Debbie Fazio
Project Manager

DJF/ja
Enclosure: Report

MAR 30 2004

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0403062

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
030104-28-01	0403062-1		WIPE	02-Mar-04	11:15
030104-28-02	0403062-2		WIPE	02-Mar-04	11:15
030104-28-03	0403062-3		WIPE	02-Mar-04	11:15
030104-28-04	0403062-4		WIPE	02-Mar-04	11:15
030104-28-05	0403062-5		WIPE	02-Mar-04	11:15
030104-28-06	0403062-6		WIPE	02-Mar-04	11:15
030104-28-07	0403062-7		WIPE	02-Mar-04	11:15
030104-28-08	0403062-8		WIPE	02-Mar-04	11:15
030104-28-09	0403062-9		WIPE	02-Mar-04	11:15
030104-28-10	0403062-10		WIPE	02-Mar-04	11:15
030104-28-11	0403062-11		WIPE	02-Mar-04	11:15
030104-28-12	0403062-12		WIPE	02-Mar-04	11:15
030104-28-13	0403062-13		WIPE	02-Mar-04	11:15
030104-28-14	0403062-14		WIPE	02-Mar-04	11:15
030104-28-15	0403062-15		WIPE	02-Mar-04	11:15
030104-28-16	0403062-16		WIPE	02-Mar-04	11:15
030104-28-17	0403062-17		WIPE	02-Mar-04	11:15
030104-28-18	0403062-18		WIPE	02-Mar-04	11:15
030104-28-19	0403062-19		WIPE	02-Mar-04	11:15
030104-28-20	0403062-20		WIPE	02-Mar-04	11:15
030104-28-21	0403062-21		WIPE	02-Mar-04	11:15
030104-28-22	0403062-22		WIPE	02-Mar-04	11:15
030104-28-23	0403062-23		WIPE	02-Mar-04	11:15
030104-28-24	0403062-24		WIPE	02-Mar-04	11:15
030104-28-25	0403062-25		WIPE	02-Mar-04	11:15
030104-28-26	0403062-26		WIPE	02-Mar-04	11:15
030104-28-27	0403062-27		WIPE	02-Mar-04	11:15
030104-28-28	0403062-28		WIPE	02-Mar-04	11:15
030104-28-29	0403062-29		WIPE	02-Mar-04	11:15
030104-28-30	0403062-30		WIPE	02-Mar-04	11:15
030104-28-31	0403062-31		WIPE	02-Mar-04	11:17
030104-28-32	0403062-32		WIPE	02-Mar-04	11:17



Shaw Environmental & Infrastructure, Inc.

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

Reference Document No: AW09030104-28PAGE 1 of 3

Bill to:

0403062

Project No. 101115
 Project name EPA NEIC EDDP
 Sample Coordinator James Nelson / 303-233-1279
 Project Manager Randy Rodgers / 865-694-7457
 Sample Team Members J. TRENT
J. STEPHENS

Sample Shipment Date _____
 Lab Destination Paragon Analytics, Inc.
 Lab Contact Debbie FAZIO
 Project Contact/phone Ben Dettorre / 865-670-2669
 Carrier Waybill No. _____

Report to:

Ben Dettorre
312 Directors Drive
Knoxville, TN 37923

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
030104-28 - 01	Rm A1709 FSS Location C-01	3-2-04 1115	Smear		
- 02	- 02				
- 03	- 03				
- 04	- 04				
- 05	- 05				
- 06	- 06				
- 07	- 07				
- 08	- 08				

Special Instructions:

Possible Hazard Identification:

Non-haz ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:

Return to Client ☐ Disposal by Lab ☒ Archive ☐

Turnaround Time Required:

Normal ☒ Rush ☐

QC Level:

I. ☐ II. ☐ III. ☐

Project Specific: Defined in OAPP

1. Relinquished by

(Signature/Affiliation)

Date: 3-5-04Time: 0800

1. Received by

(Signature/Affiliation)

Date: 3-5-04Time: 0800

2. Relinquished by

(Signature/Affiliation)

Date: _____

Time: _____

2. Received by

(Signature/Affiliation)

Date: 3-5-04Time: 1635

3. Relinquished by

(Signature/Affiliation)

Date: _____

Time: _____

3. Received by

(Signature/Affiliation)

Date: _____

Time: _____

Comments:

ANALYSIS: Gross Alpha/Beta - MDC (REPORTING LIMITS) of <1.1 dpm/smear for alpha
 <100 dpm/smear for beta



ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

 0403062
 Reference Document No: A1209-030104-28
Project Name/Project No. EPA NEIC EDDP / 101115Lab Destination Paragon Analytics, Inc.

Sample Shipment Date _____

ONE SAMPLE PER LINE

	Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
⑨	030104-28-09	RMA1209 FSS Location C-09	3-2-04 1115	Smear		
10	-10					
11	-11					
12	-12					
13	-13					
14	-14					
15	-15					
16	-16					
17	-17					
18	-18					
19	-19					
20	-20					
21	-21					
22	-22					
23	-23					
24	-24					
25	-25					
26	-26					
27	-27					
28	-28					
29	-29					
30	✓ -30	✓	✓	✓		



ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

Reference Document No: 040306-2
A1209-030104-28Project Name/Project No. EPA NEIC EDDP / 101115 Lab Destination Paragon Analytics, Inc. Sample Shipment Date _____

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
31 030104-28-31	Rm A1209 FSS Location C-31	3-2-04 1117	Smear		
32 32	-32				
33 33	-33				
34 34	-34				
35 35	-35				
36 36	↓ -36				
37 37	BS-1209-01				
38 38	-02				
39 39	-03				
40 40	-04				
41 41	-05				
42 42	-06				
43 43	-07				
44 44	-08				
45 45	-09				
46 46	-10				
47 -20 FD	Rm 1209 FSS Loc C-20 Field Dup				
48 -36 FD	↓ C-36 Field Dup				
49 -45 FD	BS-1209-09 Field Dup				
50 ↓ -FB	Field Blank	↓	↓		
51	N				
52	A				

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Shaw Knox Veric WORKORDER NO: 0403062
 PROJECT MANAGER: DF INITIALS: One DATE: 3/6/04

1. Does this project require any special handling in addition to standard Paragon procedures?		Yes	<u>No</u>
IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.)		Yes	<u>No</u>
2. Are custody seals on shipping containers intact? How many custody seals are provided?	<u>N/A</u>	Yes	<u>No</u>
3. Are the custody seals on sample containers intact?	<u>N/A</u>	<u>Yes</u>	<u>No</u>
4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos?		Yes	<u>No</u>
5. Is the COC complete?	<u>N/A</u>	<u>Yes</u>	<u>No</u>
Relinquished: Yes <u>X</u> No ___ Analyses Requested: Yes <u>X</u> No ___			
6. Is the COC in agreement with the samples received?	<u>N/A</u>	<u>Yes</u>	<u>No</u>
No. of Samples: Yes <u>X</u> No ___ Sample ID's: Yes <u>X</u> No ___			
Matrix: Yes <u>X</u> No ___ No. of Containers: Yes <u>7</u> No ___			
7. Were COC (if applicable) and sample labels legible?		<u>Yes</u>	<u>No</u>
8. Were airbills present and/or removable?	<u>N/A</u>	Yes	<u>No</u>
9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)?	<u>N/A</u>	Yes	<u>No</u>
Are all aqueous non-preserved samples at the correct pH?		Yes	<u>No</u>
10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers?		<u>Yes</u>	<u>No</u>
11. Are all samples within holding times for the requested analyses?		<u>Yes</u>	<u>No</u>
12. Were all sample containers received intact? (not broken or leaking, etc.)		<u>Yes</u>	<u>No</u>
13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide, radon), headspace free? Size of bubble: ___ < green pea; ___ > green pea (List sample IDs and affected containers on Page 2)	<u>N/A</u>	Yes	<u>No</u>
14. Were samples checked for and free from the presence of residual chlorine?	<u>N/A</u>	Yes	<u>No</u>
15. Were the sample(s) shipped on ice?	<u>N/A</u>	Yes	<u>No</u>
16. Were cooler temperatures measured at 0.1 - 6 °C? IR Gun Used*: 1 2	<u>N/A</u>	Yes	<u>No</u>
17. Were all samples cooled that should have been cooled?	<u>N/A</u>	Yes	<u>No</u>

Cooler #'s BX
 Temperature ambient °C
 Project Manager Signature / Date: Debbie Frizio 3/9/04

A NO RESPONSE TO ANY QUESTION EXCEPT # 1 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM

- * IR Gun #1 (original): Raytek, SN SC-PM3/T29403
- IR Gun #2 (newer): Oakton, SN 2SCIR1201

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: SHAW KNOWVILLE (NEIC) WORKORDER NO: _____

PROJECT MANAGER: D. Fazio INITIALS: D DATE: 3/9/04

- ☐ Custody seals broken (on outside of shipping container or on sample containers).
- ☒ No Chain-of-Custody (COC) present.
- ☐ Number of samples on the COC do not match the number of samples received.
- ☐ Aqueous samples not preserved correctly (see pH discussion below).
- ☐ SVOC samples contained residual chlorine (list sample IDs and affected containers below).
- ☐ Samples received at inappropriate temperature.
- ☐ Insufficient sample to perform requested analyses.
- ☐ Extraction or analytical holding times expired in transit.
- ☐ Broken/leaking bottles and intact bottles received in same cooler (list affected sample IDs below).
- ☐ No analyses requested.
- ☐ Incorrect sample type received.
- ☐ VOAs, reactive CN/S, radon not headspace free (list sample IDs and affected vials below).
- ☐ Airbills not present and/or removable (record applicable shipper's tracking number below).
- ☐ Other (describe below).

Describe discrepancy:

WIPES FOR REFERENCE DOCUMENTS: A1209-030104-28 & A1209-030104-828
WERE RECEIVED 3/8/04 1635. 3/9/04

CHAINS RECEIVED BY FACSIMILE 3/9/04

REF DOCUMENT A1209-030104-28 sent to PARAGON in error. Courier to
PICK UP and return to SHAW 3/9/04 Per JAMES NELSON

Was the client contacted? ___ No; ___ Yes: Name _____ Date/Time _____

Was the pH of any sample adjusted by the laboratory? ___ No; ___ Yes (see Table below):

NOTE: No pH adjustments shall be made without prior consent of Project Manager. After pH adjustment, hold metals and radchem samples ≥ 16 hr before analysis.

Sample ID	Initial pH	Final pH (wait 30 min)	Type of Reagent Used	Lot No. of Reagent Used	Initials / Date / Time

Was the laboratory directed to proceed with the analysis of any samples yielding the presence of residual chlorine? ___ No; ___ Yes (see notes above).

Project Manager Signature / Date: Debbie Fazio 3/9/04



Paragon Analytics

Radiochemistry Case Narrative

Gross Alpha/Beta

Shaw E & I
EPA NEIC EDDP / 101115
Paragon WO 0403062

1. This report consists of the analytical results and supporting documentation for 50 filter samples received by Paragon on 3/8/04.
2. These samples were prepared according to Paragon Analytics procedure SOP702R16.
3. The samples submitted by the client were placed in stainless steel counting planchets and were analyzed for gross alpha and beta activity by gas flow proportional counting according to Paragon Analytics procedure PA SOP724R8. The analyses were completed on 3/25/04. Calibrations and calculations are defined in Paragon Analytics procedure PA SOP702R16. Gross Alpha and Gross Beta results are referenced to NIST traceable planchet sources containing ^{241}Am and ^{90}Sr , respectively.
4. The analysis results for these samples are reported on an 'as received' basis in units of DPM/sample.
5. Sample volumes were insufficient to allow preparation of a duplicate. A duplicate analysis of samples 0403061-4,-14,-26,-36,-45 was performed in lieu of a prepared duplicate. Please refer to cross reference table for client IDs.
6. PAI follows the convention outlined in ANSI N42.23 for reporting significant digits in the TPU and MDC results. ANSI N42.23 states that the TPU result should be rounded to two significant digits and that the MDC result should be rounded to the same decimal place as the TPU result. In practice, this could result in an MDC result with a reported value of 0 for samples with significant activity, including the batch laboratory control sample.
7. The magnitude of the negative alpha activity for sample 030104-28-02 (Paragon ID 0403062-2) is greater than the 2 sigma TPU. The analyst's review of the data does not indicate a problem with the instrument data or the subsequent reporting systems. The data quality is not believed to be affected and the results are submitted without qualification. Under typical conditions, where background level sample data is normally distributed and analyzed by paired observations, this event is likely to occur at least 2.5% of the time.

000001

8. No anomalous situations were encountered during the preparation or analysis of these samples. All quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Leah Balko
Leah Balko
Radiochemistry Instrument Technician

3/26/04
Date

Clare Seaton
Radiochemistry Final Data Review

3/26/04
Date

000002

PARAGON ANALYTICS
Radiochemistry Data Package

Section 1

**SAMPLE RESULTS
SUMMARY**

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Page: 1 of 12

Reported on: Friday, March 26, 2004
9:09:13 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-1	030104-28-01	Sample	GROSS ALPHA	-0.01 +/- 0.24	0.65	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-1	030104-28-01	Sample	GROSS BETA	0.14 +/- 0.61	1.39	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-2	030104-28-02	Sample	GROSS ALPHA	-0.31 +/- 0.29	0.90	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-2	030104-28-02	Sample	GROSS BETA	-0.12 +/- 0.58	1.37	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-3	030104-28-03	Sample	GROSS ALPHA	0.02 +/- 0.31	0.77	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-3	030104-28-03	Sample	GROSS BETA	0.16 +/- 0.63	1.42	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-4	030104-28-04	Sample	GROSS ALPHA	-0.06 +/- 0.33	0.87	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-4	030104-28-04	Sample	GROSS BETA	1.01 +/- 0.71	1.42	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-5	030104-28-05	Sample	GROSS ALPHA	0.18 +/- 0.31	0.67	DPM/sample	WIPE	AB040312-8	3/19/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 1 of 12

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403062

Page: 2 of 12
 Reported on: Friday, March 26, 2004
 9:09:13 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-5	030104-28-05	Sample	GROSS BETA	-0.14 +/- 0.61	1.43	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-6	030104-28-06	Sample	GROSS ALPHA	0.45 +/- 0.37	0.66	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-8	030104-28-06	Sample	GROSS BETA	0.58 +/- 0.70	1.49	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-7	030104-28-07	Sample	GROSS ALPHA	0.08 +/- 0.28	0.65	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-7	030104-28-07	Sample	GROSS BETA	0.26 +/- 0.66	1.47	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-8	030104-28-08	Sample	GROSS ALPHA	-0.12 +/- 0.27	0.77	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-8	030104-28-08	Sample	GROSS BETA	0.66 +/- 0.69	1.45	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-9	030104-28-09	Sample	GROSS ALPHA	-0.05 +/- 0.24	0.68	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-9	030104-28-09	Sample	GROSS BETA	0.01 +/- 0.61	1.42	DPM/sample	WIPE	AB040312-8	3/19/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics
 LIMS Version: 4.347C

Page 2 of 12

20006

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Page: 3 of 12

Reported on: Friday, March 26, 2004
9:09:13 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-10	030104-28-10	Sample	GROSS ALPHA	0.22 +/- 0.33	0.68	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-10	030104-28-10	Sample	GROSS BETA	0.26 +/- 0.65	1.44	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-11	030104-28-11	Sample	GROSS ALPHA	0.19 +/- 0.34	0.73	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-11	030104-28-11	Sample	GROSS BETA	0.51 +/- 0.75	1.64	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-12	030104-28-12	Sample	GROSS ALPHA	-0.01 +/- 0.26	0.68	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-12	030104-28-12	Sample	GROSS BETA	0.38 +/- 0.72	1.58	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-13	030104-28-13	Sample	GROSS ALPHA	0.19 +/- 0.33	0.71	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-13	030104-28-13	Sample	GROSS BETA	0.34 +/- 0.62	1.36	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-14	030104-28-14	Sample	GROSS ALPHA	0.13 +/- 0.31	0.70	DPM/sample	WIPE	AB040312-8	3/19/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 3 of 12

90000

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403062

Page: 4 of 12
 Reported on: Friday, March 26, 2004
 9:09:13 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-14	030104-28-14	Sample	GROSS BETA	1.14 +/- 0.77	1.54	DPM/sample	WIPE	AB040312-8	3/19/04	U
0403062-15	030104-28-15	Sample	GROSS ALPHA	0.14 +/- 0.29	0.64	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-15	030104-28-15	Sample	GROSS BETA	-0.20 +/- 0.59	1.40	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-16	030104-28-16	Sample	GROSS ALPHA	0.30 +/- 0.37	0.76	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-16	030104-28-16	Sample	GROSS BETA	-0.49 +/- 0.62	1.49	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-17	030104-28-17	Sample	GROSS ALPHA	-0.02 +/- 0.25	0.66	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-17	030104-28-17	Sample	GROSS BETA	0.68 +/- 0.69	1.45	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-18	030104-28-18	Sample	GROSS ALPHA	0.29 +/- 0.36	0.74	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-18	030104-28-18	Sample	GROSS BETA	0.59 +/- 0.69	1.46	DPM/sample	WIPE	AB040312-8	3/22/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
 LT - Result is less than Requested MDC, greater than sample specific MDC.
 Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
 Y2 - Chemical Yield outside default limits.
 M - The requested MDC was not met.
 M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
 MDC - Minimum Detectable Concentration (see PAI SOP 709)
 BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics
 LIMS Version: 4.347C

Page 4 of 12

00007

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Laboratory Name: Paragon Analytics

Page: 5 of 12

Client Project Name: EPA NEIC EDDP

PAI Work Order: 0403062

Reported on: Friday, March 26, 2004

Client Project Number: 101115

9:09:14 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-19	030104-28-19	Sample	GROSS ALPHA	0.14 +/- 0.28	0.62	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-19	030104-28-19	Sample	GROSS BETA	0.50 +/- 0.66	1.43	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-20	030104-28-20	Sample	GROSS ALPHA	0.15 +/- 0.35	0.79	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-20	030104-28-20	Sample	GROSS BETA	0.80 +/- 0.71	1.47	DPM/sample	WIPE	AB040312-8	3/22/04	U
0403062-21	030104-28-21	Sample	GROSS ALPHA	0.07 +/- 0.28	0.68	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-21	030104-28-21	Sample	GROSS BETA	0.62 +/- 0.66	1.41	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-22	030104-28-22	Sample	GROSS ALPHA	0.32 +/- 0.36	0.71	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-22	030104-28-22	Sample	GROSS BETA	0.42 +/- 0.63	1.36	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-23	030104-28-23	Sample	GROSS ALPHA	-0.02 +/- 0.23	0.62	DPM/sample	WIPE	AB040312-9	3/22/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics

Page 5 of 12

LIMS Version: 4.347C

80000

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403062

Page: 6 of 12
 Reported on: Friday, March 26, 2004
 9:09:14 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-23	030104-28-23	Sample	GROSS BETA	0.02 +/- 0.59	1.37	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-24	030104-28-24	Sample	GROSS ALPHA	0.21 +/- 0.34	0.72	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-24	030104-28-24	Sample	GROSS BETA	0.60 +/- 0.66	1.39	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-25	030104-28-25	Sample	GROSS ALPHA	0.10 +/- 0.28	0.64	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-25	030104-28-25	Sample	GROSS BETA	0.85 +/- 0.68	1.40	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-26	030104-28-26	Sample	GROSS ALPHA	0.14 +/- 0.34	0.77	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-26	030104-28-26	Sample	GROSS BETA	0.44 +/- 0.68	1.49	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-27	030104-28-27	Sample	GROSS ALPHA	0.06 +/- 0.28	0.66	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-27	030104-28-27	Sample	GROSS BETA	0.45 +/- 0.67	1.45	DPM/sample	WIPE	AB040312-9	3/22/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics
 LIMS Version: 4.347C

Page 6 of 12

600000

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
Client Project Name: EPA NEIC EDDP
Client Project Number: 101115

Laboratory Name: Paragon Analytics
PAI Work Order: 0403062

Page: 7 of 12
Reported on: Friday, March 26, 2004
9:09:14 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-28	030104-28-28	Sample	GROSS ALPHA	0.05 +/- 0.30	0.74	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-28	030104-28-28	Sample	GROSS BETA	0.74 +/- 0.70	1.48	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-29	030104-28-29	Sample	GROSS ALPHA	0.18 +/- 0.29	0.62	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-29	030104-28-29	Sample	GROSS BETA	0.05 +/- 0.63	1.43	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-30	030104-28-30	Sample	GROSS ALPHA	-0.22 +/- 0.26	0.79	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-30	030104-28-30	Sample	GROSS BETA	0.79 +/- 0.70	1.48	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-31	030104-28-31	Sample	GROSS ALPHA	0.13 +/- 0.35	0.79	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-31	030104-28-31	Sample	GROSS BETA	0.32 +/- 0.75	1.66	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-32	030104-28-32	Sample	GROSS ALPHA	-0.07 +/- 0.25	0.70	DPM/sample	WIPE	AB040312-9	3/22/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics
LIMS Version: 4.347C

Page 7 of 12

00010

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403062

Page: 8 of 12
 Reported on: Friday, March 26, 2004
 9:09:14 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-32	030104-28-32	Sample	GROSS BETA	0.15 +/- 0.68	1.54	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-33	030104-28-33	Sample	GROSS ALPHA	-0.17 +/- 0.23	0.72	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-33	030104-28-33	Sample	GROSS BETA	0.86 +/- 0.67	1.35	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-34	030104-28-34	Sample	GROSS ALPHA	0.06 +/- 0.25	0.62	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-34	030104-28-34	Sample	GROSS BETA	0.33 +/- 0.62	1.37	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-35	030104-28-35	Sample	GROSS ALPHA	-0.03 +/- 0.27	0.72	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-35	030104-28-35	Sample	GROSS BETA	0.11 +/- 0.61	1.38	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-36	030104-28-36	Sample	GROSS ALPHA	-0.13 +/- 0.26	0.74	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-36	030104-28-36	Sample	GROSS BETA	-0.13 +/- 0.66	1.54	DPM/sample	WIPE	AB040312-9	3/22/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics
 LIMS Version: 4.347C

Page 8 of 12

110011

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Laboratory Name: Paragon Analytics

Page: 9 of 12

Client Project Name: EPA NEIC EDDP

PAI Work Order: 0403062

Reported on: Friday, March 26, 2004

Client Project Number: 101115

9:09:14 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-37	030104-28-37	Sample	GROSS ALPHA	0.22 +/- 0.36	0.77	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-37	030104-28-37	Sample	GROSS BETA	0.86 +/- 0.72	1.49	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-38	030104-28-38	Sample	GROSS ALPHA	0.10 +/- 0.29	0.66	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-38	030104-28-38	Sample	GROSS BETA	0.40 +/- 0.66	1.45	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-39	030104-28-39	Sample	GROSS ALPHA	0.13 +/- 0.32	0.74	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-39	030104-28-39	Sample	GROSS BETA	0.59 +/- 0.68	1.46	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-40	030104-28-40	Sample	GROSS ALPHA	0.10 +/- 0.27	0.62	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-40	030104-28-40	Sample	GROSS BETA	0.55 +/- 0.67	1.43	DPM/sample	WIPE	AB040312-9	3/22/04	U
0403062-41	030104-28-41	Sample	GROSS ALPHA	0.02 +/- 0.30	0.75	DPM/sample	WIPE	AB040312-10	3/23/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics

Page 9 of 12

LIMS Version: 4.347C

00012

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403062

Page: 10 of 12
 Reported on: Friday, March 26, 2004
 9:09:15 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-41	030104-28-41	Sample	GROSS BETA	1.13 +/- 0.76	1.54	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-42	030104-28-42	Sample	GROSS ALPHA	0.27 +/- 0.35	0.72	DPM/sample	WIPE	AB040312-10	3/25/04	U
0403062-42	030104-28-42	Sample	GROSS BETA	0.89 +/- 0.67	1.36	DPM/sample	WIPE	AB040312-10	3/25/04	U
0403062-43	030104-28-43	Sample	GROSS ALPHA	-0.06 +/- 0.30	0.79	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-43	030104-28-43	Sample	GROSS BETA	0.44 +/- 0.75	1.66	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-44	030104-28-44	Sample	GROSS ALPHA	-0.17 +/- 0.27	0.79	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-44	030104-28-44	Sample	GROSS BETA	0.06 +/- 0.64	1.46	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-45	030104-28-45	Sample	GROSS ALPHA	0.43 +/- 0.36	0.62	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-45	030104-28-45	Sample	GROSS BETA	0.04 +/- 0.63	1.44	DPM/sample	WIPE	AB040312-10	3/23/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics
 LIMS Version: 4.347C

Page 10 of 12

0403062-41

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Laboratory Name: Paragon Analytics

Page: 11 of 12

Client Project Name: EPA NEIC EDDP

PAI Work Order: 0403062

Reported on: Friday, March 26, 2004

Client Project Number: 101115

9:09:15 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-46	030104-28-46	Sample	GROSS ALPHA	0.53 +/- 0.42	0.74	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-46	030104-28-46	Sample	GROSS BETA	0.52 +/- 0.68	1.47	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-47	030104-28-20FD	Sample	GROSS ALPHA	0.26 +/- 0.33	0.67	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-47	030104-28-20FD	Sample	GROSS BETA	0.69 +/- 0.69	1.46	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-48	030104-28-36FD	Sample	GROSS ALPHA	0.22 +/- 0.36	0.77	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-48	030104-28-36FD	Sample	GROSS BETA	0.31 +/- 0.67	1.49	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-49	030104-28-45FD	Sample	GROSS ALPHA	0.23 +/- 0.34	0.71	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-49	030104-28-45FD	Sample	GROSS BETA	0.02 +/- 0.64	1.47	DPM/sample	WIPE	AB040312-10	3/23/04	U
0403062-50	030104-28-FB	Sample	GROSS ALPHA	0.10 +/- 0.28	0.64	DPM/sample	WIPE	AB040312-10	3/23/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics

Page 11 of 12

LIMS Version: 4.347C

00014

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Page: 12 of 12

Reported on: Friday, March 26, 2004

9:09:15 AM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403062-50	030104-28-FB	Sample	GROSS BETA	0.45 +/- 0.64	1.40	DPM/sample	WIPE	AB040312-10	3/23/04	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 12 of 12

000015

2

PARAGON ANALYTICS
Radiochemistry Data Package

Section 2

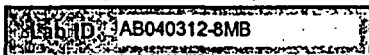
**QC RESULTS
SUMMARY**

000016

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.02 +/- 0.32	0.79	U
12587-47-2	GROSS BETA	0 +/- 0.72	1.66	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

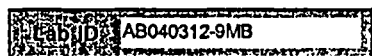
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.21 +/- 0.25	0.79	U
12587-47-2	GROSS BETA	-0.05 +/- 0.63	1.46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10

QCBatchID: AB040312-10-1

Run ID: ab040312-8a

Count Time: 100 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.15 +/- 0.24	0.72	U
12587-47-2	GROSS BETA	0.47 +/- 0.64	1.38	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 1 of 3

000019

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

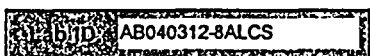
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 10 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: abb0322a

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-46-1	GROSS ALPHA	11000 +/- 1800	0	9950	111	70 - 130	P,M3

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

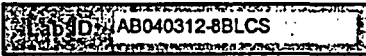
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



AB040312-8BLCS

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8

QCBatchID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 10 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: abb0322a

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-47-2	GROSS BETA	40300 +/- 6400	0	41000	98.4	70 - 130	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 4 of 6

000021

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

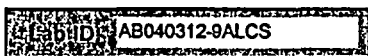
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 10 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: abb0322d

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-46-1	GROSS ALPHA	11200 +/- 1800	0	9950	113	70 - 130	P,M3

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

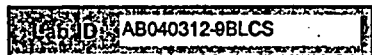
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



AB040312-9BLCS

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 10 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: abb0322d

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-47-2	GROSS BETA	41900 +/- 6700	0	41000	102	70 - 130	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 6 of 6

000023

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



AB040312-10ALCS

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10

QC Batch ID: AB040312-10-1

Run ID: ab040312-8a

Count Time: 10 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: abb0323b

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-46-1	GROSS ALPHA	11200 +/- 1800	0	9950	113	70 - 130	P,M3

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 10 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: abb0323b

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-47-2	GROSS BETA	41500 +/- 6600	0	41000	101	70 - 130	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID: 030104-28-04
Lab ID: 0403062-4DUP

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	-0.06 +/- 0.33	-0.09 +/- 0.23	0.08	2.13	U
12587-47-2	GROSS BETA	1.01 +/- 0.71	0.71 +/- 0.67	0.31	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

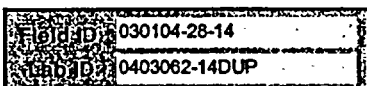
Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8

QCBatchID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-48-1	GROSS ALPHA	0.13 +/- 0.31	0.21 +/- 0.30	0.19	2.13	U
12587-47-2	GROSS BETA	1.14 +/- 0.77	1.13 +/- 0.70	0.01	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 2 of 5

000027

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

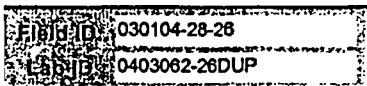
Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322c

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-48-1	GROSS ALPHA	0.14 +/- 0.34	0.20 +/- 0.32	0.12	2.13	U
12587-47-2	GROSS BETA	0.44 +/- 0.68	0.17 +/- 0.62	0.29	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

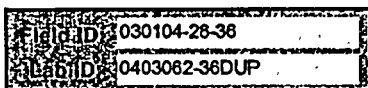
Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322c

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	-0.13 +/- 0.26	0.18 +/- 0.30	0.79	2.13	U
12587-47-2	GROSS BETA	-0.13 +/- 0.66	0.41 +/- 0.64	0.60	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 4 of 5

000029

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

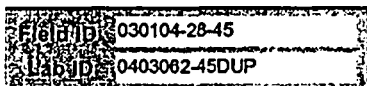
Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10

QCBatchID: AB040312-10-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0323e

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	0.43 +/- 0.38	0.11 +/- 0.30	0.67	2.13	U
12587-47-2	GROSS BETA	0.04 +/- 0.63	0.52 +/- 0.65	0.52	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: ABF0403062-1

PARAGON ANALYTICS
Radiochemistry Data Package

3

Section 3

**INDIVIDUAL
SAMPLE RESULTS**

000031

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

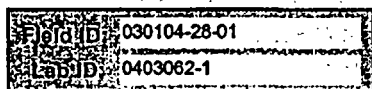
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8

QCBatchID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.01 +/- 0.24	0.65	U
12587-47-2	GROSS BETA	0.14 +/- 0.61	1.39	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 1 of 50

000032

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

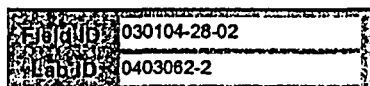
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.31 +/- 0.29	0.90	U
12587-47-2	GROSS BETA	-0.12 +/- 0.58	1.37	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030104-28-03
Lab ID	0403062-3

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.02 +/- 0.31	0.77	U
12587-47-2	GROSS BETA	0.16 +/- 0.63	1.42	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics
LIMS Version: 4.347C

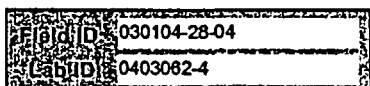
Page 3 of 50

000034

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.06 +/- 0.33	0.87	U
12587-47-2	GROSS BETA	1.01 +/- 0.71	1.42	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

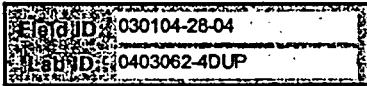
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8

QCBatchID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.09 +/- 0.23	0.68	U
12587-47-2	GROSS BETA	0.71 +/- 0.67	1.40	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 1 of 5

000036

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

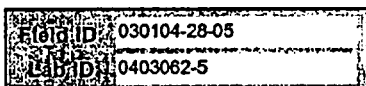
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.18 +/- 0.31	0.67	U
12587-47-2	GROSS BETA	-0.14 +/- 0.61	1.43	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

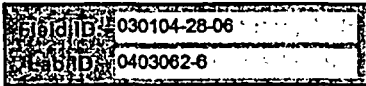
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8

QCBatchID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.45 +/- 0.37	0.66	U
12587-47-2	GROSS BETA	0.58 +/- 0.70	1.49	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

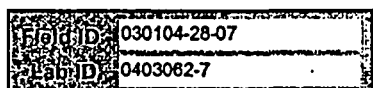
DL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.08 +/- 0.28	0.65	U
12587-47-2	GROSS BETA	0.26 +/- 0.66	1.47	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

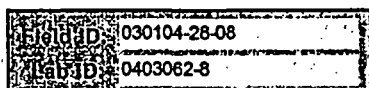
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8

QC Batch ID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.12 +/- 0.27	0.77	U
12587-47-2	GROSS BETA	0.66 +/- 0.69	1.45	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

RDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 8 of 50

000040

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

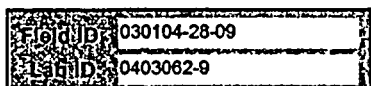
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.05 +/- 0.24	0.68	U
12587-47-2	GROSS BETA	0.01 +/- 0.61	1.42	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

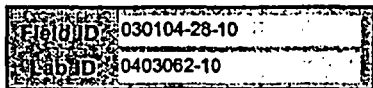
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.22 +/- 0.33	0.68	U
12587-47-2	GROSS BETA	0.26 +/- 0.65	1.44	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

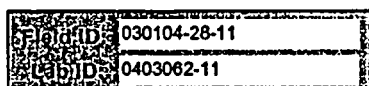
DL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.19 +/- 0.34	0.73	U
12587-47-2	GROSS BETA	0.51 +/- 0.75	1.64	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

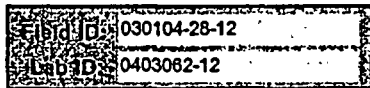
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.01 +/- 0.26	0.68	U
12587-47-2	GROSS BETA	0.38 +/- 0.72	1.58	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics
LIMS Version: 4.347C

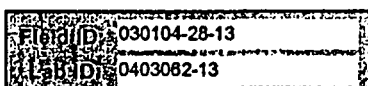
Page 12 of 50

000043
000044

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04
Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received
Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.19 +/- 0.33	0.71	U
12587-47-2	GROSS BETA	0.34 +/- 0.62	1.36	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

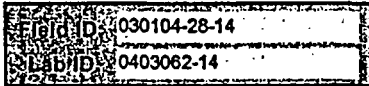
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 19-Mar-04

Prep Batch: AB040312-8

QC Batch ID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0319b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.13 +/- 0.31	0.70	U
12587-47-2	GROSS BETA	1.14 +/- 0.77	1.54	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

SDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 14 of 50

000046

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

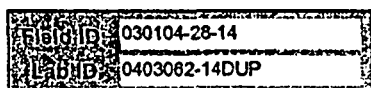
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.21 +/- 0.30	0.62	U
12587-47-2	GROSS BETA	1.13 +/- 0.70	1.37	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030104-28-15
Lab ID:	0403062-15

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8

QCBatchID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.14 +/- 0.29	0.64	U
12587-47-2	GROSS BETA	-0.20 +/- 0.59	1.40	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

NDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

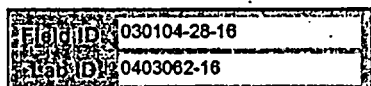
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.30 +/- 0.37	0.76	U
12587-47-2	GROSS BETA	-0.49 +/- 0.62	1.49	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

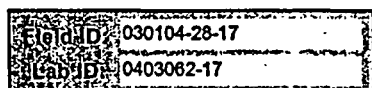
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8

QC Batch ID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.02 +/- 0.25	0.66	U
12587-47-2	GROSS BETA	0.68 +/- 0.69	1.45	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

IDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

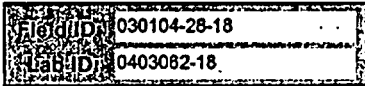
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.29 +/- 0.36	0.74	U
12587-47-2	GROSS BETA	0.59 +/- 0.69	1.46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

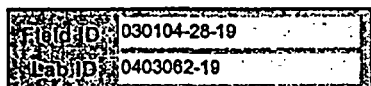
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8

QCBatchID: AB040312-8-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322

CASNO	Target Nuclide	Result +/- 2's TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.14 +/- 0.28	0.62	U
12587-47-2	GROSS BETA	0.50 +/- 0.66	1.43	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 19 of 50

000052

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

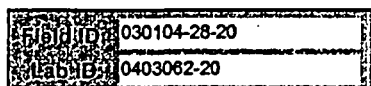
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-8
QCBatchID: AB040312-8-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.15 +/- 0.35	0.79	U
12587-47-2	GROSS BETA	0.80 +/- 0.71	1.47	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

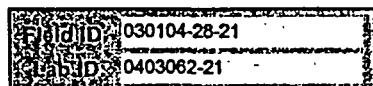
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.07 +/- 0.28	0.68	U
12587-47-2	GROSS BETA	0.62 +/- 0.66	1.41	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

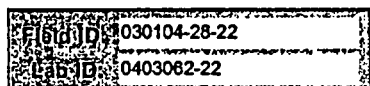
BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8 Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.32 +/- 0.36	0.71	U
12587-47-2	GROSS BETA	0.42 +/- 0.63	1.36	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030104-28-23
Lab ID	0403062-23

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.02 +/- 0.23	0.62	U
12587-47-2	GROSS BETA	0.02 +/- 0.59	1.37	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

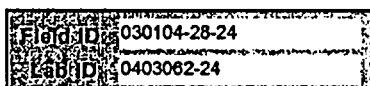
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.21 +/- 0.34	0.72	U
12587-47-2	GROSS BETA	0.60 +/- 0.66	1.39	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030104-28-25
Lab ID	0403062-25

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QC Batch ID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.10 +/- 0.28	0.64	U
12587-47-2	GROSS BETA	0.85 +/- 0.68	1.40	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

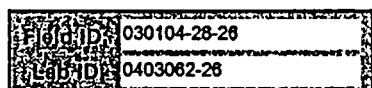
Data Package ID: ABF0403062-1

0000058

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04
Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received
Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.14 +/- 0.34	0.77	U
12587-47-2	GROSS BETA	0.44 +/- 0.68	1.49	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030104-28-28
Lab ID	0403062-28DUP

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.20 +/- 0.32	0.68	U
12587-47-2	GROSS BETA	0.17 +/- 0.62	1.41	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics

LIMS Version: 4.347C

Page 3 of 5

000060

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

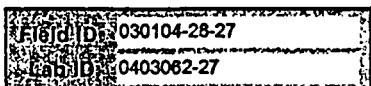
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.06 +/- 0.28	0.66	U
12587-47-2	GROSS BETA	0.45 +/- 0.67	1.45	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID	030104-28-28
Lab ID	0403062-28

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.05 +/- 0.30	0.74	U
12587-47-2	GROSS BETA	0.74 +/- 0.70	1.46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

*DL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

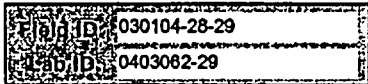
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.18 +/- 0.29	0.62	U
12587-47-2	GROSS BETA	0.05 +/- 0.63	1.43	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

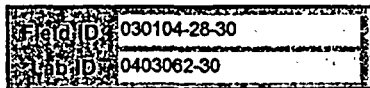
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.22 +/- 0.26	0.79	U
12587-47-2	GROSS BETA	0.79 +/- 0.70	1.46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID:	030104-28-31
Lab ID:	0403062-31

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.13 +/- 0.35	0.79	U
12587-47-2	GROSS BETA	0.32 +/- 0.75	1.66	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

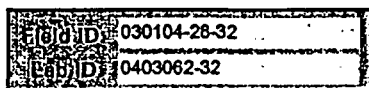
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.07 +/- 0.25	0.70	U
12587-47-2	GROSS BETA	0.15 +/- 0.68	1.54	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

NDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

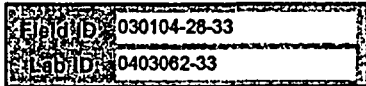
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.17 +/- 0.23	0.72	U
12587-47-2	GROSS BETA	0.86 +/- 0.67	1.35	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

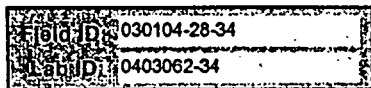
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9

QCBatchID: AB040312-9-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.06 +/- 0.25	0.62	U
12587-47-2	GROSS BETA	0.33 +/- 0.62	1.37	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

NDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID	030104-28-35
Lab ID	0403062-35

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.03 +/- 0.27	0.72	U
12587-47-2	GROSS BETA	0.11 +/- 0.61	1.38	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030104-28-38
Lab ID	0403062-38

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.13 +/- 0.26	0.74	U
12587-47-2	GROSS BETA	-0.13 +/- 0.66	1.54	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

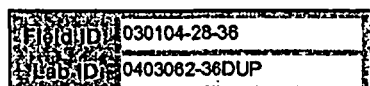
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.18 +/- 0.30	0.64	U
12587-47-2	GROSS BETA	0.41 +/- 0.64	1.40	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030104-28-37
Lab ID	0403062-37

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.22 +/- 0.36	0.77	U
12587-47-2	GROSS BETA	0.86 +/- 0.72	1.49	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

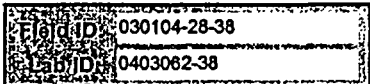
NDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.10 +/- 0.29	0.66	U
12587-47-2	GROSS BETA	0.40 +/- 0.66	1.45	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

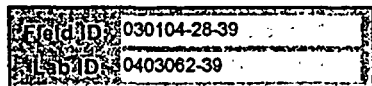
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.13 +/- 0.32	0.74	U
12587-47-2	GROSS BETA	0.59 +/- 0.68	1.46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID:	030104-28-40
Lab ID:	0403062-40

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 22-Mar-04

Prep Batch: AB040312-9
QCBatchID: AB040312-9-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0322c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.10 +/- 0.27	0.62	U
12587-47-2	GROSS BETA	0.55 +/- 0.67	1.43	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

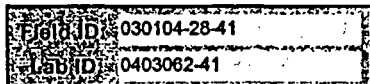
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10

QCBatchID: AB040312-10-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.02 +/- 0.30	0.75	U
12587-47-2	GROSS BETA	1.13 +/- 0.76	1.54	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

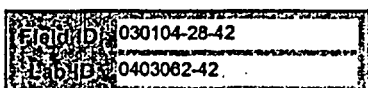
BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 25-Mar-04
Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received
Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0325a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.27 +/- 0.35	0.72	U
12587-47-2	GROSS BETA	0.89 +/- 0.67	1.36	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID	030104-28-43
Lab ID	0403062-43

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.06 +/- 0.30	0.79	U
12587-47-2	GROSS BETA	0.44 +/- 0.75	1.66	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics
LIMS Version: 4.347C

Page 43 of 50

000078

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

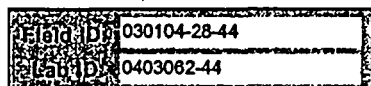
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10

QC Batch ID: AB040312-10-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.17 +/- 0.27	0.79	U
12587-47-2	GROSS BETA	0.06 +/- 0.64	1.46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

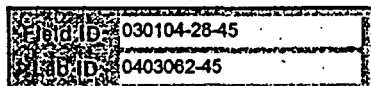
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.43 +/- 0.36	0.62	U
12587-47-2	GROSS BETA	0.04 +/- 0.63	1.44	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Date Printed: Friday, March 26, 2004

Paragon Analytics
LIMS Version: 4.347C

Page 45 of 50

000080

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

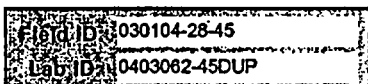
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 18
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323e

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.11 +/- 0.30	0.68	U
12587-47-2	GROSS BETA	0.52 +/- 0.65	1.41	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

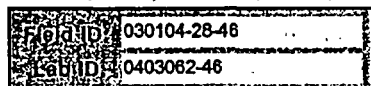
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.53 +/- 0.42	0.74	U
12587-47-2	GROSS BETA	0.52 +/- 0.68	1.47	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

NDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

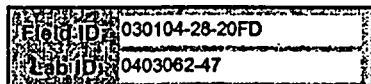
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 02-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10

QCBatchID: AB040312-10-1

Run ID: ab040312-8a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.26 +/- 0.33	0.67	U
12587-47-2	GROSS BETA	0.69 +/- 0.69	1.46	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

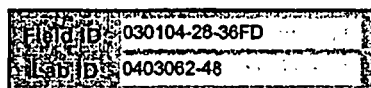
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Allquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.22 +/- 0.36	0.77	U
12587-47-2	GROSS BETA	0.31 +/- 0.67	1.49	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

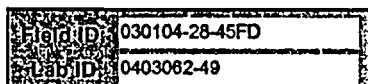
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403062

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.23 +/- 0.34	0.71	U
12587-47-2	GROSS BETA	0.02 +/- 0.64	1.47	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403062
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115

Field ID:	030104-28-FB
Lab ID:	0403062-50

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 02-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-10
QCBatchID: AB040312-10-1
Run ID: ab040312-8a
Count Time: 100 minutes
Report Basis: As Received

Final Allquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323a

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.10 +/- 0.28	0.64	U
12587-47-2	GROSS BETA	0.45 +/- 0.64	1.40	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403062-1

PARAGON ANALYTICS
Radiochemistry Data Package

Section 4

4

RAW DATA

000087

Gross Alpha/Beta Analysis by GF-Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics
PAI Work Order: 0403062

Prep SOP: PAI 702
Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004
4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QCBatchID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403062-1 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0319b	3/19/04 12:12 PM	0.080 0.078	24.75% NA	100 NA	-0.01 0.24	0.65 NA	DPM/sample As Received	NA NA	NA U
0403062-1 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0319b	3/19/04 12:12 PM	1.410 1.339	40.98% NA	100 NA	0.14 0.81	1.39 NA	DPM/sample As Received	NA NA	NA U
0403062-2 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0319b	3/19/04 12:12 PM	0.100 0.171	24.60% NA	100 NA	-0.31 0.29	0.90 NA	DPM/sample As Received	NA NA	NA U
0403062-2 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0319b	3/19/04 12:12 PM	1.270 1.302	40.97% NA	100 NA	-0.12 0.58	1.37 NA	DPM/sample As Received	NA NA	NA U
0403062-3 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0319b	3/19/04 12:12 PM	0.130 0.121	25.08% NA	100 NA	0.02 0.31	0.77 NA	DPM/sample As Received	NA NA	NA U
0403062-3 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0319b	3/19/04 12:12 PM	1.530 1.439	41.53% NA	100 NA	0.16 0.63	1.42 NA	DPM/sample As Received	NA NA	NA U
0403062-4 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A4	ab040312-8a abb0319b	3/19/04 12:12 PM	0.150 0.158	24.77% NA	100 NA	-0.08 0.33	0.87 NA	DPM/sample As Received	NA NA	NA U
0403062-4 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A4	ab040312-8a abb0319b	3/19/04 12:12 PM	1.870 1.427	41.30% NA	100 NA	1.01 0.71	1.42 NA	DPM/sample As Received	NA NA	NA U
0403062-4 DUP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0322	3/22/04 9:06 AM	0.070 0.087	24.75% NA	100 NA	-0.09 0.23	0.68 NA	DPM/sample As Received	0.08 NA	NA U
0403062-4 DUP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0322	3/22/04 9:06 AM	1.680 1.378	40.98% NA	100 NA	0.71 0.67	1.40 NA	DPM/sample As Received	0.31 NA	NA U
0403062-5 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0319b	3/19/04 12:12 PM	0.140 0.091	25.25% NA	100 NA	0.18 0.31	0.67 NA	DPM/sample As Received	NA NA	NA U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13
- + - Duplicate RPD not within limits.
- LT - Result is less than Request MDC, greater than sample specific MDC
- * - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

- M - Requested MDC not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

- TR - Tracer
- TA - Target Analyte
- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- DER - Duplicate Error Ratio
- BDL - Below Detection Limit

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLay	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403062-5 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0319b	3/19/04 12:12 PM	1.460 1.491	42.08% NA	100 NA	-0.14 0.81	1.43 NA	DPM/sample As Received	NA NA	U
0403062-6 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B4	ab040312-8a abb0319b	3/19/04 12:12 PM	0.210 0.092	25.71% NA	100 NA	0.45 0.37	0.68 NA	DPM/sample As Received	NA NA	U
0403062-6 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B4	ab040312-8a abb0319b	3/19/04 12:12 PM	1.870 1.585	41.60% NA	100 NA	0.58 0.70	1.49 NA	DPM/sample As Received	NA NA	U
0403062-7 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0319b	3/19/04 12:12 PM	0.110 0.084	25.53% NA	100 NA	0.08 0.28	0.65 NA	DPM/sample As Received	NA NA	U
0403062-7 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0319b	3/19/04 12:12 PM	1.710 1.582	41.94% NA	100 NA	0.28 0.66	1.47 NA	DPM/sample As Received	NA NA	U
0403062-8 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0319b	3/19/04 12:12 PM	0.100 0.124	25.24% NA	100 NA	-0.12 0.27	0.77 NA	DPM/sample As Received	NA NA	U
0403062-8 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0319b	3/19/04 12:12 PM	1.810 1.515	41.54% NA	100 NA	0.66 0.69	1.45 NA	DPM/sample As Received	NA NA	U
0403062-9 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0319b	3/19/04 12:12 PM	0.080 0.091	24.72% NA	100 NA	-0.05 0.24	0.68 NA	DPM/sample As Received	NA NA	U
0403062-9 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0319b	3/19/04 12:12 PM	1.490 1.473	41.98% NA	100 NA	0.01 0.81	1.42 NA	DPM/sample As Received	NA NA	U
0403062-10 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0319b	3/19/04 12:12 PM	0.150 0.089	24.89% NA	100 NA	0.22 0.33	0.68 NA	DPM/sample As Received	NA NA	U
0403062-10 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0319b	3/19/04 12:12 PM	1.620 1.484	41.57% NA	100 NA	0.26 0.65	1.44 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

± - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR- Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 2 of 12

689

Gross Alpha/Beta Analysis by GF-Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403062-11 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D2	ab040312-8a abb0319b	3/19/04 12:12 PM	0.160 0.106	25.16% NA	100 NA	0.19 0.34	0.73 NA	DPM/sample As Received	NA NA	NA U
0403062-11 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D2	ab040312-8a abb0319b	3/19/04 12:12 PM	2.300 2.056	42.47% NA	100 NA	0.51 0.75	1.64 NA	DPM/sample As Received	NA NA	NA U
0403062-12 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D3	ab040312-8a abb0319b	3/19/04 12:12 PM	0.100 0.098	25.82% NA	100 NA	-0.01 0.26	0.68 NA	DPM/sample As Received	NA NA	NA U
0403062-12 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D3	ab040312-8a abb0319b	3/19/04 12:12 PM	1.990 1.815	41.47% NA	100 NA	0.38 0.72	1.58 NA	DPM/sample As Received	NA NA	NA U
0403062-13 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0322	3/22/04 9:06 AM	0.150 0.097	24.60% NA	100 NA	0.19 0.33	0.71 NA	DPM/sample As Received	NA NA	NA U
0403062-13 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0322	3/22/04 9:06 AM	1.440 1.276	40.97% NA	100 NA	0.34 0.62	1.36 NA	DPM/sample As Received	NA NA	NA U
0403062-14 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D4	ab040312-8a abb0319b	3/19/04 12:12 PM	0.140 0.100	25.54% NA	100 NA	0.13 0.31	0.70 NA	DPM/sample As Received	NA NA	NA U
0403062-14 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D4	ab040312-8a abb0319b	3/19/04 12:12 PM	2.370 1.853	43.03% NA	100 NA	1.14 0.77	1.54 NA	DPM/sample As Received	NA NA	NA U
0403062-14 DUP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0322	3/22/04 9:06 AM	0.130 0.071	25.06% NA	100 NA	0.21 0.30	0.62 NA	DPM/sample As Received	0.19 NA	NA U
0403062-14 DUP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0322	3/22/04 9:06 AM	1.830 1.338	41.53% NA	100 NA	1.13 0.70	1.37 NA	DPM/sample As Received	0.01 NA	NA U
0403062-15 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0322	3/22/04 9:06 AM	0.120 0.081	25.25% NA	100 NA	0.14 0.29	0.64 NA	DPM/sample As Received	NA NA	NA U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403062-15 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0322	3/22/04 9:08 AM	1,380 1,441	42.08% NA	100 NA	-0.20 0.59	1.40 NA	DPM/sample As Received	NA NA	U
0403062-16 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0322	3/22/04 9:08 AM	0.210 0.128	25.68% NA	100 NA	0.30 0.37	0.78 NA	DPM/sample As Received	NA NA	U
0403062-16 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0322	3/22/04 9:08 AM	1,460 1,626	42.01% NA	100 NA	-0.49 0.62	1.49 NA	DPM/sample As Received	NA NA	U
0403062-17 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0322	3/22/04 9:08 AM	0.090 0.089	25.53% NA	100 NA	-0.02 0.25	0.66 NA	DPM/sample As Received	NA NA	U
0403062-17 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0322	3/22/04 9:08 AM	1,850 1,550	41.94% NA	100 NA	0.68 0.69	1.45 NA	DPM/sample As Received	NA NA	U
0403062-18 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0322	3/22/04 9:08 AM	0.190 0.111	25.24% NA	100 NA	0.29 0.38	0.74 NA	DPM/sample As Received	NA NA	U
0403062-18 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0322	3/22/04 9:08 AM	1,810 1,527	41.54% NA	100 NA	0.59 0.69	1.46 NA	DPM/sample As Received	NA NA	U
0403062-19 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0322	3/22/04 9:08 AM	0.110 0.073	24.72% NA	100 NA	0.14 0.28	0.62 NA	DPM/sample As Received	NA NA	U
0403062-19 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0322	3/22/04 9:08 AM	1,740 1,509	41.98% NA	100 NA	0.50 0.66	1.43 NA	DPM/sample As Received	NA NA	U
0403062-20 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0322	3/22/04 9:08 AM	0.170 0.127	24.89% NA	100 NA	0.15 0.35	0.79 NA	DPM/sample As Received	NA NA	U
0403062-20 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-8 AB040312-8-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0322	3/22/04 9:08 AM	1,910 1,547	41.57% NA	100 NA	0.80 0.71	1.47 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

± - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR- Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 4 of 12

000091

Gross Alpha/Beta Analysis by GF- β Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QCBatchID	Ingrowth Date/Time	Decay Date/Time	Matrix %Moist	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403062-21 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0322b	3/22/04 10:48 AM	0.110 0.087	24.75% NA	100 NA	0.07 0.28	0.68 NA	DPM/sample As Received	NA NA	NA U
0403062-21 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0322b	3/22/04 10:48 AM	1.650 1.378	40.98% NA	100 NA	0.62 0.66	1.41 NA	DPM/sample As Received	NA NA	NA U
0403062-22 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0322b	3/22/04 10:48 AM	0.180 0.097	24.60% NA	100 NA	0.32 0.36	0.71 NA	DPM/sample As Received	NA NA	NA U
0403062-22 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0322b	3/22/04 10:48 AM	1.480 1.276	40.97% NA	100 NA	0.42 0.63	1.36 NA	DPM/sample As Received	NA NA	NA U
0403062-23 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0322b	3/22/04 10:48 AM	0.070 0.071	25.08% NA	100 NA	-0.02 0.23	0.62 NA	DPM/sample As Received	NA NA	NA U
0403062-23 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0322b	3/22/04 10:48 AM	1.360 1.338	41.53% NA	100 NA	0.02 0.59	1.37 NA	DPM/sample As Received	NA NA	NA U
0403062-24 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A4	ab040312-8a abb0322b	3/22/04 10:48 AM	0.160 0.102	24.77% NA	100 NA	0.21 0.34	0.72 NA	DPM/sample As Received	NA NA	NA U
0403062-24 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A4	ab040312-8a abb0322b	3/22/04 10:48 AM	1.630 1.355	41.30% NA	100 NA	0.60 0.66	1.39 NA	DPM/sample As Received	NA NA	NA U
0403062-25 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0322b	3/22/04 10:48 AM	0.110 0.081	25.25% NA	100 NA	0.10 0.28	0.64 NA	DPM/sample As Received	NA NA	NA U
0403062-25 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0322b	3/22/04 10:48 AM	1.820 1.441	42.08% NA	100 NA	0.85 0.68	1.40 NA	DPM/sample As Received	NA NA	NA U
0403062-26 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0322b	3/22/04 10:48 AM	0.170 0.128	25.68% NA	100 NA	0.14 0.34	0.77 NA	DPM/sample As Received	NA NA	NA U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 5 of 12

0403062

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date/Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403062-26 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0322b	3/22/04 10:48 AM	1.840 1.626	42.01% NA	100 NA	0.44 0.68	1.49 NA	DPM/sample As Received	NA NA	U
0403062-26 DUP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0322c	3/22/04 12:46 PM	0.140 0.087	24.75% NA	100 NA	0.20 0.32	0.68 NA	DPM/sample As Received	0.12 NA	U
0403062-26 DUP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0322c	3/22/04 12:46 PM	1.470 1.378	40.98% NA	100 NA	0.17 0.62	1.41 NA	DPM/sample As Received	0.29 NA	U
0403062-27 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0322b	3/22/04 10:48 AM	0.110 0.089	25.53% NA	100 NA	0.06 0.28	0.68 NA	DPM/sample As Received	NA NA	U
0403062-27 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0322b	3/22/04 10:48 AM	1.760 1.550	41.94% NA	100 NA	0.45 0.67	1.45 NA	DPM/sample As Received	NA NA	U
0403062-28 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0322b	3/22/04 10:48 AM	0.130 0.111	25.24% NA	100 NA	0.05 0.30	0.74 NA	DPM/sample As Received	NA NA	U
0403062-28 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0322b	3/22/04 10:48 AM	1.860 1.527	41.54% NA	100 NA	0.74 0.70	1.48 NA	DPM/sample As Received	NA NA	U
0403062-29 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0322b	3/22/04 10:48 AM	0.120 0.073	24.72% NA	100 NA	0.18 0.29	0.62 NA	DPM/sample As Received	NA NA	U
0403062-29 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0322b	3/22/04 10:48 AM	1.550 1.509	41.98% NA	100 NA	0.05 0.63	1.43 NA	DPM/sample As Received	NA NA	U
0403062-30 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0322b	3/22/04 10:48 AM	0.080 0.127	24.89% NA	100 NA	-0.22 0.26	0.79 NA	DPM/sample As Received	NA NA	U
0403062-30 SMP	GROSS BETA Trg. Analyte	3/2/04 11:15:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0322b	3/22/04 10:48 AM	1.890 1.547	41.57% NA	100 NA	0.79 0.70	1.48 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 6 of 12

00093

Gross Alpha/Beta Analysis by GFI & Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403062

Analytical SOP: PAI 724

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLay	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403062-31 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D2	ab040312-8a abb0322b	3/22/04 10:48 AM	0.170 0.130	25.16% NA	100 NA	0.13 0.35	0.79 NA	DPM/sample As Received	NA NA	U
0403062-31 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D2	ab040312-8a abb0322b	3/22/04 10:48 AM	2.270 2.103	42.47% NA	100 NA	0.32 0.75	1.68 NA	DPM/sample As Received	NA NA	U
0403062-32 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D3	ab040312-8a abb0322b	3/22/04 10:48 AM	0.090 0.104	25.82% NA	100 NA	-0.07 0.25	0.70 NA	DPM/sample As Received	NA NA	U
0403062-32 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D3	ab040312-8a abb0322b	3/22/04 10:48 AM	1.790 1.715	41.47% NA	100 NA	0.15 0.68	1.54 NA	DPM/sample As Received	NA NA	U
0403062-33 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0322c	3/22/04 12:46 PM	0.060 0.097	24.60% NA	100 NA	-0.17 0.23	0.72 NA	DPM/sample As Received	NA NA	U
0403062-33 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0322c	3/22/04 12:46 PM	1.640 1.276	40.97% NA	100 NA	0.88 0.67	1.35 NA	DPM/sample As Received	NA NA	U
0403062-34 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0322c	3/22/04 12:46 PM	0.090 0.071	25.08% NA	100 NA	0.06 0.25	0.62 NA	DPM/sample As Received	NA NA	U
0403062-34 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A3	ab040312-8a abb0322c	3/22/04 12:46 PM	1.490 1.338	41.53% NA	100 NA	0.33 0.62	1.37 NA	DPM/sample As Received	NA NA	U
0403062-35 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A4	ab040312-8a abb0322c	3/22/04 12:46 PM	0.100 0.102	24.77% NA	100 NA	-0.03 0.27	0.72 NA	DPM/sample As Received	NA NA	U
0403062-35 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A4	ab040312-8a abb0322c	3/22/04 12:46 PM	1.420 1.355	41.30% NA	100 NA	0.11 0.61	1.38 NA	DPM/sample As Received	NA NA	U
0403062-36 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D4	ab040312-8a abb0322b	3/22/04 10:48 AM	0.090 0.117	25.54% NA	100 NA	-0.13 0.26	0.74 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13
- + - Duplicate RPD not within limits.
- LT - Result is less than Request MDC, greater than sample specific MDC
- * - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

- M - Requested MDC not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

- TR - Tracer TA - Target Analyte
- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- DER - Duplicate Error Ratio
- BDL - Below Detection Limit

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date/Time	Decay Date/Time	Matrix % Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	Gross CPM Bkg CPM	Base Eff Prog Eff	CntDur (min) Yield	Activity +/- 2 s TPU	MDC Dec Lev	Report Units Report Basis	DER RPD	% Spk. Recov Flags
0403062-36 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D4	ab040312-8a abb0322b	3/22/04 10:48 AM	1.800 1.841	43.03% NA	100 NA	-0.13 0.68	1.54 NA	DPM/sample As Received	NA NA	U
0403062-36 DUP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0322c	3/22/04 12:46 PM	0.130 0.081	25.25% NA	100 NA	0.18 0.30	0.64 NA	DPM/sample As Received	0.79 NA	U
0403062-36 DUP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0322c	3/22/04 12:46 PM	1.640 1.441	42.08% NA	100 NA	0.41 0.64	1.40 NA	DPM/sample As Received	0.60 NA	U
0403062-37 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0322c	3/22/04 12:46 PM	0.190 0.128	25.68% NA	100 NA	0.22 0.38	0.77 NA	DPM/sample As Received	NA NA	U
0403062-37 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0322c	3/22/04 12:46 PM	2.020 1.628	42.01% NA	100 NA	0.86 0.72	1.49 NA	DPM/sample As Received	NA NA	U
0403062-38 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0322c	3/22/04 12:46 PM	0.120 0.089	25.53% NA	100 NA	0.10 0.29	0.66 NA	DPM/sample As Received	NA NA	U
0403062-38 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0322c	3/22/04 12:46 PM	1.740 1.550	41.94% NA	100 NA	0.40 0.66	1.45 NA	DPM/sample As Received	NA NA	U
0403062-39 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0322c	3/22/04 12:46 PM	0.150 0.111	25.24% NA	100 NA	0.13 0.32	0.74 NA	DPM/sample As Received	NA NA	U
0403062-39 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0322c	3/22/04 12:46 PM	1.800 1.527	41.54% NA	100 NA	0.59 0.68	1.48 NA	DPM/sample As Received	NA NA	U
0403062-40 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0322c	3/22/04 12:46 PM	0.100 0.073	24.72% NA	100 NA	0.10 0.27	0.62 NA	DPM/sample As Received	NA NA	U
0403062-40 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-9 AB040312-9-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0322c	3/22/04 12:46 PM	1.760 1.509	41.98% NA	100 NA	0.55 0.67	1.43 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 8 of 12

Gross Alpha/Beta Analysis by GFC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403062

Analytical SOP: PAI 724

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix % Moist.	Sample Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	Gross CPM Bkg CPM	Base Eff Prog Eff	CntDur (min) Yield	Activity +/- 2 s TPU	MDC Dec Lev	Report Units Report Basis	DER RPD	% Spk. Recov Flags
0403062-41 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D4	ab040312-8a abb0323a	3/23/04 10:20 AM	0.130 0.117	25.54% NA	100 NA	0.02 0.30	0.75 NA	DPM/sample As Received	NA NA	NA U
0403062-41 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D4	ab040312-8a abb0323a	3/23/04 10:20 AM	2.350 1.841	43.03% NA	100 NA	1.13 0.78	1.54 NA	DPM/sample As Received	NA NA	NA U
0403062-42 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0325a	3/25/04 8:38 AM	0.170 0.097	24.60% NA	100 NA	0.27 0.35	0.72 NA	DPM/sample As Received	NA NA	NA U
0403062-42 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A2	ab040312-8a abb0325a	3/25/04 8:38 AM	1.670 1.276	40.97% NA	100 NA	0.89 0.67	1.36 NA	DPM/sample As Received	NA NA	NA U
0403062-43 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D2	ab040312-8a abb0323a	3/23/04 10:20 AM	0.120 0.130	25.16% NA	100 NA	-0.06 0.30	0.79 NA	DPM/sample As Received	NA NA	NA U
0403062-43 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D2	ab040312-8a abb0323a	3/23/04 10:20 AM	2.310 2.103	42.47% NA	100 NA	0.44 0.75	1.66 NA	DPM/sample As Received	NA NA	NA U
0403062-44 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0323a	3/23/04 10:20 AM	0.090 0.127	24.89% NA	100 NA	-0.17 0.27	0.79 NA	DPM/sample As Received	NA NA	NA U
0403062-44 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b D1	ab040312-8a abb0323a	3/23/04 10:20 AM	1.590 1.547	41.57% NA	100 NA	0.06 0.64	1.46 NA	DPM/sample As Received	NA NA	NA U
0403062-45 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0323a	3/23/04 10:20 AM	0.180 0.073	24.72% NA	100 NA	0.43 0.36	0.62 NA	DPM/sample As Received	NA NA	NA U
0403062-45 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-8a abb0323a	3/23/04 10:20 AM	1.560 1.509	41.98% NA	100 NA	0.04 0.63	1.44 NA	DPM/sample As Received	NA NA	NA U
0403062-45 DUP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1	ab040312-8a abb0323a	3/23/04 12:12 PM	0.120 0.087	24.75% NA	100 NA	0.11 0.30	0.68 NA	DPM/sample As Received	0.67 NA	NA U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 9 of 12

9600

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403062

Analytical SOP: PAI 724

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date/Time	Decay Date/Time	Matrix % Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	Gross CPM Bkg CPM	Base Eff Prog Eff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC Declv	Report Units Report Basis	DER RPD	% Spk. Recov Flags
0403062-45 DUP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b A1.	ab040312-8a abb0323a	3/23/04 12:12 PM	1.610 1.378	40.98% NA	100 NA	0.52 0.65	1.41 NA	DPM/sample As Received	0.52 NA	 U
0403062-48 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0323a	3/23/04 10:20 AM	0.250 0.111	25.24% NA	100 NA	0.53 0.42	0.74 NA	DPM/sample As Received	NA NA	 U
0403062-48 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-8a abb0323a	3/23/04 10:20 AM	1.790 1.527	41.54% NA	100 NA	0.52 0.68	1.47 NA	DPM/sample As Received	NA NA	 U
0403062-47 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0323a	3/23/04 10:20 AM	0.160 0.089	25.63% NA	100 NA	0.26 0.33	0.67 NA	DPM/sample As Received	NA NA	 U
0403062-47 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-8a abb0323a	3/23/04 10:20 AM	1.870 1.550	41.94% NA	100 NA	0.69 0.69	1.46 NA	DPM/sample As Received	NA NA	 U
0403062-48 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0323a	3/23/04 10:20 AM	0.190 0.128	25.68% NA	100 NA	0.22 0.36	0.77 NA	DPM/sample As Received	NA NA	 U
0403062-48 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-8a abb0323a	3/23/04 10:20 AM	1.790 1.628	42.01% NA	100 NA	0.31 0.67	1.49 NA	DPM/sample As Received	NA NA	 U
0403062-49 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B4	ab040312-8a abb0323a	3/23/04 10:20 AM	0.170 0.107	25.71% NA	100 NA	0.23 0.34	0.71 NA	DPM/sample As Received	NA NA	 U
0403062-49 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B4	ab040312-8a abb0323a	3/23/04 10:20 AM	1.580 1.537	41.60% NA	100 NA	0.02 0.64	1.47 NA	DPM/sample As Received	NA NA	 U
0403062-50 SMP	GROSS ALPHA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0323a	3/23/04 10:20 AM	0.110 0.081	25.25% NA	100 NA	0.10 0.28	0.64 NA	DPM/sample As Received	NA NA	 U
0403062-50 SMP	GROSS BETA Trg. Analyte	3/2/04 11:17:00 AM	AB040312-10 AB040312-10-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b B3	ab040312-8a abb0323a	3/23/04 10:20 AM	1.650 1.441	42.08% NA	100 NA	0.45 0.64	1.40 NA	DPM/sample As Received	NA NA	 U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 10 of 12

00097

Gross Alpha/Beta Analysis by GF Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QCBatchID	Ingrowth Date/Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
AB040312-10A	GROSS ALPHA	3/12/04	AB040312-10	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/23/04	2768.000	24.60%	10	11200	0	DPM/sample	NA	113
LCS	Trg. Analyte	2:59:58 PM	AB040312-10-1	NA	NA	NA	1 s	A2	abb0323b	10:25 AM	0.097	NA	NA	1800	NA	As Received	NA	P,M3
AB040312-10B	GROSS BETA	3/12/04	AB040312-10	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/23/04	17255.500	41.53%	10	41500	0	DPM/sample	NA	101
LCS	Trg. Analyte	2:59:58 PM	AB040312-10-1	NA	NA	NA	1 s	A3	abb0323b	10:25 AM	1.338	NA	NA	6600	NA	As Received	NA	P
AB040312-10	GROSS ALPHA	3/12/04	AB040312-10	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/23/04	0.070	24.77%	100	-0.15	0.72	DPM/sample	NA	
MB	Trg. Analyte	2:59:58 PM	AB040312-10-1	NA	NA	NA	1 s	A4	abb0323a	10:20 AM	0.102	NA	NA	0.24	NA	As Received	NA	U
AB040312-10	GROSS BETA	3/12/04	AB040312-10	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/23/04	1.560	41.30%	100	0.47	1.38	DPM/sample	NA	
MB	Trg. Analyte	2:59:58 PM	AB040312-10-1	NA	NA	NA	1 s	A4	abb0323a	10:20 AM	1.355	NA	NA	0.64	NA	As Received	NA	U
AB040312-8A	GROSS ALPHA	3/12/04	AB040312-8	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	2842.600	25.82%	10	11000	0	DPM/sample	NA	111
LCS	Trg. Analyte	2:50:50 PM	AB040312-8-1	NA	NA	NA	1 s	D3	abb0322a	8:55 AM	0.104	NA	NA	1800	NA	As Received	NA	P,M3
AB040312-8B	GROSS BETA	3/12/04	AB040312-8	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	17360.498	43.03%	10	40300	0	DPM/sample	NA	98.4
LCS	Trg. Analyte	2:50:50 PM	AB040312-8-1	NA	NA	NA	1 s	D4	abb0322a	8:55 AM	1.841	NA	NA	8400	NA	As Received	NA	P
AB040312-8	GROSS ALPHA	3/12/04	AB040312-8	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	0.140	25.16%	100	0.02	0.79	DPM/sample	NA	
MB	Trg. Analyte	2:50:50 PM	AB040312-8-1	NA	NA	NA	1 s	D2	abb0322	9:06 AM	0.130	NA	NA	0.32	NA	As Received	NA	U
AB040312-8	GROSS BETA	3/12/04	AB040312-8	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	2.130	42.47%	100	0	1.66	DPM/sample	NA	
MB	Trg. Analyte	2:50:50 PM	AB040312-8-1	NA	NA	NA	1 s	D2	abb0322	9:06 AM	2.103	NA	NA	0.72	NA	As Received	NA	U
AB040312-9A	GROSS ALPHA	3/12/04	AB040312-9	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	2825.300	25.16%	10	11200	0	DPM/sample	NA	113
LCS	Trg. Analyte	2:55:53 PM	AB040312-9-1	NA	NA	NA	1 s	D2	abb0322d	12:46 PM	0.130	NA	NA	1800	NA	As Received	NA	P,M3
AB040312-9B	GROSS BETA	3/12/04	AB040312-9	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	17377.402	41.47%	10	41900	0	DPM/sample	NA	102
LCS	Trg. Analyte	2:55:53 PM	AB040312-9-1	NA	NA	NA	1 s	D3	abb0322d	12:46 PM	1.715	NA	NA	6700	NA	As Received	NA	P
AB040312-9	GROSS ALPHA	3/12/04	AB040312-9	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	0.080	24.89%	100	-0.21	0.79	DPM/sample	NA	
MB	Trg. Analyte	2:55:53 PM	AB040312-9-1	NA	NA	NA	1 s	D1	abb0322c	12:46 PM	0.127	NA	NA	0.25	NA	As Received	NA	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

++ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

** - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 11 of 12

60098

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403062

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

4:27:40 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC Dec Lev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
AB040312-9	GROSS BETA	3/12/04	AB040312-9	NA	NA	WIPE	1 s	LB4100-b	ab040312-8a	3/22/04	1.540	41.57%	100	-0.05	1.46	DPM/sample	NA	
MB	Trg. Analyte	2:55:53 PM	AB040312-9-1	NA	NA	NA	1 s	D1	abb0322c	12:46 PM	1.547	NA	NA	0.63	NA	As Received	NA	U

Comments:

Data Package ID: ABF0403062-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

± - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR- Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 12 of 12

66000

PAI - G Low Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
 Counting Unit ID: Aqua
 High Voltage Mode: Simultaneous
 Application Revision: 2
 Application Version: Standard
 Rev.12/29/03 JE

Data file name: AB803198
 Batch ID: AB040312-8
 Count Preset (m): 100
 Batch Ended: 3/18/04 13:50

Background logfile: BK0ABW
 Date of Bkg. Cal: 3/14/04
 Alpha efficiency logfile: AmWipe-11/03
 Alpha attenuation calibration: n/a
 Beta efficiency logfile: 3-Wipe-11/03
 Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

Alpha Attenuation Calibration	Beta Attenuation Calibration
$y = b/m \cdot (x/mass - x0)$	$y = b/m \cdot (x/mass - x0)$
Alpha b= 0.0000	Beta b= 0.0000
m= 0.0000	m= 0.0000
ss= 0.0000	ss= 0.0000
x0= 0.0000	x0= 0.0000
Alpha to Beta X-talk	Beta to Alpha X-talk
$y = m \cdot b \cdot mass$	$y = m \cdot b \cdot mass$
a → b xtalk m= 0.0000	b → a xtalk m= 0.00E+00
a → b xtalk b= 0.0000	b → a xtalk b= 0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403062-1	3/18/04 13:50	100.00	0.0	0.080	0.078	0.004	0.2475	n/a	n/a	n/a	1.410	1.338	0.0128	0.4098	n/a	n/a	n/a
A2	0403062-2	3/18/04 13:50	100.00	0.0	0.100	0.171	0.005	0.2460	n/a	n/a	n/a	1.270	1.302	0.0172	0.4097	n/a	n/a	n/a
A3	0403062-3	3/18/04 13:50	100.00	0.0	0.130	0.121	0.005	0.2508	n/a	n/a	n/a	1.530	1.438	0.0228	0.4163	n/a	n/a	n/a
C2	0403062-7	3/18/04 13:50	100.00	0.0	0.110	0.084	0.005	0.2553	n/a	n/a	n/a	1.710	1.682	0.0202	0.4184	n/a	n/a	n/a
C3	0403062-8	3/18/04 13:50	100.00	0.0	0.100	0.124	0.008	0.2524	n/a	n/a	n/a	1.810	1.616	0.0189	0.4154	n/a	n/a	n/a
C4	0403062-9	3/18/04 13:50	100.00	0.0	0.090	0.091	0.002	0.2472	n/a	n/a	n/a	1.490	1.473	0.0145	0.4198	n/a	n/a	n/a
A4	0403062-4	3/18/04 13:50	100.00	0.0	0.150	0.158	0.008	0.2477	n/a	n/a	n/a	1.870	1.427	0.0283	0.4130	n/a	n/a	n/a
D1	0403062-10	3/18/04 13:50	100.00	0.0	0.180	0.089	0.008	0.2489	n/a	n/a	n/a	1.620	1.484	0.0273	0.4157	n/a	n/a	n/a
D2	0403062-11	3/18/04 13:50	100.00	0.0	0.180	0.106	0.006	0.2518	n/a	n/a	n/a	2.300	2.058	0.0286	0.4247	n/a	n/a	n/a
D3	0403062-12	3/18/04 13:50	100.00	0.0	0.100	0.098	0.005	0.2582	n/a	n/a	n/a	1.990	1.818	0.0185	0.4147	n/a	n/a	n/a
D4	0403062-14	3/18/04 13:50	100.00	0.0	0.140	0.100	0.008	0.2554	n/a	n/a	n/a	2.370	1.853	0.0249	0.4303	n/a	n/a	n/a
B3	0403062-5	3/18/04 13:50	100.00	0.0	0.140	0.091	0.003	0.2525	n/a	n/a	n/a	1.460	1.491	0.0285	0.4208	n/a	n/a	n/a
B4	0403062-6	3/18/04 13:50	100.00	0.0	0.210	0.092	0.003	0.2571	n/a	n/a	n/a	1.870	1.685	0.0417	0.4160	n/a	n/a	n/a

001000

5/3/25/04

pg 273587 a
(cont. from pg NA) b)

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP 724 8

Date: 3/19/09

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow	Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line	Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line
1 1000	A 0.1	1	g		P		g		P		✓	9	g		P		g	g	R	H	OL
2 1200	B	2	g		P		g		P		✓	10	g		P		g	g	P		✓
	C	3		g	R	P					✓	11									✓
	D	4			P						✓	12									✓
		5									OL	13									✓
		6			P						✓	14		g	R	P					✓
		7									✓	15		g	R	P					✓
		8	✓		✓		✓		✓		✓	16	✓		P		✓	g	R	P	✓

P = passes; R = Recount; H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-16	DR Check	NA	NA	EFB0319	30	0856	g	g	3/19/09	NA
3, 14, 15	DR Recount	NA	NA	EFB0319A	30	0905	g	g	3/19/09	
1-16	Bkg Checks	NA	NA	BKB0319	60	10914	g	g	3/19/09	
9, 10	Bkg Recount	NA	NA	BKB0319A	60	1033	g	g	3/19/09	
2	0403088-8	AB040315-4	αB	AB00319	10	1140	g	g	3/19/09	
3	L -23	L	L	AB00319	L	L	L	L	L	
4	AB040315-5MB	AB040315-5	L	AB00319A	L	1147	L	L	L	
1	0403042-1	AB040312-8	αB	AB00319B	100	1209	g	g	3/19/09	
2	-2									
3	-3									
4	-4									
7	-5									
8	-6									
109	-7									
11	-8									
12	-9									

Form 780r6.frm (4/6/2001)

Reviewed by 72 Date 3-20-09

Comments:

000101

Instrument: **LB4100B**

Date 3-19-04

Det	SmplID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt. Below
3	0403062-10	AB040312-6	α/β	AB03199	106	1209	S	S	3/19/04	NA
14	L -11	L	L	L	L	L	L	L	L	L
15	L -12	L	L	L	L	L	L	L	L	L
16	L -14	L	L	L	L	L	L	L	L	L
1-16	Weekly BKG	NA	NA	BXB0319W	1000	1537	g	72	3-20-04	L
<div style="position: absolute; top: 0; right: 0; bottom: 0; left: 0; background: linear-gradient(to top right, transparent 49%, black 49%, black 51%, transparent 51%); background-size: 100% 100%;"></div>										

Form 780r6.srm (4/6/2001)

Reviewed KZ Date 3-20-04

Comments:

000102

PAI - Flow Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
Counting Unit ID: Aqua
High Voltage Mode: Simultaneous
Application Revision: 2
Rev.12/29/03 JE

Data file name: ABB0322
Batch ID: AB040312-B
Count Preset (m): 100
Batch Ended: 3/22/04 10:42

Background logfile: BKGABW
Date of Bkg. Cal: 3/20/04
Alpha efficiency logfile: AmWipe-11/03
Alpha attenuation calibration: n/a
Beta efficiency logfile: BrWipe-11/03
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration	Beta Attenuation Calibration
$y = b \cdot m^a / (a \cdot (mass - c))$	$y = b \cdot m^a / (a \cdot (mass - c))$
Alpha b = 0.0000	Alpha b = 0.0000
alpha = 0.0000	alpha = 0.0000
a = 0.0000	a = 0.0000
c = 0.0000	c = 0.0000
Alpha to Beta X-talk	Beta to Alpha X-talk
$y = m^a \cdot b^a \cdot mass$	$y = m^a \cdot b^a \cdot mass$
a → b xtalk m = 0.0000	b → a xtalk m = 0.0000
a → b xtalk b = 0.0000	b → a xtalk b = 0.0000

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403062-4D	3/22/04 10:41	100.00	0.0	0.070	0.087	0.005	0.2475	n/a	n/a	n/a	1.880	1.378	0.0112	0.4098	n/a	n/a	n/a
A2	0403062-13	3/22/04 10:41	100.00	0.0	0.150	0.097	0.005	0.2480	n/a	n/a	n/a	1.440	1.278	0.0258	0.4097	n/a	n/a	n/a
A3	0403062-14D	3/22/04 10:41	100.00	0.0	0.130	0.071	0.008	0.2508	n/a	n/a	n/a	1.830	1.338	0.0229	0.4153	n/a	n/a	n/a
C1	0403062-16	3/22/04 10:41	100.00	0.0	0.210	0.128	0.004	0.2568	n/a	n/a	n/a	1.480	1.828	0.0379	0.4201	n/a	n/a	n/a
C2	0403062-17	3/22/04 10:41	100.00	0.0	0.090	0.089	0.005	0.2553	n/a	n/a	n/a	1.850	1.550	0.0185	0.4194	n/a	n/a	n/a
C3	0403062-18	3/22/04 10:41	100.00	0.0	0.190	0.111	0.008	0.2524	n/a	n/a	n/a	1.810	1.527	0.0380	0.4154	n/a	n/a	n/a
C4	0403062-19	3/22/04 10:41	100.00	0.0	0.110	0.073	0.002	0.2472	n/a	n/a	n/a	1.740	1.609	0.0189	0.4198	n/a	n/a	n/a
B3	0403062-16	3/22/04 10:42	100.00	0.0	0.120	0.081	0.002	0.2525	n/a	n/a	n/a	1.380	1.441	0.0227	0.4208	n/a	n/a	n/a
D1	0403062-20	3/22/04 10:42	100.00	0.0	0.170	0.127	0.007	0.2489	n/a	n/a	n/a	1.910	1.547	0.0309	0.4157	n/a	n/a	n/a
D2	AB040312-8MB	3/22/04 10:42	100.00	0.0	0.140	0.130	0.008	0.2518	n/a	n/a	n/a	2.130	2.103	0.0250	0.4247	n/a	n/a	n/a

PAI - Gas Flow Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
Counting Unit ID: Aqua
High Voltage Mode: Simultaneous
Application Revision: 2
Application Version: Standard
Rev.12/28/03 JE

Data file name: AB040322A
Batch ID: AB040312-8
Count Preset (m): 10
Batch Ended: 3/22/04 9:13

Background logfile: BKGASW
Date of Bkg. Cal: 3/20/04
Alpha efficiency logfile: AmWipe-11/03
Alpha attenuation calibration: n/a
Beta efficiency logfile: SrWipe-11/03
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration	Beta Attenuation Calibration
$y = b'm^2/(a'mass-x0)$	$y = b'm^2/(a'mass-x0)$
Alpha b= 0.00000	Beta b= 0.0000
m= 0.00000	m= 0.0000
a= 0.0000	a= 0.0000
x0= 0.0000	x0= 0.0000
Alpha to Beta X-talk $y = m^2b^2mass$	Beta to Alpha X-talk $y = m^2mass + b$
a → b xtalk m= 0.0000	b → a xtalk m= 0.00E+00
a → b xtalk b= 0.0000	b → a xtalk b= 0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity						Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff
D3	AB040312-8ALCS	3/22/04 9:13	10.00	0.0	2842.600	0.104	1.362	0.2582	n/a	n/a	n/a	574.900	1.715	469.5904	0.4147	n/a	n/a
D4	AB040312-8BLC3	3/22/04 9:13	10.00	0.0	30.000	0.117	55.327	0.2554	n/a	n/a	n/a	17360.500	1.841	5.3347	0.4303	n/a	n/a

000100

83/2567

PAI - C Low Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
Counting Unit ID: Aqua
High Voltage Model: Simultaneous
Application Revision: 2
Application Version: Standard
Rev.12/29/03 JE

Data file name: ASB03228
Batch ID: AB040312-B
Count Preset (m): 100
Batch Ended: 3/22/04 12:32

Background logfile: BKGASW
Date of Bkg. Cal: 3/20/04
Alpha efficiency logfile: AmWipe-11/03
Alpha attenuation calibration: n/a
Beta efficiency logfile: SrWipe-11/03
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration	Beta Attenuation Calibration
$y = b \cdot m^a (a' \cdot \text{mass} + c')$	$y = b \cdot m^a (a' \cdot \text{mass} + c')$
Alpha ba	Beta ba
ma	ma
sa	sa
ra	ra
Alpha to Beta X-talk	Beta to Alpha X-talk
$y = m \cdot b^a \cdot \text{mass}$	$y = m \cdot b^a \cdot \text{mass}$
a → b xtalk ma	b → a xtalk ma
a → b xtalk ba	b → a xtalk ba

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403062-21	3/22/04 12:32	100.00	0.0	0.110	0.087	0.005	0.2476	n/a	n/a	n/a	1.650	1.378	0.0177	0.4098	n/a	n/a	n/a
A2	0403062-22	3/22/04 12:32	100.00	0.0	0.180	0.097	0.005	0.2480	n/a	n/a	n/a	1.480	1.276	0.0309	0.4097	n/a	n/a	n/a
A3	0403062-23	3/22/04 12:32	100.00	0.0	0.070	0.071	0.005	0.2508	n/a	n/a	n/a	1.360	1.338	0.0123	0.4183	n/a	n/a	n/a
A4	0403062-24	3/22/04 12:32	100.00	0.0	0.180	0.102	0.005	0.2477	n/a	n/a	n/a	1.630	1.365	0.0281	0.4130	n/a	n/a	n/a
C1	0403062-26	3/22/04 12:32	100.00	0.0	0.170	0.128	0.005	0.2588	n/a	n/a	n/a	1.840	1.828	0.0308	0.4201	n/a	n/a	n/a
C2	0403062-27	3/22/04 12:32	100.00	0.0	0.110	0.089	0.005	0.2553	n/a	n/a	n/a	1.780	1.550	0.0202	0.4184	n/a	n/a	n/a
C3	0403062-28	3/22/04 12:32	100.00	0.0	0.130	0.111	0.007	0.2524	n/a	n/a	n/a	1.880	1.527	0.0248	0.4154	n/a	n/a	n/a
C4	0403062-29	3/22/04 12:32	100.00	0.0	0.120	0.073	0.002	0.2472	n/a	n/a	n/a	1.650	1.509	0.0217	0.4198	n/a	n/a	n/a
D1	0403062-30	3/22/04 12:32	100.00	0.0	0.080	0.127	0.007	0.2488	n/a	n/a	n/a	1.890	1.547	0.0145	0.4157	n/a	n/a	n/a
B3	0403062-25	3/22/04 12:32	100.00	0.0	0.110	0.081	0.003	0.2525	n/a	n/a	n/a	1.620	1.441	0.0208	0.4208	n/a	n/a	n/a
D2	0403062-31	3/22/04 12:32	100.00	0.0	0.170	0.130	0.008	0.2518	n/a	n/a	n/a	2.270	2.103	0.0304	0.4247	n/a	n/a	n/a
D3	0403062-32	3/22/04 12:32	100.00	0.0	0.090	0.104	0.004	0.2582	n/a	n/a	n/a	1.790	1.715	0.0149	0.4147	n/a	n/a	n/a
D4	0403062-38	3/22/04 12:32	100.00	0.0	0.090	0.117	0.008	0.2554	n/a	n/a	n/a	1.900	1.841	0.0180	0.4303	n/a	n/a	n/a

000105

5 3/25/04

PAI - Gas Flow Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
 Counting Unit ID: Aqua
 High Voltage Mode: Simultaneous
 Application Revisions: 2
 Rev.12/28/03 JE

Data file name: ABB0322C
 Batch ID: AB040312-8
 Count Preset (mj): 100
 Batch Ended: 3/22/04 14:28

Background logfile: SKGABW
 Date of Bkg. Cal: 3/20/04
 Alpha efficiency logfile: Am/Vipe-11/03
 Alpha attenuation calibration: n/a
 Beta efficiency logfile: Sr/Vipe-11/03
 Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

Alpha Attenuation Calibration		Beta Attenuation Calibration	
$y = b'm^2/(a'(mass-x0))$		$y = b'm^2/(a'(mass-x0))$	
Alpha b=	0.00000	Beta b=	0.0000
m=	0.00000	m=	0.0000
a=	0.0000	a=	0.0000
x0=	0.0000	x0=	0.0000
Alpha to Beta X-talk		Beta to Alpha X-talk	
$y = m^2b'mass$		$y = m^2b'mass + b$	
a → b xtalk m=	0.0000	b → a xtalk m=	0.000000
a → b xtalk b=	0.0000	b → a xtalk b=	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity						Beta Activity							
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403062-26D	3/22/04 14:28	100.00	0.0	0.140	0.087	0.004	0.2476	n/a	n/a	n/a	1.470	1.378	0.0225	0.4098	n/a	n/a	n/a
A2	0403062-33	3/22/04 14:28	100.00	0.0	0.080	0.087	0.008	0.2480	n/a	n/a	n/a	1.640	1.276	0.0103	0.4097	n/a	n/a	n/a
A3	0403062-34	3/22/04 14:28	100.00	0.0	0.090	0.071	0.005	0.2508	n/a	n/a	n/a	1.490	1.338	0.0169	0.4163	n/a	n/a	n/a
A4	0403062-35	3/22/04 14:28	100.00	0.0	0.100	0.102	0.008	0.2477	n/a	n/a	n/a	1.420	1.355	0.0175	0.4130	n/a	n/a	n/a
C1	0403062-37	3/22/04 14:28	100.00	0.0	0.190	0.128	0.008	0.2568	n/a	n/a	n/a	2.020	1.628	0.0343	0.4201	n/a	n/a	n/a
C2	0403062-38	3/22/04 14:28	100.00	0.0	0.120	0.089	0.005	0.2553	n/a	n/a	n/a	1.740	1.550	0.0220	0.4194	n/a	n/a	n/a
C3	0403062-39	3/22/04 14:28	100.00	0.0	0.150	0.111	0.006	0.2524	n/a	n/a	n/a	1.800	1.527	0.0284	0.4154	n/a	n/a	n/a
C4	0403062-40	3/22/04 14:28	100.00	0.0	0.100	0.073	0.002	0.2472	n/a	n/a	n/a	1.760	1.509	0.0181	0.4188	n/a	n/a	n/a
B3	0403062-38D	3/22/04 14:28	100.00	0.0	0.130	0.081	0.003	0.2525	n/a	n/a	n/a	1.840	1.441	0.0246	0.4208	n/a	n/a	n/a
D1	AB040312-8MB	3/22/04 14:28	100.00	0.0	0.080	0.127	0.005	0.2489	n/a	n/a	n/a	1.540	1.547	0.0145	0.4167	n/a	n/a	n/a

901000

9/3/25/04

PAI - G Low Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
Counting Unit ID: Aqua
High Voltage Mode: Simultaneous
Application Revision: 2
Rev.12/28/03 JE

Date file name: AB040322D
Batch ID: AB040312-8
Count Preset (m): 10
Batch Ended: 3/22/04 12:59

Background logfile: BKGABW
Date of Bkg. Cal: 3/20/04
Alpha efficiency logfile: Am/Wipe-11/03
Alpha attenuation calibration: n/a
Beta efficiency logfile: Sr/Wipe-11/03
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration		Beta Attenuation Calibration	
$y = b/m^2(r^2 \text{ mass} - r_0^2)$		$y = b/m^2(r^2 \text{ mass} - r_0^2)$	
Alpha b	0.00000	Beta b	0.0000
m	0.00000	m	0.0000
g	0.0000	g	0.0000
r	0.0000	r	0.0000
Alpha to Beta X-talk $y = m^2 b \text{ mass}$		Beta to Alpha X-talk $y = m^2 \text{ mass} + b$	
a → b xtalk m	0.0000	b → a xtalk m	0.00E+00
a → b xtalk b	0.0000	b → a xtalk b	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
D2	AB040312-8ALCS	3/22/04 12:59	10.00	0.0	2826.300	0.130	1.770	0.2516	n/a	n/a	n/a	659.300	2.103	605.2645	0.4247	n/a	n/a	n/a
D3	AB040312-8BLC3	3/22/04 12:59	10.00	0.0	28.300	0.104	41.167	0.2582	n/a	n/a	n/a	17377.400	1.715	4.6751	0.4147	n/a	n/a	n/a

000107

8/3/25/14

Parago Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: LB4100B

SOP 724 8
Date: 3/22/04

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow
1 600	A ₂ 1
2 600	B
	C
	D

Bkg.	Cal. File ID
Dr A	AB0319W
Dr B	
Dr C	
Dr D	

Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line	Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line
1	G		P		G		P		✓	9	G		P		G		P		✓
2	G		L		G		L		✓	10	G		L		G		L		✓
3	L		L		L		L		✓	11	L		L		L		L		✓
4	L		L		L	G	R	P	✓	12	L		L		L		L		✓
5			LB				P		OL-B	13									✓
6			LB				L		OL-B	14									✓
7			P				L		✓	15									✓
8	✓		L		✓	G	R	H	OL-B	16	✓		L		✓				✓

P = passes; R = Recount; H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-16	DR checks	NA	NA	AB0322	30	0733	0733g	G	3/22/04	NA
1-16	BKG checks	NA	NA	BK0322	60	0747	G	G	3/22/04	
4, 8	BKG Recount	NA	NA	BK0322A	60	0900	G	G	3/22/04	
1	0403062-4D	AB040312-8	LB	AB0322	100	0901	G	G	3/22/04	
2	-13									
3	-14D									
7	-15									
9	-16									
10	-17									
11	-18									
12	-19									
13	-20									
14	AB040312-8MB									
15	-8ALLS			AB0322A	10	0902	L	G	3/22/04	
16	-8BLLS									

Comments:

000108

Instrument: LB4100B

Date: 3/22/04

LCB
3/26/04

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date.	Cmnt Below
1	6403062-21	AB040312-9	2B	AB00312B	100	1051	S	77	3-22-04	NA
2	-22									
3	-23									
4	-24									
7	-25									
9	-26									
10	-27									
11	-28									
12	-29									
13	-30									
14	-31									
15	-32									
16	-36									
1	-36D			AB00322C	100	12:46	77			
2	-33									
3	-34									
4	-35									
7	-36D									
9	-37									
10	-38									
11	-39									
12	-40									
13	AB0340312-9NB									
14	-9ALCS			AB00322D	10	12:49	77	09	3/22/04	
15	-9ALCS									
1	0403140-2	AB040322-2	2B	AB00322E	10	1440	S	S	3/22/04	
2	-3									
3	-4									
4	-5									
7	-6									

Form 78016.frm (4/6/2001)

Reviewed 72 Date 3-22-04

Comments:

601000

PAI - Low Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
 Counting Unit ID: Aqua
 High Voltage Mode: Simultaneous
 Application Revision: 2
 Application Version: Standard
 Rev.12/28/03 JE

Data file name: ABB0325A
 Batch ID: ABB040312-10
 Count Preset (m): 100
 Batch Ended: 3/23/04 11:58

Background logfile: BKGBW
 Date of Bkg. Cal: 3/20/04
 Alpha efficiency logfile: AmWipe-11/03
 Alpha attenuation calibration: n/a
 Beta efficiency logfile: SrWipe-11/03
 Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

Alpha Attenuation Calibration	Beta Attenuation Calibration
$y = b/m \cdot (a \cdot \text{mass} \cdot x)$	$y = b/m \cdot (a \cdot \text{mass} \cdot x)$
Alpha b= 0.0000	Beta b= 0.0000
m= 0.0000	m= 0.0000
a= 0.0000	a= 0.0000
x= 0.0000	x= 0.0000
Alpha to Beta X-talk	Beta to Alpha X-talk
$y = m \cdot b \cdot \text{mass}$	$y = m \cdot b \cdot \text{mass}$
a → b xtalk m= 0.0000	b → a xtalk m= 0.0000
a → b xtalk b= 0.0000	b → a xtalk b= 0.0000

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
C1	0403082-48	3/23/04 11:57	100.00	0.0	0.190	0.128	0.005	0.2568	n/a	n/a	n/a	1.790	1.628	0.0343	0.4201	n/a	n/a	n/a
B3	0403082-50	3/23/04 11:57	100.00	0.0	0.110	0.081	0.003	0.2525	n/a	n/a	n/a	1.850	1.441	0.0208	0.4208	n/a	n/a	n/a
C2	0403082-47	3/23/04 11:57	100.00	0.0	0.180	0.089	0.005	0.2553	n/a	n/a	n/a	1.870	1.580	0.0294	0.4194	n/a	n/a	n/a
C3	0403082-46	3/23/04 11:57	100.00	0.0	0.250	0.111	0.008	0.2524	n/a	n/a	n/a	1.790	1.627	0.0473	0.4154	n/a	n/a	n/a
C4	0403082-45	3/23/04 11:57	100.00	0.0	0.180	0.073	0.002	0.2472	n/a	n/a	n/a	1.680	1.509	0.0328	0.4198	n/a	n/a	n/a
B4	0403082-49	3/23/04 11:57	100.00	0.0	0.170	0.107	0.003	0.2571	n/a	n/a	n/a	1.580	1.637	0.0337	0.4180	n/a	n/a	n/a
D1	0403082-44	3/23/04 11:57	100.00	0.0	0.080	0.127	0.006	0.2489	n/a	n/a	n/a	1.590	1.547	0.0184	0.4157	n/a	n/a	n/a
D2	0403082-43	3/23/04 11:57	100.00	0.0	0.120	0.130	0.006	0.2516	n/a	n/a	n/a	2.310	2.103	0.0215	0.4247	n/a	n/a	n/a
D3	0403082-42	3/23/04 11:57	100.00	0.0	0.190	0.104	0.006	0.2582	n/a	n/a	n/a	2.370	1.715	0.0314	0.4147	n/a	n/a	n/a
D4	0403082-41	3/23/04 11:57	100.00	0.0	0.130	0.117	0.007	0.2554	n/a	n/a	n/a	2.360	1.941	0.0231	0.4303	n/a	n/a	n/a
A4	AB040312-10MB	3/23/04 11:58	100.00	0.0	0.070	0.102	0.005	0.2477	n/a	n/a	n/a	1.580	1.355	0.0123	0.4130	n/a	n/a	n/a

+ Recounted in file ABB0325A - 3/25/04
 Det 15 offline on 3/24.

0001100

3/25/04

PAI - Gas Flow Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
Counting Unit ID: Aqua
High Voltage Mode: Simultaneous
Application Revision: 2
Rev.12/28/03 JE

Data file name: ABB0323B
Batch ID: AB040312-10
Count Preset (n): 10
Batch Ended: 3/23/04 10:28

Background logfile: BKGA3W
Date of Bkg. Cal: 3/20/04
Alpha efficiency logfile: AmWipe-11/03
Alpha attenuation calibration: n/a
Beta efficiency logfile: BrWipe-11/03
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration	Beta Attenuation Calibration
$y = b^*m^2/(a^*(mass-0))$	$y = b^*m^2/(a^*(mass-0))$
Alpha b= 0.00000	Beta b= 0.0000
m= 0.00000	m= 0.0000
a= 0.0000	a= 0.0000
x0= 0.0000	x0= 0.0000
Alpha to Beta X-talk	Beta to Alpha X-talk
$y = m^*b^*mass$	$y = m^*mass + b$
a -> b xtalk m= 0.0000	b -> a xtalk m= 0.00E+00
a -> b xtalk b= 0.0000	b -> a xtalk b= 0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A2	AB040312-10ALCS	3/23/04 10:28	10.00	0.0	2768.000	0.097	2.113	0.2440	n/a	n/a	n/a	595.200	1.276	475.5688	0.4097	n/a	n/a	n/a
A3	AB040312-10BLC3	3/23/04 10:28	10.00	0.0	28.200	0.071	57.833	0.2508	n/a	n/a	n/a	17255.500	1.338	4.9680	0.4153	n/a	n/a	n/a

000111

8 3/4 ' r

Unit Type: LB4100-B
 Counting Unit ID: Aqua
 High Voltage Mode: Simultaneous
 Application Revision: 2
 Rev.12/29/03 JE

Data file name: ASB0323E
 Batch ID: ASB040312-10
 Count Preset (m): 100
 Batch Ended: 3/23/04 13:51

Background logfile: BKGABW
 Date of Bkg. Cal: 3/20/04
 Alpha efficiency logfile: AmWipe-11/03
 Alpha attenuation calibration: n/a
 Beta efficiency logfile: StWipe-11/03
 Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

Alpha Attenuation Calibration		Beta Attenuation Calibration	
$y = b \cdot m^a (a^b \cdot \text{mass} - c)$		$y = b \cdot m^a (a^b \cdot \text{mass} - c)$	
Alpha b	0.00000	Beta b	0.0000
ma	0.00000	ma	0.0000
am	0.0000	am	0.0000
ca	0.0000	ca	0.0000
Alpha to Beta X-talk		Beta to Alpha X-talk	
$y = m^b \cdot \text{mass}$		$y = m^b \cdot \text{mass} + b$	
a → b xtalk ma	0.0000	b → a xtalk ma	0.00E+00
a → b xtalk ba	0.0000	b → a xtalk ba	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403082-45D	3/23/04 13:51	100.00	0.0	0.120	0.087	0.005	0.2475	n/a	n/a	n/a	1.610	1.378	0.0193	0.4098	n/a	n/a	n/a

000112

8/3/25/04

pg 2591 a
(cont. from pg N/A) b

Parago nalytics, Inc.

SOP 724 P 3

Low Background Gas Flow Proportional Counter Log

Instrument: **LB4100B**

Date: 3/23/04

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow
1600	A B, 1
2450	B
	C ↓
	D ↓

Bkg. Cal. File ID

Dr A	AKB031W
Dr B	↓
Dr C	↓
Dr D	↓

Det	DR	DR	DR	Cmnt	Bkg	Bkg	Bkg	Cmnt	On-	Det	DR	DR	DR	Cmnt	Bkg	Bkg	Bkg	Cmnt	On-
	1	2	Stat		1	2	Stat		line		1	2	Stat		1	2	Stat		line
1	UB		P.		LCB		P		✓	9	LCB		P		LCB		P		✓
2									✓	10									✓
3									✓	11									✓
4									✓	12									✓
5			LB						OLB	13									✓
6			LB						OLB	14									✓
7			P						✓	15									✓
8	↓		↓		↓		↓		✓	16	↓		↓		↓		↓		✓

P = passes; R = Recount; H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-16	DR Checks	-	-	EFB0323	30	0845	LCB	LCB	3/23/04	N/A
1-16	Bkg Checks	-	-	BKB0323	60	0857	LCB	LCB	3/23/04	
1	AB040317-ILCS	AB040317-1	AB	ABB0323	60	10.07	77	77	3-23-04	
16	0403062-41	AB040312-10	AB	ABB0323A	100	10.17	77			
15	-42									
14	-43									
13	-44									
12	-45									
11	-46									
10	-47									
9	-48									
8	-49									
7	-50									
4	AB040312-04B									
2	-10ALCS			ABB0323B	10	10:19	77	77	3-23-04	
3	10BLCS	✓	✓	✓	✓	✓	✓	✓	✓	✓

Form 780r6.frm (4/6/2001)

Reviewed by 77 Date 3-23-04

Comments:

000113

Instrument: LB4100B

Date: 3/23/04

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1	0403119-1	AB040319-3	AB	ABB0323C	10	1125	77	77	3-23-04	NA
2	↓ -2	↓	↓	↓	↓	↓	↓	↓	↓	↓
3	AB040319-3AUS	↓	↓	↓	↓	↓	↓	↓	↓	↓
3	0403119-1D	↓	↓	ABB0323D	10	1138	77	↓	↓	↓
2	AB040319-3BUS	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	↓ -3MB	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	0403062-4SD	AB040312-10	AB	ABB0323E	100	1211	77	77	3-23-04	↓
2	0403092-6	AB040316-1	AB	ABB0323F	120	1209	77	↓	↓	↓
3	↓ -6D	↓	↓	↓	↓	↓	↓	↓	↓	↓
4	↓ -6MS	↓	↓	↓	↓	↓	↓	↓	↓	↓
7	AB040316-1MB	↓	↓	↓	↓	↓	↓	↓	↓	↓
8	↓ -1LCS	↓	↓	↓	↓	↓	↓	↓	↓	↓
9	0403061-41	AB040312-4	AB	ABB0323G	100	1212	77	↓	↓	↓
10	↓ -42	↓	↓	↓	↓	↓	↓	↓	↓	↓
11	↓ -43	↓	↓	↓	↓	↓	↓	↓	↓	↓
12	↓ -44	↓	↓	↓	↓	↓	↓	↓	↓	↓
13	0403085-1	AB040312-5	AB	ABB0323H	100	1213	77	↓	↓	↓
14	↓ -2	↓	↓	↓	↓	↓	↓	↓	↓	↓
15	↓ -3	↓	↓	↓	↓	↓	↓	↓	↓	↓
16	↓ -7	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	↓ -4	↓	↓	ABB0323I	100	1417	77	77	3-23-04	↓
2	↓ -5	↓	↓	↓	↓	↓	↓	↓	↓	↓
3	↓ -6	↓	↓	↓	↓	↓	↓	↓	↓	↓
4	↓ -7D	↓	↓	↓	↓	↓	↓	↓	↓	↓
7	↓ -8	↓	↓	↓	↓	↓	↓	↓	↓	↓
8	↓ -9	↓	↓	↓	↓	↓	↓	↓	↓	↓
9	↓ -10	↓	↓	↓	↓	↓	↓	↓	↓	↓
10	↓ -11	↓	↓	↓	↓	↓	↓	↓	↓	↓
11	↓ -12	↓	↓	↓	↓	↓	↓	↓	↓	↓
12	↓ -13	↓	↓	↓	↓	↓	↓	↓	↓	↓

PAI - Low Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
Counting Unit ID: Aqua
High Voltage Mode: Simultaneous
Application Revisions: 2
Application Version: Standard
Rev.12/29/03 JE

Data File name: ASS0325A
Batch ID: ASS040312-10
Count Preset (m): 100
Batch Ended: 3/25/04 10:13

Background logfile: BKGASW
Date of Bkg. Cal: 3/20/04
Alpha efficiency logfile: AmWipe-11/03
Alpha attenuation calibration: n/a
Beta efficiency logfile: SrWipe-11/03
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration	Beta Attenuation Calibration
$y = b \cdot m^a (a^2 \cdot \text{mass} - c)$	$y = m^a (a^2 \cdot \text{mass} - c)$
Alpha ba	Beta ba
ma	ma
sa	sa
xa	xa
Alpha to Beta X-talk	Beta to Alpha X-talk
$y = m^a \cdot b^a \cdot \text{mass}$	$y = m^a \cdot \text{mass} + b$
a → b xtalk ma	b → a xtalk ma
a → b xtalk ba	b → a xtalk ba

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b → a xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a → b xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A2	0403062-42	3/25/04 10:13	100.00	0.0	0.170	0.097	0.008	0.2480	n/a	n/a	n/a	1.670	1.276	0.0292	0.4097	n/a	n/a	n/a

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP 724 (8)

Date: 3/25/04

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow
1600	A 0.1
21800	B ↓
	C ↓
	D ↓

Bkg. Cal. File ID

Dr A BKB0319W
Dr B
Dr C ↓
Dr D ↓

Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line	Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line
1	LCB		P		LCB		P		✓	9	LCB		P		LCB		P		✓
2									✓	10									✓
3									✓	11									✓
4			↓				↓		✓	12									✓
5			OLB				OLB		OLB	13									✓
6			OLB				OLB		OLB	14			↓						✓
7			P				P		✓	15		LCB	R						✓
8	↓		↓		↓	LCB	R	P	✓	16	↓		P		↓	LCB	R	H.B	OLB

P = passes; R = Recount; H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-16	DR Checks	N/A	N/A	EFB0325	30	0621	LCB	LCB	3/25/04	N/A
15	DR Recount	N/A	N/A	EFB0325A	30	0642	LCB	LCB	3/25/04	
1-16	Bkg Checks	N/A	N/A	BKB0325	60	0653	LCB	LCB	3/25/04	
8,11,12,15	Bkg Recount	N/A	N/A	BKB0325A	60	0817	LCB		3/25/04	
1	AB040318-1LLS	AB040318-1	21/3	ABB0325	100	0829	LCB	7/2	3.25.04	NA 3.25.04
2	0403062-42	AB040312-10	21/3	ABB0325A	100	0830	LCB			NA
1	0403140-2	AB040322-4	AB	ABB0325B	10	1018	7/2	7/2	3.25.04	
2	-3									
3	-4									
4	-5									
7	-6									
8	-7									
9	-8									
10	-10									
11	-11									
12	-12									

Form 780r6.frm (4/6/2001)

Reviewed by 7/7 Date 3.25.04

Comments:

000116

PARAGON ANALYTICS
Radiochemistry Data Package

Section 5

**QUALITY ASSURANCE
SUMMARY REPORTS**

5

No *NON-CONFORMANCE REPORTS* or
QUALITY ASSURANCE SUMMARY SHEETS
are included in this data package.

~~000117~~

000118

PARAGON ANALYTICS
Radiochemistry Data Package

Section 6

**LABORATORY
BENCH SHEETS**

6

000119

Prep Procedure: GAB_No_Att

Analytical QASS / NCR? Y / ☒ N NA

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Residual Mass (mg)	Cnt 1 File	Cnt 1 Inst/Det	Cnt 1 Pos Chk By	Cnt 2 File	Cnt 2 Inst/Det	Cnt 2 Pos Chk By	Cnt 3 File	Cnt 3 Inst/Det	Cnt 3 Pos Chk By	Notes
1	0403062-1	SMP	1	1	sample		ABB03AB	1	g							
1	0403062-2	SMP	1	1	sample			2								
1	0403062-3	SMP	1	1	sample			3								
1	0403062-4	SMP	1	1	sample			4								
1	0403062-4	DUP	1	1	sample		ABB0322	17	g	53/22/07						
1	0403062-5	SMP	1	1	sample		ABB0319	13	g							
1	0403062-6	SMP	1	1	sample			8								
1	0403062-7	SMP	1	1	sample			10								
1	0403062-8	SMP	1	1	sample			11								
1	0403062-9	SMP	1	1	sample			12								
1	0403062-10	SMP	1	1	sample			13								
1	0403062-11	SMP	1	1	sample			14								
1	0403062-12	SMP	1	1	sample			15								
1	0403062-13	SMP	1	1	sample		ABB0322	2	g							
1	0403062-14	SMP	1	1	sample		ABB0319	16	g							
1	0403062-14	DUP	1	1	sample		ABB0322	3	g							
1	0403062-15	SMP	1	1	sample			7								
1	0403062-16	SMP	1	1	sample			9								
1	0403062-17	SMP	1	1	sample			10								
1	0403062-18	SMP	1	1	sample			11								
1	0403062-19	SMP	1	1	sample			12								
1	0403062-20	SMP	1	1	sample			13								
1	AB040312-8A	LCS	1	1	sample		ABB0322A	15	g							
1	AB040312-8B	LCS	1	1	sample			16								
1	AB040312-8	MB	1	1	sample		ABB0322	14	g							53/25/07

000129

Radiochemistry Instrument Worksheet

Paragon Analytics

Prep Batch: AB040312-8

Prep Procedure: GAB_No_Att

Analytical QASS / NCR? Y / ☒ N N/A

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Residual Mass (mg)	Cnt 1 File	Cnt 1 Inst/Det	Cnt 1 Pos Chk By	Cnt 2 File	Cnt 2 Inst/Det	Cnt 2 Pos Chk By	Cnt 3 File	Cnt 3 Inst/Det	Cnt 3 Pos Chk By	Notes
----------	-------	---------	----------	---------	-------	--------------------	------------	----------------	------------------	------------	----------------	------------------	------------	----------------	------------------	-------

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	Am-241	601	9,947,565	DPM/sample	03/12/04	1	sample	
S2	Sr-90	729	20,504,889	DPM/sample	03/12/04	1	sample	

00012

Radiochemistry Prep Worksheet

Paragon Analytics

Prep Batch: AB040

Prep Procedure: GAB_No_Att

Reviewed By: ATF

Review Date: 3/15/04

Non-Routine Pre-Treatment? Y ☒ N

Batch: _____

Re-Prep? Y ☒ N

Batch: _____

Prep QASS / NCR? Y ☒ N

Prep SOP: PAI 702 Rev: 16

Prep Analyst: Joanne Cucinotta

Balance: _____

Prep SOP: NONE

Prep Date: 3/12/04

Balance: _____

Matrix Class: solid

Prep Dept: RS

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Alq sample	Fin Alq sample	Prep Basis	Standards	Prep Notes
1	1	0403062-1	SMP		1	1	As Received		
2	1	0403062-2	SMP		1	1	As Received		
3	1	0403062-3	SMP		1	1	As Received		
4	1	0403062-4	SMP		1	1	As Received		
5	1	0403062-4	DUP		1	1	As Received		COUNT DUPLICATE
6	1	0403062-5	SMP		1	1	As Received		
7	1	0403062-6	SMP		1	1	As Received		
8	1	0403062-7	SMP		1	1	As Received		
9	1	0403062-8	SMP		1	1	As Received		
10	1	0403062-9	SMP		1	1	As Received		
11	1	0403062-10	SMP		1	1	As Received		
12	1	0403062-11	SMP		1	1	As Received		
13	1	0403062-12	SMP		1	1	As Received		
14	1	0403062-13	SMP		1	1	As Received		
15	1	0403062-14	SMP		1	1	As Received		
16	1	0403062-14	DUP		1	1	As Received		COUNT DUPLICATE
17	1	0403062-15	SMP		1	1	As Received		
18	1	0403062-16	SMP		1	1	As Received		
19	1	0403062-17	SMP		1	1	As Received		
20	1	0403062-18	SMP		1	1	As Received		
21	1	0403062-19	SMP		1	1	As Received		
22	1	0403062-20	SMP		1	1	As Received		
23	1	AB040312-8A	LCS		1	1	As Received	S1	ALPHA SOURCE
24	1	AB040312-8B	LCS		1	1	As Received	S2	BETA SOURCE
25	1	AB040312-8	MB		1	1	As Received		

Spiked By: N/A

Date: N/A

Witnessed By: N/A

Date: N/A

Relinquished By: _____

Date: 03/15/04

Received By: _____

Date: 3/16/04

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Allquot	Units	Pipet ID
S1	Am-241	601	9,947,585	DPM/sample	03/12/04	1	sample	
S2	Sr-90	729	20,504,889	DPM/sample	03/12/04	1	sample	

Comments

Prep Procedure: GAB_No_Att

Analytical QASS / NCR? Y / ☒ NA

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Residual Mass (mg)	Cnt 1 File	Cnt 1 Inst/Det	Cnt 1 Pos Chk By	Cnt 2 File	Cnt 2 Inst/Det	Cnt 2 Pos Chk By	Cnt 3 File	Cnt 3 Inst/Det	Cnt 3 Pos Chk By	Notes
1	0403062-21	SMP	1	1	sample		AB0322B	1	7/7							
1	0403062-22	SMP	1	1	sample			2								
1	0403062-23	SMP	1	1	sample			3								
1	0403062-24	SMP	1	1	sample			4								
1	0403062-25	SMP	1	1	sample			7								
1	0403062-26	SMP	1	1	sample			9								
1	0403062-26	DUP	1	1	sample		AB0322C	1								
1	0403062-27	SMP	1	1	sample		AB0322B	10								
1	0403062-28	SMP	1	1	sample			11								
1	0403062-29	SMP	1	1	sample			12								
1	0403062-30	SMP	1	1	sample			13								
1	0403062-31	SMP	1	1	sample			14								
1	0403062-32	SMP	1	1	sample			15								
1	0403062-33	SMP	1	1	sample		AB0322C	2								
1	0403062-34	SMP	1	1	sample			3								
1	0403062-35	SMP	1	1	sample			4								
1	0403062-36	SMP	1	1	sample		AB0322B	16								
1	0403062-36	DUP	1	1	sample		AB0322C	7								
1	0403062-37	SMP	1	1	sample			7								
1	0403062-38	SMP	1	1	sample			10								
1	0403062-39	SMP	1	1	sample			11								
1	0403062-40	SMP	1	1	sample			12								
1	AB040312-9A	LCS	1	1	sample		AB0322D	14	g							
1	AB040312-9B	LCS	1	1	sample			15	g							
1	AB040312-9	MB	1	1	sample		AB0322C	13	g							

3/25/22

Radiochemistry Instrument Worksheet

Paragon Analytics

Prep Batch: AB0403

Prep Procedure: GAB_No_Att

Analytical QASS / NCR? Y / ☒ N N/A

Prep Num	LabID	QC Type	Init Alq	Fin Alq	Units	Residual Mass (mg)	Cnt 1 File	Cnt 1 Inst/Det	Cnt 1 Pos Chk By	Cnt 2 File	Cnt 2 Inst/Det	Cnt 2 Pos Chk By	Cnt 3 File	Cnt 3 Inst/Det	Cnt 3 Pos Chk By	Notes
----------	-------	---------	----------	---------	-------	--------------------	------------	----------------	------------------	------------	----------------	------------------	------------	----------------	------------------	-------

Spike Solution Information

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	Am-241	601	9,947.565	DPM/sample	03/12/04	1	sample	
S2	Sr-90	729	20,504.884	DPM/sample	03/12/04	1	sample	

00012

Prep Procedure: GAB_No_Att

Reviewed By: ATF

Review Date: 3/15/04

Non-Routine Pre-Treatment? Y / ☒ N Batch: Re-Prep? Y / ☒ N Batch: Prep QASS / NCR? Y / ☒ N

Prep SOP: PAI 702 Rev: 16

Prep SOP: NONE

Matrix Class: solid

Prep Analyst: Joanne Cucinotta JC

Prep Date: 3/12/04

Prep Dept: RS

Balance:

Balance:

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Aliq sample	Fin Aliq sample	Prep Basis	Standards	Prep Notes
1	1	0403062-21	SMP		1	1	As Received		
2	1	0403062-22	SMP		1	1	As Received		
3	1	0403062-23	SMP		1	1	As Received		
4	1	0403062-24	SMP		1	1	As Received		
5	1	0403062-25	SMP		1	1	As Received		
6	1	0403062-26	SMP		1	1	As Received		
7	1	0403062-28	DUP		1	1	As Received		COUNT DUPLICATE
8	1	0403062-27	SMP		1	1	As Received		
9	1	0403062-28	SMP		1	1	As Received		
10	1	0403062-29	SMP		1	1	As Received		
11	1	0403062-30	SMP		1	1	As Received		
12	1	0403062-31	SMP		1	1	As Received		
13	1	0403062-32	SMP		1	1	As Received		
14	1	0403062-33	SMP		1	1	As Received		
15	1	0403062-34	SMP		1	1	As Received		
16	1	0403062-35	SMP		1	1	As Received		
17	1	0403062-36	SMP		1	1	As Received		
18	1	0403062-36	DUP		1	1	As Received		COUNT DUPLICATE
19	1	0403062-37	SMP		1	1	As Received		
20	1	0403062-38	SMP		1	1	As Received		
21	1	0403062-39	SMP		1	1	As Received		
22	1	0403062-40	SMP		1	1	As Received		
23	1	AB040312-9A	LCS		1	1	As Received	S1	ALPHA SOURCE
24	1	AB040312-9B	LCS		1	1	As Received	S2	BETA SOURCE
25	1	AB040312-9	MB		1	1	As Received		

Spiked By: N/A

Date: N/A

Witnessed By: N/A

Date: N/A

Relinquished By: ATF

Date: 03/15/04

Received By: 3/16/04

Date: 3/16/04

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	Am-241	601	9,947.565	DPM/sample	03/12/04	1	sample	
S2	Sr-90	729	20,504.884	DPM/sample	03/12/04	1	sample	

Comments

Prep Procedure: GAB_No_Att

Analytical QASS / NCR? Y / ~~N~~ NA

Prep Num	LabID	QC Type	Init Aliq	Fin Aliq	Units	Residual Mass (mg)	Cnt 1 File	Cnt 1 Inst/Det	Cnt 1 Pos Chk By	Cnt 2 File	Cnt 2 Inst/Det	Cnt 2 Pos Chk By	Cnt 3 File	Cnt 3 Inst/Det	Cnt 3 Pos Chk By	Notes
1	0403062-41	SMP	1	1	sample		ABB0323A 16		77							
1	0403062-42	SMP	1	1	sample			15		*ABB0325A 7		77				
1	0403062-43	SMP	1	1	sample			14				603 3/25/04				
1	0403062-44	SMP	1	1	sample			13								
1	0403062-45	SMP	1	1	sample			12								
1	0403062-45	DUP	1	1	sample		ABB0323E 1		77							Cnt Dup
1	0403062-46	SMP	1	1	sample		ABB0323A 11		77							
1	0403062-47	SMP	1	1	sample			10								
1	0403062-48	SMP	1	1	sample			9								
1	0403062-49	SMP	1	1	sample			77 3/25/04 8								
1	0403062-50	SMP	1	1	sample			47								
1	AB040312-10A	LCS	1	1	sample		ABB0323B 2		77							
1	AB040312-10B	LCS	1	1	sample			3								
1	AB040312-10	MB	1	1	sample		ABB0323A 34		77							

77 3/25/04 XRecount - Det 15 & Spike 3/24.

72 3-24-04

53/25/04

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	Am-241	601	9,947.565	DPM/sample	03/12/04	1	sample	
S2	Sr-90	729	20,504.881	DPM/sample	03/12/04	1	sample	

Prep Procedure: GAB_No_Att

Reviewed By: ATF

Review Date: 3/15/04

Non-Routine Pre-Treatment? Y / ☒ Batch: Re-Prep? Y / ☒ Batch: Prep QASS / NCR? Y / ☒

Prep SOP: PAI 702 Rev: 16

Prep Analyst: Joanne Cucinotta JC

Balance:

Prep SOP: NONE

Prep Date: 3/12/04

Balance:

Matrix Class: solid

Prep Dept: RS

Samp Num	Prep Num	LabID	QC Type	Dish No.	Init Aliq sample	Fin Aliq sample	Prep Basis	Standards	Prep Notes
1	1	0403062-41	SMP		1	1	As Received		
2	1	0403062-42	SMP		1	1	As Received		
3	1	0403062-43	SMP		1	1	As Received		
4	1	0403062-44	SMP		1	1	As Received		
5	1	0403062-45	SMP		1	1	As Received		
6	1	0403062-45	DUP		1	1	As Received		COUNT DUPLICATE
7	1	0403062-46	SMP		1	1	As Received		
8	1	0403062-47	SMP		1	1	As Received		
9	1	0403062-48	SMP		1	1	As Received		
10	1	0403062-49	SMP		1	1	As Received		
11	1	0403062-50	SMP		1	1	As Received		
12	1	AB040312-10A	LCS		1	1	As Received	S1	ALPHA SOURCE
13	1	AB040312-10B	LCS		1	1	As Received	S2	BETA SOURCE
14	1	AB040312-10	MB		1	1	As Received		

Spiked By: N/A

Date: N/A

Witnessed By: N/A

Date: N/A

Relinquished By: J

Date: 03/15/04

Received By: J

Date: 3/16/04

Soln #	Nuclide	SolnID	Prep Conc	Units	Prep Date	Aliquot	Units	Pipet ID
S1	Am-241	601	9,947.565	DPM/sample	03/12/04	1	sample	
S2	Sr-90	729	20,504.881	DPM/sample	03/12/04	1	sample	

Comments

SAMPLE CONDITION FORM (SOLIDS)

ANALYST: JC

ANALYSIS DATE: 3/12/04 METHOD: GSR

ANALYSIS DATE: 3/12/04 METHOD: G&R

WORK ORDER	SAMPLE ID	SAMPLE CONDITION		
		Dry/Wet	TEXTURE	Remarks
0403062	1-10	Dry (AR)	Swipe	None
↓	11-20	↓	↓	↓
<div style="transform: rotate(-45deg); display: inline-block;"> JLC 3/12/04 </div>				

A hand-drawn graph on a grid. The grid has 10 columns and 10 rows. A straight line is drawn from the origin (0,0) to the point (10,10). The equation $y = x$ is written in the top right corner of the grid.

000128

SAMPLE CONDITION FORM (SOLIDS)

ANALYST: JC

ANALYSIS DATE: 3/12/04 METHOD: GAB

ANALYSIS DATE: 3/12/04 METHOD: GAB

[illegible]

000129

SAMPLE CONDITION FORM (SOLIDS)

ANALYST: JC

ANALYSIS DATE: 3/12/04 METHOD: GAB

ANALYSIS DATE: 3/12/04 METHOD: GAB

WORK ORDER	SAMPLE ID	SAMPLE CONDITION		
		Dry/Wet	TEXTURE	Remarks
0403062	4145	Dry (AR)	SWipe	None
↓	4650	↓	↓	↓
<div style="position: relative; height: 400px;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border-left: 2px solid black; border-bottom: 2px solid black; transform: rotate(45deg);"></div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em;"> JC 3/12/04 </div> </div>				

000130

PARAGON ANALYTICS
Radiochemistry Data Package

Section 7

**STANDARDS
TRACEABILITY
DOCUMENTS**



CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

PAI-00601
rec'd 12-05-01

62752A-307

Am-241 47 mm Diameter Membrane Filter in Stainless Steel Planchet

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting. The calibration was checked by alpha counting after source preparation.

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

ISOTOPE:	Am-241
ACTIVITY (dps):	166.4
HALF-LIFE:	4.322 E2 years
CALIBRATION DATE:	December 1, 2001 12:00 EST
TOTAL UNCERTAINTY*:	5.0%
SYSTEMATIC:	4.7%
RANDOM:	0.3%

*99% Confidence Level

Impurities: γ -impurities <0.1%

Diameter of active area: 43 mm. Low smooth bottom planchet.
Source covering 0.5 mg/cm² mylar.

No expiration date has been given for this source due to the fragile nature of the mylar covering. This source should be carefully tested for leakage at least every six months. If leakage is detected this source should be disposed of by approved radioactive waste disposal procedures.

P O NUMBER 001703, Item 2

SOURCE PREPARED BY:

M. Taskaeva
M. Taskaeva, Radiochemist

Q A APPROVED:

WM. McIntyre 12-4-01

000132

CERTIFICATE OF CALIBRATION
Standard Radionuclide SourcePAT ID 0729
rec'd 10-30-03

66949-307

Sr-90 47 mm Diameter Membrane Filter in Stainless Steel Planchet

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting. The calibration was checked by beta counting after source preparation.

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

ISOTOPE: Sr-90
ACTIVITY (dps): 3.450 E2
HALF-LIFE: 28.79 years
CALIBRATION DATE: October 21, 2003 12:00 EST
RELATIVE EXPANDED:
UNCERTAINTY ($k=2$): 3.3%

Impurities: γ -impurities <0.1%

Diameter of active area: 43 mm. Low smooth bottom planchet.
Source covering 0.85 mg/cm² mylar.

No expiration date has been given for this source due to the fragile nature of the mylar covering. This source should be carefully tested for leakage at least every six months. If leakage is detected this source should be disposed of by approved radioactive waste disposal procedures.

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

P O NUMBER EW091503, Item 1

SOURCE PREPARED BY: M. Taskaeva
M. Taskaeva, RadiochemistQ A APPROVED: DM Mj 10-27-03

000133

PARAGON ANALYTICS
Radiochemistry Data Package

Section 8

CHAIN OF CUSTODY

8

000134

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0403062

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
030104-28-01	0403062-1		WIPE	02-Mar-04	11:15
030104-28-02	0403062-2		WIPE	02-Mar-04	11:15
030104-28-03	0403062-3		WIPE	02-Mar-04	11:15
030104-28-04	0403062-4		WIPE	02-Mar-04	11:15
030104-28-05	0403062-5		WIPE	02-Mar-04	11:15
030104-28-06	0403062-6		WIPE	02-Mar-04	11:15
030104-28-07	0403062-7		WIPE	02-Mar-04	11:15
030104-28-08	0403062-8		WIPE	02-Mar-04	11:15
030104-28-09	0403062-9		WIPE	02-Mar-04	11:15
030104-28-10	0403062-10		WIPE	02-Mar-04	11:15
030104-28-11	0403062-11		WIPE	02-Mar-04	11:15
030104-28-12	0403062-12		WIPE	02-Mar-04	11:15
030104-28-13	0403062-13		WIPE	02-Mar-04	11:15
030104-28-14	0403062-14		WIPE	02-Mar-04	11:15
030104-28-15	0403062-15		WIPE	02-Mar-04	11:15
030104-28-16	0403062-16		WIPE	02-Mar-04	11:15
030104-28-17	0403062-17		WIPE	02-Mar-04	11:15
030104-28-18	0403062-18		WIPE	02-Mar-04	11:15
030104-28-19	0403062-19		WIPE	02-Mar-04	11:15
030104-28-20	0403062-20		WIPE	02-Mar-04	11:15
030104-28-21	0403062-21		WIPE	02-Mar-04	11:15
030104-28-22	0403062-22		WIPE	02-Mar-04	11:15
030104-28-23	0403062-23		WIPE	02-Mar-04	11:15
030104-28-24	0403062-24		WIPE	02-Mar-04	11:15
030104-28-25	0403062-25		WIPE	02-Mar-04	11:15
030104-28-26	0403062-26		WIPE	02-Mar-04	11:15
030104-28-27	0403062-27		WIPE	02-Mar-04	11:15
030104-28-28	0403062-28		WIPE	02-Mar-04	11:15
030104-28-29	0403062-29		WIPE	02-Mar-04	11:15
030104-28-30	0403062-30		WIPE	02-Mar-04	11:15
030104-28-31	0403062-31		WIPE	02-Mar-04	11:17
030104-28-32	0403062-32		WIPE	02-Mar-04	11:17

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0403062

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
030104-28-33	0403062-33		WIPE	02-Mar-04	11:17
030104-28-34	0403062-34		WIPE	02-Mar-04	11:17
030104-28-35	0403062-35		WIPE	02-Mar-04	11:17
030104-28-36	0403062-36		WIPE	02-Mar-04	11:17
030104-28-37	0403062-37		WIPE	02-Mar-04	11:17
030104-28-38	0403062-38		WIPE	02-Mar-04	11:17
030104-28-39	0403062-39		WIPE	02-Mar-04	11:17
030104-28-40	0403062-40		WIPE	02-Mar-04	11:17
030104-28-41	0403062-41		WIPE	02-Mar-04	11:17
030104-28-42	0403062-42		WIPE	02-Mar-04	11:17
030104-28-43	0403062-43		WIPE	02-Mar-04	11:17
030104-28-44	0403062-44		WIPE	02-Mar-04	11:17
030104-28-45	0403062-45		WIPE	02-Mar-04	11:17
030104-28-46	0403062-46		WIPE	02-Mar-04	11:17
030104-28-20FD	0403062-47		WIPE	02-Mar-04	11:17
030104-28-36FD	0403062-48		WIPE	02-Mar-04	11:17
030104-28-45FD	0403062-49		WIPE	02-Mar-04	11:17
030104-28-FB	0403062-50		WIPE	02-Mar-04	11:17



Shaw Environmental & Infrastructure, Inc.

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

Reference Document No: AL209030104-28PAGE 1 of 3

Bill to:

0403062

Project No. 101115
 Project name EPA NEIC EDDP
 Sample Coordinator James Nelson / 303-233-1279
 Project Manager Randy Rodgers / 865-694-7457
 Sample Team Members T. TRENT
J. STEPHENS

Sample Shipment Date _____
 Lab Destination Paragon Analytics, Inc.
 Lab Contact Debbie FAZIO
 Project Contact/phone Ben Dettorre / 865-670-2669
 Carrier Waybill No. _____

Report to:

Ben Dettorre
312 Directors Drive
Knoxville, TN 37923

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
030104-28 - 01	Rm A1209 FSS Location C-01	3-2-04 1115	Smear		
- 02	- 02				
- 03	- 03				
- 04	- 04				
- 05	- 05				
- 06	- 06				
- 07	- 07				
- 08	- 08				

Special Instructions:

Possible Hazard Identification:

Non-haz ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:

Return to Client ☐ Disposal by Lab ☒ Archive ☐

Turnaround Time Required:

Normal ☒ Rush ☐

QC Level:

I. ☐ II. ☐ III. ☐

Project Specific: Defined in OAPP

1. Relinquished by

(Signature/Affiliation)

Date: 3-5-04Time: 0800

1. Received by

(Signature/Affiliation)

Date: 3-5-04Time: 0800

2. Relinquished by

(Signature/Affiliation)

Date: _____

Time: _____

2. Received by

(Signature/Affiliation)

Date: 3-8-04Time: 1635

3. Relinquished by

(Signature/Affiliation)

Date: _____

Time: _____

3. Received by

(Signature/Affiliation)

Date: _____

Time: _____

Comments:

ANALYSIS: Gross Alpha/Beta - MDC (REPORTING LIMITS) of < 1.1 dpm/smear for alpha
 < 100 dpm/smear for beta

0403062



Shaw Environmental & Infrastructure, Inc.

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

Reference Document No: A1209-030104-28Project Name/Project No. EPA NEIC EDDP / 101115Lab Destination Paragon Analytics, Inc.

Sample Shipment Date _____

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
⑨ 030104-28-09	RMA1209 FSS Location C-09	3-2-04 1115	Smear		
10	-10				
11	-11				
12	-12				
13	-13				
14	-14				
15	-15				
16	-16				
17	-17				
18	-18				
19	-19				
20	-20				
21	-21				
22	-22				
23	-23				
24	-24				
25	-25				
26	-26				
27	-27				
28	-28				
29	-29				
✓ -30	↓ -30	↓	↓		



Shaw Environmental & Infrastructure, Inc.

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

Reference Document No: 040306-2
1209-030104-28

Project Name/Project No. EPA NEICEDDP/101115

Lab Destination Paragon Analytics, Inc.

Sample Shipment Date _____

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
31 030104-28-31	Rm 1209 FSS Location C-31	3-2-04 1117	Smear		
32 32	-32				
33 33	-33				
34 34	-34				
35 35	-35				
36 36	↓ -36				
37 37	BS-1209-01				
38 38	-02				
39 39	-03				
40 40	-04				
41 41	-05				
42 42	-06				
43 43	-07				
44 44	-08				
45 45	-09				
46 46	-10				
47 -20 FD	Rm 1209 FSS Loc C-20 Field Dup				
48 -36 FD	↓ C-36 Field Dup				
49 -45 FD	BS-1209-09 Field Dup				
50 ↓ -FB	Field Blank	↓	↓		
N					
A					

PAGE 04

SHAW E I

3037226595

23:47

12/20/2003

12/20/2003

3/9/04

6344

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Shaw Knox Neic WORKORDER NO: 0403062PROJECT MANAGER: DF INITIALS: DF DATE: 3/6/04

1. Does this project require any special handling in addition to standard Paragon procedures? IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.)		Yes	<u>No</u>
2. Are custody seals on shipping containers intact? How many custody seals are provided?	<u>N/A</u>	Yes	<u>No</u>
3. Are the custody seals on sample containers intact?	<u>N/A</u>	<u>Yes</u>	<u>No</u>
4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos?		Yes	<u>No</u>
5. Is the COC complete? Relinquished: Yes <u>X</u> No ___ Analyses Requested: Yes <u>X</u> No ___	<u>N/A</u>	<u>Yes</u>	<u>No</u>
6. Is the COC in agreement with the samples received? No. of Samples: Yes <u>X</u> No ___ Sample ID's: Yes <u>X</u> No ___ Matrix: Yes <u>X</u> No ___ No. of Containers: Yes <u>7</u> No ___	<u>N/A</u>	<u>Yes</u>	<u>No</u>
7. Were COC (if applicable) and sample labels legible?		<u>Yes</u>	<u>No</u>
8. Were airbills present and/or removable?	<u>N/A</u>	Yes	<u>No</u>
9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)? Are all aqueous non-preserved samples at the correct pH?	<u>N/A</u>	Yes	<u>No</u>
10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers?		<u>Yes</u>	<u>No</u>
11. Are all samples within holding times for the requested analyses?		<u>Yes</u>	<u>No</u>
12. Were all sample containers received intact? (not broken or leaking, etc.)		<u>Yes</u>	<u>No</u>
13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide, radon), headspace free? Size of bubble: ___ < green pea; ___ > green pea (List sample IDs and affected containers on Page 2)	<u>N/A</u>	Yes	<u>No</u>
14. Were samples checked for and free from the presence of residual chlorine?	<u>N/A</u>	Yes	<u>No</u>
15. Were the sample(s) shipped on ice?	<u>N/A</u>	Yes	<u>No</u>
16. Were cooler temperatures measured at 0.1 - 6 °C? IR Gun Used*: 1 2	<u>N/A</u>	Yes	<u>No</u>
17. Were all samples cooled that should have been cooled?	<u>N/A</u>	Yes	<u>No</u>

Cooler #'s BW
Temperature ambient °CProject Manager Signature / Date: Debbie Fazio 3/9/04

A NO RESPONSE TO ANY QUESTION EXCEPT # 1 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM.

- * IR Gun #1 (original): Raytek, SN SC-PM3/T29403
- IR Gun #2 (newer): Oakton, SN 2SCIR1201

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: SHAW Knoxville (NEIC) WORKORDER NO: _____

PROJECT MANAGER: D. Fazio INITIALS: DJ DATE: 3/9/04

- ☐ Custody seals broken (on outside of shipping container or on sample containers).
- ☒ No Chain-of-Custody (COC) present.
- ☐ Number of samples on the COC do not match the number of samples received.
- ☐ Aqueous samples not preserved correctly (see pH discussion below).
- ☐ SVOC samples contained residual chlorine (list sample IDs and affected containers below).
- ☐ Samples received at inappropriate temperature.
- ☐ Insufficient sample to perform requested analyses.
- ☐ Extraction or analytical holding times expired in transit.
- ☐ Broken/leaking bottles and intact bottles received in same cooler (list affected sample IDs below).
- ☐ No analyses requested.
- ☐ Incorrect sample type received.
- ☐ VOAs, reactive CN/S, radon not headspace free (list sample IDs and affected vials below).
- ☐ Airbills not present and/or removable (record applicable shipper's tracking number below).
- ☐ Other (describe below).

Describe discrepancy:

WIPES FOR REFERENCE DOCUMENTS: A1209-030104-28 & A1209-030104-28
WERE RECEIVED 3/8/04 1635. 3/9/04

CHAINS RECEIVED BY FACSIMILE 3/9/04

REF DOCUMENT A1209-030104-28 SENT TO PARAGON IN ERROR. CARRIER TO
PICK UP AND RETURN TO SHAW 3/9/04 PER JAMES NELSON

Was the client contacted? ☐ No; ☐ Yes: Name _____ Date/Time _____

Was the pH of any sample adjusted by the laboratory? ☐ No; ☐ Yes (see Table below):

NOTE: No pH adjustments shall be made without prior consent of Project Manager. After pH adjustment, hold metals and radchem samples ≥ 16 hr before analysis.

Sample ID	Initial pH	Final pH (wait 30 min)	Type of Reagent Used	Lot No. of Reagent Used	Initials / Date / Time

Was the laboratory directed to proceed with the analysis of any samples yielding the presence of residual chlorine? ☐ No; ☐ Yes (see notes above).

Project Manager Signature / Date: Debbie Fazio 3/9/04

PARAGON ANALYTICS
Radiochemistry Data Package

Section 9

**ADDITIONAL
SUPPORTING
DOCUMENTATION**



000142

Gas Proportional Counter

Instrument Calibration

Background Calibration

**LB4100-B Weekly Instrument Calibration and Check
Background Determinations**

Detector ID	Alpha				Beta				Detector ID
	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	
A1 (01)	0.078	0.044	0.150	PASS	1.339	1.244	1.486	PASS	A1 (01)
A2 (02)	0.171	0.050	0.235	PASS	1.302	1.255	1.493	PASS	A2 (02)
A3 (03)	0.121	0.037	0.173	PASS	1.439	1.251	1.518	PASS	A3 (03)
A4 (04)	0.158	0.001	0.193	PASS	1.427	1.225	1.540	PASS	A4 (04)
B1 (05)	0.126	-0.006	0.283	PASS	1.636	1.428	1.981	PASS	B1 (05)
B2 (06)	0.094	0.008	0.247	PASS	1.390	1.339	1.770	PASS	B2 (06)
B3 (07)	0.091	0.039	0.259	PASS	1.491	1.421	1.747	PASS	B3 (07)
B4 (08)	0.092	-0.027	0.316	PASS	1.585	1.498	1.741	PASS	B4 (08)
C1 (09)	0.109	0.046	0.174	PASS	1.523	1.324	1.754	PASS	C1 (09)
C2 (10)	0.084	0.042	0.205	PASS	1.582	1.327	1.733	PASS	C2 (10)
C3 (11)	0.124	0.067	0.219	PASS	1.515	1.344	1.766	PASS	C3 (11)
C4 (12)	0.091	-0.012	0.216	PASS	1.473	1.338	1.726	PASS	C4 (12)
D1 (13)	0.089	0.028	0.206	PASS	1.484	1.302	1.759	PASS	D1 (13)
D2 (14)	0.106	0.017	0.207	PASS	2.056	1.730	2.319	PASS	D2 (14)
D3 (15)	0.098	0.044	0.147	PASS	1.815	1.566	2.045	PASS	D3 (15)
D4 (16)	0.100	0.022	0.206	PASS	1.853	1.405	2.033	PASS	D4 (16)

Reviewed by: LLB

Date: 3/15/04

Control Limits set 1/26/04.
CJ 1/26/04

000144

BKB0313W.XLD

Printed 3/15/04 8:17 AM

**LB4100-B Weekly Instrument Calibration and Check
Background Determinations**

Detector ID	Alpha				Beta				Detector ID
	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	
A1 (01)	0.087	0.044	0.150	PASS	1.378	1.244	1.486	PASS	A1 (01)
A2 (02)	0.097	0.050	0.235	PASS	1.276	1.255	1.493	PASS	A2 (02)
A3 (03)	0.071	0.037	0.173	PASS	1.338	1.251	1.518	PASS	A3 (03)
A4 (04)	0.102	0.001	0.193	PASS	1.355	1.225	1.540	PASS	A4 (04)
B1 (05)	0.111	-0.006	0.283	PASS	1.594	1.428	1.981	PASS	B1 (05)
B2 (06)	0.101	0.008	0.247	PASS	1.398	1.339	1.770	PASS	B2 (06)
B3 (07)	0.081	0.039	0.259	PASS	1.441	1.421	1.747	PASS	B3 (07)
B4 (08)	0.107	-0.027	0.316	PASS	1.537	1.498	1.741	PASS	B4 (08)
C1 (09)	0.128	0.046	0.174	PASS	1.628	1.324	1.754	PASS	C1 (09)
C2 (10)	0.089	0.042	0.205	PASS	1.550	1.327	1.733	PASS	C2 (10)
C3 (11)	0.111	0.067	0.219	PASS	1.527	1.344	1.766	PASS	C3 (11)
C4 (12)	0.073	-0.012	0.216	PASS	1.509	1.338	1.726	PASS	C4 (12)
D1 (13)	0.127	0.028	0.206	PASS	1.547	1.302	1.759	PASS	D1 (13)
D2 (14)	0.130	0.017	0.207	PASS	2.103	1.730	2.319	PASS	D2 (14)
D3 (15)	0.104	0.044	0.147	PASS	1.715	1.566	2.045	PASS	D3 (15)
D4 (16)	0.117	0.022	0.206	PASS	1.841	1.405	2.033	PASS	D4 (16)

Reviewed by: _____

7/2

Date: 3-20-04

Control Limits set 1/26/04.
CJ 1/26/04

000145

BKE J.W.XLD.

Printed 3/20/04 15 PM

Gas Proportional Counter

Quality Control Data

Daily Background Checks

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector		Alpha			Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	0.117	-0.030	0.186	PASS	1.517	0.891	1.787	PASS	A1 (01)
A2 (02)	0.067	0.011	0.331	PASS	1.500	0.860	1.744	PASS	A2 (02)
A3 (03)	0.183	-0.014	0.256	PASS	1.817	0.974	1.904	PASS	A3 (03)
A4 (04)	0.100	0.004	0.312	PASS	1.350	0.964	1.890	PASS	A4 (04)
B1 (05)	0.067	-0.011	0.263	PASS	1.800	1.141	2.131	PASS	B1 (05)
B2 (06)	0.133	-0.025	0.213	PASS	1.633	0.933	1.847	PASS	B2 (06)
B3 (07)	0.050	-0.026	0.208	PASS	1.717	1.018	1.964	PASS	B3 (07)
B4 (08)	0.183	-0.025	0.209	PASS	1.433	1.097	2.073	PASS	B4 (08)
C1 (09)	0.300	-0.019	0.237	FLAG-HIGH	2.317	1.045	2.001	FLAG-HIGH	C1 (09)
C2 (10)	0.117	-0.028	0.196	PASS	1.650	1.095	2.069	PASS	C2 (10)
C3 (11)	0.117	-0.012	0.260	PASS	1.583	1.038	1.992	PASS	C3 (11)
C4 (12)	0.133	-0.026	0.208	PASS	1.750	1.003	1.943	PASS	C4 (12)
D1 (13)	0.100	-0.027	0.205	PASS	1.733	1.012	1.956	PASS	D1 (13)
D2 (14)	0.200	-0.020	0.232	PASS	2.350	1.501	2.611	PASS	D2 (14)
D3 (15)	0.183	-0.023	0.219	PASS	1.950	1.293	2.337	PASS	D3 (15)
D4 (16)	0.200	-0.022	0.222	PASS	2.700	1.326	2.380	FLAG-HIGH	D4 (16)

- Det 9, 16 are recounted in file BKB0319A.

Reviewed by: _____

S

Date: 3/19/04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0313W Date: 3/13/04 Analyst: CJ

000147

BKB0319.XLD

Printed 3/19/04 10:32 AM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A1 (01)
A2 (02)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A2 (02)
A3 (03)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A3 (03)
A4 (04)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A4 (04)
B1 (05)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B1 (05)
B2 (06)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B2 (06)
B3 (07)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B3 (07)
B4 (08)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B4 (08)
C1 (09)	0.333	-0.019	0.237	FLAG-HIGH	1.867	1.045	2.001	PASS	C1 (09)
C2 (10)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C2 (10)
C3 (11)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C3 (11)
C4 (12)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C4 (12)
D1 (13)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D1 (13)
D2 (14)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D2 (14)
D3 (15)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D3 (15)
D4 (16)	0.200	-0.022	0.222	PASS	1.800	1.326	2.380	PASS	D4 (16)

Det 9 is offline & for today.

Reviewed by: _____

Date: 3/19/14

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0313W Date: 3/13/04 Analyst: CJ

000148

BKE A.XLD

Printed 3/11:40 AM

151148

QUALITY ASSURANCE SUMMARY SHEET

PAI W.O. # / Batch Gas Flow Proportional
TEST Count

Briefly document any QA or other problems or deviations associated with the analysis of samples. Problems could result from login-in, color, odor, dilution, consistency, scheduling, equipment, or instrumentation, or may include documentation of minor deviations necessary due to unique DQO's or sample characteristics.

When weekly background counts
are completed the morning of a new
day, it is not necessary to perform
daily BKG checks. However daily Efficiency
checks will be run.

CHN
11/17/98

TECHNICIAN/ANALYST

DATE 11/17/98

RESOURCE MANAGER

DATE 11/17/98

FRM 302FC2.FRM (12/Jan/98)

000149

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	0.200	-0.027	0.201	PASS	1.550	0.923	1.833	PASS	A1 (01)
A2 (02)	0.167	-0.024	0.218	PASS	1.250	0.839	1.713	PASS	A2 (02)
A3 (03)	0.117	-0.032	0.174	PASS	1.633	0.890	1.786	PASS	A3 (03)
A4 (04)	0.267	-0.022	0.226	FLAG-HIGH	1.367	0.904	1.806	PASS	A4 (04)
B1 (05)	0.150	-0.018	0.240	PASS	1.700	1.105	2.083	PASS	B1 (05)
B2 (06)	0.150	-0.022	0.224	PASS	1.433	0.940	1.856	PASS	B2 (06)
B3 (07)	0.167	-0.029	0.191	PASS	1.500	0.976	1.906	PASS	B3 (07)
B4 (08)	0.283	-0.020	0.234	FLAG-HIGH	1.933	1.057	2.017	PASS	B4 (08)
C1 (09)	0.183	-0.011	0.267	PASS	1.500	1.132	2.120	PASS	C1 (09)
C2 (10)	0.200	-0.027	0.205	PASS	1.483	1.068	2.032	PASS	C2 (10)
C3 (11)	0.183	-0.018	0.240	PASS	1.883	1.048	2.006	PASS	C3 (11)
C4 (12)	0.133	-0.032	0.178	PASS	1.383	1.033	1.985	PASS	C4 (12)
D1 (13)	0.167	-0.011	0.265	PASS	1.800	1.065	2.029	PASS	D1 (13)
D2 (14)	0.133	-0.010	0.270	PASS	1.850	1.541	2.665	PASS	D2 (14)
D3 (15)	0.067	-0.021	0.229	PASS	1.933	1.208	2.222	PASS	D3 (15)
D4 (16)	0.183	-0.015	0.249	PASS	2.167	1.316	2.366	PASS	D4 (16)

-Det 4,8 are recounted in file BKB0322A.

Reviewed by: _____

Date: 3/22/07

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000150

BKB0322.XLD

Printed 3/22/04 8:52 AM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector ID	Alpha				Beta				Detector ID
	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	
A1 (01)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A1 (01)
A2 (02)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A2 (02)
A3 (03)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A3 (03)
A4 (04)	0.150	-0.022	0.226	PASS	1.583	0.904	1.806	PASS	A4 (04)
B1 (05)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B1 (05)
B2 (06)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B2 (06)
B3 (07)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B3 (07)
B4 (08)	0.250	-0.020	0.234	FLAG-HIGH	1.583	1.057	2.017	PASS	B4 (08)
C1 (09)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C1 (09)
C2 (10)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C2 (10)
C3 (11)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C3 (11)
C4 (12)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C4 (12)
D1 (13)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D1 (13)
D2 (14)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D2 (14)
D3 (15)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D3 (15)
D4 (16)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D4 (16)

-Det 8 is offline 2 for today.

Reviewed by: _____

Date: 3/22/04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000151

BKB AXLD

Printed 3/22/04 10:05 AM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	0.067	-0.027	0.201	PASS	1.517	0.923	1.833	PASS	A1 (01)
A2 (02)	0.133	-0.024	0.218	PASS	1.700	0.839	1.713	PASS	A2 (02)
A3 (03)	0.100	-0.032	0.174	PASS	1.283	0.890	1.786	PASS	A3 (03)
A4 (04)	0.117	-0.022	0.226	PASS	1.517	0.904	1.806	PASS	A4 (04)
B1 (05)	0.133	-0.018	0.240	PASS	1.683	1.105	2.083	PASS	B1 (05)
B2 (06)	0.083	-0.022	0.224	PASS	1.567	0.940	1.856	PASS	B2 (06)
B3 (07)	0.117	-0.029	0.191	PASS	1.467	0.976	1.906	PASS	B3 (07)
B4 (08)	0.233	-0.020	0.234	PASS	1.700	1.057	2.017	PASS	B4 (08)
C1 (09)	0.100	-0.011	0.267	PASS	1.800	1.132	2.120	PASS	C1 (09)
C2 (10)	0.100	-0.027	0.205	PASS	1.900	1.068	2.032	PASS	C2 (10)
C3 (11)	0.133	-0.018	0.240	PASS	1.717	1.048	2.006	PASS	C3 (11)
C4 (12)	0.083	-0.032	0.178	PASS	1.783	1.033	1.985	PASS	C4 (12)
D1 (13)	0.150	-0.011	0.265	PASS	1.500	1.065	2.029	PASS	D1 (13)
D2 (14)	0.067	-0.010	0.270	PASS	2.000	1.541	2.665	PASS	D2 (14)
D3 (15)	0.083	-0.021	0.229	PASS	1.867	1.208	2.222	PASS	D3 (15)
D4 (16)	0.083	-0.015	0.249	PASS	2.200	1.316	2.366	PASS	D4 (16)

Reviewed by: LCB

Date: 3/23/04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000152

BKB0323.XLD

Printed 3/23/04 10:00 AM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	0.050	-0.027	0.201	PASS	1.367	0.923	1.833	PASS	A1 (01)
A2 (02)	0.117	-0.024	0.218	PASS	1.250	0.839	1.713	PASS	A2 (02)
A3 (03)	0.067	-0.032	0.174	PASS	1.517	0.890	1.786	PASS	A3 (03)
A4 (04)	0.100	-0.022	0.226	PASS	1.517	0.904	1.806	PASS	A4 (04)
B1 (05)	0.100	-0.018	0.240	PASS	1.850	1.105	2.083	PASS	B1 (05)
B2 (06)	0.050	-0.022	0.224	PASS	1.383	0.940	1.856	PASS	B2 (06)
B3 (07)	0.083	-0.029	0.191	PASS	1.500	0.976	1.906	PASS	B3 (07)
B4 (08)	0.117	-0.020	0.234	PASS	1.633	1.057	2.017	PASS	B4 (08)
C1 (09)	0.083	-0.011	0.267	PASS	1.533	1.132	2.120	PASS	C1 (09)
C2 (10)	0.100	-0.027	0.205	PASS	1.567	1.068	2.032	PASS	C2 (10)
C3 (11)	0.133	-0.018	0.240	PASS	1.667	1.048	2.006	PASS	C3 (11)
C4 (12)	0.067	-0.032	0.178	PASS	1.367	1.033	1.985	PASS	C4 (12)
D1 (13)	0.217	-0.011	0.265	PASS	1.517	1.065	2.029	PASS	D1 (13)
D2 (14)	0.117	-0.010	0.270	PASS	2.100	1.541	2.665	PASS	D2 (14)
D3 (15)	0.017	-0.021	0.229	PASS	2.233	1.208	2.222	FLAG-HIGH	D3 (15)
D4 (16)	0.133	-0.015	0.249	PASS	2.350	1.316	2.366	PASS	D4 (16)

Det 15 recounted in file BKB0324A.

Reviewed by: _____

77

Date: 3-24-04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000153

BKE I.XLD

Printed 3/24/04 11:10 AM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A1 (01)
A2 (02)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A2 (02)
A3 (03)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A3 (03)
A4 (04)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A4 (04)
B1 (05)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	OFFLINE	B1 (05)
B2 (06)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	OFFLINE	B2 (06)
B3 (07)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B3 (07)
B4 (08)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B4 (08)
C1 (09)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C1 (09)
C2 (10)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C2 (10)
C3 (11)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C3 (11)
C4 (12)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C4 (12)
D1 (13)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D1 (13)
D2 (14)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D2 (14)
D3 (15)	0.083	-0.021	0.229	PASS	11.100	1.208	2.222	FLAG-HIGH	D3 (15)
D4 (16)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D4 (16)

+ Det 15 at the β 3/24.

Reviewed by: _____

72

Date: 3-24-04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000154

BKB0324A.XLD

Printed 3/24/04 12:15 PM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	0.083	-0.027	0.201	PASS	1.300	0.923	1.833	PASS	A1 (01)
A2 (02)	0.167	-0.024	0.218	PASS	1.333	0.839	1.713	PASS	A2 (02)
A3 (03)	0.133	-0.032	0.174	PASS	1.550	0.890	1.786	PASS	A3 (03)
A4 (04)	0.117	-0.022	0.226	PASS	1.250	0.904	1.806	PASS	A4 (04)
B1 (05)	0.217	-0.018	0.240	PASS	1.767	1.105	2.083	OFFLINE	B1 (05)
B2 (06)	0.167	-0.022	0.224	PASS	1.633	0.940	1.856	OFFLINE	B2 (06)
B3 (07)	0.067	-0.029	0.191	PASS	1.500	0.976	1.906	PASS	B3 (07)
B4 (08)	0.250	-0.020	0.234	FLAG-HIGH	1.617	1.057	2.017	PASS	B4 (08)
C1 (09)	0.067	-0.011	0.267	PASS	1.583	1.132	2.120	PASS	C1 (09)
C2 (10)	0.083	-0.027	0.205	PASS	1.483	1.068	2.032	PASS	C2 (10)
C3 (11)	0.217	-0.018	0.240	PASS	2.017	1.048	2.006	FLAG-HIGH	C3 (11)
C4 (12)	0.233	-0.032	0.178	FLAG-HIGH	1.683	1.033	1.985	PASS	C4 (12)
D1 (13)	0.133	-0.011	0.265	PASS	1.833	1.065	2.029	PASS	D1 (13)
D2 (14)	0.233	-0.010	0.270	PASS	2.200	1.541	2.665	PASS	D2 (14)
D3 (15)	0.183	-0.021	0.229	PASS	2.733	1.208	2.222	FLAG-HIGH	D3 (15)
D4 (16)	0.150	-0.015	0.249	PASS	2.333	1.316	2.366	PASS	D4 (16)

- detectors 8, 11, 12, 15 will be recounted in file BKB0325A

Reviewed by: LCB

Date: 3/25/04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000155

BKBC XLD

Printed 3/25/04 8:15 AM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A1 (01)
A2 (02)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A2 (02)
A3 (03)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A3 (03)
A4 (04)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A4 (04)
B1 (05)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	OFFLINE	B1 (05)
B2 (06)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	OFFLINE	B2 (06)
B3 (07)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B3 (07)
B4 (08)	0.200	-0.020	0.234	PASS	1.450	1.057	2.017	PASS	B4 (08)
C1 (09)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C1 (09)
C2 (10)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C2 (10)
C3 (11)	0.133	-0.018	0.240	PASS	1.800	1.048	2.006	PASS	C3 (11)
C4 (12)	0.083	-0.032	0.178	PASS	1.617	1.033	1.985	PASS	C4 (12)
D1 (13)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D1 (13)
D2 (14)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D2 (14)
D3 (15)	0.117	-0.021	0.229	PASS	2.667	1.208	2.222	FLAG-HIGH	D3 (15)
D4 (16)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D4 (16)

- Det 15 is offline B for today.

Reviewed by: _____

Date: 3/25/09

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000156

BKB0325A.XLD

Printed 3/25/04 9:24 AM

**LB4100-B Daily Instrument Performance Checks
Background Checks**

Detector ID	Alpha				Beta				Detector ID
	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	
A1 (01)	0.167	-0.027	0.201	PASS	1.517	0.923	1.833	PASS	A1 (01)
A2 (02)	0.233	-0.024	0.218	FLAG-HIGH	1.783	0.839	1.713	FLAG-HIGH	A2 (02)
A3 (03)	0.083	-0.032	0.174	PASS	1.517	0.890	1.786	PASS	A3 (03)
A4 (04)	0.117	-0.022	0.226	PASS	1.717	0.904	1.806	PASS	A4 (04)
B1 (05)	0.217	-0.018	0.240	PASS	1.850	1.105	2.083	OFFLINE	B1 (05)
B2 (06)	0.150	-0.022	0.224	PASS	1.283	0.940	1.856	OFFLINE	B2 (06)
B3 (07)	0.183	-0.029	0.191	PASS	1.267	0.976	1.906	PASS	B3 (07)
B4 (08)	0.133	-0.020	0.234	PASS	1.617	1.057	2.017	PASS	B4 (08)
C1 (09)	0.200	-0.011	0.267	PASS	1.450	1.132	2.120	PASS	C1 (09)
C2 (10)	0.150	-0.027	0.205	PASS	1.383	1.068	2.032	PASS	C2 (10)
C3 (11)	0.200	-0.018	0.240	PASS	1.850	1.048	2.006	PASS	C3 (11)
C4 (12)	0.133	-0.032	0.178	PASS	1.700	1.033	1.985	PASS	C4 (12)
D1 (13)	0.033	-0.011	0.265	PASS	1.800	1.065	2.029	PASS	D1 (13)
D2 (14)	0.200	-0.010	0.270	PASS	1.833	1.541	2.665	PASS	D2 (14)
D3 (15)	0.133	-0.021	0.229	PASS	2.367	1.208	2.222	FLAG-HIGH	D3 (15)
D4 (16)	0.083	-0.015	0.249	PASS	2.450	1.316	2.366	FLAG-HIGH	D4 (16)

-Det 2, 15, 16 are recounted in file BKB0326A.

Reviewed by: _____

Date: 3/26/04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000157

BKB0326.XLD

Printed 3/26/04 8:56 AM

Background Checks

Detector	Alpha				Beta				Detector
ID	CPM	LCL	UCL	Flag	CPM	LCL	UCL	Flag	ID
A1 (01)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A1 (01)
A2 (02)	0.050	-0.024	0.218	PASS	1.583	0.839	1.713	PASS	A2 (02)
A3 (03)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A3 (03)
A4 (04)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	A4 (04)
B1 (05)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	OFFLINE	B1 (05)
B2 (06)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	OFFLINE	B2 (06)
B3 (07)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B3 (07)
B4 (08)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	B4 (08)
C1 (09)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C1 (09)
C2 (10)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C2 (10)
C3 (11)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C3 (11)
C4 (12)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	C4 (12)
D1 (13)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D1 (13)
D2 (14)	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	D2 (14)
D3 (15)	0.133	-0.021	0.229	PASS	1.950	1.208	2.222	PASS	D3 (15)
D4 (16)	0.100	-0.015	0.249	PASS	2.367	1.316	2.366	FLAG-HIGH	D4 (16)

- pet 16 is offline B. for today.

Reviewed by: _____ 8 _____

Date: 3/26/04

Control limits established from previous weekly background determinations.
Weekly Background File: BKB0319W Date: 3/19/04 Analyst: KF

000158

BKB0326A.XLD

Printed 3/26/04 10:10 AM

Gas Proportional Counter
Quality Control Data
Daily Instrument Performance
Checks

000159

LB4100 - B

Daily Instrument Performance Check Efficiency Determinations

Detector ID	Alpha				Beta				Detector ID
	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	
A1 (01)	0.2495	0.2277	0.2583	PASS	0.8625	0.8448	0.8995	PASS	A1 (01)
A2 (02)	0.2431	0.2314	0.2605	PASS	0.8714	0.8428	0.8989	PASS	A2 (02)
A3 (03)	0.2273	0.2291	0.2588	FLAG-LOW	0.8994	0.8661	0.9191	PASS	A3 (03)
A4 (04)	0.2480	0.2302	0.2602	PASS	0.8751	0.8514	0.9123	PASS	A4 (04)
B1 (05)	0.2488	0.2342	0.2646	PASS	0.8974	0.9050	0.9663	FLAG-LOW	B1 (05)
B2 (06)	0.2268	0.2219	0.2484	PASS	0.8609	0.8585	0.9286	PASS	B2 (06)
B3 (07)	0.2626	0.2343	0.2656	PASS	0.9207	0.8782	0.9579	PASS	B3 (07)
B4 (08)	0.2497	0.2236	0.2616	PASS	0.8861	0.8623	0.9360	PASS	B4 (08)
C1 (09)	0.2623	0.2453	0.2752	PASS	0.9060	0.8863	0.9595	PASS	C1 (09)
C2 (10)	0.2421	0.2311	0.2644	PASS	0.8927	0.8750	0.9478	PASS	C2 (10)
C3 (11)	0.2458	0.2362	0.2674	PASS	0.8861	0.8588	0.9345	PASS	C3 (11)
C4 (12)	0.2359	0.2241	0.2531	PASS	0.8694	0.8415	0.9081	PASS	C4 (12)
D1 (13)	0.2510	0.2332	0.2660	PASS	0.8992	0.8681	0.9355	PASS	D1 (13)
D2 (14)	0.2540	0.2375	0.2664	PASS	0.8696	0.8713	0.9377	FLAG-LOW	D2 (14)
D3 (15)	0.2593	0.2387	0.2733	PASS	0.8842	0.8858	0.9433	FLAG-LOW	D3 (15)
D4 (16)	0.2527	0.2381	0.2666	PASS	0.9107	0.8823	0.9367	PASS	D4 (16)

- Det 3, 4, 15 are recounted in file EFB0319.
+ Det 5 is offline B.

Reviewed by: _____

Date: 3/19/04

Control Limits established 12/21/03. JME

091000

EFB0319.XLD

Printed 3/19/04 9:04 AM

LB4100 - B
Daily Instrument Performance Check
Efficiency Determinations

Detector ID	Alpha				Beta				Detector ID
	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	
A1 (01)	#VALUE!	0.2277	0.2583	#VALUE!	#VALUE!	0.8448	0.8995	#VALUE!	A1 (01)
A2 (02)	#VALUE!	0.2314	0.2605	#VALUE!	#VALUE!	0.8428	0.8989	#VALUE!	A2 (02)
A3 (03)	0.2437	0.2291	0.2588	PASS	0.8978	0.8661	0.9191	PASS	A3 (03)
A4 (04)	#VALUE!	0.2302	0.2602	#VALUE!	#VALUE!	0.8514	0.9123	#VALUE!	A4 (04)
B1 (05)	#VALUE!	0.2342	0.2646	#VALUE!	#VALUE!	0.9050	0.9663	#VALUE!	B1 (05)
B2 (06)	#VALUE!	0.2219	0.2484	#VALUE!	#VALUE!	0.8585	0.9286	#VALUE!	B2 (06)
B3 (07)	#VALUE!	0.2343	0.2656	#VALUE!	#VALUE!	0.8782	0.9579	#VALUE!	B3 (07)
B4 (08)	#VALUE!	0.2236	0.2616	#VALUE!	#VALUE!	0.8623	0.9360	#VALUE!	B4 (08)
C1 (09)	#VALUE!	0.2453	0.2752	#VALUE!	#VALUE!	0.8863	0.9595	#VALUE!	C1 (09)
C2 (10)	#VALUE!	0.2311	0.2644	#VALUE!	#VALUE!	0.8750	0.9478	#VALUE!	C2 (10)
C3 (11)	#VALUE!	0.2362	0.2674	#VALUE!	#VALUE!	0.8588	0.9345	#VALUE!	C3 (11)
C4 (12)	#VALUE!	0.2241	0.2531	#VALUE!	#VALUE!	0.8415	0.9081	#VALUE!	C4 (12)
D1 (13)	#VALUE!	0.2332	0.2660	#VALUE!	#VALUE!	0.8681	0.9355	#VALUE!	D1 (13)
D2 (14)	0.2542	0.2375	0.2664	PASS	0.9132	0.8713	0.9377	PASS	D2 (14)
D3 (15)	0.2597	0.2387	0.2733	PASS	0.9092	0.8858	0.9433	PASS	D3 (15)
D4 (16)	#VALUE!	0.2381	0.2666	#VALUE!	#VALUE!	0.8823	0.9367	#VALUE!	D4 (16)

Reviewed by: _____

Date: 3/19/04

Control Limits established 12/21/03. JME

197000

EFB A.XLD

Printed 3 4 9:12 AM

LB4100 - B

Daily Instrument Performance Check Efficiency Determinations

Detector ID	Alpha				Beta				Detector ID
	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	
A1 (01)	0.2408	0.2277	0.2583	PASS	0.8615	0.8448	0.8995	PASS	A1 (01)
A2 (02)	0.2390	0.2314	0.2605	PASS	0.8761	0.8428	0.8989	PASS	A2 (02)
A3 (03)	0.2485	0.2291	0.2588	PASS	0.8956	0.8661	0.9191	PASS	A3 (03)
A4 (04)	0.2460	0.2302	0.2602	PASS	0.8874	0.8514	0.9123	PASS	A4 (04)
B1 (05)	0.2383	0.2342	0.2646	PASS	0.8803	0.9050	0.9663	FLAG-LOW	B1 (05)
B2 (06)	0.2283	0.2219	0.2484	PASS	0.8522	0.8585	0.9286	FLAG-LOW	B2 (06)
B3 (07)	0.2443	0.2343	0.2656	PASS	0.9192	0.8782	0.9579	PASS	B3 (07)
B4 (08)	0.2344	0.2236	0.2616	PASS	0.8885	0.8623	0.9360	PASS	B4 (08)
C1 (09)	0.2607	0.2453	0.2752	PASS	0.9223	0.8863	0.9595	PASS	C1 (09)
C2 (10)	0.2372	0.2311	0.2644	PASS	0.9010	0.8750	0.9478	PASS	C2 (10)
C3 (11)	0.2508	0.2362	0.2674	PASS	0.8950	0.8588	0.9345	PASS	C3 (11)
C4 (12)	0.2470	0.2241	0.2531	PASS	0.8802	0.8415	0.9081	PASS	C4 (12)
D1 (13)	0.2412	0.2332	0.2660	PASS	0.8977	0.8681	0.9355	PASS	D1 (13)
D2 (14)	0.2535	0.2375	0.2664	PASS	0.9038	0.8713	0.9377	PASS	D2 (14)
D3 (15)	0.2541	0.2387	0.2733	PASS	0.8984	0.8858	0.9433	PASS	D3 (15)
D4 (16)	0.2616	0.2381	0.2666	PASS	0.9031	0.8823	0.9367	PASS	D4 (16)

Reviewed by: 72

Date: 3.20.04

Control Limits established 12/21/03. JME

000162

EFB0320.XLD

Printed 3/20/04 4:01 PM

LB4100 - B
Daily Instrument Performance Check
Efficiency Determinations

Detector ID	Alpha				Beta				Detector ID
	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	
A1 (01)	0.2370	0.2277	0.2583	PASS	0.8747	0.8448	0.8995	PASS	A1 (01)
A2 (02)	0.2484	0.2314	0.2605	PASS	0.8690	0.8428	0.8989	PASS	A2 (02)
A3 (03)	0.2405	0.2291	0.2588	PASS	0.8969	0.8661	0.9191	PASS	A3 (03)
A4 (04)	0.2465	0.2302	0.2602	PASS	0.8806	0.8514	0.9123	PASS	A4 (04)
B1 (05)	0.2432	0.2342	0.2646	PASS	0.8918	0.9050	0.9663	FLAG-LOW	B1 (05)
B2 (06)	0.2277	0.2219	0.2484	PASS	0.8530	0.8585	0.9286	FLAG-LOW	B2 (06)
B3 (07)	0.2471	0.2343	0.2656	PASS	0.9127	0.8782	0.9579	PASS	B3 (07)
B4 (08)	0.2400	0.2236	0.2616	PASS	0.8978	0.8623	0.9360	PASS	B4 (08)
C1 (09)	0.2537	0.2453	0.2752	PASS	0.9193	0.8863	0.9595	PASS	C1 (09)
C2 (10)	0.2486	0.2311	0.2644	PASS	0.8984	0.8750	0.9478	PASS	C2 (10)
C3 (11)	0.2530	0.2362	0.2674	PASS	0.8972	0.8588	0.9345	PASS	C3 (11)
C4 (12)	0.2370	0.2241	0.2531	PASS	0.8822	0.8415	0.9081	PASS	C4 (12)
D1 (13)	0.2537	0.2332	0.2660	PASS	0.8947	0.8681	0.9355	PASS	D1 (13)
D2 (14)	0.2587	0.2375	0.2664	PASS	0.8834	0.8713	0.9377	PASS	D2 (14)
D3 (15)	0.2550	0.2387	0.2733	PASS	0.8952	0.8858	0.9433	PASS	D3 (15)
D4 (16)	0.2474	0.2381	0.2666	PASS	0.9068	0.8823	0.9367	PASS	D4 (16)

-Det 5,6 are offline.

Reviewed by: 8

Date: 3/22/04

Control Limits established 12/21/03, JME

000163

EFB(.XLD

Printed 3(17:44 AM

LB4100 - B

Daily Instrument Performance Check Efficiency Determinations

Detector ID	Alpha				Beta				Detector ID
	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	
A1 (01)	0.2473	0.2277	0.2583	PASS	0.8673	0.8448	0.8995	PASS	A1 (01)
A2 (02)	0.2457	0.2314	0.2605	PASS	0.8765	0.8428	0.8989	PASS	A2 (02)
A3 (03)	0.2480	0.2291	0.2588	PASS	0.8890	0.8661	0.9191	PASS	A3 (03)
A4 (04)	0.2429	0.2302	0.2602	PASS	0.8829	0.8514	0.9123	PASS	A4 (04)
B1 (05)	0.2388	0.2342	0.2646	PASS	0.8850	0.9050	0.9663	OFFLINE	B1 (05)
B2 (06)	0.2283	0.2219	0.2484	PASS	0.8578	0.8585	0.9286	FLAG-LOW	B2 (06)
B3 (07)	0.2499	0.2343	0.2656	PASS	0.9089	0.8782	0.9579	PASS	B3 (07)
B4 (08)	0.2394	0.2236	0.2616	PASS	0.8995	0.8623	0.9360	PASS	B4 (08)
C1 (09)	0.2516	0.2453	0.2752	PASS	0.9273	0.8863	0.9595	PASS	C1 (09)
C2 (10)	0.2500	0.2311	0.2644	PASS	0.9106	0.8750	0.9478	PASS	C2 (10)
C3 (11)	0.2494	0.2362	0.2674	PASS	0.8925	0.8588	0.9345	PASS	C3 (11)
C4 (12)	0.2414	0.2241	0.2531	PASS	0.8733	0.8415	0.9081	PASS	C4 (12)
D1 (13)	0.2536	0.2332	0.2660	PASS	0.9050	0.8681	0.9355	PASS	D1 (13)
D2 (14)	0.2611	0.2375	0.2664	PASS	0.8939	0.8713	0.9377	PASS	D2 (14)
D3 (15)	0.2543	0.2387	0.2733	PASS	0.8883	0.8858	0.9433	PASS	D3 (15)
D4 (16)	0.2472	0.2381	0.2666	PASS	0.9152	0.8823	0.9367	PASS	D4 (16)

-detectors 5,6 are offline β

Reviewed by: LCB

Date: 3/23/04

Control Limits established 12/21/03. JME

000162

EFB0323.XLD

Printed 3/23/04 8:53 AM

LB4100 - B
Daily Instrument Performance Check
Efficiency Determinations

Detector	Alpha				Beta				Detector
ID	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	ID
A1 (01)	0.2413	0.2277	0.2583	PASS	0.8588	0.8448	0.8995	PASS	A1 (01)
A2 (02)	0.2419	0.2314	0.2605	PASS	0.8664	0.8428	0.8989	PASS	A2 (02)
A3 (03)	0.2412	0.2291	0.2588	PASS	0.9034	0.8661	0.9191	PASS	A3 (03)
A4 (04)	0.2533	0.2302	0.2602	PASS	0.8769	0.8514	0.9123	PASS	A4 (04)
B1 (05)	0.2499	0.2342	0.2646	PASS	0.8888	0.9050	0.9663	OFFLINE	B1 (05)
B2 (06)	0.2382	0.2219	0.2484	PASS	0.8567	0.8585	0.9286	FLAG-LOW	B2 (06)
B3 (07)	0.2522	0.2343	0.2656	PASS	0.9173	0.8782	0.9579	PASS	B3 (07)
B4 (08)	0.2416	0.2236	0.2616	PASS	0.8910	0.8623	0.9360	PASS	B4 (08)
C1 (09)	0.2568	0.2453	0.2752	PASS	0.9140	0.8863	0.9595	PASS	C1 (09)
C2 (10)	0.2404	0.2311	0.2644	PASS	0.9060	0.8750	0.9478	PASS	C2 (10)
C3 (11)	0.2515	0.2362	0.2674	PASS	0.8923	0.8588	0.9345	PASS	C3 (11)
C4 (12)	0.2342	0.2241	0.2531	PASS	0.8712	0.8415	0.9081	PASS	C4 (12)
D1 (13)	0.2568	0.2332	0.2660	PASS	0.9040	0.8681	0.9355	PASS	D1 (13)
D2 (14)	0.2572	0.2375	0.2664	PASS	0.8978	0.8713	0.9377	PASS	D2 (14)
D3 (15)	0.2571	0.2387	0.2733	PASS	0.9008	0.8858	0.9433	PASS	D3 (15)
D4 (16)	0.2528	0.2381	0.2666	PASS	0.9123	0.8823	0.9367	PASS	D4 (16)

-Det 5,6 offline β for today.

Reviewed by: S

Date: 3/24/04

Control Limits established 12/21/03. JME

000165

EFBC XLD

Printed 3/24/04 9:57 AM

LB4100 - B

Daily Instrument Performance Check Efficiency Determinations

Detector ID	Alpha				Beta				Detector ID
	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	
A1 (01)	0.2514	0.2277	0.2583	PASS	0.8612	0.8448	0.8995	PASS	A1 (01)
A2 (02)	0.2455	0.2314	0.2605	PASS	0.8720	0.8428	0.8989	PASS	A2 (02)
A3 (03)	0.2414	0.2291	0.2588	PASS	0.8887	0.8661	0.9191	PASS	A3 (03)
A4 (04)	0.2422	0.2302	0.2602	PASS	0.8787	0.8514	0.9123	PASS	A4 (04)
B1 (05)	0.2487	0.2342	0.2646	PASS	0.8935	0.9050	0.9663	OFFLINE	B1 (05)
B2 (06)	0.2337	0.2219	0.2484	PASS	0.8579	0.8585	0.9286	OFFLINE	B2 (06)
B3 (07)	0.2429	0.2343	0.2656	PASS	0.9199	0.8782	0.9579	PASS	B3 (07)
B4 (08)	0.2378	0.2236	0.2616	PASS	0.8814	0.8623	0.9360	PASS	B4 (08)
C1 (09)	0.2540	0.2453	0.2752	PASS	0.9367	0.8863	0.9595	PASS	C1 (09)
C2 (10)	0.2429	0.2311	0.2644	PASS	0.9048	0.8750	0.9478	PASS	C2 (10)
C3 (11)	0.2411	0.2362	0.2674	PASS	0.9031	0.8588	0.9345	PASS	C3 (11)
C4 (12)	0.2461	0.2241	0.2531	PASS	0.8732	0.8415	0.9081	PASS	C4 (12)
D1 (13)	0.2492	0.2332	0.2660	PASS	0.9068	0.8681	0.9355	PASS	D1 (13)
D2 (14)	0.2527	0.2375	0.2664	PASS	0.9028	0.8713	0.9377	PASS	D2 (14)
D3 (15)	0.2634	0.2387	0.2733	PASS	0.8808	0.8858	0.9433	FLAG-LOW	D3 (15)
D4 (16)	0.2501	0.2381	0.2666	PASS	0.9083	0.8823	0.9367	PASS	D4 (16)

- detectors 5, 6 are offline β
+ detector 15 is recounted in file EFB0325A

Reviewed by: LCB

Date: 3/25/04

Control Limits established 12/21/03. JME

000166

EFB0325.XLD

Printed 3/25/04 6:42 AM

LB4100 - B

Daily Instrument Performance Check Efficiency Determinations

Detector ID	Alpha				Beta				Detector ID
	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	
A1 (01)	#VALUE!	0.2277	0.2583	#VALUE!	#VALUE!	0.8448	0.8995	#VALUE!	A1 (01)
A2 (02)	#VALUE!	0.2314	0.2605	#VALUE!	#VALUE!	0.8428	0.8989	#VALUE!	A2 (02)
A3 (03)	#VALUE!	0.2291	0.2588	#VALUE!	#VALUE!	0.8661	0.9191	#VALUE!	A3 (03)
A4 (04)	#VALUE!	0.2302	0.2602	#VALUE!	#VALUE!	0.8514	0.9123	#VALUE!	A4 (04)
B1 (05)	#VALUE!	0.2342	0.2646	#VALUE!	#VALUE!	0.9050	0.9663	OFFLINE	B1 (05)
B2 (06)	#VALUE!	0.2219	0.2484	#VALUE!	#VALUE!	0.8585	0.9286	OFFLINE	B2 (06)
B3 (07)	#VALUE!	0.2343	0.2656	#VALUE!	#VALUE!	0.8782	0.9579	#VALUE!	B3 (07)
B4 (08)	#VALUE!	0.2236	0.2616	#VALUE!	#VALUE!	0.8623	0.9360	#VALUE!	B4 (08)
C1 (09)	#VALUE!	0.2453	0.2752	#VALUE!	#VALUE!	0.8863	0.9595	#VALUE!	C1 (09)
C2 (10)	#VALUE!	0.2311	0.2644	#VALUE!	#VALUE!	0.8750	0.9478	#VALUE!	C2 (10)
C3 (11)	#VALUE!	0.2362	0.2674	#VALUE!	#VALUE!	0.8588	0.9345	#VALUE!	C3 (11)
C4 (12)	#VALUE!	0.2241	0.2531	#VALUE!	#VALUE!	0.8415	0.9081	#VALUE!	C4 (12)
D1 (13)	#VALUE!	0.2332	0.2660	#VALUE!	#VALUE!	0.8681	0.9355	#VALUE!	D1 (13)
D2 (14)	#VALUE!	0.2375	0.2664	#VALUE!	#VALUE!	0.8713	0.9377	#VALUE!	D2 (14)
D3 (15)	0.2624	0.2387	0.2733	PASS	0.8948	0.8858	0.9433	PASS	D3 (15)
D4 (16)	#VALUE!	0.2381	0.2666	#VALUE!	#VALUE!	0.8823	0.9367	#VALUE!	D4 (16)

Reviewed by: LCB

Date: 3/25/04

Control Limits established 12/21/03. JME

000167

EFB A.XLD

Printed 3 4 6:49 AM

LB4100 - B

Daily Instrument Performance Check Efficiency Determinations

Detector	Alpha				Beta				Detector
ID	Eff.	LCL	UCL	Flag	Eff.	LCL	UCL	Flag	ID
A1 (01)	0.2460	0.2277	0.2583	PASS	0.8723	0.8448	0.8995	PASS	A1 (01)
A2 (02)	0.2406	0.2314	0.2605	PASS	0.8664	0.8428	0.8989	PASS	A2 (02)
A3 (03)	0.2433	0.2291	0.2588	PASS	0.9034	0.8661	0.9191	PASS	A3 (03)
A4 (04)	0.2474	0.2302	0.2602	PASS	0.8947	0.8514	0.9123	PASS	A4 (04)
B1 (05)	0.2429	0.2342	0.2646	PASS	0.8811	0.9050	0.9663	OFFLINE	B1 (05)
B2 (06)	0.2362	0.2219	0.2484	PASS	0.8659	0.8585	0.9286	OFFLINE	B2 (06)
B3 (07)	0.2428	0.2343	0.2656	PASS	0.9023	0.8782	0.9579	PASS	B3 (07)
B4 (08)	0.2406	0.2236	0.2616	PASS	0.8651	0.8623	0.9360	PASS	B4 (08)
C1 (09)	0.2655	0.2453	0.2752	PASS	0.9198	0.8863	0.9595	PASS	C1 (09)
C2 (10)	0.2444	0.2311	0.2644	PASS	0.9201	0.8750	0.9478	PASS	C2 (10)
C3 (11)	0.2513	0.2362	0.2674	PASS	0.8993	0.8588	0.9345	PASS	C3 (11)
C4 (12)	0.2374	0.2241	0.2531	PASS	0.8823	0.8415	0.9081	PASS	C4 (12)
D1 (13)	0.2477	0.2332	0.2660	PASS	0.9024	0.8681	0.9355	PASS	D1 (13)
D2 (14)	0.2532	0.2375	0.2664	PASS	0.8928	0.8713	0.9377	PASS	D2 (14)
D3 (15)	0.2570	0.2387	0.2733	PASS	0.8941	0.8858	0.9433	PASS	D3 (15)
D4 (16)	0.2535	0.2381	0.2666	PASS	0.9320	0.8823	0.9367	PASS	D4 (16)

- detectors 5, 6 are offline β

Reviewed by: LCB

Date: 3/26/04

Control Limits established 12/21/03. JME

891000

EFB0326.XLD

Printed 3/26/04 7:51 AM

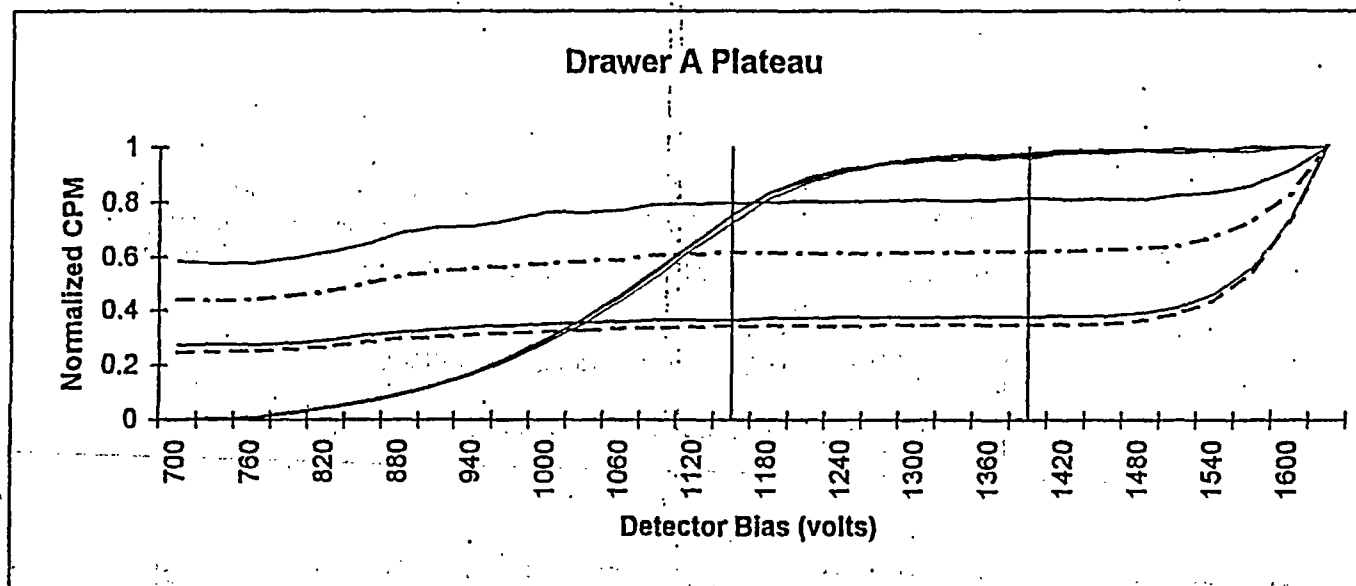
Gas Proportional Counter

Instrument Calibration

Initial Efficiency Calibration
Standards Traceability

Unit Type: LB4100/W
 Date Performed: 11/11/03 09:19
 FileName: PTB1111A
 Batch ID: DRAWER A

Unit Id: Aqua
 Application Revision: 2
 Application Version: Standard



Optimum alpha beta simultaneous operating voltage: **1402.5**

Optimum alpha only operating voltage: **1147.5**

	A1	A2	A3	A4
Beta slope at beta voltage	1.73%	1.36%	2.04%	1.59%
Alpha slope at beta voltage	0.75%	0.45%	0.63%	0.66%
Alpha slope at alpha voltage	1.76%	1.86%	1.20%	0.79%

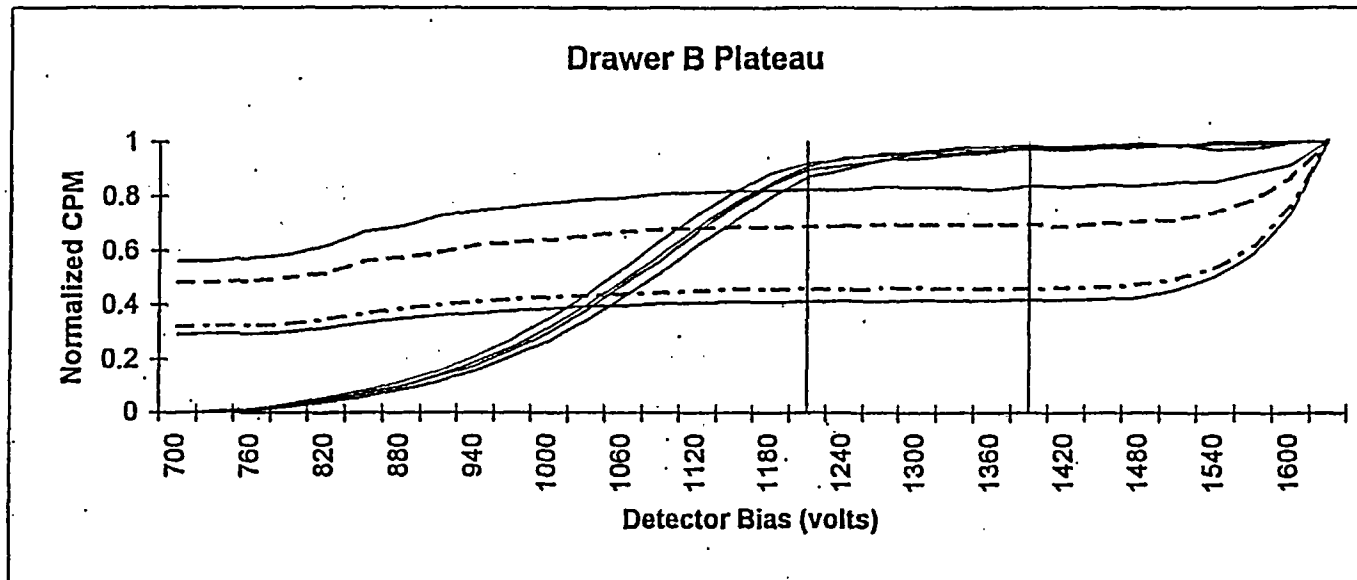
ALC
 11/13/03

Printed 11/11/03 3:38 PM

021000

Unit Type: LB4100/W
 Date Performed: 11/11/03 09:19
 FileName: PTB1111B
 Batch ID: DRAWER B

Unit Id: Aqua
 Application Revision: 2
 Application Version: Standard



Optimum alpha beta simultaneous operating voltage: **1402.5**

Optimum alpha only operating voltage: **1200**

	B1	B2	B3	B4
Beta slope at beta voltage	0.25%	1.73%	1.96%	1.01%
Alpha slope at beta voltage	1.26%	0.14%	0.86%	0.88%
Alpha slope at alpha voltage	1.42%	0.92%	0.63%	0.59%

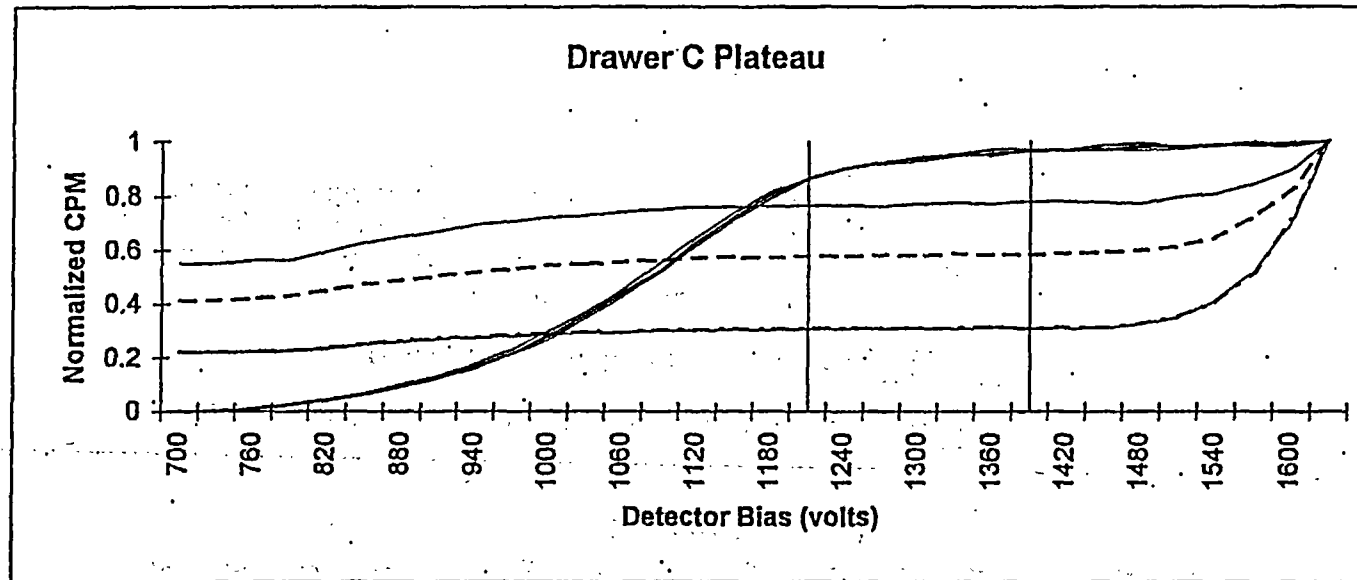
127000

Printed 11/11/03 3:39 PM

AE
 11/13/03

Unit Type: LB4100/W
Date Performed: 11/11/03 15:41
FileName: PTB1111C
Batch ID: DRAWER C

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



Optimum alpha beta simultaneous operating voltage: **1380**

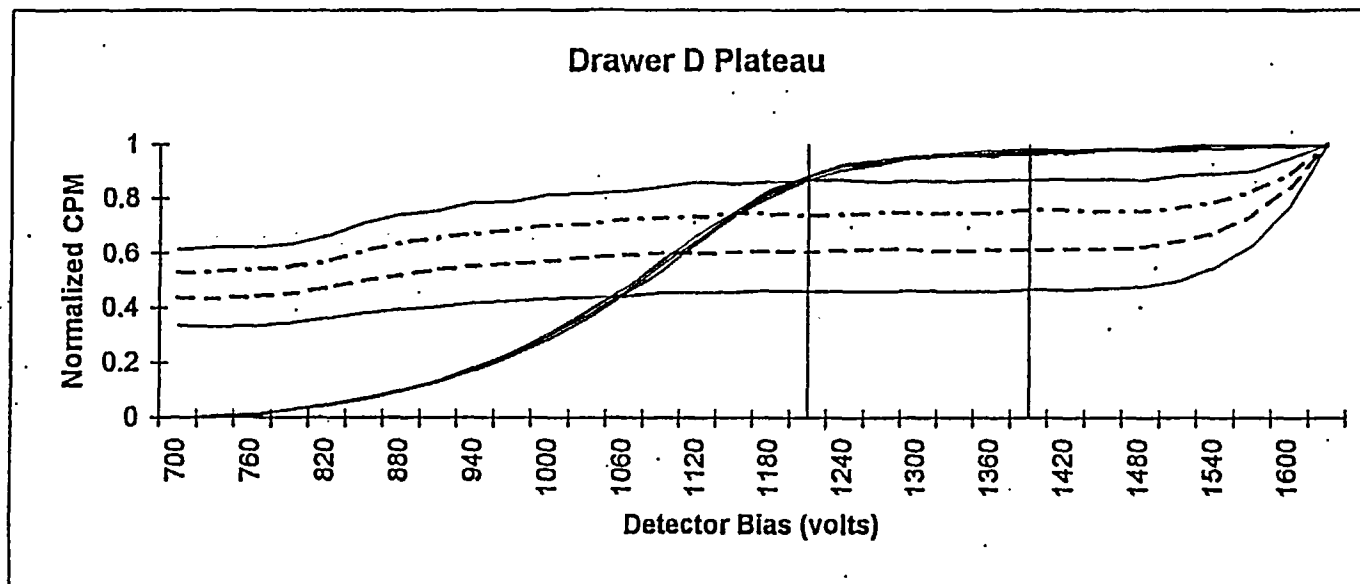
Optimum alpha only operating voltage: **1200**

	C1	C2	C3	C4
Beta slope at beta voltage	1.97%	2.08%	1.59%	2.05%
Alpha slope at beta voltage	0.49%	0.66%	0.69%	-0.24%
Alpha slope at alpha voltage	0.44%	1.15%	1.08%	1.14%

7^E
11/13/03

Unit Type: LB4100/W
 Date Performed: 11/11/03 15:42
 FileName: PTB1111D
 Batch ID: DRAWER D

Unit Id: Aqua
 Application Revision: 2
 Application Version: Standard



Optimum alpha beta simultaneous operating voltage: **1380**

Optimum alpha only operating voltage: **1200**

	D1	D2	D3	D4
Beta slope at beta voltage	1.81%	2.16%	1.11%	1.43%
Alpha slope at beta voltage	1.57%	0.87%	0.73%	0.96%
Alpha slope at alpha voltage	0.20%	1.53%	0.77%	0.04%

Printed 11/12/03 11:17 AM

Handwritten: 11/13/03

000173

LB4100-B Raw counts for Am-241 Wipe Efficiency Calibrations (Control ID #1123)

Detector ID	A1	A2	A3	A4	B1	B2	B3	B4
total time	4.27	4.3	4.22	4.27	4.02	4.1	4.19	4.11
Alpha counts	10006	10014	10018	10013	10018	10018	10017	10004
Alpha CPM	2343.22653	2328.69021	2373.83165	2344.84187	2491.8978	2443.29863	2390.49012	2433.92526
Alpha BKG CPM	0.099	0.147	0.102	0.123	0.142	0.116	0.202	0.138
Alpha Efficiency	0.24753988	0.24600426	0.25077303	0.24771054	0.26324562	0.25811158	0.25253286	0.25712138
archived STDEV	0.01286245	0.01278248	0.01303016	0.01287116	0.01367825	0.01341147	0.01312166	0.01336038
Beta CPM	376.084564	400.380465	418.200246	411.18437	508.465005	480.072317	451.732621	483.022533
A>B x-talk	0.1605	0.1719	0.1762	0.1754	0.2040	0.1965	0.1890	0.1985
Data file	EAW1226	EAW1226A	EAW1226B	EAW1226C	EAW1226D	EAW1226E	EAW1226F	EAW1226G

Detector ID	C1	C2	C3	C4	D1	D2	D3	D4
total time	4.12	4.14	4.19	4.28	4.25	4.21	4.1	4.14
total counts	10014	10007	10013	10015	10013	2381.84274	10020	10009
Alpha CPM	2430.48452	2417.02276	2389.57247	2339.86127	2355.86	2381.84274	2443.76444	2417.51185
Alpha BKG CPM	0.098	0.127	0.165	0.092	0.14	0.105	0.138	0.138
Alpha Efficiency	0.2567579	0.2553358	0.25243593	0.24718442	0.24887454	0.25161938	0.25816083	0.25538749
archived STDEV	0.01334123	0.01326752	0.01311671	0.01284376	0.01293165	0.01307389	0.01341399	0.01327015
Beta CPM	438.150825	444.041174	452.285947	423.234355	428.339353	425.958504	403.703756	429.892512
A>B x-talk	0.1803	0.1837	0.1893	0.1809	0.1818	0.1788	0.1652	0.1778
Data file	EAW1226H	EAW1226I	EAW1226J	EAW1226K	EAW1226L	EAW1226M	EAW1226N	EAW1226O

1/5/04

Source Database for OSUM for LB4100-B

Number of sources in table: 45

Application Revision: A

Control ID	Isotope	Type	Half-Life (days)	DPM	Std dev	Date	Status	Alpha/Beta Archive File
1121	Sr-90/Y-90	Beta	10446.15	22065.912	1103.30	18-Mar-99	PAI	Sr90R-11/03
1122	Am-241	Alpha	157861.05	11101.11	555.06	18-Mar-99	PAI	Am241-11/03
1123	Am-241	Alpha	157861.05	9624	481.20	1-Sep-93	PAI	AmWipe-11/03
1124	Sr-90/Y-90	Beta	10511.6072	37044	1852.20	10-Dec-01	PAI	SrWipe-11/03

12/11/03 Complete computer back-up was performed.
JE Scan disk was done and the computer's C:\ drive was defragmented.
File name: ~~12/11/03~~ 12/11/03 LB4100-B

pg. 12/16/03

12/24/03 Am-241 wipe Calibration
JE Am-241 on filter

Source: 73 Source ID: 1123 log file: Am Wipe: 11/03

File names: EAM1226, EAM1226A, EAM1226B, EAM1226C, EAM1226D,
EAM1226E, EAM1226F, EAM1226G, EAM1226H, EAM1226I,
EAM1226J, EAM1226K, EAM1226L, EAM1226M, EAM1226N,
EAM1226O.

272 x-talk is calculated for each detector using
the following equation:
counts in Beta channels / counts in Alpha channels

12/26/03 Sr-90 wipe Calibration
JE Sr-90 on filter

Source: 602 Source ID: 1124 log file: Sr-90
Sr Wipe - 11/03

File names: ESR1226, ESR1226A, ESR1226B, ESR1226C, ESR1226D,
ESR1226E, ESR1226F, ESR1226G, ESR1226H, ESR1226I,
ESR1226J, ESR1226K, ESR1226L, ESR1226M, ESR1226N,
ESR1226O.

672 x-talk is calculated for each detector using
the following equation:
counts in $\frac{272}{672}$ Beta channels / counts in Alpha channels

Continued on Page _____

Read and Understood By

Clare Linn

Signed

1/2/04

Date

Patricia Talbryson

Signed

1/2/04

Date

000176

pg 265878 a
(cont. from pg A1A b)

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP 7 Rev 8

Date: 12/26/03

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On line	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On-line
1700	A 0.1	1	JE		P		JE		P		✓	9	JE		P		JE		P		✓
2200	B	2									✓	10									✓
	C	3									✓	11									✓
	D	4									✓	12									✓
		5									✓	13									✓
		6									✓	14									✓
		7									✓	15									✓
		8									✓	16									✓

Bkg. Cal. File ID

Dr A Bk B1220W
Dr B
Dr C
Dr D

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-16	DR Checks	NA	NA	EFB1226	30	0856	JE	JE	12/26/03	NA
1-16	Bkg Checks	NA	NA	BK B1226	60	0908	JE	JE	12/26/03	
	0312081-1	AB031222-1	2/B	ABB1224	60	102642	JE	JE	12/20/03	
2	-1D					12/26/03				
3	-1A5									
4	-1A5D									
5	-2									
6	-3									
7	AB031222-1A3									
8	-1A5									
9	0312082-1	SR031222-2	51-92	SRB1224	60	102640	JE			
10	-2					12/26/03				
11	-3									
12	-4									
13	-5									
14	-6									
15	-8									

Form 780r6.frm (4/6/2001)

Comments:

Reviewed by

Date

12/29/03

000177

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Run LogDate: 12/26/03Instrument: **LB4100B**

Det	SmplID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
16	0312082-9	SR031222-2	51-9.1	SRB1226	60	1030	JE	JE	12/26/03	NA
1	0312082-16			SRB1226A	60	1230	JE	JE	12/26/03	
2	0312128-4									
3	0312128-4									
4	SR031222-24B									
5	0312128-4									
6	SR031222-3LS	SR031222-3	51-9.0	SRB1226B	60	1223 1230	JE			
7	0312118-1	AB031222-2	2/B	ABB1226A	60	1223	JE			
8	0312118-1									
9	0312118-1									
10	0312118-1									
11	0312118-1									
12	0312118-1									
13	0312118-1									
14	0312118-1									
15	0312118-1									
16	0312118-1									
1	0312118-10	AB031222-2	2/B	ABB1226B	60	1339	JE	JE	12/26/03	
2	0312118-10									
3	0312118-10									
4	0312118-10									
5	0312118-10									
6	0312118-10									
7	AB031222-24B									
8	0312118-10									
1	73	NA	Am-241 v/c Calib.	EA1226	10	1459	JE	JE	12/26/03	
2	73			A		1505	JE			

Form 780r6.frm (4/6/2001)

Reviewed g Date 12/29/03

Comments:

000178

pg 265879 a
(cont. from pg 265878 b)
265878
12/26/03

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP 72 8

Date: 12/26/03

Instrument Background and Response Checklist *See Page 265878 for Daily Check info. 12/26/03

P-10 Supply	P-10 Flow
1 <u>750</u>	A <u>0.1</u>
2 <u>2500</u>	B <u>1</u>
	C <u>1</u>
	D <u>1</u>

Bkg. Cal. File ID

Dr A Bk B12201
Dr B
Dr C
Dr D

Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On line	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On-line
1										9									
2										10									
3										11									
4										12									
5										13									
6										14									
7										15									
8										16									

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
3	73	NA	Am-241 w/pe Cal	EA1226B	10	1511	SE	SE	12/26/03	ACA
4				C		1516				
5				D		1522				
6				E		1527				
7				F		1533				
8				G		1540				
9				H		1545				
10				I		1552				
11				J		1556				
12				K		1603				
13				L		1607				
14				M		1616				
15				N		1621				
16				O		1626				
1	602	NA	Si-30 w/pe Cal	ES61226L	2	1523	SE	SE	12/26/03	
2				M		1524				
3				N		1526				

Form 780rG.fm (4/6/2001)

Comments:

Reviewed by G

Date: 12/29/03

000179

Am-241 Standard Verification: For Gas Flow Use

Std: 73
Date 12/23/03

Known Act.:		160.4	dps	4335.1	pCi/s			
	Det	Act. (pCi/s)	Ave Act	2 Std Dev*	% Recovery	Ave Rec w/in 5% (PAI)	Ave w/in 2 Std Dev (ICPT)	2 Std Dev w/in 10% Ave (ICPT)
Count 1	2	4290			99.0%	100.7%		
Count 2	8	4430			102.2%	Pass	Pass	Pass
Count 3	3	4370	4363.33	114.70	100.8%			

*The standard deviation is calculated using "n" degrees of freedom.

r:\inst\gamma\VerOtherTests.xls(Am-241 b)

000181

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

47007-307

Am-241 47 mm Membrane Filter in Stainless Steel Planchet

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

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

Source prepared by: B. D. MacDonald
B. D. MacDonald, Physicist

ISOTOPE:	Am-241
ACTIVITY (dps):	160.4
HALF-LIFE:	432.2 years
CALIBRATION DATE:	September 1, 1993 12:00 EST
TOTAL ERROR:	4.0%
SYSTEMATIC ERROR:	2.6%
RANDOM ERROR:	1.4%

43 mm active area. Low smooth bottom planchet. Source covering 0.85 mg/cm² mylar.

No expiration date has been given for this source due to the fragile nature of the mylar covering. This source should be carefully tested for leakage at least every six months. If leakage is detected this source should be disposed of by approved radioactive waste disposal procedures.

P O NUMBER 35829, Item 1

QA APPROVED [Signature] 9-20-93

000180

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.

GammaScan

Geo.7 / Filter

Sample ID: Std #73 Verif #1

```

-----
Sampling Start:   09/01/1993 08:00:00 | Counting Start:   12/23/2003 13:00:46
Sampling Stop:    09/01/1993 08:00:00 | Decay Time. . . . . 9.04E+004 Hrs
Buildup Time. . . . . 0.00E+000 Hrs | Live Time . . . . . 1800 Sec
Sample Size . . . . . 1.00E+000 sample | Real Time . . . . . 1811 Sec
Collection Efficiency . . . . . 1.0000 | Spc. File . . . . . 031983D02.SPC
-----

```

Detector #: 2 (Detector 2)

Energy(keV) = -0.74 + 0.500*Ch + 0.00E+00*Ch^2 + 0.00E+00*Ch^3 12/23/2003

FWHM(keV) = 0.57 + 0.018*En + 4.33E-04*En^2 + 0.00E+00*En^3 01/03/2003

Where En = Sqrt(Energy in keV)

```

-----
Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000
-----

```

```

=====
PEAK SEARCH RESULTS
=====

```

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN- CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.54	120.45	1472	80	18	64	0.74	a
2	92.46	186.22	15	11	6	10	0.39	a
3	510.84	1022.25	21	18	13	24	2.06	a Wide Pk

031983D02.SPC Analyzed by

SEEKER . B A C K G R O U N D S U B T R A C T R E S U L T S Vers. 2.2.1

Paragon Analytics, Inc.

GammaScan

Background File: DET021218.BKG (0324008-22 Weekly Bkg.)

Bkg.File Detector #: 2

=====

BACKGROUND SUBTRACT RESULTS

=====

PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN- CERTAINTY	NEW CR.LEVEL	FLAG
2	92.46	15	11	6	5	12	9	NET<CL
3	510.84	21	18	13	-22	20	18	NET<CL

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Inc.
 GammaScan

 Geo.7 / Filter

Sample ID: Std #73 Verif =1

```

-----
Sampling Start:   09/01/1993 08:00:00 | Counting Start:   12/23/2003 13:00:46
Sampling Stop:    09/01/1993 08:00:00 | Decay Time. . . . . 9.04e+004 Hrs
Buildup Time. . . . . 0.00e+000 Hrs   | Live Time . . . . . 1800 Sec
Sample Size . . . . . 1.00e+000 sample | Real Time . . . . . 1811 Sec
Collection Efficiency . . . . . 1.0000 | Spectrum File . . . . . 031983D02.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %
-----
  
```

Detector #: 2 (Detector 2)

Efficiency File: (D02)(Sh07).EFF (Geo 7 Eff Cal)

Eff.=1/[3.98E-04*En^-4.25E+00 + 6.03E+01*En^8.84E-01] 10/23/2003

Library File:ANALYTICAL.LIB (Analytical)

=====

MEASURED or MDA CONCENTRATIONS

=====

Nuclide	ENERGY E (keV)	N T	Concentration (pCi/sample)	MDA	Critical Level	Half-life (hrs)
Am-241	59.54	4.29E+03 +- 2.32E+02	1.12E+02	5.20E+01	3.79E+06	
Cd-109	88.02	MDA	4.65E+04	2.03E+04	1.11E+04	
Co-57	122.07	MDA	6.62E+04	2.86E+04	6.50E+03	
Ce-139	165.85	MDA	7.73E+08	3.30E+08	3.30E+03	
Hg-203	279.18	MDA	1.69E+25	7.36E+24	1.12E+03	
Sn-113	391.68	MDA	7.86E+10	3.35E+10	2.76E+03	
Cs-137	661.62	MDA	1.12E+01	4.35E+00	2.64E+05	
Y-88	898.02	MDA	6.39E+11	2.68E+11	2.56E+03	
Co-60	1173.21	MDA	5.30E+01	2.10E+01	4.62E+04	

MEASURED TOTAL: 4.29E+03 +- 2.32E+02 pCi/sample

=====

UNKNOWN, SUM or ESCAPE PEAKS

=====

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN- CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	92.46	186.22	5	12	9	10	0.39	Deleted
3	510.84	1022.25	-22	20	18	24	2.06	Deleted

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.

GammaScan

Geo.7 / Filter

Sample ID: Std #73 Verif #2

```

-----
Sampling Start: 09/01/1993 12:00:00 | Counting Start: 12/23/2003 14:28:01
Sampling Stop: 09/01/1993 12:00:00 | Decay Time: 9.04E+004 Hrs
Buildup Time: 0.00E+000 Hrs | Live Time: 1800 Sec
Sample Size: 1.00E+000 sample | Real Time: 1814 Sec
Collection Efficiency: 1.0000 | Spc. File: 031863D08.SPC
-----

```

Detector #: 8 (Detector 8)

Energy(keV) = $-0.30 + 0.500 \cdot \text{Ch} + -2.15\text{E-}08 \cdot \text{Ch}^2 + 5.68\text{E-}11 \cdot \text{Ch}^3$ 12/23/2003FWHM(keV) = $0.72 + 0.014 \cdot \text{En} + 5.05\text{E-}04 \cdot \text{En}^2 + 0.00\text{E+}00 \cdot \text{En}^3$ 01/02/2003

Where En = Sqrt(Energy in keV)

```

-----
Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000
-----

```

```

=====
PEAK SEARCH RESULTS
=====

```

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET/MDA COUNTS	UN- CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
1	59.51	119.62	6649	167	29	174	0.78	a HiResid
2	511.36	1023.16	43	22	14	30	2.04	a

031863D08.SPC Analyzed by

SEEKER BACKGROUND SUBTRACT RESULTS Vers. 2.2.1

Paragon Analytics, Inc.

GammaScan

Background File: DET081218.BKG (0324008-28 Weekly Bkg.)

Bkg.File Detector #: 8

=====

BACKGROUND SUBTRACT RESULTS

=====

PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN- CERTAINTY	NEW CR.LEVEL	FLAG
2	511.36	43	22	14	-6	23	19	NET<CL

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Inc.
 GammaScan

 Geo.7 / Filter

Sample ID: Std #73 Verif # 2

 Sampling Start: 09/01/1993 12:00:00 | Counting Start: 12/23/2003 14:28:01
 Sampling Stop: 09/01/1993 12:00:00 | Decay Time. 9.04e+004 Hrs
 Buildup Time. 0.00e+000 Hrs | Live Time 1800 Sec
 Sample Size 1.00e+000 sample | Real Time 1814 Sec
 Collection Efficiency 1.0000 | Spectrum File 031863D08.SPC
 Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %

Detector #: 8 (Detector 8)

Efficiency File: (D08)(Sh07).EFF (Geo 7 Eff Cal)

Eff.=1/[5.93E-02*En^-1.85E+00 + 7.21E+01*En^9.67E-01] 10/29/2003

Library File:ANALYTICAL.LIB (Analytical)
 =====

MEASURED or MDA CONCENTRATIONS
 =====

Nuclide	ENERGY E (keV)	Concentration (pCi/sample)	MDA	Critical Level	Half-life (hrs)
Am-241	59.54	4.43E+03 +- 1.11E+02	4.09E+01	1.96E+01	3.79E+06
Cd-109	88.02	MDA	3.43E+04	1.53E+04	1.11E+04
Co-57	122.07	MDA	9.29E+04	4.20E+04	6.50E+03
Ce-139	165.85	MDA	1.21E+09	5.41E+08	3.30E+03
Hg-203	279.18	MDA	1.88E+25	8.21E+24	1.12E+03
Sn-113	391.68	MDA	7.96E+10	3.33E+10	2.76E+03
Cs-137	661.62	MDA	2.03E+01	8.71E+00	2.64E+05
Y-88	898.02	MDA	7.56E+11	3.18E+11	2.56E+03
Co-60	1173.21	MDA	4.79E+01	1.73E+01	4.62E+04

MEASURED TOTAL: 4.43E+03 +- 1.11E+02 pCi/sample
 =====

UNKNOWN, SUM or ESCAPE PEAKS
 =====

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN- CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	511.36	1023.16	-6	23	19	30	2.04	Deleted

SEEKER G A M M A A N A L Y S I S R E S U L T S PS Version 1.8.4

Paragon Analytics, Inc.

GammaScan

Geo.7 / Filter

Sample ID: Std #73 Verif #3

```
-----
Sampling Start: 09/01/1993 12:00:00 | Counting Start: 12/23/2003 16:52:24
Sampling Stop: 09/01/1993 12:00:00 | Decay Time: . . . . . 9.04E+004 Hrs
Buildup Time: . . . . . 0.00E+000 Hrs | Live Time . . . . . 1800 Sec
Sample Size . . . . . 1.00E+000 sample | Real Time . . . . . 1832 Sec
Collection Efficiency . . . . . 1.0000 | Spc. File . . . . . 031552D03.SPC
-----
```

Detector #: 3 (Detector 3)

Energy(keV) = $-0.81 + 0.501 \cdot \text{Ch} + 0.00\text{E}+00 \cdot \text{Ch}^2 + 0.00\text{E}+00 \cdot \text{Ch}^3$ 12/23/2003FWHM(keV) = $0.77 + 0.011 \cdot \text{En} + 7.64\text{E}-04 \cdot \text{En}^2 + 0.00\text{E}+00 \cdot \text{En}^3$ 06/26/2003

Where En = Sqrt(Energy in keV)

```
-----
Search Sensitivity: 1.00 | Sigma Multiplier: 2.00 | Search Start/End: 95/4000
-----
```

PEAK SEARCH RESULTS

```
=====
PK.  ENERGY  ADDRESS  NET/MDA  UN-    C.L.    BKG    FWHM
#    (keV)    CHANNEL  COUNTS  CERTAINTY COUNTS COUNTS (keV)  FLAG
-----
1     59.59    120.60    2039      95       24     121    0.84 a
2     92.67    186.64     22      12        7      12    0.54 a
3    510.77   1021.33     43      20       12      23    2.04 a
-----
```

031552D03.SPC Analyzed by

SEEKER BACKGROUND SUBTRACT RESULTS Vers. 2.2.1

Paragon Analytics, Inc.
GammaScan

Background File: DET031218.BKG (0324008-23 Weekly Bkg.)

Bkg.File Detector #: 3

=====

BACKGROUND SUBTRACT RESULTS

=====

PK#	ENERGY (keV)	OLD NET COUNTS	OLD UN- CERTAINTY	OLD CR.LEVEL	NEW NET COUNTS	NEW UN- CERTAINTY	NEW CR.LEVEL	FLAG
2	92.67	22	12	7	4	14	11	NET<CL
3	510.77	43	20	12	-3	21	18	NET<CL

 SEEKER F I N A L A C T I V I T Y R E P O R T Version 2.2.1

Paragon Analytics, Inc.
 GammaScan

Geo.7 / Filter

Sample ID: Std #73 Verif #3

```

-----
Sampling Start:   09/01/1993 12:00:00 | Counting Start:   12/23/2003 16:52:24
Sampling Stop:    09/01/1993 12:00:00 | Decay Time. . . . . 9.04e+004 Hrs
Buildup Time. . . . . 0.00e+000 Hrs | Live Time . . . . . 1800 Sec
Sample Size . . . . . 1.00e+000 sample | Real Time . . . . . 1832 Sec
Collection Efficiency . . . . . 1.0000 | Spectrum File . . . . . 031552D03.SPC
Cr. Level Confidence Interval: 95 % | Det. Limit Confidence Interval: 95 %
-----
  
```

Detector #: 3 (Detector 3)

Efficiency File: (D03)(Sh07).EFF (Geo 7 Eff Cal)

Eff.=1/[8.04E-04*En^-3.88E+00 + 6.88E+01*En^9.22E-01] 11/11/2003

Library File:ANALYTICAL.LIB (Analytical)

=====

MEASURED or MDA CONCENTRATIONS

=====

Nuclide	ENERGY E (keV)	Concentration (pCi/sample)	MDA	Critical Level	Half-life (hrs)
Am-241	59.54	4.37E+03 +- 2.04E+02	1.11E+02	5.25E+01	3.79E+06
Cd-109	88.02	MDA	5.68E+04	2.57E+04	1.11E+04
Co-57	122.07	MDA	8.15E+04	3.62E+04	6.50E+03
Ce-139	165.85	MDA	9.23E+08	4.01E+08	3.30E+03
Hg-203	279.18	MDA	1.72E+25	7.46E+24	1.12E+03
Sn-113	391.68	MDA	8.53E+10	3.63E+10	2.76E+03
Cs-137	661.62	MDA	1.56E+01	6.39E+00	2.64E+05
Y-88	898.02	MDA	9.16E+11	4.00E+11	2.56E+03
Co-60	1173.21	MDA	5.00E+01	1.87E+01	4.62E+04

MEASURED TOTAL: 4.37E+03 +- 2.04E+02 pCi/sample

=====

UNKNOWN, SUM or ESCAPE PEAKS

=====

PK. #	ENERGY (keV)	ADDRESS CHANNEL	NET COUNTS	UN- CERTAINTY	C.L. COUNTS	BKG COUNTS	FWHM (keV)	FLAG
2	92.67	186.64	4	14	11	12	0.54	Deleted
3	510.77	1021.33	-3	21	18	23	2.04	Deleted

Reviewed By/Date: 77 12-23-03

XZ
12-23-03

7/2 12-23-03

- Counted on post. #2 12-23-03

3

LB4100-B Raw counts for Sr-90 Wipe Efficiency Calibrations (Control ID #1124)

Detector ID	A1	A2	A3	A4	B1	B2	B3	B4
total time	0.7	0.7	0.69	0.69	0.68	0.67	0.68	0.69
total counts	10117	10115	10107	10051	10066	10082	10093	10124
Beta CPM	14451.4241	14448.52	14646.3581	14565.2047	14801.2072	15046.1262	14840.9191	14670.8148
Beta BKG CPM	1.433	1.48	1.468	1.462	1.734	1.635	1.728	1.649
Beta Efficiency	0.40980287	0.40972054	0.41533073	0.41302949	0.41972161	0.42666688	0.4208478	0.41602375
archived STDEV	0.02128958	0.02128538	0.02157715	0.02145978	0.02180691	0.0221671	0.02186435	0.0216125
Alpha CPM	41.3295714	51.2815714	49.1733623	47.703087	20.4462353	35.7048955	26.2685882	27.3982319
B>A x-talk	0.0029	0.0035	0.0034	0.0033	0.0014	0.0024	0.0018	0.00186753
Data file	ESW1226L	ESW1226M	ESW1226N	ESW1226O	ESW1226H	ESW1226I	ESW1226J	ESW1226K

Detector ID	C1	C2	C3	C4	D1	D2	D3	D4
total time	0.68	0.68	0.69	0.68	0.69	0.67	0.69	0.66
total counts	10076	10059	10110	10068	10115	10035	10092	10017
Beta CPM	14815.9921	14791.0361	14650.5219	14804.3504	14857.8773	14975.5419	14624.181	15175.5227
Beta BKG CPM	1.655	1.611	1.652	1.532	1.543	2.07	1.906	1.906
Beta Efficiency	0.42014058	0.41943292	0.41544836	0.41981057	0.41565763	0.42466516	0.41470157	0.43033614
archived STDEV	0.02182828	0.02179218	0.02158316	0.02181144	0.02159379	0.02206505	0.02154509	0.02236041
Alpha CPM	42.5490588	41.0494706	52.008913	16.0844706	52.033913	40.1935075	34.6446087	48.3638485
B>A x-talk	0.0029	0.0028	0.0035	0.0011	0.0035	0.0027	0.0024	0.0032
Data file	ESW1226	ESW1226A	ESW1226B	ESW1226C	ESW1226D	ESW1226E	ESW1226F	ESW1226G

AE
1/5/04

Source Database for OSUM for LB4100-B

Number of sources in table: 45

Application Revision: A

Control ID	Isotope	Type	Half-Life (days)	DPM	Std dev	Date	Status	Alpha/Beta Archive File
1121	Sr-90/Y-90	Beta	10446.15	22065.912	1103.30	18-Mar-99	PAI	Sr90R-11/03
1122	Am-241	Alpha	157861.05	11101.11	555.06	18-Mar-99	PAI	Am241-11/03
1123	Am-241	Alpha	157861.05	9624	481.20	1-Sep-93	PAI	AmWipe-11/03
1124	Sr-90/Y-90	Beta	10511.6072	37044	1852.20	10-Dec-01	PAI	SrWipe-11/03

000193

12/11/03

JE

Complete computer back-up was performed.
 Scandisk was done and the computer's C/
 drive was defragmented.
 File names ~~12/11/03~~ 12/11/03 LB4100-B

PG 12/16/03

12/24/03

JE

Am-241 wipe Calibration

Am-241 on filter

Source: F3

Source ID: 1123

log file: Am Wipe 11/03

File names: EAM1226, EAM1226A, EAM1226B, EAM1226C, EAM1226D,
 EAM1226E, EAM1226F, EAM1226G, EAM1226H, EAM1226I,
 EAM1226J, EAM1226K, EAM1226L, EAM1226M, EAM1226N,
 EAM1226O.

X₂₄₁ talk is calculated for each detector using
 the following equation:
 $\text{counts in Beta channels} / \text{counts in Alpha channels}$

12/26/03

JE

Sr-90 wipe Calibration

Sr-90 on filter

Source: 602

Source ID: 1124

log file: Sr-90
 Sr Wipe - 11/03

File names: ESR1226, ESR1226A, ESR1226B, ESR1226C, ESR1226D,
 ESR1226E, ESR1226F, ESR1226G, ESR1226H, ESR1226I,
 ESR1226J, ESR1226K, ESR1226L, ESR1226M, ESR1226N,
 ESR1226O.

X₉₀ talk is calculated for each detector using
 the following equation:
 $\text{counts in } \frac{\text{Beta}}{\text{Alpha}} \text{ channels} / \text{counts in Beta channels}$

Continued on Page

Read and Understood By

Clare Lush

Signed

1/2/04

Date

Robin Ellingson

Signed

1/2/04

000194

pg 265878 a
(cont. from pg A b)

Parago Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP (Rev 8

Date: 12/26/03

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow
1700	A. <u>2.1</u>
2200	B
	C
	D

Bkg. Cal. File ID

Dr A	<u>BK81220W</u>
Dr B	
Dr C	
Dr D	

Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On line	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On-line
1	<u>JE</u>		<u>P</u>		<u>JE</u>		<u>P</u>		<u>✓</u>	9	<u>JE</u>		<u>P</u>		<u>JE</u>		<u>P</u>		<u>✓</u>
2									<u>✓</u>	10									<u>✓</u>
3									<u>✓</u>	11									<u>✓</u>
4									<u>✓</u>	12									<u>✓</u>
5									<u>✓</u>	13									<u>✓</u>
6									<u>✓</u>	14									<u>✓</u>
7									<u>✓</u>	15									<u>✓</u>
8	<u>✓</u>				<u>✓</u>		<u>✓</u>		<u>✓</u>	16	<u>✓</u>				<u>✓</u>				<u>✓</u>

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
<u>1-16</u>	<u>DR Checks</u>	<u>NA</u>	<u>NA</u>	<u>EFB1226</u>	<u>30</u>	<u>0856</u>	<u>JE</u>	<u>JE</u>	<u>12/26/03</u>	<u>NA</u>
<u>1-16</u>	<u>Bkg Checks</u>	<u>NA</u>	<u>NA</u>	<u>BK81226</u>	<u>60</u>	<u>0908</u>	<u>JE</u>	<u>JE</u>	<u>12/26/03</u>	
<u>1</u>	<u>1312081-1</u>	<u>AB031222-1</u>	<u>2/8</u>	<u>AB81226</u>	<u>60</u>	<u>102642</u>	<u>JE</u>	<u>JE</u>	<u>12/20/03</u>	
<u>2</u>	<u>-1D</u>					<u>12/26/03</u>				
<u>3</u>	<u>-1A5</u>									
<u>4</u>	<u>-1MSD</u>									
<u>5</u>	<u>-2</u>									
<u>6</u>	<u>-3</u>									
<u>7</u>	<u>AD031222-1AB</u>									
<u>8</u>	<u>-1L65</u>									
<u>9</u>	<u>0312082-1</u>	<u>SR031222-2</u>	<u>S1-90</u>	<u>SRB1226</u>	<u>60</u>	<u>103040</u>	<u>JE</u>			
<u>10</u>	<u>-2</u>					<u>12/26/03</u>				
<u>11</u>	<u>-3</u>									
<u>12</u>	<u>-4</u>									
<u>13</u>	<u>-5</u>									
<u>14</u>	<u>-6</u>									
<u>15</u>	<u>-8</u>									

Form 780r6.fm (4/6/2001)

Comments:

Reviewed by CJ Date 12/29/03

000195

pg 265878 bParagon Analytics, Inc.
Low Background Gas Flow Proportional Counter Run LogDate: 12/26/03Instrument: **LB4100B**

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
16	0312082-9	SR031222-2	SI-90	SRB1226	60	1030	JE	JE	12/26/03	NA
1	0312082-10			SRB1226A	60	1230	JE	JE	12/26/03	
2	0312128-4									
3	-40									
4	SR031222-24B									
5	-21CS									
6	SR031222-31CS	SR031222-3	SI-90	SRB1226B	60	1223 1230	JE			
7	0312118-1	AB031222-2	2/B	ABB1226A	60	1223	JE			
8	-2									
9	-3									
10	-4									
11	-5									
12	-5D									
13	-6									
14	-7									
15	-8									
16	-9									
1	0312118-10	AB031222-2	2/A	ABB1226B	60	1339	JE	JE	12/26/03	
2	-10/15									
3	-11									
4	-12									
5	-13									
6	-13D									
7	AB031222-24B									
8	-21CS									
1	73	NA	Am-241 Vipe Calib.	ETW1226	10	1459	JE	JE	12/26/03	
2	4			A		1505	JE			

Form 780r6.frm (4/6/2001)

Reviewed g Date 12/29/03

Comments:

000196

pg 265879 a
(cont. from pg 265878 b)
265878
12/26/03

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP Rev 8

Date: 12/26/03

Instrument Background and Response Checklist *See page 265878a for Daily Check info. 12/26/03

P-10 Supply	P-10 Flow
1 750	A 0.1
2 2500	B
	C
	D

Bkg. Cal. File ID

Dr A Bk B, 220 W
Dr B
Dr C
Dr D

Det	DR	DR	DR	cmnt	Bkg	Bkg	Bkg	cmnt	On	Det	DR	DR	DR	cmnt	Bkg	Bkg	Bkg	cmnt	On
	1	2	Stat		1	2	Stat		line		1	2	Stat		1	2	Stat		line
1										9									
2										10									
3										11									
4										12									
5										13									
6										14									
7										15									
8										16									

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
3	73	VA	Am 241 4.75 C/L	EA1226B	10	1511	JE	SE	12/26/03	NA
4				C		1516				
5				D		1522				
6				E		1527				
7				F		1533				
8				G		1540				
9				H		1545				
10				I		1552				
11				J		1556				
12				K		1603				
13				L		1607				
14				M		1616				
15				N		1621				
16				O		1626				
1	602	VA	Si 30 4.75 C/L	ES41226L	2	1523	JE	JE	12/26/03	
2				M		1524				
3				N		1526				

Form 780r6.frm (4/6/2001)

Comments:

Reviewed by

Date

000197

Paragon Analytics, Inc. Low Background Gas Flow Proportional Counter Run Log

Date: 12/26/03

Instrument: LB4100B

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Count Below
4	602	NA	Si-90 w/ G.L.	ESW12260	12	1529	JE	JE	12/24/03	NA
5			Si-90 w/ G.L.	H		1515				
6				I		1517				
7				J		1519				
8				K		1520				
9				ESW1226		1500				
10				A		1501				
11				B		1503				
12				C		1506				
13				D		1508				
14				E		1509				
15				F		1512				
16				G		1513				
1.1	BKG Check	NA	NA	BKB1226A	60	1633	JE	JE	12/26/03	
1	0310215-16	SR031210-2	Si-90	SRB1226C	1000	1748	JE	JE	12/27/03	
2	-17									
3	-18									
4	-19									
5	-20									
6	-21									
7	-210									
8	-22									
9	SR031210-248									
10	-2165									
11	0312081-1	SR031222-1	Si-90	SRI31226D	200	1751	JE			
12	-10									
13	-2									
14	-2									
15	SR031222-100									
16	-145									
Form 780r6.frm (4/6/2001)						Reviewed			Date	12/23/03
Comments:						1751	JE	JE	12/27/03	NA

000198

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

62753A-307

PAT ID: 0602
REC'D 10 12-11-01
12-14-01

Sr-90 47 mm Diameter Membrane Filter in Stainless Steel Planchet

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 25931.

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

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

ISOTOPE: Sr-90
ACTIVITY (dps): 308.7
HALF-LIFE: 28.79 years
CALIBRATION DATE: December 10, 2001 12:00 EST
TOTAL UNCERTAINTY*: 5.0%

*99% Confidence Level

Impurities: γ -impurities <0.1%43 mm active area. Low smooth bottom. Source covering 0.85 mg/cm² mylar.

NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total beta emission rate for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 3.19 hours.

P O NUMBER 001703, Item 3

PREPARED BY:

M. Taskaeva
M. Taskaeva, Radiochemist

Q A APPROVED:

UM, Mty 12-10-01

000199

New Standard Verification

WO#

Date 12/21/03

Previously Verified Standard

STD 602			
Nuclide	Sr-90		
Half Life	28.78		
Init. Activity	37044	dpm	
Ref. Date	12/10/01		
Vol.	1.0		
Current Spiked Act.	35277.50	dpm	

Standard to be Verified

STD 729			
Nuclide	Sr-90		
Half Life	28.78	y	
Init. Activity	41400	dpm	
Ref. Date	10/21/03		
Vol.	1.000		
Current Spiked Act.	41233.81	dpm	

Standards Sample ID	Pos.	GCPM	BCPM	NCPM	% Yield	DPM Added	Eff.	Ave. Eff.	Calibrated Efficiency	Calc DPM	Avg. DPM	2 StdDev	Obs w/in 5% of Cert. (PAI Req.)	Cert. Value w/in 2sig (ICPT Req.)	2sig<10% of mean (ICPT Req.)
602	D1	14798.60	1.54	14797.08	100%	35277.50	0.4194		0.4195						
602	D2	14789.40	2.07	14787.33	100%	35277.50	0.4192		0.4195						
602	D3	14812.00	1.91	14810.09	100%	35277.50	0.4198	0.4195	0.4195						
729	D1	17396.20	1.54	17394.68	100%	41233.81	0.4219		0.4195	41487.32					
729	D2	17555.60	2.07	17553.53	100%	41233.81	0.4257		0.4195	41848.08					
729	D3	17515.20	1.91	17513.29	100%	41233.81	0.4247	0.4241	0.4195	41750.14	41687.84	321.55	PASS	HIGH	PASS

1.01

reinstgipwipic

OK RG 12/24/03.
Requires NCR for RPT work.

000200

PAI - Gas Flow Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
 Counting Unit ID: Aqua
 High Voltage Mode: Simultaneous
 Application Revision: 2
 Rev. 07/29/03 JE

Date file name: SRB1221
 Batch ID: VER
 Count Preset (m): 5
 Batch Ended: 12/21/03 11:56

Background logfile: BKGABW
 Date of Bkg. Cal: 12/21/03
 Alpha efficiency logfile: Am241-11/03
 Alpha attenuation calibration: ABA1103.XLS
 Beta efficiency logfile: Sr90R-11/03
 Beta attenuation calibration: ABA1103.XLS

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

$y = b \cdot m^a (a^{\text{mass} - x0})$		$y = b \cdot m^a (a^{\text{mass} - x0})$	
Alpha b=	1.24550	Beta b=	1.0000
m=	0.99400	m=	0.9999
a=	1.0000	a=	1.0000
x0=	0.0000	x0=	0.0000
Alpha to Beta X-talk $y = m^a \cdot b^{\text{mass}}$		Beta to Alpha X-talk $y = m^a \cdot b^{\text{mass}}$	
a → b xtalk m=		b → a xtalk m=	
a → b xtalk b=		b → a xtalk b=	

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
D1	602	12/21/03 11:56	5.00	0.0	27.400	0.140	10.359	0.2111	1.246	n/a	n/a	14798.600	1.543	7.508	0.4115	1.000	n/a	n/a
D2	729	12/21/03 11:56	5.00	0.0	28.200	0.105	12.289	0.2101	1.246	n/a	n/a	17555.600	2.070	7.727	0.4102	1.000	n/a	n/a

000201

76
12/23/03

Unit Type: L64100-B
 Counting Unit ID: Aqua
 High Voltage Mode: Simultaneous
 Application Revision: 2
 Application Version: Standard
 Rev. 07/29/03 JE

Data file name: SRB1221A
 Batch ID: VER
 Count Preset (m): 5
 Batch Ended: 12/21/03 12:02

Background: BKGABW
 Date of: 12/21/03
 Alpha efficiency logfile: Am241-11/03
 Alpha attenuation calibration: ABA1103.XLS
 Beta efficiency logfile: Sr90R-11/03
 Beta attenuation calibration: ABA1103.XLS

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

$y = m \cdot m' \cdot (m' \cdot mass + a)$		$y = m \cdot m' \cdot (m' \cdot mass + a)$	
Alpha b=	1.24550	Beta b=	1.0000
m=	0.99400	m=	0.9999
a=	1.0000	a=	1.0000
x0=	0.0000	x0=	0.0000
Alpha to Beta X-talk		Beta to Alpha X-talk	
$y = m' \cdot b' \cdot mass$		$y = m' \cdot b' \cdot mass + b$	
a → b xtalk m=	0.2740	b → a xtalk m=	-2.00E-08
a → b xtalk b=	1.0010	b → a xtalk b=	0.0007

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b → a xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a → b xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
D2	602	12/21/03 12:02	5.00	0.0	25.600	0.105	10.353	0.2101	1.248	n/a	n/a	14789.400	2.070	7.014	0.4102	1.000	n/a	n/a
D3	729	12/21/03 12:02	5.00	0.0	31.400	0.138	12.261	0.2103	1.248	n/a	n/a	17515.200	1.906	8.604	0.4195	1.000	n/a	n/a

Unit Type: LB4100-B
 Counting Unit ID: Aqua
 High Voltage Mode: Simultaneous
 Application Revision: 2
 Application Version: Standard
 Rev. 07/29/03 JE

Data file name: SRB1221B
 Batch ID: VER
 Count Preset (m): 5
 Batch Ended: 12/21/03 12:09

Background logfile: BKGABW
 Date of Bkg. Cal: 12/21/03
 Alpha efficiency logfile: Am241-11/03
 Alpha attenuation calibration: ABA1103.XLS
 Beta efficiency logfile: Sr90R-11/03
 Beta attenuation calibration: ABA1103.XLS

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

y = b*m*(a*(mass-x0))		y = b*m*(a*(mass-x0))	
Alpha b=	1.24550	Beta b=	1.0000
m=	0.99400	m=	0.9999
a=	1.0000	a=	1.0000
x0=	0.0000	x0=	0.0000
Alpha to Beta X-talk		Beta to Alpha X-talk	
y = m*b*a*mass		y = m*b*a*mass	
a -> b xtalk m=	0.2740	b -> a xtalk m=	-2.00E-06
a -> b xtalk b=	1.0010	b -> a xtalk b=	0.0007

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
D1	729	12/21/03 12:09	5.00	0.0	30.400	0.140	12.177	0.2111	1.246	n/a	n/a	17396.200	1.543	8.330	0.4115	1.000	n/a	n/a
D3	502	12/21/03 12:09	5.00	0.0	26.200	0.138	10.368	0.2103	1.246	n/a	n/a	14812.000	1.906	6.805	0.4195	1.000	n/a	n/a

46
 12/23/03

000203

pg 265874 a
(cont. from pg NA b)

Parago Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP Rev 9

Date: 12/21/03

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow
1 700	A 0.1
2 800	B
	C
	D

Bkg. Cal. File ID

Dr A	BKB1221
Dr B	
Dr C	
Dr D	

Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On line	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On-line
1	JE		P		NP		*		✓	9	JE		P		NP		*		✓
2									✓	10		JE	R	P					✓
3									✓	11			P						✓
4									✓	12									✓
5									✓	13									✓
6									✓	14									✓
7									✓	15									✓
8									✓	16									✓

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-16	DR Check	NA	NA	EFB1221	30	1112	JE	JE	12/21/03	NA
16	DR Recount	NA	NA	EFB1221A	36	1125	JE	JE	12/21/03	
1	12312072-1	AB631215-3	2/P	AB631221	1000	1132	JE	JE	12/22/03	2/2/03
2	-1D									
3	.2									
4	.2MS									
5	AB631215-3HR									
6	.3LS									
13 13	602	-	Sr-90 wipe Ver	SRB1221	5	1151	JE	JE	12/21/03	
14 14	729	-	b		d	d	d			
15 9	73	-	Am-241 wipe Ver	AMB1221	5	1151	JE			
101	601	-	b		b	d	b			
1410	602	-	Sr-90 wipe Ver	SRB1221A	5	1157	JE	JE	12/21/03	
1511	729	-	b		d	d	d			
13 10	73	-	Am-241 wipe Ver	AMB1221A	3	1158	JE			
14 11	601	-	b		b	b	b			
15 15	602	-	Sr-90 wipe Ver	SRB1221B	5	1204	JE	JE	12/21/03	

Form 780r6.irm (4/6/2001)

Comments: * Since weekly BKG just finished, daily BKG were not done. 12/21/03.

Reviewed by 9/6

Date 12/22/03

000204

Instrument: **LB4100B**

Date: 12/21/03

Form 780r6.fm (4/6/2001)

Reviewed AE Date 12/22/03

Comments:

000205

030104-28-01	GROSS BETA	0.14	DPM/sample	1.39	N	U	P
030104-28-02	GROSS BETA	-0.12	DPM/sample	1.37	N	U	P
030104-28-03	GROSS BETA	0.16	DPM/sample	1.42	N	U	P
030104-28-04	GROSS BETA	1.01	DPM/sample	1.42	N	U	P
030104-28-04-LR	GROSS BETA	0.71	DPM/sample	1.4	N	UNC	P
030104-28-05	GROSS BETA	-0.14	DPM/sample	1.43	N	U	P
030104-28-06	GROSS BETA	0.58	DPM/sample	1.49	N	U	P
030104-28-07	GROSS BETA	0.26	DPM/sample	1.47	N	U	P
030104-28-08	GROSS BETA	0.66	DPM/sample	1.45	N	U	P
030104-28-09	GROSS BETA	0.01	DPM/sample	1.42	N	U	P
030104-28-10	GROSS BETA	0.26	DPM/sample	1.44	N	U	P
030104-28-11	GROSS BETA	0.51	DPM/sample	1.64	N	U	P
030104-28-12	GROSS BETA	0.38	DPM/sample	1.58	N	U	P
030104-28-13	GROSS BETA	0.34	DPM/sample	1.36	N	U	P
030104-28-14	GROSS BETA	1.14	DPM/sample	1.54	N	U	P
030104-28-14-LR	GROSS BETA	1.13	DPM/sample	1.37	N	UNC	P
030104-28-15	GROSS BETA	-0.2	DPM/sample	1.4	N	U	P
030104-28-16	GROSS BETA	-0.49	DPM/sample	1.49	N	U	P
030104-28-17	GROSS BETA	0.68	DPM/sample	1.45	N	U	P
030104-28-18	GROSS BETA	0.59	DPM/sample	1.46	N	U	P
030104-28-19	GROSS BETA	0.5	DPM/sample	1.43	N	U	P
030104-28-20	GROSS BETA	0.8	DPM/sample	1.47	N	U	P
030104-28-20FD	GROSS BETA	0.69	DPM/sample	1.46	N	U	P
030104-28-21	GROSS BETA	0.62	DPM/sample	1.41	N	U	P
030104-28-22	GROSS BETA	0.42	DPM/sample	1.36	N	U	P
030104-28-23	GROSS BETA	0.02	DPM/sample	1.37	N	U	P
030104-28-24	GROSS BETA	0.6	DPM/sample	1.39	N	U	P
030104-28-25	GROSS BETA	0.85	DPM/sample	1.4	N	U	P
030104-28-26	GROSS BETA	0.44	DPM/sample	1.49	N	U	P
030104-28-26-LR	GROSS BETA	0.17	DPM/sample	1.41	N	UNC	P
030104-28-27	GROSS BETA	0.45	DPM/sample	1.45	N	U	P
030104-28-28	GROSS BETA	0.74	DPM/sample	1.46	N	U	P
030104-28-29	GROSS BETA	0.05	DPM/sample	1.43	N	U	P
030104-28-30	GROSS BETA	0.79	DPM/sample	1.46	N	U	P
030104-28-31	GROSS BETA	0.32	DPM/sample	1.66	N	U	P
030104-28-32	GROSS BETA	0.15	DPM/sample	1.54	N	U	P
030104-28-33	GROSS BETA	0.86	DPM/sample	1.35	N	U	P
030104-28-34	GROSS BETA	0.33	DPM/sample	1.37	N	U	P
030104-28-35	GROSS BETA	0.11	DPM/sample	1.38	N	U	P
030104-28-36	GROSS BETA	-0.13	DPM/sample	1.54	N	U	P
030104-28-36FD	GROSS BETA	0.31	DPM/sample	1.49	N	U	P
030104-28-36-LR	GROSS BETA	0.41	DPM/sample	1.4	N	UNC	P
030104-28-37	GROSS BETA	0.86	DPM/sample	1.49	N	U	P
030104-28-38	GROSS BETA	0.4	DPM/sample	1.45	N	U	P
030104-28-39	GROSS BETA	0.59	DPM/sample	1.46	N	U	P
030104-28-40	GROSS BETA	0.55	DPM/sample	1.43	N	U	P
030104-28-41	GROSS BETA	1.13	DPM/sample	1.54	N	U	P
030104-28-42	GROSS BETA	0.89	DPM/sample	1.36	N	U	P
030104-28-43	GROSS BETA	0.44	DPM/sample	1.66	N	U	P
030104-28-44	GROSS BETA	0.06	DPM/sample	1.46	N	U	P
030104-28-45	GROSS BETA	0.04	DPM/sample	1.44	N	U	P

Sample ID	Measurement	Value	Unit	Net	Unc	Flag
030104-28-45FD	GROSS BETA	0.02	DPM/sample	1.47	N	U
030104-28-45-LR	GROSS BETA	0.52	DPM/sample	1.41	N	UNC
030104-28-46	GROSS BETA	0.52	DPM/sample	1.47	N	U
030104-28-FB	GROSS BETA	0.45	DPM/sample	1.4	N	U

Sample ID	Parameter	Value	Unit	Count	Net Count	Net Count Error	Net Count Error	Net Count Error
030104-28-01	GROSS ALPHA	-0.01	DPM/sample	0.65	N	U	P	
030104-28-02	GROSS ALPHA	-0.31	DPM/sample	0.9	N	U	P	
030104-28-03	GROSS ALPHA	0.02	DPM/sample	0.77	N	U	P	
030104-28-04	GROSS ALPHA	-0.06	DPM/sample	0.87	N	U	P	
030104-28-04-LR	GROSS ALPHA	-0.09	DPM/sample	0.68	N	UNC	P	
030104-28-05	GROSS ALPHA	0.18	DPM/sample	0.67	N	U	P	
030104-28-06	GROSS ALPHA	0.45	DPM/sample	0.66	N	U	P	
030104-28-07	GROSS ALPHA	0.08	DPM/sample	0.65	N	U	P	
030104-28-08	GROSS ALPHA	-0.12	DPM/sample	0.77	N	U	P	
030104-28-09	GROSS ALPHA	-0.05	DPM/sample	0.68	N	U	P	
030104-28-10	GROSS ALPHA	0.22	DPM/sample	0.68	N	U	P	
030104-28-11	GROSS ALPHA	0.19	DPM/sample	0.73	N	U	P	
030104-28-12	GROSS ALPHA	-0.01	DPM/sample	0.68	N	U	P	
030104-28-13	GROSS ALPHA	0.19	DPM/sample	0.71	N	U	P	
030104-28-14	GROSS ALPHA	0.13	DPM/sample	0.7	N	U	P	
030104-28-14-LR	GROSS ALPHA	0.21	DPM/sample	0.62	N	UNC	P	
030104-28-15	GROSS ALPHA	0.14	DPM/sample	0.64	N	U	P	
030104-28-16	GROSS ALPHA	0.3	DPM/sample	0.76	N	U	P	
030104-28-17	GROSS ALPHA	-0.02	DPM/sample	0.66	N	U	P	
030104-28-18	GROSS ALPHA	0.29	DPM/sample	0.74	N	U	P	
030104-28-19	GROSS ALPHA	0.14	DPM/sample	0.62	N	U	P	
030104-28-20	GROSS ALPHA	0.15	DPM/sample	0.79	N	U	P	
030104-28-20FD	GROSS ALPHA	0.26	DPM/sample	0.67	N	U	P	
030104-28-21	GROSS ALPHA	0.07	DPM/sample	0.68	N	U	P	
030104-28-22	GROSS ALPHA	0.32	DPM/sample	0.71	N	U	P	
030104-28-23	GROSS ALPHA	-0.02	DPM/sample	0.62	N	U	P	
030104-28-24	GROSS ALPHA	0.21	DPM/sample	0.72	N	U	P	
030104-28-25	GROSS ALPHA	0.1	DPM/sample	0.64	N	U	P	
030104-28-26	GROSS ALPHA	0.14	DPM/sample	0.77	N	U	P	
030104-28-26-LR	GROSS ALPHA	0.2	DPM/sample	0.68	N	UNC	P	
030104-28-27	GROSS ALPHA	0.06	DPM/sample	0.66	N	U	P	
030104-28-28	GROSS ALPHA	0.05	DPM/sample	0.74	N	U	P	
030104-28-29	GROSS ALPHA	0.18	DPM/sample	0.62	N	U	P	
030104-28-30	GROSS ALPHA	-0.22	DPM/sample	0.79	N	U	P	
030104-28-31	GROSS ALPHA	0.13	DPM/sample	0.79	N	U	P	
030104-28-32	GROSS ALPHA	-0.07	DPM/sample	0.7	N	U	P	
030104-28-33	GROSS ALPHA	-0.17	DPM/sample	0.72	N	U	P	
030104-28-34	GROSS ALPHA	0.06	DPM/sample	0.62	N	U	P	
030104-28-35	GROSS ALPHA	-0.03	DPM/sample	0.72	N	U	P	
030104-28-36	GROSS ALPHA	-0.13	DPM/sample	0.74	N	U	P	
030104-28-36FD	GROSS ALPHA	0.22	DPM/sample	0.77	N	U	P	
030104-28-36-LR	GROSS ALPHA	0.18	DPM/sample	0.64	N	UNC	P	
030104-28-37	GROSS ALPHA	0.22	DPM/sample	0.77	N	U	P	
030104-28-38	GROSS ALPHA	0.1	DPM/sample	0.66	N	U	P	
030104-28-39	GROSS ALPHA	0.13	DPM/sample	0.74	N	U	P	
030104-28-40	GROSS ALPHA	0.1	DPM/sample	0.62	N	U	P	
030104-28-41	GROSS ALPHA	0.02	DPM/sample	0.75	N	U	P	
030104-28-42	GROSS ALPHA	0.27	DPM/sample	0.72	N	U	P	
030104-28-43	GROSS ALPHA	-0.06	DPM/sample	0.79	N	U	P	
030104-28-44	GROSS ALPHA	-0.17	DPM/sample	0.79	N	U	P	
030104-28-45	GROSS ALPHA	0.43	DPM/sample	0.62	N	U	P	

DATE	TIME	PARAMETER	VALUE	UNIT	STATUS	REMARKS	TESTER	REVIEWER
030104-28-45FD		GROSS ALPHA	0.23	DPM/sample	0.71	N	U	P
030104-28-45-LR		GROSS ALPHA	0.11	DPM/sample	0.68	N	UNC	P
030104-28-46		GROSS ALPHA	0.53	DPM/sample	0.74	N	U	P
030104-28-FB		GROSS ALPHA	0.1	DPM/sample	0.64	N	U	P

Laboratory A1505/1507

Final Status Data Summary Table Beta and Alpha Scan Data
Survey Unit: Laboratory A1505/1507
Building 53, Denver Federal Center

(1 of 5)

Laboratory ID

Action Criteria

Individual Measurements

Beta Scan

A1505/1507

<u>A1505/1507</u>	<u>Bkg. Value</u>	<u>MDCR_{Surveyor}</u>										
Floor Tile	401	802.0	409.0	383.0	388.0	294.0	315.0	333.0	292.0	313.0	No. of meas./locs	10
Wall Board	345	690.0	339.0	400.0							Maximum	409.0
											Mean	346.6
											Standard Deviation	44.60
											No. > MDCR _{Surveyor}	0

Alpha Scan

A1505/1507

A1505/1507	Bkg. Value										
Floor Tile	5.5	3.0	5.0	3.0	5.0	2.0	7.0	3.0	6.0	No. of meas./locs	10
Wall Board	5.5	6.0	5.0							Maximum	7.0
										Mean	4.5
										Standard Deviation	1.65
										No. > Scan MDC	0

Notes:

Bold values exceed respective criteria.

Kcpm - Thousand counts per minute.

Bkg. - Background.

470094

Final Status Data Summary Table: Direct Beta Measurements
Survey Unit: Laboratory A1505/1507
Building 53, Denver Federal Center

(2 of 5)

Laboratory ID	Administrative Goal	Release Criteria	Individual Measurements														
<i>Systematic Direct Read Locations</i>																	
<u>A1505/1507</u>															-	No. of meas./locs	39
Wall	1,000 dpm/100cm ²	1,000 dpm/100cm ²	239	-28	-47	151	152	77	-47	-117	-53	300	55	25		Maximum	632.0
Wall	1,000 dpm/100cm ²	1,000 dpm/100cm ²	632	-210	224	-364	-100	-173	-218	-291	-92	-672	-1984			Mean	57.8
Floor	1,000 dpm/100cm ²	1,000 dpm/100cm ²	-61	228	210	294	332	171	317	294	136	363	394			Standard Deviation	430.2
Floor	1,000 dpm/100cm ²	1,000 dpm/100cm ²	407	474	462	282	493									No. > Administrative Goal	0
																No. > Release Criteria	0
<i>Bias Direct Read Locations</i>																	
<u>A1505/1507</u>																No. of meas./locs	10
Wall	1,000 dpm/100cm ²	1,000 dpm/100cm ²	84	983	-1258											Maximum	983.0
Floor	1,000 dpm/100cm ²	1,000 dpm/100cm ²	626	93	950	-250	-185	-191	-391							Mean	46.1
																Standard Deviation	676.9
																No. > Administrative Goal	0
																No. > Release Criteria	0
<i>Quality Control; Field Duplicate Performance (Criteria <20%)</i>																	
	1st	2nd	RPD														
<u>A1505/1507</u>																	
Location A-06	152	116	27														
Location A-26	210	220	-5														
Location BS-1505/1507-08	-1258	-1747	-33														

Notes:

Bold values exceed respective criteria.

cm² - Square centimeters.

DCGL - Derived concentration value representing the upper limit criteria.

RPD - Relative percent difference.

dpm - Disintegrations per minute.

ALARA - As low as reasonably achievable.

Final Status Data Summary Table Direct Alpha Measurements
Survey Unit: Laboratory A1507/1507
Building 53, Denver Federal Center

(3 of 5)

Laboratory ID	Administrative Goal	Release Criteria	Individual Measurements														No. of meas./locs	
Systematic Direct Read Locations																		
<u>A1505/1507</u>																	39	
Wall	30 ^a dpm/100cm ²	100 dpm/100cm ²	3	-13	-37	-18	-22	-22	-18	23	18	0	-6	-17		Maximum	36.0	
Wall	30 ^a dpm/100cm ²	100 dpm/100cm ²	-20	-18	31	-7	-22	-20	-36	-37	-34	-34	-36		Mean	-6.4		
Floor	30 ^a dpm/100cm ²	100 dpm/100cm ²	-10	-9	0	-6	21	25	18	21	36	29	-19		Standard Deviation	20.8		
Floor	30 ^a dpm/100cm ²	100 dpm/100cm ²	-7	-16	1	4	4								No. > Administrative Goal	1		
															No. > Release Criteria	0		

Blas Direct Read Locations																		
<u>A1505/1507</u>																	No. of meas./locs	10
Wall	30 ^a dpm/100cm ²	100 dpm/100cm ²	-23	-33	-12												Maximum	5.0
Floor	30 ^a dpm/100cm ²	100 dpm/100cm ²	5	-16	-12	5	-16	-22	-3								Mean	-12.7
																	Standard Deviation	12.2
																	No. > Administrative Goal	0
																	No. > Release Criteria	0

Quality Control; Field Duplicate Performance (Criteria <20%)			
	1st	2nd	RPD
<u>A1505/1507</u>			
Location A-08	-22	-21	5
Location A-26	0	-9	-200
Location BS-1505/1507-08	-12	-11	9

Notes:
 Bold values exceed respective criteria.
 cm² - Square centimeters.
 DCGL - Derived concentration value representing the upper limit criteria.
 RPD - Relative percent difference.
 dpm - Disintegrations per minute.
 ALARA - As low as reasonably achievable.
^a - Approximate sensitivity of field instrument

Final Status Data Summary Table: Beta Wipe Sample Results
Survey Unit: Laboratory A1505/1507
Building 53, Denver Federal Center

Laboratory ID		Administrative Goal	Release Criteria	(4 of 5) Individual Measurements			
<i>Systematic Direct Read Locations</i>							
<u>A1505/1507</u>						No. of meas./locs	39
Wall	200 dpm/100cm ²	200 dpm/100cm ²	All sample results were reported as non-detected at < 1.9 dpm/100cm ²			Maximum	na
Wall	200 dpm/100cm ²	200 dpm/100cm ²				Mean	na
Floor	200 dpm/100cm ²	200 dpm/100cm ²				Standard Deviation	na
						No. > Administrative Goal	0
						No. > Release Criteria	0
<i>Bias Direct Read Locations</i>							
<u>A1505/1507</u>						No. of meas./locs	10
Wall	200 dpm/100cm ²	200 dpm/100cm ²	All sample results were reported as non-detected at < 1.9 dpm/100cm ²			Maximum	na
Floor	200 dpm/100cm ²	200 dpm/100cm ²				Mean	na
						Standard Deviation	na
						No. > Administrative Goal	0
						No. > Release Criteria	0
<i>Quality Control; Field Duplicate Performance (Criteria <20%)</i>							
<u>A1505/1507</u>							
Location A-20	Regular	Field Duplicate	Field Splits	RPD			
Location A-35	nd	nd	nd	nc			
Location BS-1507-06	nd	nd	nd	nc			

Notes:

Bold values exceed respective criteria.
cm² - Square centimeters.

DCGL - Derived concentration value representing the upper limit criteria.

RPD - Relative percent difference.

dpm - Disintegrations per minute.

ALARA - As low as reasonably achievable.

nd - non-detected

nc - not calculated

Final Status Data Summary Table. Alpha Wipe Sample Results
Survey Unit: Laboratory A1505/1507
Building 53, Denver Federal Center

(5 of 5)

Laboratory ID	Administrative Goal	Release Criteria	Individual Measurements		
<i>Systematic Direct Read Locations</i>					
<u>A1505/1507</u>				No. of meas./locs	39
Wall	1.1 dpm/100cm ²	20 dpm/100cm ²	There was one floor sample location with a result of 0.61 dpm/100cm ² , just over it's respective MDC of 0.60 dpm/100cm ² All other sample results were reported as non-detected at < 0.90 dpm/100cm ²	Maximum	0.6
Wall	1.1 dpm/100cm ²	20 dpm/100cm ²		Mean	na
Floor	1.1 dpm/100cm ²	20 dpm/100cm ²		Standard Deviation	na
				No. > Administrative Goal	0
				No. > Release Criteria	0
<i>Bias Direct Read Locations</i>					
<u>A1505/1507</u>				No. of meas./locs	10
Wall	1.1 dpm/100cm ²	20 dpm/100cm ²	All sample results were reported as non-detected at < 0.90 dpm/100cm ²	Maximum	na
Floor	1.1 dpm/100cm ²	20 dpm/100cm ²		Mean	na
				Standard Deviation	na
				No. > Administrative Goal	0
				No. > Release Criteria	0
<i>Quality Control; Field Duplicate Performance (Criteria <20%)</i>					
<u>A1505/1507</u>	<i>Regular</i>	<i>Field Duplicate</i>	<i>Field Splits</i>	<i>RPD</i>	
Location A-20	nd	nd	nd	nc	
Location A-35	nd	nd	nd	nc	
Location BS-1507-06	nd	nd	nd	nc	

Notes:

Bold values exceed respective criteria.

cm² - Square centimeters.

DCGL - Derived concentration value representing the upper limit criteria.

RPD - Relative percent difference.

dpm - Disintegrations per minute.

ALARA - As low as reasonably achievable.

nd - non-detected

nc - not calculated

Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT		PROJECT NUMBER: 101115		DATE: 030204	TIME START: 1300	TIME COMPLETE: 1615	PAGE 1 OF 10																	
LOCATION: EPA NEIC <i>Rm A 1507</i>		SURVEYOR(S): <i>Trent / Stephens</i>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">Alpha</th> <th colspan="2">Beta-Gamma</th> <th>Alpha cpm</th> <th rowspan="3">Item or Location</th> </tr> <tr> <th>Loose</th> <th>Total</th> <th>Loose</th> <th>Total</th> <th>Beta cpm</th> </tr> <tr> <th>dpm/100cm²</th> <th>dpm/100cm²</th> <th>dpm/100cm²</th> <th>dpm/100cm²</th> <th>Material</th> </tr> </table>		Alpha		Beta-Gamma		Alpha cpm	Item or Location	Loose	Total	Loose	Total	Beta cpm	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material	Denver Federal Center, CO		SURVEY NUMBER: 030201-30
Alpha		Beta-Gamma				Alpha cpm	Item or Location																	
Loose	Total	Loose	Total	Beta cpm																				
dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²	Material																				
Denver, CO		MAP ID:		Item #																				
ACCEPTABLE SURFACE CONTAMINATION LEVELS Loose 20 dpm/100cm ² Alpha 200 dpm/100cm ² Beta-Gamma Total 100 dpm/100cm ² Alpha 1,000 dpm/100cm ² Beta-Gamma				ACCEPTABLE SCAN LIMITS MDCR _{surveyor} Beta MDCR _{surveyor} Alpha																				
Source Check Data		Contamination Surveys		Radiation Surveys																				
	α	α	β-γ	β-γ	Beta-Gamma																			
	(TOTAL)	(TOTAL)	(TOTAL)	(TOTAL)																				
Instrument	184904 / 185768	185774	184904 / 185768	185774	NA																			
Source Type and ID	Th-230, 1170/89	Th-230, 1170/89	Cs-137, 92CS5000	Cs-137, 92CS5000																				
Source Strength in dpm	13800	13800	769565	769565	Ck																			
Efficiency	0.13 / 0.15	0.15	0.16 / 0.17	0.18																				
MDC in dpm/100 cm ²	See attached instrument sheets for material specific backgrounds and MDC's.				Sat. <input type="checkbox"/> Unsat. <input type="checkbox"/>																			
Background in cpm					min/hr or prom/hr																			
REASON FOR SURVEY <input checked="" type="checkbox"/> PROCEDURE NO. FINAL STATUS SURVEY PLAN <input type="checkbox"/> SPECIAL <i>SCANS</i> <input type="checkbox"/> ROUTINE _____ Contamination <input checked="" type="checkbox"/> By Shift <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Radiation <input type="checkbox"/> By Shift <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>																								
COMMENTS:																								
BADS - See Attached Data Sheet																								
Contamination Survey		ALPHA (TOTAL)		BETA-GAMMA (TOTAL)																				
INSTRUMENT / SERIAL #		2360 185774		2360 185774																				
		2360 185768		2360 185768																				
		N/A		N/A																				
THE KNOWING & WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.																								
RCS REVIEW <i>[Signature]</i>				DATE 3.5.04																				

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room A 1507	PAGE 2 OF 10	
COMMENTS:	SURVEYOR(S): Trent Stephens	SURVEY NUMBER: 030204-30	DATE: 030204
	NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <i>[Signature]</i> DATE: 3.5.04			

Grid Intersection __, __

Backgrd CK (cpm)

6 / 355 6780

5 / 347 1500

2340 15774

Grid Intersection __, __

Backgrd CK (cpm)

7 / 278 0730

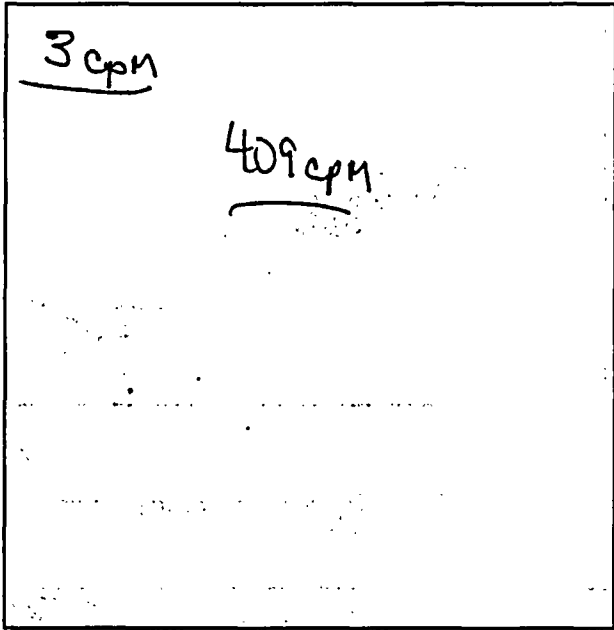
4 / 301 1500

2360 185768

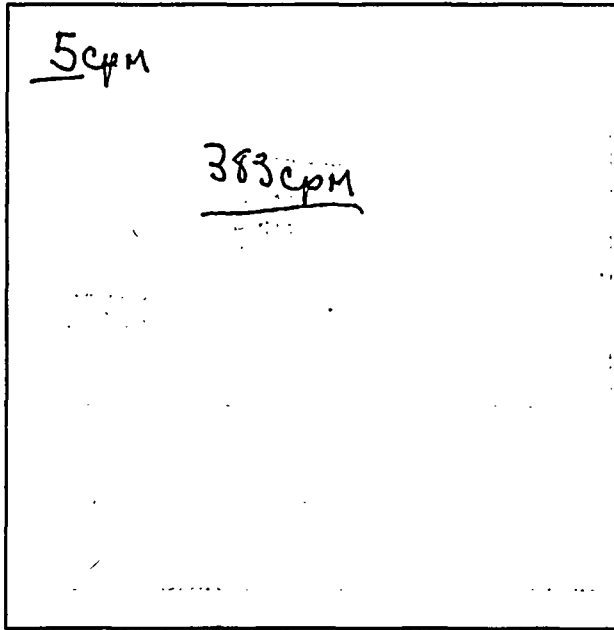
Contamination / Remediation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: <u>Rm 1507</u>	/ Laboratory-Room		PAGE <u>3</u> OF <u>10</u>
COMMENTS:		SURVEYOR(S): <u>Trent Stephens</u>	SURVEY NUMBER: <u>030207-30</u>	DATE: <u>030207</u>
		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <u>[Signature]</u>		DATE: <u>3.5.04</u>		

Grid Intersection M.2

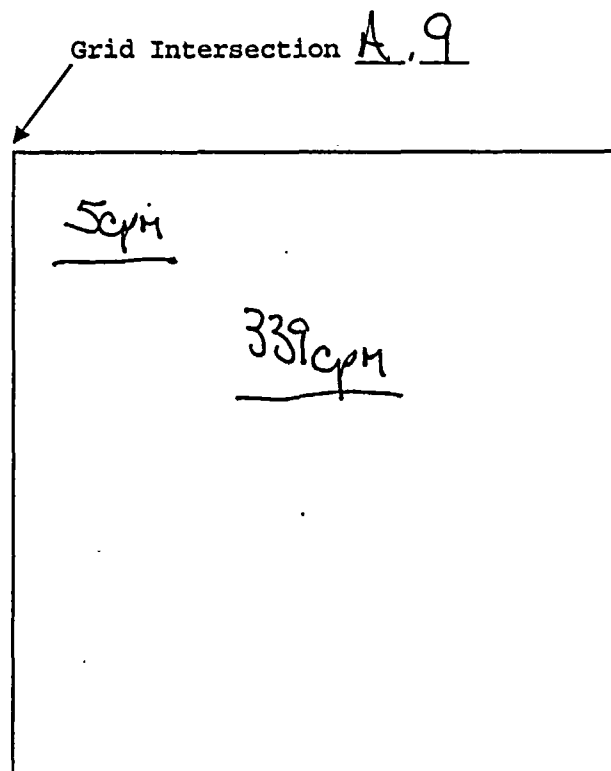
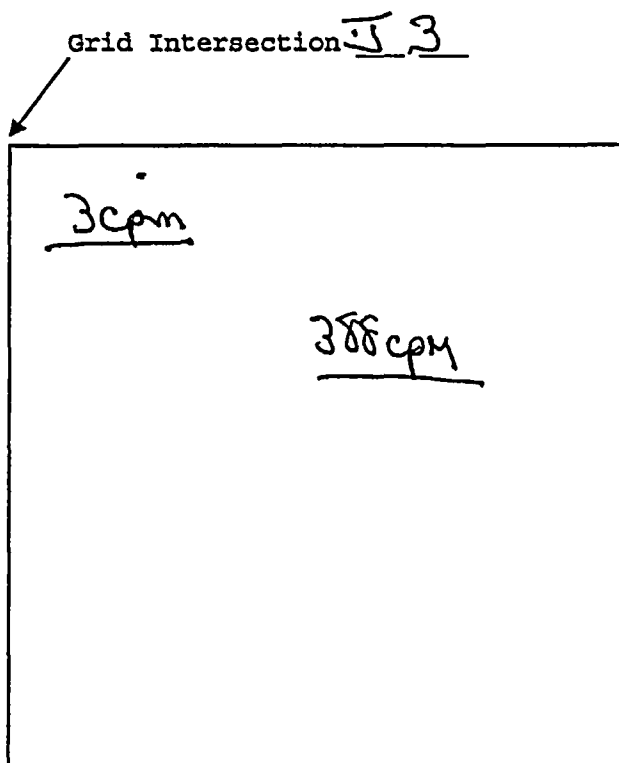


Grid Intersection K.4



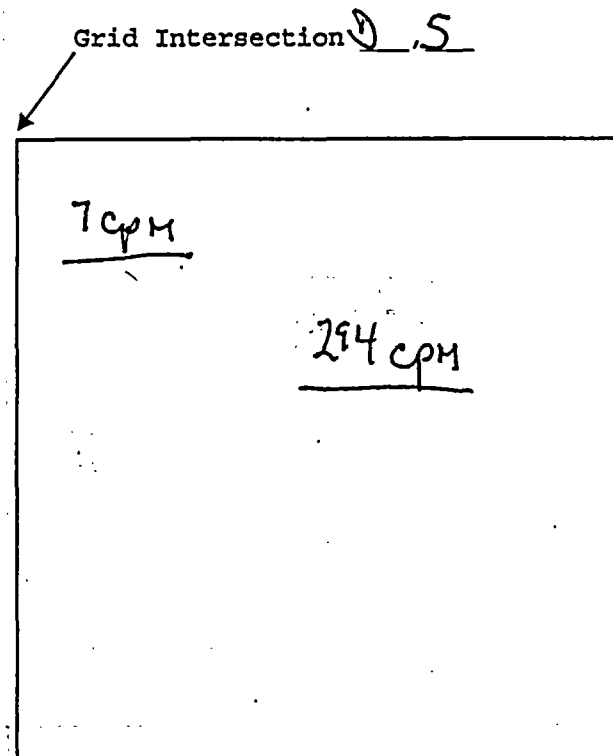
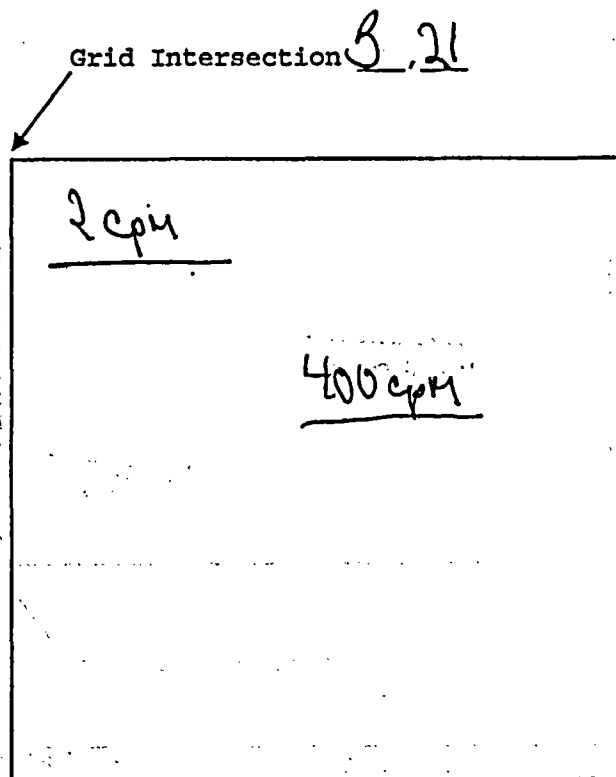
Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room A 1507	PAGE 4 OF 10	
COMMENTS:	SURVEYOR(S): Trent Stephens	SURVEY NUMBER: 030204-30	DATE: 030204
	NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <i>[Signature]</i>	DATE: 3.5.04		



Contamination / Emission Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room <u>A 1507</u>	PAGE <u>5</u> OF <u>10</u>	
COMMENTS:		SURVEYOR(S): <u>Robert Stephens</u>	SURVEY NUMBER: <u>030204-30</u>
		DATE: <u>030204</u>	
RCS REVIEW: <u>[Signature]</u> DATE: <u>3-5-04</u>		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.	



Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room <u>A 1507</u>	PAGE <u>6</u> OF <u>10</u>
COMMENTS:	SURVEYOR(S): <u>Trent Stephens</u>	SURVEY NUMBER: <u>030204-30</u>
	DATE: <u>030204</u>	
	NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.	
RCS REVIEW: <u>[Signature]</u> DATE: <u>3-5-04</u>		

Grid Intersection I, I

3cpm

315 cpm

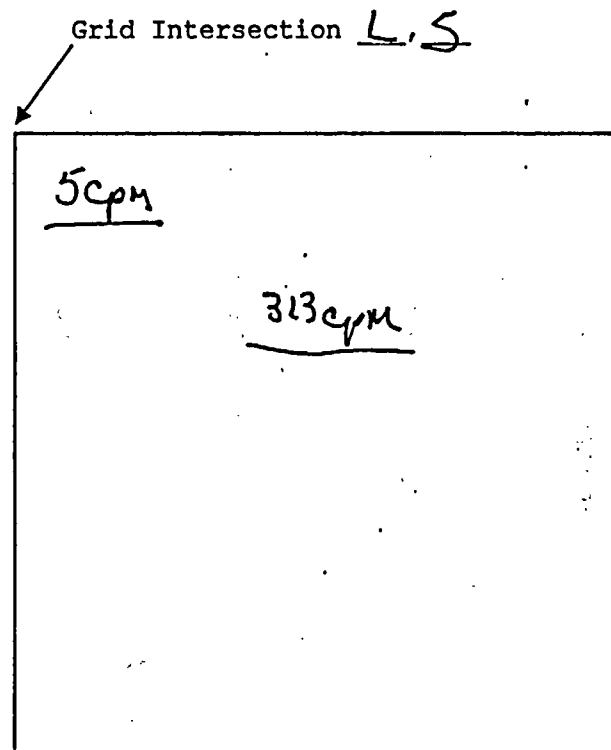
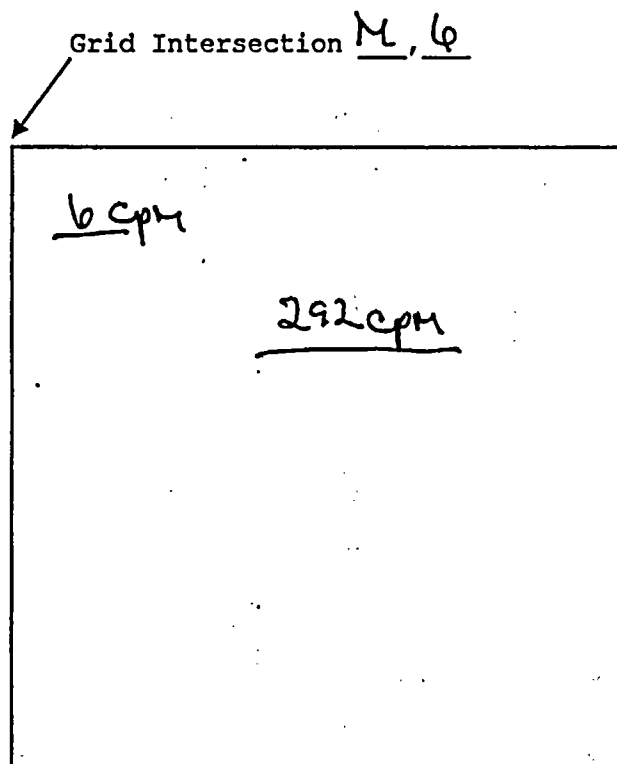
Grid Intersection J, 6

6cpm

333 cpm

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room <u>A 1507</u>	PAGE <u>7</u> OF <u>10</u>	
COMMENTS:		SURVEYOR(S): <u>Trent Stephens</u>	SURVEY NUMBER: <u>030204-30</u>
		DATE: <u>030204</u>	
RCS REVIEW: <u>[Signature]</u> DATE: <u>3-5-04</u>		NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.	



MDCRsurveyor Scanning Levels for Specific Materials

23-60

185774

/

Instr. Eff.

0.18 / Setup MDC

1711

Wall Board (WB)

BKGD CPM	271.18	MDCR surveyor	396	gross cpm
----------	--------	------------------	-----	--------------

Floor Tile (FT)

BKGD CPM	347.86	MDCR surveyor	489	gross cpm
----------	--------	------------------	-----	--------------

Wood (wo)

BKGD CPM	250.42	MDCR surveyor	370	gross cpm
----------	--------	------------------	-----	--------------

Concrete Floor (CF)

BKGD CPM	498.62	MDCR surveyor	667	gross cpm
----------	--------	------------------	-----	--------------

Metal (ME)

BKGD CPM	325.46	MDCR surveyor	462	gross cpm
----------	--------	------------------	-----	--------------

Concrete Block (CB)

BKGD CPM	530.62	MDCR surveyor	705	gross cpm
----------	--------	------------------	-----	--------------

Glass (GL)

BKGD CPM	370.34	MDCR surveyor	516	gross cpm
----------	--------	------------------	-----	--------------

Countertop (CT)

BKGD CPM	286.78	MDCR surveyor	415	gross cpm
----------	--------	------------------	-----	--------------

Miller 3.5.04
03020420
Pg 8 of 10

MDCRsurveyor Scanning Levels for Specific Materials

23-60

185768

/

Instr. Eff.

0.17 / Setup MDC

1641

Wall Board (WB)

BKGD CPM	230.00	MDCR surveyor	345	gross cpm
----------	--------	------------------	-----	--------------

Floor tile (FT)

BKGD CPM	275.22	MDCR surveyor	401	gross cpm
----------	--------	------------------	-----	--------------

Wood (wo)

BKGD CPM	210.12	MDCR surveyor	320	gross cpm
----------	--------	------------------	-----	--------------

Concrete Floor (CF)

BKGD CPM	357.50	MDCR surveyor	500	gross cpm
----------	--------	------------------	-----	--------------

Metal (ME)

BKGD CPM	256.10	MDCR surveyor	377	gross cpm
----------	--------	------------------	-----	--------------

Concret Block (CB)

BKGD CPM	446.00	MDCR surveyor	606	gross cpm
----------	--------	------------------	-----	--------------

Glass (GL)

BKGD CPM	304.00	MDCR surveyor	436	gross cpm
----------	--------	------------------	-----	--------------

Countertop (CT)

BKGD CPM	232.08	MDCR surveyor	347	gross cpm
----------	--------	------------------	-----	--------------

glt
3-5-04

030204-30

3 4 of 10

999 9960 m:mm / IN

STARTING DATE: 25NOV00
DRAWN BY: C.E.TUMLIN



Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT		PROJECT NUMBER: 101115		DATE: 03.02.04	TIME START: 0730	TIME COMPLETE: 1400	PAGE 1 OF 10
LOCATION: EPANEIC		SURVEYOR(S): J. STEPHENS / T. TRENT		Alpha		Beta-Gamma	Alpha cpm <input type="checkbox"/>
Denver Federal Center, CO		SURVEY NUMBER: 030204-31		Loose		Total	Beta cpm <input type="checkbox"/>
Denver, CO		MAP ID: LAB AK05/1507		Total		Loose	Material <input type="checkbox"/>
ACCEPTABLE SURFACE CONTAMINATION LEVELS		ACCEPTABLE SCAN LIMITS		Item #	dpm/100cm ²	dpm/100cm ²	dpm/100cm ²
Loose 20 dpm/100cm ² Alpha 200 dpm/100cm ² Beta-Gamma		MDCR _{survey} Beta		1	NA	3	239
Total 100 dpm/100cm ² Alpha 1,000 dpm/100cm ² Beta-Gamma		MDCR _{survey} Alpha		2		-13	-28
Source Check Data		Contamination Surveys		3		-37	-672
		Radiation Surveys		4		-18	-47
		Beta-Gamma		5		-22	151
		(TOTAL)		6		-22	152
Instrument		184904 / 185778		7		-18	77
Source Type and ID		Th-230, 1170/88		8		23	-47
Source Strength in dpm		13800		9		18	-117
Efficiency		0.13 / 0.15		10		0	-53
MDC in dpm/100 cm ²		See attached instrument sheets for material specific backgrounds and MDC's.		11		-6	300
Background in cpm				12		-17	55
REASON FOR SURVEY		PROCEDURE NO. FINAL STATUS SURVEY PLAN - Direct Readings		13		-20	25
SURVEY		SPECIAL		14		-18	632
Contamination		By Shift <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>		15		31	-1984
Radiation		By Shift <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>		16		-7	-210
COMMENTS: Item 1-18 - 2360 185774 19-39 2360 - 185768				17		-22	224
40 - 2360 185774 41-46 2360 185768				18		-20	-364
47-52 2360 185774				19		-36	-100
				20		-37	-173
SACS - See Attached Data Sheet				21		-34	-218
Contamination Survey		ALPHA (TOTAL) 2360 185774		22		-34	-291
INSTRUMENT / SERIAL #		BETA-GAMMA (TOTAL) 2360 185774		23		-36	-92
		ALPHA (TOTAL) 2360 185768		24		-10	-61
		BETA-GAMMA (TOTAL) 2360 185768		25		-9	228
		ALPHA (TOTAL)					
		BETA-GAMMA (TOTAL)					
THE KNOWING & WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.				RCS REVIEW: [Signature] DATE 3.16.04			

Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT (CONTINUATION SHEET)						PROJECT NUMBER: 101115		DATE: 03.02.04		PAGE 2 OF 10	
LOCATION: EPANEIC				SURVEYOR(S): J. STEPHENS / T. TRENT		COMMENTS:					
Denver Federal Center, Building 53				SURVEY NUMBER: D30204-31							
Denver, CO				MAP ID: LAB A1505/1507							
RCS REVIEW: <i>[Signature]</i>						DATE: 3.16.04					

Item #	Alpha		Beta-Gamma		Alpha cpm Beta cpm Material	Item or Location	Item #	Alpha		Beta-Gamma		Alpha cpm Beta cpm Material	Item or Location
	LOOSE	TOTAL	LOOSE	TOTAL				LOOSE	TOTAL	LOOSE	TOTAL		
26	NA	0	NA	210	FT	A-26	51	NA	-3	NA	-391	FT	BS-1507-10
27		-6		294		A-27	52	↓	-11	↓	-1747	CB	Replicate BS-1507-08
28		21		332		A-28	53						
29		25		171		A-29	54						
30		18		317		A-30	55						
31		21		294		A-31	56						
32		36		136		A-32	57						
33		29		363		A-33	58						
34		-19		394		A-34	59						
35		-7		407		A-35	60						
36		-16		474		A-36	61						
37		1		462		A-37	62						
38		4		282	↓	A-38	63						
39		4		493	FT	A-39	64						
40		-21		116	WBD	Replicate A-06	65						
41		-9		220	FT	Replicate A-26	66						
42		5		626	FT	BS-1507-01	67						
43		-16		93	FT	BS-1507-02	68						
44		-23		84	WBD	BS-1507-03	69						
45		-33		983	WBD	BS-1507-04	70						
46		-12		950	FT	BS-1507-05	71						
47		5		250	FT	BS-1507-06	72						
48		-16		185	FT	BS-1507-07	73						
49		-12		1258	CB	BS-1507-08	74						
50		-22		-191	FT	BS-1507-09	75						

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: Laboratory-Room LAB A1505/1507	PAGE 3 OF 10
COMMENTS:	SURVEYOR(S): J. STEPHENS / T. TRENT	SURVEY NUMBER: 030204-31
	DATE: 03-02-04	
NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <i>[Signature]</i>	DATE: 3.16.04	

Background Checks (cpm)

2360	185774	
alpha	beta	Time
6	355	0730
5	347	1500
		03-02-04
5	336	
6	401	
		03-03-04

Background Checks (cpm)

2360	185768	
alpha	beta	Time
7	278	0730
4	301	1500
		03-02-04
3	289	
2	301	
		03-03-04

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room LAB A1505/1507	PAGE 4 OF 10
COMMENTS:	SURVEYOR(S): J. STEPHENS / T. TRENT	SURVEY NUMBER: 030204 - 31
	DATE: 03-02-04	
	NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.	
RCS REVIEW: <i>[Signature]</i>	DATE: 3.16.04	

Replicate Count A-06

Gross Total Counts

ORIGINAL

15 / 4859

Replicate

16 / 4797

Replicate Count A-26

Gross Total Counts

ORIGINAL

33 / 4466

Replicate

27 / 4481

Contamination / Radiation Survey Report

PROJECT NUMBER: 101115	ACTIVITY / LOCATION: / Laboratory-Room LAB	PAGE 5 OF 10
COMMENTS:	SURVEYOR(S): J. STEPHENS / T. TRENT	SURVEY NUMBER: 030204-31
		DATE: 03-02-04
NOTE: THE KNOWING AND WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.		
RCS REVIEW: <i>[Signature]</i>	DATE: 3.16.04	

Replicate Count BS-1507-08

Gross Total Counts

ORIGINAL

17 / 5820

Replicate

18 / 4987

Material Specific Background and MDC Sheet for Beta Measurements

Pg 6 of 10
030204-31

ghm
3.16.04

Instrument/SN:	<u>Ludlum 2360 / 185768</u>	Background Count Time	<u>5.00</u> minutes
Probe/SN:	<u>Ludlum 43-68 / RN012714</u>	Total Instrument Efficiency	<u>0.0850</u> dpm/cpm

Wall Board	(WB)	230.00	cpm	MDC	242	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	(FT)	275.22	cpm	MDC	265	dpm/100cm2	Sample Count Time	15.00	min
Wood	(WO)	210.12	cpm	MDC	232	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	(CF)	357.50	cpm	MDC	302	dpm/100cm2	Sample Count Time	15.00	min
Metal	(ME)	256.10	cpm	MDC	256	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	(CB)	446.00	cpm	MDC	337	dpm/100cm2	Sample Count Time	15.00	min
Glass	(GL)	304.00	cpm	MDC	278	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	(CT)	232.08	cpm	MDC	244	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	385.38	cpm	MDC	313	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	285.78	cpm	MDC	270	dpm/100cm2	Sample Count Time	15.00	min

Material Specific Background and MDC Sheet for Alpha Measurements

Pa 7 of 10
(30204-31)
John
3.16.04

Instrument/SN: Ludlum 2360 / 185768

Background count time 5 minutes

Probe/SN: Ludlum 43-68 / RN012714

Total Instrument Efficiency 0.0375 dpm/cpm

Wall Board	WB	1.82	cpm	MDC	53	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	FT	2.22	cpm	MDC	58	dpm/100cm2	Sample Count Time	15.00	min
Wood	WO	3.10	cpm	MDC	68	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	CF	5.52	cpm	MDC	89	dpm/100cm2	Sample Count Time	15.00	min
Metal	ME	1.84	cpm	MDC	53	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	CB	2.50	cpm	MDC	61	dpm/100cm2	Sample Count Time	15.00	min
Glass	GL	4.38	cpm	MDC	79	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	CT	1.68	cpm	MDC	51	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	16.10	cpm	MDC	149	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	3.42	cpm	MDC	71	dpm/100cm2	Sample Count Time	15	min

Material Specific Background and MDC Sheet for Alpha Measurements

19 0 0 10
030204-31
John
3-16-04

Instrument/SN: Ludlum 2360 / 185774

Background count time 5 minutes

Probe/SN: Ludlum 43-68 / RN012713

Total Instrument Efficiency 0.0375 dpm/cpm

Wall Board	WB	2.30	cpm	MDC	59	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	FT	1.96	cpm	MDC	55	dpm/100cm2	Sample Count Time	15.00	min
Wood	WO	2.24	cpm	MDC	58	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	CF	3.54	cpm	MDC	72	dpm/100cm2	Sample Count Time	15.00	min
Metal	ME	1.10	cpm	MDC	42	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	CB	1.72	cpm	MDC	51	dpm/100cm2	Sample Count Time	15.00	min
Glass	GL	3.74	cpm	MDC	74	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	CT	2.30	cpm	MDC	59	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	5.04	cpm	MDC	85	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	2.06	cpm	MDC	56	dpm/100cm2	Sample Count Time	15	min

Material Specific Background and MDC Sheet for Beta Measurements

Pa 4 of 10
30204-31
J. J. J.
3-16-04

Instrument/SN: Ludlum 2360 / 185774

Background Count Time 5.00 minutes

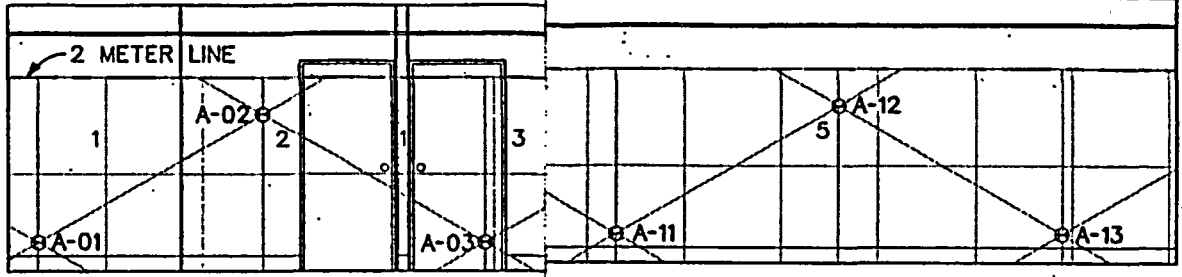
Probe/SN: Ludlum 43-68 / RN012713

Total Instrument Efficiency 0.0900 dpm/cpm

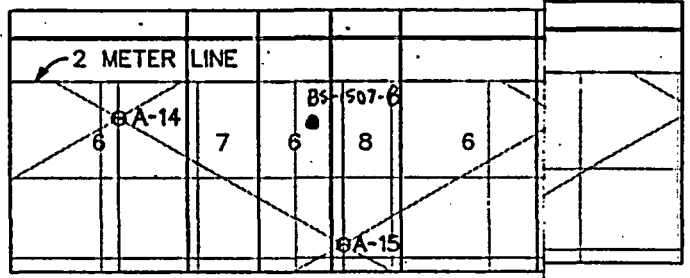
Wall Board	(WB)	271.18	cpm	MDC	248	dpm/100cm2	Sample Count Time	15.00	min
Floor Tile	(FT)	347.86	cpm	MDC	281	dpm/100cm2	Sample Count Time	15.00	min
Wood	(WO)	250.42	cpm	MDC	239	dpm/100cm2	Sample Count Time	15.00	min
Cement Floor	(CF)	498.62	cpm	MDC	336	dpm/100cm2	Sample Count Time	15.00	min
Metal	(ME)	325.46	cpm	MDC	272	dpm/100cm2	Sample Count Time	15.00	min
Concrete Block	(CB)	530.62	cpm	MDC	347	dpm/100cm2	Sample Count Time	15.00	min
Glass	(GL)	370.34	cpm	MDC	290	dpm/100cm2	Sample Count Time	15.00	min
Counter Top	(CT)	286.78	cpm	MDC	255	dpm/100cm2	Sample Count Time	15.00	min
Black&White Floor Tile	(BWFT)	393.98	cpm	MDC	299	dpm/100cm2	Sample Count Time	15.00	min
Wall Board Downstairs	(WBD)	306.64	cpm	MDC	264	dpm/100cm2	Sample Count Time	15.00	min

Callahan 3.16.04 19 030204-31

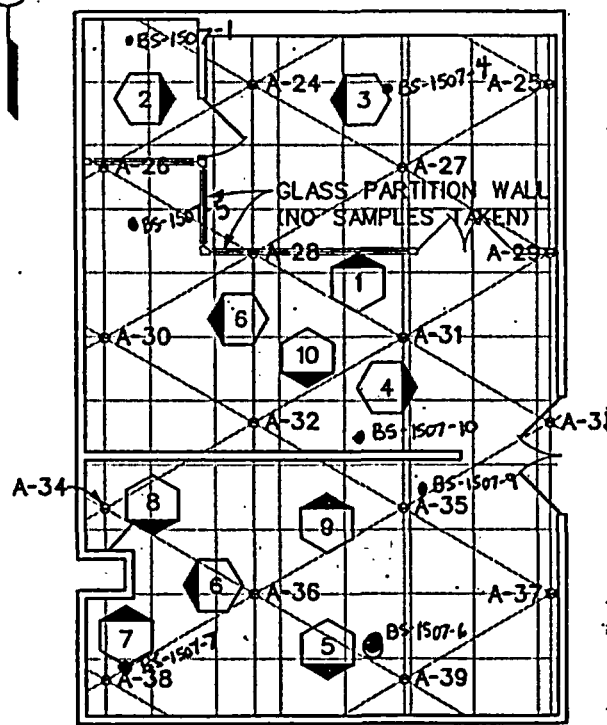
1999.9960 mm / IN.
 c:\codd\Design\101115_neic_0005.dgn
 r2d2-b&w-tablet.dpt
 standard.tbl
 3/2/2004
 3:43:01 PM
 STARTING DATE: 25NOV03
 DRAWN BY: C.E.TUMLIN
 INITIATOR: R.COLLINS
 CADD REVIEW: C.BENTLEY
 TECH. REVIEW: R.COLLINS
 PROJ. MGR.: R.L.ROGERS
 DWG. NO.: 101115_neic_0005.dgn
 PROJ. NO.: 101115



ELEVATION
 SCALE: 1" = 2.0 m



ELEVATION (CONT)
 SCALE: 1" = 2.0 m



PLAN VIEW
 SCALE: 1" = 3.0 m

NOTES

1. WALL SURFACE AREA: 106.0992 SQ. M.
 FLOOR SURFACE AREA: 76.8926 SQ. M.
 TOTAL SURFACE AREA: 182.9918 SQ. M.
2. THE LENGTH OF EACH LEG OF THE TRIANGULAR SAMPLING GRID IS 2.654 METERS

FIGURE 3-7
TRIANGULAR SAMPLING GRID FOR
LABORATORY A1505/1507

EPA NEIC
 DENVER FEDERAL CENTER
 LAKEWOOD, COLORADO



Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT		PROJECT NUMBER: 101115		DATE: 030304	TIME START: 1400	TIME COMPLETE: 1630	PAGE 1 OF 3	
LOCATION: EPA NEIC <i>LA A 1507</i>		SURVEYOR(S): <i>Stephens / Trembl</i>		Alpha		Beta-Gamma	Item or Location	
Denver Federal Center, CO		SURVEY NUMBER: 030204-32		Loose		Total		
Denver, CO		MAP ID: LAB A1505/1507		Loose		Total		
				dpm/100cm ²		dpm/100cm ²		
ACCEPTABLE SURFACE CONTAMINATION LEVELS Loose 20 dpm/100cm ² Alpha 200 dpm/100cm ² Beta-Gamma Total 100 dpm/100cm ² Alpha 1,000 dpm/100cm ² Beta-Gamma				ACCEPTABLE SCAN LIMITS				
Source Check Data		Contamination Surveys		Radiation Surveys				
Instrument		*NOTE		NA		NA		
Source Type and ID								
Source Strength in dpm								
Efficiency								
MDC in dpm/100 cm ²								
Background in cpm								
REASON FOR SURVEY		PROCEDURE NO. FINAL STATUS SURVEY PLAN						
		SPECIAL <i>Smears</i>						
		ROUTINE						
Contamination		By SHR <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>						
Radiation		By SHR <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/>						
COMMENT: NOTE: SEE DATA PACKAGE FROM PARAGON ANALYTICS, INC. FOR REMOVABLE ACTIVITY RESULTS AND INSTRUMENT INFORMATION.								
Contamination Survey		ALPHA (LOOSE) PERFORMED BY PARAGON ANALYTICS, INC.		BETA-GAMMA (LOOSE) PERFORMED BY PARAGON ANALYTICS, INC.				
INSTRUMENT / SERIAL #		ALPHA (TOTAL) N/A		BETA-GAMMA (TOTAL) N/A				
Radiation Survey		BETA-GAMMA Meter N/A		BETA-GAMMA Probe N/A				
INSTRUMENT / SERIAL #								
THE KNOWING & WILLFUL RECORDING OF FALSE, FETTEROUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.								
RCS REVIEW <i>[Signature]</i>				DATE 3.5.04				

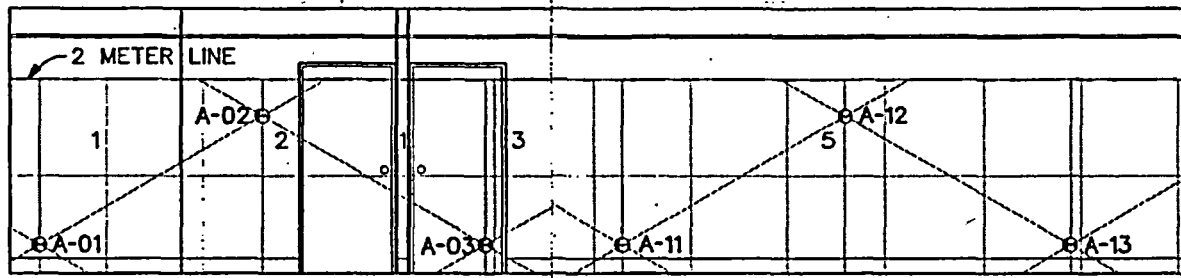
Contamination / Radiation Survey Report

CONTAMINATION / RADIATION SURVEY REPORT (CONTINUATION SHEET)						PROJECT NUMBER 101115		DATE: 030204		PAGE 2 OF 3	
LOCATION: EPA NEIC				SURVEYOR(S): Trent / Stephens		COMMENTS:					
Denver Federal Center, Building 53				SURVEY NUMBER: 030204-32							
Denver, CO				MAP ID:							
RCS REVIEW DATE: 3504											

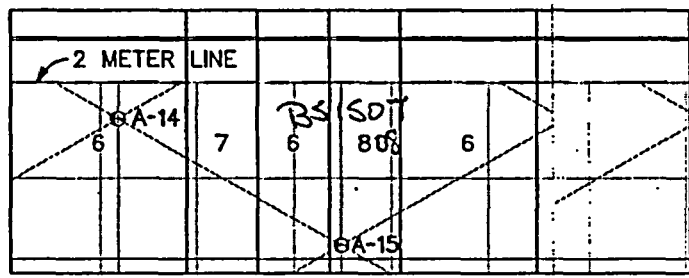
Item #	Alpha		Beta-Gamma		Alpha cpm Beta cpm Material <input type="checkbox"/>	Item or Location	Item #	Alpha		Beta-Gamma		Alpha cpm Beta cpm Material <input type="checkbox"/>	Item or Location
	LOOSE dpm/100cm²	TOTAL dpm/100cm²	LOOSE dpm/100cm²	TOTAL dpm/100cm²				LOOSE dpm/100cm²	TOTAL dpm/100cm²				
26						A 26	51						BS 1507 10
27						27	52						FD BS 106
28						28	53						
29						29	54						
30						30	55						
31						31	56						
32						32	57						
33						33	58						
34						34	59						
35						35	60						
36						36	61						
37						37	62						
38						38	63						
39						A 39	64						
40						FD A20	65						
41						FD A35	66						
42						BS 1507 01	67						
43						02	68						
44						03	69						
45						04	70						
46						05	71						
47						06	72						
48						07	73						
49						08	74						
50						09	75						

THE KNOWING & WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTES.

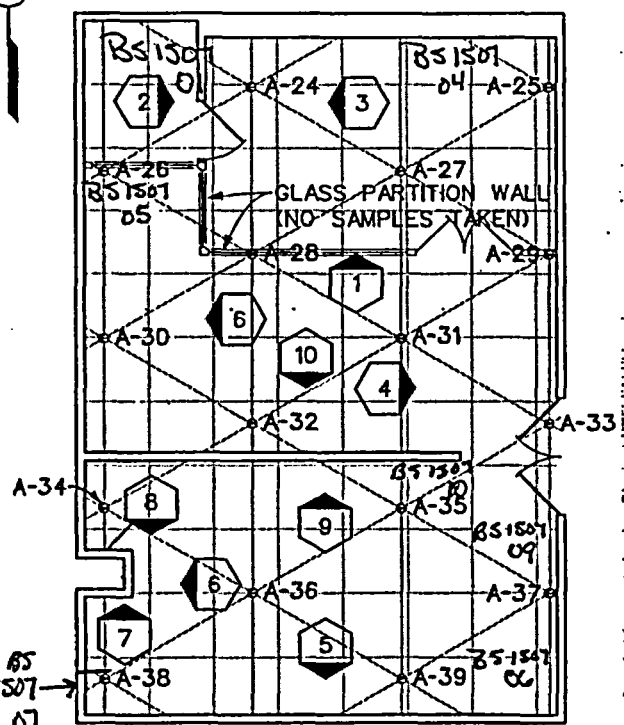
03620432 19 2 07 J
 neic-0005.dgn
 DWG. NO.:
 PROJ. NO.: 10115
 TECH. REVIEW: R. COLLINS
 PROJ. MGR.: R.L. ROGERS
 CADD REVIEW: C. BENTLEY
 STARTING DATE: 25NOV03
 DRAWN BY: C.E. TUMLIN
 1:999.9960 m / IN.
 1999.9960
 c:\cadd\Design\10115.neic-0005.dgn
 r2d2-b&w-lobloid.plt
 standard.tbl
 3/2/2004
 3:43:01 PM



ELEVATION
 SCALE: 1" = 2.0 m



ELEVATION (CONT)
 SCALE: 1" = 2.0 m



PLAN VIEW
 SCALE: 1" = 3.0 m

NOTES

- WALL SURFACE AREA: 106.0992 SQ. M.
 FLOOR SURFACE AREA: 76.8926 SQ. M.
 TOTAL SURFACE AREA: 182.9918 SQ. M.
- THE LENGTH OF EACH LEG OF THE TRIANGULAR SAMPLING GRID IS 2.654 METERS

FIGURE 3-7
TRIANGULAR SAMPLING GRID FOR
LABORATORY A1505/1507

EPA NEIC
 DENVER FEDERAL CENTER
 LAKEWOOD, COLORADO



PARAGON ANALYTICS

225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

March 26, 2004

Mr. Eddie Weaver
Shaw E & I
312 Directors Drive
Knoxville, TN 37923

Re: Paragon Workorder: 04-03-061
Client Project Name: EPA NEIC EDDP
Client Project Number: 101115

Dear Mr. Weaver:

Fifty-three wipe samples were received from Shaw E & I on March 8, 2004. The samples were scheduled for Gross Alpha/Beta (pages 1-238) analysis. The results for this analysis are contained in the enclosed reports.

Thank you for your confidence in Paragon Analytics. Should you have any questions, please call.

Sincerely,

Debbie Fazio

Paragon Analytics
Debbie Fazio
Project Manager

MAR 30 2004

DJF/ja
Enclosure: Report

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0403061

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
030204-31-01	0403061-1		WIPE	04-Mar-04	14:30
030204-31-02	0403061-2		WIPE	04-Mar-04	14:30
030204-31-03	0403061-3		WIPE	04-Mar-04	14:30
030204-31-04	0403061-4		WIPE	04-Mar-04	14:30
030204-31-05	0403061-5		WIPE	04-Mar-04	14:30
030204-31-06	0403061-6		WIPE	04-Mar-04	14:30
030204-31-07	0403061-7		WIPE	04-Mar-04	14:30
030204-31-08	0403061-8		WIPE	04-Mar-04	14:30
030204-31-09	0403061-9		WIPE	04-Mar-04	14:30
030204-31-10	0403061-10		WIPE	04-Mar-04	14:30
030204-31-11	0403061-11		WIPE	04-Mar-04	14:30
030204-31-12	0403061-12		WIPE	04-Mar-04	14:30
030204-31-13	0403061-13		WIPE	04-Mar-04	14:30
030204-31-14	0403061-14		WIPE	04-Mar-04	14:30
030204-31-15	0403061-15		WIPE	04-Mar-04	14:30
030204-31-16	0403061-16		WIPE	04-Mar-04	14:30
030204-31-17	0403061-17		WIPE	04-Mar-04	14:30
030204-31-18	0403061-18		WIPE	04-Mar-04	14:30
030204-31-19	0403061-19		WIPE	04-Mar-04	14:30
030204-31-20	0403061-20		WIPE	04-Mar-04	14:30
030204-31-21	0403061-21		WIPE	04-Mar-04	14:30
030204-31-22	0403061-22		WIPE	04-Mar-04	14:30
030204-31-23	0403061-23		WIPE	04-Mar-04	14:30
030204-31-24	0403061-24		WIPE	04-Mar-04	14:30
030204-31-25	0403061-25		WIPE	04-Mar-04	14:30
030204-31-26	0403061-26		WIPE	04-Mar-04	14:30
030204-31-27	0403061-27		WIPE	04-Mar-04	14:30
030204-31-28	0403061-28		WIPE	04-Mar-04	14:30
030204-31-29	0403061-29		WIPE	04-Mar-04	14:30
030204-31-30	0403061-30		WIPE	04-Mar-04	14:30
030204-31-31	0403061-31		WIPE	04-Mar-04	14:32
030204-31-32	0403061-32		WIPE	04-Mar-04	14:32

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0403061

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
030204-31-33	0403061-33		WIPE	04-Mar-04	14:32
030204-31-34	0403061-34		WIPE	04-Mar-04	14:32
030204-31-35	0403061-35		WIPE	04-Mar-04	14:32
030204-31-36	0403061-36		WIPE	04-Mar-04	14:32
030204-31-37	0403061-37		WIPE	04-Mar-04	14:32
030204-31-38	0403061-38		WIPE	04-Mar-04	14:32
030204-31-39	0403061-39		WIPE	04-Mar-04	14:32
030204-31-40	0403061-40		WIPE	04-Mar-04	14:32
030204-31-41	0403061-41		WIPE	04-Mar-04	14:32
030204-31-42	0403061-42		WIPE	04-Mar-04	14:32
030204-31-43	0403061-43		WIPE	04-Mar-04	14:32
030204-31-44	0403061-44		WIPE	04-Mar-04	14:32
030204-31-45	0403061-45		WIPE	04-Mar-04	14:32
030204-31-46	0403061-46		WIPE	04-Mar-04	14:32
030204-31-47	0403061-47		WIPE	04-Mar-04	14:32
030204-31-48	0403061-48		WIPE	04-Mar-04	14:32
030204-31-49	0403061-49		WIPE	04-Mar-04	14:32
030204-31-20FD	0403061-50		WIPE	04-Mar-04	14:32
030204-31-35FD	0403061-51		WIPE	04-Mar-04	14:32
030204-31-45FD	0403061-52		WIPE	04-Mar-04	14:32
030204-31-FB	0403061-53		WIPE	04-Mar-04	14:32



Shaw Environmental & Infrastructure, Inc.

ANALYSIS REQUEST AND
CHAIN-OF-CUSTODY RECORD0403061
Reference Document No: A1507-30204-31
PAGE 1 of 3
Bill to: _____

Project No. 101115 Sample Shipment Date 3-8-04
 Project name EPA NEIC EDDP Lab Destination Paragon Analytics, Inc.
 Sample Coordinator James Nelson / 303-233-1279 Lab Contact Debbie FAZIO
 Project Manager Randy Rodgers / 865-694-7457 Project Contact/phone Ben Dettorre / 865-670-2669
 Sample Team Members T. TRENT Carrier Waybill No. _____
J. STEPHENS

Report to: Ben Dettorre
312 Directors Drive
Knoxville, TN 37923

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
030204-31-01	Rm A1507 FSS Location A-01	3-3-04 1430	Smear		
02	02				
03	03				
04	04				
05	05				
06	06				
07	07				
08	08				

Special Instructions:

Possible Hazard Identification:

 Non-haz ☒ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal:

 Return to Client ☐ Disposal by Lab ☒ Archive ☐

Turnaround Time Required:

 Normal ☒ Rush ☐

QC Level:

 I. ☐ II. ☐ III. ☐

Project Specific: Defined in OAPP

1. Relinquished by

(Signature/Affiliation)

Date: 3-5-04Time: 0805

1. Received by

(Signature/Affiliation)

Date: 3-5-04Time: 0805

2. Relinquished by

(Signature/Affiliation)

Date: 3-8-04Time: 1007

2. Received by

(Signature/Affiliation)

Date: 3-8-04Time: 1007

3. Relinquished by

(Signature/Affiliation)

Date: 3-8-04Time: 255

3. Received by

(Signature/Affiliation)

Date: 3-8-04Time: 181/55

Comments:

ANALYSIS: GROSS Alpha/Beta - MDC (reporting limits) < 1.1 dpm/smear for alpha
 Received by 1635 < 100 dpm/smear for beta
3-8-04



ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

Reference Document No: A1507-030204-31

0403061

Project Name/Project No. EPA NEIC EDDP / 101115

Lab Destination Paragon Analytics, Inc.

Sample Shipment Date _____

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
9 030204-31 - 09	Rm A1507 ESS Location A-09	3-3-04 1430	Smear		
10 -10	10				
11 -11	11				
12 -12	12				
13 -13	13				
14 -14	14				
15 -15	15				
16 -16	16				
17 -17	17				
18 -18	18				
19 -19	19				
20 -20	20				
21 -21	21				
22 -22	22				
23 -23	23				
24 -24	24				
25 -25	25				
26 -26	26				
27 -27	27				
28 -28	28				
29 -29	29				
30 -30	30				



ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

Reference Document No: 41507-030 14-31

0403061

Project Name/Project No. EPA NEIC EDDP / 101115Lab Destination Paragon Analytics, Inc.

Sample Shipment Date _____

ONE SAMPLE PER LINE

Sample Number (Client ID)	Sample Description	Date/Time Collected	Sample Type	Condition on Receipt	Disposal Record
31	030204-31 - 31 Rm A1507 FSS Location A-31	3-3-04 1432	Smear		
32	32				
33	33				
34	34				
35	35				
36	36				
37	37				
38	38				
39	39				
40	40 BS-1507 - 1				
41	41 - 2				
42	42 - 3				
43	43 - 4				
44	44 - 5				
45	45 - 6				
46	46 - 7				
47	47 - 8				
48	48 - 9				
49	49 - 10				
50	-20 FD Rm 1507 FSS Loc. A-20 Field Dup				
51	-35 FD -35 Field Dup				
52	-45 FD BS-1507-6 Field Dup				
53	-FB Field Blank				

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Shaw's Inc WORKORDER NO: 0403061
PROJECT MANAGER: DF INITIALS: Cue DATE: 3-9-04

1. Does this project require any special handling in addition to standard Paragon procedures? IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.)		Yes	No
2. Are custody seals on shipping containers intact? How many custody seals are provided? <u>N/A</u>		Yes	No
3. Are the custody seals on sample containers intact?	<u>N/A</u>	Yes	No
4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos?		Yes	No
5. Is the COC complete? Relinquished: Yes <u>X</u> No <u> </u> Analyses Requested: Yes <u>X</u> No <u> </u>	<u>N/A</u>	Yes	No
6. Is the COC in agreement with the samples received? No. of Samples: Yes <u>X</u> No <u> </u> Sample ID's: Yes <u>X</u> No <u> </u> Matrix: Yes <u>X</u> No <u> </u> No. of Containers: Yes <u>X</u> No <u> </u>	<u>N/A</u>	Yes	No
7. Were COC (if applicable) and sample labels legible?		Yes	No
8. Were airbills present and/or removable?	<u>N/A</u>	Yes	No
9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)? Are all aqueous non-preserved samples at the correct pH?	<u>N/A</u>	Yes	No
10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers?		Yes	No
11. Are all samples within holding times for the requested analyses?		Yes	No
12. Were all sample containers received intact? (not broken or leaking, etc.)		Yes	No
13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide, radon), headspace free? Size of bubble: <u> </u> < green pea; <u> </u> > green pea (List sample IDs and affected containers on Page 2)	<u>N/A</u>	Yes	No
14. Were samples checked for and free from the presence of residual chlorine?	<u>N/A</u>	Yes	No
15. Were the sample(s) shipped on ice?	<u>N/A</u>	Yes	No
16. Were cooler temperatures measured at 0.1 - 6 °C? IR Gun Used*: 1 2 <u>N/A</u>	<u>N/A</u>	Yes	No
17. Were all samples cooled that should have been cooled?	<u>N/A</u>	Yes	No

Cooler #'s Box
Temperature ambient °C
Project Manager Signature / Date: Dubbi Fazio 3/9/04

A NO RESPONSE TO ANY QUESTION EXCEPT # 1 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM

* IR Gun #1 (original): Raytek, SN SC-PM3/T29403
IR Gun #2 (newer): Oakton, SN 2SCIR1201



Paragon Analytics

Radiochemistry Case Narrative

Gross Alpha/Beta

Shaw E & I

Denver NEIC ECCP / 101115

Paragon WO 0403061

1. This report consists of the analytical results and supporting documentation for 53 filter samples received by Paragon on 3/8/04.
2. These samples were prepared according to Paragon Analytics procedure SOP702R16.
3. The samples submitted by the client were placed in stainless steel counting planchets and were analyzed for gross alpha and beta activity by gas flow proportional counting according to Paragon Analytics procedure PA SOP724R8. The analyses were completed on 3/23/04. Calibrations and calculations are defined in Paragon Analytics procedure PA SOP702R16. Gross Alpha and Gross Beta results are referenced to NIST traceable planchet sources containing ^{241}Am and ^{90}Sr , respectively.
4. The analysis results for these samples are reported on an 'as received' basis in units of DPM/sample.
5. Sample volumes were insufficient to allow preparation of a duplicate. A duplicate analysis of samples 0403061-4,-14,-27,-37,-41,-52 was performed in lieu of a prepared duplicate. Please refer to cross reference table for client IDs.
6. PAI follows the convention outlined in ANSI N42.23 for reporting significant digits in the TPU and MDC results. ANSI N42.23 states that the TPU result should be rounded to two significant digits and that the MDC result should be rounded to the same decimal place as the TPU result. In practice, this could result in an MDC result with a reported value of 0 for samples with significant activity, including the batch laboratory control sample.
7. The magnitude of the negative alpha activity for some samples in this work order is greater than the 2 sigma TPU. The analyst's review of the data does not indicate a problem with the instrument data or the subsequent reporting systems. The data quality is not believed to be affected and the results are submitted without qualification. Under typical conditions, where background level sample data is normally distributed and analyzed by paired observations, this event is likely to occur at least 2.5% of the time.

000001

PARAGON ANALYTICS

8. No anomalous situations were encountered during the preparation or analysis of these samples. All quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Clare Lenich
Clare Lenich
Radiochemistry Instrument Technician

3/25/04
Date

Leah Backe
Radiochemistry Final Data Review

3/25/04
Date

000002

PARAGON ANALYTICS
Radiochemistry Data Package

Section 1

**SAMPLE RESULTS
SUMMARY**

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Page: 1 of 12

Reported on: Thursday, March 25, 2004

3:12:01 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-1	030204-31-01	Sample	GROSS ALPHA	-0.27 +/- 0.17	0.71	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-1	030204-31-01	Sample	GROSS BETA	-0.39 +/- 0.71	1.68	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-2	030204-31-02	Sample	GROSS ALPHA	-0.08 +/- 0.30	0.82	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-2	030204-31-02	Sample	GROSS BETA	-0.25 +/- 0.74	1.73	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-3	030204-31-03	Sample	GROSS ALPHA	0.04 +/- 0.31	0.77	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-3	030204-31-03	Sample	GROSS BETA	0.24 +/- 0.73	1.64	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-4	030204-31-04	Sample	GROSS ALPHA	0.02 +/- 0.24	0.61	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-4	030204-31-04	Sample	GROSS BETA	0.46 +/- 0.69	1.51	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-5	030204-31-05	Sample	GROSS ALPHA	-0.19 +/- 0.20	0.67	DPM/sample	WIPE	AB040312-2	3/16/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 1 of 12

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403061

Page: 2 of 12
 Reported on: Thursday, March 25, 2004
 3:12:02 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-5	030204-31-05	Sample	GROSS BETA	0.14 +/- 0.65	1.48	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-6	030204-31-06	Sample	GROSS ALPHA	-0.08 +/- 0.25	0.71	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-6	030204-31-06	Sample	GROSS BETA	0.37 +/- 0.72	1.60	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-7	030204-31-07	Sample	GROSS ALPHA	-0.19 +/- 0.22	0.74	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-7	030204-31-07	Sample	GROSS BETA	-0.16 +/- 0.63	1.48	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-8	030204-31-08	Sample	GROSS ALPHA	-0.15 +/- 0.22	0.71	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-8	030204-31-08	Sample	GROSS BETA	0.32 +/- 0.75	1.68	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-9	030204-31-09	Sample	GROSS ALPHA	-0.17 +/- 0.27	0.82	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-9	030204-31-09	Sample	GROSS BETA	0.01 +/- 0.75	1.73	DPM/sample	WIPE	AB040312-2	3/16/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
 LIMS Version: 4.346C

Page 2 of 12

50005

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
Client Project Name: EPA NEIC EDDP
Client Project Number: 101115

Laboratory Name: Paragon Analytics
PAI Work Order: 0403061

Page: 3 of 12
Reported on: Thursday, March 25, 2004
3:12:02 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-10	030204-31-10	Sample	GROSS ALPHA	-0.08 +/- 0.28	0.77	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-10	030204-31-10	Sample	GROSS BETA	0.35 +/- 0.74	1.63	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-11	030204-31-11	Sample	GROSS ALPHA	0.06 +/- 0.25	0.61	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-11	030204-31-11	Sample	GROSS BETA	0.90 +/- 0.73	1.51	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-12	030204-31-12	Sample	GROSS ALPHA	-0.19 +/- 0.20	0.67	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-12	030204-31-12	Sample	GROSS BETA	-0.12 +/- 0.63	1.48	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-13	030204-31-13	Sample	GROSS ALPHA	-0.20 +/- 0.20	0.71	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-13	030204-31-13	Sample	GROSS BETA	-0.15 +/- 0.68	1.59	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-14	030204-31-14	Sample	GROSS ALPHA	-0.40 +/- 0.16	0.74	DPM/sample	WIPE	AB040312-2	3/16/04	U

Comments:

Data Package ID: *abf0403061-1*

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.348C

Page 3 of 12

900000

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Page: 4 of 12

Reported on: Thursday, March 25, 2004

3:12:02 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-14	030204-31-14	Sample	GROSS BETA	0.28 +/- 0.66	1.48	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-15	030204-31-15	Sample	GROSS ALPHA	-0.10 +/- 0.24	0.71	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-15	030204-31-15	Sample	GROSS BETA	-0.16 +/- 0.72	1.69	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-16	030204-31-16	Sample	GROSS ALPHA	-0.12 +/- 0.29	0.82	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-16	030204-31-16	Sample	GROSS BETA	-0.05 +/- 0.75	1.73	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-17	030204-31-17	Sample	GROSS ALPHA	0.04 +/- 0.31	0.77	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-17	030204-31-17	Sample	GROSS BETA	0.05 +/- 0.71	1.64	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-18	030204-31-18	Sample	GROSS ALPHA	0.06 +/- 0.25	0.61	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-18	030204-31-18	Sample	GROSS BETA	0.15 +/- 0.67	1.51	DPM/sample	WIPE	AB040312-2	3/16/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 4 of 12

000007

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Laboratory Name: Paragon Analytics

Page: 5 of 12

Client Project Name: EPA NEIC EDDP

PAI Work Order: 0403061

Reported on: Thursday, March 25, 2004

Client Project Number: 101115

3:12:02 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-19	030204-31-19	Sample	GROSS ALPHA	0.08 +/- 0.28	0.67	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-19	030204-31-19	Sample	GROSS BETA	0.50 +/- 0.69	1.49	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-20	030204-31-20	Sample	GROSS ALPHA	-0.20 +/- 0.20	0.71	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-20	030204-31-20	Sample	GROSS BETA	0.60 +/- 0.74	1.59	DPM/sample	WIPE	AB040312-2	3/16/04	U
0403061-21	030204-31-21	Sample	GROSS ALPHA	-0.09 +/- 0.33	0.90	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-21	030204-31-21	Sample	GROSS BETA	0.09 +/- 0.80	1.82	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-22	030204-31-22	Sample	GROSS ALPHA	0.02 +/- 0.28	0.71	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-22	030204-31-22	Sample	GROSS BETA	0.87 +/- 0.80	1.89	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-23	030204-31-23	Sample	GROSS ALPHA	-0.12 +/- 0.29	0.82	DPM/sample	WIPE	AB040312-3	3/16/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 5 of 12

800000

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403061

Page: 6 of 12
 Reported on: Thursday, March 25, 2004
 3:12:02 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-23	030204-31-23	Sample	GROSS BETA	1.04 +/- 0.84	1.73	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-24	030204-31-24	Sample	GROSS ALPHA	-0.08 +/- 0.28	0.77	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-24	030204-31-24	Sample	GROSS BETA	0.79 +/- 0.77	1.63	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-25	030204-31-25	Sample	GROSS ALPHA	0.02 +/- 0.24	0.61	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-25	030204-31-25	Sample	GROSS BETA	0.78 +/- 0.72	1.51	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-26	030204-31-26	Sample	GROSS ALPHA	-0.27 +/- 0.16	0.67	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-26	030204-31-26	Sample	GROSS BETA	-0.42 +/- 0.61	1.48	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-27	030204-31-27	Sample	GROSS ALPHA	-0.24 +/- 0.19	0.71	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-27	030204-31-27	Sample	GROSS BETA	0.89 +/- 0.76	1.59	DPM/sample	WIPE	AB040312-3	3/16/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
 LT - Result is less than Requested MDC, greater than sample specific MDC.
 Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
 Y2 - Chemical Yield outside default limits.
 M - The requested MDC was not met.
 M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
 MDC - Minimum Detectable Concentration (see PAI SOP 709)
 BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
 LIMS Version: 4.346C

Page 6 of 12

600000

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Laboratory Name: Paragon Analytics

Page: 7 of 12

Client Project Name: EPA NEIC EDDP

PAI Work Order: 0403061

Reported on: Thursday, March 25, 2004

Client Project Number: 101115

3:12:03 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-28	030204-31-28	Sample	GROSS ALPHA	-0.15 +/- 0.24	0.74	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-28	030204-31-28	Sample	GROSS BETA	0.79 +/- 0.71	1.48	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-29	030204-31-29	Sample	GROSS ALPHA	0.61 +/- 0.40	0.60	DPM/sample	WIPE	AB040312-3	3/16/04	LT J-15
0403061-29	030204-31-29	Sample	GROSS BETA	0.48 +/- 0.71	1.53	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-30	030204-31-30	Sample	GROSS ALPHA	0.17 +/- 0.29	0.63	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-30	030204-31-30	Sample	GROSS BETA	0.05 +/- 0.68	1.55	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-31	030204-31-31	Sample	GROSS ALPHA	-0.33 +/- 0.21	0.79	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-31	030204-31-31	Sample	GROSS BETA	-0.03 +/- 0.65	1.51	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-32	030204-31-32	Sample	GROSS ALPHA	0.14 +/- 0.31	0.71	DPM/sample	WIPE	AB040312-3	3/17/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

Page 7 of 12

LIMS Version: 4.346C

000010

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403061

Page: 8 of 12
 Reported on: Thursday, March 25, 2004
 3:12:03 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-32	030204-31-32	Sample	GROSS BETA	0.34 +/- 0.76	1.69	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-33	030204-31-33	Sample	GROSS ALPHA	0.04 +/- 0.33	0.82	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-33	030204-31-33	Sample	GROSS BETA	0.41 +/- 0.79	1.74	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-34	030204-31-34	Sample	GROSS ALPHA	-0.08 +/- 0.28	0.77	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-34	030204-31-34	Sample	GROSS BETA	0.11 +/- 0.72	1.63	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-35	030204-31-35	Sample	GROSS ALPHA	0.10 +/- 0.26	0.61	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-35	030204-31-35	Sample	GROSS BETA	0.29 +/- 0.68	1.51	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-36	030204-31-36	Sample	GROSS ALPHA	0 +/- 0.26	0.67	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-36	030204-31-36	Sample	GROSS BETA	-0.03 +/- 0.64	1.49	DPM/sample	WIPE	AB040312-3	3/17/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
 LT - Result is less than Requested MDC, greater than sample specific MDC.
 Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
 Y2 - Chemical Yield outside default limits.
 M - The requested MDC was not met.
 M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
 MDC - Minimum Detectable Concentration (see PAI SOP 709)
 BDL - Below Detection Limit

Data Printed: Thursday, March 25, 2004

Paragon Analytics
 LIMS Version: 4.346C

Page 8 of 12

000011

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Client Project Name: EPA NEIC EDDP

Client Project Number: 101115

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Page: 9 of 12

Reported on: Thursday, March 25, 2004
3:12:03 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-37	030204-31-37	Sample	GROSS ALPHA	-0.28 +/- 0.25	0.83	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-37	030204-31-37	Sample	GROSS BETA	1.27 +/- 0.79	1.56	DPM/sample	WIPE	AB040312-3	3/16/04	U
0403061-38	030204-31-38	Sample	GROSS ALPHA	0.05 +/- 0.30	0.74	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-38	030204-31-38	Sample	GROSS BETA	0.58 +/- 0.69	1.49	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-39	030204-31-39	Sample	GROSS ALPHA	0.09 +/- 0.27	0.63	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-39	030204-31-39	Sample	GROSS BETA	0.18 +/- 0.69	1.55	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-40	030204-31-40	Sample	GROSS ALPHA	-0.01 +/- 0.30	0.79	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-40	030204-31-40	Sample	GROSS BETA	-0.48 +/- 0.63	1.52	DPM/sample	WIPE	AB040312-3	3/17/04	U
0403061-41	030204-31-41	Sample	GROSS ALPHA	-0.28 +/- 0.22	0.76	DPM/sample	WIPE	AB040312-4	3/23/04	U

Comments:

Data Package ID: *abf0403061-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 9 of 12

000012

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403061

Page: 10 of 12
 Reported on: Thursday, March 25, 2004
 3:12:03 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-41	030204-31-41	Sample	GROSS BETA	-0.35 +/- 0.62	1.48	DPM/sample	WIPE	AB040312-4	3/23/04	U
0403061-42	030204-31-42	Sample	GROSS ALPHA	0.11 +/- 0.29	0.66	DPM/sample	WIPE	AB040312-4	3/23/04	U
0403061-42	030204-31-42	Sample	GROSS BETA	-0.31 +/- 0.61	1.45	DPM/sample	WIPE	AB040312-4	3/23/04	U
0403061-43	030204-31-43	Sample	GROSS ALPHA	0.44 +/- 0.40	0.74	DPM/sample	WIPE	AB040312-4	3/23/04	U
0403061-43	030204-31-43	Sample	GROSS BETA	1.25 +/- 0.75	1.47	DPM/sample	WIPE	AB040312-4	3/23/04	U
0403061-44	030204-31-44	Sample	GROSS ALPHA	0.10 +/- 0.27	0.62	DPM/sample	WIPE	AB040312-4	3/23/04	U
0403061-44	030204-31-44	Sample	GROSS BETA	-0.02 +/- 0.62	1.43	DPM/sample	WIPE	AB040312-4	3/23/04	U
0403061-45	030204-31-45	Sample	GROSS ALPHA	-0.06 +/- 0.21	0.61	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-45	030204-31-45	Sample	GROSS BETA	0.63 +/- 0.70	1.51	DPM/sample	WIPE	AB040312-4	3/17/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
 LIMS Version: 4.346C

Page 10 of 12

000013

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.

Laboratory Name: Paragon Analytics

Page: 11 of 12

Client Project Name: EPA NEIC EDDP

PAI Work Order: 0403061

Reported on: Thursday, March 25, 2004

Client Project Number: 101115

3:12:03 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-46	030204-31-46	Sample	GROSS ALPHA	-0.08 +/- 0.24	0.67	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-46	030204-31-46	Sample	GROSS BETA	0.61 +/- 0.69	1.48	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-47	030204-31-47	Sample	GROSS ALPHA	-0.08 +/- 0.25	0.71	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-47	030204-31-47	Sample	GROSS BETA	0.17 +/- 0.71	1.60	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-48	030204-31-48	Sample	GROSS ALPHA	0.01 +/- 0.29	0.74	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-48	030204-31-48	Sample	GROSS BETA	0.07 +/- 0.65	1.49	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-49	030204-31-49	Sample	GROSS ALPHA	0.30 +/- 0.32	0.60	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-49	030204-31-49	Sample	GROSS BETA	0.78 +/- 0.73	1.53	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-50	030204-31-20FD	Sample	GROSS ALPHA	-0.23 +/- 0.15	0.63	DPM/sample	WIPE	AB040312-4	3/17/04	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

Page 11 of 12

LIMS Version: 4.346C

000014

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Sample Results Summary

Client Name: Shaw E & I Inc.
 Client Project Name: EPA NEIC EDDP
 Client Project Number: 101115

Laboratory Name: Paragon Analytics
 PAI Work Order: 0403061

Page: 12 of 12
 Reported on: Thursday, March 25, 2004
 3:12:04 PM

Lab Sample ID	Client Sample ID	Sample Type	Nuclide	Result +/- 2 s TPU	MDC	Units	Matrix	Prep Batch	Date Analyzed	Flags
0403061-50	030204-31-20FD	Sample	GROSS BETA	0.80 +/- 0.73	1.55	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-51	030204-31-35FD	Sample	GROSS ALPHA	-0.17 +/- 0.26	0.79	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-51	030204-31-35FD	Sample	GROSS BETA	-0.11 +/- 0.65	1.51	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-52	030204-31-45FD	Sample	GROSS ALPHA	0.18 +/- 0.37	0.83	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-52	030204-31-45FD	Sample	GROSS BETA	0.25 +/- 0.70	1.57	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-53	030204-31-FB	Sample	GROSS ALPHA	-0.29 +/- 0.23	0.82	DPM/sample	WIPE	AB040312-4	3/17/04	U
0403061-53	030204-31-FB	Sample	GROSS BETA	0.62 +/- 0.80	1.73	DPM/sample	WIPE	AB040312-4	3/17/04	U

Comments:

Data Package ID: *abf0403061-1*

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
 LT - Result is less than Requested MDC, greater than sample specific MDC.
 Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
 Y2 - Chemical Yield outside default limits.
 M - The requested MDC was not met.
 M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
 MDC - Minimum Detectable Concentration (see PAI SOP 709)
 BOL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
 LIMS Version: 4.346C

Page 12 of 12

000015

2

PARAGON ANALYTICS
Radiochemistry Data Package

Section 2

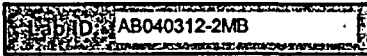
**QC RESULTS
SUMMARY**

000016

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.19 +/- 0.22	0.74	U
12587-47-2	GROSS BETA	0.73 +/- 0.70	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

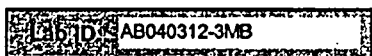
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8 Method Blank Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.05 +/- 0.34	0.83	U
12587-47-2	GROSS BETA	0.57 +/- 0.73	1.57	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4

QC Batch ID: AB040312-4-1

Run ID: ab040312-2a

Count Time: 100 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: aba0317d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.16 +/- 0.34	0.77	U
12587-47-2	GROSS BETA	0.52 +/- 0.75	1.64	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 3 of 3

000019

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

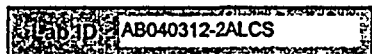
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 10 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: aba0316e

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-46-1	GROSS ALPHA	11200 +/- 1800	0	9950	112	70 - 130	P,M3

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

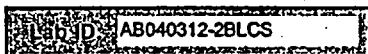
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QC Batch ID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 10 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: aba0316e

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-47-2	GROSS BETA	42100 +/- 6700	0	41000	103	70 - 130	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 2 of 6

000021

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

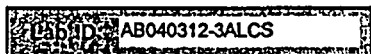
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 10 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: aba0317a

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-46-1	GROSS ALPHA	11100 +/- 1800	0	9950	111	70 - 130	P,M3

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

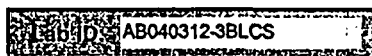
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 10 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: aba0317b

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-47-2	GROSS BETA	41500 +/- 6600	0	41000	101	70 - 130	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

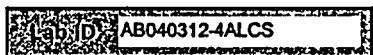
Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 12-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-2a
Count Time: 10 minutes

Final Aliquot: 1.00 sample
Result Units: DPM/sample
File Name: aba0317e

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-46-1	GROSS ALPHA	10900 +/- 1700	0	9950	110	70 - 130	P,M3

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Lab ID: AB040312-4BLCS

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 12-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4

QCBatchID: AB040312-4-1

Run ID: ab040312-2a

Count Time: 10 minutes

Final Aliquot: 1.00 sample

Result Units: DPM/sample

File Name: aba0317e

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
12587-47-2	GROSS BETA	39900 +/- 6400	0	41000	97.3	70 - 130	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-04
Lab ID:	0403061-4DUP

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QCBatchID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316c

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	0.02 +/- 0.24	-0.18 +/- 0.31	0.51	2.13	U
12587-47-2	GROSS BETA	0.46 +/- 0.69	0.68 +/- 0.84	0.21	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 1 of 6

000026

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID: 1030204-31-14
Lab ID: 0403061-14DUP

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QC Batch ID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316d

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	-0.40 +/- 0.16	-0.05 +/- 0.34	0.94	2.13	U
12587-47-2	GROSS BETA	0.28 +/- 0.66	-0.24 +/- 0.78	0.51	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 2 of 6

000027

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-27
Lab ID:	0403061-27DUP

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	-0.24 +/- 0.19	0.04 +/- 0.37	0.69	2.13	U
12587-47-2	GROSS BETA	0.89 +/- 0.76	0.12 +/- 0.80	0.69	2.13	U

Comments:

Duplicate Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13
- LT - Result is less than Request MDC, greater than sample specific MDC
- M - Requested MDC not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- DER - Duplicate Error Ratio
- BDL - Below Detection Limit
- NR - Not Reported

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 3 of 6

000028

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

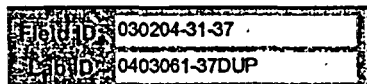
Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	-0.28 +/- 0.25	-0.12 +/- 0.23	0.49	2.13	U
12587-47-2	GROSS BETA	1.27 +/- 0.79	-0.01 +/- 0.69	1.23	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 4 of 6

000029

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115

Flag ID:	030204-31-41
Lab ID:	0403061-41DUP

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-4a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317d

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	-0.28 +/- 0.22	-0.06 +/- 0.25	0.66	2.13	U
12587-47-2	GROSS BETA	-0.35 +/- 0.62	-0.16 +/- 0.72	0.20	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

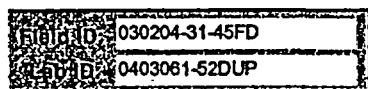
Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4

QCBatchID: AB040312-4-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317d

CASNO	Analyte	Sample Result +/- 2s TPU	Duplicate Result +/- 2s TPU	DER	Control Limit	Lab Qualifiers
12587-46-1	GROSS ALPHA	0.18 +/- 0.37	0 +/- 0.35	0.35	2.13	U
12587-47-2	GROSS BETA	0.25 +/- 0.70	0.35 +/- 0.82	0.09	2.13	U

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: ABF0403061-1

PARAGON ANALYTICS
Radiochemistry Data Package

3

Section 3

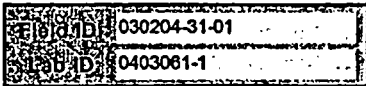
**INDIVIDUAL
SAMPLE RESULTS**

000032

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.27 +/- 0.17	0.71	U
12587-47-2	GROSS BETA	-0.39 +/- 0.71	1.68	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

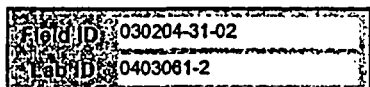
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.08 +/- 0.30	0.82	U
12587-47-2	GROSS BETA	-0.25 +/- 0.74	1.73	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115

Field ID	030204-31-03
Lab ID	0403061-3

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QCBatchID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.04 +/- 0.31	0.77	U
12587-47-2	GROSS BETA	0.24 +/- 0.73	1.64	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

NDL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 3 of 53

000035

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

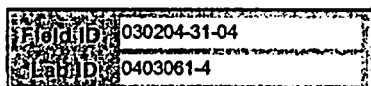
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.02 +/- 0.24	0.61	U
12587-47-2	GROSS BETA	0.46 +/- 0.69	1.51	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

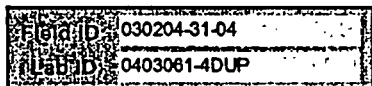
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QCBatchID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.18 +/- 0.31	0.90	U
12587-47-2	GROSS BETA	0.68 +/- 0.84	1.82	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.348C

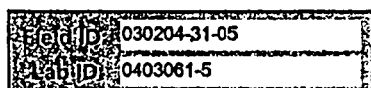
Page 1 of 6

000037

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.19 +/- 0.20	0.67	U
12587-47-2	GROSS BETA	0.14 +/- 0.65	1.48	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

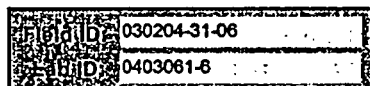
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QCBatchID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.08 +/- 0.25	0.71	U
12587-47-2	GROSS BETA	0.37 +/- 0.72	1.60	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

NDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

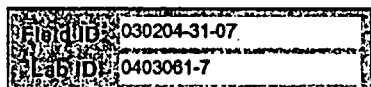
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316b

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.19 +/- 0.22	0.74	U
12587-47-2	GROSS BETA	-0.16 +/- 0.63	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

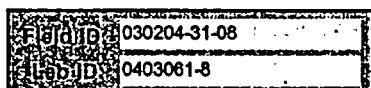
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1

Final Aliquot: 1.00 sample
Prep Basis: As Received

Date Collected: 03-Mar-04

Run ID: ab040312-2a

Moisture(%): NA

Date Prepared: 12-Mar-04

Count Time: 100 minutes

Result Units: DPM/sample

Date Analyzed: 16-Mar-04

Report Basis: As Received

File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.15 +/- 0.22	0.71	U
12587-47-2	GROSS BETA	0.32 +/- 0.75	1.68	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

MS - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

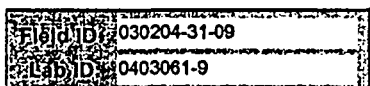
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QCBatchID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.17 +/- 0.27	0.82	U
12587-47-2	GROSS BETA	0.01 +/- 0.75	1.73	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID	030204-31-10
Lab ID	0403061-10

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Allquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.08 +/- 0.28	0.77	U
12587-47-2	GROSS BETA	0.35 +/- 0.74	1.63	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

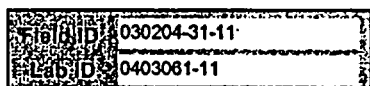
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.06 +/- 0.25	0.61	U
12587-47-2	GROSS BETA	0.90 +/- 0.73	1.51	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030204-31-12
Lab ID	0403061-12

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QC Batch ID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.19 +/- 0.20	0.67	U
12587-47-2	GROSS BETA	-0.12 +/- 0.63	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

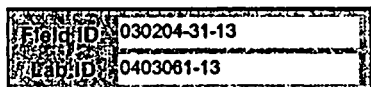
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.20 +/- 0.20	0.71	U
12587-47-2	GROSS BETA	-0.15 +/- 0.68	1.59	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

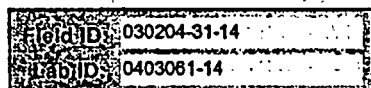
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QC Batch ID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.40 +/- 0.16	0.74	U
12587-47-2	GROSS BETA	0.28 +/- 0.66	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 14 of 53

000047

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

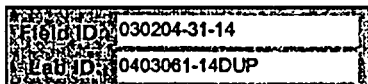
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.05 +/- 0.34	0.90	U
12587-47-2	GROSS BETA	-0.24 +/- 0.78	1.82	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

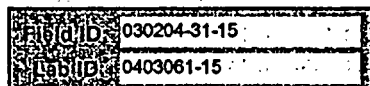
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QCBatchID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.10 +/- 0.24	0.71	U
12587-47-2	GROSS BETA	-0.16 +/- 0.72	1.69	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

NDL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 15 of 53

000049

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

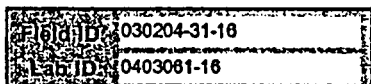
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QCBatchID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.12 +/- 0.29	0.82	U
12587-47-2	GROSS BETA	-0.05 +/- 0.75	1.73	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-17
Lab ID:	0403061-17

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2

QC Batch ID: AB040312-2-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.04 +/- 0.31	0.77	U
12587-47-2	GROSS BETA	0.05 +/- 0.71	1.64	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

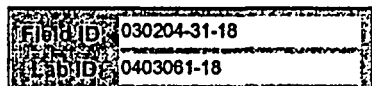
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.06 +/- 0.25	0.61	U
12587-47-2	GROSS BETA	0.15 +/- 0.67	1.51	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

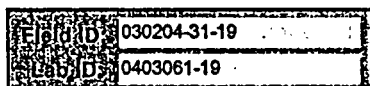
- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04
Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received
Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.08 +/- 0.28	0.67	U
12587-47-2	GROSS BETA	0.50 +/- 0.69	1.49	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

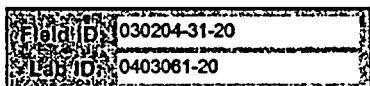
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-2
QCBatchID: AB040312-2-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.20 +/- 0.20	0.71	U
12587-47-2	GROSS BETA	0.60 +/- 0.74	1.59	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

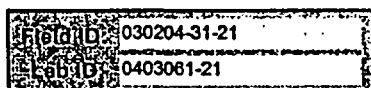
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.09 +/- 0.33	0.90	U
12587-47-2	GROSS BETA	0.09 +/- 0.80	1.82	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

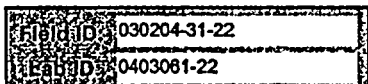
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.02 +/- 0.28	0.71	U
12587-47-2	GROSS BETA	0.87 +/- 0.80	1.69	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

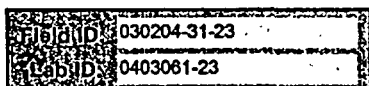
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.12 +/- 0.29	0.82	U
12587-47-2	GROSS BETA	1.04 +/- 0.84	1.73	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 23 of 53

000057

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
Client Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-24
Lab ID:	0403061-24

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.08 +/- 0.28	0.77	U
12587-47-2	GROSS BETA	0.79 +/- 0.77	1.63	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-25
Lab ID:	0403061-25

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3

QC Batch ID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.02 +/- 0.24	0.61	U
12587-47-2	GROSS BETA	0.78 +/- 0.72	1.51	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 25 of 53

000059

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

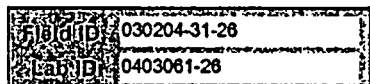
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.27 +/- 0.16	0.67	U
12587-47-2	GROSS BETA	-0.42 +/- 0.61	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-27
Lab ID:	0403061-27

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3

QC Batch ID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.24 +/- 0.19	0.71	U
12587-47-2	GROSS BETA	0.89 +/- 0.76	1.59	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 27 of 53

000061

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

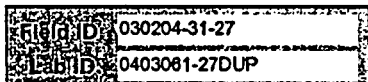
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.04 +/- 0.37	0.90	U
12587-47-2	GROSS BETA	0.12 +/- 0.80	1.82	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

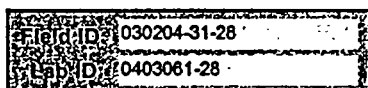
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.15 +/- 0.24	0.74	U
12587-47-2	GROSS BETA	0.79 +/- 0.71	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

*DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

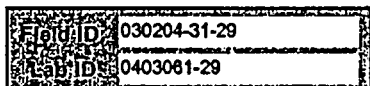
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3

QC Batch ID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.61 +/- 0.40	0.60	LT
12587-47-2	GROSS BETA	0.48 +/- 0.71	1.53	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID	030204-31-30
Lab ID	0403061-30

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3

QC Batch ID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Allquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.17 +/- 0.29	0.63	U
12587-47-2	GROSS BETA	0.05 +/- 0.68	1.55	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

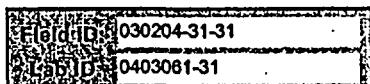
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.33 +/- 0.21	0.79	U
12587-47-2	GROSS BETA	-0.03 +/- 0.65	1.51	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

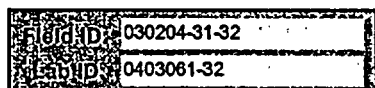
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.14 +/- 0.31	0.71	U
12587-47-2	GROSS BETA	0.34 +/- 0.76	1.69	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

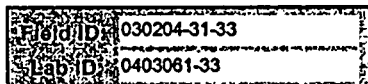
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.04 +/- 0.33	0.82	U
12587-47-2	GROSS BETA	0.41 +/- 0.79	1.74	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

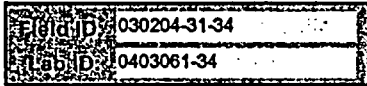
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.08 +/- 0.28	0.77	U
12587-47-2	GROSS BETA	0.11 +/- 0.72	1.63	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

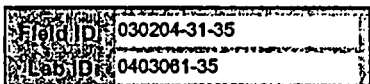
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Allquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.10 +/- 0.26	0.61	U
12587-47-2	GROSS BETA	0.29 +/- 0.68	1.51	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID	030204-31-38
Lab ID	0403061-38

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0 +/- 0.26	0.67	U
12587-47-2	GROSS BETA	-0.03 +/- 0.64	1.49	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

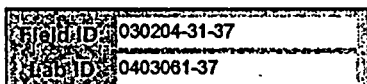
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 16-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0316h

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.28 +/- 0.25	0.83	U
12587-47-2	GROSS BETA	1.27 +/- 0.79	1.56	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

QID:	030204-31-37
Lab ID:	0403061-37DUP

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3

QCBatchID: AB040312-3-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.12 +/- 0.23	0.71	U
12587-47-2	GROSS BETA	-0.01 +/- 0.69	1.60	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC; greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.346C

Page 4 of 6

000073

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

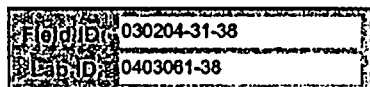
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.05 +/- 0.30	0.74	U
12587-47-2	GROSS BETA	0.58 +/- 0.69	1.49	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

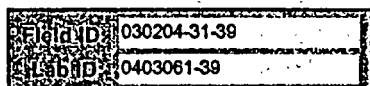
- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.09 +/- 0.27	0.63	U
12587-47-2	GROSS BETA	0.18 +/- 0.69	1.55	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- M - The requested MDC was not met.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- *DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

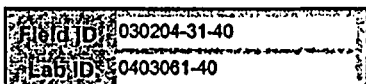
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-3
QCBatchID: AB040312-3-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.01 +/- 0.30	0.79	U
12587-47-2	GROSS BETA	-0.48 +/- 0.63	1.52	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

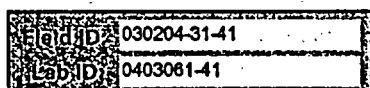
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-4

QC Batch ID: AB040312-4-1

Run ID: ab040312-4a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0323g

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.28 +/- 0.22	0.76	U
12587-47-2	GROSS BETA	-0.35 +/- 0.62	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1.

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115

Field ID:	030204-31-41
Lab ID:	0403061-41DUP

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-4a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.06 +/- 0.25	0.71	U
12587-47-2	GROSS BETA	-0.16 +/- 0.72	1.69	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID	030204-31-42
Lab ID	0403061-42

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-4

QC Batch ID: AB040312-4-1

Run ID: ab040312-4a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0323g

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.11 +/- 0.29	0.66	U
12587-47-2	GROSS BETA	-0.31 +/- 0.61	1.45	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

SDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

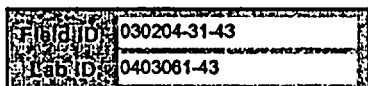
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 23-Mar-04

Prep Batch: AB040312-4

QCBatchID: AB040312-4-1

Run ID: ab040312-4a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: abb0323g

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.44 +/- 0.40	0.74	U
12587-47-2	GROSS BETA	1.25 +/- 0.75	1.47	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
Client/Project ID: EPA NEIC EDDP 101115

Field ID	030204-31-44
Lab ID	0403061-44

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 23-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-4a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: abb0323g

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.10 +/- 0.27	0.62	U
12587-47-2	GROSS BETA	-0.02 +/- 0.62	1.43	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

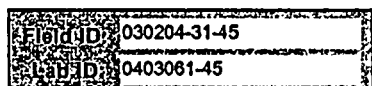
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.06 +/- 0.21	0.61	U
12587-47-2	GROSS BETA	0.63 +/- 0.70	1.51	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

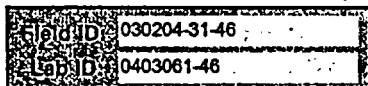
BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.08 +/- 0.24	0.67	U
12587-47-2	GROSS BETA	0.61 +/- 0.69	1.48	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

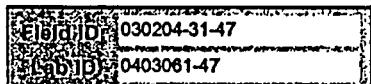
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.08 +/- 0.25	0.71	U
12587-47-2	GROSS BETA	0.17 +/- 0.71	1.60	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-48
Lab ID:	0403061-48

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.01 +/- 0.29	0.74	U
12587-47-2	GROSS BETA	0.07 +/- 0.65	1.49	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DL - Below Detection Limit

Data Package ID: ABF0403061-1

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 48 of 53

000085

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

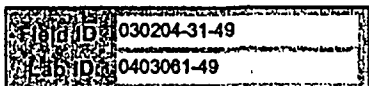
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4

QCBatchID: AB040312-4-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.30 +/- 0.32	0.60	U
12587-47-2	GROSS BETA	0.78 +/- 0.73	1.53	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

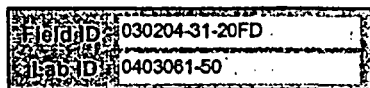
PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4

QCBatchID: AB040312-4-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.23 +/- 0.15	0.63	U
12587-47-2	GROSS BETA	0.80 +/- 0.73	1.55	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

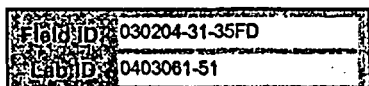
DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0403061
Client Name: Shaw E & I Inc.
ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Allquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.17 +/- 0.26	0.79	U
12587-47-2	GROSS BETA	-0.11 +/- 0.65	1.51	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-45FD
Lab ID:	0403061-52

Sample Matrix: WIPE
Prep SOP: PAI 702 Rev 16
Date Collected: 03-Mar-04
Date Prepared: 12-Mar-04
Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4
QCBatchID: AB040312-4-1
Run ID: ab040312-2a
Count Time: 100 minutes
Report Basis: As Received

Final Aliquot: 1.00 sample
Prep Basis: As Received
Moisture(%): NA
Result Units: DPM/sample
File Name: aba0317c

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0.18 +/- 0.37	0.83	U
12587-47-2	GROSS BETA	0.25 +/- 0.70	1.57	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

<DL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

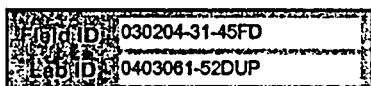
Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

ClientProject ID: EPA NEIC EDDP 101115



Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4

QCBatchID: AB040312-4-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	0 +/- 0.35	0.90	U
12587-47-2	GROSS BETA	0.35 +/- 0.82	1.82	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

Gross Alpha/Beta Analysis by GFPC Wipe/Filter

PAI 724 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0403061

Client Name: Shaw E & I Inc.

Client/Project ID: EPA NEIC EDDP 101115

Field ID:	030204-31-FB
Lab ID:	0403061-53

Sample Matrix: WIPE

Prep SOP: PAI 702 Rev 16

Date Collected: 03-Mar-04

Date Prepared: 12-Mar-04

Date Analyzed: 17-Mar-04

Prep Batch: AB040312-4

QCBatchID: AB040312-4-1

Run ID: ab040312-2a

Count Time: 100 minutes

Report Basis: As Received

Final Aliquot: 1.00 sample

Prep Basis: As Received

Moisture(%): NA

Result Units: DPM/sample

File Name: aba0317d

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
12587-46-1	GROSS ALPHA	-0.29 +/- 0.23	0.82	U
12587-47-2	GROSS BETA	0.62 +/- 0.80	1.73	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: ABF0403061-1

PARAGON ANALYTICS
Radiochemistry Data Package

Section 4

4

RAW DATA

000092

Gross Alpha/Beta Analysis by GFC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date/Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-1 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0316b	3/16/04 9:35 AM	0.030 0.094	24.15% NA	100 NA	-0.27 0.17	0.71 NA	DPM/sample As Received	NA NA	U
0403061-1 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0316b	3/16/04 9:35 AM	1.800 1.950	40.26% NA	100 NA	-0.39 0.71	1.68 NA	DPM/sample As Received	NA NA	U
0403061-2 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0316b	3/16/04 9:35 AM	0.110 0.128	23.75% NA	100 NA	-0.08 0.30	0.82 NA	DPM/sample As Received	NA NA	U
0403061-2 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0316b	3/16/04 9:35 AM	2.000 2.080	40.43% NA	100 NA	-0.25 0.74	1.73 NA	DPM/sample As Received	NA NA	U
0403061-3 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0316b	3/16/04 9:35 AM	0.130 0.118	24.44% NA	100 NA	0.04 0.31	0.77 NA	DPM/sample As Received	NA NA	U
0403061-3 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0316b	3/16/04 9:35 AM	2.030 1.911	41.13% NA	100 NA	0.24 0.73	1.64 NA	DPM/sample As Received	NA NA	U
0403061-4 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0316b	3/16/04 9:35 AM	0.080 0.072	25.10% NA	100 NA	0.02 0.24	0.61 NA	DPM/sample As Received	NA NA	U
0403061-4 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0316b	3/16/04 9:35 AM	1.990 1.780	43.00% NA	100 NA	0.46 0.69	1.51 NA	DPM/sample As Received	NA NA	U
0403061-4 DUP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0316c	3/16/04 11:33 AM	0.110 0.149	23.03% NA	100 NA	-0.18 0.31	0.90 NA	DPM/sample As Received	0.51 NA	U
0403061-4 DUP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0316c	3/16/04 11:33 AM	2.640 2.340	40.74% NA	100 NA	0.68 0.84	1.82 NA	DPM/sample As Received	0.21 NA	U
0403061-5 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0316b	3/16/04 9:35 AM	0.050 0.097	25.86% NA	100 NA	-0.19 0.20	0.67 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR- Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403061

Analytical SOP: PAI 724

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QCBatchID	Ingrowth Date/Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-5	GROSS BETA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	1.760	42.80%	100	0.14	1.48	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-3-1	NA	NA	NA	1 s	B2	aba0310b	9:35 AM	1.692	NA	NA	0.85	NA	As Received	NA	U
0403061-6	GROSS ALPHA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	0.080	24.48%	100	-0.08	0.71	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	B3	aba0310b	9:35 AM	0.098	NA	NA	0.25	NA	As Received	NA	U
0403061-6	GROSS BETA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	2.040	41.70%	100	0.37	1.60	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	B3	aba0310b	9:35 AM	1.871	NA	NA	0.72	NA	As Received	NA	U
0403061-7	GROSS ALPHA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	0.060	24.23%	100	-0.19	0.74	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	B4	aba0310b	9:35 AM	0.105	NA	NA	0.22	NA	As Received	NA	U
0403061-7	GROSS BETA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	1.640	42.83%	100	-0.16	1.48	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	B4	aba0310b	9:35 AM	1.697	NA	NA	0.63	NA	As Received	NA	U
0403061-8	GROSS ALPHA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	0.060	24.15%	100	-0.15	0.71	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	A2	aba0310c	11:33 AM	0.094	NA	NA	0.22	NA	As Received	NA	U
0403061-8	GROSS BETA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	2.090	40.28%	100	0.32	1.68	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	A2	aba0310c	11:33 AM	1.850	NA	NA	0.75	NA	As Received	NA	U
0403061-9	GROSS ALPHA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	0.090	23.75%	100	-0.17	0.82	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	A3	aba0310c	11:33 AM	0.128	NA	NA	0.27	NA	As Received	NA	U
0403061-9	GROSS BETA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	2.100	40.43%	100	0.01	1.73	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	A3	aba0310c	11:33 AM	2.080	NA	NA	0.75	NA	As Received	NA	U
0403061-10	GROSS ALPHA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	0.100	24.44%	100	-0.08	0.77	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	A4	aba0310c	11:33 AM	0.118	NA	NA	0.28	NA	As Received	NA	U
0403061-10	GROSS BETA	3/3/04	AB040312-2	NA	NA	WIPE	1 s	LB4100-a	ab040312-2a	3/16/04	2.070	41.13%	100	0.35	1.63	DPM/sample	NA	
SMP	Trg. Analyte	2:30:00 PM	AB040312-2-1	NA	NA	NA	1 s	A4	aba0310c	11:33 AM	1.911	NA	NA	0.74	NA	As Received	NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+- Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 2 of 12

Gross Alpha/Beta Analysis by GFP Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-11 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0318c	3/16/04 11:33 AM	0.090 0.072	25.10% NA	100 NA	0.06 0.25	0.61 NA	DPM/sample As Received	NA NA	U
0403061-11 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0318c	3/16/04 11:33 AM	2.180 1.780	43.00% NA	100 NA	0.90 0.73	1.51 NA	DPM/sample As Received	NA NA	U
0403061-12 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0318c	3/16/04 11:33 AM	0.050 0.097	25.86% NA	100 NA	-0.19 0.20	0.67 NA	DPM/sample As Received	NA NA	U
0403061-12 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0318c	3/16/04 11:33 AM	1.650 1.692	42.80% NA	100 NA	-0.12 0.63	1.48 NA	DPM/sample As Received	NA NA	U
0403061-13 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0318c	3/16/04 11:33 AM	0.050 0.098	24.48% NA	100 NA	-0.20 0.20	0.71 NA	DPM/sample As Received	NA NA	U
0403061-13 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0318c	3/16/04 11:33 AM	1.820 1.871	41.70% NA	100 NA	-0.15 0.68	1.59 NA	DPM/sample As Received	NA NA	U
0403061-14 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0318c	3/16/04 11:33 AM	0.010 0.105	24.23% NA	100 NA	-0.40 0.16	0.74 NA	DPM/sample As Received	NA NA	U
0403061-14 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0318c	3/16/04 11:33 AM	1.820 1.697	42.83% NA	100 NA	0.28 0.66	1.48 NA	DPM/sample As Received	NA NA	U
0403061-14 DUP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0318d	3/16/04 1:53 PM	0.140 0.149	23.03% NA	100 NA	-0.05 0.34	0.90 NA	DPM/sample As Received	0.94 NA	U
0403061-14 DUP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0318d	3/16/04 1:53 PM	2.270 2.340	40.74% NA	100 NA	-0.24 0.78	1.82 NA	DPM/sample As Received	0.51 NA	U
0403061-15 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0318d	3/16/04 1:53 PM	0.070 0.094	24.15% NA	100 NA	-0.10 0.24	0.71 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13
- + - Duplicate RPD not within limits.
- LT - Result is less than Request MDC, greater than sample specific MDC
- * - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

- M - Requested MDC not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

- TR- Tracer TA - Target Analyte
- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- DER - Duplicate Error Ratio
- BDL - Below Detection Limit

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403061

Analytical SOP: PAI 724

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC Dec Lev	Report Units Report Basis	DER RPD	%Spk. Recov Flags
0403061-15 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0316d	3/16/04 1:53 PM	1.900 1.950	40.26% NA	100 NA	-0.16 0.72	1.69 NA	DPM/sample As Received	NA NA	U
0403061-16 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0316d	3/16/04 1:53 PM	0.100 0.128	23.75% NA	100 NA	-0.12 0.29	0.82 NA	DPM/sample As Received	NA NA	U
0403061-16 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0316d	3/16/04 1:53 PM	2.080 2.080	40.43% NA	100 NA	-0.05 0.75	1.73 NA	DPM/sample As Received	NA NA	U
0403061-17 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0316d	3/16/04 1:53 PM	0.130 0.118	24.44% NA	100 NA	0.04 0.31	0.77 NA	DPM/sample As Received	NA NA	U
0403061-17 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0316d	3/16/04 1:53 PM	1.950 1.911	41.13% NA	100 NA	0.05 0.71	1.64 NA	DPM/sample As Received	NA NA	U
0403061-18 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0316d	3/16/04 1:53 PM	0.090 0.072	25.10% NA	100 NA	0.06 0.25	0.61 NA	DPM/sample As Received	NA NA	U
0403061-18 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0316d	3/16/04 1:53 PM	1.860 1.780	43.00% NA	100 NA	0.15 0.67	1.51 NA	DPM/sample As Received	NA NA	U
0403061-19 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0316d	3/16/04 1:53 PM	0.120 0.097	25.86% NA	100 NA	0.08 0.28	0.67 NA	DPM/sample As Received	NA NA	U
0403061-19 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0316d	3/16/04 1:53 PM	1.930 1.692	42.80% NA	100 NA	0.50 0.69	1.49 NA	DPM/sample As Received	NA NA	U
0403061-20 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0316d	3/16/04 1:53 PM	0.050 0.098	24.48% NA	100 NA	-0.20 0.20	0.71 NA	DPM/sample As Received	NA NA	U
0403061-20 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0316d	3/16/04 1:53 PM	2.130 1.871	41.70% NA	100 NA	0.60 0.74	1.59 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+- Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 4 of 12

00096

Gross Alpha/Beta Analysis by GFC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-21 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0316h	3/16/04 3:51 PM	0.130 0.149	23.03% NA	100 NA	-0.09 0.33	0.90 NA	DPM/sample As Received	NA NA	U
0403061-21 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0316h	3/16/04 3:51 PM	2.400 2.340	40.74% NA	100 NA	0.09 0.80	1.82 NA	DPM/sample As Received	NA NA	U
0403061-22 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0316h	3/16/04 3:51 PM	0.100 0.094	24.15% NA	100 NA	0.02 0.28	0.71 NA	DPM/sample As Received	NA NA	U
0403061-22 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0316h	3/16/04 3:51 PM	2.320 1.950	40.26% NA	100 NA	0.87 0.80	1.89 NA	DPM/sample As Received	NA NA	U
0403061-23 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0316h	3/16/04 3:51 PM	0.100 0.128	23.75% NA	100 NA	-0.12 0.29	0.82 NA	DPM/sample As Received	NA NA	U
0403061-23 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0316h	3/16/04 3:51 PM	2.520 2.080	40.43% NA	100 NA	1.04 0.84	1.73 NA	DPM/sample As Received	NA NA	U
0403061-24 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0316h	3/16/04 3:51 PM	0.100 0.118	24.44% NA	100 NA	-0.08 0.28	0.77 NA	DPM/sample As Received	NA NA	U
0403061-24 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0316h	3/16/04 3:51 PM	2.250 1.911	41.13% NA	100 NA	0.79 0.77	1.63 NA	DPM/sample As Received	NA NA	U
0403061-25 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0316h	3/16/04 3:51 PM	0.080 0.072	25.10% NA	100 NA	0.02 0.24	0.61 NA	DPM/sample As Received	NA NA	U
0403061-25 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0316h	3/16/04 3:51 PM	2.130 1.780	43.00% NA	100 NA	0.78 0.72	1.51 NA	DPM/sample As Received	NA NA	U
0403061-26 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0316h	3/16/04 3:51 PM	0.030 0.097	25.86% NA	100 NA	-0.27 0.16	0.67 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

++ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.348C

Page 5 of 12

06097

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-28 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0316h	3/16/04 3:51 PM	1.520 1.692	42.80% NA	100 NA	-0.42 0.61	1.48 NA	DPM/sample As Received	NA NA	U
0403061-27 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0316h	3/16/04 3:51 PM	0.040 0.098	24.48% NA	100 NA	-0.24 0.19	0.71 NA	DPM/sample As Received	NA NA	U
0403061-27 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0316h	3/16/04 3:51 PM	2.250 1.871	41.70% NA	100 NA	0.89 0.76	1.59 NA	DPM/sample As Received	NA NA	U
0403061-27 DUP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0317	3/17/04 8:10 AM	0.160 0.149	23.03% NA	100 NA	0.04 0.37	0.90 NA	DPM/sample As Received	0.69 NA	U
0403061-27 DUP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0317	3/17/04 8:10 AM	2.420 2.340	40.74% NA	100 NA	0.12 0.80	1.82 NA	DPM/sample As Received	0.69 NA	U
0403061-28 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0316h	3/16/04 3:51 PM	0.070 0.105	24.23% NA	100 NA	-0.15 0.24	0.74 NA	DPM/sample As Received	NA NA	U
0403061-28 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0316h	3/16/04 3:51 PM	2.050 1.697	42.83% NA	100 NA	0.79 0.71	1.48 NA	DPM/sample As Received	NA NA	U
0403061-29 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C1	ab040312-2a aba0316h	3/16/04 3:51 PM	0.230 0.073	25.48% NA	100 NA	0.61 0.40	0.60 NA	DPM/sample As Received	NA NA	LT
0403061-29 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C1	ab040312-2a aba0316h	3/16/04 3:51 PM	1.890 1.661	41.18% NA	100 NA	0.48 0.71	1.53 NA	DPM/sample As Received	NA NA	U
0403061-30 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C2	ab040312-2a aba0316h	3/16/04 3:51 PM	0.120 0.075	24.82% NA	100 NA	0.17 0.29	0.63 NA	DPM/sample As Received	NA NA	U
0403061-30 SMP	GROSS BETA Trg. Analyte	3/3/04 2:30:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C2	ab040312-2a aba0316h	3/16/04 3:51 PM	1.770 1.728	41.32% NA	100 NA	0.05 0.68	1.55 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

++ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 6 of 12

0608

Gross Alpha/Beta Analysis by GFI Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-31 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C3	ab040312-2a aba0310h	3/16/04 3:51 PM	0.050 0.132	24.96% NA	100 NA	-0.33 0.21	0.79 NA	DPM/sample As Received	NA NA	NA U
0403061-31 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C3	ab040312-2a aba0310h	3/16/04 3:51 PM	1.780 1.782	43.00% NA	100 NA	-0.03 0.65	1.51 NA	DPM/sample As Received	NA NA	NA U
0403061-32 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0317	3/17/04 8:10 AM	0.130 0.094	24.15% NA	100 NA	0.14 0.31	0.71 NA	DPM/sample As Received	NA NA	NA U
0403061-32 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-2a aba0317	3/17/04 8:10 AM	2.110 1.950	40.26% NA	100 NA	0.34 0.78	1.69 NA	DPM/sample As Received	NA NA	NA U
0403061-33 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0317	3/17/04 8:10 AM	0.140 0.128	23.75% NA	100 NA	0.04 0.33	0.82 NA	DPM/sample As Received	NA NA	NA U
0403061-33 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0317	3/17/04 8:10 AM	2.270 2.080	40.43% NA	100 NA	0.41 0.79	1.74 NA	DPM/sample As Received	NA NA	NA U
0403061-34 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0317	3/17/04 8:10 AM	0.100 0.118	24.44% NA	100 NA	-0.08 0.28	0.77 NA	DPM/sample As Received	NA NA	NA U
0403061-34 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0317	3/17/04 8:10 AM	1.970 1.911	41.13% NA	100 NA	0.11 0.72	1.63 NA	DPM/sample As Received	NA NA	NA U
0403061-35 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0317	3/17/04 8:10 AM	0.100 0.072	25.10% NA	100 NA	0.10 0.26	0.61 NA	DPM/sample As Received	NA NA	NA U
0403061-35 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0317	3/17/04 8:10 AM	1.920 1.780	43.00% NA	100 NA	0.29 0.68	1.51 NA	DPM/sample As Received	NA NA	NA U
0403061-36 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0317	3/17/04 8:10 AM	0.100 0.097	25.86% NA	100 NA	0 0.26	0.67 NA	DPM/sample As Received	NA NA	NA U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+- Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 7 of 12

660099

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403061

Analytical SOP: PAI 724

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-36 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0317	3/17/04 8:10 AM	1.700 1.692	42.80% NA	100 NA	-0.03 0.64	1.49 NA	DPM/sample As Received	NA NA	U
0403061-37 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C4	ab040312-2a aba0316h	3/16/04 3:51 PM	0.070 0.137	23.99% NA	100 NA	-0.28 0.25	0.83 NA	DPM/sample As Received	NA NA	U
0403061-37 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C4	ab040312-2a aba0316h	3/16/04 3:51 PM	2.370 1.821	42.01% NA	100 NA	1.27 0.79	1.56 NA	DPM/sample As Received	NA NA	U
0403061-37 DUP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0317	3/17/04 8:10 AM	0.070 0.098	24.48% NA	100 NA	-0.12 0.23	0.71 NA	DPM/sample As Received	0.49 NA	U
0403061-37 DUP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0317	3/17/04 8:10 AM	1.880 1.871	41.70% NA	100 NA	-0.01 0.69	1.60 NA	DPM/sample As Received	1.23 NA	U
0403061-38 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0317	3/17/04 8:10 AM	0.120 0.105	24.23% NA	100 NA	0.05 0.30	0.74 NA	DPM/sample As Received	NA NA	U
0403061-38 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0317	3/17/04 8:10 AM	1.970 1.697	42.83% NA	100 NA	0.58 0.69	1.49 NA	DPM/sample As Received	NA NA	U
0403061-39 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C2	ab040312-2a aba0317	3/17/04 8:10 AM	0.100 0.075	24.82% NA	100 NA	0.09 0.27	0.63 NA	DPM/sample As Received	NA NA	U
0403061-39 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C2	ab040312-2a aba0317	3/17/04 8:10 AM	1.820 1.728	41.32% NA	100 NA	0.18 0.69	1.55 NA	DPM/sample As Received	NA NA	U
0403061-40 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C3	ab040312-2a aba0317	3/17/04 8:10 AM	0.130 0.132	24.96% NA	100 NA	-0.01 0.30	0.79 NA	DPM/sample As Received	NA NA	U
0403061-40 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C3	ab040312-2a aba0317	3/17/04 8:10 AM	1.600 1.782	43.00% NA	100 NA	-0.48 0.63	1.52 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+- Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

- 1) The Tracer results are not yield corrected (i.e. activity measured not activity added).
- 2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR- Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 8 of 12

Gross Alpha/Beta Analysis by GF Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403061

Analytical SOP: PAI 724

3:06:41 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QC Batch ID	Ingrowth Date/Time	Decay Date/Time	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-41 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-4a abb0323g	3/23/04 12:12 PM	0.060 0.128	25.68% NA	100 NA	-0.28 0.22	0.76 NA	DPM/sample As Received	NA NA	NA U
0403061-41 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C1	ab040312-4a abb0323g	3/23/04 12:12 PM	1.490 1.628	42.01% NA	100 NA	-0.35 0.62	1.48 NA	DPM/sample As Received	NA NA	NA U
0403061-41 DUP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-4a aba0317d	3/17/04 12:48 PM	0.080 0.094	24.15% NA	100 NA	-0.08 0.25	0.71 NA	DPM/sample As Received	0.68 NA	NA U
0403061-41 DUP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A2	ab040312-4a aba0317d	3/17/04 12:48 PM	1.900 1.950	40.26% NA	100 NA	-0.16 0.72	1.69 NA	DPM/sample As Received	0.20 NA	NA U
0403061-42 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-4a abb0323g	3/23/04 12:12 PM	0.120 0.089	25.53% NA	100 NA	0.11 0.29	0.68 NA	DPM/sample As Received	NA NA	NA U
0403061-42 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C2	ab040312-4a abb0323g	3/23/04 12:12 PM	1.440 1.550	41.94% NA	100 NA	-0.31 0.61	1.45 NA	DPM/sample As Received	NA NA	NA U
0403061-43 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-4a abb0323g	3/23/04 12:12 PM	0.230 0.111	25.24% NA	100 NA	0.44 0.40	0.74 NA	DPM/sample As Received	NA NA	NA U
0403061-43 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C3	ab040312-4a abb0323g	3/23/04 12:12 PM	2.090 1.527	41.54% NA	100 NA	1.25 0.75	1.47 NA	DPM/sample As Received	NA NA	NA U
0403061-44 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-4a abb0323g	3/23/04 12:12 PM	0.100 0.073	24.72% NA	100 NA	0.10 0.27	0.62 NA	DPM/sample As Received	NA NA	NA U
0403061-44 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-b C4	ab040312-4a abb0323g	3/23/04 12:12 PM	1.520 1.509	41.98% NA	100 NA	-0.02 0.62	1.43 NA	DPM/sample As Received	NA NA	NA U
0403061-45 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0317c	3/17/04 10:03 AM	0.060 0.072	25.10% NA	100 NA	-0.06 0.21	0.61 NA	DPM/sample As Received	NA NA	NA U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

++ Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.348C

Page 9 of 12

00101

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

Prep SOP: PAI 702

Reported on: Thursday, March 25, 2004

PAI Work Order: 0403061

Analytical SOP: PAI 724

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QCBatchID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist	Samp Aliq Analy Aliq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-45 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0317c	3/17/04 10:03 AM	2.060 1.780	43.00% NA	100 NA	0.63 0.70	1.51 NA	DPM/sample As Received	NA NA	U
0403061-46 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0317c	3/17/04 10:03 AM	0.080 0.097	25.86% NA	100 NA	-0.08 0.24	0.67 NA	DPM/sample As Received	NA NA	U
0403061-48 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0317c	3/17/04 10:03 AM	1.970 1.692	42.80% NA	100 NA	0.61 0.69	1.48 NA	DPM/sample As Received	NA NA	U
0403061-47 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0317c	3/17/04 10:03 AM	0.080 0.098	24.48% NA	100 NA	-0.08 0.25	0.71 NA	DPM/sample As Received	NA NA	U
0403061-47 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B3	ab040312-2a aba0317c	3/17/04 10:03 AM	1.960 1.871	41.70% NA	100 NA	0.17 0.71	1.60 NA	DPM/sample As Received	NA NA	U
0403061-48 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0317c	3/17/04 10:03 AM	0.110 0.105	24.23% NA	100 NA	0.01 0.29	0.74 NA	DPM/sample As Received	NA NA	U
0403061-48 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0317c	3/17/04 10:03 AM	1.750 1.697	42.83% NA	100 NA	0.07 0.65	1.49 NA	DPM/sample As Received	NA NA	U
0403061-49 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C1	ab040312-2a aba0317c	3/17/04 10:03 AM	0.150 0.073	25.48% NA	100 NA	0.30 0.32	0.60 NA	DPM/sample As Received	NA NA	U
0403061-49 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C1	ab040312-2a aba0317c	3/17/04 10:03 AM	2.000 1.661	41.18% NA	100 NA	0.78 0.73	1.53 NA	DPM/sample As Received	NA NA	U
0403061-50 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C2	ab040312-2a aba0317c	3/17/04 10:03 AM	0.020 0.075	24.82% NA	100 NA	-0.23 0.15	0.63 NA	DPM/sample As Received	NA NA	U
0403061-50 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C2	ab040312-2a aba0317c	3/17/04 10:03 AM	2.060 1.728	41.32% NA	100 NA	0.80 0.73	1.55 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+- Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR- Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 10 of 12

00102

Gross Alpha/Beta Analysis by GFP Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch OCBatchID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
0403061-51 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C3	ab040312-2a aba0317c	3/17/04 10:03 AM	0.090 0.132	24.96% NA	100 NA	-0.17 0.26	0.79 NA	DPM/sample As Received	NA NA	NA U
0403061-51 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C3	ab040312-2a aba0317c	3/17/04 10:03 AM	1.750 1.782	43.00% NA	100 NA	-0.11 0.65	1.51 NA	DPM/sample As Received	NA NA	NA U
0403061-52 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C4	ab040312-2a aba0317c	3/17/04 10:03 AM	0.180 0.137	23.99% NA	100 NA	0.18 0.37	0.83 NA	DPM/sample As Received	NA NA	NA U
0403061-52 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C4	ab040312-2a aba0317c	3/17/04 10:03 AM	1.960 1.821	42.01% NA	100 NA	0.25 0.70	1.57 NA	DPM/sample As Received	NA NA	NA U
0403061-52 DUP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0317d	3/17/04 12:46 PM	0.150 0.149	23.03% NA	100 NA	0 0.35	0.90 NA	DPM/sample As Received	0.35 NA	NA U
0403061-52 DUP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A1	ab040312-2a aba0317d	3/17/04 12:46 PM	2.510 2.340	40.74% NA	100 NA	0.35 0.82	1.82 NA	DPM/sample As Received	0.09 NA	NA U
0403061-53 SMP	GROSS ALPHA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0317d	3/17/04 12:46 PM	0.060 0.128	23.75% NA	100 NA	-0.29 0.23	0.82 NA	DPM/sample As Received	NA NA	NA U
0403061-53 SMP	GROSS BETA Trg. Analyte	3/3/04 2:32:00 PM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A3	ab040312-2a aba0317d	3/17/04 12:46 PM	2.340 2.080	40.43% NA	100 NA	0.62 0.80	1.73 NA	DPM/sample As Received	NA NA	NA U
AB040312-2A LCS	GROSS ALPHA Trg. Analyte	3/12/04 10:18:13 AM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C1	ab040312-2a aba0316a	3/16/04 2:27 PM	2846.300 0.073	25.48% NA	10 NA	11200 1800	0 NA	DPM/sample As Received	NA NA	112 P,M3
AB040312-2B LCS	GROSS BETA Trg. Analyte	3/12/04 10:18:13 AM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C2	ab040312-2a aba0316a	3/16/04 2:27 PM	17401.500 1.728	41.32% NA	10 NA	42100 6700	0 NA	DPM/sample As Received	NA NA	103 P
AB040312-2 MB	GROSS ALPHA Trg. Analyte	3/12/04 10:18:13 AM	AB040312-2 AB040312-2-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0316d	3/16/04 1:53 PM	0.060 0.105	24.23% NA	100 NA	-0.19 0.22	0.74 NA	DPM/sample As Received	NA NA	NA U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+ - Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics
LIMS Version: 4.346C

Page 11 of 12

0103

Gross Alpha/Beta Analysis by GFPC Wipe/Filter Raw Data Report

Laboratory Name: Paragon Analytics

PAI Work Order: 0403061

Prep SOP: PAI 702

Analytical SOP: PAI 724

Reported on: Thursday, March 25, 2004

3:07:52 PM

Sample ID QC Type	Nuclide Type	Sample Date/Time	Prep Batch QCBatchID	Ingrowth Date /Time	Decay Date/Time	Matrix %Moist.	Samp Alq Analy Alq	Inst ID Det ID	AnRunID File Name	Count Date/Time	GrossCPM BkgCPM	BaseEff ProgEff	CntDur(min) Yield	Activity +/- 2 s TPU	MDC DecLev	ReportUnits ReportBasis	DER RPD	%Spk. Recov Flags
AB040312-2 MB	GROSS BETA Trg. Analyte	3/12/04 10:18:13 AM	AB040312-2 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B4	ab040312-2a aba0310d	3/16/04 1:53 PM	2.020 1.697	42.83% NA	100 NA	0.73 0.70	1.48 NA	DPM/sample As Received	NA NA	U
AB040312-3A LCS	GROSS ALPHA Trg. Analyte	3/12/04 10:27:34 AM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C1	ab040312-2a aba0317a	3/17/04 9:12 AM	2821.800 0.073	25.48% NA	10 NA	11100 1800	0 NA	DPM/sample As Received	NA NA	111 P,M3
AB040312-3B LCS	GROSS BETA Trg. Analyte	3/12/04 10:27:34 AM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C4	ab040312-2a aba0317b	3/17/04 9:57 AM	17428.500 1.821	42.01% NA	10 NA	41500 6600	0 NA	DPM/sample As Received	NA NA	101 P
AB040312-3 MB	GROSS ALPHA Trg. Analyte	3/12/04 10:27:34 AM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C4	ab040312-2a aba0317	3/17/04 8:10 AM	0.150 0.137	23.99% NA	100 NA	0.05 0.34	0.83 NA	DPM/sample As Received	NA NA	U
AB040312-3 MB	GROSS BETA Trg. Analyte	3/12/04 10:27:34 AM	AB040312-3 AB040312-3-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a C4	ab040312-2a aba0317	3/17/04 8:10 AM	2.090 1.821	42.01% NA	100 NA	0.57 0.73	1.57 NA	DPM/sample As Received	NA NA	U
AB040312-4A LCS	GROSS ALPHA Trg. Analyte	3/12/04 10:34:48 AM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B1	ab040312-2a aba0317e	3/17/04 12:46 PM	2738.300 0.072	25.10% NA	10 NA	10900 1700	0 NA	DPM/sample As Received	NA NA	110 P,M3
AB040312-4B LCS	GROSS BETA Trg. Analyte	3/12/04 10:34:48 AM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a B2	ab040312-2a aba0317e	3/17/04 12:46 PM	17080.699 1.692	42.80% NA	10 NA	39900 6400	0 NA	DPM/sample As Received	NA NA	97.3 P
AB040312-4 MB	GROSS ALPHA Trg. Analyte	3/12/04 10:34:48 AM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0317d	3/17/04 12:46 PM	0.160 0.118	24.44% NA	100 NA	0.16 0.34	0.77 NA	DPM/sample As Received	NA NA	U
AB040312-4 MB	GROSS BETA Trg. Analyte	3/12/04 10:34:48 AM	AB040312-4 AB040312-4-1	NA NA	NA NA	WIPE NA	1 s 1 s	LB4100-a A4	ab040312-2a aba0317d	3/17/04 12:46 PM	2.150 1.911	41.13% NA	100 NA	0.52 0.75	1.64 NA	DPM/sample As Received	NA NA	U

Comments:

Data Package ID: abf0403061-1

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

+- Duplicate RPD not within limits.

LT - Result is less than Request MDC, greater than sample specific MDC

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Notes:

1) The Tracer results are not yield corrected (i.e. activity measured not activity added).

2) Where sample time is not available, 12:00 PM (Mountain) is used for decay correction.

Abbreviations:

TR - Tracer TA - Target Analyte

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

Date Printed: Thursday, March 25, 2004

Paragon Analytics

LIMS Version: 4.348C

Page 12 of 12

0104

PAI - Gamma Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/29/03 JE

Data file name: ABA03168
Batch ID: AB040312-2
Count Preset (m): 100
Batch Ended: 3/18/04 11:14

Background logfile: BKGAB
Date of Bkg. Cal: 3/14/04
Alpha efficiency logfile: AmWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency logfile: Sr90Wipe-03/04
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b^*m^a/(a^*(mass-x_0))$	Beta Attenuation Calibration $y = b^*m^a/(a^*(mass-x_0))$
Alpha b= 0.00000	Beta b= 0.0000
m= 0.00000	m= 0.0000
a= 0.0000	a= 0.0000
x0= 0.0000	x0= 0.0000
Alpha to Beta X-talk $y = m^b * b^a - mass$	Beta to Alpha X-talk $y = m^b * mass + b$
a to b xtalk m= 0.0000	b to a xtalk m= 0.00E+00
a to b xtalk b= 0.0000	b to a xtalk b= 0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A2	0403081-1	3/18/04 11:14	100.00	0.0	0.030	0.094	0.001	0.2415	n/a	n/a	n/a	1.800	1.950	0.0057	0.4028	n/a	n/a	n/a
A3	0403081-2	3/18/04 11:14	100.00	0.0	0.110	0.128	0.001	0.2375	n/a	n/a	n/a	2.000	2.080	0.0202	0.4043	n/a	n/a	n/a
A4	0403081-3	3/18/04 11:14	100.00	0.0	0.130	0.118	0.002	0.2444	n/a	n/a	n/a	2.030	1.911	0.0199	0.4113	n/a	n/a	n/a
B1	0403081-4	3/18/04 11:14	100.00	0.0	0.080	0.072	0.002	0.2510	n/a	n/a	n/a	1.990	1.780	0.0135	0.4300	n/a	n/a	n/a
B2	0403081-5	3/18/04 11:14	100.00	0.0	0.050	0.097	0.003	0.2598	n/a	n/a	n/a	1.760	1.892	0.0100	0.4280	n/a	n/a	n/a
B3	0403081-6	3/18/04 11:14	100.00	0.0	0.080	0.098	0.001	0.2448	n/a	n/a	n/a	2.040	1.871	0.0163	0.4170	n/a	n/a	n/a
B4	0403081-7	3/18/04 11:14	100.00	0.0	0.080	0.105	0.002	0.2423	n/a	n/a	n/a	1.640	1.697	0.0114	0.4283	n/a	n/a	n/a

LAB 3/22/04

PAI - Gas Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
 Counting Unit ID: Orange
 High Voltage Mode: Simultaneous
 Application Revision: C
 Application Version: PAI
 Rev.12/28/03 JE

Data file name: ABA0316C
 Batch ID: AS040312-2
 Count Preset (m): 100
 Batch Ended: 3/16/04 13:13

Background logfile: BKGAB
 Date of Bkg. Cal: 3/14/04
 Alpha efficiency logfile: AmWipe-03/04
 Alpha attenuation calibration: n/a
 Beta efficiency logfile: SRSWipe-03/04
 Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b \cdot m^a / (a \cdot (\text{mass} - c))$		Beta Attenuation Calibration $y = b \cdot m^a / (a \cdot (\text{mass} - c))$	
Alpha b=	0.00000	Beta b=	0.00000
m=	0.00000	m=	0.00000
a=	0.00000	a=	0.00000
c=	0.00000	c=	0.00000
Alpha to Beta X-talk $y = m \cdot b^a \cdot \text{mass}$		Beta to Alpha X-talk $y = m \cdot b^a \cdot \text{mass}$	
a → b xtalk m=	0.00000	b → a xtalk m=	0.000000
a → b xtalk b=	0.00000	b → a xtalk b=	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403061-10	3/16/04 13:13	100.00	0.0	0.110	0.149	0.002	0.2303	n/a	n/a	n/a	2.540	2.340	0.0213	0.4074	n/a	n/a	n/a
A2	0403061-8	3/16/04 13:13	100.00	0.0	0.060	0.094	0.001	0.2415	n/a	n/a	n/a	2.090	1.950	0.0113	0.4028	n/a	n/a	n/a
A3	0403061-3	3/16/04 13:13	100.00	0.0	0.090	0.128	0.001	0.2375	n/a	n/a	n/a	2.100	2.080	0.0168	0.4043	n/a	n/a	n/a
A4	0403061-10	3/16/04 13:13	100.00	0.0	0.100	0.118	0.002	0.2444	n/a	n/a	n/a	2.070	1.911	0.0153	0.4113	n/a	n/a	n/a
B1	0403061-11	3/16/04 13:13	100.00	0.0	0.090	0.072	0.002	0.2510	n/a	n/a	n/a	2.180	1.780	0.0152	0.4300	n/a	n/a	n/a
B2	0403061-12	3/16/04 13:13	100.00	0.0	0.050	0.097	0.003	0.2586	n/a	n/a	n/a	1.650	1.692	0.0100	0.4280	n/a	n/a	n/a
B3	0403061-13	3/16/04 13:13	100.00	0.0	0.050	0.088	0.001	0.2448	n/a	n/a	n/a	1.820	1.871	0.0102	0.4170	n/a	n/a	n/a
B4	0403061-14	3/16/04 13:13	100.00	0.0	0.010	0.105	0.002	0.2423	n/a	n/a	n/a	1.820	1.697	0.0019	0.4283	n/a	n/a	n/a

LCAS 3/22/04

901000

PAI - Gamma Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/28/03 JE

Data File name: ABA0316D
Batch ID: AB040312-2
Count Preset (m): 100
Batch Ended: 3/18/04 15:41

Background log file: BK00AB
Date of Bkg. Cal: 3/14/04
Alpha efficiency log file: AnWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency log file: SpWipe-03/04
Beta attenuation calibration: n/a

Alpha prog. log file: n/a
Alpha prog. attenuation: n/a
Beta prog. log file: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b/m \cdot (a/mass - aT)$		Beta Attenuation Calibration $y = b/m \cdot (a/mass - aT)$	
Alpha b	0.0000	Beta b	0.0000
m	0.0000	m	0.0000
a	0.0000	a	0.0000
x	0.0000	x	0.0000
Alpha to Beta X talk $y = m \cdot b - mass$		Beta to Alpha X talk $y = m \cdot mass - b$	
a -> b xtalk m	0.0000	b -> a xtalk m	0.0000
a -> b xtalk b	0.0000	b -> a xtalk b	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403081-14D	3/18/04 15:40	100.00	0.0	0.140	0.149	0.002	0.2303	n/a	n/a	n/a	2.270	2.340	0.0271	0.4074	n/a	n/a	n/a
A2	0403081-15	3/18/04 15:40	100.00	0.0	0.070	0.094	0.001	0.2415	n/a	n/a	n/a	1.900	1.950	0.0132	0.4028	n/a	n/a	n/a
A3	0403081-16	3/18/04 15:40	100.00	0.0	0.100	0.128	0.001	0.2375	n/a	n/a	n/a	2.080	2.090	0.0184	0.4043	n/a	n/a	n/a
A4	0403081-17	3/18/04 15:40	100.00	0.0	0.130	0.118	0.002	0.2444	n/a	n/a	n/a	1.950	1.911	0.0199	0.4113	n/a	n/a	n/a
B1	0403081-18	3/18/04 15:41	100.00	0.0	0.090	0.072	0.002	0.2510	n/a	n/a	n/a	1.880	1.780	0.0152	0.4300	n/a	n/a	n/a
B2	0403081-19	3/18/04 15:41	100.00	0.0	0.120	0.097	0.003	0.2586	n/a	n/a	n/a	1.930	1.692	0.0241	0.4280	n/a	n/a	n/a
B3	0403081-20	3/18/04 15:41	100.00	0.0	0.050	0.098	0.001	0.2448	n/a	n/a	n/a	2.130	1.871	0.0102	0.4170	n/a	n/a	n/a
B4	AB040312-2MB	3/18/04 15:41	100.00	0.0	0.060	0.105	0.002	0.2423	n/a	n/a	n/a	2.020	1.697	0.0114	0.4283	n/a	n/a	n/a

LCS 3/22/04

000107

PAI - Gas Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/21/03 JE

Data file name: ABA0316E
Batch ID: AB040312-2
Count Preset (n): 10
Batch Ended: 3/16/04 14:32

Background logfile: BKGAS
Date of Bkg. Cal: 3/14/04
Alpha efficiency logfile: AmWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency logfile: Sr90Wipe-03/04
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b \cdot m^2 (r/(mass - c))$		Beta Attenuation Calibration $y = b \cdot m^2 (r/(mass - c))$	
Alpha b0	0.00000	Beta b0	0.00000
am	0.00000	m0	0.00000
as	0.00000	as	0.00000
bs	0.00000	bs	0.00000
Alpha to Beta X-talk $y = m \cdot b \cdot mass$		Beta to Alpha X-talk $y = m \cdot mass + b$	
a → b xtalk am	0.00000	b → a xtalk am	0.000000
a → b xtalk bs	0.00000	b → a xtalk bs	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b → a xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a → b xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
C1	AB040312-2ALCS	3/16/04 14:32	10.00	0.0	2848.300	0.073	0.278	0.2548	n/a	n/a	n/a	555.500	1.661	363.1878	0.4118	n/a	n/a	n/a
C2	AB040312-2BLCS	3/16/04 14:32	10.00	0.0	8.200	0.075	27.842	0.2482	n/a	n/a	n/a	17401.500	1.728	1.3932	0.4132	n/a	n/a	n/a

53/25/04

000108

PAI - Ga w Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/28/03 JE

Data File Name: ABA0316H
Batch ID: AB040312-3
Count Preset (m): 100
Batch Ended: 3/18/04 17:33

Background logFile: BK04AB
Date of Bkg. Cal: 3/14/04
Alpha efficiency logFile: AmWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency logFile: Br90Wipe-03/04
Beta attenuation calibration: n/a

Alpha prog. logFile: n/a
Alpha prog. attenuation: n/a
Beta prog. logFile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration		Beta Attenuation Calibration	
$y = b'w^2/(a'(mass-x))$		$y = b'w^2/(a'(mass-x))$	
Alpha ba	0.0000	Beta ba	0.0000
ma	0.0000	ma	0.0000
sa	0.0000	sa	0.0000
xba	0.0000	xba	0.0000
Alpha to Beta X-talk		Beta to Alpha X-talk	
$y = m'x^2 + mass$		$y = m'x^2 + mass$	
a → b xtalk ma	0.0000	b → a xtalk ma	0.0000
a → b xtalk ba	0.0000	b → a xtalk ba	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
C1	0403061-29	3/18/04 17:33	100.00	0.0	0.230	0.073	0.001	0.2548	n/a	n/a	n/a	1.890	1.881	0.0293	0.4118	n/a	n/a	n/a
C2	0403061-30	3/18/04 17:33	100.00	0.0	0.120	0.075	0.003	0.2482	n/a	n/a	n/a	1.770	1.728	0.0204	0.4132	n/a	n/a	n/a
C3	0403061-31	3/18/04 17:33	100.00	0.0	0.090	0.132	0.001	0.2498	n/a	n/a	n/a	1.780	1.782	0.0095	0.4300	n/a	n/a	n/a
C4	0403061-37	3/18/04 17:33	100.00	0.0	0.070	0.137	0.001	0.2398	n/a	n/a	n/a	2.370	1.821	0.0137	0.4201	n/a	n/a	n/a
A1	0403061-21	3/18/04 17:33	100.00	0.0	0.130	0.148	0.002	0.2303	n/a	n/a	n/a	2.400	2.340	0.0251	0.4074	n/a	n/a	n/a
A2	0403061-22	3/18/04 17:33	100.00	0.0	0.100	0.094	0.001	0.2415	n/a	n/a	n/a	2.320	1.950	0.0189	0.4028	n/a	n/a	n/a
A3	0403061-23	3/18/04 17:33	100.00	0.0	0.100	0.128	0.002	0.2375	n/a	n/a	n/a	2.520	2.080	0.0184	0.4043	n/a	n/a	n/a
A4	0403061-24	3/18/04 17:33	100.00	0.0	0.100	0.118	0.002	0.2444	n/a	n/a	n/a	2.250	1.911	0.0153	0.4113	n/a	n/a	n/a
B1	0403061-25	3/18/04 17:33	100.00	0.0	0.080	0.072	0.002	0.2510	n/a	n/a	n/a	2.130	1.780	0.0135	0.4300	n/a	n/a	n/a
B2	0403061-26	3/18/04 17:33	100.00	0.0	0.030	0.087	0.003	0.2586	n/a	n/a	n/a	1.520	1.682	0.0060	0.4280	n/a	n/a	n/a
B3	0403061-27	3/18/04 17:33	100.00	0.0	0.040	0.098	0.001	0.2448	n/a	n/a	n/a	2.250	1.871	0.0081	0.4170	n/a	n/a	n/a
B4	0403061-28	3/18/04 17:33	100.00	0.0	0.070	0.105	0.002	0.2423	n/a	n/a	n/a	2.050	1.687	0.0133	0.4283	n/a	n/a	n/a

LAB 3/22/04

000109

269564 a
(cont. from pg 1A) b)

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: LB4100A

SOP 724 v 8

Date: 3/16/04

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On line	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On-line
1 600	A 0.1	1	LCB		P		LCB		P		✓	9	LCB		P		LCB		P		✓
2 1860	B ↓	2	↓				↓				✓	10	↓				↓				✓
	C ↓	3	↓				↓				✓	11	↓				↓				✓
	D NP	4	↓				↓				✓	12	↓		↓		↓		↓		✓
		5	↓				↓				✓	13	NP				NP				OL
		6	↓				↓				✓	14	↓				↓				↓
		7	↓				↓				✓	15	↓				↓				↓
		8	↓		↓		↓		↓		✓	16	↓				↓				↓

Bkg. Cal. File ID

Dr A	BKA0313W
Dr B	↓
Dr C	↓
Dr D	NP

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-12	DR Checks	—	—	EFA0316	30	0644	LCB	LCB	3/16/04	N/A
1-12	Akg Checks	—	—	BKA0316	60	0653	LCB	LCB	3/16/04	
1	0403026-1	AB040309-1	21B	ABA0316A	60	0816	LCB	g	3/16/04	
2	↓ -1D	↓	↓	↓	↓	↓	↓	↓	↓	
3	↓ -2	↓	↓	↓	↓	↓	↓	↓	↓	
4	↓ -3	↓	↓	↓	↓	↓	↓	↓	↓	
5	↓ -3MS	↓	↓	↓	↓	↓	↓	↓	↓	
7	AB040309-1MB	↓	↓	↓	↓	↓	↓	↓	↓	
8	↓ -1LC	↓	↓	↓	↓	↓	↓	↓	↓	
6	0403026-1	AB040309-1	21B	ABA0316A	60	0816	LCB	↓	↓	
9	0403018-1	SR040309-1	Sr-90	SRA0316	300	0824	LCB	g	3/16/04	
10	↓ -1D	↓	↓	↓	↓	↓	↓	↓	↓	
11	↓ -2	↓	↓	↓	↓	↓	↓	↓	↓	
12	SR040309-1MA	↓	↓	↓	↓	↓	↓	↓	↓	
1	SR040309-1LC	SR040309-1	Sr-90	SRA0316A	60	0931	g	g	3/16/04	
2	0403001-1	AB040317-2	21B	ABA0316B	100	0933	g	g	↓	
3	↓ -2	↓	↓	↓	↓	↓	↓	↓	↓	

Form 780r6.fm (4/6/2001)

Comments:

Reviewed by 72 Date 3-16-04

LCB 3/16/04

000110

pg 269564 b.Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Run LogDate: 3/16/04Instrument: **LB4100A**

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
4	0403061-3	AB040312-2	2/B	AB040316B	100	0933	S	S	3/16/04	NA
5	-4									
6	-5									
7	-6									
8	-7									
1	0403061-10	AB040312-2	2/B	AB040316C	100	1132	S	S	3/16/04	
2	-8									
3	-9									
4	-10									
5	-11									
6	-12									
7	-13									
8	-14									
1	0403061-14D	AB040312-2	2/B	AB040316D	100	1400	S	X2	3-16-04	
2	-15									
3	-16									
4	-17									
5	-18									
6	-19									
7	-20									
8	AB040312-2MB									
9	AB040312-2ALCS	AB040312-2	2/B	AB040316E	10	1422	S	X7	3-16-04	
10	L-2BLC									
9	0403072-1	AB040311-5	AB	AB040316F	10	1529	X7	X7	3-16-04	
10	-2									
11	AB040311-5ALCS									
12	L-5BLC									

Form 780r6.frm (4/6/2001)

Reviewed X7 Date 3-16-04

Comments:

000111

pg 269565 a
(cont. from pg 269564 b)

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100A**

SOP 724 Rev 8

Date: 3-16-04

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow
1 <u>600</u>	A <u>C</u> 1
2 <u>1800</u>	B
	C
	D

Bkg. Cal. File ID

Dr A	<u>BK0313W</u>
Dr B	<u>A</u>
Dr C	<u>3/16/04</u>
Dr D	<u>✓</u>

Det	DR	DR	DR	cmnt	Bkg	Bkg	Bkg	cmnt	On	Det	DR	DR	DR	cmnt	Bkg	Bkg	Bkg	cmnt	On
	1	2	Stat		1	2	Stat		line		1	2	Stat		1	2	Stat		line
1	<u>✗</u>				<u>✗</u>					9	<u>✗</u>				<u>✗</u>				
2										10									
3										11									
4										12									
5										13									
6										14									
7										15									
8	<u>✓</u>				<u>✓</u>					16	<u>✓</u>				<u>✓</u>				

*Daily Check Info on Pg 269564a. 3-16-04

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
9	<u>0403072-2D</u>	<u>AB040311-5</u>	<u>AB</u>	<u>ABA0316G</u>	<u>10</u>	<u>1540</u>	<u>7/2</u>	<u>7/2</u>	<u>3-16-04</u>	<u>NA</u>
10	<u>0403072-2D</u>	<u>AB040311-5MB</u>	<u>L</u>	<u>L</u>	<u>1</u>	<u>✓</u>	<u>L</u>	<u>L</u>	<u>✓</u>	
1	<u>0403061-21</u>	<u>AB040312-3</u>	<u>AB</u>	<u>ABA0316H</u>	<u>100</u>	<u>1553</u>	<u>7/2</u>	<u>LB</u>	<u>3/17/04</u>	
2	<u>-22</u>									
3	<u>-23</u>									
4	<u>-24</u>									
5	<u>-25</u>									
6	<u>-26</u>									
7	<u>-27</u>									
8	<u>-28</u>									
9	<u>-29</u>									
10	<u>-30</u>									
11	<u>-31</u>									
12	<u>-37</u>									

LCB
3/18/04

Form 780r6.frm (4/6/2001)
Comments:

Reviewed by LCB

Date 3/17/04

000112

PAI - C Low Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/29/03 JE

Data file name: ABA0317
Batch ID: AB040312-3
Count Preset (m): 100
Batch Ended: 3/17/04 9:43

Background logfile: BK028
Date of Bkg. Cal: 3/14/04
Alpha efficiency logfile: AmiWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency logfile: Sr90Wipe-03/04
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b \cdot m^2 \cdot (c^2 \cdot \text{mass} - x^2)$	Beta Attenuation Calibration $y = b \cdot m^2 \cdot (c^2 \cdot \text{mass} - x^2)$
Alpha ba 0.0000	Beta ba 0.0000
ma 0.0000	ma 0.0000
sa 0.0000	sa 0.0000
zba 0.0000	zba 0.0000
Alpha to Beta X-talk $y = m \cdot b^2 \cdot \text{mass}$	Beta to Alpha X-talk $y = m \cdot b^2 \cdot \text{mass}$
a to b xtalk ma 0.0000	b to a xtalk ma 0.0000
a to b xtalk ba 0.0000	b to a xtalk ba 0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403081-27D	3/17/04 9:43	100.00	0.0	0.180	0.149	0.002	0.2303	n/a	n/a	n/a	2.420	2.340	0.0309	0.2074	n/a	n/a	n/a
A2	0403081-32	3/17/04 9:43	100.00	0.0	0.130	0.094	0.001	0.2415	n/a	n/a	n/a	2.110	1.950	0.0245	0.4028	n/a	n/a	n/a
A3	0403081-33	3/17/04 9:43	100.00	0.0	0.140	0.128	0.001	0.2375	n/a	n/a	n/a	2.270	2.080	0.0257	0.4043	n/a	n/a	n/a
A4	0403081-34	3/17/04 9:43	100.00	0.0	0.100	0.118	0.002	0.2444	n/a	n/a	n/a	1.970	1.911	0.0153	0.4113	n/a	n/a	n/a
B1	0403081-35	3/17/04 9:43	100.00	0.0	0.100	0.072	0.002	0.2510	n/a	n/a	n/a	1.920	1.780	0.0168	0.4300	n/a	n/a	n/a
B2	0403081-36	3/17/04 9:43	100.00	0.0	0.100	0.097	0.003	0.2588	n/a	n/a	n/a	1.700	1.692	0.0201	0.4280	n/a	n/a	n/a
B3	0403081-37D	3/17/04 9:43	100.00	0.0	0.070	0.098	0.001	0.2448	n/a	n/a	n/a	1.880	1.871	0.0143	0.4170	n/a	n/a	n/a
B4	0403081-38	3/17/04 9:43	100.00	0.0	0.120	0.105	0.002	0.2423	n/a	n/a	n/a	1.970	1.697	0.0228	0.4283	n/a	n/a	n/a
C2	0403081-39	3/17/04 9:43	100.00	0.0	0.100	0.073	0.003	0.2482	n/a	n/a	n/a	1.820	1.728	0.0170	0.4132	n/a	n/a	n/a
C3	0403081-40	3/17/04 9:43	100.00	0.0	0.130	0.132	0.001	0.2496	n/a	n/a	n/a	1.600	1.782	0.0247	0.4300	n/a	n/a	n/a
C4	AB040312-3MB	3/17/04 9:43	100.00	0.0	0.150	0.137	0.001	0.2398	n/a	n/a	n/a	2.090	1.821	0.0293	0.4201	n/a	n/a	n/a

LCB 3/22/04

PAI - Gas Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/29/83 JE

Data file name: AB40317A
Batch ID: AB40312-3
Count Preset (n): 10
Batch Ended: 3/17/04 8:17

Background logfile: SKGAB
Date of Bkg. Cal: 3/14/04
Alpha efficiency logfile: AmWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency logfile: Sr90Wipe-03/04
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b^*m^a(a^*(mass-x))$		Beta Attenuation Calibration $y = b^*m^a(a^*(mass-x))$	
Alpha b0	0.00000	Beta b0	0.0000
m0	0.00000	m0	0.0000
a0	0.0000	a0	0.0000
x0	0.0000	x0	0.0000
Alpha to Beta X-talk $y = m^b * mass$		Beta to Alpha X-talk $y = m^b * mass + b$	
a -> b xtalk m0	0.0000	b -> a xtalk m0	0.000000
a -> b xtalk b0	0.0000	b -> a xtalk b0	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
C1	AB040312-3ALCS	3/17/04 9:17	10.00	0.0	2821.800	0.073	0.248	0.2548	n/a	n/a	n/a	492.800	1.661	360.0817	0.4118	n/a	n/a	n/a

LCB 3/22/04

000114

PAI - G Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-AW
 Counting Unit ID: Orange
 High Voltage Mode: Simultaneous
 Application Revision: C
 Application Version: PAI
 Rev.12/28/03 JE

Date file name: ASB03178
 Batch ID: ASB48312-3
 Count Preset (m): 10
 Batch Ended: 3/17/04 10:00

Background logfile: BK00As
 Date of Bkg. Cal: 3/14/04
 Alpha efficiency logfile: AmWpe-03/04
 Alpha attenuation calibration: n/a
 Beta efficiency logfile: Sr90Wpe-03/04
 Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

Alpha Attenuation Calibration		Beta Attenuation Calibration	
$y = b'm^a / (a'(mass-x)^b)$		$y = b'm^a / (a'(mass-x)^b)$	
Alpha b0	0.0000	Beta b0	0.0000
am	0.0000	am	0.0000
an	0.0000	an	0.0000
x0a	0.0000	x0a	0.0000
Alpha to Beta X-talk		Beta to Alpha X-talk	
$y = a'b'm^a / (a'(mass-x)^b)$		$y = a'b'm^a / (a'(mass-x)^b)$	
a → b xtalk am	0.0000	b → a xtalk am	0.0000
a → b xtalk an	0.0000	b → a xtalk an	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity								Beta Activity							
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.		
C4	ASB040312-3BLLS	3/17/04 10:00	10.00	U.U	10.200	0.137	8.714	0.2398	n/a	n/a	n/a		17428.500	1.821	1.9900	0.4201	n/a	n/a	n/a	

LCB 3/22/04

000115

PAI - Gas Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
 Counting Unit ID: Orange
 High Voltage Mode: Simultaneous
 Application Version: C
 Rev.12/28/03 JE
 III GUARD WARNING!!!! See GASS # NA

Data file name: ABA8317C
 Batch ID: AB848312-4
 Count Preset (m): 158
 Batch Ended: 3/17/04 12:28

Background logfile: BKGAB
 Date of Bkg. Cal: 3/14/04
 Alpha efficiency logfile: AmWipe-03/04
 Alpha attenuation calibration: n/a
 Beta efficiency logfile: Sr90Wipe-03/04
 Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
 Alpha prog. attenuation: n/a
 Beta prog. logfile: n/a
 Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = k'm^2/(a'(mass-x))$		Beta Attenuation Calibration $y = k'm^2/(a'(mass-x))$	
Alpha b=	0.0000	Beta b=	0.0000
m=	0.0000	m=	0.0000
a=	0.0000	a=	0.0000
x=	0.0000	x=	0.0000
Alpha to Beta X-talk $y = m^2/a'-mass$		Beta to Alpha X-talk $y = m^2/mass + b$	
a → b xtalk m=	0.0000	b → a xtalk m=	0.0000
a → b xtalk b=	0.0000	b → a xtalk b=	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity							
					Gross CPM	Bkg. CPM	b>a xtk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	
B1	0403061-45	3/17/04 11:43	100.00	0.0	0.080	0.072	0.002	0.2510	n/a	n/a	n/a	n/a	2.080	1.780	0.0101	0.4300	n/a	n/a	n/a
B2	0403061-48	3/17/04 11:43	100.00	0.0	0.080	0.087	0.003	0.2586	n/a	n/a	n/a	n/a	1.970	1.692	0.0181	0.4280	n/a	n/a	n/a
B3	0403061-47	3/17/04 11:43	100.00	0.0	0.080	0.098	0.001	0.2448	n/a	n/a	n/a	n/a	1.860	1.871	0.0183	0.4170	n/a	n/a	n/a
C1	0403061-49	3/17/04 11:43	100.00	0.0	0.150	0.073	0.001	0.2548	n/a	n/a	n/a	n/a	2.000	1.881	0.0181	0.4118	n/a	n/a	n/a
B4	0403061-48	3/17/04 11:43	100.00	0.0	0.110	0.105	0.002	0.2423	n/a	n/a	n/a	n/a	1.750	1.687	0.0209	0.4283	n/a	n/a	n/a
C2	0403061-50	3/17/04 11:43	100.00	0.0	0.020	0.075	0.003	0.2482	n/a	n/a	n/a	n/a	2.060	1.728	0.0034	0.4132	n/a	n/a	n/a
C3	0403061-51	3/17/04 11:43	100.00	0.0	0.090	0.132	0.001	0.2498	n/a	n/a	n/a	n/a	1.750	1.782	0.0171	0.4300	n/a	n/a	n/a
C4	0403061-52	3/17/04 11:43	100.00	0.0	0.180	0.137	0.001	0.2398	n/a	n/a	n/a	n/a	1.960	1.821	0.0351	0.4201	n/a	n/a	n/a
A1	0403061-41	3/17/04 12:28	100.00	0.0	0.140	0.148	0.002	0.2303	n/a	n/a	n/a	n/a	2.770	2.340	0.0271	0.4074	n/a	n/a	n/a
A2	0403061-42	3/17/04 12:28	100.00	0.0	0.090	0.084	0.001	0.2415	n/a	n/a	n/a	n/a	2.130	1.950	0.0170	0.4026	n/a	n/a	n/a
A3	0403061-43	3/17/04 12:28	100.00	0.0	0.150	0.128	0.002	0.2375	n/a	n/a	n/a	n/a	3.150	2.080	0.0276	0.4043	n/a	n/a	n/a
A4	0403061-44	3/17/04 12:28	100.00	0.0	0.080	0.118	0.003	0.2444	n/a	n/a	n/a	n/a	2.350	1.911	0.0122	0.4113	n/a	n/a	n/a

+ Recounted due to high guard counts in file ABB03Z3G.

7/7 3-23-04

LCP 3/22/04

000116

PAI - Gross Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/29/03 JE

Data file name: ABA0317D
Batch ID: AB040312-4
Count Preset (n): 100
Batch Ended: 3/17/04 14:27

Background log file: BKGA
Date of Bkg. Cal: 3/14/04
Alpha efficiency log file: AmWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency log file: Sr90Wipe-03/04
Beta attenuation calibration: n/a

Alpha prog. log file: n/a
Alpha prog. attenuation: n/a
Beta prog. log file: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b \cdot m^a (c^2(mass - x0))$		Beta Attenuation Calibration $y = b \cdot m^a (c^2(mass - x0))$	
Alpha b	0.0000	Beta b	0.0000
m	0.0000	m	0.0000
a	0.0000	a	0.0000
x0	0.0000	x0	0.0000
Alpha to Beta X-talk $y = m^b \cdot mass$		Beta to Alpha X-talk $y = m^b \cdot mass$	
a → b xtalk m	0.0000	b → a xtalk m	0.0000
a → b xtalk b	0.0000	b → a xtalk b	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtlk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
A1	0403081-52D	3/17/04 14:27	100.00	0.0	0.150	0.149	0.002	0.2303	n/a	n/a	n/a	2.510	2.340	0.0290	0.4074	n/a	n/a	n/a
A2	0403081-41D	3/17/04 14:27	100.00	0.0	0.080	0.084	0.001	0.2415	n/a	n/a	n/a	1.900	1.950	0.0151	0.4028	n/a	n/a	n/a
A3	0403081-53	3/17/04 14:27	100.00	0.0	0.060	0.128	0.001	0.2375	n/a	n/a	n/a	2.340	2.080	0.0110	0.4043	n/a	n/a	n/a
A4	AB040312-4MB	3/17/04 14:27	100.00	0.0	0.160	0.118	0.002	0.2444	n/a	n/a	n/a	2.150	1.911	0.0244	0.4113	n/a	n/a	n/a

CCB 3/22/04

000117

PAI - Gas Flow Proportional Sample Analysis LB4100-A

Unit Type: LB4100-A/W
Counting Unit ID: Orange
High Voltage Mode: Simultaneous
Application Revision: C
Application Version: PAI
Rev.12/28/03 JE

Data file name: ABA0317E
Batch ID: AB040312-4
Count Preset (m): 10
Batch Ended: 3/17/04 12:59

Background logfile: BKGAB
Date of Bkg. Cal: 3/14/04
Alpha efficiency logfile: AmWipe-03/04
Alpha attenuation calibration: n/a
Beta efficiency logfile: S-SOWipe-03/04
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b'x + (a'(mass - a))$		Beta Attenuation Calibration $y = b'x + (a'(mass - a))$	
Alpha b'	0.0000	Beta b'	0.0000
rm	0.0000	rm	0.0000
as	0.0000	as	0.0000
rsa	0.0000	rsa	0.0000
Alpha to Beta X-talk $y = m'x + mass + b$		Beta to Alpha X-talk $y = m'x + mass + b$	
a → b xtalk m'	0.0000	b → a xtalk m'	0.0000
a → b xtalk b'	0.0000	b → a xtalk b'	0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity							Beta Activity						
					Gross CPM	Bkg. CPM	b>a xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xtalk CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
B1	AB040312-4ALCS	3/17/04 12:59	10.00	0.0	2738.300	0.072	0.587	0.2510	n/a	n/a	n/a	568.700	1.780	481.1287	0.4300	n/a	n/a	n/a
B2	AB040312-4BLCS	3/17/04 12:59	10.00	0.0	28.900	0.097	28.037	0.2588	n/a	n/a	n/a	17080.700	1.682	5.4042	0.4280	n/a	n/a	n/a

LAB 3/22/04

000118

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100A**

SOP 724 8

Date: 3/17/04

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow
1 600	A 0.1
2 1656	B ↓
	C ↓
	D NP

Bkg. Cal. File ID

Dr A	BKA0313W
Dr B	↓
Dr C	↓
Dr D	NP

Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On line	Det	DR 1	DR 2	DR Stat	cmnt	Bkg 1	Bkg 2	Bkg Stat	cmnt	On-line
1	LCB		P		LCB		P		✓	9	LCB		P		LCB	g	R	P	✓
2									✓	10							P		✓
3									✓	11							L		✓
4									✓	12	↓		↓						✓
5									✓	13	NP				NP				α
6									✓	14	↓								↓
7									✓	15	↓								↓
8	↓		↓		↓		↓		✓	16	↓				↓				↓

P = passes; R = Recount, H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-12	DR Checks	-	-	EFA0317	30	0630	LCB	LCB	3/17/04	N/A
1-12	Bkg Checks	-	-	BKA0317	60	0650	LCB	g	3/17/04	
9	Bkg Recount	MA	MA	BKA0317A	60	0756	g	g	3-17-04	
1	0403061-37D	AB040312-3	α/B	ABA0317	100	0802	g	7/2	3-17-04	
2	-32									
3	-33									
4	-34									
5	-35									
6	-36									
7	-37D									
8	-38									
10	-37									
11	-40									
12	AB040312-3MB									
9	AB040317-3ALCS			ABA0317A	10	908	7/2			
12	-38LCS			ABA0317B	10	949	7/2	✓		
1	0403061-41	AB040312-4	AB	ABA0317C	100	1002	7/2	g	3/17/04	

Form 780r6.frm (4/6/2001)

Comments:

Reviewed by g Date 3/19/04

000119

pg 269566 b

Paragon Analytics, Inc. Low Background Gas Flow Proportional Counter Run Log

Date: 3/17/04Instrument: LB4100A

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
2	0403061-42	AB040312-4	AB	ABA0317C	100	10 02	X2	S	3/17/04	(M)
3	-43									
4	-44									
5	-45									
6	-46									
7	-47									
8	-48									
9	-49									
10	-50									
11	-51									
12	-52									
1	0403061-52	AB040312-4	AB	ABA0317D	100	1247	S	S	3/17/04	
2	-41D									
3	-53									
4	AB040312-4MB									
5	AB040312-4ALLS			ABA0317E	10	1248	S	S	3/17/04	
6	-4ALLS									
1	0401187-1	SR040302-1	SR90	SRA0317	180	1435	S	S	3/18/04	
2	-1D									
3	0403018-3	SR040311-2	SR90	SRA0317A	1000	1433				
4	-3D									
5	SR040311-2MB									
6	-2ALLS									
7	0403067-3	TR040312-1	Total Rad.	TRA0317	1000	1434				
8	-4									
9	TR040312-1MB									

Form 780r6.frm (4/6/2001)

Reviewed S Date 3/17/04

Comments:

000120

PAI - C Low Proportional Sample Analysis LB4100-B

Unit Type: LB4100-B
Counting Unit ID: Aqua
High Voltage Mode: Simultaneous
Application Revisions: 2
Rev.12/29/03 JE

Date file name: ABB0323G
Batch ID: AB040312-4
Count Preset (m): 100
Batch Ended: 3/23/04 13:52

Background logfile: BKGA5W
Date of Bkg. Cal: 3/20/04
Alpha efficiency logfile: AmWipe-11/03
Alpha attenuation calibration: n/a
Beta efficiency logfile: SrWipe-11/03
Beta attenuation calibration: n/a

Alpha prog. logfile: n/a
Alpha prog. attenuation: n/a
Beta prog. logfile: n/a
Beta prog. attenuation: n/a

Alpha Attenuation Calibration $y = b \cdot m^a (a = \ln(\text{mass} - x0))$	Beta Attenuation Calibration $y = b \cdot m^a (a = \ln(\text{mass} - x0))$
Alpha b = 0.00000 m = 0.00000 a = 0.0000 x0 = 0.0000	Beta b = 0.0000 m = 0.0000 a = 0.0000 x0 = 0.0000
Alpha to Beta X-talk $y = m \cdot b \cdot \text{mass}$	Beta to Alpha X-talk $y = m \cdot \text{mass} \cdot b$
a → b xtalk m = 0.0000 a → b xtalk b = 0.0000	b → a xtalk m = 0.00E+00 b → a xtalk b = 0

Det. ID	Sample ID	Count End Date & Time	Count Dur. (min)	Resid. Mass (mg)	Alpha Activity						Beta Activity							
					Gross CPM	Bkg. CPM	b>a xlik CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.	Gross CPM	Bkg. CPM	a>b xlik CPM	Base Eff	Base Cor.Fact.	Progeny Eff	Progeny Cor.Fact.
C1	0403081-41	3/23/04 13:52	100.00	0.0	0.060	0.128	0.004	0.2568	n/a	n/a	n/a	1.490	1.628	0.0108	0.4201	n/a	n/a	n/a
C2	0403081-42	3/23/04 13:52	100.00	0.0	0.120	0.089	0.004	0.2553	n/a	n/a	n/a	1.440	1.550	0.0220	0.4194	n/a	n/a	n/a
C3	0403081-43	3/23/04 13:52	100.00	0.0	0.230	0.111	0.007	0.2524	n/a	n/a	n/a	2.090	1.627	0.0435	0.4154	n/a	n/a	n/a
C4	0403081-44	3/23/04 13:52	100.00	0.0	0.100	0.073	0.002	0.2472	n/a	n/a	n/a	1.620	1.509	0.0181	0.4198	n/a	n/a	n/a

53/23/04

000121

pg 273591 a
(cont. from pg N/A b)

Paragon Analytics, Inc.
Low Background Gas Flow Proportional Counter Log
Instrument: **LB4100B**

SOP 724 Rev. 8

Date: 3/23/04

Instrument Background and Response Checklist

P-10 Supply	P-10 Flow	Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line	Det	DR 1	DR 2	DR Stat	Cmnt	Bkg 1	Bkg 2	Bkg Stat	Cmnt	On-line
1 600	A. 6.1	1	UB		P.		LCB		P		✓	9	LCB		P		LCB		P		✓
2 450	B	2									✓	10									✓
	C	3									✓	11									✓
	D	4									✓	12									✓
		5			LB						OLB	13									✓
		6			LB						OLB	14									✓
		7			P						✓	15									✓
		8									✓	16									✓

P = passes; R = Recount; H = high; L = low; W = weekly; α = Alpha; B = Beta; DR = Daily Response Check; Stat = Status; Det = Detector; Bkg = Background; OL = Offline; NP = Not Processed.

Runlog

Det	SmpID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1-16	DR Checks	-	-	EPB0323	30	0845	LCB	LCB	3/23/04	N/A
1-16	Bkg Checks	-	-	BKB0323	60	0857	LCB	LCB	3/23/04	
1	AB040317-ILCS	AB040317-1	AB	ABB0323	60	10 07	77	77	3-23-04	
16	04 03 062-41	AB040312-10	AB	ABB0323A	100	10 17	77			
15	-42									
14	-43									
13	-44									
12	-45									
11	-46									
10	-47									
9	-48									
8	-49									
7	-50									
4	AB040312-04B									
2	-10ALCS			ABB0323B	10	10:19	77	77	3-23-04	
3	-10BLCS									

Form 780r6.frm (4/6/2001)

Reviewed by 77 Date 3-23-04

Comments:

000122

Paragon Analytics, Inc.

Low Background Gas Flow Proportional Counter Log

Instrument: LB4100B

Date: 3/23/04

Det	SnipID	Batch	Test	File ID	Cnt Dur. (minutes)	Start Time	Anal. Init.	Outp. Init.	Outp. Date	Cmnt Below
1	0403119-1	AB040319-3	AB	ABB0323C	10	11 25	7/2	7/2	3-23-04	NA
2	↓ -2	↓	↓	↓	↓	↓	↓	↓	↓	↓
3	AB040319-3AC5	↓	↓	↓	↓	↓	↓	↓	↓	↓
3	0403119-1D	↓	↓	ABB0323D	10	11 38	7/2	↓	↓	↓
2	AB040319-3B65	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	↓ -3MB	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	0403062-45D	AB040312-10	AB	ABB0323E	100	12 11	7/2	7/2	3-23-04	↓
2	0403092-6	AB040316-1	AB	ABB0323F	120	12 09	7/2	↓	↓	↓
3	↓ -6D	↓	↓	↓	↓	↓	↓	↓	↓	↓
4	↓ -6MS	↓	↓	↓	↓	↓	↓	↓	↓	↓
7	AB040316-1MB	↓	↓	↓	↓	↓	↓	↓	↓	↓
8	↓ -1LCS	↓	↓	↓	↓	↓	↓	↓	↓	↓
9	0403061-41	AB040312-4	AB	ABB0323G	100	12 12	7/2	↓	↓	↓
10	↓ -42	↓	↓	↓	↓	↓	↓	↓	↓	↓
11	↓ -43	↓	↓	↓	↓	↓	↓	↓	↓	↓
12	↓ -44	↓	↓	↓	↓	↓	↓	↓	↓	↓
13	0403085-1	AB040312-5	AB	ABB0323H	100	12 13	7/2	↓	↓	↓
14	↓ -2	↓	↓	↓	↓	↓	↓	↓	↓	↓
15	↓ -3	↓	↓	↓	↓	↓	↓	↓	↓	↓
16	↓ -7	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	↓ -4	↓	↓	ABB0323I	100	14 17	7/2	X	↓	↓
2	↓ -5	↓	↓	↓	↓	↓	↓	↓	↓	↓
3	↓ -6	↓	↓	↓	↓	↓	↓	↓	↓	↓
4	↓ -7D	↓	↓	↓	↓	↓	↓	↓	↓	↓
7	↓ -8	↓	↓	↓	↓	↓	↓	↓	↓	↓
8	↓ -9	↓	↓	↓	↓	↓	↓	↓	↓	↓
9	↓ -10	↓	↓	↓	↓	↓	↓	↓	↓	↓
10	↓ -11	↓	↓	↓	↓	↓	↓	↓	↓	↓
11	↓ -12	↓	↓	↓	↓	↓	↓	↓	↓	↓
12	↓ -13	↓	↓	↓	↓	↓	↓	↓	↓	7/2

Form 780r6.frm (4/6/2001)

Reviewed

7/2

Date

3-23-04

3-23-04

Comments:

*Counts in Progress 7/2

3-23-04

000123

PARAGON ANALYTICS
Radiochemistry Data Package

Section 5

**QUALITY ASSURANCE
SUMMARY REPORTS**

5

000124

No *NON-CONFORMANCE REPORTS* or
QUALITY ASSURANCE SUMMARY SHEETS
are included in this data package.