



RTI Laboratories, Inc.

Client Ref.: Fort Monmouth 1207072

Pace-Pittsburgh Project No. 3072060

Pace Analytical Services, Inc.-Pittsburgh
1638 Roseytown Road
Suites 2, 3, & 4
Greensburg, PA 15601

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Case Narrative for Pace Analytical Job Number 3072060

7/31/2012

Four hundred and thirty one (431) contamination swipe samples were received in good condition at Pace Analytical on 06/25/12. One hundred (100) of the samples received were logged for radiochemical analyses under Pace Analytical Project number 3072060 with corresponding samples IDs of 3072060001 through 3072060100. This project narrative is for the analysis of all samples for Gross Alpha and Gross Beta content by Gas Flow Proportional Counting (GFPC).

Samples were analyzed as specified in the generic Scope of Work (SOW) for Analytical Chemistry Laboratory Services for Environmental Samples USACE, Baltimore District.

All work was performed under the Purchase Order (PO) agreement number 12E-183 by and between Pace Analytical Services, Inc. and RTI Laboratories, Inc.

Gross Alpha and Gross Beta by EPA 900.0 Modified

Each sample, as received, was removed from the corresponding filter holder and affixed to a shallow, stainless-steel counting planchet.

The prepared samples were counted in a GFPC system which was calibrated with NIST-traceable quantities of Th-230 and Sr-90/Y-90. Samples were counted for a duration sufficient to achieve the project-specified detection limit of 1 dpm/filter for gross alpha and 5 dpm/filter for gross beta.

Batch quality control analyses performed for each set of 20 samples consisted of one batch method blank (MB), one Laboratory Control Sample (LCS), and one LCS Duplicate (LCSD). The LCS and LCSD samples used were "static" sources that were prepared by Pace prior to the onset of analyses and consisted of a blank filter of the same lot as those used for sample analysis directly spiked with quantities of Th-230 as the alpha emitter and Sr-90/Y-90 as the beta emitter(s).

The prepared LCSs do not completely mimic the project samples provided as the materials spiked onto the filters may have evaporated on the top surface of the filter limiting the self-absorption of the alpha particles and creating closer proximity of the radioactivity to the detectors during counting.

For this project, Pace applied default acceptance criteria for gross alpha LCS control as within the range of 62% to 119%. The LCS limits for gross beta analysis were set at 79% to 130%. The precision limit for gross alpha was set at 35% and for gross beta at 17%. Pace's default acceptance criteria for LCSs is based on a group of aqueous LCSs which were spiked at a higher concentration than used for this project. The limits used are narrower than those typically used for LCSs at the utilized spike level.

Case Narrative for Pace Analytical Job Number 3072060

As a secondary measure, as accepted under the DOD QSM, LCSs and LCSDs were assessed using Numerical Indicators that measure the degree of overlap between measured spike concentrations with the measurement uncertainty and the spike target values. These assessments did not indicate any failures for LCSs or LCSDs related to the analysis of any project samples.

The gross alpha LCS associated with samples 3072060020 through 3072060039 was high and outside of Pace's default acceptance criteria for LCS control. Excluding samples 3072060023 and 3072060034 results for these samples have been reported based on the observation that the gross alpha result for each sample was less than the required MDC of 1.0 dpm/filter. Of the listed samples with observed gross alpha concentrations greater than 1 dpm/filter, the maximum result was calculated to be 1.18 dpm/filter. Results for samples 3072060023 and 3072060034 have been reported with the narrative notation that the reported gross alpha result may be biased high as indicated by the elevated LCS..

The gross alpha LCSD associated with samples 3072060060 through 3072060079 was high and outside of Pace's default acceptance criteria for LCS control. All samples excluding sample 3072060069 had measured gross alpha concentrations which were less than the required MDC of 1.0 dpm/filter. The result for sample 3072060069 was calculated to be 1.09 dpm/filter. The result for sample 3072060069 has been reported with the narrative notation that the result may be biased high as evidenced by the elevated LCSD.

The gross alpha LCSD associated with samples 3072060080 through 3072060099 was high and outside of Pace's default acceptance criteria for LCS control. All samples excluding samples 3072060087 and 3072060099 have been reported based on the observation that the gross alpha result for each sample was less than the required MDC of 1.0 dpm/filter. Of the listed samples with observed gross alpha concentrations greater than 1 dpm/filter, the maximum result was calculated to be 1.20 dpm/filter. Results for samples 3072060087 and 3072060099 have been reported with the narrative notation that the reported gross alpha results may be biased high.

Lastly, the gross alpha LCS associated with sample 3072060100 was high and outside of Pace's default acceptance criteria for LCS control. Results for sample 3072060100 have been reported based on the observation that the gross alpha result for the sample was less than the required MDC of 1.0 dpm/filter.

No further anomalous events were noted during the preparation or analysis of the samples for Gross Alpha and Gross Beta content. Unless indicated otherwise, all data quality objectives and quality control acceptance criteria were satisfied.

Case Narrative for Pace Analytical Job Number 3072060

General Comments

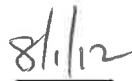
Please note that analytical results, as well as the CSU (Combined Standard Uncertainty – a.k.a. TPU) are reported at the 1.96 sigma level for all sample analyses.

No further anomalous events were noted during the preparation or analysis of the samples referenced in this project narrative.

Unless noted otherwise, all data quality objectives and quality control acceptance criteria were satisfied.



Radiochemistry Manager or Designate



Date

July 24, 2012

Mr. Chino Ortiz
RTI Laboratories, Inc.
31628 Glendale Street
Livonia, MI 48150

RE: Project: Fort Monmouth 1207072
Pace Project No.: 3072060

Dear Mr. Ortiz:

Enclosed are the analytical results for sample(s) received by the laboratory on June 25, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Carin Ferris

carin.ferris@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601

ACLASS DOD-ELAP Accreditation #: ADE-1544

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California/TNI Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH 0694

Delaware Certification

Florida/TNI Certification #: E87683

Guam/PADEP Certification

Hawaii/PADEP Certification

Idaho Certification

Illinois/PADEP Certification

Indiana/PADEP Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana/TNI Certification #: LA080002

Louisiana/TNI Certification #: 4086

Maine Certification #: PA0091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nevada Certification

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188

Utah/TNI Certification #: ANTE

Virgin Island/PADEP Certification

Virginia Certification #: 00112

Virginia VELAP (Cert # 460198)

Washington Certification #: C868

West Virginia Certification #: 143

Wisconsin/PADEP Certification

Wyoming Certification #: 8TMS-Q

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3072060001	2540-SU3-40	Wipe	06/14/12 00:01	06/25/12 10:15
3072060002	2540-SU3-41	Wipe	06/14/12 00:01	06/25/12 10:15
3072060003	2540-SU3-42	Wipe	06/14/12 00:01	06/25/12 10:15
3072060004	2540-SU3-43	Wipe	06/14/12 00:01	06/25/12 10:15
3072060005	2540-SU3-43D	Wipe	06/14/12 00:01	06/25/12 10:15
3072060006	2540-SU3-44	Wipe	06/14/12 00:01	06/25/12 10:15
3072060007	2540-SU3-45	Wipe	06/14/12 00:01	06/25/12 10:15
3072060008	2540-SU3-46	Wipe	06/14/12 00:01	06/25/12 10:15
3072060009	2540-SU3-47	Wipe	06/14/12 00:01	06/25/12 10:15
3072060010	2540-SU4-1	Wipe	06/18/12 00:01	06/25/12 10:15
3072060011	2540-SU4-2	Wipe	06/18/12 00:01	06/25/12 10:15
3072060012	2540-SU4-2D	Wipe	06/18/12 00:01	06/25/12 10:15
3072060013	2540-SU4-3	Wipe	06/18/12 00:01	06/25/12 10:15
3072060014	2540-SU4-4	Wipe	06/18/12 00:01	06/25/12 10:15
3072060015	2540-SU4-5	Wipe	06/18/12 00:01	06/25/12 10:15
3072060016	2540-SU4-6	Wipe	06/18/12 00:01	06/25/12 10:15
3072060017	2540-SU4-7	Wipe	06/18/12 00:01	06/25/12 10:15
3072060018	2540-SU4-8	Wipe	06/18/12 00:01	06/25/12 10:15
3072060019	2540-SU4-9	Wipe	06/18/12 00:01	06/25/12 10:15
3072060020	2540-SU4-10	Wipe	06/18/12 00:01	06/25/12 10:15
3072060021	2540-SU4-11	Wipe	06/18/12 00:01	06/25/12 10:15
3072060022	2540-SU4-12	Wipe	06/18/12 00:01	06/25/12 10:15
3072060023	2540-SU4-13	Wipe	06/18/12 00:01	06/25/12 10:15
3072060024	2540-SU4-14	Wipe	06/18/12 00:01	06/25/12 10:15
3072060025	2540-SU4-15	Wipe	06/18/12 00:01	06/25/12 10:15
3072060026	2540-SU4-16	Wipe	06/18/12 00:01	06/25/12 10:15
3072060027	2540-SU4-16D	Wipe	06/18/12 00:01	06/25/12 10:15
3072060028	2540-SU4-17	Wipe	06/18/12 00:01	06/25/12 10:15
3072060029	2540-SU4-18	Wipe	06/18/12 00:01	06/25/12 10:15
3072060030	2540-SU4-19	Wipe	06/18/12 00:01	06/25/12 10:15
3072060031	2540-SU4-20	Wipe	06/18/12 00:01	06/25/12 10:15
3072060032	2540-SU4-21	Wipe	06/18/12 00:01	06/25/12 10:15
3072060033	2540-SU4-22	Wipe	06/18/12 00:01	06/25/12 10:15
3072060034	2540-SU4-23	Wipe	06/18/12 00:01	06/25/12 10:15
3072060035	2540-SU4-24	Wipe	06/18/12 00:01	06/25/12 10:15
3072060036	2540-SU4-25	Wipe	06/18/12 00:01	06/25/12 10:15
3072060037	2540-SU4-26	Wipe	06/18/12 00:01	06/25/12 10:15

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SAMPLE SUMMARY

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3072060038	2540-SU4-27	Wipe	06/18/12 00:01	06/25/12 10:15
3072060039	2540-SU4-28	Wipe	06/18/12 00:01	06/25/12 10:15
3072060040	2540-SU4-29	Wipe	06/18/12 00:01	06/25/12 10:15
3072060041	2540-SU4-30	Wipe	06/18/12 00:01	06/25/12 10:15
3072060042	2540-SU5-1	Wipe	06/18/12 00:01	06/25/12 10:15
3072060043	2540-SU5-10	Wipe	06/18/12 00:01	06/25/12 10:15
3072060044	2540-SU5-18	Wipe	06/18/12 00:01	06/25/12 10:15
3072060045	2540-SU5-19	Wipe	06/18/12 00:01	06/25/12 10:15
3072060046	2540-SU5-36	Wipe	06/18/12 00:01	06/25/12 10:15
3072060047	2540-SU6-1	Wipe	06/19/12 00:01	06/25/12 10:15
3072060048	2540-SU6-2	Wipe	06/19/12 00:01	06/25/12 10:15
3072060049	2540-SU6-3	Wipe	06/19/12 00:01	06/25/12 10:15
3072060050	2540-SU6-4	Wipe	06/19/12 00:01	06/25/12 10:15
3072060051	2540-SU6-5	Wipe	06/19/12 00:01	06/25/12 10:15
3072060052	2540-SU6-6	Wipe	06/19/12 00:01	06/25/12 10:15
3072060053	2540-SU6-7	Wipe	06/19/12 00:01	06/25/12 10:15
3072060054	2540-SU6-8	Wipe	06/19/12 00:01	06/25/12 10:15
3072060055	2540-SU6-9	Wipe	06/19/12 00:01	06/25/12 10:15
3072060056	2540-SU6-10	Wipe	06/19/12 00:01	06/25/12 10:15
3072060057	2540-SU6-11	Wipe	06/19/12 00:01	06/25/12 10:15
3072060058	2540-SU6-12	Wipe	06/19/12 00:01	06/25/12 10:15
3072060059	2540-SU6-13	Wipe	06/19/12 00:01	06/25/12 10:15
3072060060	2540-SU6-14	Wipe	06/19/12 00:01	06/25/12 10:15
3072060061	2540-SU6-15	Wipe	06/19/12 00:01	06/25/12 10:15
3072060062	2540-SU6-16	Wipe	06/19/12 00:01	06/25/12 10:15
3072060063	2540-SU6-17	Wipe	06/19/12 00:01	06/25/12 10:15
3072060064	2540-SU6-18	Wipe	06/19/12 00:01	06/25/12 10:15
3072060065	2540-SU6-19	Wipe	06/19/12 00:01	06/25/12 10:15
3072060066	2540-SU6-19D	Wipe	06/19/12 00:01	06/25/12 10:15
3072060067	2540-SU6-20	Wipe	06/19/12 00:01	06/25/12 10:15
3072060068	2540-SU6-21	Wipe	06/19/12 00:01	06/25/12 10:15
3072060069	2540-SU6-22	Wipe	06/19/12 00:01	06/25/12 10:15
3072060070	2540-SU6-23	Wipe	06/19/12 00:01	06/25/12 10:15
3072060071	2540-SU6-23D	Wipe	06/19/12 00:01	06/25/12 10:15
3072060072	2540-SU6-24	Wipe	06/19/12 00:01	06/25/12 10:15
3072060073	2540-SU6-25	Wipe	06/19/12 00:01	06/25/12 10:15
3072060074	2540-SU6-26	Wipe	06/19/12 00:01	06/25/12 10:15

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SAMPLE SUMMARY

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3072060075	2540-SU6-27	Wipe	06/19/12 00:01	06/25/12 10:15
3072060076	2540-SU6-28	Wipe	06/19/12 00:01	06/25/12 10:15
3072060077	2540-SU6-29	Wipe	06/19/12 00:01	06/25/12 10:15
3072060078	2540-SU6-30	Wipe	06/19/12 00:01	06/25/12 10:15
3072060079	2540-SU6-31	Wipe	06/19/12 00:01	06/25/12 10:15
3072060080	2540-SU6-32	Wipe	06/19/12 00:01	06/25/12 10:15
3072060081	2540-SU6-SINK	Wipe	06/19/12 00:01	06/25/12 10:15
3072060082	2540-SU7-1	Wipe	06/19/12 00:01	06/25/12 10:15
3072060083	2540-SU7-2	Wipe	06/19/12 00:01	06/25/12 10:15
3072060084	2540-SU7-3	Wipe	06/19/12 00:01	06/25/12 10:15
3072060085	2540-SU7-5	Wipe	06/19/12 00:01	06/25/12 10:15
3072060086	2540-SU7-6	Wipe	06/19/12 00:01	06/25/12 10:15
3072060087	2540-SU7-7	Wipe	06/19/12 00:01	06/25/12 10:15
3072060088	2540-SU7-8	Wipe	06/19/12 00:01	06/25/12 10:15
3072060089	2540-SU7-10	Wipe	06/19/12 00:01	06/25/12 10:15
3072060090	2540-SU7-11	Wipe	06/19/12 00:01	06/25/12 10:15
3072060091	2540-SU7-11D	Wipe	06/19/12 00:01	06/25/12 10:15
3072060092	2540-SU7-12	Wipe	06/19/12 00:01	06/25/12 10:15
3072060093	2540-SU7-15	Wipe	06/19/12 00:01	06/25/12 10:15
3072060094	2540-SU7-16	Wipe	06/19/12 00:01	06/25/12 10:15
3072060095	2540-SU7-17	Wipe	06/19/12 00:01	06/25/12 10:15
3072060096	2540-SU7-18	Wipe	06/19/12 00:01	06/25/12 10:15
3072060097	2540-SU7-19	Wipe	06/19/12 00:01	06/25/12 10:15
3072060098	2540-SU7-21	Wipe	06/19/12 00:01	06/25/12 10:15
3072060099	2540-SU7-23	Wipe	06/19/12 00:01	06/25/12 10:15
3072060100	2540-SU7-24	Wipe	06/19/12 00:01	06/25/12 10:15

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SAMPLE ANALYTE COUNT

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3072060001	2540-SU3-40	EPA 900.0m	MBT	2	PASI-PA
3072060002	2540-SU3-41	EPA 900.0m	MBT	2	PASI-PA
3072060003	2540-SU3-42	EPA 900.0m	MBT	2	PASI-PA
3072060004	2540-SU3-43	EPA 900.0m	MBT	2	PASI-PA
3072060005	2540-SU3-43D	EPA 900.0m	MBT	2	PASI-PA
3072060006	2540-SU3-44	EPA 900.0m	MBT	2	PASI-PA
3072060007	2540-SU3-45	EPA 900.0m	MBT	2	PASI-PA
3072060008	2540-SU3-46	EPA 900.0m	MBT	2	PASI-PA
3072060009	2540-SU3-47	EPA 900.0m	MBT	2	PASI-PA
3072060010	2540-SU4-1	EPA 900.0m	MBT	2	PASI-PA
3072060011	2540-SU4-2	EPA 900.0m	MBT	2	PASI-PA
3072060012	2540-SU4-2D	EPA 900.0m	MBT	2	PASI-PA
3072060013	2540-SU4-3	EPA 900.0m	MBT	2	PASI-PA
3072060014	2540-SU4-4	EPA 900.0m	MBT	2	PASI-PA
3072060015	2540-SU4-5	EPA 900.0m	MBT	2	PASI-PA
3072060016	2540-SU4-6	EPA 900.0m	MBT	2	PASI-PA
3072060017	2540-SU4-7	EPA 900.0m	MBT	2	PASI-PA
3072060018	2540-SU4-8	EPA 900.0m	MBT	2	PASI-PA
3072060019	2540-SU4-9	EPA 900.0m	MBT	2	PASI-PA
3072060020	2540-SU4-10	EPA 900.0m	MBT	2	PASI-PA
3072060021	2540-SU4-11	EPA 900.0m	MBT	2	PASI-PA
3072060022	2540-SU4-12	EPA 900.0m	MBT	2	PASI-PA
3072060023	2540-SU4-13	EPA 900.0m	MBT	2	PASI-PA
3072060024	2540-SU4-14	EPA 900.0m	MBT	2	PASI-PA
3072060025	2540-SU4-15	EPA 900.0m	MBT	2	PASI-PA
3072060026	2540-SU4-16	EPA 900.0m	MBT	2	PASI-PA
3072060027	2540-SU4-16D	EPA 900.0m	MBT	2	PASI-PA
3072060028	2540-SU4-17	EPA 900.0m	MBT	2	PASI-PA
3072060029	2540-SU4-18	EPA 900.0m	MBT	2	PASI-PA
3072060030	2540-SU4-19	EPA 900.0m	MBT	2	PASI-PA
3072060031	2540-SU4-20	EPA 900.0m	MBT	2	PASI-PA
3072060032	2540-SU4-21	EPA 900.0m	MBT	2	PASI-PA
3072060033	2540-SU4-22	EPA 900.0m	MBT	2	PASI-PA
3072060034	2540-SU4-23	EPA 900.0m	MBT	2	PASI-PA
3072060035	2540-SU4-24	EPA 900.0m	MBT	2	PASI-PA
3072060036	2540-SU4-25	EPA 900.0m	MBT	2	PASI-PA
3072060037	2540-SU4-26	EPA 900.0m	MBT	2	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3072060038	2540-SU4-27	EPA 900.0m	MBT	2	PASI-PA
3072060039	2540-SU4-28	EPA 900.0m	MBT	2	PASI-PA
3072060040	2540-SU4-29	EPA 900.0m	MBT	2	PASI-PA
3072060041	2540-SU4-30	EPA 900.0m	MBT	2	PASI-PA
3072060042	2540-SU5-1	EPA 900.0m	MBT	2	PASI-PA
3072060043	2540-SU5-10	EPA 900.0m	MBT	2	PASI-PA
3072060044	2540-SU5-18	EPA 900.0m	MBT	2	PASI-PA
3072060045	2540-SU5-19	EPA 900.0m	MBT	2	PASI-PA
3072060046	2540-SU5-36	EPA 900.0m	MBT	2	PASI-PA
3072060047	2540-SU6-1	EPA 900.0m	MBT	2	PASI-PA
3072060048	2540-SU6-2	EPA 900.0m	MBT	2	PASI-PA
3072060049	2540-SU6-3	EPA 900.0m	MBT	2	PASI-PA
3072060050	2540-SU6-4	EPA 900.0m	MBT	2	PASI-PA
3072060051	2540-SU6-5	EPA 900.0m	MBT	2	PASI-PA
3072060052	2540-SU6-6	EPA 900.0m	MBT	2	PASI-PA
3072060053	2540-SU6-7	EPA 900.0m	MBT	2	PASI-PA
3072060054	2540-SU6-8	EPA 900.0m	MBT	2	PASI-PA
3072060055	2540-SU6-9	EPA 900.0m	MBT	2	PASI-PA
3072060056	2540-SU6-10	EPA 900.0m	MBT	2	PASI-PA
3072060057	2540-SU6-11	EPA 900.0m	MBT	2	PASI-PA
3072060058	2540-SU6-12	EPA 900.0m	MBT	2	PASI-PA
3072060059	2540-SU6-13	EPA 900.0m	MBT	2	PASI-PA
3072060060	2540-SU6-14	EPA 900.0m	MBT	2	PASI-PA
3072060061	2540-SU6-15	EPA 900.0m	MBT	2	PASI-PA
3072060062	2540-SU6-16	EPA 900.0m	MBT	2	PASI-PA
3072060063	2540-SU6-17	EPA 900.0m	MBT	2	PASI-PA
3072060064	2540-SU6-18	EPA 900.0m	MBT	2	PASI-PA
3072060065	2540-SU6-19	EPA 900.0m	MBT	2	PASI-PA
3072060066	2540-SU6-19D	EPA 900.0m	MBT	2	PASI-PA
3072060067	2540-SU6-20	EPA 900.0m	MBT	2	PASI-PA
3072060068	2540-SU6-21	EPA 900.0m	MBT	2	PASI-PA
3072060069	2540-SU6-22	EPA 900.0m	MBT	2	PASI-PA
3072060070	2540-SU6-23	EPA 900.0m	MBT	2	PASI-PA
3072060071	2540-SU6-23D	EPA 900.0m	MBT	2	PASI-PA
3072060072	2540-SU6-24	EPA 900.0m	MBT	2	PASI-PA
3072060073	2540-SU6-25	EPA 900.0m	MBT	2	PASI-PA
3072060074	2540-SU6-26	EPA 900.0m	MBT	2	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3072060075	2540-SU6-27	EPA 900.0m	MBT	2	PASI-PA
3072060076	2540-SU6-28	EPA 900.0m	MBT	2	PASI-PA
3072060077	2540-SU6-29	EPA 900.0m	MBT	2	PASI-PA
3072060078	2540-SU6-30	EPA 900.0m	MBT	2	PASI-PA
3072060079	2540-SU6-31	EPA 900.0m	MBT	2	PASI-PA
3072060080	2540-SU6-32	EPA 900.0m	MBT	2	PASI-PA
3072060081	2540-SU6-SINK	EPA 900.0m	MBT	2	PASI-PA
3072060082	2540-SU7-1	EPA 900.0m	MBT	2	PASI-PA
3072060083	2540-SU7-2	EPA 900.0m	MBT	2	PASI-PA
3072060084	2540-SU7-3	EPA 900.0m	MBT	2	PASI-PA
3072060085	2540-SU7-5	EPA 900.0m	MBT	2	PASI-PA
3072060086	2540-SU7-6	EPA 900.0m	MBT	2	PASI-PA
3072060087	2540-SU7-7	EPA 900.0m	MBT	2	PASI-PA
3072060088	2540-SU7-8	EPA 900.0m	MBT	2	PASI-PA
3072060089	2540-SU7-10	EPA 900.0m	MBT	2	PASI-PA
3072060090	2540-SU7-11	EPA 900.0m	MBT	2	PASI-PA
3072060091	2540-SU7-11D	EPA 900.0m	MBT	2	PASI-PA
3072060092	2540-SU7-12	EPA 900.0m	MBT	2	PASI-PA
3072060093	2540-SU7-15	EPA 900.0m	MBT	2	PASI-PA
3072060094	2540-SU7-16	EPA 900.0m	MBT	2	PASI-PA
3072060095	2540-SU7-17	EPA 900.0m	MBT	2	PASI-PA
3072060096	2540-SU7-18	EPA 900.0m	MBT	2	PASI-PA
3072060097	2540-SU7-19	EPA 900.0m	MBT	2	PASI-PA
3072060098	2540-SU7-21	EPA 900.0m	MBT	2	PASI-PA
3072060099	2540-SU7-23	EPA 900.0m	MBT	2	PASI-PA
3072060100	2540-SU7-24	EPA 900.0m	MBT	2	PASI-PA

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU3-40 **Lab ID: 3072060001** Collected: 06/14/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.223U ± 0.360 (0.785)	dpm/sample	07/11/12 17:18	12587-46-1	N2
Gross Beta	EPA 900.0m	0.180U ± 0.311 (0.685)	dpm/sample	07/11/12 17:18	12587-47-2	N2

Sample: 2540-SU3-41 **Lab ID: 3072060002** Collected: 06/14/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.507J ± 0.500 (0.974)	dpm/sample	07/11/12 20:51	12587-46-1	N2
Gross Beta	EPA 900.0m	0.112U ± 0.278 (0.619)	dpm/sample	07/11/12 20:51	12587-47-2	N2

Sample: 2540-SU3-42 **Lab ID: 3072060003** Collected: 06/14/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.056U ± 0.261 (0.785)	dpm/sample	07/11/12 20:51	12587-46-1	N2
Gross Beta	EPA 900.0m	0.223U ± 0.312 (0.685)	dpm/sample	07/11/12 20:51	12587-47-2	N2

Sample: 2540-SU3-43 **Lab ID: 3072060004** Collected: 06/14/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.462J ± 0.448 (0.853)	dpm/sample	07/11/12 20:51	12587-46-1	N2
Gross Beta	EPA 900.0m	0.677 ± 0.369 (0.637)	dpm/sample	07/11/12 20:51	12587-47-2	N2

Sample: 2540-SU3-43D **Lab ID: 3072060005** Collected: 06/14/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	1.56 ± 0.720 (0.924)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.270J ± 0.352 (0.719)	dpm/sample	07/11/12 20:52	12587-47-2	N2

Sample: 2540-SU3-44 **Lab ID: 3072060006** Collected: 06/14/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.308J ± 0.400 (0.829)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.020U ± 0.277 (0.656)	dpm/sample	07/11/12 20:52	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU3-45		Lab ID: 3072060007	Collected: 06/14/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.570J ± 0.476 (0.845)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.439J ± 0.335 (0.641)	dpm/sample	07/11/12 20:52	12587-47-2	N2

Sample: 2540-SU3-46		Lab ID: 3072060008	Collected: 06/14/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.067U ± 0.320 (0.912)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.066U ± 0.287 (0.676)	dpm/sample	07/11/12 20:52	12587-47-2	N2

Sample: 2540-SU3-47		Lab ID: 3072060009	Collected: 06/14/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.179U ± 0.425 (0.992)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.224J ± 0.299 (0.643)	dpm/sample	07/11/12 20:52	12587-47-2	N2

Sample: 2540-SU4-1		Lab ID: 3072060010	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.320U ± 0.219 (0.888)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.399J ± 0.336 (0.694)	dpm/sample	07/11/12 20:52	12587-47-2	N2

Sample: 2540-SU4-2		Lab ID: 3072060011	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.006U ± 0.328 (0.874)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.397J ± 0.291 (0.558)	dpm/sample	07/11/12 20:52	12587-47-2	N2

Sample: 2540-SU4-2D		Lab ID: 3072060012	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.659J ± 0.520 (0.923)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.283J ± 0.303 (0.612)	dpm/sample	07/11/12 20:52	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU4-3		Lab ID: 3072060013	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.167U ± 0.306 (0.948)	dpm/sample	07/11/12 20:52	12587-46-1	N2
Gross Beta	EPA 900.0m	0.329J ± 0.291 (0.596)	dpm/sample	07/11/12 20:52	12587-47-2	N2

Sample: 2540-SU4-4		Lab ID: 3072060014	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.772J ± 0.535 (0.881)	dpm/sample	07/11/12 20:53	12587-46-1	N2
Gross Beta	EPA 900.0m	0.240J ± 0.315 (0.657)	dpm/sample	07/11/12 20:53	12587-47-2	N2

Sample: 2540-SU4-5		Lab ID: 3072060015	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.037U ± 0.357 (0.972)	dpm/sample	07/11/12 20:53	12587-46-1	N2
Gross Beta	EPA 900.0m	0.449J ± 0.322 (0.623)	dpm/sample	07/11/12 20:53	12587-47-2	N2

Sample: 2540-SU4-6		Lab ID: 3072060016	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.114U ± 0.383 (0.929)	dpm/sample	07/11/12 20:53	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.095U ± 0.246 (0.626)	dpm/sample	07/11/12 20:53	12587-47-2	N2

Sample: 2540-SU4-7		Lab ID: 3072060017	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.161U ± 0.271 (0.866)	dpm/sample	07/11/12 20:53	12587-46-1	N2
Gross Beta	EPA 900.0m	0.812 ± 0.388 (0.654)	dpm/sample	07/11/12 20:53	12587-47-2	N2

Sample: 2540-SU4-8		Lab ID: 3072060018	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	1.46 ± 0.647 (0.686)	dpm/sample	07/11/12 20:53	12587-46-1	N2
Gross Beta	EPA 900.0m	0.500J ± 0.336 (0.587)	dpm/sample	07/11/12 20:53	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU4-9		Lab ID: 3072060019	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.085U ± 0.303 (0.936)	dpm/sample	07/18/12 15:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.590J ± 0.348 (0.612)	dpm/sample	07/18/12 15:22	12587-47-2	N2

Sample: 2540-SU4-10		Lab ID: 3072060020	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.261U ± 0.269 (0.674)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.360J ± 0.333 (0.670)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-11		Lab ID: 3072060021	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.006U ± 0.245 (0.563)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.414J ± 0.313 (0.611)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-12		Lab ID: 3072060022	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.144U ± 0.268 (0.650)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.611U ± 0.383 (0.835)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-13		Lab ID: 3072060023	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	1.18 ± 0.530 (0.844)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.125U ± 0.299 (0.615)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-14		Lab ID: 3072060024	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.151U ± 0.255 (0.531)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.600J ± 0.348 (0.652)	dpm/sample	07/12/12 13:22	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU4-15 **Lab ID: 3072060025** Collected: 06/18/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.246J ± 0.318 (0.645)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.493U ± 0.390 (0.845)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-16 **Lab ID: 3072060026** Collected: 06/18/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.724U ± 0.393 (0.965)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.259U ± 0.349 (0.725)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-16D **Lab ID: 3072060027** Collected: 06/18/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.171U ± 0.334 (0.787)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.115U ± 0.338 (0.734)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-17 **Lab ID: 3072060028** Collected: 06/18/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.242U ± 0.250 (0.632)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.030U ± 0.332 (0.710)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-18 **Lab ID: 3072060029** Collected: 06/18/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.462J ± 0.308 (0.539)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.302J ± 0.323 (0.650)	dpm/sample	07/12/12 13:22	12587-47-2	N2

Sample: 2540-SU4-19 **Lab ID: 3072060030** Collected: 06/18/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.148U ± 0.260 (0.545)	dpm/sample	07/12/12 13:22	12587-46-1	N2
Gross Beta	EPA 900.0m	0.232U ± 0.336 (0.693)	dpm/sample	07/12/12 13:22	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

Sample: 2540-SU4-20		Lab ID: 3072060031	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.203U ± 0.275 (0.674)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	0.301J ± 0.329 (0.670)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-21		Lab ID: 3072060032	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.337J ± 0.298 (0.563)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	0.117U ± 0.292 (0.611)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-22		Lab ID: 3072060033	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.006U ± 0.286 (0.650)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.779U ± 0.387 (0.835)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-23		Lab ID: 3072060034	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	1.02 ± 0.506 (0.844)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	0.135U ± 0.299 (0.615)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-24		Lab ID: 3072060035	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.035U ± 0.236 (0.531)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	0.228U ± 0.317 (0.652)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-25		Lab ID: 3072060036	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.137U ± 0.303 (0.645)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.524U ± 0.390 (0.845)	dpm/sample	07/12/12 20:10	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

Sample: 2540-SU4-26		Lab ID: 3072060037	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.802U ± 0.390 (0.965)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	0.343J ± 0.355 (0.725)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-27		Lab ID: 3072060038	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.171U ± 0.334 (0.787)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.261U ± 0.335 (0.734)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-28		Lab ID: 3072060039	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.000U ± 0.279 (0.632)	dpm/sample	07/12/12 20:10	12587-46-1	N2
Gross Beta	EPA 900.0m	0.018U ± 0.332 (0.710)	dpm/sample	07/12/12 20:10	12587-47-2	N2

Sample: 2540-SU4-29		Lab ID: 3072060040	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.091U ± 0.345 (0.853)	dpm/sample	07/12/12 07:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.481J ± 0.333 (0.637)	dpm/sample	07/12/12 07:38	12587-47-2	N2

Sample: 2540-SU4-30		Lab ID: 3072060041	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.756J ± 0.542 (0.924)	dpm/sample	07/12/12 07:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.181U ± 0.331 (0.719)	dpm/sample	07/12/12 07:38	12587-47-2	N2

Sample: 2540-SU5-1		Lab ID: 3072060042	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.633J ± 0.487 (0.829)	dpm/sample	07/12/12 07:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.189U ± 0.305 (0.656)	dpm/sample	07/12/12 07:38	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU5-10		Lab ID: 3072060043	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.570J ± 0.476 (0.845)	dpm/sample	07/12/12 07:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.007U ± 0.274 (0.641)	dpm/sample	07/12/12 07:38	12587-47-2	N2

Sample: 2540-SU5-18		Lab ID: 3072060044	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.095U ± 0.370 (0.912)	dpm/sample	07/12/12 07:38	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.137U ± 0.265 (0.676)	dpm/sample	07/12/12 07:38	12587-47-2	N2

Sample: 2540-SU5-19		Lab ID: 3072060045	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.000U ± 0.332 (0.888)	dpm/sample	07/12/12 07:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.283J ± 0.324 (0.694)	dpm/sample	07/12/12 07:38	12587-47-2	N2

Sample: 2540-SU5-36		Lab ID: 3072060046	Collected: 06/18/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.733J ± 0.535 (0.929)	dpm/sample	07/12/12 07:39	12587-46-1	N2
Gross Beta	EPA 900.0m	0.157U ± 0.290 (0.626)	dpm/sample	07/12/12 07:39	12587-47-2	N2

Sample: 2540-SU6-1		Lab ID: 3072060047	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	1.46 ± 0.647 (0.686)	dpm/sample	07/12/12 07:39	12587-46-1	N2
Gross Beta	EPA 900.0m	0.612 ± 0.353 (0.587)	dpm/sample	07/12/12 07:39	12587-47-2	N2

Sample: 2540-SU6-2		Lab ID: 3072060048	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.323J ± 0.419 (0.870)	dpm/sample	07/12/12 07:42	12587-46-1	N2
Gross Beta	EPA 900.0m	0.397J ± 0.402 (0.847)	dpm/sample	07/12/12 07:42	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

Sample: 2540-SU6-3		Lab ID: 3072060049	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.040U ± 0.284 (0.801)	dpm/sample	07/12/12 07:42	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.250U ± 0.312 (0.795)	dpm/sample	07/12/12 07:42	12587-47-2	N2

Sample: 2540-SU6-4		Lab ID: 3072060050	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.210U ± 0.431 (0.982)	dpm/sample	07/12/12 07:42	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.079U ± 0.336 (0.810)	dpm/sample	07/12/12 07:42	12587-47-2	N2

Sample: 2540-SU6-5		Lab ID: 3072060051	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.483J ± 0.464 (0.866)	dpm/sample	07/12/12 07:42	12587-46-1	N2
Gross Beta	EPA 900.0m	0.888 ± 0.442 (0.779)	dpm/sample	07/12/12 07:42	12587-47-2	N2

Sample: 2540-SU6-6		Lab ID: 3072060052	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.046U ± 0.311 (0.874)	dpm/sample	07/12/12 07:41	12587-46-1	N2
Gross Beta	EPA 900.0m	0.422J ± 0.294 (0.558)	dpm/sample	07/12/12 07:41	12587-47-2	N2

Sample: 2540-SU6-7		Lab ID: 3072060053	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.034U ± 0.368 (0.992)	dpm/sample	07/12/12 07:50	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.087U ± 0.252 (0.643)	dpm/sample	07/12/12 07:50	12587-47-2	N2

Sample: 2540-SU6-8		Lab ID: 3072060054	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.092U ± 0.319 (0.923)	dpm/sample	07/12/12 07:53	12587-46-1	N2
Gross Beta	EPA 900.0m	0.260J ± 0.288 (0.612)	dpm/sample	07/12/12 07:53	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU6-9		Lab ID: 3072060055	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.611J ± 0.496 (0.881)	dpm/sample	07/12/12 07:53	12587-46-1	N2
Gross Beta	EPA 900.0m	0.334J ± 0.326 (0.657)	dpm/sample	07/12/12 07:53	12587-47-2	N2

Sample: 2540-SU6-10		Lab ID: 3072060056	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.017U ± 0.373 (0.972)	dpm/sample	07/12/12 07:53	12587-46-1	N2
Gross Beta	EPA 900.0m	0.257J ± 0.293 (0.623)	dpm/sample	07/12/12 07:53	12587-47-2	N2

Sample: 2540-SU6-11		Lab ID: 3072060057	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.252U ± 0.396 (0.866)	dpm/sample	07/12/12 07:53	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.077U ± 0.263 (0.654)	dpm/sample	07/12/12 07:53	12587-47-2	N2

Sample: 2540-SU6-12		Lab ID: 3072060058	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.004U ± 0.356 (0.948)	dpm/sample	07/12/12 08:45	12587-46-1	N2
Gross Beta	EPA 900.0m	0.064U ± 0.253 (0.596)	dpm/sample	07/12/12 08:45	12587-47-2	N2

Sample: 2540-SU6-13		Lab ID: 3072060059	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.371J ± 0.454 (0.944)	dpm/sample	07/12/12 09:24	12587-46-1	N2
Gross Beta	EPA 900.0m	0.259J ± 0.282 (0.582)	dpm/sample	07/12/12 09:24	12587-47-2	N2

Sample: 2540-SU6-14		Lab ID: 3072060060	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.310U ± 0.216 (0.874)	dpm/sample	07/12/12 16:31	12587-46-1	N2
Gross Beta	EPA 900.0m	0.175U ± 0.249 (0.558)	dpm/sample	07/12/12 16:31	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

Sample: 2540-SU6-15		Lab ID: 3072060061	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.212U ± 0.340 (0.965)	dpm/sample	07/12/12 09:28	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.086U ± 0.230 (0.576)	dpm/sample	07/12/12 09:28	12587-47-2	N2

Sample: 2540-SU6-16		Lab ID: 3072060062	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.596J ± 0.504 (0.924)	dpm/sample	07/12/12 09:39	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.024U ± 0.304 (0.719)	dpm/sample	07/12/12 09:39	12587-47-2	N2

Sample: 2540-SU6-17		Lab ID: 3072060063	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.254U ± 0.384 (0.829)	dpm/sample	07/12/12 09:39	12587-46-1	N2
Gross Beta	EPA 900.0m	0.065U ± 0.283 (0.656)	dpm/sample	07/12/12 09:39	12587-47-2	N2

Sample: 2540-SU6-18		Lab ID: 3072060064	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.515J ± 0.462 (0.845)	dpm/sample	07/12/12 09:39	12587-46-1	N2
Gross Beta	EPA 900.0m	0.071U ± 0.282 (0.641)	dpm/sample	07/12/12 09:39	12587-47-2	N2

Sample: 2540-SU6-19		Lab ID: 3072060065	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.258U ± 0.415 (0.912)	dpm/sample	07/12/12 09:40	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.048U ± 0.278 (0.676)	dpm/sample	07/12/12 09:40	12587-47-2	N2

Sample: 2540-SU6-19D		Lab ID: 3072060066	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.160U ± 0.279 (0.888)	dpm/sample	07/12/12 09:40	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.070U ± 0.276 (0.694)	dpm/sample	07/12/12 09:40	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU6-20		Lab ID: 3072060067	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.217U ± 0.410 (0.929)	dpm/sample	07/12/12 09:40	12587-46-1	N2
Gross Beta	EPA 900.0m	0.420J ± 0.321 (0.626)	dpm/sample	07/12/12 09:40	12587-47-2	N2

Sample: 2540-SU6-21		Lab ID: 3072060068	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	1.09 ± 0.562 (0.686)	dpm/sample	07/12/12 09:40	12587-46-1	N2
Gross Beta	EPA 900.0m	0.560J ± 0.341 (0.587)	dpm/sample	07/12/12 09:40	12587-47-2	N2

Sample: 2540-SU6-22		Lab ID: 3072060069	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.019U ± 0.383 (0.992)	dpm/sample	07/12/12 10:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.377J ± 0.319 (0.643)	dpm/sample	07/12/12 10:38	12587-47-2	N2

Sample: 2540-SU6-23		Lab ID: 3072060070	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.145U ± 0.392 (0.933)	dpm/sample	07/12/12 10:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.340J ± 0.307 (0.623)	dpm/sample	07/12/12 10:38	12587-47-2	N2

Sample: 2540-SU6-23D		Lab ID: 3072060071	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.152U ± 0.276 (0.874)	dpm/sample	07/12/12 10:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.379J ± 0.286 (0.558)	dpm/sample	07/12/12 10:38	12587-47-2	N2

Sample: 2540-SU6-24		Lab ID: 3072060072	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.039U ± 0.335 (0.923)	dpm/sample	07/12/12 10:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.101U ± 0.264 (0.612)	dpm/sample	07/12/12 10:38	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

Sample: 2540-SU6-25 **Lab ID: 3072060073** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.697J ± 0.561 (0.980)	dpm/sample	07/12/12 10:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.297J ± 0.349 (0.725)	dpm/sample	07/12/12 10:38	12587-47-2	N2

Sample: 2540-SU6-26 **Lab ID: 3072060074** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.145U ± 0.325 (0.972)	dpm/sample	07/12/12 10:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.425J ± 0.317 (0.623)	dpm/sample	07/12/12 10:38	12587-47-2	N2

Sample: 2540-SU6-27 **Lab ID: 3072060075** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.025U ± 0.360 (0.964)	dpm/sample	07/12/12 10:38	12587-46-1	N2
Gross Beta	EPA 900.0m	0.100U ± 0.308 (0.722)	dpm/sample	07/12/12 10:38	12587-47-2	N2

Sample: 2540-SU6-28 **Lab ID: 3072060076** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.192U ± 0.309 (0.997)	dpm/sample	07/12/12 10:50	12587-46-1	N2
Gross Beta	EPA 900.0m	0.158U ± 0.275 (0.625)	dpm/sample	07/12/12 10:50	12587-47-2	N2

Sample: 2540-SU6-29 **Lab ID: 3072060077** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.360U ± 0.224 (0.923)	dpm/sample	07/12/12 16:31	12587-46-1	N2
Gross Beta	EPA 900.0m	0.064U ± 0.253 (0.612)	dpm/sample	07/12/12 16:31	12587-47-2	N2

Sample: 2540-SU6-30 **Lab ID: 3072060078** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.213U ± 0.416 (0.948)	dpm/sample	07/12/12 16:31	12587-46-1	N2
Gross Beta	EPA 900.0m	0.170U ± 0.272 (0.596)	dpm/sample	07/12/12 16:31	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU6-31		Lab ID: 3072060079	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.880J ± 0.560 (0.881)	dpm/sample	07/12/12 16:31	12587-46-1	N2
Gross Beta	EPA 900.0m	0.134U ± 0.302 (0.657)	dpm/sample	07/12/12 16:31	12587-47-2	N2

Sample: 2540-SU6-32		Lab ID: 3072060080	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.201U ± 0.382 (0.866)	dpm/sample	07/12/12 16:32	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.033U ± 0.268 (0.654)	dpm/sample	07/12/12 16:32	12587-47-2	N2

Sample: 2540-SU6-SINK		Lab ID: 3072060081	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.989 ± 0.537 (0.686)	dpm/sample	07/12/12 16:32	12587-46-1	N2
Gross Beta	EPA 900.0m	0.721 ± 0.366 (0.587)	dpm/sample	07/12/12 16:32	12587-47-2	N2

Sample: 2540-SU7-1		Lab ID: 3072060082	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.344J ± 0.460 (0.974)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.005U ± 0.261 (0.619)	dpm/sample	07/12/12 20:04	12587-47-2	N2

Sample: 2540-SU7-2		Lab ID: 3072060083	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.334J ± 0.394 (0.785)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.141U ± 0.308 (0.685)	dpm/sample	07/12/12 20:04	12587-47-2	N2

Sample: 2540-SU7-3		Lab ID: 3072060084	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.068U ± 0.294 (0.853)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.427J ± 0.323 (0.637)	dpm/sample	07/12/12 20:04	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

Sample: 2540-SU7-5		Lab ID: 3072060085	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.062U ± 0.365 (0.924)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.004U ± 0.300 (0.719)	dpm/sample	07/12/12 20:04	12587-47-2	N2

Sample: 2540-SU7-6		Lab ID: 3072060086	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.254U ± 0.384 (0.829)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.255J ± 0.309 (0.656)	dpm/sample	07/12/12 20:04	12587-47-2	N2

Sample: 2540-SU7-7		Lab ID: 3072060087	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	1.01 ± 0.583 (0.845)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.497J ± 0.350 (0.641)	dpm/sample	07/12/12 20:04	12587-47-2	N2

Sample: 2540-SU7-8		Lab ID: 3072060088	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.258U ± 0.415 (0.912)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.043U ± 0.289 (0.676)	dpm/sample	07/12/12 20:04	12587-47-2	N2

Sample: 2540-SU7-10		Lab ID: 3072060089	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.126U ± 0.411 (0.992)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.231J ± 0.299 (0.643)	dpm/sample	07/12/12 20:04	12587-47-2	N2

Sample: 2540-SU7-11		Lab ID: 3072060090	Collected: 06/19/12 00:01	Received: 06/25/12 10:15	Matrix: Wipe	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.035U ± 0.360 (0.933)	dpm/sample	07/12/12 20:04	12587-46-1	N2
Gross Beta	EPA 900.0m	0.172U ± 0.281 (0.623)	dpm/sample	07/12/12 20:04	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Sample: 2540-SU7-11D **Lab ID: 3072060091** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.660J ± 0.488 (0.807)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta	EPA 900.0m	0.250J ± 0.326 (0.682)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Sample: 2540-SU7-12 **Lab ID: 3072060092** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.053U ± 0.348 (0.888)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta	EPA 900.0m	0.071U ± 0.297 (0.694)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Sample: 2540-SU7-15 **Lab ID: 3072060093** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.205U ± 0.257 (0.874)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta	EPA 900.0m	0.441J ± 0.295 (0.558)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Sample: 2540-SU7-16 **Lab ID: 3072060094** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.092U ± 0.319 (0.923)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta	EPA 900.0m	-0.007U ± 0.247 (0.612)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Sample: 2540-SU7-17 **Lab ID: 3072060095** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	-0.059U ± 0.340 (0.948)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta	EPA 900.0m	0.052U ± 0.250 (0.596)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Sample: 2540-SU7-18 **Lab ID: 3072060096** Collected: 06/19/12 00:01 Received: 06/25/12 10:15 Matrix: Wipe
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0m	0.396J ± 0.441 (0.881)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta	EPA 900.0m	0.323J ± 0.321 (0.657)	dpm/sample	07/12/12 20:05	12587-47-2	N2

ANALYTICAL RESULTS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

Parameters		Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha		EPA 900.0m	0.114U ± 0.383 (0.929)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta		EPA 900.0m	-0.095U ± 0.246 (0.626)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Parameters		Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha		EPA 900.0m	0.356J ± 0.424 (0.866)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta		EPA 900.0m	0.377J ± 0.327 (0.654)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Parameters		Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha		EPA 900.0m	1.20 ± 0.587 (0.686)	dpm/sample	07/12/12 20:05	12587-46-1	N2
Gross Beta		EPA 900.0m	0.436J ± 0.323 (0.587)	dpm/sample	07/12/12 20:05	12587-47-2	N2

Parameters		Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha		EPA 900.0m	0.279J ± 0.377 (0.785)	dpm/sample	07/12/12 22:07	12587-46-1	N2
Gross Beta		EPA 900.0m	0.043U ± 0.292 (0.685)	dpm/sample	07/12/12 22:07	12587-47-2	N2

QUALITY CONTROL DATA

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

QC Batch:	RADC/12459	Analysis Method:	EPA 900.0m
QC Batch Method:	EPA 900.0m	Analysis Description:	900.0 Gross Alpha/Beta
Associated Lab Samples:	3072060001, 3072060002, 3072060003, 3072060004, 3072060005, 3072060006, 3072060007, 3072060008, 3072060009, 3072060010, 3072060011, 3072060012, 3072060013, 3072060014, 3072060015, 3072060016, 3072060017, 3072060018, 3072060019		

METHOD BLANK:	458971	Matrix:	Impact Plate
Associated Lab Samples:	3072060001, 3072060002, 3072060003, 3072060004, 3072060005, 3072060006, 3072060007, 3072060008, 3072060009, 3072060010, 3072060011, 3072060012, 3072060013, 3072060014, 3072060015, 3072060016, 3072060017, 3072060018, 3072060019		

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	-0.301U ± 0.290 (0.992)	dpm/sample	07/11/12 17:09	N2
Gross Beta	-0.108U ± 0.244 (0.643)	dpm/sample	07/11/12 17:09	N2

QUALITY CONTROL DATA

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

QC Batch: RADC/12460

Analysis Method: EPA 900.0m

QC Batch Method: EPA 900.0m

Analysis Description: 900.0 Gross Alpha/Beta

Associated Lab Samples: 3072060020, 3072060021, 3072060022, 3072060023, 3072060024, 3072060025, 3072060026, 3072060027, 3072060028, 3072060029, 3072060030, 3072060031, 3072060032, 3072060033, 3072060034, 3072060035, 3072060036, 3072060037, 3072060038, 3072060039

METHOD BLANK: 458972

Matrix: Impact Plate

Associated Lab Samples: 3072060020, 3072060021, 3072060022, 3072060023, 3072060024, 3072060025, 3072060026, 3072060027, 3072060028, 3072060029, 3072060030, 3072060031, 3072060032, 3072060033, 3072060034, 3072060035, 3072060036, 3072060037, 3072060038, 3072060039

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	-0.152U ± 0.215 (0.545)	dpm/sample	07/12/12 07:58	N2
Gross Beta	0.227U ± 0.335 (0.693)	dpm/sample	07/12/12 07:58	N2

QUALITY CONTROL DATA

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

QC Batch:	RADC/12461	Analysis Method:	EPA 900.0m
QC Batch Method:	EPA 900.0m	Analysis Description:	900.0 Gross Alpha/Beta
Associated Lab Samples:	3072060040, 3072060041, 3072060042, 3072060043, 3072060044, 3072060045, 3072060046, 3072060047, 3072060048, 3072060049, 3072060050, 3072060051, 3072060052, 3072060053, 3072060054, 3072060055, 3072060056, 3072060057, 3072060058, 3072060059		

METHOD BLANK:	458973	Matrix:	Impact Plate
Associated Lab Samples:	3072060040, 3072060041, 3072060042, 3072060043, 3072060044, 3072060045, 3072060046, 3072060047, 3072060048, 3072060049, 3072060050, 3072060051, 3072060052, 3072060053, 3072060054, 3072060055, 3072060056, 3072060057, 3072060058, 3072060059		

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	0.126U ± 0.404 (0.974)	dpm/sample	07/12/12 07:37	N2
Gross Beta	0.287J ± 0.297 (0.619)	dpm/sample	07/12/12 07:37	N2

QUALITY CONTROL DATA

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

QC Batch:	RADC/12462	Analysis Method:	EPA 900.0m
QC Batch Method:	EPA 900.0m	Analysis Description:	900.0 Gross Alpha/Beta
Associated Lab Samples:	3072060060, 3072060061, 3072060062, 3072060063, 3072060064, 3072060065, 3072060066, 3072060067, 3072060068, 3072060069, 3072060070, 3072060071, 3072060072, 3072060073, 3072060074, 3072060075, 3072060076, 3072060077, 3072060078, 3072060079		

METHOD BLANK:	458975	Matrix:	Impact Plate
Associated Lab Samples:	3072060060, 3072060061, 3072060062, 3072060063, 3072060064, 3072060065, 3072060066, 3072060067, 3072060068, 3072060069, 3072060070, 3072060071, 3072060072, 3072060073, 3072060074, 3072060075, 3072060076, 3072060077, 3072060078, 3072060079		

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	0.304U ± 0.449 (0.971)	dpm/sample	07/12/12 09:24	N2
Gross Beta	0.084U ± 0.273 (0.622)	dpm/sample	07/12/12 09:24	N2

QUALITY CONTROL DATA

Project: Fort Monmouth 1207072
Pace Project No.: 3072060

QC Batch: RADC/12463 Analysis Method: EPA 900.0m
QC Batch Method: EPA 900.0m Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 3072060080, 3072060081, 3072060082, 3072060083, 3072060084, 3072060085, 3072060086, 3072060087, 3072060088, 3072060089, 3072060090, 3072060091, 3072060092, 3072060093, 3072060094, 3072060095, 3072060096, 3072060097, 3072060098, 3072060099

METHOD BLANK: 458977 Matrix: Impact Plate
Associated Lab Samples: 3072060080, 3072060081, 3072060082, 3072060083, 3072060084, 3072060085, 3072060086, 3072060087, 3072060088, 3072060089, 3072060090, 3072060091, 3072060092, 3072060093, 3072060094, 3072060095, 3072060096, 3072060097, 3072060098, 3072060099

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	0.165U ± 0.397 (0.929)	dpm/sample	07/12/12 16:31	N2
Gross Beta	-0.083U ± 0.249 (0.626)	dpm/sample	07/12/12 16:31	N2

QUALITY CONTROL DATA

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

QC Batch: RADC/12464

Analysis Method: EPA 900.0m

QC Batch Method: EPA 900.0m

Analysis Description: 900.0 Gross Alpha/Beta

Associated Lab Samples: 3072060100

METHOD BLANK: 458978

Matrix: Impact Plate

Associated Lab Samples: 3072060100

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	0.289U ± 0.446 (0.974)	dpm/sample	07/12/12 22:07	N2
Gross Beta	-0.061U ± 0.251 (0.619)	dpm/sample	07/12/12 22:07	N2

QUALIFIERS

Project: Fort Monmouth 1207072

Pace Project No.: 3072060

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

N2 The lab does not hold TNI accreditation for this parameter.

Project Number: 3072060

**Chain of Custody
And
Sample Receiving Conditions
Upon Receipt Form**



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: US Army Corps of Engineers Address: 10 South Howard Street Baltimore, MD Email To: david.j.watters@usace.army.mil Phone: 443-253-0916 Fax: none Requested Due Date/TAT: ASAP		Section B Required Project Information: Report To: David Watters Copy To: Alan Warminski Purchase Order No.: Project Name: Fort Monmouth Red Survey Project Number:		Section C Invoice Information: Attention: Address: Pace Profile Reference: Pace Project Manager: Carin Ferris Pace Profile #:	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> NRC		Site Location STATE: NJ			

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL WIPE WIP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Unpreserved	Analysis Test ↑	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.			
				COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	H ₂ O ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol						Other		
110		WP	G	NA	NA	06/14/12	NA	1	X												009	3072-060	
111		WP	G	NA	NA	08/18/12	NA	1	X													016	3072-060
112		WP	G	NA	NA	06/18/12	NA	1	X													011	3072-060
113		WP	G	NA	NA	06/18/12	NA	1	X													012	3072-060
114		WP	G	NA	NA	06/18/12	NA	1	X													013	3072-060
115		WP	G	NA	NA	06/18/12	NA	1	X													014	3072-060
116		WP	G	NA	NA	06/18/12	NA	1	X													015	3072-060
117		WP	G	NA	NA	06/18/12	NA	1	X													016	3072-060
118		WP	G	NA	NA	06/18/12	NA	1	X													017	3072-060
119		WP	G	NA	NA	06/18/12	NA	1	X													018	3072-060
120		WP	G	NA	NA	06/18/12	NA	1	X													019	3072-060
121		WP	G	NA	NA	06/18/12	NA	1	X													020	3072-060
122		WP	G	NA	NA	06/18/12	NA	1	X													021	3072-060
123		WP	G	NA	NA	06/18/12	NA	1	X													022	3072-060
124		WP	G	NA	NA	06/18/12	NA	1	X													023	3072-060
125		WP	G	NA	NA	06/18/12	NA	1	X													024	3072-060
126		WP	G	NA	NA	06/18/12	NA	1	X													025	3072-060
127		WP	G	NA	NA	06/18/12	NA	1	X													026	3072-060
128		WP	G	NA	NA	06/18/12	NA	1	X													027	3072-060
129		WP	G	NA	NA	06/18/12	NA	1	X													028	3072-060
130		WP	G	NA	NA	06/18/12	NA	1	X													029	3072-060
131		WP	G	NA	NA	06/18/12	NA	1	X													030	3072-060

M.A. Pace 6/25/12 11:15



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	US Army Corps of Engineers	Report To:	David Watters	Attention:	
Address:	10 South Howard Street Baltimore, MD	Copy To:	Alan Warminski	Address:	
Email To:	david.j.watters@usace.army.mil	Purchase Order No.:		Pace Quote Reference:	
Phone:	443-253-0916	Project Name:	Fort Monmouth Rad Survey	Pace Project Manager:	Carin Ferris
Requested Due Date/TAT:	ASAP	Project Number:		Pace Profile #:	
REGULATORY AGENCY			REGULATORY AGENCY		
<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> NRC			Site Location: <u>NJ</u> STATE: <u>NJ</u>		

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER PRODUCT P SOIL/SOLID SL OIL OL WIPE WIP AIR AIR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES							Analysis Test ↑	Gross Alpha/Beta	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
				COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	DATE	TIME	H ₂ O ₂	HNO ₃	HCl				
132		2540-SU4-20	WP G	NA	NA	06/18/12	NA	1	X									031
133		2540-SU4-21	WP G	NA	NA	06/18/12	NA	1	X									032
134		2540-SU4-22	WP G	NA	NA	06/18/12	NA	1	X									033
135		2540-SU4-23	WP G	NA	NA	06/18/12	NA	1	X									034
136		2540-SU4-24	WP G	NA	NA	06/18/12	NA	1	X									035
137		2540-SU4-25	WP G	NA	NA	06/18/12	NA	1	X									036
138		2540-SU4-26	WP G	NA	NA	06/18/12	NA	1	X									037
139		2540-SU4-27	WP G	NA	NA	06/18/12	NA	1	X									038
140		2540-SU4-28	WP G	NA	NA	06/18/12	NA	1	X									039
141		2540-SU4-29	WP G	NA	NA	06/18/12	NA	1	X									040
142		2540-SU4-30	WP G	NA	NA	06/18/12	NA	1	X									041
143		2540-SU5-1	WP G	NA	NA	06/18/12	NA	1	X									042
144		2540-SU5-10	WP G	NA	NA	06/18/12	NA	1	X									043
145		2540-SU5-18	WP G	NA	NA	06/18/12	NA	1	X									044
146		2540-SU5-19	WP G	NA	NA	06/18/12	NA	1	X									045
147		2540-SU5-36	WP G	NA	NA	06/18/12	NA	1	X									046
148		2540-SU6-1	WP G	NA	NA	06/19/12	NA	1	X									047
149		2540-SU6-2	WP G	NA	NA	06/19/12	NA	1	X									048
150		2540-SU6-3	WP G	NA	NA	06/19/12	NA	1	X									049
151		2540-SU6-4	WP G	NA	NA	06/19/12	NA	1	X									050
152		2540-SU6-5	WP G	NA	NA	06/19/12	NA	1	X									051
153		2540-SU6-6	WP G	NA	NA	06/18/12	NA	1	X									052

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	US Army Corps of Engineers	Report To:	David Watters	Attention:	
Address:	10 South Howard Street Baltimore, MD	Copy To:	Alan Warminski	Address:	
Mail To:	david.j.watters@usace.army.mil	Purchase Order No.:		Pace Quote Reference:	
Phone:	443-253-0916	Project Name:	Fort Monmouth Rad Survey	Pace Project Manager:	Carin Ferris
Requested Due Date/TAT:	ASAP	Project Number:		Pace Profile #:	
REGULATORY AGENCY			Site Location		
<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> NRC			NJ		

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL WIFE WIP AIR AR OTHER OR TISSUE TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)		
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	UNPRESERVED	F ₂ O ₄	HNO ₃	HCl	NaOH				Na ₂ S ₂ O ₃	Methanol
154	2540-SU6-7	WP G	NA	NA	08/19/12	NA	1	X										053
155	2540-SU6-8	WP G	NA	NA	08/19/12	NA	1	X										054
156	2540-SU6-9	WP G	NA	NA	08/19/12	NA	1	X										055
157	2540-SU6-10	WP G	NA	NA	08/19/12	NA	1	X										056
158	2540-SU6-11	WP G	NA	NA	08/19/12	NA	1	X										057
159	2540-SU6-12	WP G	NA	NA	08/19/12	NA	1	X										058
160	2540-SU6-13	WP G	NA	NA	08/19/12	NA	1	X										059
161	2540-SU6-14	WP G	NA	NA	08/19/12	NA	1	X										060
162	2540-SU6-15	WP G	NA	NA	08/19/12	NA	1	X										061
163	2540-SU6-16	WP G	NA	NA	08/19/12	NA	1	X										062
164	2540-SU6-17	WP G	NA	NA	08/19/12	NA	1	X										063
165	2540-SU6-18	WP G	NA	NA	08/19/12	NA	1	X										064
166	2540-SU6-19	WP G	NA	NA	08/19/12	NA	1	X										065
167	2540-SU6-19D	WP G	NA	NA	08/19/12	NA	1	X										066
168	2540-SU6-20	WP G	NA	NA	08/19/12	NA	1	X										067
169	2540-SU6-21	WP G	NA	NA	08/19/12	NA	1	X										068
170	2540-SU6-22	WP G	NA	NA	08/19/12	NA	1	X										069
171	2540-SU6-23	WP G	NA	NA	08/19/12	NA	1	X										070
172	2540-SU6-23D	WP G	NA	NA	08/19/12	NA	1	X										071
173	2540-SU6-24	WP G	NA	NA	08/19/12	NA	1	X										072
174	2540-SU6-25	WP G	NA	NA	08/19/12	NA	1	X										073
175	2540-SU6-26	WP G	NA	NA	08/19/12	NA	1	X										074

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	US Army Corps of Engineers	Report To:	David Watters	Attention:	
Address:	10 South Howard Street Baltimore, MD	Copy To:	Alan Warminski	Address:	
Email To:	david.j.watters@usace.army.mil	Purchase Order No.:		Place Order Reference:	
Phone:	443-253-0916	Project Name:	Fort Monmouth Rad Survey	Place Project Manager:	Carin Ferris
Requested Due Date/TAT:	ASAP	Project Number:		Place Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER NRC

Site Location: _____ STATE: **NJ**

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OIL WIPE WIP AIR AR OTHER OT TISSUE TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test ↑	Gross Alpha/Beta	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃					
178	2540-SU6-27	WP G	NA	NA	08/19/12	NA	1	X									075	
177	2540-SU6-28	WP G	NA	NA	08/19/12	NA	1	X									076	
178	2540-SU6-29	WP G	NA	NA	08/19/12	NA	1	X									077	
179	2540-SU6-30	WP G	NA	NA	08/19/12	NA	1	X									078	
180	2540-SU6-31	WP G	NA	NA	08/19/12	NA	1	X									079	
181	2540-SU6-32	WP G	NA	NA	08/19/12	NA	1	X									080	
182	2540-SU6-SINK	WP G	NA	NA	08/19/12	NA	1	X									081	
183	2540-SU7-1	WP G	NA	NA	08/19/12	NA	1	X									082	
184	2540-SU7-2	WP G	NA	NA	08/19/12	NA	1	X									083	
185	2540-SU7-3	WP G	NA	NA	08/19/12	NA	1	X									084	
186	2540-SU7-5	WP G	NA	NA	08/19/12	NA	1	X									085	
187	2540-SU7-6	WP G	NA	NA	08/19/12	NA	1	X									086	
188	2540-SU7-7	WP G	NA	NA	08/19/12	NA	1	X									087	
189	2540-SU7-8	WP G	NA	NA	08/19/12	NA	1	X									088	
190	2540-SU7-10	WP G	NA	NA	08/19/12	NA	1	X									089	
191	2540-SU7-11	WP G	NA	NA	08/19/12	NA	1	X									090	
192	2540-SU7-11D	WP G	NA	NA	08/19/12	NA	1	X									091	
193	2540-SU7-12	WP G	NA	NA	08/19/12	NA	1	X									092	
194	2540-SU7-15	WP G	NA	NA	08/19/12	NA	1	X									093	
195	2540-SU7-16	WP G	NA	NA	08/19/12	NA	1	X									094	
196	2540-SU7-17	WP G	NA	NA	08/19/12	NA	1	X									095	
197	2540-SU7-18	WP G	NA	NA	08/19/12	NA	1	X									096	

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



Page: 10 of 20

Section A

Required Client Information:
 Company: US Army Corps of Engineers
 Address: 10 South Howard Street
 Baltimore, MD
 Email To: david.j.watters@usace.army.mil
 Phone: 443-253-0916 Fax: none
 Requested Due Date/TAT: ASAP

Section B

Required Project Information:
 Report To: David Watters
 Copy To: Alan Warminski
 Purchase Order No.:
 Project Name: Fort Monmouth Rad Survey
 Project Number:

Section C

Invoice Information:
 Attention:
 Address:
 Pace Quote Reference:
 Pace Project Manager: Carin Ferris
 Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER NRC
 Site Location: NJ
 STATE: NJ

ITEM #	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	COMPOSITE START	COMPOSITE END/GRAB	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
198	DRINKING WATER	DW	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			307206
199	WASTE WATER	WW	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			047
200	WASTE WATER PRODUCT	WP	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			048
201	SOLID	SL	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			049
202	LIQUID	LI	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			040
203	WIPES	WI	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
204	AIR	AR	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
205	OTHER	OT	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
206	TISSUE	TS	G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
207			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
208			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
209			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
210			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
211			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
212			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
213			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
214			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
215			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
216			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
217			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
218			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			
219			G	WP			06/19/12	NA	06/19/12	NA	1	X	Unpreserved	Analysis Test			

SAMPLE ID
 (A-Z, 0-9, /, -)
 Sample IDs MUST BE UNIQUE



Sample Condition Upon Receipt

Client Name: RTI

Project # 3072069

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 875925653773

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used 5 6 7

Type of Ice: Wet Blue (None)

Samples on ice, cooling process has begun

Cooler Temperature NA

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: WV 4/25/12

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WP</u>		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WFDRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed <u>WV</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review:

Alvaro Ferris

Date: 6/26/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Project Number: 3072-060

Client Name: RTI

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal / 1 galL)	Cubtrainer (500 ml / 4L)	Ziploc	Other	Other
100	WP																							
101	WP																							

Gross Alpha and Beta Sample Analysis Data

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

1 458971-BLANK for HBN 91029 [RADC/1245

Type BLANK Matrix Impact Plate Collected Work ID % Moisture
 Client QCACCOUNT WO

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 17:09 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795641 Instru NONE CC ok F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 17:09 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795641 File CC ok F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	-0.301U ± 0.290 (0.992)	pCi/sa -0.301U ± 0.290 (0.992)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	-0.108U ± 0.244 (0.643)	pCi/sa -0.108U ± 0.244 (0.643)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					

2 3072058101-2540-SU3-39

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072058 Work ID Fort Monmouth Location
 1207071

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 17:10 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784080 Instru NONE CC ok F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 17:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784080 File CC ok F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.160U ± 0.279 (0.888)	pCi/sa -0.160U ± 0.279 (0.888)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

2 3072058101-2540-SU3-39

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Beta	OK	-0.051U ± 0.278 (0.694)	pCi/sa -0.051U ± 0.278 (0.694)			dpm/sa	

The lab does not hold TNI accreditation for this parameter.

4 3072060001-2540-SU3-40

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 17:18 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784197 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 17:18 Dilution
 Method EPA 900.0m Col ID Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784197 File CC OK F

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.223U ± 0.360 (0.785)	pCi/sa 0.223U ± 0.360 (0.785)			dpm/sa	

The lab does not hold TNI accreditation for this parameter.

Gross Beta	OK	0.180U ± 0.311 (0.685)	pCi/sa 0.180U ± 0.311 (0.685)			dpm/sa	
------------	----	------------------------------	--	--	--	--------	--

The lab does not hold TNI accreditation for this parameter.

5 3072060002-2540-SU3-41

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:51 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784200 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

5 3072060002-2540-SU3-41

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:51 Dilution
 Method EPA 900.0m Col ID Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784200 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.507J ± 0.500 (0.974)	pCi/sa 0.507J ± 0.500 (0.974)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.112U ± 0.278 (0.619)	pCi/sa 0.112U ± 0.278 (0.619)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

6 3072060003-2540-SU3-42

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:51 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784202 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:51 Dilution
 Method EPA 900.0m Col ID Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784202 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	-0.056U ± 0.261 (0.785)	pCi/sa -0.056U ± 0.261 (0.785)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.223U ± 0.312 (0.685)	pCi/sa 0.223U ± 0.312 (0.685)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

7 3072060004-2540-SU3-43

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

7 3072060004-2540-SU3-43

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:51 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784204 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:51 Dilution
 Method EPA 900.0m Col ID Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784204 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.462J ± 0.448 (0.853)	pCi/sa 0.462J ± 0.448 (0.853)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.677 ± 0.369 (0.637)	pCi/sa 0.677 ± 0.369 (0.637)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

8 3072060005-2540-SU3-43D

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784206 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m Col ID Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784206 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	1.56 ± 0.720 (0.924)	pCi/sa 1.56 ± 0.720 (0.924)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.270J ± 0.352 (0.719)	pCi/sa 0.270J ± 0.352 (0.719)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

8 3072060005-2540-SU3-43D

9 3072060006-2540-SU3-44

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784208 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m Col ID File Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784208 File CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.308J ± 0.400 (0.829)	pCi/sa 0.308J ± 0.400 (0.829)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.020U ± 0.277 (0.656)	pCi/sa 0.020U ± 0.277 (0.656)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

10 3072060007-2540-SU3-45

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784210 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m Col ID File Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784210 File CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK				dpm/sa		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

10 3072060007-2540-SU3-45

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	0.570J ± 0.476 (0.845)	pCi/sa 0.570J ± 0.476 (0.845)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.439J ± 0.335 (0.641)	pCi/sa 0.439J ± 0.335 (0.641)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

11 3072060008-2540-SU3-46

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784212 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m Col ID Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784212 File CC OK F

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	-0.067U ± 0.320 (0.912)	pCi/sa -0.067U ± 0.320 (0.912)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.066U ± 0.287 (0.676)	pCi/sa 0.066U ± 0.287 (0.676)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

12 3072060009-2540-SU3-47

Type PS Matrix Wipe Collected 6/14/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/11/2012 23:59 Analyst MBT
 Schedule 2784214 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

12 3072060009-2540-SU3-47

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/11/2012 20:52	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/11/2012 23:59	Analyst MBT
Schedule 2784214	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.179U ± 0.425 (0.992)	pCi/sa 0.179U ± 0.425 (0.992)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.224J ± 0.299 (0.643)	pCi/sa 0.224J ± 0.299 (0.643)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

13 3072060010-2540-SU4-1

Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12459	Prep Date 7/11/2012 20:52	Dilution
Method EPA 900.0m	HBN 91029	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2784216	Instru NONE		CC OK F

Initial Volume	1 mL Default	1 mL
Final Volume,	1 mL Default	1 mL

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/11/2012 20:52	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2784216	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	-0.320U ± 0.219 (0.888)	pCi/sa -0.320U ± 0.219 (0.888)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.399J ± 0.336 (0.694)	pCi/sa 0.399J ± 0.336 (0.694)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

14 3072060011-2540-SU4-2

Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

14 3072060011-2540-SU4-2

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784218 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784218 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.006U ± 0.328 (0.874)	pCi/sa 0.006U ± 0.328 (0.874)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.397J ± 0.291 (0.558)	pCi/sa 0.397J ± 0.291 (0.558)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

15 3072060012-2540-SU4-2D

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784220 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784220 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.659J ± 0.520 (0.923)	pCi/sa 0.659J ± 0.520 (0.923)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.283J ± 0.303 (0.612)	pCi/sa 0.283J ± 0.303 (0.612)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

15 3072060012-2540-SU4-2D

16 3072060013-2540-SU4-3

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784222 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:52 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784222 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	-0.167U ± 0.306 (0.948)	pCi/sa -0.167U ± 0.306 (0.948)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.329J ± 0.291 (0.596)	pCi/sa 0.329J ± 0.291 (0.596)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

17 3072060014-2540-SU4-4

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784224 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784224 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

17 3072060014-2540-SU4-4

Analyte	CC	Posted Result		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Gross Alpha	OK	0.772J ± 0.535 (0.881)	pCi/sa 0.772J ± 0.535 (0.881)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								
Gross Beta	OK	0.240J ± 0.315 (0.657)	pCi/sa 0.240J ± 0.315 (0.657)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								

18 3072060015-2540-SU4-5

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784226 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784226 File CC OK F

Analyte	CC	Posted Result		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Rad Chemistry	OK					dpm/sa		
Gross Alpha	OK	-0.037U ± 0.357 (0.972)	pCi/sa -0.037U ± 0.357 (0.972)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								
Gross Beta	OK	0.449J ± 0.322 (0.623)	pCi/sa 0.449J ± 0.322 (0.623)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								

19 3072060016-2540-SU4-6

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784228 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

19 3072060016-2540-SU4-6

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784228 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.114U ± 0.383 (0.929)	pCi/sa 0.114U ± 0.383 (0.929)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.095U ± 0.246 (0.626)	pCi/sa -0.095U ± 0.246 (0.626)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

20 3072060017-2540-SU4-7

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784230 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784230 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	-0.161U ± 0.271 (0.866)	pCi/sa -0.161U ± 0.271 (0.866)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.812 ± 0.388 (0.654)	pCi/sa 0.812 ± 0.388 (0.654)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

21 3072060018-2540-SU4-8

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12459 HBN 91029
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

21 3072060018-2540-SU4-8

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784232 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/11/2012 20:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784232 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	1.46 ± 0.647 (0.686)	pCi/sa 1.46 ± 0.647 (0.686)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.500J ± 0.336 (0.587)	pCi/sa 0.500J ± 0.336 (0.587)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

22 3072060019-2540-SU4-9

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12459 Prep Date 7/18/2012 15:22 Dilution
 Method EPA 900.0m HBN 91029 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784234 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/18/2012 15:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784234 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	-0.085U ± 0.303 (0.936)	pCi/sa -0.085U ± 0.303 (0.936)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.590J ± 0.348 (0.612)	pCi/sa 0.590J ± 0.348 (0.612)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review

Batch	RADC/12459	HBN	91029
Rule	9000 I	Status	RE
Create Date	6/28/2012	Analyst	MBT



22 3072060019-2540-SU4-9

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Creation Date 06/28/2012 13:04
Batch ID 12459
Assigned Analyst MBT
Earliest Due Date 07/04/2012 07:12
A-code 9000 I 9000W or NJ HBN 91029
Method EPA 900.0m EPA 900.0 or NJAC7186

Workorder	Sample ID	Sample Type	Matrix	Collection Date/Time	Client ID	Alpha Activity	Alpha Unc.	Alpha MDC	Beta Activity	Beta Unc.	Beta MDC	Analysis Date/Time	Alpha	Beta
	458971	BLANK	IP		QCACCOUNT	-0.301U	0.290	0.992	-0.108U	0.244	0.643	7/11/12 17:09		
3072058	3072058101	PS	WP	6/14/2012 0:01	RTI	-0.160U	0.279	0.888	-0.051U	0.278	0.694	7/11/12 17:10		
3072060	3072060001	PS	WP	6/14/2012 0:01	RTI	0.223U	0.360	0.785	0.180U	0.311	0.685	7/11/12 17:18		
3072060	3072060002	PS	WP	6/14/2012 0:01	RTI	0.507J	0.500	0.974	0.112U	0.278	0.619	7/11/12 20:51		
3072060	3072060003	PS	WP	6/14/2012 0:01	RTI	-0.056U	0.261	0.785	0.223U	0.312	0.685	7/11/12 20:51		
3072060	3072060004	PS	WP	6/14/2012 0:01	RTI	0.462J	0.448	0.853	0.677	0.369	0.637	7/11/12 20:51		
3072060	3072060005	PS	WP	6/14/2012 0:01	RTI	1.56	0.720	0.924	0.270J	0.352	0.719	7/11/12 20:52		
3072060	3072060006	PS	WP	6/14/2012 0:01	RTI	0.308J	0.400	0.829	0.020U	0.277	0.656	7/11/12 20:52		
3072060	3072060007	PS	WP	6/14/2012 0:01	RTI	0.570J	0.476	0.845	0.439J	0.335	0.641	7/11/12 20:52		
3072060	3072060008	PS	WP	6/14/2012 0:01	RTI	-0.067U	0.320	0.912	0.066U	0.287	0.676	7/11/12 20:52		
3072060	3072060009	PS	WP	6/14/2012 0:01	RTI	0.179U	0.425	0.992	0.224J	0.299	0.643	7/11/12 20:52		
3072060	3072060010	PS	WP	6/18/2012 0:01	RTI	-0.320U	0.219	0.888	0.399J	0.336	0.694	7/11/12 20:52		
3072060	3072060011	PS	WP	6/18/2012 0:01	RTI	0.006U	0.328	0.874	0.397J	0.291	0.558	7/11/12 20:52		
3072060	3072060012	PS	WP	6/18/2012 0:01	RTI	0.659J	0.520	0.923	0.283J	0.303	0.612	7/11/12 20:52		
3072060	3072060013	PS	WP	6/18/2012 0:01	RTI	-0.167U	0.306	0.948	0.329J	0.291	0.596	7/11/12 20:52		
3072060	3072060014	PS	WP	6/18/2012 0:01	RTI	0.772J	0.535	0.881	0.240J	0.315	0.557	7/11/12 20:53		
3072060	3072060015	PS	WP	6/18/2012 0:01	RTI	-0.037U	0.357	0.972	0.449J	0.322	0.623	7/11/12 20:53		
3072060	3072060016	PS	WP	6/18/2012 0:01	RTI	0.114U	0.383	0.929	-0.095U	0.246	0.626	7/11/12 20:53		
3072060	3072060017	PS	WP	6/18/2012 0:01	RTI	-0.161U	0.271	0.866	0.812	0.388	0.654	7/11/12 20:53		
3072060	3072060018	PS	WP	6/18/2012 0:01	RTI	1.46	0.647	0.686	0.500J	0.336	0.587	7/11/12 20:53		
3072060	3072060019	PS	WP	6/18/2012 0:01	RTI	-0.085U	0.303	0.936	0.590J	0.348	0.612	7/18/12 15:22		

* This indicates a possible MCL exceedance may exist for this sample. Results greater than 15.0 pCi/L gross alpha must be reviewed expeditiously and the PM, Radchem Supervisor, and QA Manager notified immediately upon validation of the result. If the gross beta result is above 50 pCi/L, this may also indicate a reportable exceedance.

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Gross Alpha and Gross Beta Preparation Sheet

Batch: 12459
 Transfer Analyst: MBT
 Prep Date/Time: 7-9-12 12:00
 Matrix: Filter
 Logbook ID: 3-R021-5

Spike Analyst: NA
 QC ID: a: NA
 LCS QC Vol (mL): a:
 MS/MSD QC Vol (mL): a:
 Pipette ID:

Aliquot Balance ID: NA
 Tare Balance ID:
 Tare Wgt. Date:
 Gross Balance ID:
 Gross Wgt. Date:

Bottle ID	Sample No.	Analyst Initials			Analyst Initials			Analyst Initials			Sample Comments
		Tare Mass (g)	5mL Test Mass (g)	Sample Volume (mL)	Gross Mass (g)	5mL Test Mass (g)	Sample Volume (mL)	Gross Mass (g)			
NA	458971	NA	NA	1.0	NA	NA	NA	NA	NA		
	30720580101										
	3072060001										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	10										
	11										
	12										
	13										
	14										
	15										
	16										
	17										
	18										
	19										
	20										
	LCS 12459										
	LCS P 12459										

Batch Comments: Ludox: 8N HNO₃: Conc HNO₃:
 Date Placed in oven / / @ Date Removed / / @
 Peer Review Date: MBT 7-11-12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12459
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012
Reporting Units: dpm

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Sigma 1.96
Zero Factor 2.71

Sample ID	Aliquot	Units	Tare (g)	Gross (g)	Residue (mg)	Det. ID	Count Date	Alpha Gross CPM	Beta Gross CPM	Count Duration (min)	Alpha Bkg CPM	Beta Bkg CPM	Bkg Count Duration (min)	Req Activity Units
458971	1.00000	S	9.0000	9.0000	0.00	20	7/11/2012 17:09	0.0500	0.3167	120	0.0970	0.3820	1000	dpm
3072058101	1.00000	S	9.0000	9.0000	0.00	23	7/11/2012 17:10	0.0500	0.4250	120	0.0750	0.4570	1000	dpm
3072060001	1.00000	S	9.0000	9.0000	0.00	13	7/11/2012 17:18	0.0833	0.4167	120	0.0500	0.3330	1000	dpm
3072060002	1.00000	S	9.0000	9.0000	0.00	12	7/11/2012 20:51	0.1667	0.4583	120	0.0890	0.3780	1000	dpm
3072060003	1.00000	S	9.0000	9.0000	0.00	13	7/11/2012 20:51	0.0417	0.4167	120	0.0500	0.3330	1000	dpm
3072060004	1.00000	S	9.0000	9.0000	0.00	14	7/11/2012 20:51	0.1417	0.7083	120	0.0690	0.3800	1000	dpm
3072060005	1.00000	S	9.0000	9.0000	0.00	15	7/11/2012 20:52	0.3250	0.7000	120	0.0820	0.4950	1000	dpm
3072060006	1.00000	S	9.0000	9.0000	0.00	16	7/11/2012 20:52	0.1083	0.4167	120	0.0610	0.3910	1000	dpm
3072060007	1.00000	S	9.0000	9.0000	0.00	18	7/11/2012 20:52	0.1500	0.6083	120	0.0630	0.3820	1000	dpm
3072060008	1.00000	S	9.0000	9.0000	0.00	19	7/11/2012 20:52	0.0667	0.4833	120	0.0770	0.4570	1000	dpm
3072060009	1.00000	S	9.0000	9.0000	0.00	20	7/11/2012 20:52	0.1250	0.4917	120	0.0970	0.3820	1000	dpm
3072060010	1.00000	S	9.0000	9.0000	0.00	23	7/11/2012 20:52	0.0250	0.6167	120	0.0750	0.4570	1000	dpm
3072060011	1.00000	S	9.0000	9.0000	0.00	27	7/11/2012 20:52	0.0750	0.4667	120	0.0740	0.2880	1000	dpm
3072060012	1.00000	S	9.0000	9.0000	0.00	28	7/11/2012 20:52	0.1833	0.4917	120	0.0810	0.3330	1000	dpm
3072060013	1.00000	S	9.0000	9.0000	0.00	29	7/11/2012 20:52	0.0583	0.4583	120	0.0840	0.3220	1000	dpm
3072060014	1.00000	S	9.0000	9.0000	0.00	30	7/11/2012 20:53	0.1917	0.5583	120	0.0720	0.4090	1000	dpm
3072060015	1.00000	S	9.0000	9.0000	0.00	31	7/11/2012 20:53	0.0833	0.5667	120	0.0890	0.3670	1000	dpm
3072060016	1.00000	S	9.0000	9.0000	0.00	33	7/11/2012 20:53	0.1083	0.3500	120	0.0900	0.3870	1000	dpm
3072060017	1.00000	S	9.0000	9.0000	0.00	34	7/11/2012 20:53	0.0500	0.7583	120	0.0760	0.4040	1000	dpm
3072060018	1.00000	S	9.0000	9.0000	0.00	37	7/11/2012 20:53	0.2750	0.6167	120	0.0420	0.3190	1000	dpm
3072060019	1.00000	S	9.0000	9.0000	0.00	29	7/18/2012 15:22	0.0500	0.5300	100	0.0630	0.2740	1000	dpm
LCS12459	1.00000	S	9.0000	9.0000	0.00	13	7/17/2012 12:53	0.5333	3.7667	90	0.1230	0.3450	1000	dpm
LCSD12459	1.00000	S	9.0000	9.0000	0.00	13	7/17/2012 14:24	0.4444	4.2667	90	0.1230	0.3450	1000	dpm

7/17/2012

MBT

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12459
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Alpha Results

Sample ID	Alpha Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Alpha Net CPM	Residue (mg)	Beta to Alpha Xtlk CPM	Xtlk corr. Net alpha CPM	Alpha eff	Activity Conversion
458971	-0.301	0.285	0.290	0.992	0.318	dpm/S	-0.047	0.00	0.000000	-0.047	15.61%	1
3072058101	-0.160	0.278	0.279	0.888	0.279	dpm/S	-0.025	0.00	0.000000	-0.025	15.64%	1
3072060001	0.223	0.357	0.360	0.785	0.238	dpm/S	0.033	0.00	0.000000	0.033	14.96%	1
3072060002	0.507	0.492	0.500	0.974	0.310	dpm/S	0.078	0.00	0.000000	0.078	15.32%	1
3072060003	-0.056	0.261	0.261	0.785	0.238	dpm/S	-0.008	0.00	0.000000	-0.008	14.96%	1
3072060004	0.462	0.441	0.448	0.853	0.266	dpm/S	0.073	0.00	0.000000	0.073	15.72%	1
3072060005	1.557	0.663	0.720	0.924	0.293	dpm/S	0.243	0.00	0.000000	0.243	15.61%	1
3072060006	0.308	0.396	0.400	0.829	0.256	dpm/S	0.047	0.00	0.000000	0.047	15.37%	1
3072060007	0.570	0.465	0.476	0.845	0.262	dpm/S	0.087	0.00	0.000000	0.087	15.27%	1
3072060008	-0.067	0.320	0.320	0.912	0.287	dpm/S	-0.010	0.00	0.000000	-0.010	15.39%	1
3072060009	0.179	0.424	0.425	0.992	0.318	dpm/S	0.028	0.00	0.000000	0.028	15.61%	1
3072060010	-0.320	0.211	0.219	0.888	0.279	dpm/S	-0.050	0.00	0.000000	-0.050	15.64%	1
3072060011	0.006	0.328	0.328	0.874	0.274	dpm/S	0.001	0.00	0.000000	0.001	15.80%	1
3072060012	0.659	0.506	0.520	0.923	0.292	dpm/S	0.102	0.00	0.000000	0.102	15.54%	1
3072060013	-0.167	0.305	0.306	0.948	0.301	dpm/S	-0.026	0.00	0.000000	-0.026	15.36%	1
3072060014	0.772	0.517	0.535	0.881	0.276	dpm/S	0.120	0.00	0.000000	0.120	15.50%	1
3072060015	-0.037	0.357	0.357	0.972	0.310	dpm/S	-0.006	0.00	0.000000	-0.006	15.35%	1
3072060016	0.114	0.382	0.383	0.929	0.296	dpm/S	0.018	0.00	0.000000	0.018	16.15%	1
3072060017	-0.161	0.270	0.271	0.866	0.273	dpm/S	-0.026	0.00	0.000000	-0.026	16.12%	1
3072060018	1.458	0.592	0.647	0.686	0.204	dpm/S	0.233	0.00	0.000000	0.233	15.98%	1
3072060019	-0.085	0.303	0.303	0.936	0.283	dpm/S	-0.013	0.00	0.000000	-0.013	15.36%	1
LCS12459	2.743	1.019	1.131	1.350	0.426	dpm/S	0.410	0.00	0.000000	0.410	14.96%	1
LCSD12459	2.149	0.932	1.008	1.350	0.426	dpm/S	0.321	0.00	0.000000	0.321	14.96%	1

M 7/20/12

MBT

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12459
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Beta Results

Sample ID	Beta Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Beta Net CPM	Residue (mg)	Alpha to Beta Xtlk CPM	Xtlk corr. Net beta CPM	Beta eff	Activity Conversion
458971	-0.108	0.243	0.244	0.643	0.222	dpm/S	-0.065	0.00	-0.017380	-0.048	44.32%	1
3072058101	-0.051	0.278	0.278	0.694	0.242	dpm/S	-0.032	0.00	-0.009220	-0.023	44.61%	1
3072060001	0.180	0.310	0.311	0.685	0.236	dpm/S	0.084	0.00	0.013581	0.070	39.03%	1
3072060002	0.112	0.277	0.278	0.619	0.214	dpm/S	0.080	0.00	0.029029	0.051	45.83%	1
3072060003	0.223	0.310	0.312	0.685	0.236	dpm/S	0.084	0.00	-0.003395	0.087	39.03%	1
3072060004	0.677	0.348	0.369	0.637	0.220	dpm/S	0.328	0.00	0.026079	0.302	44.64%	1
3072060005	0.270	0.349	0.352	0.719	0.251	dpm/S	0.205	0.00	0.084377	0.121	44.66%	1
3072060006	0.020	0.277	0.277	0.656	0.227	dpm/S	0.026	0.00	0.016774	0.009	43.92%	1
3072060007	0.439	0.326	0.335	0.641	0.222	dpm/S	0.226	0.00	0.031337	0.195	44.42%	1
3072060008	0.066	0.287	0.287	0.676	0.235	dpm/S	0.026	0.00	-0.003953	0.030	45.78%	1
3072060009	0.224	0.296	0.299	0.643	0.222	dpm/S	0.110	0.00	0.010354	0.099	44.32%	1
3072060010	0.399	0.329	0.336	0.694	0.242	dpm/S	0.160	0.00	-0.018439	0.178	44.61%	1
3072060011	0.397	0.282	0.291	0.558	0.191	dpm/S	0.179	0.00	0.000338	0.178	44.88%	1
3072060012	0.283	0.298	0.303	0.612	0.210	dpm/S	0.159	0.00	0.035124	0.124	43.73%	1
3072060013	0.329	0.285	0.291	0.596	0.205	dpm/S	0.136	0.00	-0.008873	0.145	44.19%	1
3072060014	0.240	0.312	0.315	0.657	0.228	dpm/S	0.149	0.00	0.042068	0.107	44.74%	1
3072060015	0.449	0.312	0.322	0.623	0.215	dpm/S	0.200	0.00	-0.001995	0.202	44.88%	1
3072060016	-0.095	0.246	0.246	0.626	0.216	dpm/S	-0.037	0.00	0.006353	-0.043	45.82%	1
3072060017	0.812	0.360	0.388	0.654	0.227	dpm/S	0.354	0.00	-0.008705	0.363	44.69%	1
3072060018	0.500	0.324	0.336	0.587	0.201	dpm/S	0.298	0.00	0.074301	0.223	44.70%	1
3072060019	0.590	0.331	0.348	0.612	0.205	dpm/S	0.256	0.00	-0.004494	0.260	44.19%	1
LCS12459	8.338	1.032	1.813	0.815	0.273	dpm/S	3.422	0.00	0.167178	3.254	39.03%	1
LCS12459	9.712	1.097	2.055	0.815	0.273	dpm/S	3.922	0.00	0.130963	3.791	39.03%	1

Jul 2012

Doc

Quality Control Sample Performance Assessment

RCDU Upload

Analyst: MBT
Date: 7/16/2012
Worklist: 12459
Matrix: Filter
Method: EPA 900.0m
SOP: PGH-R-001
MB Sample ID: 458971



Method Blank Assessment				
Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value
Gross Alpha	-0.3010	0.2900	0.9920	0.31800
Gross Beta	-0.1080	0.2440	0.6490	0.22200
MS/MSD Decay Corrected Spike Conc. (DPM/Sample):				
Spike Volume Used in MS (mL):				
Spike Volume Used in MSD (mL):				
MS Aliquot (L, g, F):				
MS Target Conc.(DPM/Sample, g, F):				
MSD Aliquot (L, g, F):				
MSD Target Conc. (DPM/Sample, g, F):				
MS Spike uncertainty (calculated):				
MSD Spike uncertainty (calculated):				
Sample Result:				
Sample 1.96 Sigma Unc.:				
Sample Matrix Spike Result:				
Sample MS 1.96 Sigma Unc.:				
Sample Matrix Spike Duplicate Result:				
Sample MSD 1.96 Sigma Unc.:				
MS % Recovery:				
MSD % Recovery:				
MS Assessment:				
MSD Assessment:				
MS/MSD Upper % Recovery Limits:				
MS/MSD Lower % Recovery Limits:				
Matrix Spike/Matrix Spike Duplicate Sample Assessment				
Analyte:				
Sample I.D.:				
Sample MSD I.D.:				
Sample MSD I.D.:				
Sample Matrix Spike Result:				
Sample Matrix Spike 1.96 Sigma Unc.:				
Sample Matrix Spike Duplicate Result:				
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:				
MS/MSD Relative Percent Difference:				
MS/MSD RPD Assessment:				
% RPD Limit:				

Laboratory Control Sample Assessment														
Analyte:	Count Date:	Spike I.D.:	DPM/Sample:	Volume Used (mL):	Target Conc. (DPM/Sample, g, F):	1.96 Sigma Uncertainty (Calculated):	LCS		LCS D		LCS		LCS D	
							LCS	LCS D	LCS	LCS D	LCS	LCS D		
Gross Alpha	7/17/12 12:53	12-018-F1	2.353	1.000	1.000	0.138	2.743	1.008	91.33%	Pass	119.00%	62.00%	19.00%	130.00%
Gross Beta	7/17/12 14:24	12-018-F2	2.353	1.000	1.000	0.192	2.149	1.008	86.09%	Pass	119.00%	79.00%	130.00%	79.00%
Duplicate Sample Assessment							Y	Y						
Analyte:							Gross Alpha	Gross Beta						
Sample I.D.:							LCS12459	LCS12459						
Duplicate Sample I.D.:							LCS12459	LCS12459						
Sample Result (DPM/Sample, g, F):							2.7430	8.3380						
1.96 Sigma Unc:							1.1310	1.8130						
Duplicate Sample 1.96 Sigma Unc:							2.1490	9.7120						
Duplicate Sample 1.96 Sigma Unc:							1.0090	2.0550						
Either results below MDC?							N	N						
Relative Percent Difference:							24.28%	15.22%						
Assessment:							Pass	Pass						
% RPD Limit:							35.00%	17.00%						

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

07/20/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12459
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Det No.	Effective Calibration Date			Alpha Efficiency	Alpha to Beta Cross-Talk			Beta Efficiency	Beta to Alpha Cross-Talk			Beta Eff: ax + b	Beta-to-Alpha Xtalk: ax + b			Alpha Bkg	Beta Bkg	Alpha Bkg	Beta Bkg	BKG 1 Date	BKG 2 Date	7/13/2012
	a	b	c		d	e	a		b	c	d		e	a	b							
1				1.4286E-01																		
2				1.5524E-01																		
3				1.5070E-01																		
4				1.4437E-01																		
5				#N/A																		
6				#N/A																		
7				1.5705E-01																		
8				1.4091E-01																		
9				1.3453E-01																		
10				#N/A																		
11				1.5103E-01																		
12				1.5319E-01																		
13				1.4959E-01																		
14				1.5721E-01																		
15				1.5605E-01																		
16				1.5365E-01																		
17				1.5472E-01																		
18				1.5273E-01																		
19				1.5393E-01																		
20				1.5610E-01																		
21				1.5130E-01																		
22				1.5360E-01																		
23				1.5639E-01																		
24				#N/A																		
25				1.5698E-01																		
26				1.5743E-01																		
27				1.5803E-01																		

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12459
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGR-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Det No.	Effective Calibration Date				Alpha Efficiency	11/20/2006	Alpha to Beta Cross-Talk				Beta Efficiency	11/20/2006	Beta to Alpha Cross-Talk				N/A	BKG 1 Date: 6/3/2012	BKG 2 Date: 7/13/2012	
	a	b	c	d			e	a	b	c			d	e	a	b				c
26						1.5536E-01											0.0810	0.3330	0.1500	0.3480
29						1.5363E-01											0.0840	0.3220	0.0630	0.2740
30						1.5497E-01											0.0720	0.4090	0.2330	0.4240
31						1.5353E-01											0.0690	0.3670	0.0900	0.3660
32						1.5323E-01											0.0540	0.4120	0.0550	0.3380
33						1.6147E-01											0.0900	0.3870	0.1200	0.4100
34						1.6117E-01											0.0760	0.4040	0.1250	0.4480
35						#N/A											0.1970	0.3930	0.2070	0.3640
36						1.4953E-01											0.0930	0.4070	0.0670	0.3320
37						1.5981E-01											0.0420	0.3190	0.2180	0.4600
38						1.5294E-01											0.1100	0.3990	0.1040	0.3900
39						1.7614E-01											0.0780	12.4760	0.0780	12.4760
40						1.8178E-01											0.2530	12.6520	0.2530	12.5520
41						#N/A											2.7170	366.8100	2.7170	366.8100
42						1.4541E-01											0.2050	9.9000	0.2050	9.9000
43						1.7364E-01											0.1620	1.1560	0.1620	1.1560
44						1.7507E-01											0.1110	0.8900	0.1110	0.9900
45						1.6898E-01											0.1410	1.7460	0.1410	1.7460
46						1.6416E-01											0.2330	0.9840	0.2330	0.9840
47						1.7203E-01											0.0940	1.1670	0.0940	1.1670
48						1.8314E-01											0.1650	2.0860	0.1650	2.0860
49						1.6993E-01											0.3330	1.3450	0.3330	1.3450
50						1.6594E-01											0.2050	1.4900	0.2050	1.4900
51						1.7880E-01											0.1500	1.3750	0.1500	1.3750
52						1.7970E-01											0.1070	1.1480	0.1070	1.1480
53						1.7780E-01											0.1070	1.3970	0.1070	1.3970

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

CSU Analysis for Preparation

Planchet Weighing

uncert (g)	gross (g)	tare (g)	net (g)	CSU (g)	
0.0003	9.1463	9.1273	0.019	0.000424264	2.23%

Volume Aliquot

(mL)	vol (mL)	rel unc
1.00	100.0	1.00%

Description	relative	of Critical	CSU for Preparation (UE1)	Uncertainty	6.71%
Sample Aliquoting	1.00%	1	1.00%	0.01%	
Planchet Weighing	2.23%	2	3.16%	0.10%	
Sample transfer to planchet	3.00%	1	3.00%	0.09%	
Additional Uncertainty due to differences in the distribution of residue on the planchet	5.00%	1	5.00%	0.25%	

CSU Analysis for Analysis

Mass Aliquot

	Ref mass	uncert (g)	Rel unc
Tare	5	0.0004	
Gross	6	0.0004	Use max of 1%
net	1	0.000565685	0.057%

Description	Maximum	of Critical	CSU for Analysis (UE2)	Uncertainty	13.23%
SRM Uncertainty	5.00%	1	5.00%	0.25%	
Mass transfer	0.06%	2	0.08%	0.00%	
Source Reproducibility	5.00%	1	5.00%	0.25%	
Curve Fitting Uncertainty	5.00%	1	5.00%	0.25%	
Estimated Additional Uncertainty (variations in efficiency and self-absorption due to chemical composition of residue)	10.00%	1	10.00%	1.00%	

CSU Analysis for Yield Correction

Description	Maximum	of Critical	CSU for Yield (UE3)	Uncertainty	10.00%
Additional Sample Uncertainty due to analysis without a tracer or chemical carrier	10.00%	1	10.00%	1.00%	

2 Analyt
7/19

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

SAMPLE_ID	Det#	BEG_DATE	BATCH_ID	ACPM	BCPM	CNT_TIME
458971	20	7/11/2012 17:09	GAB12459	0.05	0.316666667	120
3072058101	23	7/11/2012 17:10	GAB12459	0.05	0.425	120
3072060001	13	7/11/2012 17:18	GAB12459	0.083333333	0.416666667	120
3072060002	12	7/11/2012 20:51	GAB12459	0.166666667	0.458333333	120
3072060003	13	7/11/2012 20:51	GAB12459	0.041666667	0.416666667	120
3072060004	14	7/11/2012 20:51	GAB12459	0.141666667	0.708333333	120
3072060005	15	7/11/2012 20:52	GAB12459	0.325	0.7	120
3072060006	16	7/11/2012 20:52	GAB12459	0.108333333	0.416666667	120
3072060007	18	7/11/2012 20:52	GAB12459	0.15	0.608333333	120
3072060008	19	7/11/2012 20:52	GAB12459	0.066666667	0.483333333	120
3072060009	20	7/11/2012 20:52	GAB12459	0.125	0.491666667	120
3072060010	23	7/11/2012 20:52	GAB12459	0.025	0.616666667	120
3072060011	27	7/11/2012 20:52	GAB12459	0.075	0.466666667	120
3072060012	28	7/11/2012 20:52	GAB12459	0.183333333	0.491666667	120
3072060013	29	7/11/2012 20:52	GAB12459	0.058333333	0.458333333	120
3072060014	30	7/11/2012 20:53	GAB12459	0.191666667	0.558333333	120
3072060015	31	7/11/2012 20:53	GAB12459	0.083333333	0.566666667	120
3072060016	33	7/11/2012 20:53	GAB12459	0.108333333	0.35	120
3072060017	34	7/11/2012 20:53	GAB12459	0.05	0.758333333	120
3072060018	37	7/11/2012 20:53	GAB12459	0.275	0.616666667	120
3072060019	19	7/17/2012 9:26	GAB12459	0.154545455	0.527272727	110
LCS12459	13	7/17/2012 12:53	GAB12459	0.533333333	3.766666667	90
LCS12459	13	7/17/2012 14:24	GAB12459	0.444444444	4.266666667	90
3072060019	29	7/18/2012 15:22	GAB12459	0.05	0.53	100

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072060019	7/18/2012 3:22:49 PM	29	GAB12459	0.050	0.5300	100.0
LCS12459	7/17/2012 2:24:57 PM	13	GAB12459	0.444	4.2667	90.0
LCS12459	7/17/2012 12:53:44 PM	13	GAB12459	0.533	3.7667	90.0
3072060019	7/17/2012 9:26:48 AM	19	GAB12459	0.155	0.5273	110.0
3072060018	7/11/2012 8:53:30 PM	37	GAB12459	0.275	0.6167	120.0
3072060017	7/11/2012 8:53:21 PM	34	GAB12459	0.050	0.7583	120.0
3072060016	7/11/2012 8:53:15 PM	33	GAB12459	0.108	0.3500	120.0
3072060015	7/11/2012 8:53:10 PM	31	GAB12459	0.083	0.5667	120.0
3072060014	7/11/2012 8:53:04 PM	30	GAB12459	0.192	0.5583	120.0
3072060013	7/11/2012 8:52:57 PM	29	GAB12459	0.058	0.4583	120.0
3072060012	7/11/2012 8:52:50 PM	28	GAB12459	0.183	0.4917	120.0
3072060011	7/11/2012 8:52:45 PM	27	GAB12459	0.075	0.4667	120.0
3072060010	7/11/2012 8:52:36 PM	23	GAB12459	0.025	0.6167	120.0
3072060009	7/11/2012 8:52:31 PM	20	GAB12459	0.125	0.4917	120.0
3072060008	7/11/2012 8:52:25 PM	19	GAB12459	0.067	0.4833	120.0
3072060007	7/11/2012 8:52:16 PM	18	GAB12459	0.150	0.6083	120.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072060006	7/11/2012 8:52:10 PM	16	GAB12459	0.108	0.4167	120.0
3072060005	7/11/2012 8:52:05 PM	15	GAB12459	0.325	0.7000	120.0
3072060004	7/11/2012 8:51:58 PM	14	GAB12459	0.142	0.7083	120.0
3072060003	7/11/2012 8:51:52 PM	13	GAB12459	0.042	0.4167	120.0
3072060002	7/11/2012 8:51:47 PM	12	GAB12459	0.167	0.4583	120.0
3072060001	7/11/2012 5:18:19 PM	13	GAB12459	0.083	0.4167	120.0
3072058101	7/11/2012 5:10:14 PM	23	GAB12459	0.050	0.4250	120.0
458971	7/11/2012 5:09:55 PM	20	GAB12459	0.050	0.3167	120.0

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
GAF	2	GAF-20170609-NS	GAFcal	210	7/11/12 16:26	R	NA	
	8	- N6		↓				
	21	- N1		150				
	22	- N2		↓				
	27	- N4						
	20	458971	GAB12459	120	7/11/12 17:10		NA	NA
	23	3072058101			↓			
	13	3072060001			17:18			
	19				20:53			
	13							
	14							
	15							
	16							
	18							
	19							
	20							
	23							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
	37	3072060018	GAB12459	120	8053		NA	NA
	1	↓ 19	↓	↓			↓	↓
	19	3072059096	GAB12458	120	7/11/12 1710	BSH	NA	NA
GAB	13	3072434002	GAB12537	260	7/12/12 0800			
GAB	17	30727070010	GAB12403	90				
	32	72910001		340				
	35	72931		1000				
	34	72703						
	38	72770						
		↓ 72151						
		3560800						
		↓ 003						
		3072030001	GAB12575					
		72599						
		72587						
		72588						
GAB	11	453-12461	GAB12461	120	7/12/12 921	BSH	NA	NA
	17	454-12461	↓	↓	922			
	22	3072020000	GAB12462	↓	920			
	36	45895	↓	130	924			
	38	5072009059	GAB12461	150	924			
	35	7206001	↓ 12462	↓	7/12/12 928	BSH	NA	NA
	12	45895	GAB12462	120	7-12-12	BSH	NA	NA

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- Legend:
- 1. Detector daily check failure
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 - 4. Sample was re-prepped
 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 25-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
WAB	12	35010200100	WAB12033	90	7/17/12	J	WAB	WAB
J	14	354102005	J	140	J	J	J	J
J	15	1019517001	J	90	J	J	J	J
GAB	14	460308	GAB12033	90	7/9/12 0737	O	WAB	Sample added to Bank
J	32	307208001	J	J	7/10/12 0834	J	J	J
J	35	307208001	J	J	7/10/12 0831	J	J	J
J	3	307208001	J	J	7/10/12 0844	J	J	J
GAB	15	LOS#1 - 12456	GAB12456	90	7-17-12 0915	MUST	NA	NA
J	16	LOS#2 - 12456	J	J	J	J	J	J
J	17	LOS#3 - 12458	GAB12458	90	J	J	J	J
J	18	LOS#4 - 12458	J	J	J	J	J	J
J	19	3072080019	GAB12459	110	7-17-12 0928	MUST	NA	NA
J	20	458981	GAB12467	120	J	J	J	MDC
J	21	3072085083	GAB12468	110	J	J	J	MDC
J	22	J 87	J	100120	J	J	J	MDC
J	29	3072085093	GAB12468	110	J	J	J	MDC
J	31	3072086008	GAB12469	120	J	J	J	MDC
J	33	J 010	J	120	J	J	J	NA
J	34	3072086011	J	100	J	J	J	J
J	36	J 12	J	130	J	J	J	J
J	37	J 13	J	90	J	J	J	J
J	38	J 14	J	150	J	J	J	J
GAB	23	3072086015	GAB12469	100	07-17-12 0949	MUST	NA	NA
J	27	J 16	J	J	J	MUST	J	J

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- Legend:
- 1. Detector daily check failure
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 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAS	25	3072086036	64312470	210	7/18/12 1402	RL	2	
	26	020		120	1410			
	27	021		100	1402			
	29	022		100	1328			
	30	040	64312471	270	1402			
	31	024	64312470	120	1505			
	36	031		100	1402			
	37	058		220	1328			
	33	035		130	1328			
	30	80040		17/12/12				
GAS	29	3072060019	64312459	100	1523	RL	2	
	14	3072086002	64312469	110	7/18/12 1611			
	16	041	12471	100	1627			
	17	042		110	1607			
	18	044			1652			
	19	045		120	1627			
	20	051		100	1602			
	21	053			1627			
	23	050			1602			
	24	LCS12466 #4	64312466	100	1602			
27	3072086057	12471	100	1554				
29	058			1612				
36	458487	12472	100	1553				
38	LCS12466 #3	64312466	90					

- Legend:
1. Detector daily check failure
 2. MDC > Contract RL
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 4. Sample was re-prepped
 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
 Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
GAB	51	3072085 027	GAB124465	300	7-13-12 0800	MST	NA	NA
	52	↓ 28	↓	↓	↓	↓	↓	↓
	53	↓ 29	↓	↓	↓	↓	↓	↓
GAB	43	LCS3 12475	GAB12475	90	7-10-12-125	MST	NA	NA
	44	↓ 4	↓	↓	↓	↓	↓	↓
	45	LCS1-12460	GAB12460	↓	↓	↓	↓	↓
	46	LCS2-12460	↓	↓	↓	↓	↓	↓
GAB	2	3072085 027	GAB12459	1000	7/10/12 1504	g	NA	N/A
	3	↓ 7208061	↓	↓	↓	↓	↓	↓
	6	3072085 027	GAB12458	↓	7/10/12 1504	↓	↓	↓
	7	↓ 7208061	↓	↓	↓	↓	↓	↓
	8	↓ 7208061	↓	↓	↓	↓	↓	↓
	9	↓ 7208061	↓	↓	↓	↓	↓	↓
	10	↓ 7208061	↓	↓	↓	↓	↓	↓
GAB	13	LCS12459 #1	GAB12459	90	7/12/12 1253	Q	not	not
GAB	↓	LCS12459 #2	↓	↓	↓ 172F	↓	↓	↓

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review DL

Date: 7/18/12

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Gross Alpha and Beta Sample Analysis Data

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

1 458972-BLANK for HBN 91030 [RADC/1246]

Type BLANK Matrix Impact Plate Collected % Moisture
 Client QCACCOUNT WO Work ID

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 07:58 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795642 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:58 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795642 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	-0.152U ± 0.215 (0.545)	pCi/sa -0.152U ± 0.215 (0.545)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	0.227U ± 0.335 (0.693)	pCi/sa 0.227U ± 0.335 (0.693)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					

2 458972-BLANK for HBN 91030 [RADC/1246]

Type BLANK Matrix Impact Plate Collected % Moisture
 Client QCACCOUNT WO Work ID

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 07:58 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2840556 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:58 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2840556 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	-0.152U ± 0.215 (0.545)	pCi/sa -0.152U ± 0.215 (0.545)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	0.227U ± 0.335 (0.693)	pCi/sa 0.227U ± 0.335 (0.693)		pCi/sam

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

2 458972-BLANK for HBN 91030 [RADC/1246

Analyte	CC	Posted Result	Result	MDL	RDL
The lab does not hold TNI accreditation for this parameter.					

3 3072060020-2540-SU4-10

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784236 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784236 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.261U ± 0.269 (0.674)	pCi/sa -0.261U ± 0.269 (0.674)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.360J ± 0.333 (0.670)	pCi/sa 0.360J ± 0.333 (0.670)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

4 3072060020-2540-SU4-10

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840557 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840557 File CC OK F

** Indicates QC failure, For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

4 3072060020-2540-SU4-10

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.261U ± 0.269 (0.674)	pCi/sa -0.261U ± 0.269 (0.674)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.360J ± 0.333 (0.670)	pCi/sa 0.360J ± 0.333 (0.670)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

5 3072060021-2540-SU4-11

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784238 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784238 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.006U ± 0.245 (0.563)	pCi/sa -0.006U ± 0.245 (0.563)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.414J ± 0.313 (0.611)	pCi/sa 0.414J ± 0.313 (0.611)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

6 3072060021-2540-SU4-11

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840558 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

6 3072060021-2540-SU4-11

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840558 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.006U ± 0.245 (0.563)	pCi/sa -0.006U ± 0.245 (0.563)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.414J ± 0.313 (0.611)	pCi/sa 0.414J ± 0.313 (0.611)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

7 3072060022-2540-SU4-12

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784240 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784240 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.144U ± 0.268 (0.650)	pCi/sa -0.144U ± 0.268 (0.650)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.611U ± 0.383 (0.835)	pCi/sa -0.611U ± 0.383 (0.835)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

8 3072060022-2540-SU4-12

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

8 3072060022-2540-SU4-12

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840559 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840559 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.144U ± 0.268 (0.650)	pCi/sa -0.144U ± 0.268 (0.650)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.611U ± 0.383 (0.835)	pCi/sa -0.611U ± 0.383 (0.835)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

9 3072060023-2540-SU4-13

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784242 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784242 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	1.18 ± 0.530 (0.844)	pCi/sa 1.18 ± 0.530 (0.844)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.125U ± 0.299 (0.615)	pCi/sa 0.125U ± 0.299 (0.615)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

9 3072060023-2540-SU4-13

10 3072060023-2540-SU4-13

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840560 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840560 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	1.18 ± 0.530 (0.844)	pCi/sa 1.18 ± 0.530 (0.844)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.125U ± 0.299 (0.615)	pCi/sa 0.125U ± 0.299 (0.615)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

11 3072060024-2540-SU4-14

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784244 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784244 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

11 3072060024-2540-SU4-14

Analyte	CC	Posted		MDL	RDL	Reg. Limits	Low		High	
		Result	Result				Low	High		
Gross Alpha	OK	0.151U ± 0.255 (0.531)	pCi/sa 0.151U ± 0.255 (0.531)							pCi/sam
The lab does not hold TNI accreditation for this parameter.										
Gross Beta	OK	0.600J ± 0.348 (0.652)	pCi/sa 0.600J ± 0.348 (0.652)							pCi/sam
The lab does not hold TNI accreditation for this parameter.										

12 3072060024-2540-SU4-14

Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12460	Prep Date 7/12/2012 13:22	Dilution
Method EPA 900.0m	HBN 91030	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2840561	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 13:22	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2840561	File		CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits		Low		High	
		Result	Result			Low	High				
Rad Chemistry	OK										
Gross Alpha	OK	0.151U ± 0.255 (0.531)	pCi/sa 0.151U ± 0.255 (0.531)								pCi/sam
The lab does not hold TNI accreditation for this parameter.											
Gross Beta	OK	0.600J ± 0.348 (0.652)	pCi/sa 0.600J ± 0.348 (0.652)								pCi/sam
The lab does not hold TNI accreditation for this parameter.											

13 3072060025-2540-SU4-15

Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12460	Prep Date 7/12/2012 13:22	Dilution
Method EPA 900.0m	HBN 91030	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2784246	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

13 3072060025-2540-SU4-15

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784246 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.246J ± 0.318 (0.645)	pCi/sa 0.246J ± 0.318 (0.645)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.493U ± 0.390 (0.845)	pCi/sa -0.493U ± 0.390 (0.845)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

14 3072060025-2540-SU4-15

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840562 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840562 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.246J ± 0.318 (0.645)	pCi/sa 0.246J ± 0.318 (0.645)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.493U ± 0.390 (0.845)	pCi/sa -0.493U ± 0.390 (0.845)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

15 3072060026-2540-SU4-16

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

15 3072060026-2540-SU4-16

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784248 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784248 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.724U ± 0.393 (0.965)	pCi/sa -0.724U ± 0.393 (0.965)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.259U ± 0.349 (0.725)	pCi/sa 0.259U ± 0.349 (0.725)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

16 3072060026-2540-SU4-16

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840563 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840563 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.724U ± 0.393 (0.965)	pCi/sa -0.724U ± 0.393 (0.965)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.259U ± 0.349 (0.725)	pCi/sa 0.259U ± 0.349 (0.725)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

16 3072060026-2540-SU4-16

17 3072060027-2540-SU4-16D

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784250 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784250 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.171U ± 0.334 (0.787)	pCi/sa -0.171U ± 0.334 (0.787)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.115U ± 0.338 (0.734)	pCi/sa -0.115U ± 0.338 (0.734)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

18 3072060027-2540-SU4-16D

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840564 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840564 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

18 3072060027-2540-SU4-16D

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	-0.171U ± 0.334 (0.787)	pCi/sa -0.171U ± 0.334 (0.787)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.115U ± 0.338 (0.734)	pCi/sa -0.115U ± 0.338 (0.734)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

19 3072060028-2540-SU4-17

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784252 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784252 File CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.242U ± 0.250 (0.632)	pCi/sa -0.242U ± 0.250 (0.632)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.030U ± 0.332 (0.710)	pCi/sa 0.030U ± 0.332 (0.710)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

20 3072060028-2540-SU4-17

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840565 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

20 3072060028-2540-SU4-17

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840565 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.242U ± 0.250 (0.632)	pCi/sa -0.242U ± 0.250 (0.632)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.030U ± 0.332 (0.710)	pCi/sa 0.030U ± 0.332 (0.710)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

21 3072060029-2540-SU4-18

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784254 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784254 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.462J ± 0.308 (0.539)	pCi/sa 0.462J ± 0.308 (0.539)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.302J ± 0.323 (0.650)	pCi/sa 0.302J ± 0.323 (0.650)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

22 3072060029-2540-SU4-18

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

22 3072060029-2540-SU4-18

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840566 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840566 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.462J ± 0.308 (0.539)	pCi/sa 0.462J ± 0.308 (0.539)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.302J ± 0.323 (0.650)	pCi/sa 0.302J ± 0.323 (0.650)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

23 3072060030-2540-SU4-19

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784257 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784257 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.148U ± 0.260 (0.545)	pCi/sa 0.148U ± 0.260 (0.545)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.232U ± 0.336 (0.693)	pCi/sa 0.232U ± 0.336 (0.693)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

23 3072060030-2540-SU4-19

24 3072060030-2540-SU4-19

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840567 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 13:22 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840567 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.148U ± 0.260 (0.545)	pCi/sa 0.148U ± 0.260 (0.545)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.232U ± 0.336 (0.693)	pCi/sa 0.232U ± 0.336 (0.693)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

25 3072060031-2540-SU4-20

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784259 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784259 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

25 3072060031-2540-SU4-20

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	-0.203U ± 0.275 (0.674)	pCi/sa -0.203U ± 0.275 (0.674)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.301J ± 0.329 (0.670)	pCi/sa 0.301J ± 0.329 (0.670)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

26 3072060031-2540-SU4-20

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840568 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840568 File CC OK F

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.203U ± 0.275 (0.674)	pCi/sa -0.203U ± 0.275 (0.674)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.301J ± 0.329 (0.670)	pCi/sa 0.301J ± 0.329 (0.670)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

27 3072060032-2540-SU4-21

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784261 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

27 3072060032-2540-SU4-21

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784261 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Req. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.337J ± 0.298 (0.563)	pCi/sa 0.337J ± 0.298 (0.563)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.117U ± 0.292 (0.611)	pCi/sa 0.117U ± 0.292 (0.611)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

28 3072060032-2540-SU4-21

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840569 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840569 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Req. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.337J ± 0.298 (0.563)	pCi/sa 0.337J ± 0.298 (0.563)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.117U ± 0.292 (0.611)	pCi/sa 0.117U ± 0.292 (0.611)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

29 3072060033-2540-SU4-22

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

29 3072060033-2540-SU4-22

Prep Information

Procedure 9000 I **Batch** RADC/12460 **Prep Date** 7/12/2012 20:10 **Dilution**
Method EPA 900.0m **HBN** 91030 **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2784263 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 20:10 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2784263 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.006U ± 0.286 (0.650)	pCi/sa -0.006U ± 0.286 (0.650)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.779U ± 0.387 (0.835)	pCi/sa -0.779U ± 0.387 (0.835)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

30 3072060033-2540-SU4-22

Type PS **Matrix** Wipe **Collected** 6/18/2012 00:01 **% Moisture**
Client RTI **WO** 3072060 **Work ID** Fort Monmouth 1207072 **Location**

Prep Information

Procedure 9000 I **Batch** RADC/12460 **Prep Date** 7/12/2012 20:10 **Dilution**
Method EPA 900.0m **HBN** 91030 **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2840570 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 20:10 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2840570 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.006U ± 0.286 (0.650)	pCi/sa -0.006U ± 0.286 (0.650)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.779U ± 0.387 (0.835)	pCi/sa -0.779U ± 0.387 (0.835)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

30 3072060033-2540-SU4-22

31 3072060034-2540-SU4-23

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784265 Instru NONE CC OK F
 Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784265 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	1.02 ± 0.506 (0.844)	pCi/sa 1.02 ± 0.506 (0.844)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.135U ± 0.299 (0.615)	pCi/sa 0.135U ± 0.299 (0.615)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

32 3072060034-2540-SU4-23

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840571 Instru NONE CC OK F
 Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840571 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

32 3072060034-2540-SU4-23

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	1.02 ± 0.506 (0.844)	pCi/sa 1.02 ± 0.506 (0.844)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.135U ± 0.299 (0.615)	pCi/sa 0.135U ± 0.299 (0.615)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

33 3072060035-2540-SU4-24

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/18/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784267	Batch RADC/12460 HBN 91030 Instru NONE	Prep Date 7/12/2012 20:10 Hold Date 12/15/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I Method EPA 900.0m Schedule 2784267	Instru NONE Col ID File	Run Date 7/12/2012 20:10 Hold Date 12/15/2012 23:59	Dilution Analyst MBT CC OK F
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Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.035U ± 0.236 (0.531)	pCi/sa 0.035U ± 0.236 (0.531)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.228U ± 0.317 (0.652)	pCi/sa 0.228U ± 0.317 (0.652)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

34 3072060035-2540-SU4-24

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/18/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2840572	Batch RADC/12460 HBN 91030 Instru NONE	Prep Date 7/12/2012 20:10 Hold Date 12/15/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure, For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

34 3072060035-2540-SU4-24

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840572 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.035U ± 0.236 (0.531)	pCi/sa 0.035U ± 0.236 (0.531)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.228U ± 0.317 (0.652)	pCi/sa 0.228U ± 0.317 (0.652)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

35 3072060036-2540-SU4-25

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784269 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784269 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.137U ± 0.303 (0.645)	pCi/sa 0.137U ± 0.303 (0.645)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.524U ± 0.390 (0.845)	pCi/sa -0.524U ± 0.390 (0.845)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

36 3072060036-2540-SU4-25

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

36 3072060036-2540-SU4-25

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840573 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840573 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.137U ± 0.303 (0.645)	pCi/sa 0.137U ± 0.303 (0.645)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.524U ± 0.390 (0.845)	pCi/sa -0.524U ± 0.390 (0.845)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

37 3072060037-2540-SU4-26

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784271 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784271 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.802U ± 0.390 (0.965)	pCi/sa -0.802U ± 0.390 (0.965)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.343J ± 0.355 (0.725)	pCi/sa 0.343J ± 0.355 (0.725)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

37 3072060037-2540-SU4-26

38 3072060037-2540-SU4-26

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840574 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840574 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Req. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.802U ± 0.390 (0.965)	pCi/sa -0.802U ± 0.390 (0.965)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.343J ± 0.355 (0.725)	pCi/sa 0.343J ± 0.355 (0.725)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

39 3072060038-2540-SU4-27

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784273 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784273 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Req. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

39 3072060038-2540-SU4-27						
Analyte	CC	Posted	Result	MDL	RDL	Reg. Limits
		Result				Low
Gross Alpha	OK	-0.171U ± 0.334 (0.787)	pCi/sa -0.171U ± 0.334 (0.787)			pCi/sam
The lab does not hold TNI accreditation for this parameter.						
Gross Beta	OK	-0.261U ± 0.335 (0.734)	pCi/sa -0.261U ± 0.335 (0.734)			pCi/sam
The lab does not hold TNI accreditation for this parameter.						

40 3072060038-2540-SU4-27				
Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information

Procedure 9000 I	Batch RADC/12460	Prep Date 7/12/2012 20:10	Dilution
Method EPA 900.0m	HBN 91030	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2840575	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 20:10	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2840575	File		CC OK F

Analyte	CC	Posted	Result	MDL	RDL	Reg. Limits
		Result				Low
Rad Chemistry	OK					
Gross Alpha	OK	-0.171U ± 0.334 (0.787)	pCi/sa -0.171U ± 0.334 (0.787)			pCi/sam
The lab does not hold TNI accreditation for this parameter.						
Gross Beta	OK	-0.261U ± 0.335 (0.734)	pCi/sa -0.261U ± 0.335 (0.734)			pCi/sam
The lab does not hold TNI accreditation for this parameter.						

41 3072060039-2540-SU4-28				
Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information

Procedure 9000 I	Batch RADC/12460	Prep Date 7/12/2012 20:10	Dilution
Method EPA 900.0m	HBN 91030	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2784275	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure, For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12460 HBN 91030
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

41 3072060039-2540-SU4-28

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784275 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.000U ± 0.279 (0.632)	pCi/sa 0.000U ± 0.279 (0.632)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.018U ± 0.332 (0.710)	pCi/sa 0.018U ± 0.332 (0.710)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

42 3072060039-2540-SU4-28

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12460 Prep Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m HBN 91030 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840576 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:10 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840576 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.000U ± 0.279 (0.632)	pCi/sa 0.000U ± 0.279 (0.632)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.018U ± 0.332 (0.710)	pCi/sa 0.018U ± 0.332 (0.710)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Creation Date 06/28/2012 13:04
Batch ID 12460
A-code 9000 I 9000W or NJ
Method EPA 900.0m EPA 900.0 or NJAC7186
Assigned Analyst MBT
Earliest Due Date 07/04/2012 07:12
HBN 91030

WorkerID	Sample ID	Sample Type	Matrix	Collection Date/Time	Client ID	Alpha Activity	Alpha Unc.	Alpha MDC	Beta Activity	Beta Unc.	Beta MDC	Analysis Date/Time	Alpha	Beta
	458972	BLANK	IP		QCACCOUNT	-0.152U	0.215	0.545	0.227U	0.335	0.693	7/12/12 7:58		
3072060	3072060020	PS	WP	6/18/2012 0:01	RTI	-0.261U	0.269	0.674	0.360U	0.333	0.670	7/12/12 13:22		
3072060	3072060021	PS	WP	6/18/2012 0:01	RTI	-0.006U	0.245	0.563	0.414U	0.313	0.611	7/12/12 13:22		
3072060	3072060022	PS	WP	6/18/2012 0:01	RTI	-0.144U	0.268	0.650	-0.611U	0.383	0.835	7/12/12 13:22		
3072060	3072060023	PS	WP	6/18/2012 0:01	RTI	1.18	0.530	0.844	0.125U	0.299	0.615	7/12/12 13:22		
3072060	3072060024	PS	WP	6/18/2012 0:01	RTI	0.151U	0.255	0.531	0.600U	0.348	0.652	7/12/12 13:22		
3072060	3072060025	PS	WP	6/18/2012 0:01	RTI	0.246U	0.318	0.645	-0.493U	0.390	0.845	7/12/12 13:22		
3072060	3072060026	PS	WP	6/18/2012 0:01	RTI	-0.724U	0.393	0.965	0.259U	0.349	0.725	7/12/12 13:22		
3072060	3072060027	PS	WP	6/18/2012 0:01	RTI	-0.171U	0.334	0.787	-0.115U	0.338	0.734	7/12/12 13:22		
3072060	3072060028	PS	WP	6/18/2012 0:01	RTI	-0.242U	0.250	0.632	0.030U	0.332	0.710	7/12/12 13:22		
3072060	3072060029	PS	WP	6/18/2012 0:01	RTI	0.462U	0.308	0.539	0.302U	0.323	0.650	7/12/12 13:22		
3072060	3072060030	PS	WP	6/18/2012 0:01	RTI	0.148U	0.280	0.545	0.232U	0.336	0.693	7/12/12 13:22		
3072060	3072060031	PS	WP	6/18/2012 0:01	RTI	-0.203U	0.275	0.674	0.301U	0.329	0.670	7/12/12 20:10		
3072060	3072060032	PS	WP	6/18/2012 0:01	RTI	0.337U	0.298	0.563	0.117U	0.292	0.611	7/12/12 20:10		
3072060	3072060033	PS	WP	6/18/2012 0:01	RTI	-0.006U	0.286	0.650	-0.779U	0.387	0.835	7/12/12 20:10		
3072060	3072060034	PS	WP	6/18/2012 0:01	RTI	1.02	0.506	0.844	0.135U	0.299	0.615	7/12/12 20:10		
3072060	3072060035	PS	WP	6/18/2012 0:01	RTI	0.035U	0.236	0.531	0.228U	0.317	0.652	7/12/12 20:10		
3072060	3072060036	PS	WP	6/18/2012 0:01	RTI	0.137U	0.303	0.645	-0.524U	0.390	0.845	7/12/12 20:10		
3072060	3072060037	PS	WP	6/18/2012 0:01	RTI	-0.802U	0.390	0.965	0.343U	0.355	0.725	7/12/12 20:10		
3072060	3072060038	PS	WP	6/18/2012 0:01	RTI	-0.171U	0.334	0.787	-0.261U	0.335	0.734	7/12/12 20:10		
3072060	3072060039	PS	WP	6/18/2012 0:01	RTI	0.000U	0.279	0.632	0.018U	0.332	0.710	7/12/12 20:10		

* This indicates a possible MCL exceedance may exist for this sample. Results greater than 15.0 pCi/L gross alpha must be reviewed expeditiously and the PM, Radchem Supervisor, and QA Manager notified immediately upon validation of the result. If the gross beta result is above 50 pCi/L, this may also indicate a reportable exceedance.

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Gross Alpha and Gross Beta Preparation Sheet

Batch: 124100

Transfer Analyst: MBT

Prep Date/Time: 7/9/12 12:00

Matrix: Filter

Logbook ID: 3-R021-5

Spike Analyst: N/A

QC ID: a:

LCS QC Vol (mL): a:

MSMSD QC Vol (mL): a:

Pipette ID:

Aliquot Balance ID: N/A

Aliquot Wgt. Date:

Tare Balance ID:

Tare Wgt. Date:

Gross Balance ID:

Gross Wgt. Date:

b: N/A

b:

b:

b:

Analyst Initials

Analyst Initials

Analyst Initials

Analyst Initials

Gross Mass (g)

Gross Mass (g)

Sample Volume (mL)

5mL Test Mass (g)

Analyst Initials

Bottle ID

Sample No.

Sample Comments

B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Bottle ID	Sample No.	Analyst Initials	Analyst Initials	Analyst Initials	Analyst Initials	Analyst Initials	Analyst Initials	Analyst Initials	Analyst Initials	Sample Comments
		Tare Mass (g)	5mL Test Mass (g)	Sample Volume (mL)	Gross Mass (g)	Gross Mass (g)	Gross Mass (g)	Gross Mass (g)	Gross Mass (g)	
N/A	45897Z	N/A	N/A	1.0	N/A	N/A	N/A	N/A	N/A	
	3072010020									
	21									
	22									
	23									
	24									
	25									
	26									
	27									
	28									
	29									
	30									
	31									
	32									
	33									
	34									
	35									
	36									
	37									
	38									
	39									
	LCS 124100									
	LASD 124100									

Batch Comments: Ludox: 8N HNO₃: Conc HNO₃:

Date Placed in oven: / / @

Date Removed: / / @

@

NBT7-11-R

Peer Review: _____ Date: _____

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12460
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012
Reporting Units: dpm

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Sigma 1.96
Zero Factor 2.71

Sample ID	Aliquot	Units	Tare (g)	Gross (g)	Residue (mg)	Det. ID	Count Date	Alpha Gross CPM	Beta Gross CPM	Count Duration (min)	Alpha Bkg CPM	Beta Bkg CPM	Bkg Count Duration (min)	Req Activity Units
458972	1.00000	S	9.0000	9.0000	0.00	53	7/12/2012 7:58	0.0800	1.4967	300	0.1070	1.3970	1000	dpm
3072060020	1.00000	S	9.0000	9.0000	0.00	43	7/12/2012 13:22	0.1167	1.3033	300	0.1620	1.1560	1000	dpm
3072060021	1.00000	S	9.0000	9.0000	0.00	44	7/12/2012 13:22	0.1100	1.1767	300	0.1110	0.9900	1000	dpm
3072060022	1.00000	S	9.0000	9.0000	0.00	45	7/12/2012 13:22	0.1167	1.4733	300	0.1410	1.7460	1000	dpm
3072060023	1.00000	S	9.0000	9.0000	0.00	46	7/12/2012 13:22	0.4267	1.0967	300	0.2330	0.9840	1000	dpm
3072060024	1.00000	S	9.0000	9.0000	0.00	47	7/12/2012 13:22	0.1200	1.4500	300	0.0940	1.1670	1000	dpm
3072060025	1.00000	S	9.0000	9.0000	0.00	48	7/12/2012 13:22	0.2100	1.8667	300	0.1650	2.0860	1000	dpm
3072060026	1.00000	S	9.0000	9.0000	0.00	49	7/12/2012 13:22	0.2100	1.4233	300	0.3330	1.3450	1000	dpm
3072060027	1.00000	S	9.0000	9.0000	0.00	50	7/12/2012 13:22	0.1767	1.4000	300	0.2050	1.4600	1000	dpm
3072060028	1.00000	S	9.0000	9.0000	0.00	51	7/12/2012 13:22	0.1067	1.3767	300	0.1500	1.3750	1000	dpm
3072060029	1.00000	S	9.0000	9.0000	0.00	52	7/12/2012 13:22	0.1900	1.3100	300	0.1070	1.1480	1000	dpm
3072060030	1.00000	S	9.0000	9.0000	0.00	53	7/12/2012 13:22	0.1333	1.5133	300	0.1070	1.3970	1000	dpm
3072060031	1.00000	S	9.0000	9.0000	0.00	43	7/12/2012 20:10	0.1267	1.2800	300	0.1620	1.1560	1000	dpm
3072060032	1.00000	S	9.0000	9.0000	0.00	44	7/12/2012 20:10	0.1700	1.0600	300	0.1110	0.9900	1000	dpm
3072060033	1.00000	S	9.0000	9.0000	0.00	45	7/12/2012 20:10	0.1400	1.4067	300	0.1410	1.7460	1000	dpm
3072060034	1.00000	S	9.0000	9.0000	0.00	46	7/12/2012 20:10	0.4000	1.0933	300	0.2330	0.9840	1000	dpm
3072060035	1.00000	S	9.0000	9.0000	0.00	47	7/12/2012 20:10	0.1000	1.2733	300	0.0940	1.1670	1000	dpm
3072060036	1.00000	S	9.0000	9.0000	0.00	48	7/12/2012 20:10	0.1900	1.8467	300	0.1650	2.0860	1000	dpm
3072060037	1.00000	S	9.0000	9.0000	0.00	49	7/12/2012 20:10	0.1967	1.4567	300	0.3330	1.3450	1000	dpm
3072060038	1.00000	S	9.0000	9.0000	0.00	50	7/12/2012 20:10	0.1767	1.3333	300	0.2050	1.4600	1000	dpm
3072060039	1.00000	S	9.0000	9.0000	0.00	51	7/12/2012 20:10	0.1500	1.3833	300	0.1500	1.3750	1000	dpm
LCS12460	1.00000	S	9.0000	9.0000	0.00	45	7/16/2012 12:14	0.7556	5.5667	90	0.1410	1.7460	1000	dpm
LCS12460	1.00000	S	9.0000	9.0000	0.00	46	7/16/2012 12:14	0.6667	5.4444	90	0.2330	0.9840	1000	dpm

M 7/17/12

M 7/17/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12460
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Alpha Results

Sample ID	Alpha Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Alpha Net CPM	Residue (mg)	Beta to Alpha Xtlk CPM	Xtlk corr. Net alpha CPM	Alpha eff	Activity Conversion
458972	-0.152	0.213	0.215	0.545	0.200	dpm/S	-0.027	0.00	0.000000	-0.027	17.78%	1
3072060020	-0.261	0.265	0.269	0.674	0.252	dpm/S	-0.045	0.00	0.000000	-0.045	17.36%	1
3072060021	-0.006	0.245	0.245	0.563	0.207	dpm/S	-0.001	0.00	0.000000	-0.001	17.51%	1
3072060022	-0.144	0.267	0.268	0.650	0.241	dpm/S	-0.024	0.00	0.000000	-0.024	16.90%	1
3072060023	1.180	0.486	0.530	0.844	0.319	dpm/S	0.194	0.00	0.000000	0.194	16.42%	1
3072060024	0.151	0.253	0.255	0.531	0.194	dpm/S	0.026	0.00	0.000000	0.026	17.20%	1
3072060025	0.246	0.315	0.318	0.645	0.241	dpm/S	0.045	0.00	0.000000	0.045	18.31%	1
3072060026	-0.724	0.371	0.393	0.965	0.369	dpm/S	-0.123	0.00	0.000000	-0.123	16.99%	1
3072060027	-0.171	0.333	0.334	0.787	0.296	dpm/S	-0.028	0.00	0.000000	-0.028	16.59%	1
3072060028	-0.242	0.246	0.250	0.632	0.235	dpm/S	-0.043	0.00	0.000000	-0.043	17.88%	1
3072060029	0.462	0.297	0.308	0.539	0.198	dpm/S	0.083	0.00	0.000000	0.083	17.97%	1
3072060030	0.148	0.259	0.260	0.545	0.200	dpm/S	0.026	0.00	0.000000	0.026	17.78%	1
3072060031	-0.203	0.273	0.275	0.674	0.252	dpm/S	-0.035	0.00	0.000000	-0.035	17.36%	1
3072060032	0.337	0.291	0.298	0.563	0.207	dpm/S	0.059	0.00	0.000000	0.059	17.51%	1
3072060033	-0.006	0.286	0.286	0.650	0.241	dpm/S	-0.001	0.00	0.000000	-0.001	16.90%	1
3072060034	1.017	0.473	0.506	0.844	0.319	dpm/S	0.167	0.00	0.000000	0.167	16.42%	1
3072060035	0.035	0.236	0.236	0.531	0.194	dpm/S	0.006	0.00	0.000000	0.006	17.20%	1
3072060036	0.137	0.302	0.303	0.645	0.241	dpm/S	0.025	0.00	0.000000	0.025	18.31%	1
3072060037	-0.802	0.363	0.390	0.965	0.369	dpm/S	-0.136	0.00	0.000000	-0.136	16.99%	1
3072060038	-0.171	0.333	0.334	0.787	0.296	dpm/S	-0.028	0.00	0.000000	-0.028	16.59%	1
3072060039	0.000	0.279	0.279	0.632	0.235	dpm/S	0.000	0.00	0.000000	0.000	17.88%	1
LCS12460	3.637	1.072	1.254	1.268	0.404	dpm/S	0.615	0.00	0.000000	0.615	16.90%	1
LCSD12460	2.642	1.044	1.146	1.625	0.534	dpm/S	0.434	0.00	0.000000	0.434	16.42%	1

M 7/17/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12460
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Beta Results

Sample ID	Beta Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Beta Net CPM	Residue (mg)	Alpha to Beta Xtlk CPM	Xtlk corr. Net beta CPM	Beta eff	Activity Conversion
458972	0.227	0.332	0.335	0.693	0.272	dpm/S	0.100	0.00	-0.007413	0.107	47.12%	1
3072060020	0.360	0.327	0.333	0.670	0.263	dpm/S	0.147	0.00	-0.012783	0.160	44.46%	1
3072060021	0.414	0.304	0.313	0.611	0.239	dpm/S	0.187	0.00	-0.000292	0.187	45.20%	1
3072060022	-0.611	0.367	0.383	0.835	0.330	dpm/S	-0.273	0.00	-0.006458	-0.266	43.55%	1
3072060023	0.125	0.298	0.299	0.615	0.241	dpm/S	0.113	0.00	0.056737	0.056	44.76%	1
3072060024	0.600	0.331	0.348	0.652	0.256	dpm/S	0.283	0.00	0.007550	0.275	45.90%	1
3072060025	-0.493	0.380	0.390	0.845	0.334	dpm/S	-0.219	0.00	0.012142	-0.231	46.97%	1
3072060026	0.259	0.346	0.349	0.725	0.285	dpm/S	0.078	0.00	-0.036066	0.114	44.19%	1
3072060027	-0.115	0.338	0.338	0.734	0.289	dpm/S	-0.060	0.00	-0.007946	-0.052	45.41%	1
3072060028	0.030	0.332	0.332	0.710	0.279	dpm/S	0.002	0.00	-0.012143	0.014	45.63%	1
3072060029	0.302	0.319	0.323	0.650	0.255	dpm/S	0.162	0.00	0.023943	0.138	45.67%	1
3072060030	0.232	0.334	0.336	0.693	0.272	dpm/S	0.116	0.00	0.007230	0.109	47.12%	1
3072060031	0.301	0.325	0.329	0.670	0.263	dpm/S	0.124	0.00	-0.009963	0.134	44.46%	1
3072060032	0.117	0.292	0.292	0.611	0.239	dpm/S	0.070	0.00	0.017256	0.053	45.20%	1
3072060033	-0.779	0.361	0.387	0.835	0.330	dpm/S	-0.339	0.00	-0.000265	-0.339	43.55%	1
3072060034	0.135	0.298	0.299	0.615	0.241	dpm/S	0.109	0.00	0.048924	0.060	44.76%	1
3072060035	0.228	0.314	0.317	0.652	0.256	dpm/S	0.106	0.00	0.001742	0.105	45.90%	1
3072060036	-0.524	0.379	0.390	0.845	0.334	dpm/S	-0.239	0.00	0.006746	-0.246	46.97%	1
3072060037	0.343	0.349	0.355	0.725	0.285	dpm/S	0.112	0.00	-0.039976	0.152	44.19%	1
3072060038	-0.261	0.332	0.335	0.734	0.289	dpm/S	-0.127	0.00	-0.007946	-0.119	45.41%	1
3072060039	0.018	0.332	0.332	0.710	0.279	dpm/S	0.008	0.00	0.000000	0.008	45.63%	1
LCS12460	8.399	1.135	1.883	1.556	0.551	dpm/S	3.821	0.00	0.163109	3.658	43.55%	1
LCSD12460	9.682	1.086	2.044	1.154	0.402	dpm/S	4.460	0.00	0.127047	4.333	44.76%	1

M 7/17/12

MBT

Quality Control Sample Performance Assessment

RCDU Upload



Analyst: MBT
Date: 7/17/2012
Worksheet: 12460
Matrix: Filter

Method: EPA 900.0m
SOP: PGHR-001
MB Sample ID: 458972

Method Blank Assessment			
Analyte	Activity	1.96 Sig Unc.	MDC
Gross Alpha	-0.1520	0.2150	0.5450
Gross Beta	0.2270	0.3350	0.6930

Laboratory Control Sample Assessment					
Analyte:	Count Date:	LCS		LCSB	
		7/16/12 12:14	7/16/12 12:14	7/16/12 12:14	7/16/12 12:14
Gross Alpha	12-018-F1	12-018-F2	12-014-F1	12-014-F2	Gross Beta
Spike I.D.:	2.353	1.000	1.000	1.000	9.800
Spike Concentration (DPM/Sample):	1.000	1.000	1.000	1.000	1.000
Volume Used (mL):	2.353	2.353	9.800	9.800	9.800
Aliquot Volume (L, g, F):	0.138	0.138	0.192	0.192	0.192
Target Conc. (DPM/Sample, g, F):	3.637	2.642	8.399	9.692	2.044
1.96 Sigma Uncertainty (Calculated):	1.254	1.146	1.883	2.044	1.883
% Recovery:	154.57%	112.29%	85.70%	88.80%	98.80%
Assessment:	High**	Pass	Pass	Pass	Pass
Upper % Recovery Limits:	119.00%	119.00%	130.00%	130.00%	130.00%
Lower % Recovery Limits:	62.00%	62.00%	79.00%	79.00%	79.00%

Duplicate Sample Assessment		
LCS/LCSD Y or N?	Y	N
Gross Alpha	Gross Beta	
LCS12460	LCS12460	
LCS12460	LCS12460	
3.6370	8.3990	
1.2540	1.8830	
2.6420	9.6920	
1.1460	2.0440	
No	No	
Relative Percent Difference:	31.69%	
Assessment:	Pass	
% RPD Limit:	35.00%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Analysis

Sample Matrix Spike Control Assessment	
Analyte:	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Conc. (DPM/Sample):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (DPM/Sample, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (DPM/Sample, g, F):	
MS Spike uncertainty (calculated):	
MSD Spike uncertainty (calculated):	
Sample Result:	
Sample 1.96 Sigma Unc.:	
Sample Matrix Spike Result:	
Sample MS 1.96 Sigma Unc.:	
Sample Matrix Spike Duplicate Result:	
Sample MSD 1.96 Sigma Unc.:	
MS % Recovery:	
MSD % Recovery:	
MS Assessment:	
MSD Assessment:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	
Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Analyte:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:	
MS/MSD Relative Percent Difference:	
MS/MSD RPD Assessment:	
% RPD Limit:	

Per 7/17/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12460
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PCH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Det No.	Effective Calibration Date				Alpha Efficiency	Alpha to Beta Cross-Talk				Beta to Alpha Cross-Talk	Beta Eff: ax + b	Beta-to-Alpha Xtalk : ax + b				BKG 1 Date: 6/3/2012	BKG 2 Date: 7/13/2012	
	a	b	c	d		e	a	b	c			d	e	a	b			c
1					1.4256E-01					3.2336E-01	4.5624E-01				0.0640	0.8040	0.0640	0.8040
2					1.5524E-01					2.7992E-01	4.5633E-01				0.0620	0.7010	0.0620	0.7010
3					1.5070E-01					3.0910E-01	4.4491E-01				0.0600	0.6670	0.0600	0.6670
4					1.4437E-01					2.9231E-01	4.3452E-01				0.1120	0.6050	0.1120	0.6050
5					#N/A					#N/A	#N/A				0.0520	5.1640	0.0520	5.1640
6					#N/A					#N/A	#N/A				0.0510		0.0510	
7					1.5705E-01					2.4638E-01	4.4360E-01				0.1070	0.6890	0.1070	0.6890
8					1.4091E-01					3.0938E-01	4.2938E-01				0.0960	0.6310	0.0960	0.6310
9					1.3453E-01					3.2289E-01	4.4454E-01				0.0550	0.6370	0.0550	0.6370
10					#N/A					#N/A	#N/A				0.0590	0.7940	0.0590	0.7940
11					1.5103E-01					4.0303E-01	4.5335E-01				0.1620	0.4690	0.1770	0.4410
12					1.5319E-01					3.7376E-01	4.5830E-01				0.0890	0.3780	0.1550	0.4240
13					1.4959E-01					4.0742E-01	3.9032E-01				0.0500	0.3330	0.1230	0.3450
14					1.5721E-01					3.5895E-01	4.4635E-01				0.0590	0.3800	0.0820	0.4390
15					1.5605E-01					3.4723E-01	4.4658E-01				0.0820	0.4950	0.1200	0.4700
16					1.5385E-01					3.5438E-01	4.3920E-01				0.0610	0.3910	0.0870	0.3430
17					1.5472E-01					3.2944E-01	4.4691E-01				0.1370	0.3660	0.0940	0.3710
18					1.5273E-01					3.6020E-01	4.4422E-01				0.0630	0.3820	0.0730	0.3840
19					1.5393E-01					3.8255E-01	4.5782E-01				0.0770	0.4570	0.0900	0.4330
20					1.5610E-01					3.6978E-01	4.4321E-01				0.0970	0.3820	0.0700	0.3890
21					1.5100E-01					4.0476E-01	4.5535E-01				0.0780	0.3780	0.0560	0.3810
22					1.5360E-01					3.9282E-01	4.3854E-01				0.0570	0.4180	0.1140	0.4060
23					1.5639E-01					3.8878E-01	4.4612E-01				0.0760	0.4570	0.0720	0.4150
24					#N/A					#N/A	#N/A							
25					1.5898E-01					3.5511E-01	4.5368E-01				0.1270	0.4110	0.1660	0.4010
26					1.5743E-01					3.3781E-01	4.5458E-01				0.1490	0.4370	0.0970	0.4050
27					1.5803E-01					3.3826E-01	4.4883E-01				0.0740	0.2860	0.0690	0.3990

Am 7/17/12

Am 7/17/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12460
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PCH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Det No.	Effective Calibration Date				Alpha Efficiency	Alpha to Beta Cross-Talk				Beta Efficiency	Alpha-to-Beta Cross-Talk: $ax^4 + bx^3 + cx^2 + dx + e$				Beta Eff: $ax + b$				Beta-to-Alpha Xtalk: $ax + b$				BKG 1 Date	BKG 2 Date	7/13/2012
	a	b	c	d		e	a	b	c		d	e	a	b	c	d	e	a	b	c	d	e			
28					1.5536E-01					3.4323E-01					4.3728E-01						0.0810	0.3330	0.1900	0.3480	
29					1.5363E-01					3.4570E-01					4.4188E-01						0.0840	0.3320	0.0630	0.2740	
30					1.5497E-01					3.5154E-01					4.4737E-01						0.0720	0.4080	0.2330	0.4240	
31					1.5353E-01					3.5204E-01					4.4881E-01						0.0890	0.3670	0.0900	0.3660	
32					1.5823E-01					3.3321E-01					4.6019E-01						0.0540	0.4120	0.0530	0.3380	
33					1.6147E-01					3.4650E-01					4.5824E-01						0.0900	0.3870	0.1200	0.4100	
34					1.6117E-01					3.3480E-01					4.4688E-01						0.0760	0.4040	0.1250	0.4480	
35					#N/A					#N/A					#N/A						0.1970	0.3930	0.2070	3.6640	
36					1.4953E-01					3.6093E-01					4.5203E-01						0.0930	0.4070	0.0870	0.3320	
37					1.5991E-01					3.1899E-01					4.4698E-01						0.0420	0.3190	0.2180	0.4600	
38					1.5254E-01					3.4653E-01					4.4279E-01						0.1100	0.3990	0.1040	0.3900	
39					1.7614E-01					2.7763E-01					4.5734E-01						0.0780	12.4760	0.0760	12.4760	
40					1.8176E-01					2.5395E-01					4.5470E-01						0.2530	12.5520	0.2530	12.5520	
41					#N/A					#N/A					#N/A						2.7170	366.6100	2.7170	366.6100	
42					1.4541E-01					4.9586E-01					3.3352E-01						0.2050	9.9000	0.2050	9.9000	
43					1.7364E-01					2.8197E-01					4.4499E-01						0.1620	1.560	0.1620	1.560	
44					1.7507E-01					2.9247E-01					4.5195E-01						0.1110	0.9900	0.1110	0.9900	
45					1.6896E-01					2.6541E-01					4.3650E-01						0.1410	1.7460	0.1410	1.7460	
46					1.6416E-01					2.9296E-01					4.4755E-01						0.2330	0.9840	0.2330	0.9840	
47					1.7203E-01					2.9040E-01					4.5901E-01						0.0940	1.1670	0.0940	1.1670	
48					1.8314E-01					2.6993E-01					4.5987E-01						0.1650	2.0860	0.1650	2.0860	
49					1.6993E-01					2.9322E-01					4.4190E-01						0.3330	1.3450	0.3330	1.3450	
50					1.6594E-01					2.8046E-01					4.5406E-01						0.2050	1.4800	0.2050	1.4800	
51					1.7800E-01					2.8023E-01					4.5625E-01						0.1500	1.3750	0.1500	1.3750	
52					1.7970E-01					2.8847E-01					4.5669E-01						0.1070	1.1480	0.1070	1.1480	
53					1.7780E-01					2.7454E-01					4.7119E-01						0.1070	1.3970	0.1070	1.3970	

Amelia

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

2/11/12
2/11/12

CSU Analysis for Preparation

Planchet Weighing

uncert (g)	gross (g)	tare (g)	net (g)	CSU (g)	
0.0003	9.1463	9.1273	0.019	0.000424264	2.23%

Volume Aliquot

(mL)	vol (mL)	rel unc
1.00	100.0	1.00%

Description	relative	of Critical	CSU for Preparation (UE1)	Uncertainty	Uncertainty
Sample Aliquoting	1.00%	1	1.00%	0.01%	
Planchet Weighing	2.23%	2	3.16%	0.10%	
Sample transfer to planchet	3.00%	1	3.00%	0.09%	
Additional Uncertainty due to differences in the distribution of residue on the planchet	5.00%	1	5.00%	0.25%	
				6.71%	

CSU Analysis for Analysis

Mass Aliquot

	Ref mass	uncert (g)	Rel unc
Tare	5	0.0004	
Gross	6	0.0004	Use max of 1%
net	1	0.000565685	0.057%

Description	Maximum	of Critical	CSU for Analysis (UE2)	Uncertainty	Uncertainty
SRM Uncertainty	5.00%	1	5.00%	0.25%	
Mass transfer	0.06%	2	0.08%	0.00%	
Source Reproducibility	5.00%	1	5.00%	0.25%	
Curve Fitting Uncertainty	5.00%	1	5.00%	0.25%	
Estimated Additional Uncertainty (variations in efficiency and self-absorption due to chemical composition of residue)	10.00%	1	10.00%	1.00%	
				13.23%	

CSU Analysis for Yield Correction

Description	Maximum	of Critical	CSU for Yield (UE3)	Uncertainty	Uncertainty
Additional Sample Uncertainty due to analysis without a tracer or chemical carrier	10.00%	1	10.00%	1.00%	
				10.00%	

2/12/12
PC

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Count

alpha

beta

SAMPLE_ID	Det#	BEG_DATE	BATCH_ID	ACPM	BCPM	CNT_TIME	alpha	beta
458972	53	#####	GAB12460	0.08	1.497	300	24	449
3072060020	43	#####	GAB12460	0.117	1.303	300	35	391
3072060021	44	#####	GAB12460	0.11	1.177	300	33	353
3072060022	45	#####	GAB12460	0.117	1.473	300	35	442
3072060023	46	#####	GAB12460	0.427	1.097	300	128	329
3072060024	47	#####	GAB12460	0.12	1.45	300	36	435
3072060025	48	#####	GAB12460	0.21	1.867	300	63	560
3072060026	49	#####	GAB12460	0.21	1.423	300	63	427
3072060027	50	#####	GAB12460	0.177	1.4	300	53	420
3072060028	51	#####	GAB12460	0.107	1.377	300	32	413
3072060029	52	#####	GAB12460	0.19	1.31	300	57	393
3072060030	53	#####	GAB12460	0.133	1.513	300	40	454
3072060031	43	#####	GAB12460	0.127	1.28	300	38	384
3072060032	44	#####	GAB12460	0.17	1.06	300	51	318
3072060033	45	#####	GAB12460	0.14	1.407	300	42	422
3072060034	46	#####	GAB12460	0.4	1.093	300	120	328
3072060035	47	#####	GAB12460	0.1	1.273	300	30	382
3072060036	48	#####	GAB12460	0.19	1.847	300	57	554
3072060037	49	#####	GAB12460	0.197	1.457	300	59	437
3072060038	50	#####	GAB12460	0.177	1.333	300	53	400
3072060039	51	#####	GAB12460	0.15	1.383	300	45	415
LCS12460	45	#####	GAB12460	0.756	5.567	90	68	501
LCSD12460	46	#####	GAB12460	0.667	5.444	90	60	490

Analysis

Batch Report

Batch Name: GAB12460

Procedure: GAB Filter Counting

Calibration: Water

Count Date: 7/12/2012 7:58:43 AM

Preset Count Time: 18000

Count Mode: Simultaneous

Sample ID	DetectorName	Alpha Counts	Beta Counts	Count Date/Time	Count Duration (minutes)
458972	53	24	449	7/12/2012 7:58:34 AM	300
3072060020	43	35	391	7/12/2012 1:22:00 PM	300
3072060021	44	33	353	7/12/2012 1:22:00 PM	300
3072060022	45	35	442	7/12/2012 1:22:00 PM	300
3072060023	46	128	329	7/12/2012 1:22:00 PM	300
3072060024	47	36	435	7/12/2012 1:22:00 PM	300
3072060025	48	63	560	7/12/2012 1:22:00 PM	300
3072060026	49	63	427	7/12/2012 1:22:01 PM	300
3072060027	50	53	420	7/12/2012 1:22:01 PM	300
3072060028	51	32	413	7/12/2012 1:22:01 PM	300
3072060029	52	57	393	7/12/2012 1:22:01 PM	300
3072060030	53	40	454	7/12/2012 1:22:01 PM	300
3072060031	43	38	384	7/12/2012 8:10:40 PM	300
3072060032	44	51	318	7/12/2012 8:10:40 PM	300
3072060033	45	42	422	7/12/2012 8:10:40 PM	300
3072060034	46	120	328	7/12/2012 8:10:40 PM	300

7/12/2012

2/16/12
2/17/12

Sample ID	DetectorName	Alpha Counts	Beta Counts	Count Date/Time	Count Duration (minutes)
3072060035	47	30	382	7/12/2012 8:10:40 PM	300
3072060036	48	57	554	7/12/2012 8:10:40 PM	300
3072060037	49	59	437	7/12/2012 8:10:41 PM	300
3072060038	50	53	400	7/12/2012 8:10:41 PM	300
3072060039	51	45	415	7/12/2012 8:10:41 PM	300

Batch Report

Batch Name: GAB12460B

Procedure: GAB Filter Counting

Calibration: Water

Count Date: 7/16/2012 12:14:34 PM

Preset Count Time: 18000

Count Mode: Simultaneous

Sample ID	DetectorName	Alpha Counts	Beta Counts	Count Date/Time	Count Duration (minutes)
LCS#1-12460	45	68	501	7/16/2012 12:14:29 PM	90
LCS#2-12460	46	60	490	7/16/2012 12:14:29 PM	90

2/11/12
2012

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 25-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
	6	3072768001	GRA 12608	130	7/11/12 21:04	BSH	NA	NA
	7	3072769001						
	9	3072914601						
	10	3072733001						
	11	3072750001		110	21:00			
	17	3072909001						
	21	LCS 12608						
	22	LCS D 12608						
GAB	43	3072058071	GAB 12457	300	7-12-12	MBT	NA	NA
	44	72						
	45	73						
	46	74						
	47	75						
	48	76						
	49	77						
	50	78						
	51	79						
	52	80						
	53	3458972	GAB 12400		7-12-12	MBT		
GAB	12	458973	GAB 12401	120	7-12-12 0745	MBT		NA
	14	3072000040						
	15	41						
	16	42						
	18	43						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review 182

Date: 7/12/12

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182

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
GAB	34	GA20120614 - N06	GAB Cnd	90	7/12/12 1245	MBT	NA	NA
	36	0711 - N17						
	37	N18						
	38	N19						
	38	GA20120711 - N19		19	7/12/12 1308			
	29	6414 - N01						
	30	N10						
	31	N03						
	33	N04						
	34	N05						
	36	N06						
	37	0711 - N17						
	38	N18						
GAB	43	3072010020	GAB12400	300	7-12-12 1322	MBT	NA	NA
	44	21						
	45	22						
	46	23						
	47	24						
	48	25						
	49	26						
	50	27						
	51	28						
	52	29						
	53	30						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review MBT

Date: 7/13/12

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7/13/12 MBT

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAB	51	3072085 027	GAB 124105	300	7-13-12 0800	MBT	NA	NA
	52	28						
	53	29						
GAB	43	LCS 3 12475	GAB 12475	90	7-10-12 1245	MBT	NA	NA
	44	4						
	45	LCS 1 - 12460	GAB 12460					
	46	LCS 2 - 12460						
GAB	2	307254104	GAB 12573	1000	7/10/12 1504	G	NA	NA
	3	307254101						
	6	307274902	GAB 12558		7/10/12 1504			
	7	70903						
	8	70912						
	9	70911						
	10	70920						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

MBT

Pace Analytical Services, Inc.-Pittsburgh Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAB	43	2070060031	648 0400	300	7/21/10 20:10	BSE	NA	
	44	039						
	45	033						
	46	034						
	47	035						
	48	036						
	49	037						
	50	038						
	51	039						

- Legend:**
1. Detector daily check failure
 2. MDC > Contract RL
 3. Sample re-ingrowth
 4. Sample was re-prepped
 5. Other noted comments

Gross Alpha and Beta Sample Analysis Data

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

1 458973-BLANK for HBN 91031 [RADC/1246]

Type BLANK Matrix Impact Plate Collected % Moisture
 Client QCACCOUNT WO Work ID

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:37 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795651 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:37 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795651 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	0.126U ± 0.404 (0.974)	pCi/sa 0.126U ± 0.404 (0.974)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	0.287J ± 0.297 (0.619)	pCi/sa 0.287J ± 0.297 (0.619)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					

2 458973-BLANK for HBN 91031 [RADC/1246]

Type BLANK Matrix Impact Plate Collected % Moisture
 Client QCACCOUNT WO Work ID

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:37 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2840577 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:37 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2840577 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	0.126U ± 0.404 (0.974)	pCi/sa 0.126U ± 0.404 (0.974)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	0.287J ± 0.297 (0.619)	pCi/sa 0.287J ± 0.297 (0.619)		pCi/sam

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

2 458973-BLANK for HBN 91031 [RADC/1246

Analyte	CC	Posted Result	Result	MDL	RDL
The lab does not hold TNI accreditation for this parameter.					

3 3072060040-2540-SU4-29

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784277 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784277 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.091U ± 0.345 (0.853)	pCi/sa 0.091U ± 0.345 (0.853)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.481J ± 0.333 (0.637)	pCi/sa 0.481J ± 0.333 (0.637)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

4 3072060040-2540-SU4-29

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840578 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840578 File CC OK F

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

4 3072060040-2540-SU4-29							
Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.091U ± 0.345 (0.853)	pCi/sa 0.091U ± 0.345 (0.853)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.481J ± 0.333 (0.637)	pCi/sa 0.481J ± 0.333 (0.637)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

5 3072060041-2540-SU4-30				
Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information				
Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 07:38	Dilution	
Method EPA 900.0m	HBN 91031	Hold Date 12/15/2012 23:59	Analyst MBT	
Schedule 2784279	Instru NONE		CC OK F	
Initial Volume 1 mL Default	1 mL			
Final Volume, 1 mL Default	1 mL			

Analytical Information				
Procedure 9000 I	Instru NONE	Run Date 7/12/2012 07:38	Dilution	
Method EPA 900.0m	Col ID	Hold Date 12/15/2012 23:59	Analyst MBT	
Schedule 2784279	File		CC OK F	

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.756J ± 0.542 (0.924)	pCi/sa 0.756J ± 0.542 (0.924)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.181U ± 0.331 (0.719)	pCi/sa 0.181U ± 0.331 (0.719)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

6 3072060041-2540-SU4-30				
Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information				
Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 07:38	Dilution	
Method EPA 900.0m	HBN 91031	Hold Date 12/15/2012 23:59	Analyst MBT	
Schedule 2840579	Instru NONE		CC OK F	
Initial Volume 1 mL Default	1 mL			
Final Volume, 1 mL Default	1 mL			

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

6 3072060041-2540-SU4-30

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840579 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.756J ± 0.542 (0.924)	pCi/sa 0.756J ± 0.542 (0.924)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.181U ± 0.331 (0.719)	pCi/sa 0.181U ± 0.331 (0.719)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

7 3072060042-2540-SU5-1

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784281 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784281 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.633J ± 0.487 (0.829)	pCi/sa 0.633J ± 0.487 (0.829)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.189U ± 0.305 (0.656)	pCi/sa 0.189U ± 0.305 (0.656)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

8 3072060042-2540-SU5-1

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

8 3072060042-2540-SU5-1

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840580 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840580 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.633J ± 0.487 (0.829)	pCi/sa 0.633J ± 0.487 (0.829)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.189U ± 0.305 (0.656)	pCi/sa 0.189U ± 0.305 (0.656)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

9 3072060043-2540-SU5-10

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784283 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784283 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.570J ± 0.476 (0.845)	pCi/sa 0.570J ± 0.476 (0.845)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.007U ± 0.274 (0.641)	pCi/sa 0.007U ± 0.274 (0.641)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

9 3072060043-2540-SU5-10

10 3072060043-2540-SU5-10

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840581 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2840581 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.570J ± 0.476 (0.845)	pCi/sa 0.570J ± 0.476 (0.845)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.007U ± 0.274 (0.641)	pCi/sa 0.007U ± 0.274 (0.641)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

11 3072060044-2540-SU5-18

Type PS Matrix Wipe Collected 6/18/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784285 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/15/2012 23:59 Analyst MBT
 Schedule 2784285 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

11 3072060044-2540-SU5-18

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	0.095U ± 0.370 (0.912)	pCi/sa 0.095U ± 0.370 (0.912)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.137U ± 0.265 (0.676)	pCi/sa -0.137U ± 0.265 (0.676)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

12 3072060044-2540-SU5-18

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/18/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2840582	Batch RADC/12461 HBN 91031 Instru NONE	Prep Date 7/12/2012 07:38 Hold Date 12/15/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I Method EPA 900.0m Schedule 2840582	Instru NONE Col ID File	Run Date 7/12/2012 07:38 Hold Date 12/15/2012 23:59	Dilution Analyst MBT CC OK F
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Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.095U ± 0.370 (0.912)	pCi/sa 0.095U ± 0.370 (0.912)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.137U ± 0.265 (0.676)	pCi/sa -0.137U ± 0.265 (0.676)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

13 3072060045-2540-SU5-19

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/18/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784287	Batch RADC/12461 HBN 91031 Instru NONE	Prep Date 7/12/2012 07:38 Hold Date 12/15/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

13 3072060045-2540-SU5-19

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 07:38	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2784287	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.000U ± 0.332 (0.888)	pCi/sa 0.000U ± 0.332 (0.888)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.283J ± 0.324 (0.694)	pCi/sa 0.283J ± 0.324 (0.694)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

14 3072060045-2540-SU5-19

Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 07:38	Dilution
Method EPA 900.0m	HBN 91031	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2840583	Instru NONE		CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 07:38	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/15/2012 23:59	Analyst MBT
Schedule 2840583	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.000U ± 0.332 (0.888)	pCi/sa 0.000U ± 0.332 (0.888)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.283J ± 0.324 (0.694)	pCi/sa 0.283J ± 0.324 (0.694)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

15 3072060046-2540-SU5-36

Type PS	Matrix Wipe	Collected 6/18/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

15 3072060046-2540-SU5-36

Prep Information

Procedure 9000 I **Batch** RADC/12461 **Prep Date** 7/12/2012 07:39 **Dilution**
Method EPA 900.0m **HBN** 91031 **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2784289 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 07:39 **Dilution**
Method EPA 900.0m **Col ID** File **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2784289 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.733J ± 0.535 (0.929)	pCi/sa 0.733J ± 0.535 (0.929)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.157U ± 0.290 (0.626)	pCi/sa 0.157U ± 0.290 (0.626)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

16 3072060046-2540-SU5-36

Type PS **Matrix** Wipe **Collected** 6/18/2012 00:01 **% Moisture**
Client RTI **WO** 3072060 **Work ID** Fort Monmouth 1207072 **Location**

Prep Information

Procedure 9000 I **Batch** RADC/12461 **Prep Date** 7/12/2012 07:39 **Dilution**
Method EPA 900.0m **HBN** 91031 **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2840584 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 07:39 **Dilution**
Method EPA 900.0m **Col ID** File **Hold Date** 12/15/2012 23:59 **Analyst** MBT
Schedule 2840584 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.733J ± 0.535 (0.929)	pCi/sa 0.733J ± 0.535 (0.929)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.157U ± 0.290 (0.626)	pCi/sa 0.157U ± 0.290 (0.626)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure, For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

16 3072060046-2540-SU5-36

17 3072060047-2540-SU6-1

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:39 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784291 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:39 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784291 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	1.46 ± 0.647 (0.686)	pCi/sa 1.46 ± 0.647 (0.686)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.612 ± 0.353 (0.587)	pCi/sa 0.612 ± 0.353 (0.587)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

18 3072060047-2540-SU6-1

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:39 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840585 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:39 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840585 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

18 3072060047-2540-SU6-1

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	1.46 ± 0.647 (0.686)	pCi/sa 1.46 ± 0.647 (0.686)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.612 ± 0.353 (0.587)	pCi/sa 0.612 ± 0.353 (0.587)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

19 3072060048-2540-SU6-2

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784293 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784293 File CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.323J ± 0.419 (0.870)	pCi/sa 0.323J ± 0.419 (0.870)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.397J ± 0.402 (0.847)	pCi/sa 0.397J ± 0.402 (0.847)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

20 3072060048-2540-SU6-2

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840586 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

20 3072060048-2540-SU6-2

Analytical Information

Procedure 9000 I		Instru NONE		Run Date 7/12/2012 07:42		Dilution	
Method EPA 900.0m		Col ID		Hold Date 12/16/2012 23:59		Analyst MBT	
Schedule 2840586		File				CC OK F	
Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.323J ± 0.419 (0.870)	pCi/sa 0.323J ± 0.419 (0.870)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.397J ± 0.402 (0.847)	pCi/sa 0.397J ± 0.402 (0.847)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

21 3072060049-2540-SU6-3

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I		Batch RADC/12461		Prep Date 7/12/2012 07:42		Dilution	
Method EPA 900.0m		HBN 91031		Hold Date 12/16/2012 23:59		Analyst MBT	
Schedule 2784295		Instru NONE				CC OK F	
Initial Volume	1 mL Default	1 mL					
Final Volume,	1 mL Default	1 mL					

Analytical Information

Procedure 9000 I		Instru NONE		Run Date 7/12/2012 07:42		Dilution	
Method EPA 900.0m		Col ID		Hold Date 12/16/2012 23:59		Analyst MBT	
Schedule 2784295		File				CC OK F	
Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.040U ± 0.284 (0.801)	pCi/sa -0.040U ± 0.284 (0.801)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.250U ± 0.312 (0.795)	pCi/sa -0.250U ± 0.312 (0.795)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

22 3072060049-2540-SU6-3

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

22 3072060049-2540-SU6-3

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840587 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840587 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.040U ± 0.284 (0.801)	pCi/sa -0.040U ± 0.284 (0.801)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.250U ± 0.312 (0.795)	pCi/sa -0.250U ± 0.312 (0.795)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

23 3072060050-2540-SU6-4

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784297 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784297 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.210U ± 0.431 (0.982)	pCi/sa 0.210U ± 0.431 (0.982)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.079U ± 0.336 (0.810)	pCi/sa -0.079U ± 0.336 (0.810)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

23 3072060050-2540-SU6-4

24 3072060050-2540-SU6-4

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840588 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840588 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.210U ± 0.431 (0.982)	pCi/sa 0.210U ± 0.431 (0.982)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.079U ± 0.336 (0.810)	pCi/sa -0.079U ± 0.336 (0.810)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

25 3072060051-2540-SU6-5

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784299 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:42 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784299 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

25 3072060051-2540-SU6-5

Analyte	CC	Posted		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Gross Alpha	OK	0.483J ± 0.464 (0.866)	pCi/sa 0.483J ± 0.464 (0.866)			pCi/sam		
The lab does not hold TNI accreditation for this parameter.								
Gross Beta	OK	0.888 ± 0.442 (0.779)	pCi/sa 0.888 ± 0.442 (0.779)			pCi/sam		
The lab does not hold TNI accreditation for this parameter.								

26 3072060051-2540-SU6-5

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2840589	Batch RADC/12461 HBN 91031 Instru NONE	Prep Date 7/12/2012 07:42 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I Method EPA 900.0m Schedule 2840589	Instru NONE Col ID File	Run Date 7/12/2012 07:42 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
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Analyte	CC	Posted		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Rad Chemistry	OK							
Gross Alpha	OK	0.483J ± 0.464 (0.866)	pCi/sa 0.483J ± 0.464 (0.866)			pCi/sam		
The lab does not hold TNI accreditation for this parameter.								
Gross Beta	OK	0.888 ± 0.442 (0.779)	pCi/sa 0.888 ± 0.442 (0.779)			pCi/sam		
The lab does not hold TNI accreditation for this parameter.								

27 3072060052-2540-SU6-6

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784301	Batch RADC/12461 HBN 91031 Instru NONE	Prep Date 7/12/2012 07:41 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

27 3072060052-2540-SU6-6

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:41 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784301 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.046U ± 0.311 (0.874)	pCi/sa -0.046U ± 0.311 (0.874)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.422J ± 0.294 (0.558)	pCi/sa 0.422J ± 0.294 (0.558)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

28 3072060052-2540-SU6-6

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:41 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840590 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:41 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840590 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.046U ± 0.311 (0.874)	pCi/sa -0.046U ± 0.311 (0.874)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.422J ± 0.294 (0.558)	pCi/sa 0.422J ± 0.294 (0.558)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

29 3072060053-2540-SU6-7

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

29 3072060053-2540-SU6-7

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:50 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784303 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:50 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784303 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.034U ± 0.368 (0.992)	pCi/sa -0.034U ± 0.368 (0.992)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.087U ± 0.252 (0.643)	pCi/sa -0.087U ± 0.252 (0.643)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

30 3072060053-2540-SU6-7

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:50 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840591 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:50 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840591 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.034U ± 0.368 (0.992)	pCi/sa -0.034U ± 0.368 (0.992)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.087U ± 0.252 (0.643)	pCi/sa -0.087U ± 0.252 (0.643)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

30 3072060053-2540-SU6-7

31 3072060054-2540-SU6-8

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784305 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784305 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.092U ± 0.319 (0.923)	pCi/sa -0.092U ± 0.319 (0.923)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.260J ± 0.288 (0.612)	pCi/sa 0.260J ± 0.288 (0.612)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

32 3072060054-2540-SU6-8

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840592 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840592 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

32 3072060054-2540-SU6-8

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	-0.092U ± 0.319 (0.923)	pCi/sa -0.092U ± 0.319 (0.923)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.260J ± 0.288 (0.612)	pCi/sa 0.260J ± 0.288 (0.612)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

33 3072060055-2540-SU6-9

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 07:53	Dilution
Method EPA 900.0m	HBN 91031	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784307	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 07:53	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784307	File		CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.611J ± 0.496 (0.881)	pCi/sa 0.611J ± 0.496 (0.881)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.334J ± 0.326 (0.657)	pCi/sa 0.334J ± 0.326 (0.657)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

34 3072060055-2540-SU6-9

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 07:53	Dilution
Method EPA 900.0m	HBN 91031	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2840593	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

34 3072060055-2540-SU6-9

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840593 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.611J ± 0.496 (0.881)	pCi/sa 0.611J ± 0.496 (0.881)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.334J ± 0.326 (0.657)	pCi/sa 0.334J ± 0.326 (0.657)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

35 3072060056-2540-SU6-10

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784309 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784309 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.017U ± 0.373 (0.972)	pCi/sa 0.017U ± 0.373 (0.972)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.257J ± 0.293 (0.623)	pCi/sa 0.257J ± 0.293 (0.623)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

36 3072060056-2540-SU6-10

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

36 3072060056-2540-SU6-10

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840594 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840594 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.017U ± 0.373 (0.972)	pCi/sa 0.017U ± 0.373 (0.972)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.257J ± 0.293 (0.623)	pCi/sa 0.257J ± 0.293 (0.623)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

37 3072060057-2540-SU6-11

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784311 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784311 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.252U ± 0.396 (0.866)	pCi/sa 0.252U ± 0.396 (0.866)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.077U ± 0.263 (0.654)	pCi/sa -0.077U ± 0.263 (0.654)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

37 3072060057-2540-SU6-11

38 3072060057-2540-SU6-11

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840595 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 07:53 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2840595 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.252U ± 0.396 (0.866)	pCi/sa 0.252U ± 0.396 (0.866)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.077U ± 0.263 (0.654)	pCi/sa -0.077U ± 0.263 (0.654)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

39 3072060058-2540-SU6-12

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12461 Prep Date 7/12/2012 08:45 Dilution
 Method EPA 900.0m HBN 91031 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784313 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 08:45 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784313 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

39 3072060058-2540-SU6-12

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	-0.004U ± 0.356 (0.948)	pCi/sa -0.004U ± 0.356 (0.948)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.064U ± 0.253 (0.596)	pCi/sa 0.064U ± 0.253 (0.596)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

40 3072060058-2540-SU6-12

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 08:45	Dilution
Method EPA 900.0m	HBN 91031	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2840596	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 08:45	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2840596	File		CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.004U ± 0.356 (0.948)	pCi/sa -0.004U ± 0.356 (0.948)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.064U ± 0.253 (0.596)	pCi/sa 0.064U ± 0.253 (0.596)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

41 3072060059-2540-SU6-13

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 09:24	Dilution
Method EPA 900.0m	HBN 91031	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784315	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12461 HBN 91031
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

41 3072060059-2540-SU6-13

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 09:24	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784315	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.371J ± 0.454 (0.944)	pCi/sa 0.371J ± 0.454 (0.944)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.259J ± 0.282 (0.582)	pCi/sa 0.259J ± 0.282 (0.582)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

42 3072060059-2540-SU6-13

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12461	Prep Date 7/12/2012 09:24	Dilution
Method EPA 900.0m	HBN 91031	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2840597	Instru NONE		CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 09:24	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2840597	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.371J ± 0.454 (0.944)	pCi/sa 0.371J ± 0.454 (0.944)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.259J ± 0.282 (0.582)	pCi/sa 0.259J ± 0.282 (0.582)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Creation Date 06/28/2012 13:05 Assigned Analyst MBT
Batch ID 12461 Earliest Due Date 07/04/2012 07:12
A-code 9000 I 9000W or NJ HBN 91031
Method EPA.900.0m EPA 900.0 or NJAC7186

Workorder	Sample ID	Sample Type	Matrix	Collection Date/Time	Client ID	Alpha Activity	Alpha Unc.	Alpha MDC	Beta Activity	Beta Unc.	Beta MDC	Analysis Date/Time	MCL Exceedance *	
													Alpha	Beta
	458973	BLANK	IP		QCACCOUNT	0.126U	0.404	0.974	0.287J	0.297	0.619	7/12/12 7:37		
3072060	3072060040	PS	WP	6/18/2012 0:01	RTI	0.091U	0.345	0.853	0.481J	0.333	0.637	7/12/12 7:38		
3072060	3072060041	PS	WP	6/18/2012 0:01	RTI	0.756J	0.542	0.924	0.181U	0.331	0.719	7/12/12 7:38		
3072060	3072060042	PS	WP	6/18/2012 0:01	RTI	0.633J	0.487	0.829	0.189U	0.305	0.656	7/12/12 7:38		
3072060	3072060043	PS	WP	6/18/2012 0:01	RTI	0.570J	0.476	0.845	0.007U	0.274	0.641	7/12/12 7:38		
3072060	3072060044	PS	WP	6/18/2012 0:01	RTI	0.095U	0.370	0.912	-0.137U	0.265	0.676	7/12/12 7:38		
3072060	3072060045	PS	WP	6/18/2012 0:01	RTI	0.000U	0.332	0.888	0.283J	0.324	0.684	7/12/12 7:38		
3072060	3072060046	PS	WP	6/18/2012 0:01	RTI	0.733J	0.535	0.929	0.157U	0.290	0.626	7/12/12 7:39		
3072060	3072060047	PS	WP	6/19/2012 0:01	RTI	1.46	0.647	0.686	0.612	0.353	0.587	7/12/12 7:39		
3072060	3072060048	PS	WP	6/19/2012 0:01	RTI	0.323J	0.419	0.870	0.397J	0.402	0.847	7/12/12 7:42		
3072060	3072060049	PS	WP	6/19/2012 0:01	RTI	-0.040U	0.284	0.801	-0.250U	0.312	0.795	7/12/12 7:42		
3072060	3072060050	PS	WP	6/19/2012 0:01	RTI	0.210U	0.431	0.982	-0.079U	0.336	0.810	7/12/12 7:42		
3072060	3072060051	PS	WP	6/19/2012 0:01	RTI	0.483J	0.464	0.866	0.888	0.442	0.779	7/12/12 7:42		
3072060	3072060052	PS	WP	6/19/2012 0:01	RTI	-0.046U	0.311	0.874	0.422J	0.294	0.558	7/12/12 7:41		
3072060	3072060053	PS	WP	6/19/2012 0:01	RTI	-0.034U	0.368	0.992	-0.087U	0.252	0.643	7/12/12 7:50		
3072060	3072060054	PS	WP	6/19/2012 0:01	RTI	-0.092U	0.319	0.923	0.260J	0.288	0.612	7/12/12 7:53		
3072060	3072060055	PS	WP	6/19/2012 0:01	RTI	0.611J	0.496	0.861	0.334J	0.326	0.657	7/12/12 7:53		
3072060	3072060056	PS	WP	6/19/2012 0:01	RTI	0.017U	0.373	0.972	0.257J	0.293	0.623	7/12/12 7:53		
3072060	3072060057	PS	WP	6/19/2012 0:01	RTI	0.252U	0.396	0.866	-0.077U	0.263	0.654	7/12/12 7:53		
3072060	3072060058	PS	WP	6/19/2012 0:01	RTI	-0.004U	0.356	0.948	0.064U	0.253	0.596	7/12/12 8:45		
3072060	3072060059	PS	WP	6/19/2012 0:01	RTI	0.371J	0.454	0.944	0.259J	0.282	0.582	7/12/12 9:24		

* This indicates a possible MCL exceedance may exist for this sample. Results greater than 15.0 pCi/L gross alpha must be reviewed expeditiously and the PM, Radchem Supervisor, and QA Manager notified immediately upon validation of the result. If the gross beta result is above 50 pCi/L, this may also indicate a reportable exceedance.

M-7/18/12

07/17/12

Gross Alpha and Gross Beta Preparation Sheet

Batch: 124101

Transfer Analyst: MBT

Prep Date/Time: 7/4/12 12:00

Matrix: Filter

Logbook ID: 3-R021-5

Spike Analyst: NA

QC ID: a:

LCS QC Vol (mL): a:

MS/MSD QC Vol (mL): a:

Pipette ID: _____

NA

b:

b:

b:

Aliquot Balance ID: NA

Aliquot Wgt. Date: _____

Tare Balance ID: _____

Tare Wgt. Date: _____

Gross Balance ID: _____

Gross Wgt. Date: _____

Bottle ID	Sample No.	Analyst Initials			Gross Mass (g)	Sample Comments
		Tare Mass (g)	5mL Test Mass (g)	Sample Volume (mL)		
NA	458973	NA	NA	NA	NA	
	3072000040					
	41					
	42					
	43					
	44					
	45					
	46					
	47					
	48					
	49					
	50					
	51					
	52					
	53					
	54					
	55					
	56					
	57					
	58					
	59					
	LOS124101					
	LOSD124101					

Batch Comments: Ludox:

8N HNO₃:

Date Removed / / @

Conc HNO₃:

MBT 7-11-12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12461
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012
Reporting Units: dpm

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Sigma
Zero Factor

1.96
2.71

Sample ID	Aliquot	Units	Tare (g)	Gross (g)	Residue (mg)	Det. ID	Count Date	Alpha Gross CPM	Beta Gross CPM	Count Duration (min)	Alpha Bkg CPM	Beta Bkg CPM	Bkg Count Duration (min)	Req Activity Units
458973	1.00000	S	9.0000	9.0000	0.00	12	7/12/2012 7:37	0.1083	0.5167	120	0.0890	0.3780	1000	dpm
3072060040	1.00000	S	9.0000	9.0000	0.00	14	7/12/2012 7:38	0.0833	0.6000	120	0.0690	0.3800	1000	dpm
3072060041	1.00000	S	9.0000	9.0000	0.00	15	7/12/2012 7:38	0.2000	0.6167	120	0.0820	0.4950	1000	dpm
3072060042	1.00000	S	9.0000	9.0000	0.00	16	7/12/2012 7:38	0.1583	0.5083	120	0.0610	0.3910	1000	dpm
3072060043	1.00000	S	9.0000	9.0000	0.00	18	7/12/2012 7:38	0.1500	0.4167	120	0.0630	0.3820	1000	dpm
3072060044	1.00000	S	9.0000	9.0000	0.00	19	7/12/2012 7:38	0.0917	0.4000	120	0.0770	0.4570	1000	dpm
3072060045	1.00000	S	9.0000	9.0000	0.00	23	7/12/2012 7:38	0.0750	0.5833	120	0.0750	0.4570	1000	dpm
3072060046	1.00000	S	9.0000	9.0000	0.00	33	7/12/2012 7:39	0.2083	0.5000	120	0.0900	0.3870	1000	dpm
3072060047	1.00000	S	9.0000	9.0000	0.00	37	7/12/2012 7:39	0.2750	0.6667	120	0.0420	0.3190	1000	dpm
3072060048	1.00000	S	9.0000	9.0000	0.00	1	7/12/2012 7:42	0.1100	1.0000	130	0.0640	0.8040	1000	dpm
3072060049	1.00000	S	9.0000	9.0000	0.00	3	7/12/2012 7:42	0.0540	0.5540	130	0.0600	0.6670	1000	dpm
3072060050	1.00000	S	9.0000	9.0000	0.00	7	7/12/2012 7:42	0.1400	0.6620	130	0.1070	0.6890	1000	dpm
3072060051	1.00000	S	9.0000	9.0000	0.00	9	7/12/2012 7:42	0.1200	1.0540	130	0.0550	0.6370	1000	dpm
3072060052	1.00000	S	9.0000	9.0000	0.00	27	7/12/2012 7:41	0.0667	0.4750	120	0.0740	0.2880	1000	dpm
3072060053	1.00000	S	9.0000	9.0000	0.00	20	7/12/2012 7:50	0.0917	0.3417	120	0.0970	0.3820	1000	dpm
3072060054	1.00000	S	9.0000	9.0000	0.00	28	7/12/2012 7:53	0.0667	0.4417	120	0.0810	0.3330	1000	dpm
3072060055	1.00000	S	9.0000	9.0000	0.00	30	7/12/2012 7:53	0.1667	0.5917	120	0.0720	0.4090	1000	dpm
3072060056	1.00000	S	9.0000	9.0000	0.00	31	7/12/2012 7:53	0.0917	0.4833	120	0.0890	0.3670	1000	dpm
3072060057	1.00000	S	9.0000	9.0000	0.00	34	7/12/2012 7:53	0.1167	0.3833	120	0.0760	0.4040	1000	dpm
3072060058	1.00000	S	9.0000	9.0000	0.00	29	7/12/2012 8:45	0.0833	0.3500	120	0.0840	0.3220	1000	dpm
3072060059	1.00000	S	9.0000	9.0000	0.00	38	7/12/2012 9:24	0.1667	0.5333	150	0.1100	0.3990	1000	dpm
LCS12461	1.00000	S	9.0000	9.0000	0.00	11	7/12/2012 9:21	0.5833	5.3167	120	0.1620	0.4690	1000	dpm
LCSD12461	1.00000	S	9.0000	9.0000	0.00	17	7/12/2012 9:22	0.4750	4.8500	120	0.1370	0.3860	1000	dpm

GM 7/10/12

BT
7/17/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12461
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Alpha Results

Sample ID	Alpha Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Alpha Net CPM	Residue (mg)	Beta to Alpha Xtlk CPM	Xtlk corr. Net alpha CPM	Alpha eff Conversion	Activity Conversion
458973	0.126	0.403	0.404	0.974	0.310	dpm/S	0.019	0.00	0.000000	0.019	15.32%	1
3072060040	0.091	0.344	0.345	0.853	0.266	dpm/S	0.014	0.00	0.000000	0.014	15.72%	1
3072060041	0.756	0.525	0.542	0.924	0.293	dpm/S	0.118	0.00	0.000000	0.118	15.61%	1
3072060042	0.633	0.474	0.487	0.829	0.256	dpm/S	0.097	0.00	0.000000	0.097	15.37%	1
3072060043	0.570	0.465	0.476	0.845	0.262	dpm/S	0.087	0.00	0.000000	0.087	15.27%	1
3072060044	0.095	0.369	0.370	0.912	0.287	dpm/S	0.015	0.00	0.000000	0.015	15.39%	1
3072060045	0.000	0.332	0.332	0.888	0.279	dpm/S	0.000	0.00	0.000000	0.000	15.64%	1
3072060046	0.733	0.519	0.535	0.929	0.296	dpm/S	0.118	0.00	0.000000	0.118	16.15%	1
3072060047	1.458	0.592	0.647	0.686	0.204	dpm/S	0.233	0.00	0.000000	0.233	15.98%	1
3072060048	0.323	0.415	0.419	0.870	0.273	dpm/S	0.046	0.00	0.000000	0.046	14.26%	1
3072060049	-0.040	0.284	0.284	0.801	0.250	dpm/S	-0.006	0.00	0.000000	-0.006	15.07%	1
3072060050	0.210	0.429	0.431	0.982	0.320	dpm/S	0.033	0.00	0.000000	0.033	15.71%	1
3072060051	0.483	0.456	0.464	0.866	0.268	dpm/S	0.065	0.00	0.000000	0.065	13.45%	1
3072060052	-0.046	0.311	0.311	0.874	0.274	dpm/S	-0.007	0.00	0.000000	-0.007	15.80%	1
3072060053	-0.034	0.368	0.368	0.992	0.318	dpm/S	-0.005	0.00	0.000000	-0.005	15.61%	1
3072060054	-0.092	0.318	0.319	0.923	0.292	dpm/S	-0.014	0.00	0.000000	-0.014	15.54%	1
3072060055	0.611	0.483	0.496	0.881	0.276	dpm/S	0.095	0.00	0.000000	0.095	15.50%	1
3072060056	0.017	0.373	0.373	0.972	0.310	dpm/S	0.003	0.00	0.000000	0.003	15.35%	1
3072060057	0.252	0.394	0.396	0.866	0.273	dpm/S	0.041	0.00	0.000000	0.041	16.12%	1
3072060058	-0.004	0.356	0.356	0.948	0.301	dpm/S	-0.001	0.00	0.000000	-0.001	15.36%	1
3072060059	0.371	0.449	0.454	0.944	0.314	dpm/S	0.057	0.00	0.000000	0.057	15.25%	1
LCS12461	2.790	0.920	1.046	1.281	0.425	dpm/S	0.421	0.00	0.000000	0.421	15.10%	1
LCSD12461	2.185	0.811	0.900	1.161	0.381	dpm/S	0.338	0.00	0.000000	0.338	15.47%	1

MBT

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12461
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Beta Results

Sample ID	Beta Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Beta Net CPM	Residue (mg)	Alpha to Beta Xtlk CPM	Xtlk corr. Net beta CPM	Beta eff	Activity Conversion
458973	0.287	0.293	0.297	0.619	0.214	dpm/S	0.139	0.00	0.007226	0.131	45.83%	1
3072060040	0.481	0.322	0.333	0.637	0.220	dpm/S	0.220	0.00	0.005144	0.215	44.64%	1
3072060041	0.181	0.329	0.331	0.719	0.251	dpm/S	0.122	0.00	0.040973	0.081	44.66%	1
3072060042	0.189	0.304	0.305	0.656	0.227	dpm/S	0.117	0.00	0.034493	0.083	43.92%	1
3072060043	0.007	0.274	0.274	0.641	0.222	dpm/S	0.035	0.00	0.031337	0.003	44.42%	1
3072060044	-0.137	0.264	0.265	0.676	0.235	dpm/S	-0.057	0.00	0.005611	-0.063	45.78%	1
3072060045	0.283	0.320	0.324	0.694	0.242	dpm/S	0.126	0.00	0.000000	0.126	44.61%	1
3072060046	0.157	0.289	0.290	0.626	0.216	dpm/S	0.113	0.00	0.041003	0.072	45.82%	1
3072060047	0.612	0.336	0.353	0.587	0.201	dpm/S	0.348	0.00	0.074301	0.273	44.70%	1
3072060048	0.397	0.396	0.402	0.847	0.302	dpm/S	0.196	0.00	0.014875	0.181	45.62%	1
3072060049	-0.250	0.309	0.312	0.795	0.282	dpm/S	-0.113	0.00	-0.001855	-0.111	44.49%	1
3072060050	-0.079	0.336	0.336	0.810	0.288	dpm/S	-0.027	0.00	0.008131	-0.035	44.36%	1
3072060051	0.888	0.412	0.442	0.779	0.276	dpm/S	0.417	0.00	0.022288	0.395	44.45%	1
3072060052	0.422	0.285	0.294	0.558	0.191	dpm/S	0.187	0.00	-0.002481	0.189	44.88%	1
3072060053	-0.087	0.251	0.252	0.643	0.222	dpm/S	-0.040	0.00	-0.001972	-0.038	44.32%	1
3072060054	0.260	0.284	0.288	0.612	0.210	dpm/S	0.109	0.00	-0.004920	0.114	43.73%	1
3072060055	0.334	0.320	0.326	0.657	0.228	dpm/S	0.183	0.00	0.033279	0.149	44.74%	1
3072060056	0.257	0.290	0.293	0.623	0.215	dpm/S	0.116	0.00	0.000939	0.115	44.88%	1
3072060057	-0.077	0.263	0.263	0.654	0.227	dpm/S	-0.021	0.00	0.013615	-0.034	44.69%	1
3072060058	0.064	0.252	0.253	0.596	0.205	dpm/S	0.028	0.00	-0.000230	0.028	44.19%	1
3072060059	0.259	0.278	0.282	0.582	0.206	dpm/S	0.134	0.00	0.019659	0.115	44.28%	1
LCSD12461	10.318	0.915	2.060	0.691	0.241	dpm/S	4.848	0.00	0.169810	4.678	45.34%	1
LCSD12461	9.739	0.886	1.954	0.641	0.222	dpm/S	4.464	0.00	0.111418	4.353	44.69%	1

MBT-7/11/12

7/17/12

Quality Control Sample Performance Assessment

RCDU Upload



Analyst: MBT
Date: 7/16/2012
Worklist: 12481
Matrix: Filler

Method: EPA 900.0m
SOP: PCH-R-001
MB Sample ID: 458973

Analyte	Method Blank Assessment			Flag	Assessment
	Activity	1.96 Sig. Unc.	MDC		
Gross Alpha	0.1260	0.4040	0.9740		
Gross Beta	0.2870	0.2870	0.6190	0.21400	

Analyte:	Laboratory Control Sample Assessment					
	LCS	LCSD	LCS	LCSD	LCS	LCSD
Count Date:	7/12/12 9:21	7/12/12 9:22	7/12/12 9:21	7/12/12 9:22	Gross Beta	
Spike I.D.:	12-018-F3	12-018-F4	12-014-F3	12-014-F4		
Spike Concentration (DPM/Sample):	2.353	2.353	9.803	9.803		
Volume Used (mL):	1.000	1.000	1.000	1.000		
Aliquot Volume (L, g, F):	1.000	1.000	1.000	1.000		
Target Conc. (DPM/Sample, g, F):	2.353	2.353	9.803	9.803		
1.96 Sigma Uncertainty (Calculated):	0.138	0.138	0.192	0.192		
Result (DPM/Sample, g, F):	2.790	2.185	10.318	9.739		
1.96 Sigma Unc:	0.920	0.811	0.915	0.696		
% Recovery:	118.58%	92.86%	105.26%	99.35%		
Assessment:	Pass	Pass	Pass	Pass		
Upper % Recovery Limits:	119.00%	119.00%	130.00%	130.00%		
Lower % Recovery Limits:	62.00%	62.00%	79.00%	79.00%		

LCS/LCSD Y or N?:	Duplicate Sample Assessment					
	Y	Y	Y	Y	Y	Y
Assessment:	Pass	Pass	Pass	Pass	Pass	Pass
% RPD Limit:	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Sample Matrix Spike Control Assessment	
Analyte:	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Conc. (DPM/Sample):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (DPM/Sample, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (DPM/Sample, g, F):	
MS Spike uncertainty (calculated):	
MSD Spike uncertainty (calculated):	
Sample Result:	
Sample 1.96 Sigma Unc.:	
Sample Matrix Spike Result:	
Sample MS 1.96 Sigma Unc.:	
Sample Matrix Spike Duplicate Result:	
Sample MSD 1.96 Sigma Unc.:	
MS % Recovery:	
MSD % Recovery:	
MS Assessment:	
MSD Assessment:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	
Matrix Spike/Matrix Spike Duplicate Sample Assessment:	
Analyte:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike 1.96 Sigma Unc.:	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:	
MS/MSD Relative Percent Difference:	
MS/MSD RPD Assessment:	
% RPD Limit:	

Analyst

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12461
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Det No.	Effective Calibration Date			Alpha Efficiency	Alpha to Beta Cross-Talk			Beta Efficiency	Alpha-to-Beta Crossstalk: $ax^4 + bx^3 + cx^2 + dx + e$			Beta Eff: $ax + b$			Beta-to-Alpha Xtalk: $ax + b$			BKG 1 Date	6/3/2012	BKG 2 Date#	7/13/2012
	a	b	c		d	e	a		b	c	d	e	a	b	c	d	e				
1				1.4286E-01	3.2336E-01				4.5624E-01						0.0640	0.8040					
2				1.5524E-01	2.7392E-01				4.5638E-01						0.0620	0.7010					
3				1.5070E-01	3.0910E-01				4.4491E-01						0.0600	0.6670					
4				1.4437E-01	2.9231E-01				4.3452E-01						0.1120	0.6050					
5				#N/A	#N/A				#N/A						0.0510	5.1640					
6				#N/A	#N/A				#N/A						0.1070	0.6890					
7				1.5705E-01	2.4638E-01				4.4308E-01						0.0960	0.6510					
8				1.4091E-01	3.0938E-01				4.2938E-01						0.0550	0.6370					
9				1.3453E-01	3.4289E-01				4.4454E-01						0.0590	0.7940					
10				#N/A	#N/A				#N/A						0.1620	0.4590					
11				1.5103E-01	4.0303E-01				4.5335E-01						0.0890	0.3780					
12				1.5319E-01	3.7376E-01				4.5830E-01						0.0500	0.3390					
13				1.4989E-01	4.0742E-01				3.9032E-01						0.0690	0.3800					
14				1.5721E-01	3.5889E-01				4.4635E-01						0.0820	0.4950					
15				1.5605E-01	3.4723E-01				4.4658E-01						0.0610	0.3910					
16				1.5365E-01	3.5438E-01				4.3920E-01						0.1370	0.3880					
17				1.5472E-01	3.2964E-01				4.4691E-01						0.0630	0.3820					
18				1.5739E-01	3.6020E-01				4.4422E-01						0.0770	0.4570					
19				1.5393E-01	3.8259E-01				4.5782E-01						0.0970	0.3820					
20				1.5610E-01	3.6978E-01				4.4321E-01						0.0780	0.3780					
21				1.5130E-01	4.0478E-01				4.5533E-01						0.0570	0.4180					
22				1.5360E-01	3.9282E-01				4.3564E-01						0.0750	0.4570					
23				1.5639E-01	3.6678E-01				4.4612E-01												
24				#N/A	#N/A				#N/A												
25				1.5898E-01	3.5511E-01				4.5368E-01						0.1270	0.4110					
26				1.5743E-01	3.3781E-01				4.5458E-01						0.1490	0.4370					
27				1.5803E-01	3.3826E-01				4.4883E-01						0.0740	0.2880					

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Page 5 of 7

Cal and BKG
Printed 7/17/2012 at 1:40 PM

GAB_12461_

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Analyst: MBT
PrepSOP1: FGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12461
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Diet No.	Alpha Efficiency: $ax^4 + bx^3 + cx^2 + dx + e$				Alpha to Beta Crossstalk: $ax^4 + bx^3 + cx^2 + dx + e$				Beta Eff: $ax + b$				Beta-to-Alpha Xtalk: $ax + b$				Alpha Bkg	Beta Bkg	Alpha Bkg	Beta Bkg			
	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e	a					b	c	d
28					1.5536E-01					3.4372E-01					4.3725E-01					0.0810	0.3330	0.1500	0.3460
29					1.5363E-01					3.4570E-01					4.4186E-01					0.0840	0.3220	0.0630	0.2740
30					1.5497E-01					3.5154E-01					4.4737E-01					0.0720	0.4090	0.2330	0.4240
31					1.5353E-01					3.5204E-01					4.4881E-01					0.0890	0.3670	0.0900	0.3660
32					1.5923E-01					3.3321E-01					4.6019E-01					0.0540	0.4120	0.0650	0.3380
33					1.6147E-01					3.4650E-01					4.5824E-01					0.0600	0.3870	0.1200	0.4100
34					1.6117E-01					3.480E-01					4.4688E-01					0.0780	0.4040	0.1250	0.4480
35					#N/A					#N/A					#N/A					0.1970	0.3930	0.2070	3.6640
36					1.4963E-01					3.6069E-01					4.5203E-01					0.0930	0.4070	0.0670	0.3320
37					1.5981E-01					3.1889E-01					4.4695E-01					0.0420	0.3190	0.2180	0.4600
38					1.5254E-01					3.4693E-01					4.4279E-01					0.1100	0.3990	0.1040	0.3900
39					1.7614E-01					2.7763E-01					4.5734E-01					0.0780	12.4760	0.0780	12.4760
40					1.8176E-01					2.5395E-01					4.5470E-01					0.2530	12.5520	0.2530	12.5520
41					#N/A					#N/A					#N/A					2.7170	366.8100	2.7170	366.8100
42					1.4541E-01					4.9586E-01					3.3352E-01					0.2050	9.9000	0.2050	9.9000
43					1.7364E-01					4.4459E-01					4.4659E-01					0.1620	1.1560	0.1620	1.1560
44					1.7507E-01					2.8197E-01					4.5195E-01					0.1110	0.9900	0.1110	0.9900
45					1.6896E-01					2.9247E-01					4.3550E-01					0.1410	1.7460	0.1410	1.7460
46					1.6416E-01					2.6541E-01					4.3500E-01					0.2330	0.9840	0.2330	0.9840
47					1.7203E-01					2.9299E-01					4.4755E-01					0.0940	1.1670	0.0940	1.1670
48					1.8314E-01					2.6883E-01					4.5901E-01					0.1650	2.0860	0.1650	2.0860
49					1.6993E-01					2.9322E-01					4.6867E-01					0.3330	1.3450	0.3330	1.3450
50					1.6594E-01					2.8046E-01					4.4190E-01					0.2050	1.4600	0.2050	1.4600
51					1.7880E-01					2.8023E-01					4.5006E-01					0.1500	1.3750	0.1500	1.3750
52					1.7970E-01					2.8847E-01					4.5625E-01					0.1070	1.1480	0.1070	1.1480
53					1.7780E-01					2.7454E-01					4.7119E-01					0.1070	1.3970	0.1070	1.3970

Am 7/11/12

7/17/12

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Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

7/17/12
200

CSU Analysis for Preparation

Planchet Weighing

uncert (g)	gross (g)	tare (g)	net (g)	CSU (g)	
0.0003	9.1463	9.1273	0.019	0.000424264	2.23%

Volume Aliquot

(mL)	vol (mL)	rel unc
1.00	100.0	1.00%

Description	relative	of Critical	CSU for Preparation (UE1)	Uncertainty	6.71%
Sample Aliquoting	1.00%	1	1.00%	0.01%	
Planchet Weighing	2.23%	2	3.16%	0.10%	
Sample transfer to planchet	3.00%	1	3.00%	0.09%	
Additional Uncertainty due to differences in the distribution of residue on the planchet	5.00%	1	5.00%	0.25%	

CSU Analysis for Analysis

Mass Aliquot

	Ref mass	uncert (g)	Rel unc
Tare	5	0.0004	
Gross	6	0.0004	Use max of 1%
net	1	0.000565685	0.057%

Description	Maximum	of Critical	CSU for Analysis (UE2)	Uncertainty	13.23%
SRM Uncertainty	5.00%	1	5.00%	0.25%	
Mass transfer	0.06%	2	0.08%	0.00%	
Source Reproducibility	5.00%	1	5.00%	0.25%	
Curve Fitting Uncertainty	5.00%	1	5.00%	0.25%	
Estimated Additional Uncertainty (variations in efficiency and self-absorption due to chemical composition of residue)	10.00%	1	10.00%	1.00%	

CSU Analysis for Yield Correction

Description	Maximum	of Critical	CSU for Yield (UE3)	Uncertainty	10.00%
Additional Sample Uncertainty due to analysis without a tracer or chemical carrier	10.00%	1	10.00%	1.00%	

7/17/12
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Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

SAMPLE_ID	Det#	BEG_DATE	BATCH_ID	ACPM	BCPM	CNT_TIME
3072060053	20	7/12/2012 7:50	GAB12461	0.091666667	0.341666667	120
458972	12	7/12/2012 7:37	GAB12461	0.108333333	0.516666667	120
3072060040	14	7/12/2012 7:38	GAB12461	0.083333333	0.6	120
3072060041	15	7/12/2012 7:38	GAB12461	0.2	0.616666667	120
3072060042	16	7/12/2012 7:38	GAB12461	0.158333333	0.508333333	120
3072060043	18	7/12/2012 7:38	GAB12461	0.15	0.416666667	120
3072060044	19	7/12/2012 7:38	GAB12461	0.091666667	0.4	120
3072060045	23	7/12/2012 7:38	GAB12461	0.075	0.583333333	120
3072060046	33	7/12/2012 7:39	GAB12461	0.208333333	0.5	120
3072060047	37	7/12/2012 7:39	GAB12461	0.275	0.666666667	120
3072060052	27	7/12/2012 7:41	GAB12461	0.066666667	0.475	120
3072060054	28	7/12/2012 7:53	GAB12461	0.066666667	0.441666667	120
3072060055	30	7/12/2012 7:53	GAB12461	0.166666667	0.591666667	120
3072060056	31	7/12/2012 7:53	GAB12461	0.091666667	0.483333333	120
3072060057	34	7/12/2012 7:53	GAB12461	0.116666667	0.383333333	120
3072060058	29	7/12/2012 8:45	GAB12461	0.083333333	0.35	120
3072060059	38	7/12/2012 9:24	GAB12461	0.166666667	0.533333333	150
LCS12461	11	7/12/2012 9:21	GAB12461	0.583333333	5.316666667	120
LCSD12461	17	7/12/2012 9:22	GAB12461	0.475	4.85	120
3072060048	1	7/12/2012 7:42	GAB12461	0.11	1	130
3072060049	3	7/12/2012 7:42	GAB12461	0.054	0.554	130
3072060050	7	7/12/2012 7:42	GAB12461	0.14	0.662	130
3072060051	9	7/12/2012 7:42	GAB12461	0.12	1.054	130
458973	12	7/12/2012 7:37	GAB12461	0.108333333	0.516666667	120

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072060059	7/12/2012 9:24:20 AM	38	GAB12461	0.167	0.5333	150.0
LCS#4-12461	7/12/2012 9:22:06 AM	17	GAB12461	0.475	4.8500	120.0
LCS#3-12461	7/12/2012 9:21:21 AM	11	GAB12461	0.583	5.3167	120.0
3072060058	7/12/2012 8:45:42 AM	29	GAB12461	0.083	0.3500	120.0
3072060057	7/12/2012 7:53:46 AM	34	GAB12461	0.117	0.3833	120.0
3072060056	7/12/2012 7:53:40 AM	31	GAB12461	0.092	0.4833	120.0
3072060055	7/12/2012 7:53:34 AM	30	GAB12461	0.167	0.5917	120.0
3072060054	7/12/2012 7:53:13 AM	28	GAB12461	0.067	0.4417	120.0
3072060053	7/12/2012 7:50:25 AM	20	GAB12461	0.092	0.3417	120.0
3072060052	7/12/2012 7:41:40 AM	27	GAB12461	0.067	0.4750	120.0
3072060047	7/12/2012 7:39:23 AM	37	GAB12461	0.275	0.6667	120.0
3072060046	7/12/2012 7:39:02 AM	33	GAB12461	0.208	0.5000	120.0
3072060045	7/12/2012 7:38:52 AM	23	GAB12461	0.075	0.5833	120.0
3072060044	7/12/2012 7:38:49 AM	19	GAB12461	0.092	0.4000	120.0
3072060043	7/12/2012 7:38:32 AM	18	GAB12461	0.150	0.4167	120.0
3072060042	7/12/2012 7:38:24 AM	16	GAB12461	0.158	0.5083	120.0

2/11/12
Pace

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072060040	7/12/2012 7:38:17 AM	14	GAB12461	0.083	0.6000	120.0
3072060041	7/12/2012 7:38:12 AM	15	GAB12461	0.200	0.6167	120.0
458972	7/12/2012 7:37:58 AM	12	GAB12461	0.108	0.5167	120.0

2/14/12
202

2/11/12
200

Sample Measurement
C:\UMS\GAB12461.SDT

Sample Measurement Parameters:

User: MBT

Preset Time: 130:00

Alpha Preset Error: 1.0%

User Protocol: GAB

Instrument Name: LB770PC

Cycles: 1

Beta Preset Error: 1.0%

Cycle 1 of 1

Start Time: 07/12/2012 7:42:38

Elapsed Time: 130:00

Guard: 818.3 cpm

	<u>Spl #</u>	<u>Sample Name</u>	<u>Alpha (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>	<u>Beta (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>
1	12461	3042060048	0.11 (±26.7%)	0.0039	0.0020	1.000 (±8.77%)	0.0112	0.0055
2	12807	E	0.062 (±35.4%)	0.0047	0.0024	0.677 (±10.7%)	0.0105	0.0051
3	12461	3072060049	0.054 (±37.8%)	0.0054	0.0027	0.554 (±11.8%)	0.0107	0.0053
4	12807	E	0.18 (±20.4%)	0.0047	0.0024	0.869 (±9.41%)	0.0112	0.0055
5	12841	E	0.085 (±30.2%)	0.0047	0.0024	5.492 (±3.74%)	0.0202	0.0099
6	12841	E	0.062 (±35.4%)	0.0054	0.0027	49.24 (±1.32%)	0.0298	0.0148
7	12461	3072060050	0.14 (±23.6%)	0.0054	0.0027	0.662 (±10.8%)	0.0112	0.0055
8	12807	E	0.038 (±44.7%)	0.0039	0.0020	0.454 (±13.0%)	0.0102	0.0050
9	12461	3072060051	0.12 (±25.0%)	0.0054	0.0027	1.054 (±8.54%)	0.0114	0.0056
10	12841	E	0.077 (±31.6%)	undef.	undef.	Outliers!	0.0118	0.0058

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 25-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
	6	3072708001	GRA 12408	130	7-11-12 21:04	BSH	N/A	N/A
	7	3072769001						
	9	3072914601						
	10	3072733001						
	11	3072750001		110	21:00			
	17	3072909001						
	21	LCS 12608						
	22	LCS 12608						
GAB	43	3072058071	GAB12457	300	7-12-12	MBT	N/A	N/A
	44	72						
	45	73						
	46	74						
	47	75						
	48	76						
	49	77						
	50	78						
	51	79						
	52	80						
	53	3458972	GAB12460		7-12-12	MBT		
GAB	12	458973	GAB12461	120	7-12-12 0745	MBT		N/A
	14	3072000040						
	15	41						
	16	42						
	18	43						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Doc 7/17/12

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 25-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAB	19	3072000044	GAB12401	120	7-12-12 0745	MBI	NA	NA
	23	45						
	33	46						
	37	47						
	1	48		130				
	3	49						
	7	50						
	9	51						
	27	52		120				
GAB	20	3072000053	GAB12461	120	7-12-12 845	WBT	NA	NA
	28	64						
	30	55						
	31	56						
	34	57						
	29	58						
GAB	31	3072770001	GRA12608	1000	7/12/12 16:36	B5H	NA	NA
	36	3560866003						
	38	3560866001						
	11	3072181001	GRA12608	1000	7/12/12 20:16	B5H	NA	NA
	17	10196923001	PB12568	1000				
	25	461255						
	1	3072147040	GAB12599	650	7/12/12 20:21			
	2	041						
	3	042						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review REV

Date: 7/12/12

REV
7/12/12

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
	37	3072060018	GAB12459	120	8053		NA	NA
	1	19						
	19	3072058096	GAB12458	120	7/11/12 1710	BSH	NA	NA
GAB	13	3072434002	GAB12537	260	7/12/12 8 ^{PM}			
GAB	17	307230700116	GAB12406	90				
	32	72410001		340				
	35	72931		1000				
	34	72702						
	35	72776						
		72181						
		3500500						
		CO2						
		3072303001	GAB12574					
		72574						
		72587						
		72581						
		72584						
GAB	11	453-12461	GAB12461	120	7/12/12 921	DL	NA	NA
	17	454-12461			923			
	22	3072060000	GAB12468		920			
	36	458975		130	924			
	38	3072060009	GAB12411	150	924			
	25	72060001	12462		7/12/12 928		NA	NA
	12	453#1-12462	GAB12402	120	7-12-12	MBR	NA	NA

- 1. Detector daily check failure
- 2. MDC > Contract RL
- 3. Sample re-ingrowth
- 4. Sample was re-prepped
- 5. Other noted comments

Peer Review 2/2/12

Date: 7/12/12

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2/2/12
200

Gross Alpha and Beta Sample Analysis Data

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

1 458975-BLANK for HBN 91032 [RADC/1246]

Type BLANK Matrix Impact Plate Collected % Moisture
 Client QACCOUNT WO Work ID

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 09:24 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795658 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 09:24 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795658 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	0.304U ± 0.449 (0.971)	pCi/sa 0.304U ± 0.449 (0.971)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	0.084U ± 0.273 (0.622)	pCi/sa 0.084U ± 0.273 (0.622)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					

2 3072060060-2540-SU6-14

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784317 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784317 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Req. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.310U ± 0.216 (0.874)	pCi/sa -0.310U ± 0.216 (0.874)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure, For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

2 3072060060-2540-SU6-14

Analyte	CC	Posted Result		MDL	RDL	Req. Limits	
		Result	Result			Low	High
Gross Beta	OK	0.175U ± 0.249 (0.558)	pCi/sa 0.175U ± 0.249 (0.558)			pCi/sam	

The lab does not hold TNI accreditation for this parameter.

3 3072060061-2540-SU6-15

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784319	Batch RADC/12462 HBN 91032 Instru NONE	Prep Date 7/12/2012 09:28 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I Method EPA 900.0m Schedule 2784319	Instru NONE Col ID File	Run Date 7/12/2012 09:28 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
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Analyte	CC	Posted Result		MDL	RDL	Req. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.212U ± 0.340 (0.965)	pCi/sa -0.212U ± 0.340 (0.965)			pCi/sam	

The lab does not hold TNI accreditation for this parameter.

Gross Beta	OK	-0.086U ± 0.230 (0.576)	pCi/sa -0.086U ± 0.230 (0.576)			pCi/sam	
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The lab does not hold TNI accreditation for this parameter.

4 3072060062-2540-SU6-16

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784321	Batch RADC/12462 HBN 91032 Instru NONE	Prep Date 7/12/2012 09:39 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

4 3072060062-2540-SU6-16

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 09:39 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784321 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.596J ± 0.504 (0.924)	pCi/sa 0.596J ± 0.504 (0.924)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.024U ± 0.304 (0.719)	pCi/sa -0.024U ± 0.304 (0.719)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

5 3072060063-2540-SU6-17

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 09:39 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784323 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 09:39 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784323 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.254U ± 0.384 (0.829)	pCi/sa 0.254U ± 0.384 (0.829)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.065U ± 0.283 (0.656)	pCi/sa 0.065U ± 0.283 (0.656)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

6 3072060064-2540-SU6-18

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

6 3072060064-2540-SU6-18

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 09:39 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784325 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 09:39 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784325 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.515J ± 0.462 (0.845)	pCi/sa 0.515J ± 0.462 (0.845)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.071U ± 0.282 (0.641)	pCi/sa 0.071U ± 0.282 (0.641)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

7 3072060065-2540-SU6-19

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 09:40 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784327 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 09:40 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784327 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.258U ± 0.415 (0.912)	pCi/sa 0.258U ± 0.415 (0.912)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.048U ± 0.278 (0.676)	pCi/sa -0.048U ± 0.278 (0.676)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

7 3072060065-2540-SU6-19

8 3072060066-2540-SU6-19D

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 09:40 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784329 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 09:40 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784329 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.160U ± 0.279 (0.888)	pCi/sa -0.160U ± 0.279 (0.888)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.070U ± 0.276 (0.694)	pCi/sa -0.070U ± 0.276 (0.694)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

9 3072060067-2540-SU6-20

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 09:40 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784331 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 09:40 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784331 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

9 3072060067-2540-SU6-20

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	0.217U ± 0.410 (0.929)	pCi/sa 0.217U ± 0.410 (0.929)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.420J ± 0.321 (0.626)	pCi/sa 0.420J ± 0.321 (0.626)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

10 3072060068-2540-SU6-21

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784333	Batch RADC/12462 HBN 91032 Instru NONE	Prep Date 7/12/2012 09:40 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I Method EPA 900.0m Schedule 2784333	Instru NONE Col ID File	Run Date 7/12/2012 09:40 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
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Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	1.09 ± 0.562 (0.686)	pCi/sa 1.09 ± 0.562 (0.686)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.560J ± 0.341 (0.587)	pCi/sa 0.560J ± 0.341 (0.587)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

11 3072060069-2540-SU6-22

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784335	Batch RADC/12462 HBN 91032 Instru NONE	Prep Date 7/12/2012 10:38 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

11 3072060069-2540-SU6-22

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784335 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.019U ± 0.383 (0.992)	pCi/sa 0.019U ± 0.383 (0.992)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.377J ± 0.319 (0.643)	pCi/sa 0.377J ± 0.319 (0.643)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

12 3072060070-2540-SU6-23

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784337 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784337 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.145U ± 0.392 (0.933)	pCi/sa 0.145U ± 0.392 (0.933)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.340J ± 0.307 (0.623)	pCi/sa 0.340J ± 0.307 (0.623)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

13 3072060071-2540-SU6-23D

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

13 3072060071-2540-SU6-23D

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784339 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784339 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.152U ± 0.276 (0.874)	pCi/sa -0.152U ± 0.276 (0.874)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.379J ± 0.286 (0.558)	pCi/sa 0.379J ± 0.286 (0.558)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

14 3072060072-2540-SU6-24

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784341 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784341 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.039U ± 0.335 (0.923)	pCi/sa -0.039U ± 0.335 (0.923)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.101U ± 0.264 (0.612)	pCi/sa 0.101U ± 0.264 (0.612)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

14 3072060072-2540-SU6-24

15 3072060073-2540-SU6-25

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784343 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784343 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.697J ± 0.561 (0.980)	pCi/sa 0.697J ± 0.561 (0.980)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.297J ± 0.349 (0.725)	pCi/sa 0.297J ± 0.349 (0.725)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

16 3072060074-2540-SU6-26

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784345 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 10:38 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784345 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

16 3072060074-2540-SU6-26

Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Alpha	OK	-0.145U ± 0.325 (0.972)	pCi/sa -0.145U ± 0.325 (0.972)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.425J ± 0.317 (0.623)	pCi/sa 0.425J ± 0.317 (0.623)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

17 3072060075-2540-SU6-27

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784347	Batch RADC/12462 HBN 91032 Instru NONE	Prep Date 7/12/2012 10:38 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I Method EPA 900.0m Schedule 2784347	Instru NONE Col ID File	Run Date 7/12/2012 10:38 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
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Analyte	CC	Posted		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.025U ± 0.360 (0.964)	pCi/sa 0.025U ± 0.360 (0.964)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.100U ± 0.308 (0.722)	pCi/sa 0.100U ± 0.308 (0.722)			pCi/sam	
The lab does not hold TNI accreditation for this parameter.							

18 3072060076-2540-SU6-28

Type PS Client RTI	Matrix Wipe WO 3072060	Collected 6/19/2012 00:01 Work ID Fort Monmouth 1207072	% Moisture Location
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Prep Information

Procedure 9000 I Method EPA 900.0m Schedule 2784349	Batch RADC/12462 HBN 91032 Instru NONE	Prep Date 7/12/2012 10:50 Hold Date 12/16/2012 23:59	Dilution Analyst MBT CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

18 3072060076-2540-SU6-28

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 10:50 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784349 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.192U ± 0.309 (0.997)	pCi/sa -0.192U ± 0.309 (0.997)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.158U ± 0.275 (0.625)	pCi/sa 0.158U ± 0.275 (0.625)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

19 3072060077-2540-SU6-29

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784351 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784351 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	-0.360U ± 0.224 (0.923)	pCi/sa -0.360U ± 0.224 (0.923)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.064U ± 0.253 (0.612)	pCi/sa 0.064U ± 0.253 (0.612)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

20 3072060078-2540-SU6-30

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12462 HBN 91032
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

20 3072060078-2540-SU6-30

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784353 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784353 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.213U ± 0.416 (0.948)	pCi/sa 0.213U ± 0.416 (0.948)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.170U ± 0.272 (0.596)	pCi/sa 0.170U ± 0.272 (0.596)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

21 3072060079-2540-SU6-31

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12462 Prep Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m HBN 91032 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784355 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784355 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK						
Gross Alpha	OK	0.880J ± 0.560 (0.881)	pCi/sa 0.880J ± 0.560 (0.881)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.134U ± 0.302 (0.657)	pCi/sa 0.134U ± 0.302 (0.657)		pCi/sam		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review

Batch	RADC/12462	HBN	91032
Rule	9000 I	Status	RE
Create Date	6/28/2012	Analyst	MBT



21	3072060079-2540-SU6-31
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** Indicates QC failure. For example, blank contamination or recoveries out of range.

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Creation Date 06/28/2012 13:05 Assigned Analyst MBT
Batch ID 12462 Earliest Due Date 07/04/2012 07:12
A-code 90001 9000W or NJ HBN 91032
Method EPA 900.0m EPA 900.0 or NJAC7186

Workorder	Sample ID	Sample Type	Matrix	Collection Date/Time	Client ID	Alpha Activity	Alpha Unc.	Alpha MDC	Beta Activity	Beta Unc.	Beta MDC	Analysis Date/Time	MCL Exceedance *	
													Alpha	Beta
	458975	BLANK	IP		QCACCOUNT	0.304U	0.449	0.971	0.084U	0.273	0.622	7/12/12 9:24		
3072060	3072060060	PS	WP	6/19/2012 0:01	RTI	-0.310U	0.216	0.874	0.175U	0.249	0.558	7/12/12 16:31		
3072060	3072060061	PS	WP	6/19/2012 0:01	RTI	-0.212U	0.340	0.965	-0.086U	0.230	0.576	7/12/12 9:28		
3072060	3072060062	PS	WP	6/19/2012 0:01	RTI	0.596J	0.504	0.924	-0.024U	0.304	0.719	7/12/12 9:39		
3072060	3072060063	PS	WP	6/19/2012 0:01	RTI	0.254U	0.384	0.829	0.065U	0.283	0.656	7/12/12 9:39		
3072060	3072060064	PS	WP	6/19/2012 0:01	RTI	0.515J	0.462	0.845	0.071U	0.282	0.641	7/12/12 9:39		
3072060	3072060065	PS	WP	6/19/2012 0:01	RTI	0.258U	0.415	0.912	-0.048U	0.278	0.676	7/12/12 9:40		
3072060	3072060066	PS	WP	6/19/2012 0:01	RTI	-0.160U	0.279	0.888	-0.070U	0.276	0.694	7/12/12 9:40		
3072060	3072060067	PS	WP	6/19/2012 0:01	RTI	0.217U	0.410	0.929	0.420J	0.321	0.626	7/12/12 9:40		
3072060	3072060068	PS	WP	6/19/2012 0:01	RTI	1.09	0.562	0.886	0.560J	0.341	0.587	7/12/12 9:40		
3072060	3072060069	PS	WP	6/19/2012 0:01	RTI	0.019U	0.383	0.992	0.377J	0.319	0.643	7/12/12 10:38		
3072060	3072060070	PS	WP	6/19/2012 0:01	RTI	0.145U	0.392	0.933	0.340J	0.307	0.623	7/12/12 10:38		
3072060	3072060071	PS	WP	6/19/2012 0:01	RTI	-0.152U	0.276	0.874	0.379J	0.286	0.558	7/12/12 10:38		
3072060	3072060072	PS	WP	6/19/2012 0:01	RTI	-0.039U	0.335	0.923	0.101U	0.264	0.612	7/12/12 10:38		
3072060	3072060073	PS	WP	6/19/2012 0:01	RTI	0.897J	0.561	0.980	0.297J	0.349	0.725	7/12/12 10:38		
3072060	3072060074	PS	WP	6/19/2012 0:01	RTI	-0.145U	0.325	0.972	0.425J	0.317	0.623	7/12/12 10:38		
3072060	3072060075	PS	WP	6/19/2012 0:01	RTI	0.025U	0.360	0.964	0.100U	0.308	0.722	7/12/12 10:38		
3072060	3072060076	PS	WP	6/19/2012 0:01	RTI	-0.192U	0.309	0.997	0.158U	0.275	0.625	7/12/12 10:50		
3072060	3072060077	PS	WP	6/19/2012 0:01	RTI	-0.360U	0.224	0.923	0.064U	0.253	0.612	7/12/12 16:31		
3072060	3072060078	PS	WP	6/19/2012 0:01	RTI	0.213U	0.416	0.948	0.170U	0.272	0.596	7/12/12 16:31		
3072060	3072060079	PS	WP	6/19/2012 0:01	RTI	0.880J	0.560	0.881	0.134U	0.302	0.657	7/12/12 16:31		

7/12/12

* This indicates a possible MCL exceedance may exist for this sample. Results greater than 15.0 pCi/L gross alpha must be reviewed expeditiously and the PM, Radchem Supervisor, and QA Manager notified immediately upon validation of the result. If the gross beta result is above 50 pCi/L, this may also indicate a reportable exceedance.

Gross Alpha and Gross Beta Preparation Sheet



Batch: 12402

Transfer Analyst: MBT

Prep Date/Time: 7-9-12 12:00

Matrix: Filter

Logbook ID: 3-R021-5

Spike Analyst: NA

QC ID: a:

LCS QC Vol (mL): a:

MSMSD QC Vol (mL): a:

Pipette ID:

NA

b:

b:

b:

Aliquot Balance ID: NA

Aliquot Wgt. Date:

Tare Balance ID:

Tare Wgt. Date:

Gross Balance ID:

Gross Wgt. Date:

Bottle ID	Sample No.	Analyst Initials		Analyst Initials		Analyst Initials		Sample Comments	
		Tare Mass (g)	5mL Test Mass (g)	Sample Volume (mL)	Gross Mass (g)	Tare Mass (g)	5mL Test Mass (g)	Sample Volume (mL)	Gross Mass (g)
NA	458975	NA	NA	1.0	NA	NA	NA	NA	
	3072060060								
	601								
	602								
	603								
	604								
	605								
	606								
	607								
	608								
	609								
	70								
	71								
	72								
	73								
	74								
	75								
	76								
	77								
	78								
	79								
	LOS12402								
	LOS12462								

Conc HNO₃:

MBT 7-11-12

8N HNO₃:

Date Removed / / @

Date Placed in oven / / @

Peer Review Date:

MBT

7/11/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12462
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012
Reporting Units: dpm

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Sigma
Zero Factor

1.96
2.71

Sample ID	Aliquot	Units	Tare (g)	Gross (g)	Residue (mg)	Det. ID	Count Date	Alpha Gross CPM	Beta Gross CPM	Count Duration (min)	Alpha Bkg CPM	Beta Bkg CPM	Bkg Count Duration (min)	Req Activity Units
458975	1.00000	S	9.0000	9.0000	0.00	36	7/12/2012 9:24	0.1385	0.4615	130	0.0930	0.4070	1000	dpm
3072060060	1.00000	S	9.0000	9.0000	0.00	27	7/12/2012 16:31	0.0250	0.3500	120	0.0740	0.2880	1000	dpm
3072060061	1.00000	S	9.0000	9.0000	0.00	25	7/12/2012 9:28	0.0933	0.3600	150	0.1270	0.4110	1000	dpm
3072060062	1.00000	S	9.0000	9.0000	0.00	15	7/12/2012 9:39	0.1750	0.5167	120	0.0820	0.4950	1000	dpm
3072060063	1.00000	S	9.0000	9.0000	0.00	16	7/12/2012 9:39	0.1000	0.4333	120	0.0610	0.3910	1000	dpm
3072060064	1.00000	S	9.0000	9.0000	0.00	18	7/12/2012 9:39	0.1417	0.4417	120	0.0630	0.3820	1000	dpm
3072060065	1.00000	S	9.0000	9.0000	0.00	19	7/12/2012 9:40	0.1167	0.4500	120	0.0770	0.4570	1000	dpm
3072060066	1.00000	S	9.0000	9.0000	0.00	23	7/12/2012 9:40	0.0500	0.4167	120	0.0750	0.4570	1000	dpm
3072060067	1.00000	S	9.0000	9.0000	0.00	33	7/12/2012 9:40	0.1250	0.5917	120	0.0900	0.3870	1000	dpm
3072060068	1.00000	S	9.0000	9.0000	0.00	37	7/12/2012 9:40	0.2167	0.6250	120	0.0420	0.3190	1000	dpm
3072060069	1.00000	S	9.0000	9.0000	0.00	20	7/12/2012 10:38	0.1000	0.5500	120	0.0970	0.3820	1000	dpm
3072060070	1.00000	S	9.0000	9.0000	0.00	21	7/12/2012 10:38	0.1000	0.5417	120	0.0780	0.3780	1000	dpm
3072060071	1.00000	S	9.0000	9.0000	0.00	27	7/12/2012 10:38	0.0500	0.4500	120	0.0740	0.2880	1000	dpm
3072060072	1.00000	S	9.0000	9.0000	0.00	28	7/12/2012 10:38	0.0750	0.3750	120	0.0810	0.3330	1000	dpm
3072060073	1.00000	S	9.0000	9.0000	0.00	30	7/12/2012 10:38	0.1800	0.5800	100	0.0720	0.4090	1000	dpm
3072060074	1.00000	S	9.0000	9.0000	0.00	31	7/12/2012 10:38	0.0667	0.5500	120	0.0890	0.3670	1000	dpm
3072060075	1.00000	S	9.0000	9.0000	0.00	34	7/12/2012 10:38	0.0800	0.4500	100	0.0760	0.4040	1000	dpm
3072060076	1.00000	S	9.0000	9.0000	0.00	29	7/12/2012 10:50	0.0545	0.3818	110	0.0840	0.3220	1000	dpm
3072060077	1.00000	S	9.0000	9.0000	0.00	28	7/12/2012 16:31	0.0250	0.3417	120	0.0810	0.3330	1000	dpm
3072060078	1.00000	S	9.0000	9.0000	0.00	29	7/12/2012 16:31	0.1167	0.4083	120	0.0840	0.3220	1000	dpm
3072060079	1.00000	S	9.0000	9.0000	0.00	30	7/12/2012 16:31	0.2083	0.5167	120	0.0720	0.4090	1000	dpm
LCS12462	1.00000	S	9.0000	9.0000	0.00	12	7/12/2012 9:38	0.5083	4.8833	120	0.0890	0.3780	1000	dpm
LCSD12462	1.00000	S	9.0000	9.0000	0.00	11	7/18/2012 6:45	0.6000	4.9889	90	0.1770	0.4410	1000	dpm

Analyst

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12462
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Alpha Results

Sample ID	Alpha Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Alpha Net CPM	Residue (mg)	Beta to Alpha Xtlk CPM	Xtlk corr. Net alpha CPM	Alpha eff	Activity Conversion
458975	0.304	0.446	0.449	0.971	0.314	dpm/S	0.045	0.00	0.000000	0.045	14.95%	1
3072060060	-0.310	0.208	0.216	0.874	0.274	dpm/S	-0.049	0.00	0.000000	-0.049	15.80%	1
3072060061	-0.212	0.337	0.340	0.965	0.324	dpm/S	-0.034	0.00	0.000000	-0.034	15.90%	1
3072060062	0.596	0.493	0.504	0.924	0.293	dpm/S	0.093	0.00	0.000000	0.093	15.61%	1
3072060063	0.254	0.381	0.384	0.829	0.256	dpm/S	0.039	0.00	0.000000	0.039	15.37%	1
3072060064	0.515	0.453	0.462	0.845	0.262	dpm/S	0.079	0.00	0.000000	0.079	15.27%	1
3072060065	0.258	0.412	0.415	0.912	0.287	dpm/S	0.040	0.00	0.000000	0.040	15.39%	1
3072060066	-0.160	0.278	0.279	0.888	0.279	dpm/S	-0.025	0.00	0.000000	-0.025	15.64%	1
3072060067	0.217	0.408	0.410	0.929	0.296	dpm/S	0.035	0.00	0.000000	0.035	16.15%	1
3072060068	1.093	0.527	0.562	0.686	0.204	dpm/S	0.175	0.00	0.000000	0.175	15.98%	1
3072060069	0.019	0.383	0.383	0.992	0.318	dpm/S	0.003	0.00	0.000000	0.003	15.61%	1
3072060070	0.145	0.391	0.392	0.933	0.294	dpm/S	0.022	0.00	0.000000	0.022	15.13%	1
3072060071	-0.152	0.275	0.276	0.874	0.274	dpm/S	-0.024	0.00	0.000000	-0.024	15.80%	1
3072060072	-0.039	0.335	0.335	0.923	0.292	dpm/S	-0.006	0.00	0.000000	-0.006	15.54%	1
3072060073	0.697	0.547	0.561	0.980	0.300	dpm/S	0.108	0.00	0.000000	0.108	15.50%	1
3072060074	-0.145	0.324	0.325	0.972	0.310	dpm/S	-0.022	0.00	0.000000	-0.022	15.35%	1
3072060075	0.025	0.360	0.360	0.964	0.296	dpm/S	0.004	0.00	0.000000	0.004	16.12%	1
3072060076	-0.192	0.307	0.309	0.997	0.313	dpm/S	-0.029	0.00	0.000000	-0.029	15.36%	1
3072060077	-0.360	0.215	0.224	0.923	0.292	dpm/S	-0.056	0.00	0.000000	-0.056	15.54%	1
3072060078	0.213	0.415	0.416	0.948	0.301	dpm/S	0.033	0.00	0.000000	0.033	15.36%	1
3072060079	0.880	0.538	0.560	0.881	0.276	dpm/S	0.136	0.00	0.000000	0.136	15.50%	1
LCS12462	2.737	0.841	0.974	0.974	0.310	dpm/S	0.419	0.00	0.000000	0.419	15.32%	1
LCSD12462	2.801	1.074	1.185	1.565	0.506	dpm/S	0.423	0.00	0.000000	0.423	15.10%	1

MBT 7/18/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12462
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Beta Results

Sample ID	Beta Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Beta Net CPM	Residue (mg)	Alpha to Beta Xtlk CPM	Xtlk corr. Net beta CPM	Beta eff	Activity Conversion
458975	0.084	0.273	0.273	0.622	0.217	dpm/S	0.055	0.00	0.016393	0.038	45.20%	1
3072060060	0.175	0.247	0.249	0.558	0.191	dpm/S	0.062	0.00	-0.016575	0.079	44.88%	1
3072060061	-0.086	0.229	0.230	0.576	0.204	dpm/S	-0.051	0.00	-0.011955	-0.039	45.37%	1
3072060062	-0.024	0.304	0.304	0.719	0.251	dpm/S	0.022	0.00	0.032292	-0.011	44.66%	1
3072060063	0.065	0.282	0.283	0.656	0.227	dpm/S	0.042	0.00	0.013821	0.029	43.92%	1
3072060064	0.071	0.281	0.282	0.641	0.222	dpm/S	0.060	0.00	0.028336	0.031	44.42%	1
3072060065	-0.048	0.278	0.278	0.676	0.235	dpm/S	-0.007	0.00	0.015174	-0.022	45.78%	1
3072060066	-0.070	0.275	0.276	0.694	0.242	dpm/S	-0.040	0.00	-0.009220	-0.031	44.61%	1
3072060067	0.420	0.312	0.321	0.626	0.216	dpm/S	0.205	0.00	0.012128	0.193	45.82%	1
3072060068	0.560	0.326	0.341	0.587	0.201	dpm/S	0.306	0.00	0.055699	0.250	44.70%	1
3072060069	0.377	0.312	0.319	0.643	0.222	dpm/S	0.168	0.00	0.001109	0.167	44.32%	1
3072060070	0.340	0.301	0.307	0.623	0.215	dpm/S	0.164	0.00	0.008905	0.155	45.53%	1
3072060071	0.379	0.277	0.286	0.558	0.191	dpm/S	0.162	0.00	-0.008118	0.170	44.88%	1
3072060072	0.101	0.264	0.264	0.612	0.210	dpm/S	0.042	0.00	-0.002059	0.044	43.73%	1
3072060073	0.297	0.345	0.349	0.725	0.247	dpm/S	0.171	0.00	0.037966	0.133	44.74%	1
3072060074	0.425	0.307	0.317	0.623	0.215	dpm/S	0.183	0.00	-0.007862	0.191	44.88%	1
3072060075	0.100	0.307	0.308	0.722	0.246	dpm/S	0.046	0.00	0.001339	0.045	44.69%	1
3072060076	0.158	0.273	0.275	0.625	0.213	dpm/S	0.060	0.00	-0.010182	0.070	44.19%	1
3072060077	0.064	0.253	0.253	0.612	0.210	dpm/S	0.009	0.00	-0.019221	0.028	43.73%	1
3072060078	0.170	0.271	0.272	0.596	0.205	dpm/S	0.086	0.00	0.011293	0.075	44.19%	1
3072060079	0.134	0.301	0.302	0.657	0.228	dpm/S	0.108	0.00	0.047927	0.060	44.74%	1
LCS12462	9.489	0.867	1.906	0.619	0.214	dpm/S	4.505	0.00	0.156730	4.349	45.83%	1
LCSD12462	9.656	1.022	2.007	0.784	0.266	dpm/S	4.548	0.00	0.170482	4.377	45.34%	1

7/18/12

Quality Control Sample Performance Assessment

RCDU Upload

Analyst: MBT
Date: 7/18/2012
Worklist: 12462
Matrix: Filter

Method: EPA 900.0m
SOP: PGH-R-001
MB Sample ID: 458975



Sample Matrix Spike Control Assessment	
Analyte:	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Corrected Spike Conc. (DPM/Sample):	
Spike Volume Used in MS (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (DPM/Sample, g, F):	
MSD Target Conc. (DPM/Sample, g, F):	
MSD Spike uncertainty (calculated):	
Sample Result:	
Sample 1.96 Sigma Unc.:	
Sample Matrix Spike Result:	
Sample MS 1.96 Sigma Unc.:	
Sample Matrix Spike Duplicate Result:	
Sample MSD 1.96 Sigma Unc.:	
MS % Recovery:	
MSD % Recovery:	
MS Assessment:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	
Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Analyte:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike 1.96 Sigma Unc.:	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:	
MS/MSD Relative Percent Difference:	
MS/MSD RPD Assessment:	
% RPD Limit:	

Method Blank Assessment			
Activity	1.96 Sig. Unc.	MDC	Assessment
Gross Alpha	0.3040	0.4490	0.31400
Gross Beta	0.0840	0.2730	0.19100

Laboratory Control Sample Assessment					
	LCS	LCSD	LCS	LCSD	LCS
Analyte:	Gross Alpha	Gross Beta			
Count Date:	7/12/12 9:38	7/18/12 6:45	7/12/12 9:38	7/18/12 6:45	
Spike I.D.:	12-018-F1	12-018-F3	12-014-F1	12-014-F3	
Spike Concentration (DPM/Sample):	2.353	1.000	9.603	9.799	
Volume Used (mL):	1.000	1.000	1.000	1.000	
Aliquot Volume (L, g, F):	1.000	1.000	1.000	1.000	
Target Conc. (DPM/Sample, g, F):	2.353	2.353	9.603	9.799	
1.96 Sigma Uncertainty (Calculated):	0.138	0.138	0.192	0.192	
Result (DPM/Sample, g, F):	2.737	2.801	9.489	9.656	
1.96 Sigma Unc:	0.974	1.185	1.906	2.007	
% Recovery:	116.32%	119.04%	96.80%	98.54%	
Assessment:	Pass	High**	Pass	Pass	
Upper % Recovery Limits:	119.00%	119.00%	130.00%	130.00%	
Lower % Recovery Limits:	62.00%	62.00%	79.00%	79.00%	
Duplicate Sample Assessment					
LCS/LCSD Y or N?:	Y	Y			
Analyte:	Gross Alpha	Gross Beta			
Sample I.D.:	LCS12462	LCS12462			
Duplicate Sample I.D.:	LCS12462	LCS12462			
Sample Result (DPM/Sample, g, F):	2.7370	9.4890			
1.96 Sigma Unc:	0.9740	1.9060			
Duplicate Result (DPM/Sample, g, F):	2.8010	9.6560			
Duplicate Sample 1.96 Sigma Unc:	1.1850	2.0070			
Either results below MDC?	N	N			
Relative Percent Difference:	2.31%	1.74%			
Assessment:	Pass	Pass			
% RPD Limit:	35.00%	17.00%			

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

07/18/12

21/18/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12462
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Det No.	Effective Calibration Date				Alpha Efficiency	11/20/2006	Alpha to Beta Cross-Talk				Beta to Alpha Cross-Talk	N/A	Alpha Bkg	Beta Bkg	BKG 1 Date: 6/2/2012	BKG 2 Date: 7/13/2012
	a	b	c	d			e	a	b	c						
1					1.4256E-01					3.2336E-01			0.0640	0.8040		
2					1.5524E-01					2.7932E-01			0.0620	0.7010		
3					1.5070E-01					3.0910E-01			0.0600	0.6670		
4					1.4437E-01					2.9231E-01			0.1120	0.6050		
5					#N/A					#N/A			0.0520	5.1640		
6					#N/A					#N/A			0.0510	0.0510		
7					1.5705E-01					2.4638E-01			0.1070	0.6890		
8					1.4091E-01					3.0938E-01			0.0960	0.5310		
9					1.3453E-01					3.4289E-01			0.0550	0.6370		
10					#N/A					#N/A			0.0590	0.7940		
11					1.5103E-01					4.0303E-01			0.1620	0.4690		
12					1.5319E-01					3.7376E-01			0.0890	0.3780		
13					1.4859E-01					4.0742E-01			0.0500	0.3330		
14					1.5721E-01					3.9032E-01			0.0690	0.3900		
15					1.5606E-01					4.4635E-01			0.0820	0.4950		
16					1.5365E-01					4.4658E-01			0.0610	0.3910		
17					1.5472E-01					4.3920E-01			0.1370	0.3960		
18					1.5273E-01					4.4691E-01			0.0630	0.3820		
19					1.5393E-01					4.4422E-01			0.0770	0.4570		
20					1.5610E-01					4.5782E-01			0.0970	0.3820		
21					1.5130E-01					4.4321E-01			0.0780	0.3780		
22					1.5360E-01					4.5533E-01			0.0570	0.4180		
23					1.5639E-01					4.3554E-01			0.0750	0.4180		
24					#N/A					4.4612E-01			0.0740	0.4570		
25					1.5888E-01					#N/A			0.1270	0.4110		
26					1.5743E-01					4.5388E-01			0.1490	0.4370		
27					1.5803E-01					4.5458E-01			0.0740	0.2880		

202
THINK

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Analyst: MBT
PrepSOP1: PGR-R-001
PrepSOP2: n/a
AnalSOP1: EPA.900.0
AnalSOP2: n/a

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12462
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Det No.	Effective Calibration Date			Alpha Efficiency	Alpha to Beta Cross-Talk			Beta Efficiency	Beta to Alpha Cross-Talk			Beta to Alpha Xtalk : ax + b			Alpha Bkg	Beta Bkg	Alpha Bkg	Beta Bkg	BKG 1 Date	BKG 2 Date	7/13/2012
	a	b	c		d	e	a		b	c	d	e	a	b							
27																					
28					1.5536E-01					3.4323E-01				4.3725E-01							
29					1.5933E-01					3.4570E-01				4.4186E-01							
30					1.5497E-01					3.5154E-01				4.4737E-01							
31					1.5353E-01					3.5204E-01				4.4881E-01							
32					1.5823E-01					3.3211E-01				4.5019E-01							
33					1.6147E-01					3.4650E-01				4.5824E-01							
34					1.6117E-01					3.3480E-01				4.4688E-01							
35					#N/A					#N/A				#N/A							
36					1.4853E-01					3.6059E-01				4.5203E-01							
37					1.5981E-01					3.1889E-01				4.4695E-01							
38					1.5254E-01					3.4693E-01				4.4797E-01							
39					1.7614E-01					2.7763E-01				4.5734E-01							
40					1.8178E-01					2.5395E-01				4.5470E-01							
41					#N/A					#N/A				#N/A							
42					1.4541E-01					4.3586E-01				3.3352E-01							
43					1.7384E-01					2.8197E-01				4.4592E-01							
44					1.7507E-01					2.9247E-01				4.5186E-01							
45					1.6896E-01					2.8541E-01				4.3550E-01							
46					1.6418E-01					2.9296E-01				4.4756E-01							
47					1.7203E-01					2.9040E-01				4.5901E-01							
48					1.8314E-01					2.6993E-01				4.6967E-01							
49					1.6993E-01					2.9322E-01				4.4190E-01							
50					1.6594E-01					2.8046E-01				4.5406E-01							
51					1.7880E-01					2.8023E-01				4.5525E-01							
52					1.7970E-01					2.8847E-01				4.5698E-01							
53					1.7780E-01					2.7454E-01				4.7119E-01							

7/18/12
JST

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

CSU Analysis for Preparation

Planchet Weighing

uncert (g)	gross (g)	tare (g)	net (g)	CSU (g)	
0.0003	9.1463	9.1273	0.019	0.000424264	2.23%

Volume Aliquot

(mL)	vol (mL)	rel unc
1.00	100.0	1.00%

Description	relative	of Critical	CSU for Preparation (UE1)	Uncertainty	6.71%
Sample Aliquoting	1.00%	1	1.00%	0.01%	
Planchet Weighing	2.23%	2	3.16%	0.10%	
Sample transfer to planchet	3.00%	1	3.00%	0.09%	
Additional Uncertainty due to differences in the distribution of residue on the planchet	5.00%	1	5.00%	0.25%	

CSU Analysis for Analysis

Mass Aliquot

	Ref mass	uncert (g)	Rel unc
Tare	5	0.0004	
Gross	6	0.0004	Use max of 1%
net	1	0.000565685	0.057%

Description	Maximum	of Critical	CSU for Analysis (UE2)	Uncertainty	13.23%
SRM Uncertainty	5.00%	1	5.00%	0.25%	
Mass transfer	0.06%	2	0.08%	0.00%	
Source Reproducibility	5.00%	1	5.00%	0.25%	
Curve Fitting Uncertainty	5.00%	1	5.00%	0.25%	
Estimated Additional Uncertainty (variations in efficiency and self-absorption due to chemical composition of residue)	10.00%	1	10.00%	1.00%	

CSU Analysis for Yield Correction

Description	Maximum	of Critical	CSU for Yield (UE3)	Uncertainty	10.00%
Additional Sample Uncertainty due to analysis without a tracer or chemical carrier	10.00%	1	10.00%	1.00%	

7/18/12
200

Pace Analytical Services
Gross Alpha and Gross Beta

Analysis

SAMPLE_ID	Det#	BEG_DATE	BATCH_ID	ACPM	BCPM	CNT_TIME
458975	36	7/12/2012 9:24	GAB12462	0.138461538	0.461538462	130
3072060060	22	7/12/2012 9:20	GAB12462	0.166666667	0.408333333	120
3072060061	25	7/12/2012 9:28	GAB12462	0.093333333	0.36	150
LCS12462	12	7/12/2012 9:38	GAB12462	0.508333333	4.883333333	120
3072060062	15	7/12/2012 9:39	GAB12462	0.175	0.516666667	120
3072060063	16	7/12/2012 9:39	GAB12462	0.1	0.433333333	120
3072060064	18	7/12/2012 9:39	GAB12462	0.141666667	0.441666667	120
3072060065	19	7/12/2012 9:40	GAB12462	0.116666667	0.45	120
3072060066	23	7/12/2012 9:40	GAB12462	0.05	0.416666667	120
3072060067	33	7/12/2012 9:40	GAB12462	0.125	0.591666667	120
3072060068	37	7/12/2012 9:40	GAB12462	0.216666667	0.625	120
3072060069	20	7/12/2012 10:38	GAB12462	0.1	0.55	120
3072060070	21	7/12/2012 10:38	GAB12462	0.1	0.541666667	120
3072060071	27	7/12/2012 10:38	GAB12462	0.05	0.45	120
3072060072	28	7/12/2012 10:38	GAB12462	0.075	0.375	120
3072060073	30	7/12/2012 10:38	GAB12462	0.18	0.58	100
3072060074	31	7/12/2012 10:38	GAB12462	0.066666667	0.55	120
3072060075	34	7/12/2012 10:38	GAB12462	0.08	0.45	100
3072060076	29	7/12/2012 10:50	GAB12462	0.054545455	0.381818182	110
3072060060	27	7/12/2012 16:31	GAB12462	0.025	0.35	120
3072060077	28	7/12/2012 16:31	GAB12462	0.025	0.341666667	120
3072060078	29	7/12/2012 16:31	GAB12462	0.116666667	0.408333333	120
3072060079	30	7/12/2012 16:31	GAB12462	0.208333333	0.516666667	120
LCSD12462	11	7/18/2012 6:45	GAB12462	0.6	4.988888889	90

On 7/18/12

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LCS#3-12462	7/18/2012 6:45:20 AM	11	GAB12462	0.600	4.9889	90.0
3072060079	7/12/2012 4:31:44 PM	30	GAB12462	0.208	0.5167	120.0
3072060078	7/12/2012 4:31:39 PM	29	GAB12462	0.117	0.4083	120.0
3072060077	7/12/2012 4:31:33 PM	28	GAB12462	0.025	0.3417	120.0
3072060060	7/12/2012 4:31:26 PM	27	GAB12462	0.025	0.3500	120.0
3072060076	7/12/2012 10:50:08 AM	29	GAB12462	0.055	0.3818	110.0
3072060075	7/12/2012 10:38:54 AM	34	GAB12462	0.080	0.4500	100.0
3072060074	7/12/2012 10:38:48 AM	31	GAB12462	0.067	0.5500	120.0
3072060073	7/12/2012 10:38:43 AM	30	GAB12462	0.180	0.5800	100.0
3072060072	7/12/2012 10:38:36 AM	28	GAB12462	0.075	0.3750	120.0
3072060071	7/12/2012 10:38:26 AM	27	GAB12462	0.050	0.4500	120.0
3072060070	7/12/2012 10:38:12 AM	21	GAB12462	0.100	0.5417	120.0
3072060069	7/12/2012 10:38:02 AM	20	GAB12462	0.100	0.5500	120.0
3072060068	7/12/2012 9:40:30 AM	37	GAB12462	0.217	0.6250	120.0
3072060067	7/12/2012 9:40:27 AM	33	GAB12462	0.125	0.5917	120.0
3072060066	7/12/2012 9:40:20 AM	23	GAB12462	0.050	0.4167	120.0

7/18/12

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072060065	7/12/2012 9:40:16 AM	19	GAB12462	0.117	0.4500	120.0
3072060064	7/12/2012 9:39:22 AM	18	GAB12462	0.142	0.4417	120.0
3072060063	7/12/2012 9:39:19 AM	16	GAB12462	0.100	0.4333	120.0
3072060062	7/12/2012 9:39:16 AM	15	GAB12462	0.175	0.5167	120.0
LCS#1-12462	7/12/2012 9:38:43 AM	12	GAB12462	0.508	4.8833	120.0
3072060061	7/12/2012 9:28:24 AM	25	GAB12462	0.093	0.3600	150.0
458975	7/12/2012 9:24:11 AM	36	GAB12462	0.138	0.4615	130.0
3072060060	7/12/2012 9:20:56 AM	22	GAB12462	0.167	0.4083	120.0

OK
7/18/12

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
	37	3072060018	GAB12459	120	8053		NA	NA
	1	↓ 19	↓	↓			↓	↓
GAB	19	3072058096	GAB12458	120	7/11/12 1710	BSH	NA	NA
GAB	13	3072434002	GAB12557	260	7/12/12 1000			
GAB	17	30723070010	GAB12405	90				
	14	7275000100		↓				
	32	72410001		340				
	35	724131		1000				
	34	72702						
	35	72776						
		72181						
		5560500						
		↓ 003						
		3072063001	GAB12578					
		72599						
		72587						
		72588						
GAB	11	653-12461	GAB12461	120	7/12/12 921	DL	NA	NA
	17	654-12461	↓	↓	922			
	22	3072060060	GAB12462		920			
	36	458975	↓	130	924			
	38	5072060059	GAB12461	150	924			
	25	72060001	↓ 12462	↓	7/12/12 928		NA	NA
	12	654-12462	GAB12462	120	7-12-12	WBA	NA	W

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review: DLA

Date: 7/12/12

J:\QAQC\MasterDocument Management\Radiological\GFPC Run Log (R002-3 7Oct2010).xls

DLA

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
5AB	14	LCS# 2-12464Z	VAB12410F	120	7-12-12 0939	WFA	NA	NA
	15	3072060042	VAB12462	120				
	16	63						
	18	64						
	19	65						
	23	66						
	33	67						
	37	68						
6AB	20	3072060069		120	7/10/12 1038		NA	NA
	21	70						
	27	71						
	28	72						
	30	73		100				
	31	74		120				
	34	75		100				
	34	76		110			NA	NA
6AB	26	GA20100711-N17	GABCA	120	7/10/12 1123		NA	NA
	26	-N18		12	1135			
	26	-N19		15	1148			
	28	GA20100614-N01	GABCA	26	9/12/12 1245		NA	NA
	29	-N20						
	30	-N03						
	31	-N04						
	33	-N05						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review Del

Date: 7/13/12

200
7/13/12

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
GAS	28	GA 201206064 - N03	GAB 064	10	7/12/12 1551	RL	NA	NA
	29	- N04						
	30	- N05						
	31	- N06						
	33	0711 - N07						
	34	- N18						
	36	- N19						
	37	U614 - N01						
	38	- N10						
	38	- N10			7/11/12 1557	RL	NA	NA
	39	- N03						
	30	- N04						
	31	- N05						
	33	- N06						
	34	0711 - N17						
	34	- N18						
	37	- N19						
	38	0614 - N01						
GAS	27	3072060060	GAB 12462	120	7/12/12 16:32	B5H	NA	NA
	28	077						
	29	078						
	30	079						
	33	458977	GAB 12463	120				
	34	3072060080						

- Legend:
1. Detector daily check failure
 2. MDC > Contract RL
 3. Sample re-ingrowth
 4. Sample was re-prepped
 5. Other noted comments

Peer Review: RL

Date: 7/13/12

RL

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 25-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAP	13	3561332001	GA12643	656	7/17/12 2145	RMLC	NA	
	14	CO2						
	16	3561248001						
	17	CO2						
	18	CO3						
	19	3561707001						
	20	CO2						
	21	CO4						
	22	CO5						
	23	3073080001						
GAB	26	3072944001	GA12597	656	7/17/12 2145	RMLC	NA	
	27	3073177001	GA12646					
	28	3073178001						
	29	3073220002						
	30	CO3						
	25	3072080054	GA12471	210	7-18-12 0040	MST	NA	
	31	55		120				
GAB	33	3072080049		140				
	34	50		140				
	37	51		220				
	38	3072080009	GA12470	220 130				
GAB	36	68		100	7-18-12 2456	MST	M	
	11	LOS#3 12402	GA12402	90	7-18-12	MST		
	15	LOS#1 12403	GA12403	90				

- Legend:
1. Detector daily check failure
 2. MDC > Contract RL
 3. Sample re-ingrowth
 4. Sample was re-prepped
 5. Other noted comments

Peer Review

Date: 7/18/12

2011/10/20

Gross Alpha and Beta Sample Analysis Data

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

1 458977-BLANK for HBN 91033 [RADC/1246

Type BLANK Matrix Impact Plate Collected % Moisture
 Client QCACCOUNT WO Work ID

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795660 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 16:31 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795660 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	0.165U ± 0.397 (0.929)	pCi/sa 0.165U ± 0.397 (0.929)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	-0.083U ± 0.249 (0.626)	pCi/sa -0.083U ± 0.249 (0.626)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					

2 3072060080-2540-SU6-32

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 16:32 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784357 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 16:32 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784357 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Req. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.201U ± 0.382 (0.866)	pCi/sa 0.201U ± 0.382 (0.866)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

2 3072060080-2540-SU6-32

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Gross Beta	OK	-0.033U ± 0.268 (0.654)	pCi/sa -0.033U ± 0.268 (0.654)		dpm/sa		

The lab does not hold TNI accreditation for this parameter.

3 3072060081-2540-SU6-SINK

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 16:32 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784359 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 16:32 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784359 File CC OK F

Analyte	CC	Posted Result		MDL	RDL	Reg. Limits	
		Result	Result			Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.989 ± 0.537 (0.686)	pCi/sa 0.989 ± 0.537 (0.686)		dpm/sa		

The lab does not hold TNI accreditation for this parameter.

Gross Beta	OK	0.721 ± 0.366 (0.587)	pCi/sa 0.721 ± 0.366 (0.587)		dpm/sa		
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The lab does not hold TNI accreditation for this parameter.

4 3072060082-2540-SU7-1

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784361 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

4 3072060082-2540-SU7-1

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 20:04	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784361	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.344J ± 0.460 (0.974)	pCi/sa 0.344J ± 0.460 (0.974)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.005U ± 0.261 (0.619)	pCi/sa 0.005U ± 0.261 (0.619)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

5 3072060083-2540-SU7-2

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I	Batch RADC/12463	Prep Date 7/12/2012 20:04	Dilution
Method EPA 900.0m	HBN 91033	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784363	Instru NONE		CC OK F

Initial Volume	1 mL Default	1 mL
Final Volume,	1 mL Default	1 mL

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 20:04	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784363	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.334J ± 0.394 (0.785)	pCi/sa 0.334J ± 0.394 (0.785)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.141U ± 0.308 (0.685)	pCi/sa 0.141U ± 0.308 (0.685)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

6 3072060084-2540-SU7-3

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

6 3072060084-2540-SU7-3

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784365 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784365 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	-0.068U ± 0.294 (0.853)	pCi/sa -0.068U ± 0.294 (0.853)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.427J ± 0.323 (0.637)	pCi/sa 0.427J ± 0.323 (0.637)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

7 3072060085-2540-SU7-5

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784367 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784367 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.062U ± 0.365 (0.924)	pCi/sa 0.062U ± 0.365 (0.924)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.004U ± 0.300 (0.719)	pCi/sa 0.004U ± 0.300 (0.719)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

7 3072060085-2540-SU7-5

8 3072060086-2540-SU7-6

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784369 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784369 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.254U ± 0.384 (0.829)	pCi/sa 0.254U ± 0.384 (0.829)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.255J ± 0.309 (0.656)	pCi/sa 0.255J ± 0.309 (0.656)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

9 3072060087-2540-SU7-7

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth Location
 1207072

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784371 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:04 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784371 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

9 3072060087-2540-SU7-7							
Analyte	CC	Posted	Result	MDL	RDL	Reg. Limits	
		Result				Low	High
Gross Alpha	OK	1.01 ± 0.583 (0.845)	pCi/sa 1.01 ± 0.583 (0.845)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.497J ± 0.350 (0.641)	pCi/sa 0.497J ± 0.350 (0.641)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

10 3072060088-2540-SU7-8				
Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information

Procedure 9000 I	Batch RADC/12463	Prep Date 7/12/2012 20:04	Dilution
Method EPA 900.0m	HBN 91033	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784373	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 20:04	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784373	File		CC OK F

Analyte	CC	Posted	Result	MDL	RDL	Reg. Limits	
		Result				Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.258U ± 0.415 (0.912)	pCi/sa 0.258U ± 0.415 (0.912)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.043U ± 0.289 (0.676)	pCi/sa 0.043U ± 0.289 (0.676)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

11 3072060089-2540-SU7-10				
Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information

Procedure 9000 I	Batch RADC/12463	Prep Date 7/12/2012 20:04	Dilution
Method EPA 900.0m	HBN 91033	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784375	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

11 3072060089-2540-SU7-10

Analytical Information

Procedure 9000 I		Instru NONE		Run Date 7/12/2012 20:04		Dilution	
Method EPA 900.0m		Col ID		Hold Date 12/16/2012 23:59		Analyst MBT	
Schedule 2784375		File				CC OK F	
Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.126U ± 0.411 (0.992)	pCi/sa 0.126U ± 0.411 (0.992)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.231J ± 0.299 (0.643)	pCi/sa 0.231J ± 0.299 (0.643)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

12 3072060090-2540-SU7-11

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

Prep Information

Procedure 9000 I		Batch RADC/12463		Prep Date 7/12/2012 20:04		Dilution	
Method EPA 900.0m		HBN 91033		Hold Date 12/16/2012 23:59		Analyst MBT	
Schedule 2784377		Instru NONE				CC OK F	
Initial Volume	1 mL Default	1 mL					
Final Volume,	1 mL Default	1 mL					

Analytical Information

Procedure 9000 I		Instru NONE		Run Date 7/12/2012 20:04		Dilution	
Method EPA 900.0m		Col ID		Hold Date 12/16/2012 23:59		Analyst MBT	
Schedule 2784377		File				CC OK F	
Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.035U ± 0.360 (0.933)	pCi/sa 0.035U ± 0.360 (0.933)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.172U ± 0.281 (0.623)	pCi/sa 0.172U ± 0.281 (0.623)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

13 3072060091-2540-SU7-11D

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

13 3072060091-2540-SU7-11D

Prep Information

Procedure 9000 I **Batch** RADC/12463 **Prep Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **HBN** 91033 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784379 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784379 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.660J ± 0.488 (0.807)	pCi/sa 0.660J ± 0.488 (0.807)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.250J ± 0.326 (0.682)	pCi/sa 0.250J ± 0.326 (0.682)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

14 3072060092-2540-SU7-12

Type PS **Matrix** Wipe **Collected** 6/19/2012 00:01 **% Moisture**
Client RTI **WO** 3072060 **Work ID** Fort Monmouth 1207072 **Location**

Prep Information

Procedure 9000 I **Batch** RADC/12463 **Prep Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **HBN** 91033 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784382 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784382 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.053U ± 0.348 (0.888)	pCi/sa 0.053U ± 0.348 (0.888)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.071U ± 0.297 (0.694)	pCi/sa 0.071U ± 0.297 (0.694)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

14 3072060092-2540-SU7-12

15 3072060093-2540-SU7-15

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:05 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784384 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:05 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784384 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	-0.205U ± 0.257 (0.874)	pCi/sa -0.205U ± 0.257 (0.874)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.441J ± 0.295 (0.558)	pCi/sa 0.441J ± 0.295 (0.558)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

16 3072060094-2540-SU7-16

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:05 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784386 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:05 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784386 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

16 3072060094-2540-SU7-16									
Analyte	CC	Posted		MDL	RDL	Reg. Limits			
		Result	Result			Low	High		
Gross Alpha	OK	-0.092U ± 0.319 (0.923)	pCi/sa -0.092U ± 0.319 (0.923)					dpm/sa	
The lab does not hold TNI accreditation for this parameter.									
Gross Beta	OK	-0.007U ± 0.247 (0.612)	pCi/sa -0.007U ± 0.247 (0.612)					dpm/sa	
The lab does not hold TNI accreditation for this parameter.									

17 3072060095-2540-SU7-17				
Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information

Procedure 9000 I	Batch RADC/12463	Prep Date 7/12/2012 20:05	Dilution
Method EPA 900.0m	HBN 91033	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784388	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 20:05	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784388	File		CC OK F

Analyte	CC	Posted		MDL	RDL	Reg. Limits			
		Result	Result			Low	High		
Rad Chemistry	OK							dpm/sa	
Gross Alpha	OK	-0.059U ± 0.340 (0.948)	pCi/sa -0.059U ± 0.340 (0.948)					dpm/sa	
The lab does not hold TNI accreditation for this parameter.									
Gross Beta	OK	0.052U ± 0.250 (0.596)	pCi/sa 0.052U ± 0.250 (0.596)					dpm/sa	
The lab does not hold TNI accreditation for this parameter.									

18 3072060096-2540-SU7-18				
Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture	
Client RTI	WO 3072060	Work ID Fort Monmouth 1207072	Location	

Prep Information

Procedure 9000 I	Batch RADC/12463	Prep Date 7/12/2012 20:05	Dilution
Method EPA 900.0m	HBN 91033	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2784390	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

18 3072060096-2540-SU7-18

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:05 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784390 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.396J ± 0.441 (0.881)	pCi/sa 0.396J ± 0.441 (0.881)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.323J ± 0.321 (0.657)	pCi/sa 0.323J ± 0.321 (0.657)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

19 3072060097-2540-SU7-19

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12463 Prep Date 7/12/2012 20:05 Dilution
 Method EPA 900.0m HBN 91033 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784392 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 20:05 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784392 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.114U ± 0.383 (0.929)	pCi/sa 0.114U ± 0.383 (0.929)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.095U ± 0.246 (0.626)	pCi/sa -0.095U ± 0.246 (0.626)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

20 3072060098-2540-SU7-21

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12463 HBN 91033
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

20 3072060098-2540-SU7-21

Prep Information

Procedure 9000 I **Batch** RADC/12463 **Prep Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **HBN** 91033 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784394 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784394 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.356J ± 0.424 (0.866)	pCi/sa 0.356J ± 0.424 (0.866)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.377J ± 0.327 (0.654)	pCi/sa 0.377J ± 0.327 (0.654)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

21 3072060099-2540-SU7-23

Type PS **Matrix** Wipe **Collected** 6/19/2012 00:01 **% Moisture**
Client RTI **WO** 3072060 **Work ID** Fort Monmouth 1207072 **Location**

Prep Information

Procedure 9000 I **Batch** RADC/12463 **Prep Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **HBN** 91033 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784396 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 20:05 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2784396 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	1.20 ± 0.587 (0.686)	pCi/sa 1.20 ± 0.587 (0.686)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.436J ± 0.323 (0.587)	pCi/sa 0.436J ± 0.323 (0.587)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review

Batch	RADC/12463	HBN	91033
Rule	9000 I	Status	RE
Create Date	6/28/2012	Analyst	MBT



21 3072060099-2540-SU7-23

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Creation Date 06/28/2012 13:06
Batch ID 12463
A-code 9000 I 9000W or NJ
Method EPA 900.0m EPA 900.0 or NJAC7186

Assigned Analyst MBT
Earliest Due Date 07/04/2012 07:12
HBN 91033

WorkerID	Sample ID	Sample Type	Matrix	Collection Date/Time	Client ID	Alpha Activity	Alpha Unc.	Alpha MDC	Beta Activity	Beta Unc.	Beta MDC	Analysis Date/Time	Alpha	Beta
	458977	BLANK	IP		QCACCOUNT	0.165U	0.397	0.929	-0.083U	0.249	0.626	7/12/12 16:31		
3072060	3072060080	PS	WP	6/19/2012 0:01	RTI	0.201U	0.382	0.866	-0.033U	0.268	0.654	7/12/12 16:32		
3072060	3072060081	PS	WP	6/19/2012 0:01	RTI	0.989	0.537	0.886	0.721	0.366	0.587	7/12/12 16:32		
3072060	3072060082	PS	WP	6/19/2012 0:01	RTI	0.344J	0.460	0.974	0.005U	0.261	0.619	7/12/12 20:04		
3072060	3072060083	PS	WP	6/19/2012 0:01	RTI	0.334J	0.394	0.785	0.141U	0.308	0.685	7/12/12 20:04		
3072060	3072060084	PS	WP	6/19/2012 0:01	RTI	-0.068U	0.294	0.853	0.427J	0.323	0.637	7/12/12 20:04		
3072060	3072060085	PS	WP	6/19/2012 0:01	RTI	0.062U	0.365	0.924	0.004U	0.300	0.719	7/12/12 20:04		
3072060	3072060086	PS	WP	6/19/2012 0:01	RTI	0.254U	0.384	0.829	0.255J	0.309	0.656	7/12/12 20:04		
3072060	3072060087	PS	WP	6/19/2012 0:01	RTI	1.01	0.583	0.845	0.497J	0.350	0.841	7/12/12 20:04		
3072060	3072060088	PS	WP	6/19/2012 0:01	RTI	0.258U	0.415	0.912	0.043U	0.289	0.676	7/12/12 20:04		
3072060	3072060089	PS	WP	6/19/2012 0:01	RTI	0.126U	0.411	0.992	0.231J	0.299	0.643	7/12/12 20:04		
3072060	3072060090	PS	WP	6/19/2012 0:01	RTI	0.035U	0.360	0.933	0.172U	0.281	0.623	7/12/12 20:04		
3072060	3072060091	PS	WP	6/19/2012 0:01	RTI	0.660J	0.488	0.807	0.250J	0.326	0.682	7/12/12 20:05		
3072060	3072060092	PS	WP	6/19/2012 0:01	RTI	0.053U	0.348	0.888	0.071U	0.297	0.694	7/12/12 20:05		
3072060	3072060093	PS	WP	6/19/2012 0:01	RTI	-0.205U	0.257	0.874	0.441J	0.295	0.558	7/12/12 20:05		
3072060	3072060094	PS	WP	6/19/2012 0:01	RTI	-0.092U	0.319	0.923	-0.007U	0.247	0.612	7/12/12 20:05		
3072060	3072060095	PS	WP	6/19/2012 0:01	RTI	-0.059U	0.340	0.948	0.052U	0.250	0.596	7/12/12 20:05		
3072060	3072060096	PS	WP	6/19/2012 0:01	RTI	0.396J	0.441	0.881	0.323J	0.321	0.657	7/12/12 20:05		
3072060	3072060097	PS	WP	6/19/2012 0:01	RTI	0.114U	0.383	0.929	-0.095U	0.246	0.626	7/12/12 20:05		
3072060	3072060098	PS	WP	6/19/2012 0:01	RTI	0.356J	0.424	0.866	0.377J	0.327	0.654	7/12/12 20:05		
3072060	3072060099	PS	WP	6/19/2012 0:01	RTI	1.20	0.587	0.886	0.436J	0.323	0.587	7/12/12 20:05		

Handwritten: 7/12/2012

* This indicates a possible MCL exceedance may exist for this sample. Results greater than 15.0 pCi/L gross alpha must be reviewed expeditiously and the PM, Radchem Supervisor, and QA Manager notified immediately upon validation of the result. If the gross beta result is above 50 pCi/L, this may also indicate a reportable exceedance.

Handwritten: 7/12/2012

Gross Alpha and Gross Beta Preparation Sheet



Batch: 124403
 Transfer Analyst: MBT
 Prep Date/Time: 7-9-12 12:00
 Matrix: Filter
 Logbook ID: 3-R021-5

Spike Analyst: NA
 QC ID: a: NA b:
 LCS QC Vol (mL): a: b:
 MS/MSD QC Vol (mL): a: b:
 Pipette ID:

Aliquot Balance ID: NA
 Aliquot Wgt. Date:
 Tare Balance ID:
 Tare Wgt. Date:
 Gross Balance ID:
 Gross Wgt. Date:

Bottle ID	Sample No.	Analyst Initials		Analyst Initials		Analyst Initials		Sample Comments
		Tare Mass (g)	5mL Test Mass (g)	Sample Volume (mL)	Gross Mass (g)			
NA	458977	NA	NA	1.0	NA	NA	NA	
1	3072000080							
2	81							
3	82							
4	83							
5	84							
6	85							
7	86							
8	87							
9	88							
10	89							
11	90							
12	91							
13	92							
14	93							
15	94							
16	95							
17	96							
18	97							
19	98							
20	99							
21	LCS124403							
22	LCS124403							
23								
24								

Batch Comments: Ludox: 8N HNO₃ Conc HNO₃: MBT 7-11-12
 Date Placed in oven: / / @ Date Removed: / / @
 Peer Review: Date: J:\QAQC\Master\Document Management\Radiological\GAB Preparation Logbook (R021-5 3March2012).XLS

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12463
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012
Reporting Units: dpm

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Sigma 1.96
Zero Factor 2.71

Sample ID	Aliquot	Units	Tare (g)	Gross (g)	Residue (mg)	Det. ID	Count Date	Alpha Gross CPM	Beta Gross CPM	Count Duration (min)	Alpha Bkg CPM	Beta Bkg CPM	Bkg Count Duration (min)	Req Activity Units
458977	1.00000	S	9.00000	9.00000	0.00	33	7/12/2012 16:31	0.1167	0.3583	120	0.0900	0.3870	1000	dpm
3072060080	1.00000	S	9.00000	9.00000	0.00	34	7/12/2012 16:32	0.1083	0.4000	120	0.0760	0.4040	1000	dpm
3072060081	1.00000	S	9.00000	9.00000	0.00	37	7/12/2012 16:32	0.2000	0.6917	120	0.0420	0.3190	1000	dpm
3072060082	1.00000	S	9.00000	9.00000	0.00	12	7/12/2012 20:04	0.1417	0.4000	120	0.0890	0.3780	1000	dpm
3072060083	1.00000	S	9.00000	9.00000	0.00	13	7/12/2012 20:04	0.1000	0.4083	120	0.0500	0.3330	1000	dpm
3072060084	1.00000	S	9.00000	9.00000	0.00	14	7/12/2012 20:04	0.0583	0.5667	120	0.0690	0.3800	1000	dpm
3072060085	1.00000	S	9.00000	9.00000	0.00	15	7/12/2012 20:04	0.0917	0.5000	120	0.0820	0.4950	1000	dpm
3072060086	1.00000	S	9.00000	9.00000	0.00	16	7/12/2012 20:04	0.1000	0.5167	120	0.0610	0.3910	1000	dpm
3072060087	1.00000	S	9.00000	9.00000	0.00	18	7/12/2012 20:04	0.2167	0.6583	120	0.0630	0.3820	1000	dpm
3072060088	1.00000	S	9.00000	9.00000	0.00	19	7/12/2012 20:04	0.1167	0.4917	120	0.0770	0.4570	1000	dpm
3072060089	1.00000	S	9.00000	9.00000	0.00	20	7/12/2012 20:04	0.1167	0.4917	120	0.0970	0.3820	1000	dpm
3072060090	1.00000	S	9.00000	9.00000	0.00	21	7/12/2012 20:04	0.0833	0.4583	120	0.0780	0.3780	1000	dpm
3072060091	1.00000	S	9.00000	9.00000	0.00	22	7/12/2012 20:05	0.1583	0.5667	120	0.0570	0.4180	1000	dpm
3072060092	1.00000	S	9.00000	9.00000	0.00	23	7/12/2012 20:05	0.0833	0.4917	120	0.0750	0.4570	1000	dpm
3072060093	1.00000	S	9.00000	9.00000	0.00	27	7/12/2012 20:05	0.0417	0.4750	120	0.0740	0.2880	1000	dpm
3072060094	1.00000	S	9.00000	9.00000	0.00	28	7/12/2012 20:05	0.0667	0.3250	120	0.0810	0.3330	1000	dpm
3072060095	1.00000	S	9.00000	9.00000	0.00	29	7/12/2012 20:05	0.0750	0.3417	120	0.0840	0.3220	1000	dpm
3072060096	1.00000	S	9.00000	9.00000	0.00	30	7/12/2012 20:05	0.1333	0.5750	120	0.0720	0.4090	1000	dpm
3072060097	1.00000	S	9.00000	9.00000	0.00	33	7/12/2012 20:05	0.1083	0.3500	120	0.0900	0.3870	1000	dpm
3072060098	1.00000	S	9.00000	9.00000	0.00	34	7/12/2012 20:05	0.1333	0.5917	120	0.0760	0.4040	1000	dpm
3072060099	1.00000	S	9.00000	9.00000	0.00	37	7/12/2012 20:05	0.2333	0.5750	120	0.0420	0.3190	1000	dpm
LCS12463	1.00000	S	9.00000	9.00000	0.00	15	7/18/2012 6:46	0.4222	4.5556	90	0.1200	0.4700	1000	dpm
LCS12463	1.00000	S	9.00000	9.00000	0.00	27	7/19/2012 14:05	0.5333	5.2333	90	0.0690	0.3930	1000	dpm

Mu 7/20/12

MBT

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12463
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Alpha Results

Sample ID	Alpha Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Alpha Net CPM	Residue (mg)	Beta to Alpha Xtlk CPM	Xtlk corr. Net alpha CPM	Alpha eff	Activity Conversion
458977	0.165	0.396	0.397	0.929	0.296	dpm/S	0.027	0.00	0.000000	0.027	16.15%	1
3072060080	0.201	0.380	0.382	0.866	0.273	dpm/S	0.032	0.00	0.000000	0.032	16.12%	1
3072060081	0.989	0.507	0.537	0.686	0.204	dpm/S	0.158	0.00	0.000000	0.158	15.98%	1
3072060082	0.344	0.456	0.460	0.974	0.310	dpm/S	0.053	0.00	0.000000	0.053	15.32%	1
3072060083	0.334	0.389	0.394	0.785	0.238	dpm/S	0.050	0.00	0.000000	0.050	14.96%	1
3072060084	-0.068	0.294	0.294	0.853	0.266	dpm/S	-0.011	0.00	0.000000	-0.011	15.72%	1
3072060085	0.062	0.365	0.365	0.924	0.293	dpm/S	0.010	0.00	0.000000	0.010	15.61%	1
3072060086	0.254	0.381	0.384	0.829	0.256	dpm/S	0.039	0.00	0.000000	0.039	15.37%	1
3072060087	1.006	0.555	0.583	0.845	0.262	dpm/S	0.154	0.00	0.000000	0.154	15.27%	1
3072060088	0.258	0.412	0.415	0.912	0.287	dpm/S	0.040	0.00	0.000000	0.040	15.39%	1
3072060089	0.126	0.411	0.411	0.992	0.318	dpm/S	0.020	0.00	0.000000	0.020	15.61%	1
3072060090	0.035	0.360	0.360	0.933	0.294	dpm/S	0.005	0.00	0.000000	0.005	15.13%	1
3072060091	0.660	0.473	0.488	0.807	0.248	dpm/S	0.101	0.00	0.000000	0.101	15.36%	1
3072060092	0.053	0.348	0.348	0.888	0.279	dpm/S	0.008	0.00	0.000000	0.008	15.64%	1
3072060093	-0.205	0.255	0.257	0.874	0.274	dpm/S	-0.032	0.00	0.000000	-0.032	15.80%	1
3072060094	-0.092	0.318	0.319	0.923	0.292	dpm/S	-0.014	0.00	0.000000	-0.014	15.54%	1
3072060095	-0.059	0.340	0.340	0.948	0.301	dpm/S	-0.009	0.00	0.000000	-0.009	15.36%	1
3072060096	0.396	0.435	0.441	0.881	0.276	dpm/S	0.061	0.00	0.000000	0.061	15.50%	1
3072060097	0.114	0.382	0.383	0.929	0.296	dpm/S	0.018	0.00	0.000000	0.018	16.15%	1
3072060098	0.356	0.419	0.424	0.866	0.273	dpm/S	0.057	0.00	0.000000	0.057	16.12%	1
3072060099	1.197	0.547	0.587	0.686	0.204	dpm/S	0.191	0.00	0.000000	0.191	15.98%	1
LCS12463	1.937	0.871	0.938	1.281	0.403	dpm/S	0.302	0.00	0.000000	0.302	15.61%	1
LCS12463	2.938	0.960	1.095	1.005	0.302	dpm/S	0.464	0.00	0.000000	0.464	15.80%	1

0.012012

Doc
File 112

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12463
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Beta Results

Sample ID	Beta Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Beta Net CPM	Residue (mg)	Alpha to Beta Xilk CPM	Xilk corr. Net beta CPM	Beta eff	Activity Conversion
458977	-0.083	0.248	0.249	0.626	0.216	dpm/S	-0.029	0.00	0.009240	-0.038	45.82%	1
3072060080	-0.033	0.268	0.268	0.654	0.227	dpm/S	-0.004	0.00	0.010825	-0.015	44.69%	1
3072060081	0.721	0.342	0.366	0.587	0.201	dpm/S	0.373	0.00	0.050385	0.322	44.70%	1
3072060082	0.005	0.261	0.261	0.619	0.214	dpm/S	0.022	0.00	0.019685	0.002	45.83%	1
3072060083	0.141	0.307	0.308	0.685	0.236	dpm/S	0.075	0.00	0.020371	0.055	39.03%	1
3072060084	0.427	0.314	0.323	0.637	0.220	dpm/S	0.187	0.00	-0.003828	0.190	44.64%	1
3072060085	0.004	0.300	0.300	0.719	0.251	dpm/S	0.005	0.00	0.003357	0.002	44.66%	1
3072060086	0.255	0.306	0.309	0.656	0.227	dpm/S	0.126	0.00	0.013821	0.112	43.92%	1
3072060087	0.497	0.338	0.350	0.641	0.222	dpm/S	0.276	0.00	0.055351	0.221	44.42%	1
3072060088	0.043	0.289	0.289	0.676	0.235	dpm/S	0.035	0.00	0.015174	0.019	45.78%	1
3072060089	0.231	0.296	0.299	0.643	0.222	dpm/S	0.110	0.00	0.007272	0.102	44.32%	1
3072060090	0.172	0.279	0.281	0.623	0.215	dpm/S	0.080	0.00	0.002159	0.078	45.53%	1
3072060091	0.250	0.323	0.326	0.682	0.237	dpm/S	0.149	0.00	0.039806	0.109	43.55%	1
3072060092	0.071	0.296	0.297	0.694	0.242	dpm/S	0.035	0.00	0.003073	0.032	44.61%	1
3072060093	0.441	0.285	0.295	0.558	0.191	dpm/S	0.187	0.00	-0.010937	0.198	44.88%	1
3072060094	-0.007	0.247	0.247	0.612	0.210	dpm/S	-0.008	0.00	-0.004920	-0.003	43.73%	1
3072060095	0.052	0.250	0.250	0.596	0.205	dpm/S	0.020	0.00	-0.003111	0.023	44.19%	1
3072060096	0.323	0.316	0.321	0.657	0.228	dpm/S	0.166	0.00	0.021561	0.144	44.74%	1
3072060097	-0.095	0.246	0.246	0.626	0.216	dpm/S	-0.037	0.00	0.006353	-0.043	45.82%	1
3072060098	0.377	0.320	0.327	0.654	0.227	dpm/S	0.188	0.00	0.019195	0.168	44.69%	1
3072060099	0.436	0.313	0.323	0.587	0.201	dpm/S	0.256	0.00	0.061014	0.195	44.70%	1
LCS12463	8.914	0.992	1.878	0.820	0.279	dpm/S	4.086	0.00	0.104941	3.981	44.66%	1
LCSD12463	10.434	1.057	2.145	0.752	0.254	dpm/S	4.840	0.00	0.157065	4.683	44.88%	1

07/20/12

Quality Control Sample Performance Assessment

RCDU Upload



Analyst: MBT
Date: 7/20/2012
Worklist: 12463
Matrix: Filter

Method: EPA 900.0m
SOP: PGHR-001
MB Sample ID: 458977

Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value	Flag	Assessment
Gross Alpha	0.1650	0.3970	0.9290	0.29600		
Gross Beta	-0.0830	0.2490	0.6260	0.21500		

Sample Matrix Spike Control Assessment	
Analyte:	
Sample Collection Date:	
Sample I.D.	
Sample MS I.D.	
Sample MSD I.D.	
Spike I.D.:	
MS/MSD Corrected Spike Conc. (DPM/Sample):	
Spike Volume Used in MS (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (DPM/Sample, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (DPM/Sample, g, F):	
MS Spike uncertainty (calculated):	
MSD Spike uncertainty (calculated):	
Sample Result:	
Sample 1.96 Sigma Unc.:	
Sample Matrix Spike Result:	
Sample MS 1.96 Sigma Unc.:	
Sample Matrix Spike Duplicate Result:	
Sample MSD 1.96 Sigma Unc.:	
MS % Recovery:	
MSD % Recovery:	
MS Assessment:	
MSD Assessment:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	
Matrix Spike/Matrix Spike Duplicate Sample Assessment	

Laboratory Control Sample Assessment			
LCS	LCSD	LCS	LCSD
Gross Alpha			
Count Date:	7/18/12 6:46	7/18/12 6:46	7/19/12 14:05
Spike I.D.:	12-018-F1	12-014-F1	12-014-F2
Spike Concentration (DPM/Sample):	2.353	9.799	9.798
Volume Used (mL):	1.000	1.000	1.000
Aliquot Volume (L, g, F):	1.000	1.000	1.000
Target Conc. (DPM/Sample, g, F):	2.353	9.799	9.798
1.96 Sigma Uncertainty (Calculated):	0.138	0.192	0.192
Result (DPM/Sample, g, F):	1.937	2.938	8.914
1.96 Sigma Unc:	0.938	1.095	1.878
% Recovery:	82.32%	124.87%	90.97%
Assessment:	Pass	High**	Pass
Upper % Recovery Limits:	119.00%	130.00%	130.00%
Lower % Recovery Limits:	62.00%	79.00%	79.00%

Duplicate Sample Assessment			
LCS/LCSD Y or N?	Y	Y	
Analyte:	Gross Alpha	Gross Beta	
Sample I.D.:	LCS12463	LCS12463	
Duplicate Sample I.D.:	LCSD12463	LCSD12463	
Sample Result (DPM/Sample, g, F):	1.9370	8.9140	
1.96 Sigma Unc:	0.9380	1.8780	
Duplicate Result (DPM/Sample, g, F):	2.9380	10.4340	
Duplicate Sample 1.96 Sigma Unc:	1.0950	2.1450	
Either results below MDC?	No	No	
Relative Percent Difference:	41.07%	15.71%	
Assessment:	Fail**	Pass	
% RPD Limit:	35.00%	17.00%	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

07/20/12

07/20/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12463
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PCH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Det No.	Effective Calibration Date					Alpha Efficiency	Alpha to Beta Cross-Talk	Alpha-to-Beta Cross-Talk	Beta Efficiency	11/20/2006	11/20/2006	Beta to Alpha Cross-Talk	N/A	Beta Eff. ax + b					Beta-to-Alpha Xtalk : ax + b					Alpha Bkg	Beta Bkg	Alpha Bkg	Beta Bkg	BKG 1 Date:	BKG 2 Date:	
	a	b	c	d	e									a	b	c	d	e	a	b	c	d	e							a
1					1.4256E-01							3.2336E-01			4.5624E-01									0.0640	0.8040	0.0640	0.8040	6/9/2012	7/13/2012	
2					1.5524E-01							2.7392E-01			4.5633E-01									0.0520	0.7010	0.0620	0.7010			
3					1.5070E-01							3.0910E-01			4.4491E-01									0.0600	0.6670	0.0600	0.6670			
4					1.4437E-01							2.9231E-01			4.3452E-01									0.1120	0.8050	0.1120	0.8050			
5					#N/A							#N/A			#N/A									0.0520	5.1640	0.0520	5.1640			
6					#N/A							#N/A			#N/A									0.0510			0.0510			
7					1.5705E-01							2.4638E-01			4.4360E-01									0.1070	0.6890	0.1070	0.6890			
8					1.4091E-01							3.0938E-01			4.2938E-01									0.0960	0.6930	0.0960	0.6930			
9					1.3453E-01							3.4289E-01			4.4454E-01									0.0550	0.6370	0.0550	0.6370			
10					#N/A							#N/A			#N/A									0.0590	0.7940	0.0590	0.7940			
11					1.5103E-01							4.0303E-01			4.5335E-01									0.1620	0.4690	0.1770	0.4410			
12					1.5519E-01							3.7376E-01			4.5830E-01									0.0890	0.3780	0.1550	0.4240			
13					1.4959E-01							4.0742E-01			3.9032E-01									0.0500	0.3330	0.1230	0.3450			
14					1.5721E-01							3.5889E-01			4.4635E-01									0.0690	0.3900	0.0820	0.4390			
15					1.5605E-01							3.4723E-01			4.4658E-01									0.0820	0.4950	0.1200	0.4700			
16					1.5365E-01							3.5438E-01			4.3920E-01									0.0610	0.3170	0.3860	0.0840	0.3710		
17					1.5472E-01							3.2964E-01			4.4691E-01									0.0630	0.3820	0.3820	0.0730	0.3840		
18					1.5273E-01							3.6020E-01			4.4422E-01									0.0770	0.4570	0.0900	0.4330			
19					1.5393E-01							3.8255E-01			4.5782E-01									0.0970	0.3820	0.0700	0.3890			
20					1.5610E-01							4.4321E-01			4.4321E-01									0.0780	0.3780	0.0150	0.3810			
21					1.5130E-01							4.0476E-01			4.5533E-01									0.0570	0.4180	0.1140	0.4060			
22					1.5360E-01							3.9282E-01			4.3554E-01									0.0750	0.4570	0.0720	0.4150			
23					1.5639E-01							3.6878E-01			4.4612E-01															
24					#N/A							#N/A			#N/A															
25					1.5898E-01							3.5511E-01			4.5368E-01									0.1270	0.4110	0.1580	0.4010			
26					1.5743E-01							3.3781E-01			4.5458E-01									0.1490	0.4370	0.0970	0.4050			
27					1.5803E-01							3.3826E-01			4.4883E-01									0.0740	0.2880	0.0690	0.3930			

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12463
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGR-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Det No.	Effective Calibration Date				Alpha to Beta Cross-Talk				Beta to Alpha Cross-Talk				Beta Eff: ax + b				Beta-to-Alpha Xtalk: ax + b				BKG 1 Date: 6/9/2012		BKG 2 Date: 7/13/2012	
	a	b	c	d	e	a	b	c	d	e	a	b	c	d	a	b	a	b	Alpha Bkg	Beta Bkg	Alpha Bkg	Beta Bkg		
28					1.5536E-01				3.4323E-01					4.3725E-01				0.0610	0.3330	0.0610	0.3330	0.1500	0.3460	
29					1.5363E-01				3.4570E-01					4.4186E-01				0.0840	0.3220	0.0840	0.3220	0.0630	0.2740	
30					1.5497E-01				3.5154E-01					4.4737E-01				0.0720	0.4090	0.0720	0.4090	0.2330	0.4240	
31					1.5353E-01				3.5204E-01					4.4881E-01				0.0890	0.3870	0.0890	0.3870	0.0900	0.3660	
32					1.5823E-01				3.3321E-01					4.5019E-01				0.0540	0.4120	0.0540	0.4120	0.0530	0.3380	
33					1.6147E-01				3.4650E-01					4.5824E-01				0.0900	0.3870	0.0900	0.3870	0.1200	0.4100	
34					1.6117E-01				3.3480E-01					4.4688E-01				0.0760	0.4040	0.0760	0.4040	0.1250	0.4480	
35					#N/A				#N/A					#N/A				0.1970	0.3930	0.1970	0.3930	0.2070	0.3640	
36					1.4953E-01				3.6059E-01					4.5203E-01				0.0830	0.4070	0.0830	0.4070	0.0670	0.3320	
37					1.5981E-01				3.1889E-01					4.4695E-01				0.0420	0.3190	0.0420	0.3190	0.2180	0.4600	
38					1.5254E-01				3.4693E-01					4.4279E-01				0.1100	0.3990	0.1100	0.3990	0.1040	0.3900	
39					1.7614E-01				2.7763E-01					4.5734E-01				0.0780	12.4760	0.0780	12.4760	0.0780	12.4760	
40					1.8176E-01				2.5395E-01					4.5470E-01				0.2530	12.5520	0.2530	12.5520	0.2530	12.5520	
41					#N/A				#N/A					#N/A				2.7170	366.8100	2.7170	366.8100	2.7170	366.8100	
42					1.4541E-01				4.9586E-01					3.3352E-01				0.2050	9.9000	0.2050	9.9000	0.2050	9.9000	
43					1.7364E-01				2.8197E-01					4.4459E-01				0.1620	1.1560	0.1620	1.1560	0.1620	1.1560	
44					1.7507E-01				2.9247E-01					4.5195E-01				0.1110	0.9900	0.1110	0.9900	0.1110	0.9900	
45					1.6896E-01				2.6541E-01					4.3550E-01				0.1410	1.7460	0.1410	1.7460	0.1410	1.7460	
46					1.6416E-01				2.9296E-01					4.4755E-01				0.2330	0.9840	0.2330	0.9840	0.2330	0.9840	
47					1.7203E-01				2.9040E-01					4.5901E-01				0.0940	1.1670	0.0940	1.1670	0.0940	1.1670	
48					1.8314E-01				2.6883E-01					4.6967E-01				0.1650	2.0860	0.1650	2.0860	0.1650	2.0860	
49					1.6593E-01				2.9322E-01					4.4190E-01				0.3330	1.3450	0.3330	1.3450	0.3330	1.3450	
50					1.6594E-01				2.8046E-01					4.5406E-01				0.2050	1.4600	0.2050	1.4600	0.2050	1.4600	
51					1.7880E-01				2.8023E-01					4.5625E-01				0.1500	1.3750	0.1500	1.3750	0.1500	1.3750	
52					1.7970E-01				2.8847E-01					4.5669E-01				0.1070	1.1480	0.1070	1.1480	0.1070	1.1480	
53					1.7780E-01				2.7454E-01					4.7119E-01				0.1070	1.3970	0.1070	1.3970	0.1070	1.3970	

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

CSU Analysis for Preparation

Planchet Weighing

uncert (g)	gross (g)	tare (g)	net (g)	CSU (g)	
0.0003	9.1463	9.1273	0.019	0.000424264	2.23%

Volume Aliquot

(mL)	vol (mL)	rel unc
1.00	100.0	1.00%

Description	relative	of Critical	CSU for Preparation (UE1)	Uncertainty	6.71%
Sample Aliquoting	1.00%	1	1.00%	0.01%	
Planchet Weighing	2.23%	2	3.16%	0.10%	
Sample transfer to planchet	3.00%	1	3.00%	0.09%	
Additional Uncertainty due to differences in the distribution of residue on the planchet	5.00%	1	5.00%	0.25%	

CSU Analysis for Analysis

Mass Aliquot

	Ref mass	uncert (g)	Rel unc
Tare	5	0.0004	
Gross	6	0.0004	Use max of 1%
net	1	0.000565685	0.057%

Description	Maximum	of Critical	CSU for Analysis (UE2)	Uncertainty	13.23%
SRM Uncertainty	5.00%	1	5.00%	0.25%	
Mass transfer	0.06%	2	0.08%	0.00%	
Source Reproducibility	5.00%	1	5.00%	0.25%	
Curve Fitting Uncertainty	5.00%	1	5.00%	0.25%	
Estimated Additional Uncertainty (variations in efficiency and self-absorption due to chemical composition of residue)	10.00%	1	10.00%	1.00%	

CSU Analysis for Yield Correction

Description	Maximum	of Critical	CSU for Yield (UE3)	Uncertainty	10.00%
Additional Sample Uncertainty due to analysis without a tracer or chemical carrier	10.00%	1	10.00%	1.00%	

Pace Analytical Services
 Gross Alpha and Gross Beta
 Analysis

*7/20/12
 P2*

SAMPLE_ID	Det#	BEG_DATE	BATCH_ID	ACPM	BCPM	CNT_TIME
458977	33	7/12/2012 16:31	GAB12463	0.116666667	0.358333333	120
3072060080	34	7/12/2012 16:32	GAB12463	0.108333333	0.4	120
3072060081	37	7/12/2012 16:32	GAB12463	0.2	0.691666667	120
3072060082	12	7/12/2012 20:04	GAB12463	0.141666667	0.4	120
3072060083	13	7/12/2012 20:04	GAB12463	0.1	0.408333333	120
3072060084	14	7/12/2012 20:04	GAB12463	0.058333333	0.566666667	120
3072060085	15	7/12/2012 20:04	GAB12463	0.091666667	0.5	120
3072060086	16	7/12/2012 20:04	GAB12463	0.1	0.516666667	120
3072060088	19	7/12/2012 20:04	GAB12463	0.116666667	0.491666667	120
3072060089	20	7/12/2012 20:04	GAB12463	0.116666667	0.491666667	120
3072060087	18	7/12/2012 20:04	GAB12463	0.216666667	0.658333333	120
3072060090	21	7/12/2012 20:04	GAB12463	0.083333333	0.458333333	120
3072060091	22	7/12/2012 20:05	GAB12463	0.158333333	0.566666667	120
3072060092	23	7/12/2012 20:05	GAB12463	0.083333333	0.491666667	120
3072060093	27	7/12/2012 20:05	GAB12463	0.041666667	0.475	120
3072060094	28	7/12/2012 20:05	GAB12463	0.066666667	0.325	120
3072060095	29	7/12/2012 20:05	GAB12463	0.075	0.341666667	120
3072060096	30	7/12/2012 20:05	GAB12463	0.133333333	0.575	120
3072060097	33	7/12/2012 20:05	GAB12463	0.108333333	0.35	120
3072060098	34	7/12/2012 20:05	GAB12463	0.133333333	0.591666667	120
3072060099	37	7/12/2012 20:05	GAB12463	0.233333333	0.575	120
LCS12463	15	7/18/2012 6:46	GAB12463	0.422222222	4.555555556	90
LCSD12463	27	7/19/2012 14:05	GAB12463	0.533333333	5.233333333	90

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LCSD12463	7/19/2012 2:05:58 PM	27	GAB12463	0.533	5.2333	90.0
LCS#1-12463	7/18/2012 6:46:32 AM	15	GAB12463	0.422	4.5556	90.0
3072060099	7/12/2012 8:05:35 PM	37	GAB12463	0.233	0.5750	120.0
3072060098	7/12/2012 8:05:32 PM	34	GAB12463	0.133	0.5917	120.0
3072060097	7/12/2012 8:05:28 PM	33	GAB12463	0.108	0.3500	120.0
3072060096	7/12/2012 8:05:23 PM	30	GAB12463	0.133	0.5750	120.0
3072060095	7/12/2012 8:05:20 PM	29	GAB12463	0.075	0.3417	120.0
3072060094	7/12/2012 8:05:17 PM	28	GAB12463	0.067	0.3250	120.0
3072060093	7/12/2012 8:05:13 PM	27	GAB12463	0.042	0.4750	120.0
3072060092	7/12/2012 8:05:05 PM	23	GAB12463	0.083	0.4917	120.0
3072060091	7/12/2012 8:05:01 PM	22	GAB12463	0.158	0.5667	120.0
3072060090	7/12/2012 8:04:57 PM	21	GAB12463	0.083	0.4583	120.0
3072060089	7/12/2012 8:04:54 PM	20	GAB12463	0.117	0.4917	120.0
3072060088	7/12/2012 8:04:51 PM	19	GAB12463	0.117	0.4917	120.0
3072060087	7/12/2012 8:04:44 PM	18	GAB12463	0.217	0.6583	120.0
3072060086	7/12/2012 8:04:40 PM	16	GAB12463	0.100	0.5167	120.0

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072060085	7/12/2012 8:04:37 PM	15	GAB12463	0.092	0.5000	120.0
3072060084	7/12/2012 8:04:34 PM	14	GAB12463	0.058	0.5667	120.0
3072060083	7/12/2012 8:04:30 PM	13	GAB12463	0.100	0.4083	120.0
3072060082	7/12/2012 8:04:27 PM	12	GAB12463	0.142	0.4000	120.0
3072060081	7/12/2012 4:32:21 PM	37	GAB12463	0.200	0.6917	120.0
3072060080	7/12/2012 4:32:03 PM	34	GAB12463	0.108	0.4000	120.0
458977	7/12/2012 4:31:57 PM	33	GAB12463	0.117	0.3583	120.0

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAB	28	GA 20120614 - N03	GAB 12462	120	7/12/12 1551	BSH	NA	NA
	29	- N04						
	30	- N05						
	31	- N06						
	33	0711 - N17						
	34	- N18						
	36	- N19						
	37	0614 - N01						
	38	- N10						
	28	- N10			7/12/12 1557	BSH	NA	NA
	29	- N03						
	30	- N04						
	31	- N05						
	33	- N06						
	34	0711 - N17						
	34	- N18						
	37	- N19						
	38	0614 - N01						
GAB	27	3072060060	GAB 12462	120	7/12/12 16:30	BSH	NA	NA
	28	077						
	29	078						
	30	079						
	33	458977	GAB 12463	120				
	34	3072060080						

- Legend:
1. Detector daily check failure
 2. MDC > Contract RL
 3. Sample re-ingrowth
 4. Sample was re-prepped
 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAB	37	3072060081	GAB 12463	120	7/12/12 16:32		NA	NA
	12	082			7/12/12 20:05			
	13	083						
	14	084						
	15	085						
	16	086						
	18	087						
	19	088						
	20	089						
	21	090						
	22	091						
	23	092						
	27	093						
	26	094						
	29	095						
	30	096						
	33	097						
	34	098						
	37	099						
	12	458978	GAB 12464	120	7/12/12 22:09	BSH	NA	NA
	13	3072060100						
	14	3072085001						
	15	002						
	16	003						

- Legend:
1. Detector daily check failure
 2. MDC > Contract RL
 3. Sample re-ingrowth
 4. Sample was re-prepped
 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 25-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GRA	13	3561332001 ↓ CO2	GRA12643	650	7/17/12 2145	RMLC	NA	
	14	↓ CO2						
	16	3561248001 ↓ CO2						
	17	↓ CO2						
	18	↓ CO3						
	19	3561707001 ↓ CO2						
	20	↓ CO2						
	21	↓ CO4						
	22	↓ CO5						
	23	3073080001						
GAB	26	3072944001	GAB12597	650	7/17/12 2145	RMLC	NA	
	27	3073177001	GAB12646					
	28	3073178001						
	29	3073220002						
	30	↓ CO3						
GAB	25	3072080054	GAB12471	210	7-18-12 0040	MBT	NA	
	31	↓ 55		120				
	33	3072080049		140				
	34	↓ 50		140				
	37	↓ 51		220				
	38	3072080009	GAB12472	220	7-18-12 2450	MBT	NA	
	30	68		100	7-18-12 2450	MBT	NA	
	11	LOS#3 12402	GAB12402	90	7-18-12	MBT		
	15	LOS#1 12403	GAB12403	90	↓			

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review

Date: 7/18/12

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
TR34	31	3072998001	M112629	20	7-19-12 11:22	LAC	N/A	N/A
	32	3073007001						
	33	3073008001						
	39	LCS 12629			7-19-12 11:45	LAC	N/A	N/A
	40	LCS 12629						
	43	3073036086	GRS12473	300	7/19/12 11:46			
	44	087						
	45	088						
	46	089						
	47	090						
	48	091						
	49	092						
	50	093						
	51	094						
	52	095						
	53	096						
TR31	39	LCS 12630	M12630	20	7/19/12 13:00	LAC	5	verification of recovery
GRB	17	LSD 12463	GRB 12463	90	7/19/12 1406		NA	NA
GRA	18	3561253001	GRA 12656	200	7/19/12 16:34	B5H	NA	NA
	13	002			15:41			
	15	35612473 003			16:34			
	16	3561373001			15:43			
	17	002			16:34			
	19	3561352001						

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- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Gross Alpha and Beta Sample Analysis Data

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

1 458978-BLANK for HBN 91034 [RADC/1246

Type BLANK Matrix Impact Plate Collected % Moisture
 Client QCACCOUNT WO Work ID

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:07 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795661 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:07 Dilution
 Method EPA 900.0m Col ID Hold Date 12/25/2012 23:59 Analyst MBT
 Schedule 2795661 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL
Rad Chemistry	OK				
Gross Alpha	OK	0.289U ± 0.446 (0.974)	pCi/sa 0.289U ± 0.446 (0.974)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					
Gross Beta	OK	-0.061U ± 0.251 (0.619)	pCi/sa -0.061U ± 0.251 (0.619)		pCi/sam
The lab does not hold TNI accreditation for this parameter.					

2 3072060100-2540-SU7-24

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072060 Work ID Fort Monmouth 1207072 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:07 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784398 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:07 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2784398 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.279J ± 0.377 (0.785)	pCi/sa 0.279J ± 0.377 (0.785)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

2 3072060100-2540-SU7-24

Analyte	CC	Posted Result		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Gross Beta	OK	0.043U ± 0.292 (0.685)	pCi/sa 0.043U ± 0.292 (0.685)			dpm/sa		

The lab does not hold TNI accreditation for this parameter.

3 3072085001-2540-SU7-25

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmonth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785109 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785109 File CC OK F

Analyte	CC	Posted Result		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Rad Chemistry	OK					dpm/sa		
Gross Alpha	OK	0.303J ± 0.406 (0.853)	pCi/sa 0.303J ± 0.406 (0.853)			dpm/sa		

The lab does not hold TNI accreditation for this parameter.

Gross Beta OK 0.455J ±
0.332
(0.637) pCi/sa 0.455J ±
0.332
(0.637) dpm/sa

The lab does not hold TNI accreditation for this parameter.

4 3072085002-2540-SU7-26

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmonth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785112 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

4 3072085002-2540-SU7-26

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 22:08	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785112	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.062U ± 0.365 (0.924)	pCi/sa 0.062U ± 0.365 (0.924)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.153U ± 0.318 (0.719)	pCi/sa 0.153U ± 0.318 (0.719)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

5 3072085003-2540-SU7-27

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmouth 1207073	Location

Prep Information

Procedure 9000 I	Batch RADC/12464	Prep Date 7/12/2012 22:08	Dilution
Method EPA 900.0m	HBN 91034	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785114	Instru NONE		CC OK F

Initial Volume	1 mL Default	1 mL
Final Volume,	1 mL Default	1 mL

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 22:08	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785114	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.145U ± 0.352 (0.829)	pCi/sa 0.145U ± 0.352 (0.829)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.073U ± 0.262 (0.656)	pCi/sa -0.073U ± 0.262 (0.656)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

6 3072085004-2540-SU7-34

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmouth 1207073	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

6 3072085004-2540-SU7-34

Prep Information

Procedure 9000 I **Batch** RADC/12464 **Prep Date** 7/12/2012 22:08 **Dilution**
Method EPA 900.0m **HBN** 91034 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785116 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 22:08 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785116 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.788J ± 0.531 (0.845)	pCi/sa 0.788J ± 0.531 (0.845)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.112U ± 0.291 (0.641)	pCi/sa 0.112U ± 0.291 (0.641)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

7 3072085005-2540-SU7-37

Type PS **Matrix** Wipe **Collected** 6/19/2012 00:01 **% Moisture**
Client RTI **WO** 3072085 **Work ID** Fort Monmouth 1207073 **Location**

Prep Information

Procedure 9000 I **Batch** RADC/12464 **Prep Date** 7/12/2012 22:08 **Dilution**
Method EPA 900.0m **HBN** 91034 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785118 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/12/2012 22:08 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785118 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	-0.284U ± 0.245 (0.912)	pCi/sa -0.284U ± 0.245 (0.912)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.130U ± 0.292 (0.676)	pCi/sa 0.130U ± 0.292 (0.676)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

7 3072085005-2540-SU7-37

8 3072085006-2540-SU7-38

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmonth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785120 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785120 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	-0.141U ± 0.338 (0.992)	pCi/sa -0.141U ± 0.338 (0.992)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.397J ± 0.320 (0.643)	pCi/sa 0.397J ± 0.320 (0.643)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

9 3072085007-2540-SU7-39

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmonth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785122 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785122 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

9 3072085007-2540-SU7-39

Analyte	CC	Posted		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Gross Alpha	OK	-0.075U ± 0.326 (0.933)	pCi/sa -0.075U ± 0.326 (0.933)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								
Gross Beta	OK	0.003U ± 0.255 (0.623)	pCi/sa 0.003U ± 0.255 (0.623)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								

10 3072085008-2540-SU7-43

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmouth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785124 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785124 File CC OK F

Analyte	CC	Posted		MDL	RDL		Reg. Limits	
		Result	Result				Low	High
Rad Chemistry	OK					dpm/sa		
Gross Alpha	OK	0.605J ± 0.474 (0.807)	pCi/sa 0.605J ± 0.474 (0.807)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								
Gross Beta	OK	-0.030U ± 0.288 (0.682)	pCi/sa -0.030U ± 0.288 (0.682)			dpm/sa		
The lab does not hold TNI accreditation for this parameter.								

11 3072085009-2540-SU7-46

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmouth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785126 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

11 3072085009-2540-SU7-46

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 22:08	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785126	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.160U ± 0.379 (0.888)	pCi/sa 0.160U ± 0.379 (0.888)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.018U ± 0.287 (0.694)	pCi/sa -0.018U ± 0.287 (0.694)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

12 3072085010-2540-SU8-2

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmouth 1207073	Location

Prep Information

Procedure 9000 I	Batch RADC/12464	Prep Date 7/12/2012 22:08	Dilution
Method EPA 900.0m	HBN 91034	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785128	Instru NONE		CC OK F

Initial Volume	1 mL Default	1 mL
Final Volume,	1 mL Default	1 mL

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 22:08	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785128	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	-0.205U ± 0.257 (0.874)	pCi/sa -0.205U ± 0.257 (0.874)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.088U ± 0.237 (0.558)	pCi/sa 0.088U ± 0.237 (0.558)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

13 3072085011-2540-SU8-22

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmouth 1207073	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

13 3072085011-2540-SU8-22

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785130 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785130 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.122U ± 0.382 (0.923)	pCi/sa 0.122U ± 0.382 (0.923)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.176U ± 0.278 (0.612)	pCi/sa 0.176U ± 0.278 (0.612)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

14 3072085012-2540-SU8-29

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmouth Location
 1207073

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785132 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785132 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	-0.059U ± 0.340 (0.948)	pCi/sa -0.059U ± 0.340 (0.948)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.297J ± 0.288 (0.596)	pCi/sa 0.297J ± 0.288 (0.596)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

14 3072085012-2540-SU8-29

15 3072085013-2540-SU8-SINK

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmouth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785134 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:08 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785134 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		
Gross Alpha	OK	0.611J ± 0.496 (0.881)	pCi/sa 0.611J ± 0.496 (0.881)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	-0.150U ± 0.262 (0.657)	pCi/sa -0.150U ± 0.262 (0.657)		dpm/sa		
The lab does not hold TNI accreditation for this parameter.							

16 3072085014-2540-SU9-2

Type PS Matrix Wipe Collected 6/19/2012 00:01 % Moisture
 Client RTI WO 3072085 Work ID Fort Monmouth 1207073 Location

Prep Information

Procedure 9000 I Batch RADC/12464 Prep Date 7/12/2012 22:09 Dilution
 Method EPA 900.0m HBN 91034 Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785136 Instru NONE CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I Instru NONE Run Date 7/12/2012 22:09 Dilution
 Method EPA 900.0m Col ID Hold Date 12/16/2012 23:59 Analyst MBT
 Schedule 2785136 File CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK				dpm/sa		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

16 3072085014-2540-SU9-2

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Gross Alpha	OK	0.372J ± 0.449 (0.929)	pCi/sa 0.372J ± 0.449 (0.929)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.256J ± 0.299 (0.626)	pCi/sa 0.256J ± 0.299 (0.626)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

17 3072085015-2540-SU9-3

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmonth 1207073	Location

Prep Information

Procedure 9000 I	Batch RADC/12464	Prep Date 7/12/2012 22:09	Dilution
Method EPA 900.0m	HBN 91034	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785138	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 22:09	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785138	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.046U ± 0.338 (0.866)	pCi/sa 0.046U ± 0.338 (0.866)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.172U ± 0.294 (0.654)	pCi/sa 0.172U ± 0.294 (0.654)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

18 3072085016-2540-SU9-5

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmonth 1207073	Location

Prep Information

Procedure 9000 I	Batch RADC/12464	Prep Date 7/12/2012 22:09	Dilution
Method EPA 900.0m	HBN 91034	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785140	Instru NONE		CC OK F
Initial Volume 1 mL Default	1 mL		
Final Volume, 1 mL Default	1 mL		

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

18 3072085016-2540-SU9-5

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/12/2012 22:09	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785140	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.884 ± 0.511 (0.686)	pCi/sa 0.884 ± 0.511 (0.686)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.379J ± 0.310 (0.587)	pCi/sa 0.379J ± 0.310 (0.587)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

19 3072085017-2540-SU9-6

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmouth 1207073	Location

Procedure 9000 I	Batch RADC/12464	Prep Date 7/13/2012 09:35	Dilution
Method EPA 900.0m	HBN 91034	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785142	Instru NONE		CC OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I	Instru NONE	Run Date 7/13/2012 09:35	Dilution
Method EPA 900.0m	Col ID	Hold Date 12/16/2012 23:59	Analyst MBT
Schedule 2785142	File		CC OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.101U ± 0.387 (0.972)	pCi/sa 0.101U ± 0.387 (0.972)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.460J ± 0.328 (0.616)	pCi/sa 0.460J ± 0.328 (0.616)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

20 3072085018-2540-SU9-7

Type PS	Matrix Wipe	Collected 6/19/2012 00:01	% Moisture
Client RTI	WO 3072085	Work ID Fort Monmouth 1207073	Location

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review



Batch RADC/12464 HBN 91034
 Rule 9000 I Status RE
 Create Date 6/28/2012 Analyst MBT

20 3072085018-2540-SU9-7

Prep Information

Procedure 9000 I **Batch** RADC/12464 **Prep Date** 7/13/2012 09:35 **Dilution**
Method EPA 900.0m **HBN** 91034 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785144 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/13/2012 09:35 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785144 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	0.222U ± 0.436 (0.997)	pCi/sa 0.222U ± 0.436 (0.997)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.026U ± 0.261 (0.625)	pCi/sa 0.026U ± 0.261 (0.625)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

21 3072085019-2540-SU9-8

Type PS **Matrix** Wipe **Collected** 6/19/2012 00:01 **% Moisture**
Client RTI **WO** 3072085 **Work ID** Fort Monmouth 1207073 **Location**

Prep Information

Procedure 9000 I **Batch** RADC/12464 **Prep Date** 7/13/2012 09:35 **Dilution**
Method EPA 900.0m **HBN** 91034 **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785146 **Instru** NONE **CC** OK F

Initial Volume 1 mL Default 1 mL
 Final Volume, 1 mL Default 1 mL

Analytical Information

Procedure 9000 I **Instru** NONE **Run Date** 7/13/2012 09:35 **Dilution**
Method EPA 900.0m **Col ID** **Hold Date** 12/16/2012 23:59 **Analyst** MBT
Schedule 2785146 **File** **CC** OK F

Analyte	CC	Posted Result	Result	MDL	RDL	Reg. Limits	
						Low	High
Rad Chemistry	OK					dpm/sa	
Gross Alpha	OK	1.21 ± 0.689 (0.980)	pCi/sa 1.21 ± 0.689 (0.980)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							
Gross Beta	OK	0.302J ± 0.358 (0.725)	pCi/sa 0.302J ± 0.358 (0.725)			dpm/sa	
The lab does not hold TNI accreditation for this parameter.							

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Quality Control Review

Batch	RADC/12464	HBN	91034
Rule	9000 I	Status	RE
Create Date	6/28/2012	Analyst	MBT



21 3072085019-2540-SU9-8

** Indicates QC failure. For example, blank contamination or recoveries out of range.

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Creation Date 06/28/2012 13:06
Batch ID 12464
Assigned Analyst MBT
Earliest Due Date 07/04/2012 07:12
A-code 9000 I 9000W or NJ HBN 91034
Method EPA 900.0m EPA 900.0 or NJAC7186

Workorder	Sample ID	Sample Type	Matrix	Collection Date/Time	Client ID	Alpha Activity	Alpha Unc.	Alpha MDC	Beta Activity	Beta Unc.	Beta MDC	Analysis Date/Time	Exceedance *	
													Alpha	Beta
	458978	BLANK	IP		QCACCOUNT	0.288U	0.446	0.974	-0.061U	0.251	0.619	7/12/12 22:07		
3072060	3072060100	PS	WP	6/19/2012 0:01	RTI	0.278J	0.377	0.785	0.043U	0.292	0.685	7/12/12 22:07		
3072085	3072085001	PS	WP	6/19/2012 0:01	RTI	0.303J	0.406	0.853	0.455J	0.332	0.637	7/12/12 22:08		
3072085	3072085002	PS	WP	6/19/2012 0:01	RTI	0.062U	0.365	0.924	0.153U	0.318	0.719	7/12/12 22:08		
3072085	3072085003	PS	WP	6/19/2012 0:01	RTI	0.145U	0.352	0.829	-0.073U	0.262	0.656	7/12/12 22:08		
3072085	3072085004	PS	WP	6/19/2012 0:01	RTI	0.788J	0.531	0.845	0.112U	0.291	0.641	7/12/12 22:08		
3072085	3072085005	PS	WP	6/19/2012 0:01	RTI	-0.284U	0.245	0.912	0.130U	0.292	0.676	7/12/12 22:08		
3072085	3072085006	PS	WP	6/19/2012 0:01	RTI	-0.141U	0.338	0.992	0.397J	0.320	0.643	7/12/12 22:08		
3072085	3072085007	PS	WP	6/19/2012 0:01	RTI	-0.075U	0.326	0.933	0.003U	0.255	0.623	7/12/12 22:08		
3072085	3072085008	PS	WP	6/19/2012 0:01	RTI	0.605J	0.474	0.807	-0.030U	0.288	0.682	7/12/12 22:08		
3072085	3072085009	PS	WP	6/19/2012 0:01	RTI	0.160U	0.379	0.888	-0.018U	0.287	0.684	7/12/12 22:08		
3072085	3072085010	PS	WP	6/19/2012 0:01	RTI	-0.205U	0.257	0.874	0.088U	0.237	0.558	7/12/12 22:08		
3072085	3072085011	PS	WP	6/19/2012 0:01	RTI	0.122U	0.382	0.923	0.176U	0.278	0.612	7/12/12 22:08		
3072085	3072085012	PS	WP	6/19/2012 0:01	RTI	-0.059U	0.340	0.948	0.297J	0.288	0.596	7/12/12 22:08		
3072085	3072085013	PS	WP	6/19/2012 0:01	RTI	0.611J	0.496	0.881	-0.150U	0.262	0.657	7/12/12 22:08		
3072085	3072085014	PS	WP	6/19/2012 0:01	RTI	0.372J	0.449	0.929	0.256J	0.299	0.626	7/12/12 22:09		
3072085	3072085015	PS	WP	6/19/2012 0:01	RTI	0.046U	0.338	0.866	0.172U	0.294	0.654	7/12/12 22:09		
3072085	3072085016	PS	WP	6/19/2012 0:01	RTI	0.884	0.511	0.686	0.379J	0.310	0.587	7/12/12 22:09		
3072085	3072085017	PS	WP	6/19/2012 0:01	RTI	0.101U	0.387	0.972	0.460J	0.328	0.616	7/13/12 9:35		
3072085	3072085018	PS	WP	6/19/2012 0:01	RTI	0.222U	0.436	0.997	0.026U	0.261	0.625	7/13/12 9:35		
3072085	3072085019	PS	WP	6/19/2012 0:01	RTI	1.21	0.689	0.980	0.302J	0.358	0.725	7/13/12 9:35		

* This indicates a possible MCL exceedance may exist for this sample. Results greater than 15.0 pCi/L gross alpha must be reviewed expeditiously and the PM, Radchem Supervisor, and QA Manager notified immediately upon validation of the result. If the gross beta result is above 50 pCi/L, this may also indicate a reportable exceedance.

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Gross Alpha and Gross Beta Preparation Sheet



Aliquot Balance ID: NA
 Aliquot Wgt. Date: _____
 Tare Balance ID: _____
 Tare Wgt. Date: _____
 Gross Balance ID: _____
 Gross Wgt. Date: _____

Spike Analyst: NA
 QC ID: a: NA b: _____
 LCS QC Vol (mL): a: _____ b: _____
 MS/MSD QC Vol (mL): a: _____ b: _____
 Pipette ID: _____

Batch: 124104
 Transfer Analyst: MBT
 Prep Date/Time: 7-9-12 12:00
 Matrix: Filter
 Logbook ID: 3-R021-5

Bottle ID	Sample No.	Analyst Initials		Analyst Initials		Analyst Initials		Sample Comments
		Tare Mass (g)	5mL Test Mass (g)	Sample Volume (mL)	Gross Mass (g)			
NA	458978	NA	NA	1.0	NA	NA	NA	
	30720000100							
	3072085001							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							

Batch Comments: Ludox: _____ Date Removed: / / @ _____
 8N HNO₃: _____ Conc HNO₃: MBT 7-11-12
 Date Placed in oven: / / @ _____
 Peer Review: _____ Date: _____

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP 12464
Batch ID: 12464
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012
Reporting Units: dpm

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Sigma 1.96
Zero Factor 2.71

Sample ID	Aliquot	Units	Tare (g)	Gross (g)	Residue (mg)	Det. ID	Count Date	Alpha Gross CPM	Beta Gross CPM	Count Duration (min)	Alpha Bkg CPM	Beta Bkg CPM	Bkg Count Duration (min)	Req Activity Units
458978	1.00000	S	9.0000	9.0000	0.00	12	7/12/2012 22:07	0.1333	0.3667	120	0.0890	0.3780	1000	dpm
3072060100	1.00000	S	9.0000	9.0000	0.00	13	7/12/2012 22:07	0.0917	0.3667	120	0.0500	0.3330	1000	dpm
3072085001	1.00000	S	9.0000	9.0000	0.00	14	7/12/2012 22:08	0.1167	0.6000	120	0.0690	0.3800	1000	dpm
3072085002	1.00000	S	9.0000	9.0000	0.00	15	7/12/2012 22:08	0.0917	0.5667	120	0.0820	0.4950	1000	dpm
3072085003	1.00000	S	9.0000	9.0000	0.00	16	7/12/2012 22:08	0.0833	0.3667	120	0.0610	0.3910	1000	dpm
3072085004	1.00000	S	9.0000	9.0000	0.00	18	7/12/2012 22:08	0.1833	0.4750	120	0.0630	0.3820	1000	dpm
3072085005	1.00000	S	9.0000	9.0000	0.00	19	7/12/2012 22:08	0.0333	0.5000	120	0.0770	0.4570	1000	dpm
3072085006	1.00000	S	9.0000	9.0000	0.00	20	7/12/2012 22:08	0.0750	0.5500	120	0.0970	0.3820	1000	dpm
3072085007	1.00000	S	9.0000	9.0000	0.00	21	7/12/2012 22:08	0.0667	0.3750	120	0.0780	0.3780	1000	dpm
3072085008	1.00000	S	9.0000	9.0000	0.00	22	7/12/2012 22:08	0.1500	0.4417	120	0.0570	0.4180	1000	dpm
3072085009	1.00000	S	9.0000	9.0000	0.00	23	7/12/2012 22:08	0.1000	0.4583	120	0.0750	0.4570	1000	dpm
3072085010	1.00000	S	9.0000	9.0000	0.00	27	7/12/2012 22:08	0.0417	0.3167	120	0.0740	0.2880	1000	dpm
3072085011	1.00000	S	9.0000	9.0000	0.00	28	7/12/2012 22:08	0.1000	0.4167	120	0.0810	0.3330	1000	dpm
3072085012	1.00000	S	9.0000	9.0000	0.00	29	7/12/2012 22:08	0.0750	0.4500	120	0.0840	0.3220	1000	dpm
3072085013	1.00000	S	9.0000	9.0000	0.00	30	7/12/2012 22:08	0.1667	0.3750	120	0.0720	0.4090	1000	dpm
3072085014	1.00000	S	9.0000	9.0000	0.00	33	7/12/2012 22:09	0.1500	0.5250	120	0.0900	0.3870	1000	dpm
3072085015	1.00000	S	9.0000	9.0000	0.00	34	7/12/2012 22:09	0.0833	0.4833	120	0.0760	0.4040	1000	dpm
3072085016	1.00000	S	9.0000	9.0000	0.00	37	7/12/2012 22:09	0.1833	0.5333	120	0.0420	0.3190	1000	dpm
3072085017	1.00000	S	9.0000	9.0000	0.00	27	7/13/2012 9:35	0.0900	0.5000	100	0.0740	0.2880	1000	dpm
3072085018	1.00000	S	9.0000	9.0000	0.00	29	7/13/2012 9:35	0.1182	0.3455	110	0.0840	0.3220	1000	dpm
3072085019	1.00000	S	9.0000	9.0000	0.00	30	7/13/2012 9:35	0.2600	0.6100	100	0.0720	0.4090	1000	dpm
LCS12464	1.00000	S	9.0000	9.0000	0.00	12	7/17/2012 13:06	0.6333	4.7667	90	0.1550	0.4240	1000	dpm
LCSD12464	1.00000	S	9.0000	9.0000	0.00	13	7/17/2012 16:26	0.5222	4.3222	90	0.1230	0.3450	1000	dpm

Ch 7/18/12

7/19/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12464
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Alpha Results

Sample ID	Alpha Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Alpha Net CPM	Residue (mg)	Beta to Alpha Xtlk CPM	Xtlk corr. Net alpha CPM	Alpha eff Conversion	Activity Conversion
458978	0.289	0.443	0.446	0.974	0.310	dpm/S	0.044	0.00	0.000000	0.044	15.32%	1
3072060100	0.279	0.374	0.377	0.785	0.238	dpm/S	0.042	0.00	0.000000	0.042	14.96%	1
3072085001	0.303	0.402	0.406	0.853	0.266	dpm/S	0.048	0.00	0.000000	0.048	15.72%	1
3072085002	0.062	0.365	0.365	0.924	0.293	dpm/S	0.010	0.00	0.000000	0.010	15.61%	1
3072085003	0.145	0.351	0.352	0.829	0.256	dpm/S	0.022	0.00	0.000000	0.022	15.37%	1
3072085004	0.788	0.512	0.531	0.845	0.262	dpm/S	0.120	0.00	0.000000	0.120	15.27%	1
3072085005	-0.284	0.240	0.245	0.912	0.287	dpm/S	-0.044	0.00	0.000000	-0.044	15.39%	1
3072085006	-0.141	0.337	0.338	0.992	0.318	dpm/S	-0.022	0.00	0.000000	-0.022	15.61%	1
3072085007	-0.075	0.326	0.326	0.933	0.294	dpm/S	-0.011	0.00	0.000000	-0.011	15.13%	1
3072085008	0.605	0.461	0.474	0.807	0.248	dpm/S	0.093	0.00	0.000000	0.093	15.36%	1
3072085009	0.160	0.378	0.379	0.888	0.279	dpm/S	0.025	0.00	0.000000	0.025	15.64%	1
3072085010	-0.205	0.255	0.257	0.874	0.274	dpm/S	-0.032	0.00	0.000000	-0.032	15.80%	1
3072085011	0.122	0.381	0.382	0.923	0.292	dpm/S	0.019	0.00	0.000000	0.019	15.54%	1
3072085012	-0.059	0.340	0.340	0.948	0.301	dpm/S	-0.009	0.00	0.000000	-0.009	15.36%	1
3072085013	0.611	0.483	0.496	0.881	0.276	dpm/S	0.095	0.00	0.000000	0.095	15.50%	1
3072085014	0.372	0.444	0.449	0.929	0.296	dpm/S	0.060	0.00	0.000000	0.060	16.15%	1
3072085015	0.046	0.338	0.338	0.866	0.273	dpm/S	0.007	0.00	0.000000	0.007	16.12%	1
3072085016	0.884	0.486	0.511	0.686	0.204	dpm/S	0.141	0.00	0.000000	0.141	15.98%	1
3072085017	0.101	0.387	0.387	0.972	0.298	dpm/S	0.016	0.00	0.000000	0.016	15.80%	1
3072085018	0.222	0.434	0.436	0.997	0.313	dpm/S	0.034	0.00	0.000000	0.034	15.36%	1
3072085019	1.213	0.654	0.689	0.980	0.300	dpm/S	0.188	0.00	0.000000	0.188	15.50%	1
LCS12464	3.122	1.085	1.220	1.456	0.467	dpm/S	0.478	0.00	0.000000	0.478	15.32%	1
LCSD12464	2.669	1.009	1.116	1.350	0.426	dpm/S	0.399	0.00	0.000000	0.399	14.96%	1

Mr 7/18/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12464
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Gross Beta Results

Sample ID	Beta Activity	Two-Sigma Count Uncertainty	Two-Sigma CSU	MDC	Critical Value	Units	Beta Net CPM	Residue (mg)	Alpha to Beta Xtlk CPM	Xtlk corr. Net beta CPM	Beta eff	Activity Conversion
458978	-0.061	0.251	0.251	0.619	0.214	dpm/S	-0.011	0.00	0.016570	-0.028	45.83%	1
3072060100	0.043	0.292	0.292	0.685	0.236	dpm/S	0.034	0.00	0.016976	0.017	39.03%	1
3072085001	0.455	0.322	0.332	0.637	0.220	dpm/S	0.220	0.00	0.017107	0.203	44.64%	1
3072085002	0.153	0.317	0.318	0.719	0.251	dpm/S	0.072	0.00	0.003357	0.068	44.66%	1
3072085003	-0.073	0.262	0.262	0.656	0.227	dpm/S	-0.024	0.00	0.007914	-0.032	43.92%	1
3072085004	0.112	0.291	0.291	0.641	0.222	dpm/S	0.093	0.00	0.043344	0.050	44.42%	1
3072085005	0.130	0.291	0.292	0.676	0.235	dpm/S	0.043	0.00	-0.016705	0.060	45.78%	1
3072085006	0.397	0.312	0.320	0.643	0.222	dpm/S	0.168	0.00	-0.008135	0.176	44.32%	1
3072085007	0.003	0.255	0.255	0.623	0.215	dpm/S	-0.003	0.00	-0.004587	0.002	45.53%	1
3072085008	-0.030	0.288	0.288	0.682	0.237	dpm/S	0.024	0.00	0.036532	-0.013	43.55%	1
3072085009	-0.018	0.287	0.287	0.694	0.242	dpm/S	0.001	0.00	0.009220	-0.008	44.61%	1
3072085010	0.088	0.236	0.237	0.558	0.191	dpm/S	0.029	0.00	-0.010937	0.040	44.88%	1
3072085011	0.176	0.277	0.278	0.612	0.210	dpm/S	0.084	0.00	0.006521	0.077	43.73%	1
3072085012	0.297	0.283	0.288	0.596	0.205	dpm/S	0.128	0.00	-0.003111	0.131	44.19%	1
3072085013	-0.150	0.260	0.262	0.657	0.228	dpm/S	-0.034	0.00	0.033279	-0.067	44.74%	1
3072085014	0.256	0.295	0.299	0.626	0.216	dpm/S	0.138	0.00	0.020790	0.117	45.82%	1
3072085015	0.172	0.292	0.294	0.654	0.227	dpm/S	0.079	0.00	0.002455	0.077	44.69%	1
3072085016	0.379	0.303	0.310	0.587	0.201	dpm/S	0.214	0.00	0.045070	0.169	44.70%	1
3072085017	0.460	0.318	0.328	0.616	0.207	dpm/S	0.212	0.00	0.005412	0.207	44.88%	1
3072085018	0.026	0.261	0.261	0.625	0.213	dpm/S	0.023	0.00	0.011817	0.012	44.19%	1
3072085019	0.302	0.353	0.358	0.725	0.247	dpm/S	0.201	0.00	0.066090	0.135	44.74%	1
LCS12464	9.086	0.988	1.902	0.762	0.258	dpm/S	4.343	0.00	0.178782	4.164	45.83%	1
LCSD12464	9.773	1.104	2.068	0.815	0.273	dpm/S	3.977	0.00	0.162651	3.815	39.03%	1

M 7/18/12

Quality Control Sample Performance Assessment



RCDU Upload

Analyst: MBT
Date: 7/19/2012
Worklist: 12464
Matrix: Filter

Method: EPA 900.0m
SOP: PGH-R-001
MB Sample ID: 458978

Method Blank Assessment			
Analyte	Activity	1.96 Sig. Unc.	MDC
Gross Alpha	0.2890	0.4460	0.8740
Gross Beta	-0.0610	0.2510	0.6190

Laboratory Control Sample Assessment								
Analyte:	Count Date:	LCS	LCS D	LCS D	LCS	LCS D	LCS	LCS D
Spike Concentration (DPM/Sample):	12-018-F3	2.353	1.000	1.000	9.799	1.000	1.000	9.799
Volume Used (mL):		1.000	1.000	1.000	1.000	1.000	1.000	1.000
Aliquot Volume (L, g, F):		2.353	2.353	9.799	9.799	0.192	0.192	9.773
Target Conc. (DPM/Sample, g, F):		0.138	0.138	2.669	2.669	9.086	9.086	2.068
1.96 Sigma Uncertainty (Calculated):		1.220	1.116	1.902	1.902	92.72%	92.72%	99.73%
% Recovery:		132.69%	113.43%	Pass	Pass	Pass	Pass	Pass
Upper % Recovery Limits:		119.00%	119.00%	130.00%	130.00%	130.00%	130.00%	130.00%
Lower % Recovery Limits:		62.00%	62.00%	79.00%	79.00%	79.00%	79.00%	79.00%

Duplicate Sample Assessment				
Analyte:	Sample I.D.:	Y	Gross Alpha	Gross Beta
Duplicate Sample I.D.:	LCS12464	Y	1.000	1.000
Sample Result (DPM/Sample, g, F):	LCS12464	Y	3.1220	9.0860
1.96 Sigma Unc.:		Y	1.2200	1.9020
Duplicate Result (DPM/Sample, g, F):		Y	2.6690	9.7730
Duplicate Sample 1.96 Sigma Unc.:		Y	1.1160	2.0680
Either results below MDC?		Y	No	No
Relative Percent Difference:		Y	15.64%	7.28%
Assessment:		Y	Pass	Pass
% RPD Limit:		Y	35.00%	17.00%

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Sample Matrix Spike Control Assessment	
Analyte:	Sample Collection Date:
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Conc. (DPM/Sample):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (DPM/Sample, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (DPM/Sample, g, F):	
MS Spike uncertainty (calculated):	
MSD Spike uncertainty (calculated):	
Sample Result:	
Sample 1.96 Sigma Unc.:	
Sample Matrix Spike Result:	
Sample MS 1.96 Sigma Unc.:	
Sample Matrix Spike Duplicate Result:	
Sample MSD 1.96 Sigma Unc.:	
MS % Recovery:	
MSD % Recovery:	
MS Assessment:	
MSD Assessment:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	
Matrix Spike/Matrix Spike Duplicate Sample Assessment:	

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Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12464
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Det No.	Effective Calibration Date			Alpha Efficiency	Alpha to Beta Cross-Talk			Beta Efficiency	Beta to Alpha Cross-Talk			Alpha Bkg	Beta Bkg	Alpha Bkg	Beta Bkg	BKG 1 Date	BKG 2 Date	7/14/2012
	a	b	c		d	e	a		b	c	d							
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7/9/12

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

Test Code: Alpha Beta
Matrix: IP
Batch ID: 12464
Prep Start Date/Time: 7/9/2012 12:00
Prep Finish: 7/9/2012

Analyst: MBT
PrepSOP1: PGH-R-001
PrepSOP2: n/a
AnalSOP1: EPA 900.0
AnalSOP2: n/a

CSU Factors (2 Sigma)
UE1 6.71%
UE2 13.23%
UE3 10.00%
UE4 0.00%

Det No.	Effective Calibration Date			Alpha Efficiency	Alpha to Beta Cross-Talk			Beta Efficiency	Alpha-to-Beta Crossstalk : $ax^4 + bx^3 + cx^2 + dx + e$			Beta Eff. $ax + b$	Beta-to-Alpha Xtalk : $ax + b$			Alpha Bkg	Beta Bkg	Alpha Bkg	Beta Bkg
	a	b	c		d	e	a		b	c	d		e	a	b				
28					1.533E-01														
29					1.536E-01														
30					1.5497E-01														
31					1.5353E-01														
32					1.5823E-01														
33					1.6147E-01														
34					1.6117E-01														
35					#N/A														
36					1.4953E-01														
37					1.5981E-01														
38					1.5254E-01														
39					1.7614E-01														
40					1.8176E-01														
41					#N/A														
42					1.4541E-01														
43					1.7364E-01														
44					1.7507E-01														
45					1.6896E-01														
46					1.6416E-01														
47					1.7203E-01														
48					1.8314E-01														
49					1.6993E-01														
50					1.6594E-01														
51					1.7880E-01														
52					1.7970E-01														
53					1.7780E-01														

Outlier

7/16/12
MBT

2/18/12
700

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

CSU Analysis for Preparation

Planchet Weighing

uncert (g)	gross (g)	tare (g)	net (g)	CSU (g)	
0.0003	9.1463	9.1273	0.019	0.000424264	2.23%

Volume Aliquot

(mL)	vol (mL)	rel unc
1.00	100.0	1.00%

Description	relative	of Critical	CSU for Preparation (UE1) 6.71%	
			Uncertainty	Uncertainty
Sample Aliquoting	1.00%	1	1.00%	0.01%
Planchet Weighing	2.23%	2	3.16%	0.10%
Sample transfer to planchet	3.00%	1	3.00%	0.09%
Additional Uncertainty due to differences in the distribution of residue on the planchet	5.00%	1	5.00%	0.25%

CSU Analysis for Analysis

Mass Aliquot

	Ref mass	uncert (g)	Rel unc
Tare	5	0.0004	
Gross	6	0.0004	Use max of 1%
net	1	0.000565685	0.057%

Description	Maximum	of Critical	CSU for Analysis (UE2) 13.23%	
			Uncertainty	Uncertainty
SRM Uncertainty	5.00%	1	5.00%	0.25%
Mass transfer	0.06%	2	0.08%	0.00%
Source Reproducibility	5.00%	1	5.00%	0.25%
Curve Fitting Uncertainty	5.00%	1	5.00%	0.25%
Estimated Additional Uncertainty (variations in efficiency and self-absorption due to chemical composition of residue)	10.00%	1	10.00%	1.00%

CSU Analysis for Yield Correction

Description	Maximum	of Critical	CSU for Yield (UE3) 10.00%	
			Uncertainty	Uncertainty
Additional Sample Uncertainty due to analysis without a tracer or chemical carrier	10.00%	1	10.00%	1.00%

7/18/12
P

Pace Analytical Services
Gross Alpha and Gross Beta
Analysis

SAMPLE_ID	Det#	BEG_DATE	BATCH_ID	ACPM	BCPM	CNT_TIME
3072085017	27	7/13/2012 9:35	GAB12464	0.09	0.5	100
3072085018	29	7/13/2012 9:35	GAB12464	0.118181818	0.345454545	110
458978	12	7/12/2012 22:07	GAB12464	0.133333333	0.366666667	120
3072060100	13	7/12/2012 22:07	GAB12464	0.091666667	0.366666667	120
3072085001	14	7/12/2012 22:08	GAB12464	0.116666667	0.6	120
3072085002	15	7/12/2012 22:08	GAB12464	0.091666667	0.566666667	120
3072085003	16	7/12/2012 22:08	GAB12464	0.083333333	0.366666667	120
3072085004	18	7/12/2012 22:08	GAB12464	0.183333333	0.475	120
3072085005	19	7/12/2012 22:08	GAB12464	0.033333333	0.5	120
3072085006	20	7/12/2012 22:08	GAB12464	0.075	0.55	120
3072085007	21	7/12/2012 22:08	GAB12464	0.066666667	0.375	120
3072085008	22	7/12/2012 22:08	GAB12464	0.15	0.441666667	120
3072085009	23	7/12/2012 22:08	GAB12464	0.1	0.458333333	120
3072085010	27	7/12/2012 22:08	GAB12464	0.041666667	0.316666667	120
3072085011	28	7/12/2012 22:08	GAB12464	0.1	0.416666667	120
3072085012	29	7/12/2012 22:08	GAB12464	0.075	0.45	120
3072085013	30	7/12/2012 22:08	GAB12464	0.166666667	0.375	120
3072085014	33	7/12/2012 22:09	GAB12464	0.15	0.525	120
3072085015	34	7/12/2012 22:09	GAB12464	0.083333333	0.483333333	120
3072085016	37	7/12/2012 22:09	GAB12464	0.183333333	0.533333333	120
3072085019	30	7/13/2012 9:35	GAB12464	0.26	0.61	100
LCS12464	12	7/17/2012 13:06	GAB12464	0.633333333	4.766666667	90
LCSD12464	13	7/17/2012 16:26	GAB12464	0.522222222	4.322222222	90

7/18/12
P

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072085019	7/13/2012 9:35:27 AM	30	GAB12464	0.260	0.6100	100.0
3072085018	7/13/2012 9:35:21 AM	29	GAB12464	0.118	0.3455	110.0
3072085017	7/13/2012 9:35:16 AM	27	GAB12464	0.090	0.5000	100.0
3072085016	7/12/2012 10:09:10 PM	37	GAB12464	0.183	0.5333	120.0
3072085015	7/12/2012 10:09:04 PM	34	GAB12464	0.083	0.4833	120.0
3072085014	7/12/2012 10:09:01 PM	33	GAB12464	0.150	0.5250	120.0
3072085013	7/12/2012 10:08:56 PM	30	GAB12464	0.167	0.3750	120.0
3072085012	7/12/2012 10:08:53 PM	29	GAB12464	0.075	0.4500	120.0
3072085011	7/12/2012 10:08:50 PM	28	GAB12464	0.100	0.4167	120.0
3072085010	7/12/2012 10:08:45 PM	27	GAB12464	0.042	0.3167	120.0
3072085009	7/12/2012 10:08:36 PM	23	GAB12464	0.100	0.4583	120.0
3072085008	7/12/2012 10:08:32 PM	22	GAB12464	0.150	0.4417	120.0
3072085007	7/12/2012 10:08:28 PM	21	GAB12464	0.067	0.3750	120.0
3072085006	7/12/2012 10:08:25 PM	20	GAB12464	0.075	0.5500	120.0
3072085005	7/12/2012 10:08:21 PM	19	GAB12464	0.033	0.5000	120.0
3072085004	7/12/2012 10:08:14 PM	18	GAB12464	0.183	0.4750	120.0

PK
7/16/12

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
3072085003	7/12/2012 10:08:11 PM	16	GAB12464	0.083	0.3667	120.0
3072085002	7/12/2012 10:08:07 PM	15	GAB12464	0.092	0.5667	120.0
3072085001	7/12/2012 10:08:04 PM	14	GAB12464	0.117	0.6000	120.0
3072060100	7/12/2012 10:07:59 PM	13	GAB12464	0.092	0.3667	120.0
458978	7/12/2012 10:07:54 PM	12	GAB12464	0.133	0.3667	120.0

7/16/12
ML

Pace Analytical Services, Inc.-Pittsburgh
 Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAS	37	3072060081	GAB 12463	120	7/12/12 16:32		NA	NA
	12	082			7/12/12 20:05			
	13	083						
	14	084						
	15	085						
	16	086						
	18	087						
	19	088						
	20	089						
	21	090						
	22	091						
	23	092						
	27	093						
	26	094						
	29	095						
	30	096						
	33	097						
	34	098						
	37	099						
	12	458978	GAB 12464	120	7/12/12 22:09	BSH	NA	NA
	13	3072060100						
	14	3072085001						
	15	002						
	16	003						

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- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review:

Date: 7/12/12

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7/12/12

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAB	18	3072085004	GAB12464	120	7/12/12 22:01	BSH	NA	NA
	19	005						
	20	006						
	21	007						
	22	008						
	23	009						
	27	010						
	28	011						
	29	012						
	30	013						
	33	014						
	34	015						
	37	016			7/13/12 935	BSH	NA	NA
	27	017						
	29	018						
	30	019						
GAB	43	458979	LAB12465	300	7-13-12 0800	MST	NA	NA
	44	3072085020						
	45	21						
	46	22						
	47	23						
	48	24						
	49	25						
	50	26						

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- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review Paul

Date: 7/13/12

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2/11/12
20

Gross Alpha and Beta Calibration Documentation

Gross Alpha and Beta Analysis of Smears Calibration Narrative

Date: 7/2/2012

Source Preparation Analyst: JLK

Calibration Analyst: JLK

Instrument ID: GFPC Systems LB770 Detectors 1-10
Protean Detectors 11-38
GFPC LB4110 Detectors 39-53

Calibration Description Details:

Twelve smears were prepared by weighing a portion of SRM 81005-493 (Sr-90/Y-90) onto six of the smears and a portion of Pace Standard Reference Material 12-028 (Th-230) onto the remaining six smears. The source material was evenly distributed over the whole of the smear and allowed to air dry to a constant weight.

In each detector, one smear of each, alpha and beta, was counted, and the efficiency of the detector determined by the observed net cpm divided by the decay corrected source dpm.

The sources were counted on each detector to obtain a minimum of 10000 net counts. Sources were prepared on 6/29/2012 using the balance with Pace ID 7A-7879.

The count information was entered into an excel spreadsheet to determine the alpha and beta efficiency of the detector for each counted source.

In addition, during alpha counting on a gas flow proportional counter, a certain number of alpha counts are also detected as beta counts. Using the count beta cpm for each source, an alpha to beta crosstalk factor for each detector was established.

JLK
7/2/12
Om 7/2/12

Pace Analytical Services
Calibration

Cal. Isotope Th-230 Sr/Y-90
Cal Source ID: 12-028 81005-493
Source Conc. (dpm/g): 4719.33 87076.60
Source Ref. Date: 11/5/2009 11/5/2009
Source Half-Life (years): 75380 28.802

		Th-230	
Calibration Source I. D.	Mass of Th-230 Source Added (g)	Alpha Standard	DPM
GAF-20120629-N1	0.1012		477.60
GAF-20120629-N2	0.1000		471.93
GAF-20120629-N3	0.1008		475.71
GAF-20120629-N4	0.1006		474.76
GAF-20120629-N5	0.1007		475.24
GAF-20120629-N6	0.1008		475.71

		Sr/Y-90	
Calibration Source I. D.	Mass of Sr/Y-90 Source Added (g)	Sr/Y-90 Standard	DPM
GBF-20120629-N1	0.0396		3448.23
GBF-20120629-N2	0.0393		3422.11
GBF-20120629-N3	0.0402		3500.48
GBF-20120629-N4	0.0395		3439.53
GBF-20120629-N5	0.0400		3483.06
GBF-20120629-N6	0.0396		3448.23

Aut/2011/2

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

81005-493

Sr-90 5 mL Liquid in Flame Sealed Vial

Customer: Pace Analytical Services, Inc.
P.O. No.: PI-12089, Item 12

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting. 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. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, %			Reference Date (12:00 PM EST)
			μ_A	μ_B	U	
Sr-90	1.052E+04	3.630E+03	0.1	0.9	1.8	11/05/2009

*Uncertainty: U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:

Impurities: γ -impurities <0.1%. 5.00249 g 0.1M HCl solution with approximately 30 $\mu\text{g/g}$ Sr carrier.

Source Prepared by: N. E. Kasate
N. E. Kasate, Radiochemist

QA Approved: D. M. Montgomery
D. M. Montgomery, QA Manager

Date: 11-6-09





Pace Analytical Services, Inc.-PGH

Radiological Standards Dilution Logbook

Logbook ID: 2-R056-0

Standard ID: 12-028
 Parent Source: 81003 493
 Parent Conc: 3833.13 Bq/g
 Reference Date: 11/3/2009 12:00

Nuclide: Th-230
Calibration
Solution

Std Conc.: 4719.33 dpm/g
 Prepared By: SLC
 Prep Date: 6/14/12
 Expiration Date: 6/14/17

Balance ID: 88914
 Diluent: 1.0 N HNO₃ + DI (0.5 N HNO₃)
 Diluent IDs: DL12-1111

Conversions: 60 dpm = 1 dps
 1 Bq = 1 dps
 2.22 dpm = 1 pCi

Dilution Description: CANNOT BE USED TO PREPARE GROSS ALPHA SPIKES

diluted 1.0722 g of 81003-493 to 52.2516 g w/ 0.5 N
1 N HNO₃ + DI water

Eckert & Ziegler
 Analytics Atlanta, GA 30318 USA
 404-352-8677

Th-230 4.893g
 SRS: 81003-493 Activity: 0.52 μ Ci
 Date: 11/05/09 12:00 EST Exp: XXXXXX

PO#: PI-12089, Item 8
 5.02201 g 0.5M HNO₃ solution
 QA: MM



Dilution Calculations:

$$1.0722 \text{ g} \left| \frac{3833.13 \text{ Bq}}{g} \right| \frac{60 \text{ dpm}}{\text{Bq}} \left| \frac{\text{---}}{52.2516 \text{ g}} \right|$$

$$= 4719.33 \frac{\text{dpm}}{g}$$

Vial initial
 18.8665
 17.7943

Container Tare Weight: 37.4418
 Container + Standard Final Weight: 89.6934

Balance ID: _____

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**
 Analyst initials: _____ Date: _____

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

81003-493

Th-230 5 mL Liquid in Flame Sealed Vial

Customer: Pace Analytical Services, Inc.
P.O. No.: PI-12089, Item 8

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting. 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. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty* , %			Reference Date (12:00 PM EST)
			u_A	u_B	U	
Th-230	2.763E+07	1.925E+04	0.1	0.9	1.8	11/05/2009

*Uncertainty: U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:

Impurities: γ -impurities <0.1%, α -impurities <0.04%. 5.02201 g 0.5M HNO3 solution, carrier free.

Source Prepared by: N. E. Kasate
N. E. Kasate, Radiochemist

QA Approved: D. M. Montgomery
D. M. Montgomery, QA Manager

Date: 11-6-09



Gross Alpha Calibration for Filters and Smears

Jun-12

Detector ID	Source Name	Th-230 12-028 Mass (g)	Source dpm	Source Alpha CPM	Alpha Eff. cpm/dpm	Det Alpha BKG	Source Beta CPM	Det Beta BKG	Alpha to beta Cross talk Eff
1	GAF-20120629-N1	0.1012	477.6	68.150	0.1426	0.064	22.820	0.804	0.3234
2	GAF-20120629-N5	0.1007	475.2	73.840	0.1552	0.062	20.910	0.701	0.2739
3	GAF-20120629-N2	0.1000	471.9	71.180	0.1507	0.060	22.650	0.667	0.3091
4	GAF-20120629-N3	0.1008	475.7	68.790	0.1444	0.112	20.680	0.605	0.2923
7	GAF-20120629-N4	0.1006	474.8	74.670	0.1571	0.107	19.060	0.689	0.2464
8	GAF-20120629-N6	0.1008	475.7	67.130	0.1409	0.096	21.370	0.631	0.3094
9	GAF-20120629-N6	0.1008	475.7	64.050	0.1345	0.055	22.580	0.637	0.3429
11	GAF-20120629-N1	0.1012	477.6	72.293	0.1510	0.162	29.540	0.469	0.4030
12	GAF-20120629-N2	0.1000	471.9	72.387	0.1532	0.089	27.400	0.378	0.3738
13	GAF-20120629-N3	0.1008	475.7	71.213	0.1496	0.050	29.327	0.333	0.4074
14	GAF-20120629-N1	0.1012	477.6	75.153	0.1572	0.069	27.327	0.380	0.3589
15	GAF-20120629-N2	0.1000	471.9	73.727	0.1560	0.082	26.067	0.495	0.3472
16	GAF-20120629-N3	0.1008	475.7	73.153	0.1536	0.061	26.293	0.391	0.3544
17	GAF-20120629-N4	0.1006	474.8	73.593	0.1547	0.137	24.600	0.386	0.3296
18	GAF-20120629-N5	0.1007	475.2	72.847	0.1527	0.063	26.527	0.382	0.3602
19	GAF-20120629-N2	0.1000	471.9	72.720	0.1539	0.077	28.247	0.457	0.3826
20	GAF-20120629-N1	0.1012	477.6	74.650	0.1561	0.097	27.950	0.382	0.3698
21	GAF-20120629-N1	0.1012	477.6	72.340	0.1513	0.078	29.627	0.378	0.4048
22	GAF-20120629-N2	0.1000	471.9	72.547	0.1536	0.057	28.893	0.418	0.3928
23	GAF-20120629-N3	0.1008	475.7	74.473	0.1564	0.075	27.893	0.457	0.3688
25	GAF-20120629-N3	0.1008	475.7	75.753	0.1590	0.127	27.267	0.411	0.3551
26	GAF-20120629-N4	0.1006	474.8	74.993	0.1574	0.149	25.687	0.437	0.3378
27	GAF-20120629-N4	0.1006	474.8	75.100	0.1580	0.074	25.667	0.288	0.3383
28	GAF-20120629-N6	0.1008	475.7	73.987	0.1554	0.081	25.700	0.333	0.3432
29	GAF-20120629-N3	0.1008	475.7	73.167	0.1536	0.084	25.587	0.322	0.3457
30	GAF-20120629-N4	0.1006	474.8	73.647	0.1550	0.072	26.273	0.409	0.3515
31	GAF-20120629-N5	0.1007	475.2	73.053	0.1535	0.089	26.053	0.367	0.3520
32	GAF-20120629-N6	0.1008	475.7	75.327	0.1582	0.054	25.493	0.412	0.3332
33	GAF-20120629-N4	0.1006	474.8	76.750	0.1615	0.090	26.950	0.387	0.3465
34	GAF-20120629-N3	0.1008	475.7	76.747	0.1612	0.076	26.073	0.404	0.3348
36	GAF-20120629-N4	0.1006	474.8	71.087	0.1495	0.093	26.007	0.407	0.3606
37	GAF-20120629-N4	0.1006	474.8	75.913	0.1598	0.042	24.513	0.319	0.3189
38	GAF-20120629-N6	0.1008	475.7	72.673	0.1525	0.110	25.573	0.399	0.3469
39	GAF-20120629-N1	0.1012	477.6	84.202	0.1761	0.078	35.832	12.476	0.2776
40	GAF-20120629-N2	0.1000	471.9	86.031	0.1818	0.253	34.336	12.552	0.2540
42	GAF-20120629-N5	0.1007	475.2	69.311	0.1454	0.205	44.167	9.900	0.4959
43	GAF-20120629-N4	0.1006	474.8	82.599	0.1736	0.162	24.401	1.156	0.2820
44	GAF-20120629-N5	0.1007	475.2	83.913	0.1751	0.111	25.324	0.990	0.2925
45	GAF-20120629-N6	0.1008	475.7	80.517	0.1690	0.141	23.079	1.746	0.2654
46	GAF-20120629-N6	0.1008	475.7	78.325	0.1642	0.233	23.862	0.984	0.2930
47	GAF-20120629-N1	0.1012	477.6	82.254	0.1720	0.094	25.026	1.167	0.2904
48	GAF-20120629-N2	0.1000	471.9	86.594	0.1831	0.165	25.407	2.086	0.2698
49	GAF-20120629-N3	0.1008	475.7	81.172	0.1699	0.333	25.048	1.345	0.2932
50	GAF-20120629-N4	0.1006	474.8	78.986	0.1659	0.205	23.555	1.460	0.2805
51	GAF-20120629-N1	0.1012	477.6	85.544	0.1788	0.150	25.305	1.375	0.2802
52	GAF-20120629-N2	0.1000	471.9	84.912	0.1797	0.107	25.611	1.148	0.2885
53	GAF-20120629-N3	0.1008	475.7	84.689	0.1778	0.107	24.618	1.397	0.2745

	Alpha Cts	Beta Cts	Ct Time
39	GAF-20120629-N1	10100	4298
40	GAF-20120629-N2	10100	4031
42	GAF-20120629-N3	10100	6436
43	GAF-20120629-N4	10101	2984
44	GAF-20120629-N5	10100	3070
45	GAF-20120629-N6	10100	2895
46	GAF-20120629-N6	10100	3077
47	GAF-20120629-N1	10100	3073
48	GAF-20120629-N2	10102	2964
49	GAF-20120629-N3	10101	3117
50	GAF-20120629-N4	10100	3012
51	GAF-20120629-N1	10101	2988
52	GAF-20120629-N2	10102	3047
53	GAF-20120629-N3	10100	2936

M 7/21/12

Jun-12

Gross Beta Calibration for Filters and Smears

Method: GAB Filter
 Analyst(s): JLK
 Date: 6/29/2012
 Cal. Isotope SrY-90
 Cal Source ID: 81005-493
 Source Conc. (dpm/g): 87076.6
 Source Ref. Date: 11/5/2009
 Source Half-Life (years): 28.802

Detector ID	Source Name	SrY-90 Mass (g)	Source dpm	Count Date/Time	Source Decay Days	Source Decay Factor	Source Corrected DPM	Source Beta CPM	Beta Eff. cpm/dpm	Det Beta BKG	Counts	Count Time (Min)
1	GBF-20120629-N1	0.0396	3448.2	7/2/2012 10:21	969.93	0.9377	3233.34	1476.000	0.4562	0.804	10508	7.05
2	GBF-20120629-N2	0.0393	3422.1	7/2/2012 10:21	969.93	0.9377	3208.85	1465.000	0.4563	0.701	10517	7.15
3	GBF-20120629-N3	0.0402	3500.5	7/2/2012 10:21	969.93	0.9377	3282.33	1461.000	0.4449	0.667	10504	12.02
4	GBF-20120629-N4	0.0395	3439.5	7/2/2012 10:21	969.93	0.9377	3225.18	1402.900	0.4345	0.605	10514	9.69
7	GBF-20120629-N1	0.0396	3448.2	7/2/2012 10:44	969.95	0.9377	3233.34	1435.000	0.4436	0.689	10516	7.24
8	GBF-20120629-N5	0.0400	3483.1	7/2/2012 10:21	969.93	0.9377	3266.00	1403.000	0.4294	0.631	10509	7.19
9	GBF-20120629-N6	0.0396	3448.2	7/2/2012 10:21	969.93	0.9377	3233.34	1438.000	0.4445	0.637	10511	7.39
11	GBF-20120629-N1	0.0396	3448.2	7/3/2012 9:29	970.90	0.9376	3233.14	1466.200	0.4533	0.469	10514	7.26
12	GBF-20120629-N2	0.0393	3422.1	7/3/2012 9:29	970.90	0.9376	3208.64	1470.900	0.4583	0.378	10506	6.97
13	GBF-20120629-N3	0.0402	3500.5	7/11/2012 14:19	979.10	0.9371	3280.34	1280.700	0.3903	0.333	10520	7.18
14	GBF-20120629-N1	0.0396	3448.2	7/3/2012 10:42	970.95	0.9376	3233.13	1443.500	0.4464	0.380	10510	7.05
15	GBF-20120629-N4	0.0395	3439.5	7/2/2012 11:11	969.97	0.9377	3225.17	1440.800	0.4466	0.495	10502	7.11
16	GBF-20120629-N2	0.0393	3422.1	7/2/2012 10:43	969.95	0.9377	3208.84	1409.700	0.4392	0.391	10517	6.9
17	GBF-20120629-N3	0.0402	3500.5	7/2/2012 10:43	969.95	0.9377	3282.33	1467.300	0.4469	0.386	10517	6.9
18	GBF-20120629-N6	0.0396	3448.2	7/3/2012 9:30	970.90	0.9376	3233.14	1436.600	0.4442	0.382	10517	6.9
19	GBF-20120629-N4	0.0395	3439.5	7/2/2012 10:45	969.95	0.9377	3225.17	1477.000	0.4578	0.457	10517	6.9
20	GBF-20120629-N5	0.0400	3483.1	7/2/2012 10:45	969.95	0.9377	3266.00	1447.900	0.4432	0.382	10517	6.9
21	GBF-20120629-N4	0.0395	3439.5	7/3/2012 9:31	970.90	0.9376	3224.97	1468.800	0.4553	0.378	10517	6.9
22	GBF-20120629-N5	0.0400	3483.1	7/3/2012 9:31	970.90	0.9376	3265.79	1422.900	0.4355	0.418	10517	6.9
23	GBF-20120629-N6	0.0396	3448.2	7/2/2012 10:45	969.95	0.9377	3233.34	1442.900	0.4461	0.457	10517	6.9
25	GBF-20120629-N1	0.0396	3448.2	7/2/2012 11:01	969.96	0.9377	3233.34	1467.300	0.4537	0.411	10517	6.9
26	GBF-20120629-N2	0.0393	3422.1	7/2/2012 11:00	969.96	0.9377	3208.84	1459.100	0.4546	0.437	10517	6.9
27	GBF-20120629-N3	0.0402	3500.5	7/2/2012 11:00	969.96	0.9376	3282.12	1473.400	0.4488	0.288	10517	6.9
28	GBF-20120629-N5	0.0400	3483.1	7/2/2012 11:12	969.97	0.9377	3266.00	1428.400	0.4373	0.333	10517	6.9
29	GBF-20120629-N6	0.0396	3448.2	7/2/2012 11:12	969.97	0.9377	3233.34	1429.000	0.4419	0.322	10517	6.9
30	GBF-20120629-N1	0.0396	3448.2	7/3/2012 9:52	970.91	0.9376	3233.13	1446.800	0.4474	0.409	10517	6.9
31	GBF-20120629-N3	0.0402	3500.5	7/2/2012 11:00	969.96	0.9377	3282.33	1473.500	0.4488	0.367	10517	6.9
32	GBF-20120629-N2	0.0393	3422.1	7/2/2012 9:52	970.91	0.9376	3208.64	1477.000	0.4602	0.412	10517	6.9
33	GBF-20120629-N4	0.0395	3439.5	7/2/2012 11:00	969.96	0.9377	3225.17	1478.300	0.4582	0.387	10517	6.9
34	GBF-20120629-N5	0.0400	3483.1	7/2/2012 11:00	969.96	0.9377	3266.00	1459.900	0.4469	0.404	10517	6.9
36	GBF-20120629-N4	0.0395	3439.5	7/2/2012 9:16	969.89	0.9377	3225.19	1458.300	0.4520	0.407	10517	6.9
37	GBF-20120629-N4	0.0395	3439.5	7/2/2012 9:29	969.90	0.9377	3225.19	1441.800	0.4469	0.319	10517	6.9
38	GBF-20120629-N6	0.0396	3448.2	7/2/2012 10:59	969.96	0.9377	3233.34	1432.100	0.4428	0.399	10517	6.9
39	GBF-20120629-N1	0.0396	3448.2	7/9/2012 14:00	977.08	0.9372	3231.81	1490.496	0.4573	12.476	10508	7.05
40	GBF-20120629-N2	0.0393	3422.1	7/9/2012 14:00	977.08	0.9372	3207.33	1470.909	0.4547	12.552	10517	7.15
41	GBF-20120629-N3	0.0402	3500.5	7/9/2012 14:00	977.08	0.9372	3280.78	873.877	0.1546	366.810	10504	12.02
42	GBF-20120629-N4	0.0395	3439.5	7/9/2012 14:00	977.08	0.9372	3223.65	1085.036	0.3335	9.900	10514	9.69
43	GBF-20120629-N5	0.0400	3483.1	7/9/2012 14:00	977.08	0.9372	3264.45	1452.486	0.4446	1.156	10516	7.24
44	GBF-20120629-N6	0.0396	3448.2	7/9/2012 14:00	977.08	0.9372	3231.81	1461.613	0.4520	0.990	10509	7.19
45	GBF-20120629-N5	0.0400	3483.1	7/9/2012 14:31	977.10	0.9372	3264.45	1423.410	0.4355	1.746	10519	7.39
46	GBF-20120629-N6	0.0396	3448.2	7/9/2012 14:31	977.10	0.9372	3231.80	1447.363	0.4476	0.984	10508	7.26
47	GBF-20120629-N1	0.0396	3448.2	7/9/2012 14:31	977.10	0.9372	3231.80	1484.605	0.4590	1.167	10511	7.08
48	GBF-20120629-N2	0.0393	3422.1	7/9/2012 14:31	977.10	0.9372	3207.32	1508.465	0.4697	2.086	10514	6.97
49	GBF-20120629-N3	0.0402	3500.5	7/9/2012 14:31	977.10	0.9372	3280.77	1451.105	0.4419	1.345	10506	7.24
50	GBF-20120629-N4	0.0395	3439.5	7/9/2012 14:31	977.10	0.9372	3223.64	1465.181	0.4541	1.460	10520	7.18
51	GBF-20120629-N5	0.0400	3483.1	7/9/2012 14:40	977.11	0.9372	3264.45	1490.780	0.4563	1.375	10510	7.05
52	GBF-20120629-N6	0.0396	3448.2	7/9/2012 14:40	977.11	0.9372	3231.80	1477.075	0.4567	1.148	10502	7.11
53	GBF-20120629-N1	0.0396	3448.2	7/9/2012 14:40	977.11	0.9372	3231.80	1524.203	0.4712	1.397	10517	6.9

7/27/12

Sample Measurement
 C:\UMS\UTL0001\GBFCAL.SDT

Sample Measurement Parameters:

User: JLK
 Preset Time: 15:00
 Alpha Preset Error: 1.0%
 User Protocol: GAB

Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 1.0%

Cycle 1 of 2 (1/1 in group 1 of 2)

Start Time: 07/02/2012 10:21:02

Elapsed Time: 15:00

Guard: 830 cpm

	<u>Spl #</u>	<u>Sample Name</u>	<u>Alpha (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>	<u>Beta (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>
1	12457	GBF-20120629-N1	0.067 (±100%)	0.0077	0.0025	1476 (±0.672%)	0.0191	0.0081
2	12457	GBF-20120629-N2	0.067 (±100%)	0.0090	0.0031	1465 (±0.675%)	0.0180	0.0075
3	12457	GBF-20120629-N3	0.13 (±70.7%)	0.0100	0.0036	1461 (±0.675%)	0.0184	0.0077
4	12457	GBF-20120629-N4	0.27 (±50.0%)	0.0090	0.0031	1402 (±0.689%)	0.0191	0.0081
5	12491	E	0.13 (±70.7%)	0.0090	0.0031	7.1 (±9.71%)	0.0331	0.0151
6	12491	E	0.000	0.0100	0.0036	7.5 (±9.45%)	0.0482	0.0226
7	12457	E	0.000	0.0100	0.0036	1.1 (±25.0%)	0.0191	0.0081
8	12457	GBF-20120629-N5	0.000	0.0077	0.0025	1403 (±0.689%)	0.0176	0.0073
9	12457	GBF-20120629-N6	0.27 (±50.0%)	0.0100	0.0036	1438 (±0.681%)	0.0194	0.0082
10	12491	E	0.20 (±57.7%)	undef.	undef.	1.7 (±20.0%)	0.0201	0.0086

Cycle 2 of 2 (1/1 in group 2 of 2)

Start Time: 07/02/2012 10:44:20

Elapsed Time: 15:00

Guard: 837 cpm

	<u>Spl #</u>	<u>Sample Name</u>	<u>Alpha (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>	<u>Beta (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>
1	12467	E	0.000	0.0077	0.0025	0.9 (±26.7%)	0.0191	0.0081
2	12467	E	0.000	0.0090	0.0031	0.8 (±28.9%)	0.0180	0.0075
3	12467	E	0.33 (±44.7%)	0.0100	0.0036	0.9 (±27.7%)	0.0184	0.0077
4	12467	E	0.13 (±70.7%)	0.0090	0.0031	1.0 (±25.8%)	0.0191	0.0081
5	12501	E	0.20 (±57.7%)	0.0090	0.0031	7.0 (±9.76%)	0.0331	0.0151
6	12501	E	0.13 (±70.7%)	0.0100	0.0036	Outliers!	0.0482	0.0226
7	12467	GBF-20120629-N1	0.000	0.0100	0.0036	1435 (±0.682%)	0.0191	0.0081
8	12467	E	0.13 (±70.7%)	0.0077	0.0025	0.6 (±33.3%)	0.0176	0.0073
9	12467	E	0.067 (±100%)	0.0100	0.0036	0.5 (±35.4%)	0.0194	0.0082
10	12501	E	0.20 (±57.7%)	undef.	undef.	0.8 (±28.9%)	0.0201	0.0086

Sample Measurement
C:\UMS\UTL0001\12579.SDT

Sample Measurement Parameters:

Comment: FILTER CAL

User: JLK

Preset Time: 150:00

Alpha Preset Error: 1.0%

User Protocol: GAB

Instrument Name: LB770PC

Cycles: 1

Beta Preset Error: 1.0%

Filter

Cycle 1 of 1

Start Time: 07/06/2012 14:51:00

Elapsed Time: 150:00

Guard: 821.5 cpm

Order

<u>Spl #</u>	<u>Sample Name</u>	<u>Alpha (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>	<u>Beta (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>
1	12617 GAF20120629-N1	68.15 (±0.989%)	0.0038	0.0020	22.82 (±1.71%)	0.0110	0.0054
2	12617 3072445001 ✗	0.307 (±14.7%)	0.0047	0.0024	0.887 (±8.67%)	0.0103	0.0051
3	12617 GAF20120629-N2	71.18 (±0.968%)	0.0053	0.0027	22.65 (±1.72%)	0.0106	0.0052
4	12617 GAF20120629-N3	68.79 (±0.984%)	0.0047	0.0024	20.68 (±1.80%)	0.0110	0.0054
5	12651 3072515001 ✗	0.113 (±24.3%)	0.0047	0.0024	5.053 (±3.63%)	0.0199	0.0098
6	12651 3072439001 ✗	0.167 (±20.0%)	0.0053	0.0027	1.033 (±8.03%)	0.0294	0.0146
7	12617 GAF20120629-N4	74.67 (±0.945%)	0.0053	0.0027	19.06 (±1.87%)	0.0110	0.0054
8	12617 GAF20120629-N5	65.85 (±1.01%)	0.0038	0.0020	Outliers!	0.0101	0.0050
9	12617 GAF20120629-N6	64.05 (±1.02%)	0.0053	0.0027	22.58 (±1.72%)	0.0112	0.0055
10	12651 3072441001 ✗	0.253 (±16.2%)	undef.	undef.	Outliers!	0.0117	0.0057

Sample Measurement
C:\UMS\GAB12548.SDT

Sample Measurement Parameters:

Comment: DET2,8-GAF

User: MAW

Preset Time: 210:00

Alpha Preset Error: 1.0%

User Protocol: GAB

Instrument Name: LB770PC

Cycles: 1

Beta Preset Error: 1.0%

myself

Cycle 1 of 1

Start Time: 07/11/2012 16:26:04

Elapsed Time: 210:00

Guard: 822.6 cpm

	<u>Spl #</u>	<u>Sample Name</u>	<u>Alpha (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>	<u>Beta (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>
1	12478	460442	0.071 ($\pm 25.8\%$)	0.0037	0.0020	0.862 ($\pm 7.43\%$)	0.0107	0.0053
2	12787	20120629N5	73.84 ($\pm 0.803\%$)	0.0045	0.0023	20.91 ($\pm 1.51\%$)	0.0100	0.0050
3	12478	3072554002	0.048 ($\pm 31.6\%$)	0.0051	0.0026	0.633 ($\pm 8.67\%$)	0.0103	0.0051
4	12787	3072554003	0.110 ($\pm 20.9\%$)	0.0045	0.0023	0.657 ($\pm 8.51\%$)	0.0107	0.0053
5	12821	E	0.062 ($\pm 27.7\%$)	0.0045	0.0023	5.705 ($\pm 2.89\%$)	0.0194	0.0096
6	12821	E	0.033 ($\pm 37.8\%$)	0.0051	0.0026	35.65 ($\pm 1.16\%$)	0.0287	0.0142
7	12478	3072512001	0.124 ($\pm 19.6\%$)	0.0051	0.0026	0.743 ($\pm 8.01\%$)	0.0107	0.0053
8	12787	20120629N6	67.13 ($\pm 0.842\%$)	0.0037	0.0020	21.37 ($\pm 1.49\%$)	0.0098	0.0049
9	12478	3072512002	0.038 ($\pm 35.4\%$)	0.0051	0.0026	0.867 ($\pm 7.41\%$)	0.0109	0.0054
10	12821	E	0.057 ($\pm 28.9\%$)	undef.	undef.	Outliers!	0.0113	0.0056

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N1	7/3/2012 9:47:19 AM	11	FilterCal	72.293	29.5400	150.0
GBF-20120629-N1	7/3/2012 9:29:22 AM	11	FilterCal	0.600	1466.2000 ✓	10.0

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N2	7/3/2012 9:47:32 AM	12	FilterCal	72.387	27.4000	150.0
GBF-20120629-N2	7/3/2012 9:29:37 AM	12	FilterCal	0.100	1470.9000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N3	7/11/2012 2:36:44 PM	13	FilterCal	71.213	29.3267	150.0
GBF-20120629-N3	7/11/2012 2:19:24 PM	13	FilterCal	0.000	1280.7000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N1	7/3/2012 2:24:41 PM	14	FilterCal	75.153	27.3267	150.0
GBF-20120629-N1	7/3/2012 10:42:05 AM	14	FilterCal	0.200	1443.5000	10.0

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N2	7/3/2012 2:02:30 PM	15	FilterCal	73.727	26.0667	150.0
GBF-20120629-N4	7/2/2012 11:11:45 AM	15	FilterCal	0.500	1440.8000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N3	7/3/2012 9:29:59 AM	16	FilterCal	73.153	26.2933	150.0
GBF-20120629-N2	7/2/2012 10:43:46 AM	16	FilterCal	0.300	1409.7000	10.0

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N4	7/3/2012 9:30:16 AM	17	FilterCal	73.593	24.6000	150.0
GBF-20120629-N3	7/2/2012 10:43:59 AM	17	FilterCal	0.400	1467.3000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N5	7/3/2012 9:48:13 AM	18	FilterCal	72.647	26.5267	150.0
GBF-20120629-N6	7/3/2012 9:30:48 AM	18	FilterCal	0.800	1436.6000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N2	7/2/2012 1:49:37 PM	19	FilterCal	72.720	28.2467	150.0
GBF-20120629-N4	7/2/2012 10:45:02 AM	19	FilterCal	0.400	1477.0000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GBF-20120629-N5	7/2/2012 10:45:16 AM	20	FilterCal	1.200	1447.9000	10.0
GAF-20120629-N1	7/2/2012 9:15:23 AM	20	FilterCal	74.650	27.9500	20.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N1	7/11/2012 4:56:45 PM	21	FilterCal	72.340	29.6267	150.0
GBF-20120629-N4	7/3/2012 9:31:14 AM	21	FilterCal	0.100	1468.8000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N2	7/11/2012 4:56:49 PM	22	FilterCal	72.547	28.8933	150.0
GBF-20120629-N5	7/3/2012 9:31:27 AM	22	FilterCal	0.100	1422.8000	10.0

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N6	7/3/2012 9:31:51 AM	23	FilterCal	74.473	27.8933	150.0
GBF-20120629-N6	7/2/2012 10:45:30 AM	23	FilterCal	0.100	1442.9000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N3	7/11/2012 9:40:23 AM	25	FilterCal	75.753	27.2667	150.0
GBF-20120629-N1	7/2/2012 11:01:12 AM	25	FilterCal	0.700	1467.3000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N4	7/11/2012 9:40:34 AM	26	FilterCal	74.893	25.6867	150.0
GBF-20120629-N2	7/2/2012 11:00:59 AM	26	FilterCal	0.700	1459.1000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N4	7/11/2012 4:57:04 PM	27	FilterCal	75.100	25.6667	150.0
GBF-20120629-N3	7/3/2012 9:33:31 AM	27	FilterCal	1.600	1473.4000	10.0

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N6	7/11/2012 8:57:09 AM	28	FilterCal	73.987	25.7000	150.0
GBF-20120629-N5	7/2/2012 11:12:08 AM	28	FilterCal	1.000	1428.4000	10.0

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N3	7/3/2012 2:56:52 PM	29	FilterCal	73.167	25.5867	150.0
GBF-20120629-N6	7/2/2012 11:12:21 AM	29	FilterCal	0.500	1429.0000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N4	7/3/2012 2:25:53 PM	30	FilterCal	73.647	26.2733	150.0
GBF-20120629-N1	7/3/2012 9:52:01 AM	30	FilterCal	0.300	1446.8000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N5	7/3/2012 2:20:47 PM	31	FilterCal	73.053	26.0533	150.0
GBF-20120629-N3	7/2/2012 11:00:42 AM	31	FilterCal	0.300	1473.5000	10.0

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
GAF-20120629-N6	7/3/2012 1:37:00 PM	32	FilterCal	75.327	25.4933	150.0
GBF-20120629-N2	7/3/2012 9:52:17 AM	32	FilterCal	1.000	1477.0000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GBF-20120629-N4	7/2/2012 11:00:28 AM	33	FilterCal	0.600	1478.3000	10.0
GAF-20120629-N4	7/2/2012 9:15:53 AM	33	FilterCal	76.750	26.9500	20.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N3	7/2/2012 1:50:53 PM	34	FilterCal	76.747	26.0733	150.0
GBF-20120629-N5	7/2/2012 11:00:14 AM	34	FilterCal	0.500	1459.9000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N4	7/2/2012 1:51:09 PM	36	FilterCal	71.087	26.0067	150.0
GBF-20120629-N5	7/2/2012 9:29:29 AM	36	FilterCal	0.000	1412.4000	10.0
GBF-20120629-N4	7/2/2012 9:16:09 AM	36	FilterCal	0.300	1458.3000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N4	7/2/2012 9:43:05 AM	37	FilterCal	75.913	24.5133	150.0
GBF-20120629-N4	7/2/2012 9:29:44 AM	37	FilterCal	0.600	1441.8000	10.0

Pace Analytical Protean GFPC System Count Data

<u>SAMPLE_ID</u>	<u>Count Start:</u>	<u>DET#</u>	<u>BATCH_ID</u>	<u>Alpha cpm</u>	<u>Beta cpm</u>	<u>Ct. Time (min)</u>
GAF-20120629-N6	7/2/2012 1:51:25 PM	38	FilterCal	72.673	25.5733	150.0
GBF-20120629-N6	7/2/2012 10:59:58 AM	38	FilterCal	0.800	1432.1000	10.0



Batch Report

Batch Name: GAF Cal
Procedure: GAB Filter Counting
Calibration: Water

Count Date: 7/9/2012 2:56:48 PM

Preset Count Time: 9000

Count Mode: Simultaneous

Sample ID	DetectorName	Alpha Counts	Beta Counts	Count Date/Time	Count Duration (minutes)
39-GAF20120629-N1	39	10100	4298	7/9/2012 2:56:42 PM	119.95
40-GAF20120629-N2	40	10100	4031	7/9/2012 2:56:42 PM	117.4
42-GAF20120629-N3	42	9128	7355	7/9/2012 2:56:42 PM	150
43-GAF20120629-N4	43	10101	2984	7/9/2012 2:56:43 PM	122.29
44-GAF20120629-N5	44	10100	3070	7/9/2012 2:56:43 PM	121.23
45-GAF20120629-N6	45	10100	2895	7/9/2012 2:56:43 PM	125.44



Batch Report

Batch Name: GAF CAL 2 **Count Date:** 7/10/2012 10:39:50 AM

Procedure: GAB Filter Counting

Preset Count Time: 9000

Calibration: Water

Count Mode: Simultaneous

Sample ID	DetectorName	Alpha Counts	Beta Counts	Count Date/Time	Count Duration (minutes)
47-GAF20120629-N1	47	10100	3073	7/10/2012 10:39:46 AM	122.79
48-GAF20120629-N2	48	10102	2964	7/10/2012 10:39:46 AM	116.66
49-GAF20120629-N3	49	10101	3117	7/10/2012 10:39:46 AM	124.44
50-GAF20120629-N4	50	10100	3012	7/10/2012 10:39:46 AM	127.87
42-GAF20120629-N5	42	10100	6436	7/10/2012 10:39:45 AM	145.72



Batch Report

Batch Name: GAF CAL 4

Procedure: GAB Filter Counting

Calibration: Water

Count Date: 7/10/2012 1:34:52 PM

Preset Count Time: 9000

Count Mode: Simultaneous

Sample ID

DetectorName

Alpha Counts

Beta Counts

Count Date/Time

Count Duration
(minutes)

46-GAF20120629-N6

46

10100

3077

7/10/2012 1:34:49 PM

128.95

Batch Report

Batch Name: GAF CAL 3

Procedure: GAB Filter Counting

Calibration: Water

Count Date: 7/10/2012 12:52:40 PM

Preset Count Time: 9000

Count Mode: Simultaneous

Sample ID	DetectorName	Alpha Counts	Beta Counts	Count Date/Time	Count Duration (minutes)
51-GAF20120629-N1	51	10101	2988	7/10/2012 12:52:37 PM	118.08
52-GAF20120629-N2	52	10102	3047	7/10/2012 12:52:37 PM	118.97
53-GAF20120629-N3	53	10100	2936	7/10/2012 12:52:37 PM	119.26



Batch Report

Batch Name: GBF Cal Count Date: 7/9/2012 2:00:28 PM

Procedure: GAB Filter Counting

Preset Count Time: 900

Calibration: Water

Count Mode: Simultaneous

Sample ID	DetectorName	Alpha Counts	Beta Counts	Count Date/Time	Count Duration (minutes)
39-GBF20120629-N1	39	110	10508	7/9/2012 2:00:24 PM	7.05
40-GBF20120629-N2	40	42	10517	7/9/2012 2:00:24 PM	7.15
41-GBF20120629-N3	41	1	10504	7/9/2012 2:00:24 PM	12.02
42-GBF20120629-N4	42	9	10514	7/9/2012 2:00:24 PM	9.69
43-GBF20120629-N5	43	126	10516	7/9/2012 2:00:24 PM	7.24
44-GBF20120629-N6	44	69	10509	7/9/2012 2:00:25 PM	7.19
45-GBF20120629-N5	45	77	10519	7/9/2012 2:31:09 PM	7.39
46-GBF20120629-N6	46	70	10508	7/9/2012 2:31:09 PM	7.26
47-GBF20120629-N1	47	90	10511	7/9/2012 2:31:10 PM	7.08
48-GBF20120629-N2	48	90	10514	7/9/2012 2:31:10 PM	6.97
49-GBF20120629-N3	49	59	10506	7/9/2012 2:31:10 PM	7.24
50-GBF20120629-N4	50	63	10520	7/9/2012 2:31:10 PM	7.18
51-GBF20120629-N5	51	86	10510	7/9/2012 2:40:13 PM	7.05
52-GBF20120629-N6	52	79	10502	7/9/2012 2:40:13 PM	7.11
53-GBF20120629-N1	53	68	10517	7/9/2012 2:40:13 PM	6.9

Background Report

Batch Name: Batch_1884
Procedure: BACKGROUND
Calibration: DAILY BKG CHECK

Count Date: 7/6/2012 2:38:20 PM
Preset Count Time: 60000
Count Mode: Simultaneous

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
51	1.5000E-001 +/- 1.2247E-002	1.3750E+000 +/- 3.7081E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
52	1.0700E-001 +/- 1.0344E-002	1.1480E+000 +/- 3.3882E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
53	1.0700E-001 +/- 1.0344E-002	1.3970E+000 +/- 3.7376E-002

Batch Name: Batch_1886
Procedure: BACKGROUND
Calibration: DAILY BKG CHECK

Count Date: 7/6/2012 2:38:19 PM
Preset Count Time: 60000
Count Mode: Simultaneous

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
43	1.6200E-001 +/- 1.2728E-002	1.1560E+000 +/- 3.4000E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
44	1.1100E-001 +/- 1.0536E-002	9.9000E-001 +/- 3.1464E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
45	1.4100E-001 +/- 1.1874E-002	1.7460E+000 +/- 4.1785E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
46	2.3300E-001 +/- 1.5264E-002	9.8400E-001 +/- 3.1369E-002

Batch Name: Batch_1885
Procedure: BACKGROUND
Calibration: DAILY BKG CHECK

Count Date: 7/6/2012 2:38:16 PM
Preset Count Time: 60000
Count Mode: Simultaneous

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
47	9.4000E-002 +/- 9.6954E-003	1.1670E+000 +/- 3.4161E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
48	1.6500E-001 +/- 1.2845E-002	2.0860E+000 +/- 4.5673E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
49	3.3300E-001 +/- 1.8248E-002	1.3450E+000 +/- 3.6674E-002

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
50	2.0500E-001 +/- 1.4318E-002	1.4600E+000 +/- 3.8210E-002

Batch Name: Batch_1887
Procedure: BACKGROUND
Calibration: DAILY BKG CHECK

Count Date: 7/6/2012 2:38:16 PM
Preset Count Time: 60000
Count Mode: Simultaneous

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
39	7.8000E-002 +/- 8.8318E-003	1.2476E+001 +/- 1.1170E-001

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
40	2.5300E-001 +/- 1.5906E-002	1.2552E+001 +/- 1.1204E-001

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
41	2.7170E+000 +/- 5.2125E-002	3.6681E+002 +/- 6.0564E-001

Calculated Background (cpm)		
Detector Name	Alpha Bkg Rate (cpm)	Beta Bkg Rate (cpm)
42	2.0500E-001 +/- 1.4318E-002	9.9000E+000 +/- 9.9499E-002

Pace Analytical Services, Inc.-Pittsburgh
 Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
CAF	40	CAF-20120629-N07	20120629	30	6/26/12	RL	5	10000 cpo
	50	-N08		↓				
	50	-N07		30	6/26/12 1556			
	41	-N08		↓				
	41	-N07		↓	6:50			
CAF	20	CAF-20120629-N1	Filtered	20	7/2/12	RL	nd	nd
	33	-N4		↓				
	36	GBF-20120629-N4		10				
	36	-N5		10	7/2/12			
	37	-N4		↓				
	37	CAF-20120629-N4		150	7/2/12 9:43	RL	nd	nd
	1	GBF-20120629-N1	filtered	15	7/2/12 1021	RL	nd	nd
	2	-N2		↓				
	3	-N3		↓				
	4	-N4		↓				
	8	-N5		↓				
	9	-N6		↓				
	7	-N1		15	7/2/12 1044	RL	MA	MA
	16	-N2		10	7/2/12 1045			
	17	-N3		↓				
	19	-N4		↓				
	20	-N5		↓				
	23	-N6		↓				
	25	-N1		↓	7/2/12 1101	RL	nd	nd

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
6ABF	26	GBF-20120629-N2	Filter Cal	10	7/2/12 1100	R	NA	
	31	-N3						
	33	-N4						
	34	-N5						
	38	-N6						
	15	N4			7/2/12 1113			
	28	N5						
	29	N6						
GA	39	89GA Cal 20120629-N10	GA Cal C	15	7/2/12 1330	R	NA	
CAP	19	CAF-20120629-N2	Filter Cal	150	7/2/12	R	NA	
	34	-N3						
	36	-N4						
	37	-N6						
	38	-N6						
	14	-N5						
	39	-N1						
	40	40-GA20120629-N10	GA Cal D	15	7/2/12	R	NA	
	41	-N10						
	42	-N10						
	47	-N10						
	48	-N10						
	49	-N10						
	50	-N10						

- Legend:
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Peer Review SEL Date: 7/2/12

Pace Analytical Services, Inc. -Pittsburgh
 Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
GAF	11	GBF-20120629-N1	FiltuCal	10	7/3/12	R	NA	NA
	12	↓ - N2		↓				
	16	GAF- N3		150				
	17	↓ - N4		↓				
	18	GBF- N6		10				
	21	↓ - N4		↓				
	22	↓ - N5		↓				
	23	GAF- N6		150				
	27	GBF- N3		10				
	41	41-GA 20120614-N07	GA200614Cal	25	7/3/12	R	NA	<10000 cto
	11	GAF- 20120629-N1	FiltuCal	150	7/3/12 951	R	NA	NA
	12	↓ - N2		↓				
	18	↓ - N5		↓				
	30	GBF- 20120629-N1		10				
	32	↓ - N2		↓				
	34	SR89 20120516-N6	SR89 20120516	15	7/3/12 956	R	NA	NA
	37	TU 2012 0619 N3	Tu Cal	↓	↓ 958	↓	↓	↓
	20	TAR 20120611-N1		3				
	21	↓ - N2		↓				
	22	↓ - N3		↓				
	25	↓ - N4		↓				
	26	↓ - N5		↓				
	27	↓ - N6		↓				
	28	↓ - N7		↓				

- Legend:
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Pace Analytical Services, Inc. -Pittsburgh
 Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
TAR	38	TAR20120614-N3	FILTED	3	7/3/12 1056	Ch	NA	
GBF	14	GBF20120629-N1	FILTED	10	7/3/12 1042			
TAR	20	TAR20120614-N3	TARCD	3	1101			
	21							
	22							
	25							
	26							
	27							
	28							
	33							
	37							
	38							
	20				1107			
	21							
	22							
	25							
	26							
	27							
	28							
	33							
	37							
	38							
GBF	32	GBF-20120629-N6	FILTED	150	1337			
	14				1425			

- Legend:
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Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
	15	CAF-20100629-N2	Filter Cal	150	7/3/12 1402	R	nd	nd
	29	- N3			1456			
	30	- N4			1425			
	31	- N5			↓			
SR	1	MB	SR KC MIN DL	90	7/5/12 0733	Q	N/A	N/A
	2	W01						
	3	2						
	4	3						
	7	4						
	8	MB	SR QUM DL					
	9	W01						
SR	33	W02	SR DS MIN DL	90	7/5/12 0820	Q	N/A	N/A
	34	3						
	26	4						
UMB	11	3072341001	6AB1205Z					
	12	391						
	13	421						
	14	W012252						
	15	W01						
	16	3072341001						
	17	460307	6AB12534					
	19	W013524						
	22	W01						
	24	3072347021						

- Legend:
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Pace Analytical Services, Inc.-Pittsburgh
 Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
Sr	1	4161358	SR 12565	90	7/9/12 0915	C	N/A	N/A
	2	3070448001						
	3	10						
	4	12						
	7	3073131001						
	8	172258						
	9	172310						
Sr	1	3073240001	SR 12565	90	7/9/12 1045	C	N/A	N/A
	2	72559						
	3	72343						
	7	72307						
	7	60 13565						
	8	608						
GR	29	5066 2020059 N1	GBFC01	15	7/9/12 1401	C	N/A	N/A
	40	40						
	41	41						
	42	42						
	43	43						
	44	44						
	45	45			7/9/12 1430	C	N/A	N/A
	46	46						
	47	47						
	48	48						
	49	49						

- Legend:
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Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GPF	50	50-GPF00124629-N7	GPF001	15	7/9/12 1430	Q	not	NA
	51	51-N5			1440			
	52	52-N6						
	53	53-N1						
	39	39-GAF00100091-N1	GAF001	150	7/9/12 1456	Q	NA	NA
	40	40-N2						
	42	42-N3						
	43	43-N4						
	44	44-N5						
	45	45-N6						
GFB	12	12-12450	GFB12450	90	7/10/12 0720	Q	N/A	N/A
	13	13-13207						
	14	14-13527	GFB13527					
	16	16-13527						
	17	17-307225500102						
	18	18-3072240001	SR12565					
	19	19-72293						
	20	20-72207						
	21	21-704806						
	22	22-704806						
	25	25-704806						
	27	27-13565						
	28	28-13565						
	33	33-461243	SR12565					

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
6B	52	52-6870020614-N16	6800E	15	7/10/12	AN	NA	
	53	-N7						
	43	-N4			7/10/12 1030	AN	NA	
	44	-N1						
	45	-N2						
	46	-N3						
	51	-N8						
	52	-N5						
	53	-N6						
	43	-N3			7/16/12 1059	AN	NA	
	44	-N4						
	45	-N1						
	46	-N2						
	51	-N7						
	52	-N8						
	53	-N5						
	43	-N2			7/16/12 1055	AN	NA	
	44	-N3						
	45	-N4						
	46	-N1						
	51	-N6						
	52	-N7						
	53	-N8						
	42	42-6870020614-N5	CAF Cal	200	7/10/12	AN	NA	Accurate

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
 Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
CAF	47	47-CAF20100629-N1	CAF cal	150	7/10/12 1039	A	NA	not
	48	-N2						
	49	-N3						
	50	-N4						
GB	43	43-GB20120614-N5	GB cal	15	7/10/12 1107			
	44	-N6						
	45	-N7						
	46	-N8						
	51	-N1						
	52	-N2						
	53	-N3						
	43	-N8			1123			
	44	-N5						
	45	-N6						
	46	-N7						
	51	-N4						
	52	-N1						
	53	-N2						
	43	-N7			1151			
	44	-N8						
	45	-N5						
	46	-N6						
	51	-N3						
	52	-N4						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/time	Analyst	Re-Analysis Code	Comments
GAS	11	GA 00120614 -N03	GACal	23	7/11/12 1053	AL	nd	
	12	-N04		23	7/11/12 1030-1050			
	13	-N05						
	14	-N05						
	15	-N06			1130			
	16	-N07						
	17	-N08		23	7/11/12 1020			
	18	-N08		23	1112			
	19	-N10		23	1127			
	20	-N09		23	1032			
	21	-N03		23	7/11/12 1020			
	22	-N04			1112			
	23	-N06		23	1106			
	24	-N07		23	1102			
	25	-N08		23	1050-1050			
	26	-N01		20	7/11/12			
	27	-ND1		20	1106			
CAF	46	46-CAF20120629-N06	CAF Cal	150	7/11/12	AL	nd	
GAS	49	LS41-12455	12455	90	7/10/12 1438	AL	nd	
	50	LS42-12455						
GAS	43	48962	12455	300	7/10/12	AL	nd	
	44	3072058021						
	45	082						
	46	033						
	47	024						

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Peer Review AL Date: 7/11/12

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
GAB	23	CAF 20120614-N8	CAF Cal	23	7/11/12 1539	DL	NA	NA
	25	-N1						
	26	-N10						
	27	-N3						
	19	-N3			10:07			
	20	-N4						
	21	-N5						
	22	-N6						
	23	-N7						
	25	-N8						
	26	-N1						
	27	-N10						
	14	-N10			1633			
	20	-N3						
	21	-N4						
	22	-N5						
	23	-N6						
	25	-N7						
	26	-N8						
	27	-N1						
BE	13	CAF-20120629-N3	CAF Cal	10	7/11/12 061430	DL	NA	NA
AP	13	CAF-20120629-N3	CAF Cal	150	1436			
NS	32	4626148	N1	180	DC 7/11/12 1800	DL	NA	NA
	35	307298001		1				

Page 303 of 415

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Pace Analytical Services, Inc.-Pittsburgh
Gas Flow Proportional Counter Run Log

Logbook ID 24-R002-3

Analysis	Detector #	Sample ID	Batch ID	Count Time (min)	Count Start date/ time	Analyst	Re-Analysis Code	Comments
GF	2	GAF-20120609-N5	GAF04	210	7/11/12 11:26	R	NA	
	8	- N6		↓				
	21	- N1		150				
	22	- N2		↓				
	27	- N4		↓				
	20	458971	GAB12459	120	7/11/12 17:10		NA	NA
	23	3072058101			↓			
	13	3072060001			17:18			
	19				20:53			
	13							
	14							
	15							
	16							
	18							
	19							
	20							
	23							
	27							
	28							
	30							
	33							
	34							
	35							
	36							
	37							

- Legend:
- 1. Detector daily check failure
 - 2. MDC > Contract RL
 - 3. Sample re-ingrowth
 - 4. Sample was re-prepped
 - 5. Other noted comments

Gross Alpha and Beta Laboratory Control Sample Documentation

Laboratory Control Sample Preparation for Gross Alpha and Beta Smear Counting

Date: 7/2/2012

Source Preparation Analyst: JLK

LCS Preparation Details:

Four smears were centered onto four engraved planchets. Onto each filter, 40 uL of Pace Th-230 standard 12-018 was evenly distributed over the entire filter and allowed to air dry. Additionally, onto each filter, 50 uL of Pace Sr-90/Y-90 standard 12-014 was evenly distributed over the entire filter and allowed to air dry.

Upon drying, two filters were counted for each batch of samples. The filters used were noted for reference, and the dpm/sample calculated to determine LCS/LCSD recovery.

Decay correction to the count date of each LCS was utilized in determining the final recovery.

Source ID	Amount Added (ml)	Source dpm/ml	Filter LCS dpm/sample
12-014 Sr/Y-90	0.050	208.78	10.439
12-018 Th-230	0.040	58.823	2.353



Pace Analytical Services, Inc.-PGH

Radiological Standards Dilution Logbook

Logbook ID: 2-R056-0

Standard ID: 12-018
 Parent Source: 85228-493
 Parent Conc: 3741.9175 Bq/g
 Reference Date: 7/13/2011 12:00

Nuclide: Th-230

Std Conc.: 26.497 pCi/ml
 Prepared By: JAL
 Prep Date: 4/25/12
 Expiration Date: 4/25/17

Balance ID: 88919
 Diluent: 0.5M HNO₃
 Diluent IDs: DLI2-1111 (1.0M HNO₃)

Conversions: 60 dpm = 1 dps
 1 Bq = 1 dps
 2.22 dpm = 1 pCi

Dilution Description:

diluted 0.0655g of 85228-493 to 250.0ml w/ 0.5M HNO₃
 (0.5M HNO₃ made by diluting 1.25ml of 1.0M HNO₃ to 250ml w/ DI water)
 JAL 4/25/12

Dilution Calculations:

$$0.0655g \left| \frac{3741.9175 Bq}{g} \right| \frac{60 dpm}{Bq} \left| \frac{pCi}{2.22 dpm} \right| \frac{1}{250.0 ml} = 26.497 pCi/ml$$

Container Tare Weight: _____
 Container + Standard Final Weight: _____

Balance ID: _____

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**

Analyst initials: _____ Date: _____

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

85228-493

5 mL Liquid in Flame Sealed Vial

Customer: Pace Analytical Services, Inc.
P.O. No.: PI-14763, Item 2

This standard radionuclide source was prepared gravimetrically from a master solution, calibrated by Eckert & Ziegler Analytics. The master solution was calibrated by liquid scintillation counting. Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Isotope	Half-Life, Days	Activity (Bq)	Uncertainty*, %			Reference Date (12:00 PM EST)
			u_A	u_B	U	
Th-230	2.753E+07	1.908E+04	0.1	0.9	1.8	07/13/2011

***Uncertainty:** U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

Comments:

Impurities: γ -impurities < 0.1 %, α -impurities < 0.01%. 5.09899 grams 0.5M HNO₃ solution.

Source Prepared by: _____

Z. Dimitrova, Radiochemist

QA Approved: _____

J. D. McCorvey, QA Manager Alternate

Date: _____

13-747-11





Pace Analytical Services, Inc.-PGH

Radiological Standards Dilution Logbook

Logbook ID: 2-R056-0

Standard ID: <u>12-014</u>	Nuclide: <u>Sr90</u>	Std Conc.: <u>47.02 pCi/ml</u>
Parent Source: <u>1404-58-1</u>		Prepared By: <u>JLK</u>
Parent Conc: <u>714.1 Bq/g</u>		Prep Date: <u>2/27/2012</u>
Reference Date: <u>12/1/2009 1400</u>		Expiration Date: <u>2/21/2017</u>
Balance ID: <u>88919</u>		Conversions: 60 dpm = 1 dps
Diluent: <u>0.1 N HCl</u>		1 Bq = 1 dps
Diluent IDs: <u>042-0130</u>		2.22 dpm = 1 pCi

Dilution Description:

diluted 0.6091g of 1404-58-1 to 250.0ml w/ 0.1 N HCl on 2/27/2012

Dilution Calculations:

$$0.6091 \text{ g} \left/ \frac{714.1 \text{ Bq}}{\text{g}} \right/ \frac{60 \text{ dpm}}{\text{Bq}} \left/ \frac{\text{pCi}}{2.22 \text{ dpm}} \right/ \frac{1}{250.0 \text{ ml}} = 47.02 \text{ pCi/ml}$$

(Sr90)

$$= 94.045 \text{ pCi/ml}$$

Beta (Sr + Y 90)

Container Tare Weight: _____
 Container + Standard Final Weight: _____

Balance ID: _____

Standard Final Disposal (circle one) **Consumed** **Destroyed** **Discarded**
 Analyst initials: _____ Date: _____

CERTIFICATE OF CALIBRATION

BETA STANDARD SOLUTION

Radionuclide:	Sr-90	Customer:	PACE ANALYTICAL	
Half-life:	28.5 ± 0.2 years	P.O. No.:	PI-12091	
Catalog No.:	7090	Reference Date:	1-Dec-09	12:00 PST
Source No.:	1404-58-1	Contained Radioactivity:	0.09651 μCi	3.571 kBq
		(Sr-90 only)		

Physical Description:

A. Mass of solution:	5.00022 g in 5 mL V-Vial
B. Chemical form:	SrCl ₂ in 0.1M HCl
C. Carrier content:	(10 μg Sr + 50 μg Y)/mL of solution
D. Density:	0.9996 g/mL @ 20°C

Radioimpurities:

None detected (Y-90 daughter in equilibrium)

Radionuclide Concentration: 0.01930 μCi/g, 0.7141 kBq/g**Method of Calibration:**

This source was prepared from a weighed aliquot of solution whose activity in μCi/g was determined using a liquid scintillation counter.

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 0.3 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.6 %
D. Total uncertainty at the 99% confidence level:	± 3.1 %

Notes:

- See reverse side for leak test(s) performed on this source.
- EZIP participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (as in NRC Regulatory Guide 4.15).
- Nuclear data was taken from NCRP Report No. 58, 1985.
- This solution has a working life of 5 years.


Quality Control5-NOV-09
Date

EZIP Ref. No.: 1404-58

ISO 9001 CERTIFIED

Gas Flow Proportional Routine Checks

Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	6/7/2009 3:46:02 PM	38	LONG BKG	0.048	0.3840	1000.0
LONG BKG 37	6/7/2009 3:45:55 PM	37	LONG BKG	0.079	0.3470	1000.0
LONG BKG 36	6/7/2009 3:45:49 PM	36	LONG BKG	0.070	0.4250	1000.0
LONG BKG 35	6/7/2009 3:45:42 PM	35	LONG BKG	0.096	1.3600	1000.0
LONG BKG 34	6/7/2009 3:45:36 PM	34	LONG BKG	0.082	0.4020	1000.0
LONG BKG 33	6/7/2009 3:45:30 PM	33	LONG BKG	0.090	0.3950	1000.0
LONG BKG 32	6/7/2009 3:45:24 PM	32	LONG BKG	0.037	0.3720	1000.0
LONG BKG 31	6/7/2009 3:45:17 PM	31	LONG BKG	0.059	0.3970	1000.0
LONG BKG 30	6/7/2009 3:45:08 PM	30	LONG BKG	0.074	0.3940	1000.0
LONG BKG 29	6/7/2009 3:45:02 PM	29	LONG BKG	0.040	0.2860	1000.0
LONG BKG 28	6/7/2009 3:44:56 PM	28	LONG BKG	0.049	0.3150	1000.0
LONG BKG 27	6/7/2009 3:44:51 PM	27	LONG BKG	0.052	0.3230	1000.0
LONG BKG 26	6/7/2009 3:44:45 PM	26	LONG BKG	0.058	0.4440	1000.0
LONG BKG 25	6/7/2009 3:44:40 PM	25	LONG BKG	0.103	0.4710	1000.0
LONG BKG 24	6/7/2009 3:44:34 PM	24	LONG BKG	0.082	0.3570	1000.0
LONG BKG 23	6/7/2009 3:44:29 PM	23	LONG BKG	0.039	0.5640	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	6/7/2009 3:44:22 PM	22	LONG BKG	0.046	0.3830	1000.0
LBKG 21	6/7/2009 3:44:18 PM	21	LONG BKG	0.070	0.4150	1000.0
LBKG 20	6/7/2009 3:44:12 PM	20	LONG BKG	0.044	0.3420	1000.0
LBKG 19	6/7/2009 3:44:07 PM	19	LONG BKG	0.031	0.5050	1000.0
LBKG 18	6/7/2009 3:44:01 PM	18	LONG BKG	0.055	0.3900	1000.0
LBKG 17	6/7/2009 3:43:56 PM	17	LONG BKG	0.072	0.3940	1000.0
LBKG 16	6/7/2009 3:43:52 PM	16	LONG BKG	0.047	0.4100	1000.0
LBKG 15	6/7/2009 3:43:48 PM	15	LONG BKG	0.072	0.4200	1000.0
LBKG 14	6/7/2009 3:43:44 PM	14	LONG BKG	0.034	0.3790	1000.0
LBKG 13	6/7/2009 3:43:40 PM	13	LONG BKG	0.027	0.2890	1000.0
LBKG 12	6/7/2009 3:43:37 PM	12	LONG BKG	0.084	0.3560	1000.0
LBKG 11	6/7/2009 3:43:32 PM	11	LONG BKG	0.035	0.4600	1000.0

Background Measurement
 C:\UMS\UTL0001\060709LB.BDT

Background Measurement Parameters:

User: JLK
 Preset Time: 1000:00
 Alpha Preset Error: 0.0%
 Voltage : 1650

Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 0.0%

Category List (cps)	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:
 Start Time: 06/07/2009 15:48:25
 Elapsed Time: 1000:00
 Guard: 851.1 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0320 (±17.7%)	1	0.7960 (±3.54%)	1
2	0.0420 (±15.4%)	1	0.5800 (±4.15%)	1
3	0.0420 (±15.4%)	1	0.5260 (±4.36%)	1
4	0.0830 (±11.0%)	1	0.5870 (±4.13%)	1
5	0.0660 (±12.3%)	1	4.3740 (±1.51%)	3
6	0.0550 (±13.5%)	1	0.8590 (±3.41%)	1
7	0.1430 (±8.36%)	1	0.6010 (±4.08%)	1
8	0.0490 (±14.3%)	1	0.5990 (±4.09%)	1
9	0.0480 (±14.4%)	1	0.5860 (±4.13%)	1
10	0.0790 (±11.3%)	1	0.8130 (±3.51%)	1



Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	7/22/2009 12:16:21	38	LONG BKG	0.049	0.3740	1000.0
LONG BKG 37	7/21/2009 16:40:35	37	LONG BKG	0.053	0.3820	1000.0
LONG BKG 36	7/21/2009 16:40:30	36	LONG BKG	0.069	0.3810	1000.0
LONG BKG 35	7/21/2009 16:40:24	35	LONG BKG	0.107	0.5200	1000.0
LONG BKG 34	7/21/2009 16:40:15	34	LONG BKG	0.066	0.4240	1000.0
LONG BKG 33	7/21/2009 16:40:10	33	LONG BKG	0.094	0.3840	1000.0
LONG BKG 32	7/21/2009 16:40:04	32	LONG BKG	0.037	0.3760	1000.0
LONG BKG 31	7/21/2009 16:39:58	31	LONG BKG	0.047	0.4260	1000.0
LONG BKG 30	7/21/2009 16:39:51	30	LONG BKG	0.067	0.3790	1000.0
LONG BKG 29	7/21/2009 16:39:44	29	LONG BKG	0.031	0.2830	1000.0
LONG BKG 28	7/21/2009 16:39:37	28	LONG BKG	0.047	0.3200	1000.0
LONG BKG 27	7/21/2009 16:39:28	27	LONG BKG	0.041	0.3070	1000.0
LONG BKG 25	7/21/2009 16:39:20	25	LONG BKG	0.125	0.4670	1000.0
LONG BKG 26	7/21/2009 16:39:20	26	LONG BKG	0.034	0.4700	1000.0
LONG BKG 24	7/21/2009 16:39:05	24	LONG BKG	0.070	0.3660	1000.0
LONG BKG 23	7/21/2009 16:38:59	23	LONG BKG	0.047	0.5060	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	7/21/2009 16:38:52	22	LONG BKG	0.030	0.3800	1000.0
LBKG 21	7/21/2009 16:38:52	21	LONG BKG	0.064	0.4010	1000.0
LBKG 20	7/21/2009 16:38:39	20	LONG BKG	0.046	0.3500	1000.0
LBKG 19	7/21/2009 16:38:32	19	LONG BKG	0.029	0.5040	1000.0
LBKG 18	7/21/2009 16:38:24	18	LONG BKG	0.067	0.3850	1000.0
LBKG 17	7/21/2009 16:38:17	17	LONG BKG	0.057	0.3600	1000.0
LBKG 16	7/21/2009 16:38:10	16	LONG BKG	0.040	0.4360	1000.0
LBKG 15	7/21/2009 16:38:06	15	LONG BKG	0.066	0.4190	1000.0
LBKG 14	7/21/2009 16:38:01	14	LONG BKG	0.025	0.4240	1000.0
LBKG 13	7/21/2009 16:37:58	13	LONG BKG	0.033	0.3290	1000.0
LBKG 12	7/21/2009 16:37:54	12	LONG BKG	0.091	0.3420	1000.0
LBKG 11	7/21/2009 16:37:50	11	LONG BKG	0.031	0.3980	1000.0

Sample Measurement
 C:\UMS\UTL0001\LB072209.SDT

Sample Measurement Parameters:

Comment: LONG BKG
 User: ATB
 Preset Time: 1000:00
 Alpha Preset Error: 1.0%
 User Protocol: GAB

Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 1.0%

Cycle 1 of 1
 Start Time: 07/22/2009 12:10:06
 Elapsed Time: 1000:00
 Guard: 845.7 cpm

Spl #	Sample Name	Alpha (raw cpm)	MDA	MRA	Beta (raw cpm)	MDA	MRA
1	2796 BKG	0.0410 (±15.6%)	0.0006	0.0003	0.7840 (±3.57%)	0.0023	0.0011
2	2762 BKG	0.0480 (±14.4%)	0.0005	0.0003	0.5910 (±4.11%)	0.0019	0.0009
3	2762 BKG	0.0610 (±12.8%)	0.0007	0.0003	0.7500 (±3.65%)	0.0020	0.0010
4	2762 BKG	0.0890 (±10.6%)	0.0009	0.0004	0.7310 (±3.70%)	0.0021	0.0010
5	3121 BKG	0.0470 (±14.6%)	0.0006	0.0003	3.0190 (±1.82%)	0.0076	0.0038
6	2866 BKG	0.0510 (±14.0%)	undef.	undef.	0.9060 (±3.32%)	undef.	undef.
7	2797 BKG	0.1370 (±8.54%)	0.0009	0.0004	0.6370 (±3.96%)	0.0022	0.0011
8	2795 BKG	0.0490 (±14.3%)	0.0009	0.0004	0.6050 (±4.07%)	0.0022	0.0011
9	2795 BKG	0.0550 (±13.5%)	0.0007	0.0003	0.6260 (±4.00%)	0.0022	0.0011
10	2795 BKG	0.0450 (±14.9%)	0.0006	0.0003	0.7880 (±3.56%)	0.0024	0.0012

Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 36	8/30/2009 15:43:17	36	LONG BKG	0.073	0.4070	1000.0
LONG BKG 38	8/30/2009 15:43:11	38	LONG BKG	0.049	0.3920	1000.0
LONG BKG 37	8/30/2009 15:43:06	37	LONG BKG	0.149	0.3450	1000.0
LONG BKG 35	8/30/2009 15:42:58	35	LONG BKG	0.110	0.5410	1000.0
LONG BKG 34	8/30/2009 15:42:46	34	LONG BKG	0.058	0.4090	1000.0
LONG BKG 33	8/30/2009 15:42:42	33	LONG BKG	0.089	0.3970	1000.0
LONG BKG 32	8/30/2009 15:42:37	32	LONG BKG	0.034	0.3270	1000.0
LONG BKG 31	8/30/2009 15:42:31	31	LONG BKG	0.080	0.4120	1000.0
LONG BKG 30	8/30/2009 15:42:23	30	LONG BKG	0.074	0.3760	1000.0
LONG BKG 29	8/30/2009 15:42:14	29	LONG BKG	0.033	0.2920	1000.0
LONG BKG 28	8/30/2009 15:41:54	28	LONG BKG	0.041	0.2890	1000.0
LONG BKG 27	8/30/2009 15:41:46	27	LONG BKG	0.028	0.3380	1000.0
LONG BKG 26	8/30/2009 15:41:46	26	LONG BKG	0.054	0.3990	1000.0
LONG BKG 25	8/30/2009 15:41:32	25	LONG BKG	0.126	0.4510	1000.0
LONG BKG 24	8/30/2009 15:41:26	24	LONG BKG	0.199	0.3910	1000.0
LONG BKG 23	8/30/2009 15:41:20	23	LONG BKG	0.045	0.4510	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	8/30/2009 15:41:14	22	LONG BKG	0.027	0.3600	1000.0
LBKG 21	8/30/2009 15:41:06	21	LONG BKG	0.063	0.3680	1000.0
LBKG 20	8/30/2009 15:41:01	20	LONG BKG	0.042	0.3370	1000.0
LBKG 19	8/30/2009 15:40:56	19	LONG BKG	0.023	0.4950	1000.0
LBKG 18	8/30/2009 15:40:49	18	LONG BKG	0.060	0.3700	1000.0
LBKG 17	8/30/2009 15:40:44	17	LONG BKG	0.049	0.3300	1000.0
LBKG 16	8/30/2009 15:40:41	16	LONG BKG	0.040	0.3910	1000.0
LBKG 15	8/30/2009 15:40:41	15	LONG BKG	0.051	0.4110	1000.0
LBKG 14	8/30/2009 15:40:41	14	LONG BKG	0.027	0.3950	1000.0
LBKG 13	8/30/2009 15:40:25	13	LONG BKG	0.046	0.2750	1000.0
LBKG 12	8/30/2009 15:40:22	12	LONG BKG	0.094	0.3450	1000.0
LBKG 11	8/30/2009 15:40:19	11	LONG BKG	0.016	0.3850	1000.0

Background Measurement
 C:\UMS\UTL0001\LB83010.BDT

Background Measurement Parameters:

User: JLK
 Preset Time: 1000:00
 Alpha Preset Error: 0.0%
 Voltage : 1650

Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 0.0%

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 08/30/2009 15:51:05

Elapsed Time: 1000:00
 Guard: 846.3 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0830 (±11.0%)	1	0.8790 (±3.37%)	1
2	0.0320 (±17.7%)	1		3
3	0.0590 (±13.0%)	1	0.9610 (±3.23%)	1
4	0.0790 (±11.3%)	1	0.7180 (±3.73%)	1
5	0.0500 (±14.1%)	1	2.6760 (±1.93%)	3
6	0.0890 (±10.6%)	1	1.0260 (±3.12%)	2
7	0.0850 (±10.8%)	1	0.6610 (±3.89%)	1
8	0.0550 (±13.5%)	1	0.6450 (±3.94%)	1
9	0.0470 (±14.6%)	1	0.6430 (±3.94%)	1
10	0.0410 (±15.6%)	1	0.7740 (±3.59%)	1



Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	10/11/2009 17:28:45	38	LONG BKG	0.039	0.3770	1000.0
LONG BKG 37	10/11/2009 17:28:40	37	LONG BKG	0.125	0.3810	1000.0
LONG BKG 36	10/11/2009 17:28:35	36	LONG BKG	0.058	0.3520	1000.0
LONG BKG 35	10/11/2009 17:28:30	35	LONG BKG	0.149	0.3430	1000.0
LONG BKG 34	10/11/2009 17:28:25	34	LONG BKG	0.080	0.4090	1000.0
LONG BKG 33	10/11/2009 17:28:20	33	LONG BKG	0.090	0.3660	1000.0
LONG BKG 32	10/11/2009 17:28:16	32	LONG BKG	0.033	0.3330	1000.0
LONG BKG 31	10/11/2009 17:28:11	31	LONG BKG	0.056	0.4010	1000.0
LONG BKG 30	10/11/2009 17:28:05	30	LONG BKG	0.072	0.3260	1000.0
LONG BKG 29	10/11/2009 17:28:01	29	LONG BKG	0.035	0.2740	1000.0
LONG BKG 28	10/11/2009 17:27:56	28	LONG BKG	0.040	0.2910	1000.0
LONG BKG 27	10/11/2009 17:27:51	27	LONG BKG	0.035	0.3150	1000.0
LONG BKG 26	10/11/2009 17:27:46	26	LONG BKG	0.036	0.4840	1000.0
LONG BKG 25	10/11/2009 17:27:45	25	LONG BKG	0.104	0.4190	1000.0
LONG BKG 24	10/11/2009 17:27:45	24	LONG BKG	0.042	0.3440	1000.0
LONG BKG 23	10/11/2009 17:27:45	23	LONG BKG	0.045	0.5210	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	10/11/2009 17:27:31	22	LONG BKG	0.035	0.3600	1000.0
LBKG 21	10/11/2009 17:27:27	21	LONG BKG	0.070	0.3980	1000.0
LBKG 20	10/11/2009 17:27:24	20	LONG BKG	0.041	0.3310	1000.0
LBKG 19	10/11/2009 17:27:24	19	LONG BKG	0.023	0.4500	1000.0
LBKG 18	10/11/2009 17:27:24	18	LONG BKG	0.060	0.3860	1000.0
LBKG 17	10/11/2009 17:27:11	17	LONG BKG	0.034	0.3660	1000.0
LBKG 16	10/11/2009 17:27:11	16	LONG BKG	0.035	0.4130	1000.0
LBKG 15	10/11/2009 17:27:11	15	LONG BKG	0.056	0.3850	1000.0
LBKG 14	10/11/2009 17:27:11	14	LONG BKG	0.044	0.3630	1000.0
LBKG 13	10/11/2009 17:26:59	13	LONG BKG	0.024	0.3190	1000.0
LBKG 12	10/11/2009 17:26:55	12	LONG BKG	0.087	0.3490	1000.0
LBKG 11	10/11/2009 17:26:33	11	LONG BKG	0.023	0.4130	1000.0

Background Measurement
 C:\UMS\UTL0001\LB101109.BDT

Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 0.0%

Background Measurement Parameters:

User: JLK
 Preset Time: 1000:00
 Alpha Preset Error: 0.0%
 Voltage : 1650

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 10/11/2009 17:17:32

Elapsed Time: 1000:00
 Guard: 847.1 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0450 (±14.9%)	1	0.7530 (±3.64%)	1
2	0.0310 (±18.0%)	1	0.5300 (±4.34%)	1
3	0.0260 (±19.6%)	1	0.6120 (±4.04%)	1
4	0.0770 (±11.4%)	1	0.6990 (±3.78%)	1
5	0.0350 (±16.9%)	1	4.8510 (±1.44%)	3
6	0.0470 (±14.6%)	1	0.9270 (±3.28%)	1
7	0.0710 (±11.9%)	1	0.6550 (±3.91%)	1
8	0.0370 (±16.4%)	1	0.5680 (±4.20%)	1
9	0.0570 (±13.2%)	1	0.5940 (±4.10%)	1
10	0.0330 (±17.4%)	1	0.8550 (±3.42%)	1



Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	11/17/2009 16:47:20	38	LONG BKG	0.040	0.3340	1000.0
LONG BKG 37	11/17/2009 16:47:09	37	LONG BKG	0.164	0.3290	1000.0
LONG BKG 36	11/17/2009 16:47:04	36	LONG BKG	0.067	0.3430	1000.0
LONG BKG 35	11/17/2009 16:46:59	35	LONG BKG	0.093	0.4140	1000.0
LONG BKG 34	11/17/2009 16:46:55	34	LONG BKG	0.082	0.4290	1000.0
LONG BKG 33	11/17/2009 16:46:51	33	LONG BKG	0.088	0.3710	1000.0
LONG BKG 32	11/17/2009 16:46:46	32	LONG BKG	0.029	0.3820	1000.0
LONG BKG 31	11/17/2009 16:46:41	31	LONG BKG	0.074	0.3770	1000.0
LONG BKG 30	11/17/2009 16:46:34	30	LONG BKG	0.064	0.4120	1000.0
LONG BKG 29	11/17/2009 16:46:29	29	LONG BKG	0.024	0.2660	1000.0
LONG BKG 28	11/17/2009 16:46:24	28	LONG BKG	0.049	0.2750	1000.0
LONG BKG 27	11/17/2009 16:46:19	27	LONG BKG	0.052	0.3610	1000.0
LONG BKG 26	11/17/2009 16:46:14	26	LONG BKG	0.047	0.4500	1000.0
LONG BKG 25	11/17/2009 16:46:11	25	LONG BKG	0.090	0.4010	1000.0
LONG BKG 24	11/17/2009 16:46:06	24	LONG BKG	0.045	0.3630	1000.0
LONG BKG 23	11/17/2009 16:46:02	23	LONG BKG	0.032	0.4810	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	11/17/2009 16:45:58	22	LONG BKG	0.034	0.3710	1000.0
LBKG 21	11/17/2009 16:45:55	21	LONG BKG	0.054	0.4140	1000.0
LBKG 20	11/17/2009 16:45:50	20	LONG BKG	0.034	0.3550	1000.0
LBKG 19	11/17/2009 16:45:46	19	LONG BKG	0.021	0.4590	1000.0
LBKG 18	11/17/2009 16:45:40	18	LONG BKG	0.084	0.4080	1000.0
LBKG 17	11/17/2009 16:45:37	17	LONG BKG	0.049	0.3460	1000.0
LBKG 16	11/17/2009 16:45:33	16	LONG BKG	0.033	0.3850	1000.0
LBKG 15	11/17/2009 16:45:30	15	LONG BKG	0.043	0.4140	1000.0
LBKG 14	11/17/2009 16:45:27	14	LONG BKG	0.045	0.4060	1000.0
LBKG 13	11/17/2009 16:45:24	13	LONG BKG	0.029	0.3150	1000.0
LBKG 12	11/17/2009 16:45:20	12	LONG BKG	0.088	0.3430	1000.0
LBKG 11	11/17/2009 16:45:17	11	LONG BKG	0.033	0.4390	1000.0

Background Measurement
C:\UMS\UTL0001\LB111709.BDT

Background Measurement Parameters:

User: CMC Instrument Name: LB770PC
Preset Time: 1000:00 Cycles: 1
Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 11/17/2009 9:09:33 Elapsed Time: 1000:00
Guard: 852.4 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0380 (±16.2%)	1	0.9550 (±3.24%)	1
2	0.0420 (±15.4%)	1	0.6070 (±4.06%)	1
3	0.0400 (±15.8%)	1	0.6140 (±4.04%)	1
4	0.0820 (±11.0%)	1	0.6330 (±3.97%)	1
5	0.0420 (±15.4%)	1	2.9940 (±1.83%)	3
6	0.0440 (±15.1%)	1	1.0590 (±3.07%)	2
7	0.0860 (±10.8%)	1	0.6820 (±3.83%)	1
8	0.0320 (±17.7%)	1	0.5530 (±4.25%)	1
9	0.0530 (±13.7%)	1	0.6520 (±3.92%)	1
10	0.0390 (±16.0%)	1	0.8560 (±3.42%)	1

Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	12/24/2009 12:24:03	38	LONG BKG	0.038	0.4660	1000.0
LONG BKG 37	12/24/2009 12:24:00	37	LONG BKG	0.133	0.3780	1000.0
LONG BKG 36	12/24/2009 12:23:56	36	LONG BKG	0.045	0.3760	1000.0
LONG BKG 35	12/24/2009 12:23:52	35	LONG BKG	0.082	0.4110	1000.0
LONG BKG 34	12/24/2009 12:23:47	34	LONG BKG	0.048	0.4810	1000.0
LONG BKG 33	12/24/2009 12:23:44	33	LONG BKG	0.096	0.4100	1000.0
LONG BKG 32	12/24/2009 12:23:41	32	LONG BKG	0.032	0.3840	1000.0
LONG BKG 31	12/24/2009 12:23:37	31	LONG BKG	0.055	0.4390	1000.0
LONG BKG 30	12/24/2009 12:23:32	30	LONG BKG	0.078	0.4110	1000.0
LONG BKG 29	12/24/2009 12:23:28	29	LONG BKG	0.032	0.3360	1000.0
LONG BKG 28	12/24/2009 12:23:24	28	LONG BKG	0.048	0.2930	1000.0
LONG BKG 27	12/24/2009 12:23:20	27	LONG BKG	0.031	0.2720	1000.0
LONG BKG 26	12/24/2009 12:23:16	26	LONG BKG	0.097	0.4020	1000.0
LONG BKG 25	12/24/2009 12:23:14	25	LONG BKG	0.097	0.4350	1000.0
LONG BKG 24	12/24/2009 12:23:14	24	LONG BKG	0.042	0.3540	1000.0
LONG BKG 23	12/24/2009 12:23:14	23	LONG BKG	0.034	0.5200	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	12/24/2009 12:23:02	22	LONG BKG	0.038	0.4010	1000.0
LBKG 21	12/24/2009 12:22:59	21	LONG BKG	0.069	0.4010	1000.0
LBKG 20	12/24/2009 12:22:55	20	LONG BKG	0.044	0.3670	1000.0
LBKG 19	12/24/2009 12:22:46	19	LONG BKG	0.027	0.4710	1000.0
LBKG 18	12/24/2009 12:22:42	18	LONG BKG	0.042	0.3950	1000.0
LBKG 17	12/24/2009 12:22:39	17	LONG BKG	0.052	0.3580	1000.0
LBKG 16	12/24/2009 12:22:36	16	LONG BKG	0.034	0.3710	1000.0
LBKG 15	12/24/2009 12:22:33	15	LONG BKG	0.054	0.4280	1000.0
LBKG 14	12/24/2009 12:22:29	14	LONG BKG	0.039	0.3760	1000.0
LBKG 13	12/24/2009 12:22:27	13	LONG BKG	0.022	0.2950	1000.0
LBKG 11	12/24/2009 12:22:24	11	LONG BKG	0.030	0.3850	1000.0
LBKG 12	12/24/2009 12:22:24	12	LONG BKG	0.079	0.3850	1000.0

Background Measurement
 C:\UMS\UTL0001\LB122409.BDT

Background Measurement Parameters:

User: ATB	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 12/24/2009 12:37:22	Elapsed Time: 1000:00
	Guard: 857.6 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0430 (±15.2%)	1	0.8700 (±3.39%)	1
2	0.0410 (±15.6%)	1	0.6550 (±3.91%)	1
3	0.0250 (±20.0%)	1	0.6240 (±4.00%)	1
4	0.0830 (±11.0%)	1	0.6470 (±3.93%)	1
5	0.0310 (±18.0%)	1	1.8600 (±2.32%)	2
6	0.0590 (±13.0%)	1	5.2020 (±1.39%)	3
7	0.1290 (±8.80%)	1	0.6810 (±3.83%)	1
8	0.0480 (±14.4%)	1	0.5930 (±4.11%)	1
9	0.0520 (±13.9%)	1	0.6880 (±3.81%)	1
10	0.0420 (±15.4%)	1	0.8060 (±3.52%)	1

Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	1/29/2010 1:26:23 PM	38	LONG BKG	0.066	0.4590	1000.0
LONG BKG 37	1/29/2010 1:26:19 PM	37	LONG BKG	0.150	0.3880	1000.0
LONG BKG 36	1/29/2010 1:26:15 PM	36	LONG BKG	0.094	0.3930	1000.0
LONG BKG 35	1/29/2010 1:26:11 PM	35	LONG BKG	0.097	0.3660	1000.0
LONG BKG 34	1/29/2010 1:26:06 PM	34	LONG BKG	0.061	0.4210	1000.0
LONG BKG 33	1/29/2010 1:26:02 PM	33	LONG BKG	0.123	0.3810	1000.0
LONG BKG 32	1/29/2010 1:25:59 PM	32	LONG BKG	0.056	0.3840	1000.0
LONG BKG 31	1/29/2010 1:25:55 PM	31	LONG BKG	0.105	0.3960	1000.0
LONG BKG 30	1/29/2010 1:25:50 PM	30	LONG BKG	0.081	0.3650	1000.0
LONG BKG 29	1/29/2010 1:25:46 PM	29	LONG BKG	0.060	0.3080	1000.0
LONG BKG 28	1/29/2010 1:25:43 PM	28	LONG BKG	0.072	0.2990	1000.0
LONG BKG 27	1/29/2010 1:25:39 PM	27	LONG BKG	0.052	0.3540	1000.0
LONG BKG 26	1/29/2010 1:25:32 PM	26	LONG BKG	0.090	0.4440	1000.0
LONG BKG 25	1/29/2010 1:25:28 PM	25	LONG BKG	0.128	0.4350	1000.0
LONG BKG 24	1/29/2010 1:25:24 PM	24	LONG BKG	0.062	0.3380	1000.0
LONG BKG 23	1/29/2010 1:25:20 PM	23	LONG BKG	0.058	0.5020	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	1/29/2010 1:25:16 PM	22	LONG BKG	0.054	0.3610	1000.0
LBKG 21	1/29/2010 1:25:13 PM	21	LONG BKG	0.084	0.3720	1000.0
LBKG 20	1/29/2010 1:25:09 PM	20	LONG BKG	0.086	0.3820	1000.0
LBKG 19	1/29/2010 1:25:06 PM	19	LONG BKG	0.037	0.4550	1000.0
LBKG 18	1/29/2010 1:25:00 PM	18	LONG BKG	0.061	0.4310	1000.0
LBKG 17	1/29/2010 1:24:58 PM	17	LONG BKG	0.066	0.3460	1000.0
LBKG 16	1/29/2010 1:24:54 PM	16	LONG BKG	0.057	0.4440	1000.0
LBKG 15	1/29/2010 1:24:51 PM	15	LONG BKG	0.067	0.4640	1000.0
LBKG 14	1/29/2010 1:24:48 PM	14	LONG BKG	0.063	0.4170	1000.0
LBKG 13	1/29/2010 1:24:47 PM	13	LONG BKG	0.067	0.3370	1000.0
LBKG 12	1/29/2010 1:24:44 PM	12	LONG BKG	0.107	0.4090	1000.0
LBKG 11	1/29/2010 1:24:42 PM	11	LONG BKG	0.038	0.4060	1000.0

Background Measurement
 C:\UMS\UTL0001\LB012910.BDT

Background Measurement Parameters:

User: CMC Instrument Name: LB770PC
 Preset Time: 1000:00 Cycles: 1
 Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
 Voltage : 1650

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 01/29/2010 10:56:26 Elapsed Time: 1000:00
 Guard: 863.5 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0610 (±12.8%)	1	0.9420 (±3.26%)	1
2	0.0530 (±13.7%)	1	0.5900 (±4.12%)	1
3	0.0420 (±15.4%)	1	0.6650 (±3.88%)	1
4	0.0940 (±10.3%)	1	0.6270 (±3.99%)	1
5	0.0670 (±12.2%)	1	1.8090 (±2.35%)	2
6	0.0950 (±10.3%)	1	2.6220 (±1.95%)	3
7	0.1320 (±8.70%)	1	0.6610 (±3.89%)	1
8	0.0550 (±13.5%)	1	0.5950 (±4.10%)	1
9	0.0640 (±12.5%)	1	0.6080 (±4.06%)	1
10	0.0510 (±14.0%)	1	0.8430 (±3.44%)	1

Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 30	3/6/2010 18:02:19	30	LONG BKG	0.084	0.3980	1000.0
LONG BKG 29	3/6/2010 18:00:09	29	LONG BKG	0.053	0.3640	1000.0
LONG BKG 28	3/6/2010 18:00:09	28	LONG BKG	0.061	0.2940	1000.0
LONG BKG 38	3/6/2010 17:59:59	38	LONG BKG	0.060	0.4080	1000.0
LONG BKG 37	3/6/2010 17:59:54	37	LONG BKG	0.150	0.3410	1000.0
LONG BKG 36	3/6/2010 17:59:49	36	LONG BKG	0.071	0.3530	1000.0
LONG BKG 35	3/6/2010 17:59:43	35	LONG BKG	0.124	0.3600	1000.0
LONG BKG 34	3/6/2010 17:59:38	34	LONG BKG	0.069	0.4350	1000.0
LONG BKG 33	3/6/2010 17:59:33	33	LONG BKG	0.104	0.3810	1000.0
LONG BKG 32	3/6/2010 17:59:30	32	LONG BKG	0.060	0.3870	1000.0
LONG BKG 31	3/6/2010 17:59:24	31	LONG BKG	0.207	0.4290	1000.0
LONG BKG 30	3/6/2010 17:59:17	110	LONG BKG	0.000	0.0000	0.0
LONG BKG 27	3/6/2010 17:59:08	27	LONG BKG	0.044	0.3060	1000.0
LONG BKG 26	3/6/2010 17:59:04	26	LONG BKG	0.088	0.4290	1000.0
LONG BKG 25	3/6/2010 17:59:00	25	LONG BKG	0.139	0.4450	1000.0
LONG BKG 24	3/6/2010 17:58:56	24	LONG BKG	0.047	0.3650	1000.0

2/3/8/10

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 23	3/6/2010 17:58:51	23	LONG BKG	0.048	0.4840	1000.0
LBKG 22	3/6/2010 17:58:47	22	LONG BKG	0.038	0.4160	1000.0
LBKG 21	3/6/2010 17:58:43	21	LONG BKG	0.073	0.3900	1000.0
LBKG 20	3/6/2010 17:58:39	20	LONG BKG	0.090	0.3780	1000.0
LBKG 19	3/6/2010 17:58:34	19	LONG BKG	0.040	0.5010	1000.0
LBKG 18	3/6/2010 17:58:28	18	LONG BKG	0.054	0.3910	1000.0
LBKG 17	3/6/2010 17:58:24	17	LONG BKG	0.068	0.3770	1000.0
LBKG 16	3/6/2010 17:58:21	16	LONG BKG	0.035	0.4510	1000.0
LBKG 15	3/6/2010 17:58:18	15	LONG BKG	0.062	0.3940	1000.0
LBKG 13	3/6/2010 17:58:14	13	LONG BKG	0.034	0.3250	1000.0
LBKG 14	3/6/2010 17:58:12	14	LONG BKG	0.052	0.4190	1000.0
LBKG 12	3/6/2010 17:58:06	12	LONG BKG	0.098	0.3760	1000.0
LBKG 11	3/6/2010 17:57:58	11	LONG BKG	0.044	0.3990	1000.0

Background Measurement
C:\UMS\UTL0001\030610LB.BDT

Background Measurement Parameters:

User: JLK Instrument Name: LB770PC
Preset Time: 1000:00 Cycles: 1
Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 03/06/2010 18:08:21 Elapsed Time: 1000:00
Guard: 856.5 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0940 (±10.3%)	1	0.8160 (±3.50%)	1
2	0.0340 (±17.1%)	1	0.6560 (±3.90%)	1
3	0.0380 (±16.2%)	1	0.5850 (±4.13%)	1
4	0.0850 (±10.8%)	1	0.6390 (±3.96%)	1
5	0.0440 (±15.1%)	1	1.8560 (±2.32%)	2
6	0.0720 (±11.8%)	1	1.8410 (±2.33%)	2
7	0.1080 (±9.62%)	1	0.6660 (±3.87%)	1
8	0.0520 (±13.9%)	1	0.5820 (±4.15%)	1
9	0.0340 (±17.1%)	1	0.5810 (±4.15%)	1
10	0.0370 (±16.4%)	1	0.7840 (±3.57%)	1

Sample Measurement
 C:\UMS\UTL0001\GAB4436.SDT

Cycle 2 of 2 (1/1 in group 2 of 2)
 Start Time: 03/08/2010 14:46:37
 Comment: GAB4466
 User: JMC

Elapsed Time: 1000:00

Guard: 867.5 cpm

	Spl #	Sample Name	Alpha (raw cpm)	MDA	MRA	Beta (raw cpm)	MDA	MRA
1	4487	3023567001	0.1110 (±9.49%)	0.0006	0.0003	1.0190 (±3.13%)	0.0023	0.0011
2	4487	LONGBACKGROUND	0.0500 (±14.1%)	0.0005	0.0003	0.6160 (±4.03%)	0.0019	0.0009
3	4487	3023581001	0.5500 (±4.26%)	0.0007	0.0003	2.5670 (±1.97%)	0.0020	0.0010
4	4488	3023583001	0.3740 (±5.17%)	0.0009	0.0004	1.7200 (±2.41%)	0.0021	0.0010
5	4488	302379002	0.0570 (±13.2%)	0.0006	0.0003	2.5310 (±1.99%)	0.0076	0.0038
6	4731	EMPTY	0.1220 (±9.05%)	undef.	undef.	1.8390 (±2.33%)	undef.	undef.
7	4488	3023798001	0.5120 (±4.42%)	0.0009	0.0004	1.2740 (±2.80%)	0.0022	0.0011
8	4531	3023799001	0.4380 (±4.78%)	0.0009	0.0004	1.2470 (±2.83%)	0.0022	0.0011
9	4531	3023811001	0.1010 (±9.95%)	0.0007	0.0003	0.8730 (±3.38%)	0.0022	0.0011
10	4531	3023822001	0.0590 (±13.0%)	0.0006	0.0003	0.8950 (±3.34%)	0.0024	0.0012

Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 12	4/11/2010 15:08:40	12	LONG BKG	0.111	0.3460	1000.0
LBKG 11	4/11/2010 15:08:36	11	LONG BKG	0.034	0.3860	1000.0
LONG BKG 38	4/10/2010 20:06:41	38	LONG BKG	0.049	0.4350	1000.0
LONG BKG 37	4/10/2010 20:06:37	37	LONG BKG	0.138	0.3870	1000.0
LONG BKG 36	4/10/2010 20:06:32	36	LONG BKG	0.069	0.4040	1000.0
LONG BKG 35	4/10/2010 20:06:27	35	LONG BKG	0.101	0.3790	1000.0
LONG BKG 34	4/10/2010 20:06:23	34	LONG BKG	0.045	0.4160	1000.0
LONG BKG 33	4/10/2010 20:06:19	33	LONG BKG	0.080	0.3520	1000.0
LONG BKG 32	4/10/2010 20:06:15	32	LONG BKG	0.040	0.3850	1000.0
LONG BKG 31	4/10/2010 20:06:09	31	LONG BKG	0.091	0.3820	1000.0
LONG BKG 30	4/10/2010 20:06:02	30	LONG BKG	0.080	0.4110	1000.0
LONG BKG 29	4/10/2010 20:05:57	29	LONG BKG	0.044	0.2880	1000.0
LONG BKG 28	4/10/2010 20:05:53	28	LONG BKG	0.057	0.2530	1000.0
LONG BKG 27	4/10/2010 20:05:49	27	LONG BKG	0.045	0.3400	1000.0
LONG BKG 26	4/10/2010 20:05:44	26	LONG BKG	0.094	0.3870	1000.0
LONG BKG 25	4/10/2010 20:05:41	25	LONG BKG	0.137	0.4220	1000.0

Handwritten signature and date: 01/11/10

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 24	4/10/2010 20:05:37	24	LONG BKG	0.068	0.3580	1000.0
LONG BKG 23	4/10/2010 20:05:37	23	LONG BKG	0.054	0.5110	1000.0
LBKG 22	4/10/2010 20:05:37	22	LONG BKG	0.046	0.3870	1000.0
LBKG 21	4/10/2010 20:05:24	21	LONG BKG	0.086	0.3820	1000.0
LBKG 20	4/10/2010 20:05:20	20	LONG BKG	0.081	0.3460	1000.0
LBKG 19	4/10/2010 20:05:17	19	LONG BKG	0.018	0.4370	1000.0
LBKG 18	4/10/2010 20:05:11	18	LONG BKG	0.050	0.3460	1000.0
LBKG 17	4/10/2010 20:05:08	17	LONG BKG	0.058	0.3860	1000.0
LBKG 16	4/10/2010 20:05:05	16	LONG BKG	0.040	0.3910	1000.0
LBKG 13	4/10/2010 20:05:04	13	LONG BKG	0.036	0.3030	1000.0
LBKG 15	4/10/2010 20:05:04	15	LONG BKG	0.047	0.4850	1000.0
LBKG 14	4/10/2010 20:05:04	14	LONG BKG	0.053	0.3780	1000.0

Handwritten signature
4/11/10

Background Measurement
 C:\UMS\UTL0001\041010LB.BDT

Background Measurement Parameters:

User: JLK	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 04/10/2010 20:07:57	Elapsed Time: 1000:00
	Guard: 845.8 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0980 (±10.1%)	1	0.7850 (±3.57%)	1
2	0.0410 (±15.6%)	1	0.5660 (±4.20%)	1
3	0.0520 (±13.9%)	1	0.5840 (±4.14%)	1
4	0.0680 (±12.1%)	1	0.5990 (±4.09%)	1
5	0.0460 (±14.7%)	1	2.4020 (±2.04%)	3
6	0.0700 (±12.0%)	1	1.7490 (±2.39%)	2
7	0.0940 (±10.3%)	1	0.5810 (±4.15%)	1
8	0.0470 (±14.6%)	1	0.5350 (±4.32%)	1
9	0.0400 (±15.8%)	1	0.6900 (±3.81%)	1
10	0.0370 (±16.4%)	1	0.7380 (±3.68%)	1

JRK
 4/12/10

Pace Waltz Mill Protean System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	4/30/2010 17:02:48	38	LONG BKG	0.058	0.4090	1000.0
LONG BKG 37	4/30/2010 17:02:41	37	LONG BKG	0.174	0.3890	1000.0
LONG BKG 36	4/30/2010 16:52:57	36	LONG BKG	0.110	0.3900	1000.0
LONG BKG 35	4/30/2010 16:52:52	35	LONG BKG	0.130	0.8220	1000.0
LONG BKG 34	4/30/2010 16:52:45	34	LONG BKG	0.127	0.4550	1000.0
LONG BKG 33	4/30/2010 16:52:41	33	LONG BKG	0.107	0.3930	1000.0
LONG BKG 32	4/30/2010 16:52:37	32	LONG BKG	0.052	0.9110	1000.0
LONG BKG 31	4/30/2010 16:52:32	31	LONG BKG	0.092	0.3700	1000.0
LONG BKG 30	4/30/2010 16:52:26	30	LONG BKG	0.075	0.5810	1000.0
LONG BKG 29	4/30/2010 16:52:20	29	LONG BKG	0.030	0.3860	1000.0
LONG BKG 28	4/30/2010 16:52:15	28	LONG BKG	0.050	0.5610	1000.0
LONG BKG 27	4/30/2010 16:52:10	27	LONG BKG	0.047	0.3660	1000.0
LONG BKG 26	4/30/2010 16:52:06	26	LONG BKG	0.051	0.5840	1000.0
LONG BKG 25	4/30/2010 16:52:02	25	LONG BKG	0.118	0.6260	1000.0
LONG BKG 24	4/30/2010 16:51:58	24	LONG BKG	0.049	0.4470	1000.0
LONG BKG 23	4/30/2010 16:51:55	23	LONG BKG	0.068	0.8590	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	4/30/2010 16:51:50	22	LONG BKG	0.042	0.5350	1000.0
LBKG 21	4/30/2010 16:51:46	21	LONG BKG	0.101	0.6180	1000.0
LBKG 20	4/30/2010 16:51:42	20	LONG BKG	0.073	0.4870	1000.0
LBKG 19	4/30/2010 16:51:38	19	LONG BKG	0.039	0.6240	1000.0
LBKG 18	4/30/2010 16:51:31	18	LONG BKG	0.057	0.5010	1000.0
LBKG 17	4/30/2010 16:51:27	17	LONG BKG	0.055	0.4360	1000.0
LBKG 16	4/30/2010 16:51:23	16	LONG BKG	0.048	0.4520	1000.0
LBKG 15	4/30/2010 16:51:20	15	LONG BKG	0.054	0.5890	1000.0
LBKG 14	4/30/2010 16:51:16	14	LONG BKG	0.039	0.4630	1000.0
LBKG 13	4/30/2010 16:51:12	13	LONG BKG	0.037	0.3320	1000.0
LBKG 12	4/30/2010 16:51:07	12	LONG BKG	0.106	0.6890	1000.0
LBKG 11	4/30/2010 16:51:03	11	LONG BKG	0.036	0.4940	1000.0

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 12	5/2/2010 17:17:08	12	LONG BKG	0.091	0.5610	1000.0
LONG BKG 35	5/2/2010 17:15:01	35	LONG BKG	0.113	1.1590	1000.0
LONG BKG 34	5/2/2010 17:14:55	34	LONG BKG	0.034	0.4430	1000.0
LONG BKG 32	5/2/2010 17:14:51	32	LONG BKG	0.056	1.2890	1000.0
LONG BKG 30	5/2/2010 17:14:42	30	LONG BKG	0.070	0.4830	1000.0
LONG BKG 29	5/2/2010 17:14:38	29	LONG BKG	0.054	0.3340	1000.0
LONG BKG 28	5/2/2010 17:14:32	28	LONG BKG	0.047	0.4840	1000.0
LONG BKG 26	5/2/2010 17:14:26	26	LONG BKG	0.051	0.6010	1000.0
LONG BKG 25	5/2/2010 17:14:21	25	LONG BKG	0.154	0.5480	1000.0
LONG BKG 23	5/2/2010 17:14:17	23	LONG BKG	0.037	0.7450	1000.0
LBKG 22	5/2/2010 17:14:14	22	LONG BKG	0.047	0.5170	1000.0
LBKG 21	5/2/2010 17:14:14	21	LONG BKG	0.096	0.5200	1000.0
LBKG 20	5/2/2010 17:14:02	20	LONG BKG	0.082	0.4410	1000.0
LBKG 19	5/2/2010 17:13:58	19	LONG BKG	0.055	0.5720	1000.0
LBKG 18	5/2/2010 17:13:52	18	LONG BKG	0.048	0.5040	1000.0
LONG BKG 38	4/30/2010 17:02:48	38	LONG BKG	0.058	0.4090	1000.0

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 36	6/6/2010 16:05:40	36	LONG BKG	0.198	0.3720	1000.0
LBKG 21	6/6/2010 16:05:31	21	LONG BKG	0.096	0.4820	1000.0
LBKG 20	6/6/2010 16:05:27	20	LONG BKG	0.087	0.4750	1000.0
LBKG 19	6/6/2010 16:05:23	19	LONG BKG	0.024	0.5530	1000.0
LBKG 22	6/6/2010 16:05:18	22	LONG BKG	0.093	0.5340	1000.0
LBKG 18	6/6/2010 16:04:57	18	LONG BKG	0.070	0.5230	1000.0
LBKG 17	6/6/2010 16:04:54	17	LONG BKG	0.101	0.4730	1000.0
LBKG 16	6/6/2010 16:04:50	16	LONG BKG	0.048	0.3980	1000.0
LBKG 15	6/6/2010 16:04:46	15	LONG BKG	0.044	0.5550	1000.0
LBKG 14	6/6/2010 16:04:42	14	LONG BKG	0.033	0.4280	1000.0
LBKG 13	6/6/2010 16:04:39	13	LONG BKG	0.034	0.3290	1000.0
LBKG 12	6/6/2010 16:04:36	12	LONG BKG	0.067	0.6150	1000.0
LBKG 11	6/6/2010 16:04:33	11	LONG BKG	0.034	0.4450	1000.0
LONG BKG 38	6/6/2010 13:40:22	38	LONG BKG	0.117	0.4100	1000.0
LONG BKG 37	6/6/2010 13:40:16	37	LONG BKG	0.175	0.3880	1000.0
LONG BKG 35	6/6/2010 13:40:06	35	LONG BKG	0.185	1.0790	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 34	6/6/2010 13:39:58	34	LONG BKG	0.058	0.4540	1000.0
LONG BKG 33	6/6/2010 13:39:53	33	LONG BKG	0.078	0.3940	1000.0
LONG BKG 32	6/6/2010 13:39:50	32	LONG BKG	0.046	2.8850	1000.0
LONG BKG 31	6/6/2010 13:39:46	31	LONG BKG	0.088	0.3940	1000.0
LONG BKG 30	6/6/2010 13:39:41	30	LONG BKG	0.071	0.5610	1000.0
LONG BKG 29	6/6/2010 13:39:37	29	LONG BKG	0.035	0.3410	1000.0
LONG BKG 28	6/6/2010 13:39:32	28	LONG BKG	0.048	0.4820	1000.0
LONG BKG 27	6/6/2010 13:39:24	27	LONG BKG	0.043	0.3340	1000.0
LONG BKG 26	6/6/2010 13:39:18	26	LONG BKG	0.078	0.6330	1000.0
LONG BKG 25	6/6/2010 13:39:14	25	LONG BKG	0.108	0.6440	1000.0
LONG BKG 24	6/6/2010 13:39:10	24	LONG BKG	0.219	0.4850	1000.0
LONG BKG 23	6/6/2010 13:39:05	23	LONG BKG	0.056	0.7210	1000.0

Background Measurement
 C:\UMS\UTL0001\060610LB.BDT

Background Measurement Parameters:

User: JLK
 Preset Time: 1000:00
 Alpha Preset Error: 0.0%
 Voltage : 1650
 Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 0.0%

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 06/06/2010 13:44:35

Elapsed Time: 1000:00
 Guard: 853.5 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0360 (±16.7%)	1	0.8190 (±3.49%)	1
2	0.0550 (±13.5%)	1		3
3	0.0240 (±20.4%)	1	0.6540 (±3.91%)	1
4	0.0650 (±12.4%)	1	0.6360 (±3.97%)	1
5	0.0700 (±12.0%)	1	7.3800 (±1.16%)	3
6	0.0420 (±15.4%)	1	1.4300 (±2.64%)	2
7	0.0780 (±11.3%)	1	0.6750 (±3.85%)	1
8	0.0580 (±13.1%)	1	0.5450 (±4.28%)	1
9	0.0440 (±15.1%)	1	0.5860 (±4.13%)	1
10	0.0350 (±16.9%)	1	0.8020 (±3.53%)	1

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 37	7/18/2010 17:44:37	37	LONG BKG	0.199	0.4060	1000.0
LONG BKG 38	7/18/2010 17:44:33	38	LONG BKG	0.101	0.4180	1000.0
LONG BKG 36	7/18/2010 17:44:24	36	LONG BKG	0.376	0.4820	1000.0
LONG BKG 35	7/18/2010 17:44:20	35	LONG BKG	0.173	2.4830	1000.0
LONG BKG 34	7/18/2010 17:44:15	34	LONG BKG	0.044	0.4160	1000.0
LONG BKG 33	7/18/2010 17:44:12	33	LONG BKG	0.114	0.3930	1000.0
LONG BKG 32	7/18/2010 17:44:07	32	LONG BKG	0.042	1.1800	1000.0
LONG BKG 31	7/18/2010 17:44:02	31	LONG BKG	0.090	0.4130	1000.0
LONG BKG 30	7/18/2010 17:43:53	30	LONG BKG	0.069	0.4620	1000.0
LONG BKG 29	7/18/2010 17:43:49	29	LONG BKG	0.043	0.3460	1000.0
LONG BKG 28	7/18/2010 17:43:45	28	LONG BKG	0.047	0.4000	1000.0
LONG BKG 27	7/18/2010 17:43:39	27	LONG BKG	0.069	0.3190	1000.0
LONG BKG 25	7/18/2010 17:43:35	25	LONG BKG	0.184	0.6130	1000.0
LONG BKG 26	7/18/2010 17:43:31	26	LONG BKG	0.078	0.5520	1000.0
LONG BKG 24	7/18/2010 17:43:23	24	LONG BKG	0.099	0.4710	1000.0
LONG BKG 23	7/18/2010 17:43:20	23	LONG BKG	0.060	0.7220	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	7/18/2010 17:43:17	22	LONG BKG	0.093	0.5020	1000.0
LBKG 21	7/18/2010 17:43:13	21	LONG BKG	0.085	0.4870	1000.0
LBKG 20	7/18/2010 17:43:10	20	LONG BKG	0.081	0.4400	1000.0
LBKG 19	7/18/2010 17:43:07	19	LONG BKG	0.026	0.5700	1000.0
LBKG 17	7/18/2010 17:43:01	17	LONG BKG	0.067	0.4170	1000.0
LBKG 12	7/18/2010 17:42:57	12	LONG BKG	0.088	0.5110	1000.0
LBKG 18	7/18/2010 17:42:54	18	LONG BKG	0.047	0.4420	1000.0
LBKG 16	7/18/2010 17:42:47	16	LONG BKG	0.056	0.4160	1000.0
LBKG 15	7/18/2010 17:42:44	15	LONG BKG	0.057	0.4970	1000.0
LBKG 14	7/18/2010 17:42:41	14	LONG BKG	0.051	0.4200	1000.0
LBKG 13	7/18/2010 17:42:38	13	LONG BKG	0.049	0.3100	1000.0
LBKG 11	7/18/2010 17:42:31	11	LONG BKG	0.046	0.4550	1000.0

Background Measurement
 C:\UMS\UTL0001\071810LB.BDT

Background Measurement Parameters:

User: JLK	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 07/18/2010 17:13:39	Elapsed Time: 1000:00
	Guard: 838.7 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0610 (±12.8%)	1	0.7670 (±3.61%)	1
2	0.0810 (±11.1%)	1		3
3	0.0250 (±20.0%)	1	0.5970 (±4.09%)	1
4	0.0920 (±10.4%)	1		3
5	0.0690 (±12.0%)	1	1.2910 (±2.78%)	2
6	0.0400 (±15.8%)	1	1.2870 (±2.79%)	2
7	0.0890 (±10.6%)	1		3
8	0.0320 (±17.7%)	1	0.6556 (±4.12%)	1
9	0.0330 (±17.4%)	1	0.6010 (±4.08%)	1
10	0.0490 (±14.3%)	1	0.8730 (±3.38%)	1

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	8/22/2010 12:56:40	38	LONG BKG	0.099	0.4520	1000.0
LONG BKG 37	8/22/2010 12:56:32	37	LONG BKG	0.204	0.4190	1000.0
LONG BKG 36	8/22/2010 12:56:24	36	LONG BKG	0.340	0.4520	1000.0
LONG BKG 35	8/22/2010 12:56:17	35	LONG BKG	0.191	3.3550	1000.0
LONG BKG 34	8/22/2010 12:56:07	34	LONG BKG	0.080	0.4350	1000.0
LONG BKG 33	8/22/2010 12:56:02	33	LONG BKG	0.136	0.4310	1000.0
LONG BKG 32	8/22/2010 12:55:56	32	LONG BKG	0.052	0.3680	1000.0
LONG BKG 31	8/22/2010 12:55:50	31	LONG BKG	0.088	0.4390	1000.0
LONG BKG 30	8/22/2010 12:55:44	30	LONG BKG	0.203	0.5160	1000.0
LONG BKG 29	8/22/2010 12:55:39	29	LONG BKG	0.129	0.3790	1000.0
LONG BKG 28	8/22/2010 12:55:35	28	LONG BKG	0.078	0.4500	1000.0
LONG BKG 27	8/22/2010 12:55:29	27	LONG BKG	0.033	0.3110	1000.0
LONG BKG 26	8/22/2010 12:55:22	26	LONG BKG	0.088	0.5820	1000.0
LONG BKG 25	8/22/2010 12:55:19	25	LONG BKG	0.128	0.6170	1000.0
LONG BKG 24	8/22/2010 12:55:14	24	LONG BKG	0.083	0.4770	1000.0
LONG BKG 23	8/22/2010 12:55:09	23	LONG BKG	0.045	0.7190	1000.0

Tuesday, August 24, 2010

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Handwritten: 7/13/10

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Cl. Time (min)
LBKG 21	8/22/2010 12:55:00	21	LONG BKG	0.116	0.4660	1000.0
LBKG 22	8/22/2010 12:54:55	22	LONG BKG	0.064	0.4840	1000.0
LBKG 20	8/22/2010 12:54:38	20	LONG BKG	0.080	0.4400	1000.0
LBKG 19	8/22/2010 12:54:34	19	LONG BKG	0.055	0.5670	1000.0
LBKG 18	8/22/2010 12:54:25	18	LONG BKG	0.029	0.4680	1000.0
LBKG 17	8/22/2010 12:54:22	17	LONG BKG	0.069	0.3970	1000.0
LBKG 16	8/22/2010 12:54:18	16	LONG BKG	0.055	0.4060	1000.0
LBKG 15	8/22/2010 12:54:13	15	LONG BKG	0.081	0.5790	1000.0
LBKG 14	8/22/2010 12:54:09	14	LONG BKG	0.028	0.4140	1000.0
LBKG 13	8/22/2010 12:54:05	13	LONG BKG	0.034	0.2710	1000.0
LBKG 12	8/22/2010 12:54:02	12	LONG BKG	0.103	0.5490	1000.0
LBKG 11	8/22/2010 12:53:59	11	LONG BKG	0.028	0.4800	1000.0

Tuesday, August 24, 2010

Auditorio

Background Measurement Parameters:

User: SHS Instrument Name: LB770PC
 Preset Time: 1000:00 Cycles: 1
 Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
 Voltage : 1650

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 08/22/2010 13:53:46 Elapsed Time: 1000:00
 Guard: 838.3 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0370 (±16.4%)	1	0.8060 (±3.52%)	1
2	0.0180 (±23.6%)	1	0.6230 (±4.01%)	1
3	0.0260 (±19.6%)	1	0.5920 (±4.11%)	1
4	0.0620 (±12.7%)	1	0.7770 (±3.59%)	1
5	0.0600 (±12.9%)	1	1.0970 (±3.02%)	2
6	0.0430 (±15.2%)	1	1.4590 (±2.62%)	2
7	0.0790 (±11.3%)	1	0.6490 (±3.93%)	1
8	0.0600 (±12.9%)	1	0.6540 (±3.91%)	1
9	0.0450 (±14.9%)	1	0.5670 (±4.20%)	1
10	0.0340 (±17.1%)	1	0.8030 (±3.53%)	1

Q1 8/22/10

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	9/20/2010 20:28:25	38	LONG BKG	0.064	0.4540	1000.0
LONG BKG 37	9/20/2010 20:28:19	37	LONG BKG	0.254	0.4950	1000.0
LONG BKG 36	9/20/2010 20:28:12	36	LONG BKG	0.327	0.5440	1000.0
LONG BKG 35	9/20/2010 20:28:06	35	LONG BKG	0.182	0.8160	1000.0
LONG BKG 34	9/20/2010 20:27:58	34	LONG BKG	0.081	0.4310	1000.0
LONG BKG 33	9/20/2010 20:27:53	33	LONG BKG	0.247	0.4620	1000.0
LONG BKG 32	9/20/2010 20:27:47	32	LONG BKG	0.058	0.9380	1000.0
LONG BKG 31	9/20/2010 20:27:41	31	LONG BKG	0.108	0.4040	1000.0
LONG BKG 30	9/20/2010 20:27:28	30	LONG BKG	0.200	0.5470	1000.0
LONG BKG 29	9/20/2010 20:27:23	29	LONG BKG	0.058	0.3920	1000.0
LONG BKG 28	9/20/2010 20:27:19	28	LONG BKG	0.095	0.5120	1000.0
LONG BKG 27	9/20/2010 20:27:13	27	LONG BKG	0.051	0.3280	1000.0
LONG BKG 26	9/20/2010 20:27:05	26	LONG BKG	0.126	0.5430	1000.0
LONG BKG 25	9/20/2010 20:27:00	25	LONG BKG	0.125	0.5780	1000.0
LONG BKG 24	9/20/2010 20:27:00	24	LONG BKG	0.070	0.4860	1000.0
LONG BKG 23	9/20/2010 20:26:49	23	LONG BKG	0.053	0.6160	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	9/20/2010 20:26:43	22	LONG BKG	0.075	0.5300	1000.0
LBKG 21	9/20/2010 20:26:38	21	LONG BKG	0.101	0.4670	1000.0
LBKG 20	9/20/2010 20:26:33	20	LONG BKG	0.098	0.4260	1000.0
LBKG 19	9/20/2010 20:26:28	19	LONG BKG	0.048	0.5800	1000.0
LBKG 18	9/20/2010 20:26:21	18	LONG BKG	0.063	0.5400	1000.0
LBKG 17	9/20/2010 20:26:16	17	LONG BKG	0.082	0.4070	1000.0
LBKG 16	9/20/2010 20:26:11	16	LONG BKG	0.053	0.4380	1000.0
LBKG 15	9/20/2010 20:26:07	15	LONG BKG	0.092	0.5950	1000.0
LBKG 14	9/20/2010 20:26:03	14	LONG BKG	0.035	0.4700	1000.0
LBKG 13	9/20/2010 20:25:59	13	LONG BKG	0.039	0.2850	1000.0
LBKG 12	9/20/2010 20:25:54	12	LONG BKG	0.128	0.5740	1000.0
LBKG 11	9/20/2010 20:25:49	11	LONG BKG	0.081	0.4510	1000.0

Background Measurement
 C:\UMS\UTL0001\LB92011.BDT

Background Measurement Parameters:

Comment: DB09_10

User: ALL

Preset Time: 1000:00

Alpha Preset Error: 0.0%

Voltage : 1650

Instrument Name: LB770PC

Cycles: 1

Beta Preset Error: 0.0%

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 09/20/2010 20:32:25

Elapsed Time: 1000:00

Guard: 835.8 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0430 (±15.2%)	1	0.8830 (±3.37%)	1
2	0.0420 (±15.4%)	1	0.6090 (±4.05%)	1
3	0.0750 (±11.5%)	1	0.5900 (±4.12%)	1
4	0.1060 (±9.71%)	1	0.7290 (±3.70%)	1
5	0.0500 (±14.1%)	1	4.7950 (±1.44%)	3
6	0.0560 (±13.4%)	1		3
7	0.1160 (±9.28%)	1	0.6480 (±3.93%)	1
8	0.0650 (±12.4%)	1	0.5360 (±4.32%)	1
9	0.0520 (±13.9%)	1	0.6200 (±4.02%)	1
10	0.0860 (±10.8%)	1	0.8550 (±3.42%)	1

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DE#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	10/10/2010 10:34:26 AM	38	LONG BKG	0.116	0.5240	1000.0
LONG BKG 37	10/10/2010 10:34:20 AM	37	LONG BKG	0.194	0.4230	1000.0
LONG BKG 36	10/10/2010 10:34:14 AM	36	LONG BKG	0.362	0.5590	1000.0
LONG BKG 35	10/10/2010 10:34:08 AM	35	LONG BKG	0.226	1.0030	1000.0
LONG BKG 34	10/10/2010 10:34:00 AM	34	LONG BKG	0.068	0.4590	1000.0
LONG BKG 33	10/10/2010 10:33:55 AM	33	LONG BKG	0.117	0.4090	1000.0
LONG BKG 32	10/10/2010 10:33:49 AM	32	LONG BKG	0.062	2.6600	1000.0
LONG BKG 31	10/10/2010 10:33:44 AM	31	LONG BKG	0.105	0.4100	1000.0
LONG BKG 30	10/10/2010 10:33:37 AM	30	LONG BKG	0.203	0.4880	1000.0
LONG BKG 29	10/10/2010 10:33:32 AM	29	LONG BKG	0.055	0.3730	1000.0
LONG BKG 28	10/10/2010 10:33:25 AM	28	LONG BKG	0.091	0.4500	1000.0
LONG BKG 27	10/10/2010 10:33:19 AM	27	LONG BKG	0.066	0.4070	1000.0
LONG BKG 26	10/10/2010 10:33:11 AM	26	LONG BKG	0.114	0.5890	1000.0
LONG BKG 25	10/10/2010 10:33:04 AM	25	LONG BKG	0.143	0.6240	1000.0
LONG BKG 24	10/10/2010 10:33:00 AM	24	LONG BKG	0.089	0.4940	1000.0
LONG BKG 23	10/10/2010 10:32:56 AM	23	LONG BKG	0.078	0.6180	1000.0

RET 10/11/10

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	10/10/2010 10:32:48 AM	22	LONG BKG	0.088	0.5290	1000.0
LBKG 21	10/10/2010 10:32:44 AM	21	LONG BKG	0.087	0.5240	1000.0
LBKG 20	10/10/2010 10:32:41 AM	20	LONG BKG	0.082	0.4670	1000.0
LBKG 19	10/10/2010 10:32:36 AM	19	LONG BKG	0.053	0.6200	1000.0
LBKG 18	10/10/2010 10:32:30 AM	18	LONG BKG	0.073	0.5210	1000.0
LBKG 17	10/10/2010 10:32:29 AM	17	LONG BKG	0.054	0.4140	1000.0
LBKG 16	10/10/2010 10:32:29 AM	16	LONG BKG	0.068	0.4640	1000.0
LBKG 15	10/10/2010 10:32:29 AM	15	LONG BKG	0.109	0.6140	1000.0
LBKG 14	10/10/2010 10:32:13 AM	14	LONG BKG	0.036	0.4660	1000.0
LBKG 13	10/10/2010 10:32:09 AM	13	LONG BKG	0.053	0.3300	1000.0
LBKG 12	10/10/2010 10:32:05 AM	12	LONG BKG	0.133	0.5670	1000.0
LBKG 11	10/10/2010 10:32:00 AM	11	LONG BKG	0.107	0.4690	1000.0

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Background Measurement
C:\UMS\UTL0001\DB101010.BDT

Background Measurement Parameters:

Comment: DB10_10

User: AREH

Preset Time: 1000:00

Alpha Preset Error: 0.0%

Voltage : 1650

Instrument Name: LB770PC

Cycles: 1

Beta Preset Error: 0.0%

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 10/10/2010 10:43:54

Elapsed Time: 1000:00

Guard: 856.7 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0530 (±13.7%)	1	0.7880 (±3.56%)	1
2	0.0450 (±14.9%)	1	0.6270 (±3.99%)	1
3	0.0760 (±11.5%)	1	0.5870 (±4.13%)	1
4	0.0990 (±10.1%)	1	0.7250 (±3.71%)	1
5	0.0430 (±15.2%)	1	2.0070 (±2.23%)	3
6	0.0530 (±13.7%)	1	2.1490 (±2.16%)	3
7	0.1080 (±9.62%)	1	0.7110 (±3.75%)	1
8	0.0420 (±15.4%)	1	0.6050 (±4.07%)	1
9	0.0490 (±14.3%)	1	0.6430 (±3.94%)	1
10	0.0510 (±14.0%)	1	0.7990 (±3.54%)	1

AREH
10/11/10

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	11/2/2010 10:08:01 PM	38	LONG BKG	0.145	0.4570	1000.0
LONG BKG 37	11/2/2010 10:07:57 PM	37	LONG BKG	0.193	0.4550	1000.0
LONG BKG 36	11/2/2010 10:07:52 PM	36	LONG BKG	0.433	0.5330	1000.0
LONG BKG 35	11/2/2010 10:07:47 PM	35	LONG BKG	0.180	0.6460	1000.0
LONG BKG 34	11/2/2010 10:07:41 PM	34	LONG BKG	0.070	0.3590	1000.0
LONG BKG 33	11/2/2010 10:07:37 PM	33	LONG BKG	0.156	0.4410	1000.0
LONG BKG 32	11/2/2010 10:07:32 PM	32	LONG BKG	0.057	0.4200	1000.0
LONG BKG 31	11/2/2010 10:07:27 PM	31	LONG BKG	0.097	0.4590	1000.0
LONG BKG 30	11/2/2010 10:07:18 PM	30	LONG BKG	0.218	0.5600	1000.0
LONG BKG 29	11/2/2010 10:07:14 PM	29	LONG BKG	0.045	0.3760	1000.0
LONG BKG 28	11/2/2010 10:07:09 PM	28	LONG BKG	0.079	0.4280	1000.0
LONG BKG 27	11/2/2010 10:07:04 PM	27	LONG BKG	0.062	0.3890	1000.0
LONG BKG 26	11/2/2010 10:06:57 PM	26	LONG BKG	0.118	0.5270	1000.0
LONG BKG 25	11/2/2010 10:06:53 PM	25	LONG BKG	0.125	0.6020	1000.0
LONG BKG 24	11/2/2010 10:06:48 PM	24	LONG BKG	0.101	0.4470	1000.0
LONG BKG 23	11/2/2010 10:06:44 PM	23	LONG BKG	0.071	0.5980	1000.0

11/11/10
RCH

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	11/2/2010 10:06:39 PM	22	LONG BKG	0.093	0.5300	1000.0
LBKG 21	11/2/2010 10:06:35 PM	21	LONG BKG	0.078	0.4710	1000.0
LBKG 20	11/2/2010 10:06:30 PM	20	LONG BKG	0.099	0.4510	1000.0
LBKG 19	11/2/2010 10:06:27 PM	19	LONG BKG	0.037	0.5960	1000.0
LBKG 18	11/2/2010 10:06:20 PM	18	LONG BKG	0.064	0.4930	1000.0
LBKG 17	11/2/2010 10:06:16 PM	17	LONG BKG	0.079	0.4470	1000.0
LBKG 16	11/2/2010 10:06:11 PM	16	LONG BKG	0.080	0.4070	1000.0
LBKG 15	11/2/2010 10:06:05 PM	15	LONG BKG	0.107	0.6170	1000.0
LBKG 14	11/2/2010 10:06:00 PM	14	LONG BKG	0.057	0.5000	1000.0
LBKG 13	11/2/2010 10:05:57 PM	13	LONG BKG	0.037	0.2920	1000.0
LBKG 12	11/2/2010 10:05:53 PM	12	LONG BKG	0.135	0.5990	1000.0
LBKG 11	11/2/2010 10:05:50 PM	11	LONG BKG	0.132	0.4560	1000.0

Handwritten signature and date: 11/11/10

Background Measurement
 C:\UMS\UTL0001\LB110210.BDT

Background Measurement Parameters:

Comment: LB11_10

User: AREH

Instrument Name: LB770PC

Preset Time: 1000:00

Cycles: 1

Alpha Preset Error: 0.0%

Beta Preset Error: 0.0%

Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 11/02/2010 19:21:05

Elapsed Time: 1000:00

Guard: 848.1 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0450 (±14.9%)	1	0.8200 (±3.49%)	1
2	0.0530 (±13.7%)	1	0.5840 (±4.14%)	1
3	0.0530 (±13.7%)	1	0.6430 (±3.94%)	1
4	0.1940 (±7.18%)	1	0.7630 (±3.62%)	1
5	0.0760 (±11.5%)	1	2.6280 (±1.95%)	3
6	0.0610 (±12.8%)	1	1.2390 (±2.84%)	2
7	0.0940 (±10.3%)	1	0.6000 (±4.08%)	1
8	0.0480 (±14.4%)	1	0.5920 (±4.11%)	1
9	0.0850 (±10.8%)	1	0.6110 (±4.05%)	1
10	0.0460 (±14.7%)	1	0.9200 (±3.30%)	1

AREH 11/4/10

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 37	11/30/2010 8:44:51 PM	37	LONG BKG	0.342	0.4220	1000.0
LONG BKG 29	11/30/2010 8:44:47 PM	29	LONG BKG	0.046	0.3670	1000.0
LBKG 16	11/30/2010 8:39:56 PM	16	LONG BKG	0.047	0.4440	1000.0
LONG BKG 38	11/30/2010 7:07:37 PM	38	LONG BKG	0.097	0.4820	1000.0
LONG BKG 36	11/30/2010 7:07:29 PM	36	LONG BKG	0.344	0.4870	1000.0
LONG BKG 35	11/30/2010 7:07:24 PM	35	LONG BKG	0.168	0.6980	1000.0
LONG BKG 34	11/30/2010 7:07:20 PM	34	LONG BKG	0.050	0.4560	1000.0
LONG BKG 33	11/30/2010 7:07:15 PM	33	LONG BKG	0.129	0.4320	1000.0
LONG BKG 32	11/30/2010 7:07:11 PM	32	LONG BKG	0.049	0.4760	1000.0
LONG BKG 31	11/30/2010 7:07:07 PM	31	LONG BKG	0.116	0.5000	1000.0
LONG BKG 30	11/30/2010 7:07:00 PM	30	LONG BKG	0.241	0.5250	1000.0
LONG BKG 28	11/30/2010 7:06:55 PM	28	LONG BKG	0.087	0.5260	1000.0
LONG BKG 27	11/30/2010 7:06:50 PM	27	LONG BKG	0.050	0.3820	1000.0
LONG BKG 26	11/30/2010 7:06:41 PM	26	LONG BKG	0.113	0.5080	1000.0
LONG BKG 25	11/30/2010 7:06:37 PM	25	LONG BKG	0.155	0.6120	1000.0
LONG BKG 24	11/30/2010 7:06:30 PM	24	LONG BKG	0.096	0.4810	1000.0

Handwritten signature

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 23	11/30/2010 7:06:26 PM	23	LONG BKG	0.084	0.5890	1000.0
LBKG 22	11/30/2010 7:06:21 PM	22	LONG BKG	0.089	0.5280	1000.0
LBKG 21	11/30/2010 7:06:17 PM	21	LONG BKG	0.089	0.5410	1000.0
LBKG 20	11/30/2010 7:06:13 PM	20	LONG BKG	0.074	0.4650	1000.0
LBKG 19	11/30/2010 7:06:08 PM	19	LONG BKG	0.026	0.6400	1000.0
LBKG 18	11/30/2010 7:06:01 PM	18	LONG BKG	0.050	0.5730	1000.0
LBKG 17	11/30/2010 7:06:01 PM	17	LONG BKG	0.060	0.4160	1000.0
LBKG 15	11/30/2010 7:05:46 PM	15	LONG BKG	0.094	0.7400	1000.0
LBKG 14	11/30/2010 7:05:42 PM	14	LONG BKG	0.046	0.4870	1000.0
LBKG 13	11/30/2010 7:05:38 PM	13	LONG BKG	0.042	0.3310	1000.0
LBKG 12	11/30/2010 7:05:36 PM	12	LONG BKG	0.129	0.6040	1000.0
LBKG 11	11/30/2010 7:05:33 PM	11	LONG BKG	0.097	0.4770	1000.0

JEH 12/2/10

Background Measurement
 C:\UMS\UTL0001\DB120110.BDT

Background Measurement Parameters:

Comment: DB12_10

User: JMC

Instrument Name: LB770PC

Preset Time: 1000:00

Cycles: 1

Alpha Preset Error: 0.0%

Beta Preset Error: 0.0%

Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 12/01/2010 7:44:21

Elapsed Time: 1000:00

Guard: 870.2 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0410 (±15.6%)	1	0.8180 (±3.50%)	1
2	0.0410 (±15.6%)	1	0.8460 (±3.44%)	1
3	0.0470 (±14.6%)	1	0.5880 (±4.12%)	1
4	0.1030 (±9.85%)	1	1.1540 (±2.94%)	2
5	0.0590 (±13.0%)	1	4.2180 (±1.54%)	3
6	0.0420 (±15.4%)	1		3
7	0.0960 (±10.2%)	1	0.6870 (±3.82%)	1
8	0.0520 (±13.9%)	1	0.5740 (±4.17%)	1
9	0.0330 (±17.4%)	1	0.6000 (±4.08%)	1
10	0.0420 (±15.4%)	1	0.8110 (±3.51%)	1

*JMC
12/2/10*

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	12/27/2010 09:45:44	38	LONG BKG	0.083	0.4490	1000.0
LONG BKG 37	12/27/2010 09:45:39	37	LONG BKG	0.216	0.4070	1000.0
LONG BKG 36	12/27/2010 09:45:33	36	LONG BKG	0.367	0.5300	1000.0
LONG BKG 35	12/27/2010 09:45:29	35	LONG BKG	0.159	0.6720	1000.0
LONG BKG 34	12/27/2010 09:45:23	34	LONG BKG	0.069	0.4050	1000.0
LONG BKG 33	12/27/2010 09:45:17	33	LONG BKG	0.104	0.4050	1000.0
LONG BKG 32	12/27/2010 09:45:08	32	LONG BKG	0.062	0.3650	1000.0
LONG BKG 31	12/27/2010 09:45:03	31	LONG BKG	0.102	0.3890	1000.0
LONG BKG 30	12/27/2010 09:44:56	30	LONG BKG	0.237	0.5210	1000.0
LONG BKG 29	12/27/2010 09:44:50	29	LONG BKG	0.056	0.3850	1000.0
LONG BKG 28	12/27/2010 09:44:43	28	LONG BKG	0.089	0.4430	1000.0
LONG BKG 27	12/27/2010 09:44:37	27	LONG BKG	0.057	0.2830	1000.0
LONG BKG 26	12/27/2010 09:44:31	26	LONG BKG	0.083	0.5330	1000.0
LONG BKG 25	12/27/2010 09:44:12	25	LONG BKG	0.160	0.6170	1000.0
LONG BKG 24	12/27/2010 09:44:06	24	LONG BKG	0.097	0.4740	1000.0
LBKG 22	12/27/2010 09:44:04	22	LONG BKG	0.081	0.4910	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 23	12/27/2010 09:44:04	23	LONG BKG	0.086	0.5210	1000.0
LBKG 21	12/27/2010 09:43:52	21	LONG BKG	0.068	0.4790	1000.0
LBKG 20	12/27/2010 09:43:48	20	LONG BKG	0.079	0.4690	1000.0
LBKG 17	12/27/2010 09:43:33	17	LONG BKG	0.053	0.4040	1000.0
LBKG 19	12/27/2010 09:43:26	19	LONG BKG	0.036	0.5830	1000.0
LBKG 18	12/27/2010 09:43:26	18	LONG BKG	0.059	0.4700	1000.0
LBKG 16	12/27/2010 09:43:10	16	LONG BKG	0.067	0.4330	1000.0
LBKG 15	12/27/2010 09:43:07	15	LONG BKG	0.094	0.6290	1000.0
LBKG 14	12/27/2010 09:42:58	14	LONG BKG	0.029	0.4950	1000.0
LBKG 13	12/27/2010 09:42:53	13	LONG BKG	0.043	0.3350	1000.0
LBKG 12	12/27/2010 09:42:50	12	LONG BKG	0.101	0.5530	1000.0
LBKG 11	12/27/2010 09:42:45	11	LONG BKG	0.079	0.5040	1000.0

Background Measurement
 C:\UMS\UTL0001\LB122710.BDT

Background Measurement Parameters:

Comment: DB12_10
 User: DJL
 Preset Time: 1000:00
 Alpha Preset Error: 0.0%
 Voltage : 1650

Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 0.0%

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 12/27/2010 9:23:24
 Elapsed Time: 1000:00
 Guard: 873.4 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0610 (±12.8%)	1	0.8100 (±3.51%)	1
2	0.0290 (±18.6%)	1	0.5810 (±4.15%)	1
3	0.0460 (±14.7%)	1	0.5190 (±4.39%)	1
4	0.0600 (±12.9%)	1	0.7130 (±3.75%)	1
5	0.0580 (±13.1%)	1	2.3510 (±2.06%)	3
6	0.0420 (±15.4%)	1	1.0280 (±3.12%)	2
7	0.1070 (±9.67%)	1	0.5850 (±4.13%)	1
8	0.0440 (±15.1%)	1	0.5500 (±4.26%)	1
9	0.0380 (±16.2%)	1	0.5350 (±4.32%)	1
10	0.0400 (±15.8%)	1	0.7910 (±3.56%)	1

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 35	1/27/2011 5:39:21 PM	35	LONG BKG	0.044	0.3850	1000.0
LONG BKG 38	1/27/2011 5:35:21 PM	38	LONG BKG	0.110	0.4190	1000.0
LONG BKG 37	1/27/2011 5:35:16 PM	37	LONG BKG	0.035	0.3180	1000.0
LONG BKG 36	1/27/2011 5:35:11 PM	36	LONG BKG	0.043	0.3680	1000.0
LONG BKG 34	1/27/2011 5:35:04 PM	34	LONG BKG	0.052	0.4800	1000.0
LONG BKG 33	1/27/2011 5:34:57 PM	33	LONG BKG	0.052	0.3710	1000.0
LONG BKG 32	1/27/2011 5:34:52 PM	32	LONG BKG	0.056	0.4000	1000.0
LONG BKG 31	1/27/2011 5:34:47 PM	31	LONG BKG	0.089	0.3970	1000.0
LONG BKG 30	1/27/2011 5:34:42 PM	30	LONG BKG	0.117	0.3730	1000.0
LONG BKG 29	1/27/2011 5:34:37 PM	29	LONG BKG	0.054	0.4060	1000.0
LONG BKG 28	1/27/2011 5:34:32 PM	28	LONG BKG	0.073	0.4450	1000.0
LONG BKG 27	1/27/2011 5:34:27 PM	27	LONG BKG	0.040	0.3500	1000.0
LONG BKG 26	1/27/2011 5:34:19 PM	26	LONG BKG	0.098	0.6670	1000.0
LONG BKG 25	1/27/2011 5:34:15 PM	25	LONG BKG	0.165	0.5980	1000.0
LONG BKG 24	1/27/2011 5:34:11 PM	24	LONG BKG	0.104	0.4620	1000.0
LONG BKG 23	1/27/2011 5:34:06 PM	23	LONG BKG	0.084	0.5850	1000.0

01/28/11

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	1/27/2011 5:34:03 PM	22	LONG BKG	0.064	0.4930	1000.0
LBKG 21	1/27/2011 5:33:58 PM	21	LONG BKG	0.096	0.4920	1000.0
LBKG 20	1/27/2011 5:33:53 PM	20	LONG BKG	0.101	0.4870	1000.0
LBKG 19	1/27/2011 5:33:49 PM	19	LONG BKG	0.040	0.6040	1000.0
LBKG 18	1/27/2011 5:33:43 PM	18	LONG BKG	0.054	0.4630	1000.0
LBKG 17	1/27/2011 5:33:38 PM	17	LONG BKG	0.137	0.4460	1000.0
LBKG 16	1/27/2011 5:33:34 PM	16	LONG BKG	0.071	0.4430	1000.0
LBKG 15	1/27/2011 5:33:31 PM	15	LONG BKG	0.147	0.6560	1000.0
LBKG 14	1/27/2011 5:33:27 PM	14	LONG BKG	0.091	0.4070	1000.0
LBKG 13	1/27/2011 5:33:25 PM	13	LONG BKG	0.027	0.3210	1000.0
LBKG 11	1/27/2011 5:33:24 PM	11	LONG BKG	0.097	0.5720	1000.0
LBKG 12	1/27/2011 5:33:24 PM	12	LONG BKG	0.114	0.5980	1000.0

C1/28/11

Background Measurement
 C:\UMS\UTL0001\LB012711.BDT

Background Measurement Parameters:

Comment: 01_2011

User: CMC

Instrument Name: LB770PC

Preset Time: 1000:00

Cycles: 1

Alpha Preset Error: 0.0%

Beta Preset Error: 0.0%

Voltage : 1650

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 01/27/2011 12:26:02

Elapsed Time: 1000:00

Guard: 884.7 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0310 (±18.0%)	1	0.765 (±3.62%)	1
2	0.0360 (±16.7%)	1	0.691 (±3.80%)	1
3	0.0410 (±15.6%)	1	0.531 (±4.34%)	1
4	0.0720 (±11.8%)	1	0.633 (±3.97%)	1
5	0.0570 (±13.2%)	1	2.670 (±1.94%)	3
6	0.0440 (±15.1%)	1	10.385 (±0.981%)	3
7	0.1070 (±9.67%)	1	0.641 (±3.95%)	1
8	0.0760 (±11.5%)	1	0.629 (±3.99%)	1
9	0.0320 (±17.7%)	1	0.559 (±4.23%)	1
10	0.0470 (±14.6%)	1	0.837 (±3.46%)	1

01/28/11

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	3/4/2011 2:08:24 PM	38	LONG BKG	0.096	0.4180	1000.0
LONG BKG 37	3/4/2011 2:08:11 PM	37	LONG BKG	0.053	0.3220	1000.0
LONG BKG 36	3/4/2011 2:08:06 PM	36	LONG BKG	0.037	0.3790	1000.0
LONG BKG 35	3/4/2011 2:08:01 PM	35	LONG BKG	0.049	0.3520	1000.0
LONG BKG 34	3/4/2011 2:07:54 PM	34	LONG BKG	0.045	0.3800	1000.0
LONG BKG 31	3/4/2011 2:07:49 PM	31	LONG BKG	0.064	0.4390	1000.0
LONG BKG 33	3/4/2011 2:07:44 PM	33	LONG BKG	0.057	0.3350	1000.0
LONG BKG 32	3/4/2011 2:07:40 PM	32	LONG BKG	0.044	0.3510	1000.0
LONG BKG 30	3/4/2011 2:07:28 PM	30	LONG BKG	0.143	0.3650	1000.0
LONG BKG 29	3/4/2011 2:07:24 PM	29	LONG BKG	0.049	0.3820	1000.0
LONG BKG 28	3/4/2011 2:07:18 PM	28	LONG BKG	0.069	0.4480	1000.0
LONG BKG 27	3/4/2011 2:07:13 PM	27	LONG BKG	0.037	0.2750	1000.0
LONG BKG 26	3/4/2011 2:07:06 PM	26	LONG BKG	0.092	0.5830	1000.0
LONG BKG 25	3/4/2011 2:07:02 PM	25	LONG BKG	0.166	0.6490	1000.0
LONG BKG 24	3/4/2011 2:06:56 PM	24	LONG BKG	0.071	0.4500	1000.0
LONG BKG 23	3/4/2011 2:06:51 PM	23	LONG BKG	0.071	0.5960	1000.0

3/24/11

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	3/4/2011 2:06:48 PM	22	LONG BKG	0.076	0.4730	1000.0
LBKG 21	3/4/2011 2:06:44 PM	21	LONG BKG	0.080	0.4380	1000.0
LBKG 20	3/4/2011 2:06:40 PM	20	LONG BKG	0.083	0.4360	1000.0
LBKG 19	3/4/2011 2:06:36 PM	19	LONG BKG	0.041	0.5670	1000.0
LBKG 18	3/4/2011 2:06:30 PM	18	LONG BKG	0.047	0.5260	1000.0
LBKG 17	3/4/2011 2:06:26 PM	17	LONG BKG	0.101	0.3690	1000.0
LBKG 16	3/4/2011 2:06:24 PM	16	LONG BKG	0.103	0.3980	1000.0
LBKG 15	3/4/2011 2:06:19 PM	15	LONG BKG	0.141	0.6110	1000.0
LBKG 14	3/4/2011 2:06:16 PM	14	LONG BKG	0.067	0.4740	1000.0
LBKG 13	3/4/2011 2:06:12 PM	13	LONG BKG	0.030	0.2990	1000.0
LBKG 12	3/4/2011 2:06:09 PM	12	LONG BKG	0.119	0.6040	1000.0
LBKG 11	3/4/2011 2:06:05 PM	11	LONG BKG	0.093	0.4540	1000.0

Handwritten: 11/13/11 HAP

Background Measurement
 C:\UMS\UTL0001\LB030811.BDT

Background Measurement Parameters:

User: CMC	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 03/08/2011 11:10:39	Elapsed Time: 1000:00
	Guard: 852.1 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0290 (±18.6%)	1	0.7450 (±3.66%)	1
2	0.0330 (±17.4%)	1	0.5540 (±4.25%)	1
3	0.0310 (±18.0%)	1	0.5530 (±4.25%)	1
4	0.0660 (±12.3%)	1	0.5660 (±4.20%)	1
5	0.0630 (±12.6%)	1	2.8520 (±1.87%)	3
6	0.0300 (±18.3%)	1	0.8620 (±3.41%)	1
7	0.0910 (±10.5%)	1	0.5430 (±4.29%)	1
8	0.0250 (±20.0%)	1	0.4680 (±4.62%)	1
9	0.0460 (±14.7%)	1	0.5750 (±4.17%)	1
10	0.0370 (±16.4%)	1	0.7840 (±3.57%)	1

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	4/8/2011 8:48:53 AM	38	LONG BKG	0.100	0.4430	1000.0
LONG BKG 37	4/8/2011 8:48:49 AM	37	LONG BKG	0.048	0.3290	1000.0
LONG BKG 36	4/8/2011 8:48:45 AM	36	LONG BKG	0.059	0.3080	1000.0
LONG BKG 35	4/8/2011 8:48:38 AM	35	LONG BKG	0.118	0.4370	1000.0
LONG BKG 34	4/8/2011 8:48:34 AM	34	LONG BKG	0.060	0.3860	1000.0
LONG BKG 33	4/8/2011 8:48:30 AM	33	LONG BKG	0.059	0.4090	1000.0
LONG BKG 32	4/8/2011 8:48:27 AM	32	LONG BKG	0.041	0.5380	1000.0
LONG BKG 31	4/8/2011 8:48:23 AM	31	LONG BKG	0.070	0.4160	1000.0
LONG BKG 30	4/8/2011 8:48:14 AM	30	LONG BKG	0.148	0.3820	1000.0
LONG BKG 29	4/8/2011 8:48:10 AM	29	LONG BKG	0.052	0.3480	1000.0
LONG BKG 28	4/8/2011 8:48:06 AM	28	LONG BKG	0.057	0.4270	1000.0
LONG BKG 27	4/8/2011 8:48:00 AM	27	LONG BKG	0.043	0.3840	1000.0
LONG BKG 26	4/8/2011 8:47:54 AM	26	LONG BKG	0.088	0.5070	1000.0
LONG BKG 25	4/8/2011 8:47:50 AM	25	LONG BKG	0.141	0.5930	1000.0
LONG BKG 24	4/8/2011 8:47:45 AM	24	LONG BKG	0.107	0.4990	1000.0
LONG BKG 23	4/8/2011 8:47:42 AM	23	LONG BKG	0.078	0.5290	1000.0

Handwritten signature

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	4/8/2011 8:47:39 AM	22	LONG BKG	0.073	0.4850	1000.0
LBKG 21	4/8/2011 8:47:35 AM	21	LONG BKG	0.117	0.4930	1000.0
LBKG 20	4/8/2011 8:47:29 AM	20	LONG BKG	0.096	0.4390	1000.0
LBKG 19	4/8/2011 8:47:26 AM	19	LONG BKG	0.032	0.5860	1000.0
LBKG 18	4/8/2011 8:47:20 AM	18	LONG BKG	0.053	0.4570	1000.0
LBKG 17	4/8/2011 8:47:18 AM	17	LONG BKG	0.104	0.3950	1000.0
LBKG 16	4/8/2011 8:47:15 AM	16	LONG BKG	0.093	0.4750	1000.0
LBKG 15	4/8/2011 8:47:12 AM	15	LONG BKG	0.118	0.6690	1000.0
LBKG 14	4/8/2011 8:47:10 AM	14	LONG BKG	0.085	0.4380	1000.0
LBKG 13	4/8/2011 8:47:09 AM	13	LONG BKG	0.027	0.3140	1000.0
LBKG 12	4/8/2011 8:47:06 AM	12	LONG BKG	0.132	0.5150	1000.0
LBKG 11	4/8/2011 8:47:04 AM	11	LONG BKG	0.091	0.3990	1000.0

REP 4/11/11

Background Measurement
 C:\UMS\UTL0001\DB40811.BDT

Background Measurement Parameters:

Comment: LNGBKG

User: JMC

Instrument Name: LB770PC

Preset Time: 1000:00

Cycles: 1

Alpha Preset Error: 0.0%

Beta Preset Error: 0.0%

Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 04/08/2011 12:46:13

Elapsed Time: 1000:00

Guard: 843.1 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0270 (±19.2%)	1	0.7144 (±3.94%)	1
2	0.0340 (±17.1%)	1	0.6355 (±4.18%)	1
3	0.0810 (±11.1%)	1	0.5655 (±4.43%)	1
4	0.0660 (±12.3%)	1	0.5300 (±4.58%)	1
5	0.0310 (±18.0%)	1	4.4280 (±1.50%)	3
6	0.0630 (±12.6%)	1		3
7	0.0880 (±10.7%)	1	0.5530 (±4.25%)	1
8	0.0310 (±18.0%)	1	0.5840 (±4.14%)	1
9	0.0400 (±15.8%)	1	0.5570 (±4.24%)	1
10	0.0290 (±18.6%)	1	0.7710 (±3.60%)	1

4/24/11

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	5/8/2011 8:25:09 AM	38	LONG BKG	0.060	0.4190	1000.0
LONG BKG 37	5/8/2011 8:25:05 AM	37	LONG BKG	0.044	0.3540	1000.0
LONG BKG 36	5/8/2011 8:25:02 AM	36	LONG BKG	0.082	0.3520	1000.0
LONG BKG 35	5/8/2011 8:24:58 AM	35	LONG BKG	0.097	0.4710	1000.0
LONG BKG 34	5/8/2011 8:24:53 AM	34	LONG BKG	0.057	0.3790	1000.0
LONG BKG 33	5/8/2011 8:24:50 AM	33	LONG BKG	0.083	0.3870	1000.0
LONG BKG 32	5/8/2011 8:24:45 AM	32	LONG BKG	0.052	0.4810	1000.0
LONG BKG 31	5/8/2011 8:24:41 AM	31	LONG BKG	0.087	0.4550	1000.0
LONG BKG 30	5/8/2011 8:24:38 AM	30	LONG BKG	0.134	0.4080	1000.0
LONG BKG 29	5/8/2011 8:24:34 AM	29	LONG BKG	0.075	0.3350	1000.0
LONG BKG 28	5/8/2011 8:24:31 AM	28	LONG BKG	0.046	0.4700	1000.0
LONG BKG 27	5/8/2011 8:24:29 AM	27	LONG BKG	0.049	0.3780	1000.0
LONG BKG 26	5/8/2011 8:24:29 AM	26	LONG BKG	0.092	0.5920	1000.0
LONG BKG 25	5/8/2011 8:24:17 AM	25	LONG BKG	0.158	0.6550	1000.0
LONG BKG 24	5/8/2011 8:24:11 AM	24	LONG BKG	0.115	0.5030	1000.0
LONG BKG 23	5/8/2011 8:24:07 AM	23	LONG BKG	0.105	0.6480	1000.0

Monday, May 09, 2011

Om 5/9/11

Page 1 of 2

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	5/8/2011 8:24:02 AM	22	LONG BKG	0.072	0.5120	1000.0
LBKG 21	5/8/2011 8:23:57 AM	21	LONG BKG	0.105	0.4710	1000.0
LBKG 20	5/8/2011 8:23:53 AM	20	LONG BKG	0.104	0.4690	1000.0
LBKG 19	5/8/2011 8:23:48 AM	19	LONG BKG	0.102	0.5720	1000.0
LBKG 18	5/8/2011 8:23:42 AM	18	LONG BKG	0.088	0.5010	1000.0
LBKG 17	5/8/2011 8:23:38 AM	17	LONG BKG	0.112	0.4260	1000.0
LBKG 14	5/8/2011 8:23:34 AM	14	LONG BKG	0.082	0.4710	1000.0
LBKG 16	5/8/2011 8:23:28 AM	16	LONG BKG	0.098	0.5140	1000.0
LBKG 15	5/8/2011 8:23:07 AM	15	LONG BKG	0.119	0.6140	1000.0
LBKG 13	5/8/2011 8:22:53 AM	13	LONG BKG	0.038	0.2950	1000.0
LBKG 12	5/8/2011 8:22:52 AM	12	LONG BKG	0.131	0.5430	1000.0
LBKG 11	5/8/2011 8:22:48 AM	11	LONG BKG	0.095	0.4060	1000.0

Om 5/9/11
5/9/11

Background Measurement Parameters:

User: MBT Instrument Name: LB770PC
 Preset Time: 1000:00 Cycles: 1
 Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
 Voltage : 1650

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 05/08/2011 8:26:39 Elapsed Time: 1000:00
 Guard: 855.1 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0380 (±16.2%)	1	0.8410 (±3.45%)	1
2	0.0450 (±14.9%)	1	0.5770 (±4.16%)	1
3	0.0560 (±13.4%)	1	0.5970 (±4.09%)	1
4	0.0980 (±10.1%)	1	0.6630 (±3.88%)	1
5	0.0340 (±17.1%)	1	5.0570 (±1.41%)	3
6	0.0790 (±11.3%)	1		3
7	0.0870 (±10.7%)	1	0.6300 (±3.98%)	1
8	0.0410 (±15.6%)	1	0.5410 (±4.30%)	1
9	0.0830 (±11.0%)	1	0.5750 (±4.17%)	1
10	0.0320 (±17.7%)	1		3

CM-19/11

MBT 5/9/11

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 32	6/7/2011 1:24:42 PM	32	LONG BKG	0.067	0.3820	1000.0
LONG BKG 38	6/6/2011 5:32:12 PM	38	LONG BKG	0.102	0.4460	1000.0
LONG BKG 35	6/6/2011 5:32:06 PM	35	LONG BKG	0.098	0.4580	1000.0
LONG BKG 31	6/6/2011 5:12:21 PM	31	LONG BKG	0.096	0.4520	1000.0
LONG BKG 34	6/6/2011 4:56:42 PM	34	LONG BKG	0.079	0.4500	1000.0
LONG BKG 37	6/6/2011 4:55:11 PM	37	LONG BKG	0.048	0.3230	1000.0
LONG BKG 36	6/6/2011 4:55:03 PM	36	LONG BKG	0.067	0.3650	1000.0
LONG BKG 33	6/6/2011 4:23:20 PM	33	LONG BKG	0.112	0.3840	1000.0
LONG BKG 30	6/4/2011 3:02:57 PM	30	LONG BKG	0.129	0.3820	1000.0
LONG BKG 28	6/4/2011 3:02:53 PM	28	LONG BKG	0.051	0.4000	1000.0
LONG BKG 27	6/4/2011 3:02:48 PM	27	LONG BKG	0.046	0.3500	1000.0
LONG BKG 29	6/4/2011 2:16:22 PM	29	LONG BKG	0.063	0.3380	1000.0
LONG BKG 26	6/4/2011 2:16:17 PM	26	LONG BKG	0.104	0.6000	1000.0
LONG BKG 25	6/4/2011 2:16:13 PM	25	LONG BKG	0.175	0.6510	1000.0
LONG BKG 24	6/4/2011 2:16:09 PM	24	LONG BKG	0.090	0.4690	1000.0
LONG BKG 23	6/4/2011 2:16:05 PM	23	LONG BKG	0.098	0.5760	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	6/4/2011 2:16:00 PM	22	LONG BKG	0.094	0.5200	1000.0
LBKG 21	6/4/2011 2:15:57 PM	21	LONG BKG	0.101	0.4710	1000.0
LBKG 20	6/4/2011 2:15:53 PM	20	LONG BKG	0.115	0.4580	1000.0
LBKG 19	6/4/2011 2:15:50 PM	19	LONG BKG	0.034	0.6200	1000.0
LBKG 18	6/4/2011 2:15:44 PM	18	LONG BKG	0.071	0.5260	1000.0
LBKG 17	6/4/2011 2:15:41 PM	17	LONG BKG	0.094	0.3990	1000.0
LBKG 16	6/4/2011 2:15:37 PM	16	LONG BKG	0.112	0.5220	1000.0
LBKG 15	6/4/2011 2:15:34 PM	15	LONG BKG	0.112	0.6320	1000.0
LBKG 14	6/4/2011 2:15:31 PM	14	LONG BKG	0.093	0.4500	1000.0
LBKG 13	6/4/2011 2:15:28 PM	13	LONG BKG	0.044	0.2740	1000.0
LBKG 12	6/4/2011 2:15:26 PM	12	LONG BKG	0.117	0.5820	1000.0
LBKG 11	6/4/2011 2:15:23 PM	11	LONG BKG	0.063	0.4340	1000.0

Background Measurement
C:\UMS\UTL0001\LB60411.BDT

Background Measurement Parameters:

User: JLK Instrument Name: LB770PC
Preset Time: 1000:00 Cycles: 1
Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 06/04/2011 15:04:42 Elapsed Time: 1000:00
Guard: 831.8 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0460 (±14.7%)	1	0.8040 (±3.53%)	1
2	0.0330 (±17.4%)	1	0.7120 (±3.75%)	1
3	0.0440 (±15.1%)	1	0.5870 (±4.13%)	1
4	0.0750 (±11.5%)	1	0.5960 (±4.10%)	1
5	0.0410 (±15.6%)	1	4.0090 (±1.58%)	3
6	0.0650 (±12.4%)	1		3
7	0.0900 (±10.5%)	1	0.6220 (±4.01%)	1
8	0.0390 (±16.0%)	1		3
9	0.0790 (±11.3%)	1	0.6060 (±4.06%)	1
10	0.0340 (±17.1%)	1	0.8290 (±3.47%)	1

Handwritten: 2/24 6/7/11

Background Measurement Parameters:

User: JLK	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 07/09/2011 13:21:37	Elapsed Time: 1000:00
	Guard: 828.2 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0420 (±15.4%)	1	0.7840 (±3.57%)	1
2	0.0770 (±11.4%)	1	0.6300 (±3.98%)	1
3	0.0390 (±16.0%)	1	0.5710 (±4.18%)	1
4	0.0860 (±10.8%)	1	0.6310 (±3.98%)	1
5	0.0390 (±16.0%)	1	5.0160 (±1.41%)	3
6	0.0370 (±16.4%)	1		3
7	0.1120 (±9.45%)	1	0.6180 (±4.02%)	1
8	0.0480 (±14.4%)	1	0.6230 (±4.01%)	1
9	0.0430 (±15.2%)	1	0.5790 (±4.16%)	1
10	0.0300 (±18.3%)	1	0.7180 (±3.73%)	1

Sept 7/11/11

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 21	7/9/2011 5:00:45 PM	21	LONG BKG	0.097	0.5310	1000.0
LBKG 22	7/9/2011 5:00:40 PM	22	LONG BKG	0.102	0.4930	1000.0
LBKG 20	7/9/2011 5:00:35 PM	20	LONG BKG	0.085	0.4660	1000.0
LBKG 19	7/9/2011 5:00:32 PM	19	LONG BKG	0.072	0.5600	1000.0
LBKG 18	7/9/2011 5:00:28 PM	18	LONG BKG	0.084	0.4380	1000.0
LBKG 17	7/9/2011 5:00:26 PM	17	LONG BKG	0.116	0.4140	1000.0
LBKG 16	7/9/2011 5:00:26 PM	16	LONG BKG	0.107	0.4590	1000.0
LBKG 15	7/9/2011 5:00:26 PM	15	LONG BKG	0.098	0.6800	1000.0
LONG BKG 34	7/9/2011 4:57:14 PM	34	LONG BKG	0.052	0.3910	1000.0
LONG BKG 28	7/9/2011 4:57:09 PM	28	LONG BKG	0.065	0.4020	1000.0
LONG BKG 33	7/9/2011 4:56:40 PM	33	LONG BKG	0.275	0.4520	1000.0
LONG BKG 32	7/9/2011 4:56:35 PM	32	LONG BKG	0.061	0.3830	1000.0
LONG BKG 31	7/9/2011 4:56:30 PM	31	LONG BKG	0.100	0.4250	1000.0
LONG BKG 30	7/9/2011 4:56:25 PM	30	LONG BKG	0.175	0.3990	1000.0
LONG BKG 29	7/9/2011 4:56:21 PM	29	LONG BKG	0.065	0.3630	1000.0
LONG BKG 28	7/9/2011 4:56:14 PM	110	LONG BKG	0.000	0.0000	0.0

on 7/11/11

LRH 7/11/11

... working has an effect...

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 27	7/9/2011 4:56:10 PM	27	LONG BKG	0.061	0.3470	1000.0
LONG BKG 26	7/9/2011 4:56:05 PM	26	LONG BKG	0.099	0.5970	1000.0
LONG BKG 25	7/9/2011 4:56:01 PM	25	LONG BKG	0.181	0.6430	1000.0
LONG BKG 24	7/9/2011 4:55:56 PM	24	LONG BKG	0.101	0.4700	1000.0
LONG BKG 23	7/9/2011 4:55:52 PM	23	LONG BKG	0.073	0.5870	1000.0
LBKG 13	7/9/2011 3:55:24 PM	13	LONG BKG	0.059	0.2860	1000.0
LBKG 14	7/9/2011 3:41:32 PM	14	LONG BKG	0.068	0.4650	1000.0
LBKG 12	7/9/2011 3:41:28 PM	12	LONG BKG	0.126	0.5860	1000.0
LBKG 11	7/9/2011 3:41:25 PM	11	LONG BKG	0.090	0.4370	1000.0
LONG BKG 38	7/9/2011 3:41:18 PM	38	LONG BKG	0.081	0.4620	1000.0
LONG BKG 37	7/9/2011 3:41:14 PM	37	LONG BKG	0.067	0.2880	1000.0
LONG BKG 36	7/9/2011 3:41:09 PM	36	LONG BKG	0.079	0.3430	1000.0
LONG BKG 35	7/9/2011 3:41:04 PM	35	LONG BKG	0.104	0.5030	1000.0

LONG BKG 27
LONG BKG 26
LONG BKG 25
LONG BKG 24
LONG BKG 23
LBKG 13
LBKG 14
LBKG 12
LBKG 11
LONG BKG 38
LONG BKG 37
LONG BKG 36
LONG BKG 35

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Background Measurement
 C:\UMS\UTL0001\LB80911.BDT

Background Measurement Parameters:

User: JLK Instrument Name: LB770PC
 Preset Time: 1000:00 Cycles: 1
 Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
 Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 08/09/2011 15:18:41 Elapsed Time: 1000:00
 Guard: 847.1 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0450 (±14.9%)	1	0.7630 (±3.62%)	1
2	0.0550 (±13.5%)	1	0.6160 (±4.03%)	1
3	0.0390 (±16.0%)	1	0.5140 (±4.41%)	1
4	0.0690 (±12.0%)	1	1.0600 (±3.07%)	2
5	0.0450 (±14.9%)	1	2.0330 (±2.22%)	3
6	0.0300 (±18.3%)	1		3
7	0.0680 (±12.1%)	1	0.6480 (±3.93%)	1
8	0.0260 (±19.6%)	1	0.5940 (±4.10%)	1
9	0.0500 (±14.1%)	1	0.6310 (±3.98%)	1
10	0.0410 (±15.6%)	1	0.7930 (±3.55%)	1

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Handwritten: JLK 8/10/11

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 16	8/9/2011 5:00:24 PM	16	LONG BKG	0.037	0.4080	1000.0
LBKG 14	8/9/2011 5:00:22 PM	14	LONG BKG	0.071	0.4980	1000.0
LBKG 12	8/9/2011 5:00:18 PM	12	LONG BKG	0.092	0.3930	1000.0
LBKG 11	8/9/2011 5:00:14 PM	11	LONG BKG	0.084	0.4900	1000.0
LONG BKG 29	8/9/2011 4:03:07 PM	29	LONG BKG	0.064	0.3820	1000.0
LBKG 21	8/9/2011 3:18:31 PM	21	LONG BKG	0.053	0.3740	1000.0
LBKG 19	8/9/2011 3:18:27 PM	19	LONG BKG	0.059	0.4200	1000.0
LBKG 15	8/9/2011 3:18:22 PM	15	LONG BKG	0.110	0.6280	1000.0
LONG BKG 26	8/9/2011 3:18:15 PM	26	LONG BKG	0.103	0.5430	1000.0
LONG BKG 25	8/9/2011 3:18:11 PM	25	LONG BKG	0.052	0.3850	1000.0
LONG BKG 23	8/9/2011 3:18:06 PM	23	LONG BKG	0.063	0.5700	1000.0
LONG BKG 35	8/9/2011 3:17:58 PM	35	LONG BKG	0.054	0.8920	1000.0

OK/10/11

*11/10/11
JH*

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 37	8/9/2011 6:18:54 PM	37	LONG BKG	0.047	0.3720	1000.0
LBKG 13	8/9/2011 6:18:21 PM	13	LONG BKG	0.031	0.3330	1000.0
LONG BKG 38	8/9/2011 5:01:53 PM	38	LONG BKG	0.082	0.4080	1000.0
LONG BKG 36	8/9/2011 5:01:48 PM	36	LONG BKG	0.079	0.3920	1000.0
LONG BKG 34	8/9/2011 5:01:42 PM	34	LONG BKG	0.048	0.4100	1000.0
LONG BKG 33	8/9/2011 5:01:37 PM	33	LONG BKG	0.284	0.4830	1000.0
LONG BKG 32	8/9/2011 5:01:33 PM	32	LONG BKG	0.062	0.3410	1000.0
LONG BKG 31	8/9/2011 5:01:28 PM	31	LONG BKG	0.040	0.4080	1000.0
LONG BKG 30	8/9/2011 5:01:22 PM	30	LONG BKG	0.144	0.4240	1000.0
LONG BKG 28	8/9/2011 5:01:17 PM	28	LONG BKG	0.062	0.4340	1000.0
LONG BKG 27	8/9/2011 5:01:13 PM	27	LONG BKG	0.052	0.3700	1000.0
LONG BKG 24	8/9/2011 5:01:05 PM	24	LONG BKG	0.054	0.3570	1000.0
LBKG 22	8/9/2011 5:01:00 PM	22	LONG BKG	0.061	0.3970	1000.0
LBKG 20	8/9/2011 5:00:40 PM	20	LONG BKG	0.112	0.4630	1000.0
LBKG 18	8/9/2011 5:00:31 PM	18	LONG BKG	0.087	0.4980	1000.0
LBKG 17	8/9/2011 5:00:28 PM	17	LONG BKG	0.046	0.3900	1000.0

OS/10/11

*11/01/11
Jef*

Background Measurement
 C:\UMS\UTL0001\LB090311.BDT

Background Measurement Parameters:

User: JLK Instrument Name: LB770PC
 Preset Time: 1000:00 Cycles: 1
 Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
 Voltage : 1650

Category List (cps)

	Alpha		Beta	
	Lower	Upper	Lower	Upper
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 09/03/2011 18:19:24 Elapsed Time: 1000:00
 Guard: 835.4 cpm

	Alpha (cpm)	Cat	Beta (cpm)	Cat
1	0.0580 (±13.1%)	1	0.8580 (±3.41%)	1
2	0.0720 (±11.8%)	1	0.6130 (±4.04%)	1
3	0.0590 (±13.0%)	1	0.6160 (±4.03%)	1
4	0.0800 (±11.2%)	1	0.6520 (±3.92%)	1
5	0.0610 (±12.8%)	1	1.9770 (±2.25%)	2
6	0.0560 (±13.4%)	1		3
7	0.1310 (±8.74%)	1	0.8780 (±3.37%)	1
8	0.0580 (±13.1%)	1	0.6350 (±3.97%)	1
9	0.0650 (±12.4%)	1	0.6080 (±4.06%)	1
10	0.0660 (±12.3%)	1	0.9010 (±3.33%)	1

JLH 9/6/11

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 29	9/3/2011 6:33:43 PM	29	LONG BKG	0.073	0.3260	1000.0
LBKG 15	9/3/2011 6:19:59 PM	15	LONG BKG	0.332	1.1840	1000.0
LONG BKG 38	9/3/2011 6:13:45 PM	38	LONG BKG	0.060	0.3490	1000.0
LONG BKG 37	9/3/2011 6:13:39 PM	37	LONG BKG	0.063	0.2890	1000.0
LONG BKG 36	9/3/2011 6:13:34 PM	36	LONG BKG	0.060	0.3580	1000.0
LONG BKG 35	9/3/2011 6:13:29 PM	35	LONG BKG	0.052	0.5910	1000.0
LONG BKG 34	9/3/2011 6:13:21 PM	34	LONG BKG	0.056	0.3930	1000.0
LONG BKG 33	9/3/2011 6:13:17 PM	33	LONG BKG	0.089	0.4040	1000.0
LONG BKG 32	9/3/2011 6:13:12 PM	32	LONG BKG	0.069	2.7440	1000.0
LONG BKG 31	9/3/2011 6:13:08 PM	31	LONG BKG	0.059	0.4200	1000.0
LONG BKG 30	9/3/2011 6:13:04 PM	30	LONG BKG	0.061	0.3480	1000.0
LONG BKG 28	9/3/2011 6:12:59 PM	28	LONG BKG	0.070	0.3320	1000.0
LONG BKG 27	9/3/2011 6:12:54 PM	27	LONG BKG	0.054	0.3000	1000.0
LBKG 19	9/3/2011 6:12:46 PM	19	LONG BKG	0.058	0.4580	1000.0
LONG BKG 26	9/3/2011 6:11:58 PM	26	LONG BKG	0.062	0.4160	1000.0
LONG BKG 25	9/3/2011 6:11:54 PM	25	LONG BKG	0.073	0.3860	1000.0

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9/6/11

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 24	9/3/2011 6:11:50 PM	24	LONG BKG	0.096	0.3870	1000.0
LONG BKG 23	9/3/2011 6:11:46 PM	23	LONG BKG	0.089	0.4550	1000.0
LBKG 22	9/3/2011 6:11:41 PM	22	LONG BKG	0.080	0.4200	1000.0
LBKG 21	9/3/2011 6:11:37 PM	21	LONG BKG	0.050	0.3950	1000.0
LBKG 20	9/3/2011 6:11:34 PM	20	LONG BKG	0.065	0.3560	1000.0
LBKG 18	9/3/2011 6:11:26 PM	18	LONG BKG	0.054	0.4240	1000.0
LBKG 17	9/3/2011 6:11:22 PM	17	LONG BKG	0.069	0.3670	1000.0
LBKG 16	9/3/2011 6:11:19 PM	16	LONG BKG	0.602	1.8340	1000.0
LBKG 14	9/3/2011 6:11:16 PM	14	LONG BKG	0.057	0.4220	1000.0
LBKG 13	9/3/2011 6:11:13 PM	13	LONG BKG	0.037	0.2590	1000.0
LBKG 12	9/3/2011 6:11:11 PM	12	LONG BKG	0.095	0.3950	1000.0
LBKG 11	9/3/2011 6:11:08 PM	11	LONG BKG	0.066	0.3830	1000.0

HH
9/6/11

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 32	9/6/2011 3:27:52 PM	32	LONG BKG	0.042	0.3150	1000.0
LBKG 16	9/6/2011 3:14:25 PM	16	LONG BKG	0.038	0.3650	1000.0
LBKG 15	9/6/2011 3:14:21 PM	15	LONG BKG	0.051	0.4740	1000.0

Handwritten signature

Background Measurement
C:\UMS\UTL0001\LB100111.BDT

Background Measurement Parameters:

User: CMC

Instrument Name: LB770PC

Preset Time: 1000:00

Cycles: 1

Alpha Preset Error: 0.0%

Beta Preset Error: 0.0%

Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 10/01/2011 11:26:23

Elapsed Time: 1000:00

Guard: 850.6 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0430 (±15.2%)	1	0.8110 (±3.51%)	1
2	0.0480 (±14.4%)	1	0.6310 (±3.98%)	1
3	0.0410 (±15.6%)	1	0.5920 (±4.11%)	1
4	0.0650 (±12.4%)	1	0.6160 (±4.03%)	1
5	0.0530 (±13.7%)	1	5.0720 (±1.40%)	3
6	0.0540 (±13.6%)	1		3
7	0.1030 (±9.85%)	1	0.7050 (±3.77%)	1
8	0.0480 (±14.4%)	1	0.6140 (±4.04%)	1
9	0.0560 (±13.4%)	1	0.7080 (±3.76%)	1
10	0.0440 (±15.1%)	1	0.7910 (±3.56%)	1

Handwritten: RCH 10/13/11

Sample Measurement
 C:\UMS\UTL0001\GAB9584.SDT

Sample Measurement Parameters:

User: JLK
 Preset Time: 1000:00
 Alpha Preset Error: 1.0%
 User Protocol: GAB

Instrument Name: LB770PC
 Cycles: 1
 Beta Preset Error: 1.0%

Cycle 1 of 1

Start Time: 10/02/2011 18:45:19

Elapsed Time: 1000:00
 Guard: 847.3 cpm

	<u>Spl #</u>	<u>Sample Name</u>	<u>Alpha (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>	<u>Beta (raw cpm)</u>	<u>MDA</u>	<u>MRA</u>
1	9510	3054188001	0.23 (±6.59%)	0.0006	0.0003	1.425 (±2.65%)	0.0023	0.0011
2	9513	E	0.061 (±12.8%)	0.0005	0.0003	0.608 (±4.06%)	0.0019	0.0009
3	9511	3054189001	0.18 (±7.45%)	0.0007	0.0003	1.169 (±2.92%)	0.0020	0.0010
4	9511	3054230001	0.098 (±10.1%)	0.0009	0.0004	15.43 (±0.805%)	0.0021	0.0010
5	9668	E	0.071 (±11.9%)	0.0006	0.0003	5.028 (±1.41%)	0.0076	0.0038
6	9668	E	0.097 (±10.2%)	undef.	undef.	Outliers!	undef.	undef.
7	9511	E	0.12 (±9.21%)	0.0009	0.0004	0.812 (±3.51%)	0.0022	0.0011
8	9511	LBKG	0.051 (±14.0%)	0.0009	0.0004	0.601 (±4.08%)	0.0022	0.0011
9	9513	3054230002	0.089 (±10.6%)	0.0007	0.0003	3.276 (±1.75%)	0.0022	0.0011
10	9668	E	0.081 (±11.1%)	0.0006	0.0003	0.911 (±3.31%)	0.0024	0.0012

JRH
10/3/11

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 24	10/1/2011 11:31:50 AM	24	LONG BKG	0.070	0.3750	1000.0
LONG BKG 23	10/1/2011 11:31:46 AM	23	LONG BKG	0.067	0.4070	1000.0
LBKG 22	10/1/2011 11:31:42 AM	22	LONG BKG	0.080	0.4230	1000.0
LBKG 21	10/1/2011 11:31:39 AM	21	LONG BKG	0.057	0.3940	1000.0
LBKG 20	10/1/2011 11:31:36 AM	20	LONG BKG	0.064	0.3590	1000.0
LBKG 19	10/1/2011 11:31:30 AM	19	LONG BKG	0.045	0.4400	1000.0
LBKG 18	10/1/2011 11:31:24 AM	18	LONG BKG	0.054	0.4000	1000.0
LBKG 17	10/1/2011 11:31:21 AM	17	LONG BKG	0.055	0.3790	1000.0
LBKG 16	10/1/2011 11:31:17 AM	16	LONG BKG	0.046	0.3910	1000.0
LBKG 15	10/1/2011 11:31:14 AM	15	LONG BKG	0.056	0.5570	1000.0
LBKG 14	10/1/2011 11:31:12 AM	14	LONG BKG	0.027	0.4490	1000.0
LBKG 13	10/1/2011 11:31:09 AM	13	LONG BKG	0.039	0.3440	1000.0
LBKG 12	10/1/2011 11:31:08 AM	12	LONG BKG	0.088	0.4150	1000.0
LBKG 11	10/1/2011 11:31:05 AM	11	LONG BKG	0.046	0.3820	1000.0

Handwritten signature and date: 10/12/11

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 25	10/2/2011 6:09:39 PM	25	LONG BKG	0.072	0.4390	1000.0
LBKG 13	10/2/2011 6:09:20 PM	13	LONG BKG	0.034	0.3510	1000.0
LONG BKG 38	10/1/2011 11:32:49 AM	38	LONG BKG	0.055	0.3790	1000.0
LONG BKG 37	10/1/2011 11:32:44 AM	37	LONG BKG	0.064	0.3270	1000.0
LONG BKG 36	10/1/2011 11:32:40 AM	36	LONG BKG	0.070	0.3860	1000.0
LONG BKG 35	10/1/2011 11:32:36 AM	35	LONG BKG	0.049	0.3720	1000.0
LONG BKG 34	10/1/2011 11:32:31 AM	34	LONG BKG	0.053	0.4220	1000.0
LONG BKG 33	10/1/2011 11:32:28 AM	33	LONG BKG	0.093	0.3680	1000.0
LONG BKG 32	10/1/2011 11:32:24 AM	32	LONG BKG	0.060	0.3330	1000.0
LONG BKG 31	10/1/2011 11:32:20 AM	31	LONG BKG	0.059	0.4170	1000.0
LONG BKG 30	10/1/2011 11:32:16 AM	30	LONG BKG	0.054	0.3770	1000.0
LONG BKG 29	10/1/2011 11:32:12 AM	29	LONG BKG	0.060	0.2820	1000.0
LONG BKG 28	10/1/2011 11:32:08 AM	28	LONG BKG	0.051	0.3160	1000.0
LONG BKG 27	10/1/2011 11:32:04 AM	27	LONG BKG	0.036	0.3260	1000.0
LONG BKG 26	10/1/2011 11:31:57 AM	26	LONG BKG	0.080	0.4370	1000.0
LONG BKG 25	10/1/2011 11:31:53 AM	25	LONG BKG	0.077	0.3430	1000.0

Handwritten signature and date: 10/11/11

Background Measurement
 C:\UMS\UTL0001\LB110611.BDT

Background Measurement Parameters:

User: JLK Instrument Name: LB770PC
 Preset Time: 1000:00 Cycles: 1
 Alpha Preset Error: 0.0% Beta Preset Error: 0.0%
 Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 11/06/2011 18:42:25 Elapsed Time: 1000:00
 Guard: 828.2 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0550 (±13.5%)	1	0.7970 (±3.54%)	1
2	0.0490 (±14.3%)	1	0.5990 (±4.09%)	1
3	0.0640 (±12.5%)	1	0.5880 (±4.12%)	1
4	0.0910 (±10.5%)	1	0.6620 (±3.89%)	1
5	0.0750 (±11.5%)	1	3.1460 (±1.78%)	3
6	0.0630 (±12.6%)	1	1.0700 (±3.06%)	2
7	0.1290 (±8.80%)	1	0.6130 (±4.04%)	1
8	0.0530 (±13.7%)	1	0.5690 (±4.19%)	1
9	0.0770 (±11.4%)	1	0.6210 (±4.01%)	1
10	0.0680 (±12.1%)	1	0.9600 (±3.23%)	1

JLK 11/7/11

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 29	11/6/2011 6:47:55 PM	29	LONG BKG	0.077	0.2820	1000.0
LBKG 15	11/6/2011 5:55:41 PM	15	LONG BKG	0.063	0.5120	1000.0
LONG BKG 38	11/6/2011 5:37:52 PM	38	LONG BKG	0.063	0.3640	1000.0
LONG BKG 37	11/6/2011 5:37:48 PM	37	LONG BKG	0.076	0.3220	1000.0
LONG BKG 36	11/6/2011 5:37:44 PM	36	LONG BKG	0.062	0.3460	1000.0
LONG BKG 35	11/6/2011 5:37:40 PM	35	LONG BKG	0.066	0.3530	1000.0
LONG BKG 34	11/6/2011 5:37:36 PM	34	LONG BKG	0.060	0.4430	1000.0
LONG BKG 33	11/6/2011 5:37:33 PM	33	LONG BKG	0.120	0.3780	1000.0
LONG BKG 32	11/6/2011 5:37:29 PM	32	LONG BKG	0.060	0.3790	1000.0
LONG BKG 31	11/6/2011 5:37:25 PM	31	LONG BKG	0.070	0.4420	1000.0
LONG BKG 30	11/6/2011 5:37:20 PM	30	LONG BKG	0.070	0.3890	1000.0
LONG BKG 28	11/6/2011 5:37:16 PM	28	LONG BKG	0.072	0.3560	1000.0
LONG BKG 27	11/6/2011 5:37:12 PM	27	LONG BKG	0.058	0.3520	1000.0
LONG BKG 26	11/6/2011 5:37:08 PM	26	LONG BKG	0.076	0.3870	1000.0
LONG BKG 25	11/6/2011 5:37:04 PM	25	LONG BKG	0.208	0.4270	1000.0
LONG BKG 24	11/6/2011 5:37:01 PM	24	LONG BKG	0.079	0.3260	1000.0

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SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 23	11/6/2011 5:36:58 PM	23	LONG BKG	0.094	0.4190	1000.0
LBKG 22	11/6/2011 5:36:55 PM	22	LONG BKG	0.102	0.3790	1000.0
LBKG 21	11/6/2011 5:36:51 PM	21	LONG BKG	0.081	0.3430	1000.0
LBKG 20	11/6/2011 5:36:48 PM	20	LONG BKG	0.071	0.3590	1000.0
LBKG 19	11/6/2011 5:36:44 PM	19	LONG BKG	0.087	0.4580	1000.0
LBKG 18	11/6/2011 5:36:37 PM	18	LONG BKG	0.069	0.3930	1000.0
LBKG 17	11/6/2011 5:36:34 PM	17	LONG BKG	0.089	0.4020	1000.0
LBKG 16	11/6/2011 5:36:32 PM	16	LONG BKG	0.056	0.3340	1000.0
LBKG 14	11/6/2011 5:34:19 PM	14	LONG BKG	0.042	0.4090	1000.0
LBKG 13	11/6/2011 5:34:16 PM	13	LONG BKG	0.073	0.2960	1000.0
LBKG 12	11/6/2011 5:34:14 PM	12	LONG BKG	0.110	0.3530	1000.0
LBKG 11	11/6/2011 5:34:12 PM	11	LONG BKG	0.132	0.4480	1000.0

*11/11/11
H20*

Background Measurement Parameters:

User: RMK	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 12/23/2011 20:19:05	Elapsed Time: 1000:00
	Guard: 851.3 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0600 (±12.9%)	1	0.8490 (±3.43%)	1
2	0.0470 (±14.6%)	1	0.5700 (±4.19%)	1
3	0.0390 (±16.0%)	1	0.5790 (±4.16%)	1
4	0.0790 (±11.3%)	1	0.6120 (±4.04%)	1
5	0.0360 (±16.7%)	1	2.8460 (±1.87%)	3
6	0.0680 (±12.1%)	1		3
7	0.0970 (±10.2%)	1	0.7210 (±3.72%)	1
8	0.0540 (±13.6%)	1	0.5750 (±4.17%)	1
9	0.0440 (±15.1%)	1	0.5790 (±4.16%)	1
10	0.0570 (±13.2%)	1	0.7550 (±3.64%)	1

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	12/23/2011 7:47:51 PM	38	LONG BKG	0.088	0.3680	1000.0
LONG BKG 33	12/23/2011 7:47:33 PM	33	LONG BKG	0.103	0.3770	1000.0
LONG BKG 31	12/23/2011 7:47:24 PM	31	LONG BKG	0.049	0.3780	1000.0
LONG BKG 30	12/23/2011 7:47:16 PM	30	LONG BKG	0.048	0.4080	1000.0
LONG BKG 28	12/23/2011 7:47:07 PM	28	LONG BKG	0.055	0.3060	1000.0
LONG BKG 27	12/23/2011 7:46:47 PM	27	LONG BKG	0.045	0.3290	1000.0
LONG BKG 26	12/23/2011 7:46:40 PM	26	LONG BKG	0.078	0.3470	1000.0
LONG BKG 25	12/23/2011 7:46:40 PM	25	LONG BKG	0.109	0.4100	1000.0
LONG BKG 24	12/23/2011 7:46:05 PM	24	LONG BKG	0.117	0.3030	1000.0
LONG BKG 23	12/23/2011 7:45:57 PM	23	LONG BKG	0.061	0.3560	1000.0
LBKG 22	12/23/2011 7:45:49 PM	22	LONG BKG	0.064	0.3570	1000.0
LBKG 21	12/23/2011 7:45:44 PM	21	LONG BKG	0.058	0.3580	1000.0
LBKG 20	12/23/2011 7:45:38 PM	20	LONG BKG	0.081	0.3780	1000.0
LBKG 19	12/23/2011 7:45:32 PM	19	LONG BKG	0.054	0.4350	1000.0
LBKG 18	12/23/2011 7:45:25 PM	18	LONG BKG	0.066	0.3880	1000.0
LBKG 17	12/23/2011 7:45:18 PM	17	LONG BKG	0.059	0.3810	1000.0

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 16	12/23/2011 7:45:13 PM	16	LONG BKG	0.064	0.3730	1000.0
LBKG 14	12/23/2011 7:45:07 PM	14	LONG BKG	0.045	0.3750	1000.0
LBKG 13	12/23/2011 7:45:04 PM	13	LONG BKG	0.051	0.3090	1000.0
LBKG 11	12/23/2011 7:45:04 PM	11	LONG BKG	0.094	0.4530	1000.0
LONG BKG 37	12/23/2011 3:09:59 PM	37	LONG BKG	0.066	0.3130	1000.0
LONG BKG 36	12/23/2011 3:09:59 PM	36	LONG BKG	0.084	0.3480	1000.0
LONG BKG 35	12/23/2011 3:09:44 PM	35	LONG BKG	0.055	0.3900	1000.0
LONG BKG 34	12/23/2011 3:09:39 PM	34	LONG BKG	0.102	0.4420	1000.0
LONG BKG 32	12/23/2011 3:09:32 PM	32	LONG BKG	0.056	0.3440	1000.0
LONG BKG 29	12/23/2011 3:09:26 PM	29	LONG BKG	0.067	0.3000	1000.0
LBKG 15	12/23/2011 3:09:17 PM	15	LONG BKG	0.052	0.4730	1000.0
LBKG 12	12/23/2011 3:09:13 PM	12	LONG BKG	0.099	0.3440	1000.0

Background Measurement
 C:\UMS\UTL0001\LB020312.BDT

Background Measurement Parameters:

User: JLK	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 02/03/2012 14:05:37

Elapsed Time: 1000:00

Guard: 836.5 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0430 (±15.2%)	1	0.8620 (±3.41%)	1
2	0.0680 (±12.1%)	1	0.6720 (±3.86%)	1
3	0.0570 (±13.2%)	1	0.6150 (±4.03%)	1
4	0.0730 (±11.7%)	1	0.5940 (±4.10%)	1
5	0.0440 (±15.1%)	1	2.3680 (±2.05%)	3
6	0.0770 (±11.4%)	1		3
7	0.0880 (±10.7%)	1	0.6190 (±4.02%)	1
8	0.0400 (±15.8%)	1	0.5620 (±4.22%)	1
9	0.0360 (±16.7%)	1	0.5980 (±4.09%)	1
10	0.0490 (±14.3%)	1	0.8110 (±3.51%)	1

*JEA
2/6/12*

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH_ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 28	2/3/2012 4:42:02 PM	28	LONG BKG	0.058	0.2820	1000.0
LONG BKG 24	2/3/2012 4:41:56 PM	24	LONG BKG	0.090	0.3290	1000.0
LBKG 18	2/3/2012 2:46:17 PM	18	LONG BKG	0.063	0.3810	1000.0
LONG BKG 37	2/3/2012 2:16:42 PM	37	LONG BKG	0.069	0.3250	1000.0
LBKG 17	2/3/2012 2:15:18 PM	17	LONG BKG	0.072	0.3510	1000.0
LONG BKG 38	2/3/2012 2:03:03 PM	38	LONG BKG	0.080	0.3960	1000.0
LONG BKG 36	2/3/2012 2:02:57 PM	36	LONG BKG	0.047	0.3920	1000.0
LONG BKG 35	2/3/2012 2:02:51 PM	35	LONG BKG	0.045	0.3700	1000.0
LONG BKG 34	2/3/2012 2:02:45 PM	34	LONG BKG	0.069	0.4110	1000.0
LONG BKG 33	2/3/2012 2:02:41 PM	33	LONG BKG	0.095	0.3970	1000.0
LONG BKG 32	2/3/2012 2:02:36 PM	32	LONG BKG	0.057	0.4640	1000.0
LONG BKG 31	2/3/2012 2:02:32 PM	31	LONG BKG	0.058	0.3940	1000.0
LONG BKG 30	2/3/2012 2:02:27 PM	30	LONG BKG	0.058	0.3340	1000.0
LONG BKG 29	2/3/2012 2:02:21 PM	29	LONG BKG	0.057	0.2630	1000.0
LONG BKG 27	2/3/2012 2:02:17 PM	27	LONG BKG	0.043	0.3510	1000.0
LONG BKG 26	2/3/2012 2:02:08 PM	26	LONG BKG	0.097	0.3900	1000.0

LEH 2/6/12

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 25	2/3/2012 2:02:04 PM	25	LONG BKG	0.079	0.3730	1000.0
LONG BKG 23	2/3/2012 2:01:59 PM	23	LONG BKG	0.061	0.3890	1000.0
LBKG 22	2/3/2012 2:01:55 PM	22	LONG BKG	0.061	0.3900	1000.0
LBKG 21	2/3/2012 2:01:51 PM	21	LONG BKG	0.050	0.3320	1000.0
LBKG 20	2/3/2012 2:01:47 PM	20	LONG BKG	0.046	0.3430	1000.0
LBKG 19	2/3/2012 2:01:43 PM	19	LONG BKG	0.073	0.4300	1000.0
LBKG 16	2/3/2012 2:01:34 PM	16	LONG BKG	0.062	0.3710	1000.0
LBKG 15	2/3/2012 2:01:31 PM	15	LONG BKG	0.069	0.5790	1000.0
LBKG 14	2/3/2012 2:01:28 PM	14	LONG BKG	0.042	0.4010	1000.0
LBKG 13	2/3/2012 2:01:24 PM	13	LONG BKG	0.049	0.2940	1000.0
LBKG 12	2/3/2012 2:01:21 PM	12	LONG BKG	0.109	0.4090	1000.0
LBKG 11	2/3/2012 2:01:16 PM	11	LONG BKG	0.099	0.4270	1000.0

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Background Measurement Parameters:

User: JLK	Instrument Name: LB770PC
Preset Time: 1000:00	Cycles: 1
Alpha Preset Error: 0.0%	Beta Preset Error: 0.0%
Voltage : 1650	

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 03/11/2012 17:00:37	Elapsed Time: 1000:00
	Guard: 816.9 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0470 (±14.6%)	1	0.755 (±3.64%)	1
2	0.0460 (±14.7%)	1	0.539 (±4.31%)	1
3	0.0640 (±12.5%)	1	0.556 (±4.24%)	1
4	0.0870 (±10.7%)	1	0.576 (±4.17%)	1
5	0.0550 (±13.5%)	1	2.144 (±2.16%)	3
6	0.0680 (±12.1%)	1	10.427 (±1.03%)	3
7	0.1200 (±9.13%)	1	0.615 (±4.03%)	1
8	0.0610 (±12.8%)	1	0.507 (±4.44%)	1
9	0.0480 (±14.4%)	1	0.589 (±4.12%)	1
10	0.0550 (±13.5%)	1	0.805 (±3.52%)	1

JLK 03/12/12

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 27	3/12/2012 2:31:06 PM	27	LONG BKG	0.055	0.3080	1000.0
LBKG 18	3/11/2012 6:33:47 PM	18	LONG BKG	0.077	0.4630	1000.0
LBKG 12	3/11/2012 6:33:22 PM	12	LONG BKG	0.120	0.4400	1000.0
LONG BKG 26	3/11/2012 6:28:55 PM	26	LONG BKG	0.097	0.4010	1000.0
LBKG 22	3/11/2012 6:28:31 PM	22	LONG BKG	0.084	0.3570	1000.0
LONG BKG 32	3/11/2012 6:22:50 PM	32	LONG BKG	0.065	0.4150	1000.0
LONG BKG 38	3/11/2012 6:14:37 PM	38	LONG BKG	0.083	0.3730	1000.0
LONG BKG 37	3/11/2012 6:14:32 PM	37	LONG BKG	0.047	0.3090	1000.0
LONG BKG 36	3/11/2012 6:14:27 PM	36	LONG BKG	0.069	0.3940	1000.0
LONG BKG 35	3/11/2012 6:14:22 PM	35	LONG BKG	0.062	0.3560	1000.0
LONG BKG 34	3/11/2012 6:14:16 PM	34	LONG BKG	0.149	0.6050	1000.0
LONG BKG 33	3/11/2012 6:14:11 PM	33	LONG BKG	0.104	0.3770	1000.0
LONG BKG 31	3/11/2012 6:14:07 PM	31	LONG BKG	0.072	0.3820	1000.0
LONG BKG 30	3/11/2012 6:14:03 PM	30	LONG BKG	0.074	0.3510	1000.0
LONG BKG 29	3/11/2012 6:13:59 PM	29	LONG BKG	0.077	0.2920	1000.0
LONG BKG 28	3/11/2012 6:13:55 PM	28	LONG BKG	0.061	0.3410	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 23	3/11/2012 6:13:45 PM	23	LONG BKG	0.055	0.4060	1000.0
LONG BKG 24	3/11/2012 6:13:42 PM	24	LONG BKG	0.078	0.3110	1000.0
LONG BKG 25	3/11/2012 6:13:37 PM	25	LONG BKG	0.110	0.4020	1000.0
LBKG 21	3/11/2012 6:13:17 PM	21	LONG BKG	0.078	0.3820	1000.0
LBKG 20	3/11/2012 6:13:14 PM	20	LONG BKG	0.070	0.3490	1000.0
LBKG 19	3/11/2012 6:13:11 PM	19	LONG BKG	0.048	0.4330	1000.0
LBKG 17	3/11/2012 6:13:05 PM	17	LONG BKG	0.054	0.3530	1000.0
LBKG 16	3/11/2012 6:13:01 PM	16	LONG BKG	0.057	0.4060	1000.0
LBKG 15	3/11/2012 6:12:59 PM	15	LONG BKG	0.060	0.4550	1000.0
LBKG 14	3/11/2012 6:12:56 PM	14	LONG BKG	0.056	0.3880	1000.0
LBKG 13	3/11/2012 6:12:53 PM	13	LONG BKG	0.055	0.3060	1000.0
LBKG 11	3/11/2012 6:12:51 PM	11	LONG BKG	0.144	0.3960	1000.0

Background Measurement
C:\UMS\UTL0001\LB42212.BDT

Background Measurement Parameters:

User: EHH

Instrument Name: LB770PC

Preset Time: 1000:00

Cycles: 1

Alpha Preset Error: 0.0%

Beta Preset Error: 0.0%

Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 04/22/2012 10:13:46

Elapsed Time: 1000:00

Guard: 867.1 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0600 (±12.9%)	1	0.8380 (±3.45%)	1
2	0.0510 (±14.0%)	1	0.5960 (±4.10%)	1
3	0.0640 (±12.5%)	1	0.6380 (±3.96%)	1
4	0.0800 (±11.2%)	1	0.6120 (±4.04%)	1
5	0.0330 (±17.4%)	1	3.0770 (±1.80%)	3
6	0.0580 (±13.1%)	1		3
7	0.1030 (±9.85%)	1	0.6380 (±3.96%)	1
8	0.0560 (±13.4%)	1	0.5750 (±4.17%)	1
9	0.0570 (±13.2%)	1	0.5750 (±4.17%)	1
10	0.0700 (±12.0%)	1	0.8550 (±3.42%)	1

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG 22	4/22/2012 10:12:22 AM	22	LONG BKG	0.061	0.3760	1000.0
LBKG 21	4/22/2012 10:12:19 AM	21	LONG BKG	0.065	0.3980	1000.0
LBKG 20	4/22/2012 10:12:17 AM	20	LONG BKG	0.077	0.3880	1000.0
LBKG 19	4/22/2012 10:12:13 AM	19	LONG BKG	0.078	0.4470	1000.0
LBKG 18	4/22/2012 10:12:09 AM	18	LONG BKG	0.058	0.4310	1000.0
LBKG 17	4/22/2012 10:12:06 AM	17	LONG BKG	0.073	0.3530	1000.0
LBKG 16	4/22/2012 10:12:04 AM	16	LONG BKG	0.053	0.3910	1000.0
LBKG 15	4/22/2012 10:12:00 AM	15	LONG BKG	0.072	0.5200	1000.0
LBKG 14	4/22/2012 10:11:58 AM	14	LONG BKG	0.063	0.4800	1000.0
LBKG 13	4/22/2012 10:11:55 AM	13	LONG BKG	0.025	0.3110	1000.0
LBKG 12	4/22/2012 10:11:53 AM	12	LONG BKG	0.107	0.4200	1000.0
LBKG 11	4/22/2012 10:11:51 AM	11	LONG BKG	0.200	0.4420	1000.0
LONG BKG-27	3/12/2012 2:31:06 PM	27	LONG BKG	0.055	0.3080	1000.0
LBKG 18	3/11/2012 6:33:47 PM	18	LONG BKG	0.077	0.4630	1000.0
LBKG 12	3/11/2012 6:33:22 PM	12	LONG BKG	0.120	0.4400	1000.0
LONG BKG 26	3/11/2012 6:28:55 PM	26	LONG BKG	0.097	0.4010	1000.0
LBKG 22	3/11/2012 6:28:31 PM	22	LONG BKG	0.084	0.3570	1000.0
LONG BKG-32	3/11/2012 6:22:50 PM	32	LONG BKG	0.065	0.4150	1000.0

On 4/23/12

Pace Analytical Protean GFPC System Count Data

SAMPLE_ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 38	4/22/2012 10:13:22 AM	38	LONG BKG	0.103	0.4150	1000.0
LONG BKG 37	4/22/2012 10:13:17 AM	37	LONG BKG	0.064	0.3630	1000.0
LONG BKG 36	4/22/2012 10:13:14 AM	36	LONG BKG	0.078	0.4050	1000.0
LONG BKG 35	4/22/2012 10:13:09 AM	35	LONG BKG	0.062	0.4050	1000.0
LONG BKG 34	4/22/2012 10:13:05 AM	34	LONG BKG	0.057	0.4560	1000.0
LONG BKG 33	4/22/2012 10:13:02 AM	33	LONG BKG	0.075	0.3450	1000.0
LONG BKG 32	4/22/2012 10:12:59 AM	32	LONG BKG	0.050	0.8710	1000.0
LONG BKG 31	4/22/2012 10:12:55 AM	31	LONG BKG	0.067	0.4220	1000.0
LONG BKG 30	4/22/2012 10:12:51 AM	30	LONG BKG	0.055	0.3760	1000.0
LONG BKG 29	4/22/2012 10:12:47 AM	29	LONG BKG	0.048	0.3230	1000.0
LONG BKG 28	4/22/2012 10:12:44 AM	28	LONG BKG	0.050	0.3160	1000.0
LONG BKG 27	4/22/2012 10:12:40 AM	27	LONG BKG	0.056	0.3660	1000.0
LONG BKG 26	4/22/2012 10:12:35 AM	26	LONG BKG	0.111	0.4070	1000.0
LONG BKG 25	4/22/2012 10:12:32 AM	25	LONG BKG	0.146	0.4200	1000.0
LONG BKG 24	4/22/2012 10:12:28 AM	24	LONG BKG	0.102	0.3510	1000.0
LONG BKG 23	4/22/2012 10:12:25 AM	23	LONG BKG	0.071	0.4680	1000.0

Background Measurement
C:\UMS\UTL0001\LB60312.BDT

Background Measurement Parameters:

User: JLK

Instrument Name: LB770PC

Preset Time: 1000:00

Cycles: 1

Alpha Preset Error: 0.0%

Beta Preset Error: 0.0%

Voltage : 1650

Category List (cps)

	Alpha		Beta	
	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
1	0.00000	0.3	0.00000	1.0
2	0.3	0.6	1.0	2.0
3	0.6	Infinity	2.0	Infinity

Cycle #1:

Start Time: 06/03/2012 16:41:16

Elapsed Time: 1000:00

Guard: 846.7 cpm

	<u>Alpha (cpm)</u>	<u>Cat</u>	<u>Beta (cpm)</u>	<u>Cat</u>
1	0.0640 (±12.5%)	1	0.8040 (±3.53%)	1
2	0.0620 (±12.7%)	1	0.7010 (±3.78%)	1
3	0.0600 (±12.9%)	1	0.6670 (±3.87%)	1
4	0.1120 (±9.45%)	1	0.6050 (±4.07%)	1
5	0.0520 (±13.9%)	1	5.1640 (±1.39%)	3
6	0.0510 (±14.0%)	1		3
7	0.1070 (±9.67%)	1	0.6890 (±3.81%)	1
8	0.0960 (±10.2%)	1	0.6310 (±3.98%)	1
9	0.0550 (±13.5%)	1	0.6370 (±3.96%)	1
10	0.0590 (±13.0%)	1	0.7940 (±3.55%)	1

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 32	6/3/2012 4:51:54 PM	32	LONG BKG	0.054	0.4120	1000.0
LONG BKG 31	6/3/2012 4:46:05 PM	31	LONG BKG	0.089	0.3670	1000.0
LBKG 11	6/3/2012 4:45:05 PM	11	LONG BKG	0.162	0.4690	1000.0
LBKG 18	6/3/2012 4:40:48 PM	18	LONG BKG	0.063	0.3820	1000.0
LONG BKG 38	6/3/2012 4:35:36 PM	38	LONG BKG	0.110	0.3990	1000.0
LONG BKG 37	6/3/2012 4:35:31 PM	37	LONG BKG	0.042	0.3190	1000.0
LONG BKG 36	6/3/2012 4:35:27 PM	36	LONG BKG	0.093	0.4070	1000.0
LONG BKG 35	6/3/2012 4:35:23 PM	35	LONG BKG	0.197	0.3930	1000.0
LONG BKG 34	6/3/2012 4:35:18 PM	34	LONG BKG	0.076	0.4040	1000.0
LONG BKG 33	6/3/2012 4:35:14 PM	33	LONG BKG	0.090	0.3870	1000.0
LBKG 17	6/3/2012 4:35:04 PM	17	LONG BKG	0.137	0.3860	1000.0
LONG BKG 30	6/3/2012 4:32:46 PM	30	LONG BKG	0.072	0.4090	1000.0
LONG BKG 29	6/3/2012 4:32:42 PM	29	LONG BKG	0.084	0.3220	1000.0
LONG BKG 28	6/3/2012 4:32:38 PM	28	LONG BKG	0.081	0.3330	1000.0
LONG BKG 27	6/3/2012 4:32:33 PM	27	LONG BKG	0.074	0.2880	1000.0
LONG BKG 26	6/3/2012 4:32:19 PM	26	LONG BKG	0.149	0.4370	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG 25	6/3/2012 4:32:19 PM	25	LONG BKG	0.127	0.4110	1000.0
LONG BKG 23	6/3/2012 4:29:58 PM	23	LONG BKG	0.075	0.4570	1000.0
LBKG 22	6/3/2012 4:29:41 PM	22	LONG BKG	0.057	0.4180	1000.0
LBKG 21	6/3/2012 4:29:37 PM	21	LONG BKG	0.078	0.3780	1000.0
LBKG 20	6/3/2012 4:29:34 PM	20	LONG BKG	0.097	0.3820	1000.0
LBKG 19	6/3/2012 4:29:31 PM	19	LONG BKG	0.077	0.4570	1000.0
LBKG 16	6/3/2012 4:28:56 PM	16	LONG BKG	0.061	0.3910	1000.0
LBKG 15	6/3/2012 4:28:53 PM	15	LONG BKG	0.082	0.4950	1000.0
LBKG 14	6/3/2012 4:28:50 PM	14	LONG BKG	0.069	0.3800	1000.0
LBKG 13	6/3/2012 4:28:47 PM	13	LONG BKG	0.050	0.3330	1000.0
LBKG 12	6/3/2012 4:28:44 PM	12	LONG BKG	0.089	0.3780	1000.0
LONG BKG 27	3/12/2012 2:31:06 PM	27	LONG BKG	0.055	0.3080	1000.0
LBKG 18	3/11/2012 6:33:47 PM	18	LONG BKG	0.077	0.4630	1000.0
LBKG 12	3/11/2012 6:33:22 PM	12	LONG BKG	0.120	0.4400	1000.0
LONG BKG 26	3/11/2012 6:28:55 PM	26	LONG BKG	0.097	0.4010	1000.0
LBKG 22	3/11/2012 6:28:31 PM	22	LONG BKG	0.084	0.3570	1000.0
LONG BKG 32	3/11/2012 6:22:50 PM	32	LONG BKG	0.065	0.4150	1000.0
LONG BKG 38	3/11/2012 6:14:37 PM	38	LONG BKG	0.083	0.3730	1000.0

0.6412

Pace Analytical Protean GFPC System Count Data

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LONG BKG	7/13/2012 6:35:14 PM	33	LONG BKG	0.120	0.4100	1000.0
LONG BKG	7/13/2012 6:35:08 PM	31	LONG BKG	0.090	0.3660	1000.0
LONG BKG	7/13/2012 6:35:00 PM	28	LONG BKG	0.150	0.3480	1000.0
LONG BKG	7/13/2012 6:34:51 PM	26	LONG BKG	0.097	0.4050	1000.0
LBKG	7/13/2012 6:34:44 PM	21	LONG BKG	0.058	0.3810	1000.0
LBKG	7/13/2012 6:34:34 PM	17	LONG BKG	0.084	0.3710	1000.0
LBKG	7/13/2012 6:34:29 PM	15	LONG BKG	0.120	0.4700	1000.0
LONG BKG	7/13/2012 6:32:42 PM	30	LONG BKG	0.233	0.4240	1000.0
LONG BKG	7/13/2012 6:32:37 PM	29	LONG BKG	0.063	0.2740	1000.0
LONG BKG	7/13/2012 6:32:22 PM	27	LONG BKG	0.069	0.3930	1000.0
LONG BKG	7/13/2012 6:32:03 PM	25	LONG BKG	0.158	0.4010	1000.0
LONG BKG	7/13/2012 6:31:57 PM	23	LONG BKG	0.072	0.4150	1000.0
LBKG	7/13/2012 6:31:48 PM	20	LONG BKG	0.070	0.3890	1000.0
LBKG	7/13/2012 6:31:40 PM	22	LONG BKG	0.114	0.4060	1000.0
LBKG	7/13/2012 6:31:25 PM	19	LONG BKG	0.090	0.4330	1000.0
LBKG	7/13/2012 6:30:45 PM	18	LONG BKG	0.073	0.3840	1000.0

SAMPLE ID	Count Start:	DET#	BATCH ID	Alpha cpm	Beta cpm	Ct. Time (min)
LBKG	7/13/2012 6:30:40 PM	16	LONG BKG	0.087	0.3430	1000.0
LONG BKG	7/13/2012 6:25:39 PM	34	LONG BKG	0.125	0.4480	1000.0
LONG BKG	7/13/2012 6:25:32 PM	36	LONG BKG	0.067	0.3320	1000.0
LONG BKG	7/13/2012 6:25:25 PM	37	LONG BKG	0.218	0.4600	1000.0
LBKG	7/13/2012 5:07:49 PM	14	LONG BKG	0.082	0.4390	1000.0
LBKG	7/13/2012 5:07:41 PM	13	LONG BKG	0.123	0.3450	1000.0
LBKG	7/13/2012 5:07:37 PM	12	LONG BKG	0.155	0.4240	1000.0
LBKG	7/13/2012 5:07:30 PM	11	LONG BKG	0.177	0.4410	1000.0
LONG BKG	7/13/2012 5:07:22 PM	32	LONG BKG	0.053	0.3380	1000.0
LONG BKG	7/13/2012 5:07:13 PM	35	LONG BKG	0.207	3.6640	1000.0
LONG BKG	7/13/2012 5:07:03 PM	38	LONG BKG	0.104	0.3900	1000.0
LONG BKG 32	6/3/2012 4:51:54 PM	32	LONG BKG	0.054	0.4120	1000.0
LONG BKG 31	6/3/2012 4:46:05 PM	31	LONG BKG	0.089	0.3670	1000.0
LBKG 11	6/3/2012 4:45:05 PM	11	LONG BKG	0.162	0.4690	1000.0
LBKG 18	6/3/2012 4:40:48 PM	18	LONG BKG	0.063	0.3820	1000.0
LONG BKG 38	6/3/2012 4:35:36 PM	38	LONG BKG	0.110	0.3990	1000.0
LONG BKG 37	6/3/2012 4:35:31 PM	37	LONG BKG	0.042	0.3190	1000.0
LONG BKG 36	6/3/2012 4:35:27 PM	36	LONG BKG	0.093	0.4070	1000.0

On 7/16/12