ATTACHMENT 6

RADIOLOGICAL MONITORING DATA FOR FAN REMOVAL

BROOKHAVEN NATIONAL LABORATORY

MEMO

Bldg 830, Railroad Ave
Brookhaven National Laboratory
Upton, NY 11973
Voice 516-344-2777
Fax 516-344-2217

ACTION
Clyde Newson - BGRR
Bob Miltenberger - RadCont

INFO
Lorenzo Cabrera BGRR
Paul Kalb - ASTD Project

FILE BNL ASTD Project 30822-207

FROM Larry Luckett, Analytical Physicist

DATE September 22, 1999

SUBJECT: Radiological Results for Fan House No. 5

1. In Situ Analysis at Fan No 5

   a. At your request on July 08, Larry Milian, ASTD ISOCS Technical Team, and David Groff, Canberra Physicist used the ISOCS instrument to perform *in situ* analysis of the fan housing of Fan No 5, located in the BGRR Fan House, Building 704. Because of the dimensions of the housing, physical construction, and the layout of the fan room, there were no access points where the spectrum could be accumulated without interference from fan support structures.

   b. Discussion of the analysis: The fan housing was scanned using 2" annular shields and 90° field of view collimators on the detector to reduce interference as much as possible. The detector was oriented diagonally downwards at the fan housing bottom where surveys indicated an accumulation of radioactivity. Spectra were accumulated from two symmetric positions: NE of the housing facing SW and NW of the housing facing SE.

      Activity was modeled as a layer of surface dust, uniformly covering the fan housing bottom (horizontal rectangular plane). The intervening structural members were adjusted in the model until the results from the symmetric scans were similar.

   c. Results

	Total radioactivity on the fan bottom			
ASTD Sample No	Upper estimate		Lower estimate	
FH50129a	Cs-137	620 μCi	Cs-137	78 μCi
FH50229a	Cs-137	590 μCi	Cs-137	75 μCi
			Am-241	≤ 180 μCi
			Co-60	≤ 0.1 μCi

2. Dust Sample Analysis.

   a. On August 31 you provided two samples of dust extracted from the housing of Fan No 5. The samples were scanned using 2" annular shields and 30° field of view collimators on the detector to reduce interference as much as possible.

b. Results:

ASTD Sample No	Sample Description	Activity Cs-137	Activity Am-241	Activity Co-60
FH5V123b	"Heavy" or Gravity separated fraction 90 g in 1.2" layer, poly bottle	0.12 ± 0.01 µCi/g	< 0.005 µCi/g	< 0.001 µCi/g
FH5V223b	"Light" or Filter trapped fraction 10 g in 0.2" layer, poly bottle	0.15 ± 0.02 µCi/g	< 0.03 µCi/g	< 0.008 µCi/g

3. Please contact me if you need further information.

Larry W. Luckett, CHP
Senior Health Physicist

Radiological Control Division

Building 194
P.O. Box 5000
Upton, NY 11973-5000
Phone 516 344-2503
Fax 516 344-7091
Miltenbe@bnl.gov

BROOKHAVEN
NATIONAL LABORATORY

managed by Brookhaven Science Associates
for the U.S. Department of Energy

Memo

date: *August 20, 1999*

to: *S. Pulseford*

from: *R. Miltenberger* RM

subject: *Radiological Data for "Dirt from Internal Fan Housing # 5"*

Attached are the alpha spectroscopy results from General Engineering Laboratories on the Dirt from Internal Han Housing Number 5. Also attached are the analytical results from the RCD Analytical Services Laboratory for this sample and other samples logged onto Chain of Custody 99072105. If you have any questions regarding this information, please contact me at extension 2503.

Attachments: Alpha Spectroscopy Results from General Engineering Laboratories
Gross Alpha, Gross Beta and Gamma Spectroscopy Results for COC99072105 from the RCD Analytical Services Laobratory

c: K. Corbett
M. Lillimpakis
S. Musolino
C. Newson
R. Suga

RM/sc/RA3120.99

C. O. C. Number
99072105

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:
Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR #99-137			
Requested by: R. Miltenberger	**E-Mail Reports to:**	**SAMPLER:** Ken Kropp	Priority Authorization
Life Number: 14088	**EP Manager:** K, Corbett	**SAMPLER:**	Group Leader or Higher CALL
Account No.: 7337 **Dept. Code:** DO	**FSS Manager:** R. Miltenberger	**SAMPLER:**	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
99072105-01			7/20/99		1600	704	smear	I/S fan housing #5 sidewall	1	NA	x		x							
99072105-02			7/20/99		1600	704	smear	I/S fan housing #5 top	1	NA	x		x							
99072105-03			7/20/99		1600	704	smear	I/S fan housing #5 vanes	1	NA	x		x							
99072105-04			7/20/99		1600	704	smear	I/S fan housing #5 inspec plate	1	NA	x		x							
99072105-05			7/20/99		1600	704	air	#1 outside G/A	1	5.66E+05	x		x							
99072105-06			7/20/99		1600	704	air	#2 G/A inside fan housing	1	2.83E+05	x		x							
99072105-07			7/20/99		1600	704	other	Dirt from internal fan housing #5	1	NA			x							

Must be one of the samplers

Transferred to :	Ken Kropp	RA Brown			
Signed by:	Ken Kropp	RA Brown			
Date/time	7/20/99 1600	7/21/99 1100			

***OTHER ANALYSIS NOT LISTED	COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST PINK COPY RECEIVER FOR INTRA-LAB TRANSFER

C.O.C. NUMBER
99072105

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 7/22/99

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
99072105-05	-3.61E-13	3.05E-13	-3.69E-12	1.60E-12			3.76E-13	2.49E-12		
99072105-06	5.23E-13	9.38E-13	1.43E-10	7.16E-12			2.06E-12	1.59E-11		

C.O.C. NUMBER
99072105

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 7/22/99

SAMPLE I.D. NUMBER	ALPHA dpm	ALPHA Error	BETA dpm	BETA Error			MDL - dpm Alpha	MDL - dpm Beta	
99072105-01	25.7	20.3	2781.5	154.6			23.6	19.9	
99072105-02	3.2	11.1	1935.7	129.0			23.6	19.9	
99072105-03	32.1	22.2	3059.8	162.1			23.6	19.9	
99072105-04	83.4	33.9	8265.2	266.2			23.6	19.9	

C.O.C. Number
99072105

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 7/21/99

Sample I.D.	Nuclide Name	Activity uCi/smear	1-Sigma % Error
99072105-01	CS-137	1.44E-03	11.79
99072105-02	CS-137	7.01E-04	8.82
99072105-03	CS-137	9.21E-04	11.84
99072105-04	CS-137	3.17E-03	8.47
Sample I.D.	**Nuclide Name**	**Activity uCi/cc**	**1-Sigma % Error**
99072105-05	There are no nuclides meeting the summary criteria		
99072105-06	CS-137	1.54E-10	12.02
Sample I.D.	**Nuclide Name**	**Activity uCi/gram**	**1-Sigma % Error**
99072105-07	CO-60	7.55E-05	7.71
	CS-137	4.41E-02	11.33
	AM-241	1.39E-04	30.97

GAMMA

General Engineering Laboratories
Form GEL-XXX
(Rev. 09/98)

UNCONTROLLED DOCUMENT

1. NCR Report No.: GEL-AS-LL-1214
2. Page 1 of 1
3. Revision No.: 0

COMPANY-WIDE NONCONFORMANCE REPORT

COMPLETE EVERY ITEM
(See Instructions on Reverse Side)

4. Mo. Day Yr.: 08 | 16 | 99

5. Division: ☐ Industrial ☐ Federal ☑ Radiochemistry ☐ Bioassay ☐ Other

6. Type: Material ☐ Process ☐ Product ☑

7. Instrument Type: α-SPEC

8. Quality Criteria: ☑ SOP ☐ QAP or QAPJP ☐ Client Contract ☐ Purchase Document ☐ Drawing ☐ Specifications ☐ Others

9. Supplier/Client Name & Code: BRKL 00198

10. Test/Method: CDI-A-012

11. Numerical Reference Identification: (Batch Number, Sample Number, ID number)
155968

12. Specifications and Requirements Nonconformance Description:

Item No.	
1	Duplicate Results > 20% Am-241 = 22.7% Pu-238 = 20.7%
2	Pu-238 & 239/240 Results biased Low by ≈ 10% due to ~~strong~~ tailing of Pu-239 Peak into Tracer Region.

13. Originator's Printed Name & Signature: Robert D. Timm — Date: 8/16/99

14. NRG Disposition:

Item No.	
1	REPORT RESULTS
2	REPORT RESULTS

15. NRG's Printed Name & Signature: Robert D. Timm — Date: 8/16/99

List NRG Participants: 8/16/99

Management Review ☐ or Management Approval ☐

Please review within 24 hours of receipt.

NCR Review & Disposition Review or Approval:

16. Quality Review: Date

17. Originator's Director/Group Leader: Date

Corrective Action Request and Approval:

18. CA Requested: Print Name and Sign Date

19. Corrective Action Approval & Number Date

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Client: Brookhaven National Laboratory
Building 134C
Upton, New York 11973-5000

Contact: Mr. Gree Flette

cc: BRKL00198

Report Date: August 17, 1999

Sample ID : 9907272706-01

M – Method	Method-Description

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager at (843) 556 8171.

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

9908054-01

Printed on recycled paper

FAX

Date: 8/17/99

Number of Pages including cover sheet: 5

To: Dr. Sal Sc

Phone

Fax Phone

REMARKS:

MUSSEH & Nancy - Customer Requests 14-21 dy TAT

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION
ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000
Chain of Custody Information

BNL P.O. No:
Mp to:
Pick Up by:
Attention:

C.D.C. Number: 990727 06
Contractor Number (optional)

Survey #99-146

Page 1 of 1

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Grid	ID	MC
99072706-01			

Aug. 17 1999 04:15PM P2 FAX NO. : 843 766 1178 AB

Aug. 17 1999 04:14PM P1

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Client: Brookhaven National Laboratory
Building 134C
Upton, New York 11973-5000
Contact: Mr. Greg Flette

cc: BRKL00198 Report Date: August 17, 1999

Sample ID	: 99072706-01
Lab ID	: 9908054-01
Matrix	: Misc.
Date Collected	: 07/27/99
Date Received	: 08/03/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Radiological												
Alpha Spectroscopy Americium - 2 items												
Americium-241		27.4	+/- 3.52	0.0657	0.400	pCi/g	1.0	CS	08/15/99	1829	155968	1
Alpha Spectroscopy Plutonium - 2 items												
Plutonium-238		2.16	+/- 0.464	0.104	1.00	pCi/g	1.0	CS	08/15/99	1832	155968	1
Plutonium-239/240		153	+/- 19.3	0.0492	1.00	pCi/g	1.0					
Alpha Spectroscopy Uranium - 3 items												
Uranium-233/234		2.42	+/- 0.390	0.0913	0.200	pCi/g	1.0	CS	08/14/99	1556	155766	1
Uranium-235	J	0.220	+/- 0.0943	0.0287	0.500	pCi/g	1.0					
Uranium-238		2.79	+/- 0.432	0.105	0.500	pCi/g	1.0					

M = Method	Method-Description
M 1	EPI A-011

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178
Printed on recycled paper

9908054-01

FROM : GENERAL ENGINEERING LAB FAX NO. : 843 766 1178 Aug. 17 1999 04:18PM P4

FAX

General Engineering Laboratories, Inc.
P.O. Box 30712
Charleston, SC 29417
USA

Date: 8/17/99

Number of Pages including cover sheet: 5

To: Dr. Sal Scarpitta

Phone

Fax Phone -7108

From: Nancy A. Slater

Project Manager

Phone 843-556-8171

Fax Phone 843-766-1178

Email nas@mail.gel.com

REMARKS:

Nancy- Customer Requests 14-21 dy TAT

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION
ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000
Chain of Custody Information

C. O. C. Number: 990727 06

Contractor Number (optional):

Page 1 of 1

Survey #99-146

BNL P.O. No:
Mp to:
Pick Up by:
Attention:

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1 mR/hr

ASL Number	Grid	ID	MC
99072706-01			

+ add Am

Must be one of the samplers

Transferred to:	Ken Kropp	R A Brown	J. Hewer	[illegible] 8/3/99
Signed by:	[illegible]	[illegible]	J. Hewer	
Date/time	7/27/99 @ 1330	7-27-99 1335	8/2/99 1400	

* Alpha Spec

BNL F 2361B WHITE COPY: SAMPLE CUSTODIAN YELLOW COPY: ANALYST PINK COPY: RECEIVER OR INTRA-LAB TRANSFER GOLDENROD COPY: SAMPLER

Radiological Control Division

BROOKHAVEN
NATIONAL LABORATORY

RECEIVED
SEP 2 1999
BGRR PROJECT

Building 194
P.O. Box 5000
Upton, NY 11973-5000
Phone 516 344-2503
Fax 516 344-7091
Miltenberger@bnl.gov

managed by Brookhaven Science Associates
for the U.S. Department of Energy

Memo

date: *September 1, 1999*

to: ~~*S. Pulsford*~~

from: *R. Miltenberger* RM

subject: ***Sampling Results for Building 704 Fan-House 5 Dirt Collection Task of August 27, 1999.***

Attached for your information are the data from the most recent penetration of the blower in Fan House Number 5. The data indicates that there was no detectable radioactivity exhausted via the HEPA filter, but that there was Gross Beta activity in the general room air. The gamma spectroscopy result indicates that all of the gross beta activity in the General Area Fan House Sample is attributable to ^{137}Cs. The ^{137}Cs concentration detected is above ambient levels, but is not a ES&H concern because continuous exposure at the measured concentration would result in less than 1 mrem in a year of intake.

Should you have any questions regarding this information, please contact me.

Attachment 1 Gross Alpha, Gross Beta and Gamma-Emitting Radionuclides in Air Samples Collected During the August 27, 1999 Penetration of Blower 5 in Building 704.

cc. L. Cabraro
K. Corbett
K. Kropp
M. Lilimpakis
S. Musolino
C. Newson

RM/sc/GW3320.99

Gross Alpha, Gross Beta and Gamma-Emitting Radionuclides in Air Samples Collected During the August 27, 1999 Penetration of Blower 5 in Building 704

Sample Collection Date	Sample Description	Sample Volume, cc	Gross Alpha pCi/m^3	Gross Alpha Err pCi/m^3	Gross Beta pCi/m^3	Gross Beta Err pCi/m^3	Cs-137 pCi/m^3	Cs-137 Error pCi/m^3	Bi-214 pCi/m^3	Bi-214 Error pCi/m^3	Gross Alpha MDC pCi/m^3	Gross Beta MDC PCi/m^3	Qualifiers
8/27/99	General area – fan house	4.20E6	0.040	0.073	2.11	0.289	1.98	0.59			0.125	0.367	4
8/27/99	HEPA Filter Exhaust	1.80E6	0.095	0.170	-0.096	0.488					0.292	0.857	1,2,3

Qualifier Notes:

1 = Reported result is less than Gross Alpha minimum detectable concentration for the analysis date.
2 = Reported result is less than Gross Beta minimum detectable concentration for the analysis date.
3 = Reported result is less than nuclide specific minimum detectable concentration for the analysis date. Typical values are listed below:

Daily
K-40 is 1.5 pCi/m^3
Cs-137 is 0.23 pCi/m^3
Tl-208 is 0.13 pCi/m^3
Pb-212 is 0.22 pCi/m^3
Ra-226 is 2.99 pCi/m^3

Weekly:
K-40 is 0.21 pCi/m^3
Cs-137 is 0.03 pCi/m^3
Tl-208 is 0.02 pCi/m^3
Pb-212 is 0.03 pCi/m^3
Ra-226 is 0.78 pCi/m^3

4 = The DAC for ^{137}Cs is 60,000 pCi/m^3.

C. O. C. Number
99060410

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name:	**BGRR #99-110**		
Requested by: R. Miltenberger	**E-Mail Reports to:**	**SAMPLER:** Ken Kropp	Priority Authorization
Life Number: 14088	**EP Manager:** K. Corbett	**SAMPLER:**	Group Leader or Higher CALL
Account No.: 7254 **Dept. Code:** DO	**FSS Manager:** R. Miltenberger	**SAMPLER:**	x2502 (Rad), x4860 (Non Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WO	VOA	PCB	pH	
99060410-01			6/3/99		0900	704	smear	Drain #1 secondary	1	NA	x		x							
99060410-02			6/3/99		0900	704	smear	Drain #2 primary	1	NA	x		x							
99060410-03			6/3/99		0900	704	smear	Drain #3 primary	1	NA	x		x							
99060410-04			6/3/99		0910	704	smear	Drain #4 primary	1	NA	x		x							
99060410-05			6/3/99		0910	704	smear	Drain #5 primary	1	NA	x		x							
99060410-06			6/4/99		1400	704	smear	Fan house #5 low point drain	1	NA	x		x							
99060410-07			6/4/99		1400	704	smear	Fan house #5 low point drain	1	NA	x		x							

Must be one of the samplers

Transferred to :	Ken Kropp	RA Brown	
Signed by:	Ken Kropp	RA Brown	
Date/time	6/4/99 1400	6/4/99 1425	

***OTHER ANALYSIS NOT LISTED	COMMENTS

C.O.C. NUMBER
99060410

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 6/5/99

SAMPLE I.D. NUMBER	ALPHA dpm	ALPHA Error	BETA dpm	BETA Error			MDL - dpm Alpha	MDL - dpm Beta	
99060410-01	0.0	0.0	0.0	8.5			8.7	19.9	
99060410-02	0.0	0.0	15.0	14.2			8.7	19.9	
99060410-03	0.0	0.0	15.0	14.2			8.7	19.9	
99060410-04	3.2	6.4	4.3	10.5			8.7	19.9	
99060410-05	0.0	0.0	2.1	9.6			8.7	19.9	
99060410-06	35.2	21.2	4533.2	197.0			8.7	19.9	
99060410-07	0.0	0.0	822.5	84.3			8.7	19.9	

C.O.C. Number
99060410

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 6/6/99

Sample I.D.	Nuclide Name	Activity uCi/smear	1-Sigma % Error
99060410-01	There are no nuclides meeting the summary criteria		
99060410-02	CS-137	1.30E-05	18.00
99060410-03	CS-137	1.89E-05	20.73
99060410-04	There are no nuclides meeting the summary criteria		
99060410-05	There are no nuclides meeting the summary criteria		
99060410-06	CS-137	9.70E-04	9.24
99060410-07	CS-137	4.51E-04	10.05

C. O. C. Number
99072105

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR #99-137

Requested by: R Miltenberger
Life Number: 14088
Account No.: 7337 Dept Code: DO

E-Mail Reports to:
EP Manager: K Corbett
FSS Manager: R Miltenberger

SAMPLER: Ken Kropp
SAMPLER:
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
99072105-01			7/20/99		1600	704	smear	I/S fan housing #5 sidewall	1	NA	x		x							
99072105-02			7/20/99		1600	704	smear	I/S fan housing #5 top	1	NA	x		x							
99072105-03			7/20/99		1600	704	smear	I/S fan housing #5 vanes	1	NA	x		x							
99072105-04			7/20/99		1600	704	smear	I/S fan housing #5 inspec plate	1	NA	x		x							
99072105-05			7/20/99		1600	704	air	#1 outside G/A	1	5.66E+05	x		x							
99072105-06			7/20/99		1600	704	air	#2 G/A inside fan housing	1	2.83E+05	x		x							
99072105-07			7/20/99		1600	704	other	Dirt from internal fan housing #5	1	NA			x							

Must be one of the samplers

Transferred to :	Ken Kropp	RA Brown			
Signed by:	Ken Kropp	RA Brown			
Date/time	7/20/99 1600	7/21/99 1100			

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST PINK COPY RECEIVER OR INTRA-LAB TRANSFER

C.O.C. NUMBER
99072105

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 7/22/99

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
99072105-05	-3.61E-13	3.05E-13	-3.69E-12	1.60E-12			3.76E-13	2.49E-12		
99072105-06	5.23E-13	9.38E-13	1.43E-10	7.16E-12			2.06E-12	1.59E-11		

C.O.C. NUMBER
99072105

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 7/22/99

SAMPLE I.D. NUMBER	ALPHA dpm	ALPHA Error	BETA dpm	BETA Error			MDL - dpm Alpha	MDL - dpm Beta	
99072105-01	25.7	20.3	2781.5	154.6			23.6	19.9	
99072105-02	3.2	11.1	1935.7	129.0			23.6	19.9	
99072105-03	32.1	22.2	3059.8	162.1			23.6	19.9	
99072105-04	83.4	33.9	8265.2	266.2			23.6	19.9	

C.O.C. Number
99072105

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 7/21/99

Sample I.D.	Nuclide Name	Activity uCi/smear	1-Sigma % Error
99072105-01	CS-137	1.44E-03	11.79
99072105-02	CS-137	7.01E-04	8.82
99072105-03	CS-137	9.21E-04	11.84
99072105-04	CS-137	3.17E-03	8.47
Sample I.D.	**Nuclide Name**	**Activity uCi/cc**	**1-Sigma % Error**
99072105-05	There are no nuclides meeting the summary criteria		
99072105-06	CS-137	1.54E-10	12.02
Sample I.D.	**Nuclide Name**	**Activity uCi/gram**	**1-Sigma % Error**
99072105-07	CO-60	7.55E-05	7.71
	CS-137	4.41E-02	11.33
	AM-241	1.39E-04	30.97

C. O. C. Number
20011809

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No.

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young	Priority Authorization
Life Number: 14088	EP Manager: D. Mergen	SAMPLER:	Group Leader or Higher CALL
Account No.: 7313 Dept. Code: ER	FSS Manager: R. Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg.#	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011809-01			01/15/00		1315	704	air	Fan #2 remove fan (inside) AS-039	1	4.80E+06	x		x							
20011809-02			01/15/00		1315	704	air	Fan #2 remove fan (outside) AS-040	1	4.00E+06	x		x							
20011809-03			01/15/00		0900	704	air	Fan #2 decon shaft AS-041 (inside)	1	5.00E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	RA Brown	
Signed by:	John P. Young	RA Brown	
Date/time	1/15/00 1315	1/18/00 0844	

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2963B WHITE COPY - SAMPLE CUSTODIAN YELLOW COPY - ANALYST

C.C NUMBER
20011809

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/20/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011809-01	-2.67E-14	6.38E-14	-1.34E-15	1.91E-13			1.30E-13	3.31E-13		
20011809-02	3.91E-14	8.90E-14	7.76E-13	2.61E-13			1.55E-13	4.01E-13		
20011809-03	2.39E-14	6.87E-14	1.07E-12	2.21E-13			1.22E-13	3.15E-13		

C.O.C. Number
20011809

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/19/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011809-01	K-40	8.17E-12	28.11
20011809-02	CS-137	8.22E-13	34.91
	PB-214	1.32E-12	31.95
20011809-03	CS-137	1.50E-12	18.10

C. O. C. Number
20011808

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young	Priority Authorization
Life Number: 14088	EP Manager: D. Mergen	SAMPLER:	Group Leader or Higher CALL
Account No.: 17313 Dept. Code: ER	FSS Manager: R. Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

	Sample Information								Container		Analysis Requested***									
ASL Number	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011808-01			01/15/00		1100	704	air	Fan #2 burn inner shaft (inside) AS-036	1	5.10E+06	x		x							
20011808-02			01/15/00		1100	704	air	Fan #2 burn inner shaft (inside by door) AS-037	1	4.20E+06	x		x							
20011808-03			01/15/00		1100	704	air	Fan #2 burn inner shaft (outside door) AS-038	1	4.20E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	RA Brown			
Signed by:	John P. Young	RA Brown			
Date/time	1/15/00 1100	1/18/00 0844			

***OTHER ANALYSIS NOT LISTED	COMMENTS

C.C NUMBER
20011808

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/20/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011808-01	-5.38E-14	5.43E-14	5.19E-14	1.82E-13			1.22E-13	3.10E-13		
20011808-02	7.12E-14	9.02E-14	1.04E-12	2.60E-13			1.48E-13	3.84E-13		
20011808-03	4.61E-14	8.62E-14	-1.98E-13	2.10E-13			1.48E-13	3.83E-13		

C.O.C. Number
20011808

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/19/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011808-01	BE-7	5.82E-12	25.57
	PB-212	9.94E-13	34.14
20011808-02	There are no nuclides meeting the summary criteria		
20011808-03	There are no nuclides meeting the summary criteria		

C. O. C. Number
20011807

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young	Priority Authorization
Life Number: 14088	EP Manager: D. Mergen	SAMPLER:	Group Leader or Higher CALL
Account No.: 7313 Dept. Code: ER	FSS Manager: R. Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011807-01			01/14/00		1200	704	air	secondary fan room remove elbow #2 AS-033	1	2.60E+06	x		x							
20011807-02			01/14/00		0910	704	air	Fan #2 remove drain lines (inside) AS-034	1	1.60E+06	x		x							
20011807-03			01/14/00		0920	704	air	Fan #2 remove drain lines (outside) AS-035	1	3.10E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	RA Brown			
Signed by:	John P. Young	RA Brown			
Date/time	1/14/00 1200	1/18/00 0843			

***OTHER ANALYSIS NOT LISTED	COMMENTS

C.C NUMBER
20011807

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/19/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011807-01	-4.32E-15	1.26E-13	-3.84E-13	3.76E-13			2.40E-13	6.75E-13		
20011807-02	-1.72E-13	1.74E-13	-3.50E-13	6.22E-13			3.90E-13	1.09E-12		
20011807-03	-9.06E-14	8.93E-14	7.32E-13	3.55E-13			2.01E-13	5.62E-13		

C.O.C. Number
20011807

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/19/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011807-01	CS-137	1.38E-12	37.09
20011807-02	There are no nuclides meeting the summary criteria		
20011807-03	CS-137	3.08E-12	43.51
	TL-208	3.18E-12	31.11

C. O. C. Number

20011905

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY

SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY

BLDG 535A

UPTON, N.Y 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:

Pick Up by:

Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	**E-Mail Reports to:**	**SAMPLER:** M. Blanciak	Priority Authorization
Life Number: 14088 x2503	**EP Manager:** D. Mergen	**SAMPLER:**	Group Leader or Higher CALL
Account No.: 7313 **Dept Code:** ERD	**FSS Manager:** R. Miltenberger	**SAMPLER:**	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

	Sample Information								Container		Analysis Requested***									
ASL Number	Grid	-ID	Date	-C	Time	Bldg.#	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011905-01			01/12/00		1700	704	other	SAND FROM GARBAGE DRUM IN EMERGENCY	1	1000			X							
								FAN ROOM												

Must be one of the samplers

Transferred to :	M. Blanciak	RA Brown	
Signed by:	M. Blanciak	RA Brown	
Date/time	1/19/00 1400	1/19/00 1401	

***OTHER ANALYSIS NOT LISTED	COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST

C.O.C. NUMBER
20011905

COUNTING ROOM
INFORMATION SHEET

Preparation date and initials: EK

		Alpha Beta Information				Tritium Info				
I.D. NUMBER	MATRIX	mL EVAP	Gross Wgt. g	Tare Wgt. g	Net Wgt. g	sample / water	vol. ct'd	Gamma	pH	SHELF #
20011905-01	other							300		
0	0									
0	0									
0	0									
0	0									
0	0									
0	0									
0	0									
0	0									
0	0									
0	0									
0	0									
0	0									

C.O.C. Number
20011905

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/20/2000

Sample I.D.	Nuclide Name	Activity uCi/gram	1-Sigma % Error
20011905-01	K-40	3.12E-06	9.95
	CO-60	5.61E-08	14.99
	CS-137	9.48E-05	8.36
	TL-208	1.52E-07	25.64
	PB-212	2.75E-07	23.80
	BI-214	2.51E-07	13.38

C. O. C. Number
20011305

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	**E-Mail Reports to:**	**SAMPLER:** M. Blanciak	Priority Authorization
Life Number: 14088 x2503	**EP Manager:** D. Mergen	**SAMPLER:** J. Young	Group Leader or Higher CALL
Account No.: 7313 **Dept Code:** ERD	**FSS Manager:** R. Miltenberger	**SAMPLER:**	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
								FAN HOUSE #5 BASEMENT CUT OUT 4" DRAIN LINE												
								TRITIUM SAMPLE												
20011305-01			01/12/00		1500	704	smear	#1 INSIDE	1	20		X								
20011305-02			01/12/00		1500	704	smear	#2 INSIDE	1	20		X								
20011305-03			01/12/00		1500	704	smear	#3 INSIDE	1	20		X								
20011305-04			01/12/00		1500	704	smear	#4 OUTSIDE	1	20		X								
20011305-05			01/12/00		1500	704	smear	#5 OUTSIDE	1	20		X								
20011305-06			01/12/00		1500	704	smear	#6 OUTSIDE	1	20		X								

Must be one of the samplers

Transferred to :	J. Young	P. Heotis	
Signed by:	J. Young	P. Heotis	
Date/time	1/12/00 1500	1/13/00 0910	

***OTHER ANALYSIS NOT LISTED	COMMENTS

C.O.C. NUMBER
20011305

COUNTING ROOM
INFORMATION SHEET

Preparation date and initials: EK

		Alpha Beta Information				Tritium Info				
I.D. NUMBER	MATRIX	mL EVAP	Gross Wgt. g	Tare Wgt. g	Net Wgt. g	sample / water	vol. ct'd	Gamma	pH	SHELF #
0	0									
0	0									
20011305-01	smear									
20011305-02	smear									
20011305-03	smear									
20011305-04	smear									
20011305-05	smear									
20011305-06	smear									
0	0									
0	0									
0	0									
0	0									
0	0									

C.O.C. NUMBER
20011305

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/14/2000

SAMPLE I.D. NUMBER					TRITIUM dpm	TRITIUM Error	MDL - dpm		Tritium
20011305-01					60.8	33.2			27.2
20011305-02					164.0	51.8			27.2
20011305-03					13.7	23.7			27.2
20011305-04					24.4	24.4			27.2
20011305-05					-6.0	14.7			27.2
20011305-06					-6.1	14.9			27.2

C. O. C. Number
20011206

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name:	BGRR		
Requested by:	R. Miltenberger	**E-Mail Reports to:**	
Life Number:	14088	**EP Manager:**	D. Mergen
Account No.:	7313	**Dept. Code:**	ER
FSS Manager:	R. Miltenberger		

SAMPLER:	John P. Young
SAMPLER:	M. Blanciak
SAMPLER:	

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4800 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011206-01			01/11/00		1600	704	air	secondary fan room remove fan inside 009	1	1.76E+07	x		x							
20011206-02			01/11/00		1530	704	air	secondary fan room remove fan outside 010	1	1.60E+07	x		x							

Must be one of the samplers

Transferred to :	John P. Young	P. Heotis			
Signed by:	John P. Young	P. Heotis			
Date/time	1/11/00 1600	1/12/00 0900			

***OTHER ANALYSIS NOT LISTED	COMMENTS

BNL 2952B WHITE COPY - SAMPLE CUSTODIAN YELLOW COPY - ANALYST

C.O.(JMBER
20011206

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/13/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011206-01	2.12E-14	2.35E-14	3.05E-14	5.26E-14			3.79E-14	9.07E-14		
20011206-02	-2.02E-15	2.20E-14	1.11E-13	6.10E-14			4.16E-14	9.82E-14		

C.O.C. Number
20011206

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/14/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011206-01	There are no nuclides meeting the summary criteria		
20011206-02	There are no nuclides meeting the summary criteria		

C. O. C. Number
20011208

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N Y 11973-5000

Chain of Custody Information

BNL P.O. No

Ship to
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young	Priority Authorization
Life Number: 14088	EP Manager: D. Mergen	SAMPLER: M. Blanciak	Group Leader or Higher CALL
Account No.: 7313 Dept. Code: ER	FSS Manager: R. Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011208-01			01/11/00		1350	704	air	fan #2 install glove bag inside 012	1	2.50E+07	x		x							

Must be one of the samplers

Transferred to :	John P. Young	P. Heotis
Signed by:	John P. Young	P. Heotis
Date/time	1/11/00 1350	1/12/00 0903

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST PINK COPY RECEIVER/PRINTER/LAB TRANSFER

C.O.(JMBER
20011208

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/13/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011208-01	1.41E-13	2.93E-14	6.46E-13	5.74E-14			2.67E-14	7.09E-14		

C.O.C. Number
20011208

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/14/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011208-01	K-40	1.42E-12	41.88
	PB-212	4.07E-13	18.82

C. O. C. Number
20011205

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:
Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR

Requested by: R. Miltenberger
Life Number: 14088
Account No.: 7313 **Dept. Code:** ER

E-Mail Reports to:
EP Manager: D. Mergen
FSS Manager: R. Miltenberger

SAMPLER: John P. Young
SAMPLER: Mark Blanclak
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	α/β	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011205-01			01/07/00		1140	704		cut shaft on Fan #3 (AS-013)	1	1.10E+07	x		x							
20011205-02			01/11/00		1700	704		cut bellows on Fan #3 o/s (AS-014)	1	5.90E+06	x		x							
20011205-03			01/11/00		1720	704		Fan #2 inside cut bellows (AS-015)	1	1.10E+07	x		x							
20011205-04			01/11/00		1720	704		Fan #2 inside cut bellows (AS-016)	1	8.80E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	P. Heotis			
Signed by:	John P. Young	P. Heotis			
Date/time	1/11/00 1510	1/12/00 0859			

***OTHER ANALYSIS NOT LISTED

COMMENTS

C. NUMBER
20011205

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/13/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011205-01	-3.72E-14	2.57E-14	3.13E-13	9.45E-14			6.06E-14	1.41E-13		
20011205-02	-2.50E-14	5.63E-14	1.74E-13	1.60E-13			1.13E-13	2.65E-13		
20011205-03	1.56E-14	3.49E-14	-1.54E-13	7.52E-14			6.06E-14	1.44E-13		
20011205-04	4.89E-14	4.78E-14	3.09E-13	1.15E-13			7.57E-14	1.82E-13		

C.O.C. Number
20011205

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/13/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011205-01	CS-137	4.19E-13	33.09
20011205-02	CS-137	6.54E-13	32.24
20011205-03	There are no nuclides meeting the summary criteria		
20011205-04	CS-137	4.61E-13	35.54

C. O. C. Number
20011207

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N Y 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	**E-Mail Reports to:**	**SAMPLER:** John P. Young	Priority Authorization
Life Number: 14088	**EP Manager:** D. Mergen	**SAMPLER:** M. Blanciak	Group Leader or Higher CALL
Account No.: 7313 **Dept. Code:** ER	**FSS Manager:** R. Miltenberger	**SAMPLER:**	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011207-01			01/10/00		1045	704	air	fan room #3 general clean-up inside 011	1	9.50E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	P. Heotis	
Signed by:	John P. Young	P. Heotis	
Date/time	1/10/00 1045	1/12/00 0902	

***OTHER ANALYSIS NOT LISTED	COMMENTS

BNL F 2963B WHITE COPY - SAMPLE CUSTODIAN YELLOW COPY - ANALYST

C.O.(JMBER
20011207

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/13/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011207-01	-2.72E-15	3.71E-14	5.14E-12	2.25E-13			7.01E-14	1.66E-13		

C.O.C. Number
20011207

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/14/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011207-01	K-40	4.05E-12	43.04
	CS-137	3.76E-13	42.45

C. O. C. Number
20011006

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	**E-Mail Reports to:**	**SAMPLER:** John P. Young	Priority Authorization
Life Number: 14088	**EP Manager:** D. Mergen	**SAMPLER:** M. Blanciak	Group Leader or Higher CALL
Account No.: 7313 **Dept. Code:** ER	**FSS Manager:** R. Miltenberger	**SAMPLER:**	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011006-01			01/08/00		1220	704	air	Fan #3 remove fan (inside by door)	1	1.40E+07	x		x							
20011006-02			01/08/00		1420	704	air	Fan #3 remove fan (outside DW by door)	1	2.50E+07	x		x							
20011006-03			01/08/00		1430	704	air	Fan #3 remove fan (outside DW by sea-van)	1	7.00E+06	x		x							
20011006-04			01/08/00		1400	704	air	cut clean angle iron off Fan #3 (DW outside)	1	3.50E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	P. Heotis	
Signed by:	John P. Young	P. Heotis	
Date/time	1/8/00 1400	1/10/00 0843	

***OTHER ANALYSIS NOT LISTED

COMMENTS

C.O.C MBER
20011006

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/11/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011006-01	1.14E-14	2.71E-14	4.95E-13	8.69E-14			4.73E-14	1.21E-13		
20011006-02	-6.19E-15	1.31E-14	1.83E-13	4.56E-14			2.65E-14	6.72E-14		
20011006-03	-1.35E-14	4.84E-14	2.73E-13	1.49E-13			9.46E-14	2.40E-13		
20011006-04	-7.55E-14	8.82E-14	-2.99E-13	2.66E-13			1.89E-13	4.78E-13		

C.O.C. Number
20011006

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/12/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011006-01	CS-137	3.33E-13	27.02
20011006-02	TL-208	9.58E-14	40.80
20011006-03	There are no nuclides meeting the summary criteria		
20011006-04	There are no nuclides meeting the summary criteria		

C. O. C. Number
20011005

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name:

Requested by: R. Miltenberger
Life Number: 14088
Account No.: 7313 Dept. Code: ER

E-Mail Reports to:
EP Manager: D. Mergen
FSS Manager: R. Miltenberger

SAMPLER: John P. Young
SAMPLER: M. Blanciak
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011005-01			01/08/00		1445	704	air	Fan #2 remove transition bolts (inside)	1	2.00E+07	x		x							

Must be one of the samplers

Transferred to :	John P. Young	P. Heotis			
Signed by:	John P. Young	P. Heotis			
Date/time	1/8/00 1445	1/10/00 0841			

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST PINK COPY

C.O.C MBER
20011005

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/11/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011005-01	1.34E-14	1.98E-14	6.11E-13	6.87E-14			3.31E-14	8.51E-14		

C.O.C. Number
20011005

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/12/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011005-01	CS-137	4.21E-13	20.41

C. O. C. Number
20011007

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No.

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR		
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young
Life Number: 14088	EP Manager: D. Mergen	SAMPLER: M. Blanciak
Account No.: 7313 Dept. Code: ER	FSS Manager: R. Miltenberger	SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested**									
	Grid	-ID	Date	-C	Time	Bldg. #	*Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20011007-01			01/07/00		1405	704	air	Fan #3 cut shaft (inside above)	1	2.40E+06	x		x							
20011007-02			01/07/00		1400	704	air	Fan #3 cut shaft (outside door)	1	1.70E+06	x		x							
20011007-03			01/07/00		1140	704	air	Fan #3 A6 cut shaft (outside door)	1	8.50E+05	x		x							

Must be one of the samplers

Transferred to :	John P. Young	P. Heotis			
Signed by:	John P. Young	P. Heotis			
Date/time	1/7/00 1405	1/10/00 0845			

**OTHER ANALYSIS NOT LISTED	COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST PINK COPY [illegible]

C.O.C MBER
20011007

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/11/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20011007-01	-1.96E-13	1.12E-13	1.28E-12	4.53E-13			2.76E-13	6.92E-13		
20011007-02	-2.74E-13	1.58E-13	-4.75E-13	5.54E-13			3.90E-13	9.77E-13		
20011007-03	-5.17E-13	3.23E-13	1.51E-12	1.20E-12			7.79E-13	1.96E-12		

C.O.C. Number
20011007

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/12/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20011007-01	CS-137	1.82E-12	30.30
20011007-02	There are no nuclides meeting the summary criteria		
20011007-03	CS-137	1.28E-11	16.10

C. O. C. Number
20010718

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:
Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR

Requested by: R. Miltenberger
Life Number: 14088
Account No.: 7313 **Dept. Code:** ER

E-Mail Reports to:
EP Manager: D. Mergen
FSS Manager: R. Miltenberger

SAMPLER: John P. Young
SAMPLER: M. Blanciak
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010718-01			01/07/00		0820	704	air	Fan #3 cut inner shaft (inside)	1	1.40E+07	x		x							

Must be one of the samplers

Transferred to :	John P. Young	RA Brown			
Signed by:	John P. Young	RA Brown			
Date/time	1/7/00 0820	1/7/00 1520			

***OTHER ANALYSIS NOT LISTED

COMMENTS

C.O.C MBER
20010718

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/09/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010718-01	1.80E-13	4.55E-14	1.20E-11	2.64E-13			4.53E-14	1.19E-13		

C.O.C. Number
20010718

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/11/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010718-01	K-40	7.04E-12	15.82
	CS-137	1.60E-11	9.33

C. O. C. Number
20010705

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young	Priority Authorization
Life Number: 14088	EP Manager: D. Mergen	SAMPLER: M. Blanciak	Group Leader or Higher CALL
Account No.: 7313 Dept. Code: ER	FSS Manager: R. Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010705-01			01/06/00		1500	704	air	Fan room #3 remove front piece (inside)	1	4.20E+06	x		x							
20010705-02			01/06/00		1500	704	air	Fan room #3 remove front piece (outside)	1	6.20E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	RA Brown	
Signed by:	John P. Young	RA Brown	
Date/time	1/6/00 1500	1/7/00 0850	

***OTHER ANALYSIS NOT LISTED

COMMENTS

C.O.C. MBER
20010705

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/09/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010705-01	-2.82E-14	7.54E-14	1.12E-13	2.12E-13			1.51E-13	3.59E-13		
20010705-02	-2.37E-14	5.02E-14	3.98E-14	1.42E-13			1.02E-13	2.43E-13		

C.O.C. Number
20010705

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/10/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010705-01	There are no nuclides meeting the summary criteria		
20010705-02	TL-208	5.09E-13	43.62

C. O. C. Number
20010707

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name:

Requested by: R. Miltenberger
Life Number: 14088
Account No.: 7313 Dept. Code: ER

E-Mail Reports to:
EP Manager: R. Miltenberger
FSS Manager: D. Mergen

SAMPLER: John P. Young
SAMPLER: M. Blanciak
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010707-01			01/06/00		1100	704	air	secondary fan house A6 noise alarm	1	5.90E+05	x		x							
20010707-02			01/06/00		1100	704	air	secondary fan room cut secondary ducting (breathing z	1	4.40E+06	x		x							
20010707-03			01/06/00		1100	704	air	secondary fan room cut secondary ducting (outside)	1	3.70E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	RA Brown			
Signed by:	John P. Young	RA Brown			
Date/time	1/6/00 1100	1/7/00 0855			

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST PINK COPY

C.O.C MBER
20010707

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/09/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010707-01	-4.95E-13	4.80E-13	3.78E-13	1.49E-12			1.08E-12	2.54E-12		
20010707-02	-2.68E-14	7.20E-14	1.52E-14	1.98E-13			1.44E-13	3.43E-13		
20010707-03	-9.44E-14	7.33E-14	-1.34E-13	2.29E-13			1.71E-13	4.03E-13		

C.O.C. Number
20010707

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/11/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010707-01	There are no nuclides meeting the summary criteria		
20010707-02	There are no nuclides meeting the summary criteria		
20010707-03	There are no nuclides meeting the summary criteria		

C. O. C. Number
20010706

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young	Priority Authorization
Life Number: 14088	EP Manager: D. Mergen	SAMPLER: M. Blanciak	Group Leader or Higher CALL
Account No.: 7313 Dept. Code: ER1	FSS Manager: R. Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010706-01			01/06/00		1700	704	air	secondary fan room cut secondary pipe (outside)	1	3.70E+06	x		x							
20010706-02			01/06/00		1700	704	air	secondary fan room cut secondary pipe (inside)	1	2.70E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	RA Brown		
Signed by:	John P. Young	RA Brown		
Date/time	1/6/00 1700	1/7/00 0852		

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2963B WHITE COPY SAMPLE CUSTODIAN YELLOW COPY ANALYST PINK COPY

C.O.C MBER
20010706

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/09/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010706-01	-7.58E-16	9.11E-14	2.92E-13	2.47E-13			1.71E-13	4.09E-13		
20010706-02	-4.39E-14	1.17E-13	4.10E-13	3.40E-13			2.35E-13	5.58E-13		

C.O.C. Number
20010706

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/10/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010706-01	CS-137	1.97E-12	35.01
20010706-02	There are no nuclides meeting the summary criteria		

C. O. C. Number
20010615

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:
Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted
If bottles are filled above the shoulder.

Project Name: BGRR

Requested by: R. Miltenberger
Life Number: 14088
Account No.: 7313 **Dept. Code:** ER

E-Mail Reports to:
EP. Manager: D. Mergen
FSS Manager: R. Miltenberger

SAMPLER: John P. Young
SAMPLER: M. Blanciak
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010615-01			01/05/00		1500	704	air	Fan #3 inside top separate front piece	1	7.80E+06	x		x							
20010615-02			01/05/00		1500	704	air	Fan #3 outside separate front piece	1	6.80E+06	x		x							
20010615-03			01/05/00		1600	704	air	Fan #3 inside by door separate front piece	1	7.80E+05	x		x							
20010615-04			01/05/00		1530	704	air	Fan #3 inside by door cut internal braces	1	6.60E+05	x		x							
20010615-05			01/05/00		1500	704	air	Fan #3 inside by door cut internal braces	1	5.90E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	Jean McCabe			
Signed by:	John P. Young	Jean McCabe			
Date/time	1/5/00 1500	1/6/00 1321			

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2963B WHITE COPY - SAMPLE CUSTODIAN YELLOW COPY - ANALYST PINK COPY - RECEIVER

C.O.C MBER
20010615

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/07/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010615-01	1.95E-13	5.79E-14	4.39E-12	2.36E-13			4.47E-14	2.02E-13		
20010615-02	3.99E-15	2.55E-14	1.86E-13	1.35E-13			5.13E-14	2.17E-13		
20010615-03	2.58E-13	2.87E-13	1.34E-12	1.16E-12			4.47E-13	1.91E-12		
20010615-04	-4.62E-14	2.32E-13	8.66E-14	1.31E-12			5.28E-13	2.23E-12		
20010615-05	2.43E-14	3.54E-14	-3.98E-14	1.44E-13			5.91E-14	2.52E-13		

C.O.C. Number
20010615

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/10/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010615-01	CS-137	1.33E-12	18.33
20010615-02	CS-137	4.32E-13	42.53
20010615-03	CS-137	3.56E-12	30.76
20010615-04	There are no nuclides meeting the summary criteria		
20010615-05	There are no nuclides meeting the summary criteria		

C. O. C. Number
20010614

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name:

Requested by: R. Miltenberger
Life Number: 14088
Account No.: 7313 Dept. Code: ER

E-Mail Reports to:
EP Manager: D. Mergen
FSS Manager: R. Miltenberger

SAMPLER: John P. Young
SAMPLER: M. Blanciak
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010614-01			01/05/00		1400	704	air	Fan #3 inside remove drain lines	1	4.10E+06	x		x							
20010614-02			01/05/00		1400	704	air	Fan #3 outside remove drain lines	1	3.40E+06	x		x							

Must be one of the samplers

Transferred to :	John P. Young	Jean McCabe			
Signed by:	John P. Young	Jean McCabe			
Date/time	1/5/00 1400	1/6/00 1320			

***OTHER ANALYSIS NOT LISTED

COMMENTS

BNL F 2038 WHITE COPY - SAMPLE CUSTODIAN YELLOW COPY - ANALYST

C.O.C MBER
20010614

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/07/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010614-01	7.65E-14	6.13E-14	3.08E-12	3.19E-13			8.51E-14	3.65E-13		
20010614-02	4.17E-14	6.12E-14	1.51E-12	3.14E-13			1.03E-13	4.37E-13		

C.O.C. Number
20010614

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/10/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010614-01	CS-137	2.36E-12	18.95
20010614-02	There are no nuclides meeting the summary criteria		

C. O. C. Number
20010509

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name:			
Requested by: R. Miltenberger	E-Mail Reports to:	SAMPLER: John P. Young	Priority Authorization
Life Number: 14088	EP Manager: D. Mergen	SAMPLER: Mark Blanclak	Group Leader or Higher CALL
Account No.: 7337 Dept. Code: ER	FSS Manager: R. Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010509-01			01/04/00		1000	704	air	Fan #1 cut outboard shaft		1.80E+06										
20010509-02			01/04/00		1000	704	air	Fan #2 cut outboard shaft		1.90E+06										
20010509-03			01/04/00		1000	704	air	Fan #3 cut outboard shaft		5.30E+05										
								NOTE: no analyses were requested. We are assuming alpha/beta and gamma.												

Must be one of the samplers

Transferred to :	John P. Young	RA Brown			
Signed by:	John P. Young	RA Brown.			
Date/time	1/5/00 0837	1/5/00 0838			

***OTHER ANALYSIS NOT LISTED	COMMENTS

C.O.C. MBER
20010509

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/06/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010509-01	1.43E-13	1.90E-13	1.93E-12	5.35E-13			3.14E-13	7.95E-13		
20010509-02	-7.77E-14	1.39E-13	1.49E-12	4.93E-13			2.98E-13	7.39E-13		
20010509-03	2.14E-13	5.98E-13	3.94E-12	1.71E-12			1.07E-12	2.68E-12		

C.O.C. Number
20010509

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/07/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010509-01	There are no nuclides meeting the summary criteria		
20010509-02	There are no nuclides meeting the summary criteria		
20010509-03	There are no nuclides meeting the summary criteria		

C. O. C. Number
20010508

Contractor Number

Page 1 of 1

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

Chain of Custody Information

BNL P.O. No:

Ship to:
Pick Up by:
Attention:

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name:

Requested by: R. Miltenberger
Life Number: 14088
Account No.: 7337 **Dept. Code:** ER

E-Mail Reports to:
EP Manager: D. Mergen
FSS Manager: R. Miltenberger

SAMPLER: John P. Young
SAMPLER: Mark Blanclak
SAMPLER:

Priority Authorization
Group Leader or Higher CALL
x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***									
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH	
20010508-01			01/04/00		1500	704	air	Fan #3 attempt remove cover piece (inside)		4.00E+06										
20010508-02			01/04/00		1500	704	air	Fan #3 attempt remove cover piece (by door)		2.80E+06										
20010508-03			01/04/00		1500	704	air	Fan #3 attempt remove cover piece (outside dw)		3.00E+06										
								NOTE: no analyses were requested. We are assuming alpha/beta and gamma.												

Must be one of the samplers

Transferred to :	John P. Young	RA Brown		
Signed by:	John P. Young	RA Brown		
Date/time	1/5/00 0836	1/5/00 0837		

***OTHER ANALYSIS NOT LISTED

COMMENTS

C.O.C MBER
20010508

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/06/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010508-01	3.68E-13	1.27E-13	3.27E-12	3.23E-13			1.41E-13	3.77E-13		
20010508-02	2.66E-13	1.49E-13	5.63E-12	4.89E-13			2.02E-13	5.23E-13		
20010508-03	8.62E-14	1.14E-13	3.05E-13	2.85E-13			1.88E-13	4.77E-13		

C.O.C. Number
20010508

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/07/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010508-01	CS-137	1.29E-12	22.43
20010508-02	CS-137	2.77E-12	18.49
20010508-03	There are no nuclides meeting the summary criteria		

C. O. C. Number
20010406

Contractor Number

BROOKHAVEN NATIONAL LABORATORY
SAFETY & ENVIRONMENTAL PROTECTION DIVISION

ANALYTICAL SERVICES LABORATORY
BLDG 535A
UPTON, N.Y. 11973-5000

BNL P.O. No

Ship to:
Pick Up by:
Attention

Chain of Custody Information

Bioassay samples will not be accepted if bottles are filled above the shoulder.

Project Name: BGRR			
Requested by: R Miltenberger	E-Mail Reports to:	SAMPLER: Mark blanciak	Priority Authorization
Life Number: 14088 2503	EP Manager: D Mergen	SAMPLER:	Group Leader or Higher CALL
Account No.: 07337 Dept. Code: ER	FSS Manager: R Miltenberger	SAMPLER:	x2502 (Rad), x4860 (Non-Rad)

FILL OUT ONLY SHADED AREAS. CANNOT ACCEPT SAMPLES WITH ACTIVITY >1mR/hr

ASL Number	Sample Information								Container		Analysis Requested***								
	Grid	-ID	Date	-C	Time	Bldg. #	Matrix	Description	#	vol.	αβ	3H	γ	Sr90	MET	WQ	VOA	PCB	pH
20010406-01			01/03/00		1740	704	Part	Fan #3 Remove bolts from cover plate	1	#######	X		X						
20010406-02			01/03/00		1740	704	Part	Fan #3 Remove bolts from cover plate	1	#######	X		X						
20010406-03			01/03/00		1740	704	Part	Fan #3 Outside Roll up door	1	#######	X		X						
20010406-04			01/03/00		1740	704	Part	Fan #3 Install glove bag	1	#######	X		X						
20010406-05			01/03/00		1740	704	Part	Fan #3 Install glove bag	1	#######	X		X						

Must be one of the samplers

Transferred to :	Mark blanciak	Liz Ginty			
Signed by:	Mark blanciak	Liz Ginty			
Date/time	1/3/00 1355	1/4/00 1250			

***OTHER ANALYSIS NOT LISTED	COMMENTS

C.O.C MBER
20010406

BROOKHAVEN NATIONAL LABORATORY
SAFETY AND ENVIRONMENTAL PROTECTION DIVISION
Radiological Analysis Laboratory

RADIOLOGICAL REPORT

Reviewed by: Robert R. Gaschott 01/05/2000

SAMPLE I.D. NUMBER	ALPHA uCi/cc	ALPHA Error	BETA uCi/cc	BETA Error			MDL - uCi/cc Alpha	MDL - uCi/cc Beta		
20010406-01	5.41E-13	7.02E-14	9.33E-13	9.20E-14			4.15E-14	1.32E-13		
20010406-02	4.50E-13	7.87E-14	1.73E-12	1.42E-13			5.87E-14	1.70E-13		
20010406-03	8.01E-14	5.01E-14	3.86E-13	1.16E-13			7.08E-14	1.78E-13		
20010406-04	1.30E-13	5.39E-14	1.21E-12	1.38E-13			6.60E-14	1.69E-13		
20010406-05	3.30E-14	5.07E-14	4.95E-13	1.41E-13			8.54E-14	2.10E-13		

C.O.C. Number
20010406

Brookhaven National Laboratory
Safety and Environmental Protection Division
Radiological Analysis Laboratory

GAMMA RESULTS

Reviewed by: Robert R. Gaschott 01/07/2000

Sample I.D.	Nuclide Name	Activity uCi/cc	1-Sigma % Error
20010406-01	CS-137	4.26E-13	17.08
20010406-02	CS-137	7.03E-13	17.80
20010406-03	PB-212	3.84E-13	46.41
20010406-04	CS-137	1.17E-12	17.04
20010406-05	There are no nuclides meeting the summary criteria		