

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

February 6, 2009

Amendment Request for Materials License No. 34-07167-03

U.S. Nuclear Regulatory Commission
Region III
Materials Licensing Branch
Division of Nuclear Materials Safety
2443 Warrenville Road
Suite 210
Lisle, Illinois 60532-4352

Dear Sir or Madam:

We wish to amend our NRC Materials License 34-07167-03 to downsize from a Type A Specific License of Broad Scope to a Limited Scope License, reduce the number of licensed materials, and modify our list of authorized users. This application also contains information in response to your letter of March 21, 2008, which transmitted Amendment No. 12 to our NRC Material License No. 34-07167-03.

1. We wish to reduce the scope of our license from broad to limited, and no longer continue the authorization in License Condition 11 to have the Radiation Safety Committee (RSC) approve users of licensed materials. With the NRC's approval we will keep an RSC in place as an internal process rather than as a condition of our license, in order to provide programmatic oversight and advise the Radiation Safety Officer (RSO). We will submit all user applications for licensed materials to the NRC for approval.
2. Obsolete or unneeded sealed sources identified in our previous amendment request were disposed of through the services of Chase Environmental, a licensed radioactive waste broker. Leak tests swipes were collected by Benjamin Sirknen of Chase Environmental for all sealed sources that exceeded the leak testing thresholds prescribed in 10 CFR 39.35(e). The swipes were analyzed by Chase Environmental under Texas Radioactive Materials License No. L05787. Leak test results are provided as Enclosure (A) to this letter. Benjamin Sirknen can be contacted at:

Chase Environmental Group, Inc.
109 Flint Road
Oak Ridge, TN 37830
(877) 389-2124

3. All obsolete or unneeded sealed and unsealed sources were transferred or disposed through

RECEIVED FEB 12 2009

the services of Chase Environmental to authorized recipients. We request these sources be removed from our license. Transfer records, including facility names and addresses, manifests or bills of lading, and/or records of receipt are provided as Enclosure (B) to this letter. The following table summarizes the disposition of obsolete or unneeded sealed sources listed on our Amendment Number 12:

Byproduct, Source, and/or SNM	Chemical and/or Physical Form	Recipient
G. Hydrogen-3 (Varian)	G. Foil sources (Varian)	Varian Chromatography Systems
H. Hydrogen-3 (Sentex)	H. Foil sources (Safety Light)	Alaron Corp.
I. Hydrogen-3 (Baseline)	I. Foil sources (Valco)	(2) Central Missouri State University (1) Loss reported to NRC
K. Iron-55	K. Sealed sources	QSA Global, Inc.
L. Curium-244	L. Sealed sources	QSA Global, Inc.
M. Cadmium-109	M. Sealed sources	QSA Global, Inc.
N. Americium-241	N. Sealed sources	QSA Global, Inc.
O. Cesium-137	O. Sealed sources	Alaron Corp.
P. Cobalt-60	P. Sealed sources	Alaron Corp.
Q. Americium-241	Q. Sealed sources	Alaron Corp.
R. Plutonium-239	R. Sealed sources	Alaron Corp.

Please note that a number of sources of exempt quantities or exempt concentrations were disposed of through Alaron Corp. at the same time as the sources listed above, and are listed on the same transfer records.

4. The System Science and Software Hydrogen-3 sealed source listed as item F of our Amendment Number 12 has not been listed on our inventories since consistent inventory recordkeeping began in 1991. The only record of this source being at NIOSH Cincinnati exists in two inventories from 1985, which were recently discovered. I have been unable to locate any reference to disposal, transfer or loss in radiation safety committee minutes from 1985-1991. I have been informed by Mr. Dean Charles, an environmental engineer at Maxwell Corporation (which acquired System Science and Software), that the company's transfer and disposal records from this period are no longer available. Mr. Charles reported searching Maxwell Corporation's archive lists and consulting with the company's former RSO, Mr. Rich Sobilo, before coming to this conclusion. According to Mr. Charles, the instrument this source was contained in became obsolete in the late 1980s and many of them were returned to the manufacturer for disposal. Based on the small amount of available information, we believe this source was most likely returned to System Science and Software between October 1985 and January 1991. We have no indications in our records that this source was lost, and request that this source be removed from our license. The current activity of this source would be approximately 62 milliCuries.

5. We wish to change the authorized use for Hydrogen-3 and Carbon-14, listed as lines 6.A and 6.B of our license, to storage only incident to disposal. We have ceased using these isotopes in our research, and intend to request their removal from our license on the next amendment

request, after the remaining materials have been disposed of.

6. We wish to maintain our current Ni-63 sealed source possession limit of 15 milliCuries per source, with a total activity of 150 milliCuries. The following table lists our inventory of Ni-63 sealed sources which are not exempt from NRC regulations:

Serial No.	Manufacturer	Model Number	Location	User
K0216	Hewlett Packard	G 1223A	H-321	K. Brown
K1804	Hewlett Packard	G 1533A	H-321	S. Pendergrass
K2878	Hewlett Packard	G 1533A	H-414	K. Brown
U3470	Agilent Technologies	G 2397A	H-456	S. Pendergrass
U6331	Agilent Technologies	G 2397A	T-302	C. B'Hymer
U8974	Agilent Technologies	G 2397A	T-449	K. Cheever

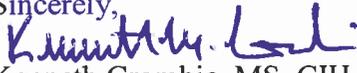
5. Due to a change in our equipment inventory, we wish to remove the following authorized users from our license:

Name	Job Title	Isotope used
Booher, Donald	Biomedical Engineering Technician	Ni-63
Dunn, Kevin L.	Biomedical Engineering Technician	Ni-63

6. Due to retirement, we wish to remove Kenneth Cheever from our list of authorized users and have Patricia Mathias appointed in his place as an authorized user of Ni-63 sealed sources. Ms Mathias's authorized user application and CV are provided as Enclosure (C).

7. Due to our discontinuation of research involving Hydrogen-3 and Carbon-14 sources, we wish to remove John Snawder from our list of authorized users. All remaining Hydrogen-3 and Carbon-14 sources will be stored under the direct control of the RSO until they are transferred to an authorized recipient for disposal.

If you have any questions or would like additional information, please contact me at (513) 533-8223.

Sincerely,

Kenneth Crombie, MS, CIH
Radiation Safety Officer
National Institute for Occupational Safety and Health
4676 Columbia Parkway MS C-2
Cincinnati, OH 45226-1998

Enclosures to NIOSH Cincinnati NRC license amendment request dated February 6, 2009:

- A. Leak test certificates for disposal of obsolete and unneeded sealed sources
- B. Transfer records for obsolete and unneeded sealed sources
- C. Sealed source authorized user application and CV for Ms. Patricia Mathias

CERTIFICATE OF DISPOSITION OF MATERIALS

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: .5 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0028), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

INSTRUCTIONS: SEND THE COMPLETED CERTIFICATE TO THE NRC OFFICE SPECIFIED ON THE REVERSE. (All items MUST be completed—print or type)

LICENSEE NAME AND ADDRESS

NATIONAL INST. FOR OCCUPATIONAL
SAFETY & HEALTH
ROBERT A TAFT LABORATORIES
4676 COLUMBIA PARKWAY
CINCINNATI, OH 45226

LICENSE NUMBER

LICENSE EXPIRATION DATE

THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT:
(Check and/or complete the appropriate item(s) below.) **JOHN E. SNAWDER (513) 533-8148**

A. MATERIALS DATA (Check one and complete as necessary)

1. NO MATERIALS HAVE EVER BEEN PROCURED OR POSSESSED BY THE LICENSEE UNDER THIS LICENSE.
- OR
2. ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSEE UNDER THE LICENSE NUMBER CITED ABOVE HAVE BEEN DISPOSED OF IN THE FOLLOWING MANNER. (If additional space is needed, use the reverse side or provide attachments.)

Shipped to: **VARIAN CHROMATOGRAPHY SYSTEMS**
Describe specific material transfer actions and, if there were radioactive wastes generated in terminating this license, the disposal actions, including the disposition of low-level radioactive waste, mixed waste, Greater-than-Class-C waste, and sealed sources, if applicable.

GAS CHROMATOGRAPHY, ELECTRON CAPTURE DETECTOR P/N 96-95 S/N S996
RADIOISOTOPE; TRITIUM (H3) AMOUNT: 1C

For transfers, specify the date of the transfer, the name of the licensed recipient, and the recipient's NRC license number or Agreement State name and license number.

DATE: **01/15/03** VARIAN LICENSE NO. (CALIFORNIA) 0256-07

If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste contractor, describe the specific disposal procedures (e.g., decay in storage).

STORED AT: **VARIAN CHROMATOGRAPHY SYSTEMS, 2700 MITCHELL DR. WALNUT CREEK, CA.94598**
PHONE: **(510) 9392400**

B. OTHER DATA

1. OUR LICENSE HAS NOT YET EXPIRED; PLEASE TERMINATE IT.
2. WAS A RADIATION SURVEY CONDUCTED TO CONFIRM THE ABSENCE OF LICENSED RADIOACTIVE MATERIALS AND TO DETERMINE WHETHER ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE? (Check one)
- NO (Attach explanation) **EXEMPT**
- YES, THE RESULTS (Check one)
- ARE ATTACHED, or
- WERE FORWARDED TO NRC ON (Date)

3. THE PERSON TO BE CONTACTED REGARDING THE INFORMATION PROVIDED ON THIS FORM

NAME

Larry Steinwandt, Radiation Safety Officer

TELEPHONE NUMBER

(510) 939-2400

4. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO

CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

SIGNATURE



DATE

1-15-03

PRINTED NAME AND TITLE

Larry Steinwandt, Radiation Safety Officer

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.



CHASE ENVIRONMENTAL GROUP, INC.
waste services, remediation & consulting

3501 Workman Road, Suite H
Knoxville, TN 37921

(865) 584-0833
FAX (865) 584-1961

January 24, 2007

Ken Crombie
Environmental Health Specialist II
NIOSH
4676 Columbia Parkway, Mail Stop C-2
Cincinnati, OH 45226-1998

Dear Ken:

Enclosed please find a copy of the stamped and signed NRC Form 540, manifest numbers AL-2007-011 and AL-2007-012, acknowledging receipt by Alaron Corp. of material shipped from your facility on January 9, 2007. If you have any questions concerning this shipment, please call us toll-free at 877-389-2124.

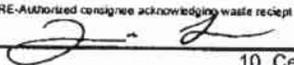
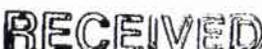
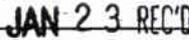
We appreciate the opportunity to be of service to NIOSH, and look forward to working with you in the future.

Sincerely,

April Case
Customer Service Representative

NRC FORM 540		5. SHIPPER- NAME AND FACILITY Chase Environmental Group, Inc. 11450 Watterson Court Louisville, KY 40299		SHIPPER ID # N/A	7. NRC FORM 540 AND 540A PAGE <u> 1 </u> PAGE(S)	8. Manifest Number (Use this number on all continuation pages) AL-2007-011			
UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER		USER PERMIT NUMBER NA		X COLLECTOR	NRC FORM 541 AND 541A 1 OF <u> 1 </u> PAGE(S)				
1. EMERGENCY TELEPHONE NUMBER (INCLUDE AREA CODE) 800-424-9300		SHIPMENT # NA		PROCESSOR	NRC FORM 542 AND 542A <u> 1 </u> PAGE(S)				
ORGANIZATION Chemtrec		CONTACT Janet Baker		GENERATOR TYPE (SPECIFY)	ADDITIONAL INFORMATION None	9. CONSIGNEE-NAME AND FACILITY ADDRESS Alaron Corporation 2138 State Route 18 Wampum, PA 16157			
WSDS #: CHEN01RAD		CONTACT Janet Baker		TELEPHONE # 865-584-0833	Contact Jonathon Wallace Telephone Number (Include area code) (724) 535-5777				
3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST 1		6. CARRIER NAME AND ADDRESS R & R Trucking PO Box 545 Duenweg, MO 64841		EPA ID # N/A	SIGNATURE-authorized consignee acknowledging waste receipt 				
4. IS THIS AN "EXCLUSIVE USE" SHIPMENT? [] YES [x] NO		CONTACT Don Richey		SHIPPING DATE 1/9/2007	Date 1-23-07				
5. DOES EPA REGULATE WASTE RELATING TO A MANIFEST ACCOMPANY THIS SHIPMENT? [] YES [x] NO		EPA MANIFEST NUMBER N/A		TELEPHONE # 417-623-6885	10. Certification <small>This is to certify that the herein named materials are properly identified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are also identified, packaged, marked and labeled and are in proper condition for transportation and storage as described in accordance with the requirements of 49 CFR parts 20 and 81, or equivalent state regulations.</small>				
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIOISOTOPES	16. TOTAL PACKAGE ACTIVITY MBq/mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME m ³ /cu.ft.	19. ID NUMBER OF PACKAGE
Non DOT Regulated Material		NA	NA	Solid / Oxide	Po-210	2.95E-03	N/A	0.019	AI-SE-B-
Po-210 Static Eliminators for License Transfer						7.98E-05		0.68	07-014
RECEIVED									
JAN 23 REC'D									
ALARON CORPORATION 07-0023									
FOR CONSIGNEE USE ONLY									

CONSIGNEE ORIGIN (MUST ACCOMPANY WASTE IN TRANSIT)

NRC FORM 540		5. SHIPPER- NAME AND FACILITY Chase Environmental Group, Inc. 11450 Watterson Court Louisville, KY 40299		SHIPPER ID # N/A	7. NRC FORM 540 AND 540A PAGE <u> 1 </u> PAGE(S)		8. Manifest Number (Use this number on all continuation pages) AL-2007-012		
UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER		USER PERMIT NUMBER NA		X COLLECTOR	NRC FORM 541 AND 541A 1 OF <u> 2 </u> PAGE(S)				
1. EMERGENCY TELEPHONE NUMBER (INCLUDE AREA CODE) 800-424-9300		SHIPMENT # NA		PROCESSOR	NRC FORM 542 AND 542A 1 PAGE(S)				
ORGANIZATION Chemtrec		CONTACT Janet Baker		GENERATOR TYPE (SPECIFY)	ADDITIONAL INFORMATION None PAGE(S)		9. CONSIGNEE-NAME AND FACILITY ADDRESS Alaron Corporation 2138 State Route 18 Wampum, PA 16157		
WSDS #: CHEN01RAD		6. CARRIER NAME AND ADDRESS R & R Trucking PO Box 545 Duenweg, MO 64841		TELEPHONE # : 865-584-0833	SIGNATURE-Authorized consignee acknowledging waste receipt 		Contact Jonathon Wallace Telephone Number (Include area code) (724) 535-5777		
3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST 8/15/07 2		EPA ID # N/A		SHIPPING DATE 1/9/2007	10. Certification		Date 1-23-07		
4. DOES SPACIALIZED WASTE REQUIRE A MANIFEST [] YES [x] NO		EPA MANIFEST NUMBER N/A		TELEPHONE # 417-623-6885	The is to certify that the herein named materials are properly checked, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. The also certifies that the materials are classified, packaged, marked and labeled and are in proper condition for transportation and handling in accordance with the requirements of 10CFR parts 20 and 61, or equivalent state regulations.				
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq/mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME m ³ /cu.ft.	19. ID NUMBER OF PACKAGE
Radioactive Material, Type A Package, 7, UN2915 Sources for License Transfer	Yellow-II	0.1	Solid / Oxide	Am-241; Ba-133; Bi-210; C-14; Co-57; Co-60; Cs-137; H-3; I-129; Ni-63; Na-22; Pb-210; Po-210; Pu-239; Ra-228; Sr-90; Tc-99; Th-230; Tl-204	1.30E+04 3.52E+02	N/A	0.21 7.5	AL-SE-B-07-017	
Radioactive Material, Type A Package, 7, UN2915 Sources for License Transfer	Yellow-II	0.1	Solid/Oxide	Co-60, Cs-137	3.33E+03 9.00E+01	N/A	0.21 7.5	AL-GA-B-07-018	
   07-0022									
FOR CONSIGNEE USE ONLY									

CONSIGNEE ORIGINAL (MUST ACCOMPANY WASTE IN TRANSIT)



ACKNOWLEDGEMENT OF RECEIPT OF RADIOACTIVE MATERIAL

January 24, 2007

Ken Crombie
NIOSH
4676 Columbia Parkway, Mail Stop C-2
Cincinnati, OH 45226-1998

Manifest Numbers: AL-2007-011 and AL-2007-012

Dear Mr. Crombie:

This letter is to certify that Alaron Corporation has received and accepted ownership of the radioactive material on manifest number AL-2007-011 and AL-2007-012, from your facility, pursuant to applicable regulations and as authorized by our NRC Radioactive Material License 37-20826-01.

This receipt should be retained in your files as a permanent record showing the disposition of this radioactive material. If you have any questions or require additional assistance, please contact us at (724) 535-5777.

Sincerely,
Alaron Corporation

A handwritten signature in black ink, appearing to read "J. Harverson", is written over the typed name.

Joseph M. Harverson
President

Crombie, Ken (CDC/NIOSH/OD)

From: Larry Ferguson [ferguson@cmsu1.cmsu.edu]
Sent: Friday, September 08, 2006 3:02 PM
To: Crombie, Ken (CDC/NIOSH/OD)
Cc: Alice Greife; Harold Keller; James Laster; Victoria Steel
Subject: Gas Chromatograph ECDs

Hello, Ken

I am an Assistant Professor of Industrial Hygiene in the Department of Safety Sciences at Central Missouri State University. I tried to call you twice earlier and left a voicemail for you. I am responding to your inquiry to Harold Keller here at CMSU regarding an incorrect serial number on a GC ECD that was transferred to us from NIOSH via an NSF Grant in 2003, since we are currently in possession of these items. When we received these items, I contacted the NIOSH Radiation Safety Officer, Mr. Frank Godbey, via phone, and sent him a fax (on July 16, 2003) of the transfer documents, requesting he complete proper general license transfer actions with the items' manufacturer, and also noted the discrepancy in the ECD Serial Numbers in that fax. I later confirmed by phone that he received the fax. The ECD SERIAL # of 166 is correct for the GC BARCODE #56648, but the BARCODE #54011 GC has an ECD with a SERIAL #023, not 166 or 158. I also noted in that fax that the received items also included an uninstalled ECD with SERIAL #N698. I have physically re-confirmed this information myself by looking at the instruments again. Our CMSU Public Safety (Larry Province) was also notified regarding receipt of these generally licensed items. I hope this answers your concerns. Please contact me at 660-543-8534 or via e-mail if you have any further questions regarding these items.

Larry Ferguson, Ed.S., CHMM
Assistant Professor of Industrial Hygiene
Labs Coordinator
Department of Safety Sciences
Central Missouri State University
HUM 314
Warrensburg, MO 64093
Phone: 660/543-8534
Fax: 660/543-8142



CHASE ENVIRONMENTAL GROUP, INC.
waste services, remediation & consulting

3501 Workman Road, Suite H
Knoxville, TN 37921

(865) 584-0833
FAX (865) 584-1961

February 1, 2007

Mr. Ken Crombie
Environmental Health Specialist
National Institute for Occupational Safety and Health
4676 Columbia Parkway, Mail Stop C-2
Cincinnati, OH 45226-1998

Dear Ken:

Enclosed please find a copy of the receipt acknowledgement from **QSA Global, Inc.** for the sealed sources shipped from your facility on January 9, 2007. The letter should be retained as a permanent record of the disposition of this radioactive material. If you have any questions concerning this shipment, please call us toll-free at 877-389-2124.

We appreciate the opportunity to be of service to NIOSH, and look forward to working with you in the future.

Sincerely,

April Case
Customer Service Representative

STRAIGHT BILL OF LADING - SHORT FORM - NOT NEGOTIABLE

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading,

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any portion of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

From: Chase Environmental Group, Inc. for CDC/National Institute for Occupational Safety & Health
 4676 Columbia Parkway, Mail Stop C-2
 Cincinnati, OH 45226-1998

Consigned To: *GSA Bms 1/9/07*
 GSA Global
 6765 Langley Drive
 Baton Rouge, LA 70809

Freight Bill #
Shipment #
SN-2007-013

Contact: Ben Sirknen 865-584-0833 Contact: Rusty Barrett (225) 751-7294

Originating Carrier: R & R Trucking
 Connecting Carrier(s): N/A

Delivering Carrier: Same Tractor #: 6059 Trailer #: DATE: 1/9/2007

# of Packages	HM	Description	Weight
SN-GA-X-07-018 (1 drum)	X	Radioactive material, Type A Package, 7, UN2915; Solid/Oxide; <i>Am-241; Cm-244; Fe-55;</i> 1.85E+03 MBq; Radioactive Label= Yellow II TI= <i>0.1</i>	<i>100 lbs</i>
SN-GA-X-07-019 (1 drum)	X	Radioactive material, Type A Package, 7, UN2915; Solid/Oxide; <i>Am-241; Cd-109; Fe-55;</i> 9.62E+02 MBq; Radioactive Label= Yellow II TI= <i>0.1</i>	<i>100 lbs</i>

24 Hour Emergency Contact: CHEMTREC @ 800-424-9300 ERG: 163 CHEMTREC WSDS CHEM01RAD

Dimensions of Cargo Before Loading	Length: LEGAL	Width: LEGAL	Height: LEGAL	Total Feet of Trailer Space Occupied:	TOTAL
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UNLESS A GREATER VALUE IS DECLARED, THE SHIPPER HEREBY RELEASES THE VALUE TO \$5000.00 PER TON OF 2000 POUNDS FOR EACH ARTICLE
 THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED VEHICLE CONTAINS MATERIALS PROPERLY PLACARDED IN ACCORDANCE WITH 49 CFR 172.500

	DATE	TIME		DATE	TIME		DATE	TIME
ARRIVED AT SHIPPER	1/9/2007		SCHEDULED	1/9/2007		LOADING STARTED	1/9/2007	
LOADING COMPLETED	1/9/2007		VEHICLE RELEASED	1/9/2007		SHIPPER'S SIGNATURE	<i>[Signature]</i>	
						GENERATOR'S SIGNATURE	<i>Kenneth M. Lavelle</i>	

SIGNATURE TALLY RECEIPT - Must be filled out and signed at origin and each time the shipment changes custody.

Received from Consignor

Date: Time: Tractor # *6059*

Driver's Signature: *[Signature]*

Change of Custody

Date: Time: Tractor #

Driver's Signature

	DATE	TIME		DATE	TIME		DATE	TIME
ARRIVED AT CONSIGNEE			SCHEDULED			UNLOADING STARTED		
UNLOADING COMPLETED			VEHICLE RELEASED			CONSIGNEE'S SIGNATURE	<i>[Signature]</i>	

RECEIVED THE ABOVE DESCRIBED PROPERTY IN GOOD CONDITION EXCEPT AS NOTED



6765 Langley Drive
Baton Rouge, Louisiana 70809
Telephone: 225-751-5893
Fax: 225-756-0365

Date: January 31, 2007

Ben Sirknen
Chase Environmental Group
3501 Workman Road
Knoxville, TN 37921

Reference: 2007-007

This is to advise that the Radioactive Material as detailed below has been received by QSA Global, Inc as of 1-9-07 and we have taken possession of this source:

Manufacturer	Model	Device S/N	Isotope	Activity
CSI	730	17125	Fe-55	10 mci
CSI	730	17125	Cm-244	30 mci
CSI	730	17125	Am-241	10 mci
CSI	730	17126	Fe-55	10 mci
CSI	730	17126	Cd-109	30 mci
CSI	730	17126	Am-241	10 mci

Please retain this record for your files. Should you require further assistance, please contact us at QSA Global, Inc.

Regards,

Rusty Barrett
Technical Service Manager

Appendix I-2

AUTHORIZED USER FORM FOR SEALED SOURCES

1. Authorized User's Name Patricia Mathias
Title Biologist
Center NIOSH Division DART Branch BHAB
Section Molecular & Genetic Monitoring
Mailing Address 4676 Columbia Parkway, MS C-23, Cincinnati, OH 45226
Phone 513-533-8216

2. Alternate's Name (appointed to supervise workers and order radioisotopes in absence of Authorized User) Clayton B'Hymer, Ph.D.
Mailing Address 4676 Columbia Pkwy, Cincinnati, OH, 45226
Phone 513-533-8148

3. Check one:

 New Authorized User
 Current Authorized User - Update
 Amendment to current authorization

4. Location, building, and room numbers where radioactive materials will be used and/or stored: Cincinnati, Taft Laboratories, 4676 Columbia Pkwy,
Room T-449

5. How will security of materials be maintained?

 Materials will be stored in a locked cabinet, refrigerator, or freezer.
 Room will be locked when unattended.
 Room has Cardkey access only.
 Other (specify

6. Radioactive Materials

Radioisotope	Amount/Source	Total Amount on Hand
1. ^{63}Ni	15 mCi/sealed EC Detector as foils or plated sources in detector cells	15 mCi
2.		

7. Describe how source will be used (such as in an instrument or as a static eliminator, etc.) An Electron Capture Detector, containing installed ^{63}Ni sealed sources, is installed in an Agilent Model G1540N Gas Chromatograph/Mass Spectrometer (BCN 151240, SN US10537053), which is used in the Robert A. Taft Laboratories, 4676 Columbia Pkwy, Cincinnati, OH 45226, Room T-449.

8. Describe the security procedures used for each source, if taken in the field. The Electron Capture Detector, containing installed ^{63}Ni sealed sources, installed in an Agilent Model G1540N Gas Chromatograph/Mass Spectrometer (BCN 151240, SN US10537053), is attached to fixed sources of high-purity gasses and 220V filtered electrical current and is used only in the Robert A. Taft Laboratories, 4676 Columbia Pkwy, Cincinnati, OH 45226, Room T-449.

9. Authorized user's training and experience

Type of Training	Where	Dates	On the job or formal course (Title)
A. Principles and practices of radiation protection	North Dakota State University University of Cincinnati	1979 1990-1992	Radioactive Tracer Methods Radiation Safety Training with annual user recertification
B. Radioactivity measurement standardization and monitoring techniques and instruments	North Dakota State University University of Cincinnati	1979 1990-1992	Radioactive Tracer Methods Radiation Safety Training with annual user recertification
C. Calculations basic to the use and measurement of radioactivity	North Dakota State University University of Cincinnati	1979 1990-1992	Radioactive Tracer Methods Radiation Safety Training with annual user recertification
D. Biological effects of radiation	North Dakota State University University of Cincinnati	1979 1990-1992	Radioactive Tracer Methods Radiation Safety Training with annual user recertification

Experience

Radioisotope/Maximum quantity	Where	Dates	Type of Use
¹⁴ carbon /10 mCi	North Dakota State	1980	carbon assimilation in microbial proteins
[³ H]-glycine/ 10 mCi	North Dakota State	1980	microbial metabolite tracing
¹⁴ carbon /10 mCi	North Dakota State	1983	in vitro carbon assimilation studies
³⁶ chloride / 1 mCi ²² sodium / 1 mCi	University of Cincinnati	1990	ion transport studies in canine epithelium
[³ H]-arachidonic acid 100 uCi	University of Cincinnati	1990	radioimmunoassay

10. Alternate's training and experience

14. Alternate's training and experience

Type of Training	Where	Dates	On the job or formal course (Title)
A. Principles and practices of radiation protection	CDC Web training	July 2007	Clarity Net Radiation Safety (Web-based)
	Merrell Dow Pharmaceuticals	Fall, 1991	On-the-job training
B. Radioactivity measurement standardization and monitoring techniques and instruments	CDC Web training	July 2007	Clarity Net Radiation Safety (Web-based)
	Merrell Dow Pharmaceuticals	Fall, 1991	On-the-job training
C. Calculations basic to the use and measurement of radioactivity	CDC Web training	July 2007	Clarity Net Radiation Safety (Web-based)
	Merrell Dow Pharmaceuticals	Fall, 1991	On-the-job training
D. Biological effects of radiation	CDC Web training	July 2007	Clarity Net Radiation Safety (Web-based)
	Merrell Dow Pharmaceuticals	Fall, 1991	On-the-job training

Experience

Radioisotope/Maximum quantity	Where	Dates	Type of Use
Nickel 63 sealed sources/30 milliCuries	NIOSH Cincinnati	2003-present	Detector use on gas chromatograph

11. Describe the training or instruction you will provide or require for all personnel who will work with or be in the vicinity of the source(s) used under your authorization.

- Personnel will be required to read the NIOSH Radiation Safety Manual.
- Other (explain in detail) Personnel will be instructed in proper storage and security of the ⁶³Ni source; the hazards of ⁶³Ni and safe use of the Electron Capture Detector containing the source.

12. List personnel who will be using the source.

- 1. Patricia I. Mathias, MS
- 2. _____
- 3. _____
- 4. _____

13. I understand my responsibilities as an Authorized User and agree to meet the requirements of the Radiation Safety Program.

Signature: Patricia I. Mathias

Date: January 14, 2009

Patricia I. Mathias

January 2009

PATRICIA I. MATHIAS Biologist

EDUCATION

University of Cincinnati Cincinnati, Ohio	M.S.	1992	Toxicology/Environmental Health
North Dakota State University Fargo, North Dakota	M.S.	1982	Bacteriology
North Dakota State University Fargo, North Dakota.	B.S.	1972	Bacteriology
Bismarck State College Bismarck, North Dakota	Associate Arts	1970	Biology

RESEARCH /WORK EXPERIENCE

1992- to present -- Biologist, Molecular & Genetic Monitoring Team
Division of Applied Research and Technology,
National Institute for Occupational Safety and Health, Cincinnati, Ohio.

1982-1984--Laboratory Technician III-Dairy Nutrition and Biochemistry, North Dakota State
University, Department of Animal Sciences, Fargo, North Dakota.

1982-- Laboratory Assistant-Department of Veterinary Sciences, North Dakota State University
Fargo, North Dakota.

1972-1978-- Instructor- Department of Biology, Bismarck State College, Bismarck, North Dakota.

RESEARCH INTERESTS

Proteomics, SELDI-MS, microarray assay, biostatistics, biomarker analysis, protein
biomarker development, biomarkers of oxidative stress, genotoxicity and *in-vitro* biomarker
development

HONORS / AWARDS

Group Award CDC/NIOSH 2006
On The Spot Award CDC/NIOSH 1999
Special Act Award CDC/NIOSH 1993.
Sigma Xi-Associate member
Outstanding Young Women of America 1982.
North Dakota Board of Higher Education Scholarship 1979.

PUBLICATIONS

Plews, P.I., M.C. Bromel, I.A. Schipper. The microbial environment of the calf with diarrhea.
North Dakota Agricultural Experimental Station Farm Journal. 40, 17-23. 1981.

Plews, P.I., M.C. Bromel, I.A. Schipper. Sanitation of feedlot soil. North Dakota Agricultural Experimental Station Farm Journal. 41, 15-16. 1983.

Plews, P.I., M.C. Bromel, I.A. Schipper. Characterization of the coliform and enteric bacilli in the environment of the calves with colibacillosis. Appl. Environ. Microbiol. 49, 949-954. 1985.

Plews, P.I., Z.A. Abdel-Malek, C.A. Douppnik, G.D. Leikauf. Endothelin stimulates chloride secretion across canine tracheal epithelium. Am. J. Physiol. 261(5) L188-L194. 1991.

Hoffmann, P., D. Richards, P. Plews, I. Heinroth-Hoffmann, M. Toraason. Arachidonic acid inhibits electrically induced intracellular calcium transients in neonatal rat cardiomyocytes. Prostaglandins Leukotrienes and Essential Fatty Acids 49, 837-838. 1993.

Hoffmann, P., K. Heinroth, D. Richards, P. Plews, M. Toraason. Depression of calcium dynamics in cardiac myocytes - A common mechanism of halogenated hydrocarbons anesthetics and solvents. J. Mol. Cell. Cardiol 26:579-589, 1994.

Tirmenstein, M.A, P.Plews, C.V. Walker, M. Wollery, H.E. Wey, M. Toraason. Antimony-induced oxidative stress and toxicity in cultured cardiac myocytes. Toxicol Appl Pharmacol 130:41-47, 1995.

Hoffmann, P., D. Richards, I Heinroth-Hoffmann, P.Mathias, H. Wey, M. Toraason. Arachidonic acid disrupts calcium dynamics in neonatal rat cardiac myocytes. Cardiovascular Research 30: 889-898, 1995.

Toraason M, Wey H, Woolery M, Plews P, and Hoffman P. (1995) Arachidonic acid supplementation enhances hydrogen peroxide induced oxidative injury of neonatal rat cardiac myocytes. Cardiovascular Research 29: 624-628.

Wey HE, Richards D, Tirmenstein MA, Mathias PI, and Toraason M. (1997)
The Role of Intracellular Calcium in Antimony-Induced Toxicity in cultured cardiac myocytes. Toxicol. Appl. Pharmacology 145:202-210.

Tirmenstein MA, Mathias PI, Snawder JE, Wey HE and Toraason M. (1997)
Antimony-induced alterations in thiol homeostasis and adenine nucleotide status in cultured cardiac myocytes. Toxicology 119:203-211.

Toraason MA, Wey HE, Richards DE, Mathias PI and Krieg E. (1997)
Altered Ca²⁺ mobilization during excitation-contraction in cultured cardiac myocytes exposed to antimony. Toxicol. Appl. Pharmacology 146:104-115.

Toraason M, Moorman W, Mathias PI, Futz, C, and Witzeman, F. (1997)
Two-dimensional electrophoretic analysis of myocardial proteins from lead-exposed rabbits. Electrophoresis 18: 2978-82.

Toraason MA, Richards DE, and Mathias PI. (1998) Ca²⁺ mobilization in fetal-human cardiac myocytes is stimulated by isoproterenol and inhibited

by ryanodine. In Vitro Cell Biol - Animal 34:19-21.

Snawder JE, Tirmenstein MA, Mathias PI, and Toraason M (1999) Induction of stress proteins in rat cardiac myocytes by antimony. Toxicol Appl Pharmacology 159:91-97.

Toraason M, Clark J, Dankovic D, Mathias P, Skaggs S, Walker C, and Werren D. (1999) Oxidative stress and DNA damage in Fischer rats following acute exposure to trichloroethylene or perchloroethylene. Toxicology 138:43-53.

Wey H, Conover D, Mathias P, Toraason M, Lotz W. (2000) 59-Hertz Magnetic Field and Calcium Transients in Jurkat Cells: Results of a Research and Public Information Dissemination (RAPID) Program Study. Environmental Health Perspectives 108:135-140.

Toraason M, Hayden C, Marlow D, Rinehart R, Mathias P, Werren D, DeBord DG, Reid TM. (2001) DNA strand breaks, oxidative damage, and 1-OH pyrene in roofers with coal-tar pitch dust and/or asphalt fume exposure. Int Arch Occup Environ Health 74(6):396-404.

Toraason M, Hayden C, Marlow D, Rinehart R, Mathias P, Werren D, DeBord DG, Reid TM. (2001) DNA strand breaks, oxidative damage, and 1-OH pyrene in roofers with coal-tar pitch dust and/or asphalt fume exposure. Int Arch Occup Environ Health 74(6):396-404.

Van Campen LE, Murphy WJ, Franks JR, Mathias, PI, Toraason MA. (2002) Oxidative DNA damage is associated with intense noise exposure in the rat. Hearing Research 164(1-2):29-38.

Toraason, M, Butler, MA, Ruder, A, Forrester, C, Taylor, L, Ashley, DL, Mathias, P, Marlow, KL, Cheever, KL, Krieg, E, Wey, H. (2003) Effect of perchloroethylene, smoking, and race on oxidative DNA damage in female dry cleaners. Mutation Research 539:9-18.

PRESENTATIONS

Plews, P.I., M.C. Bromel, I.A. Schipper. Demonstration of K88 and K99 antigens in strains of Escherichia coli isolated from calves with diarrhea. Presented at the North Central Branch of the American Society for Microbiology, University of Iowa, Iowa City, Iowa, October 1-3, 1981.

Plews, P.I., G.D. Leikauf. Endothelin stimulates chloride secretion across canine tracheal epithelium. Presented at the national meeting of the Federation of American Societies for Experimental Biology, Washington, D.C., April 1-5, 1990.

Mathias, P.I., K.L. Cheever, K.N. Marlow and M.A. Toraason. Comparison of urinary hydrodeoxyguanosine, isoprostane, and TBARS for assessing oxidative stress in smokers. Presented at the national meeting of The Society for Toxicology, San Francisco, CA, March 2001.

Mathias, P.I., Gilbert, S.J., and Cheever, K.L. Urinary proteomic-based biomarker development for evaluation of occupational exposure using SELDI-TOF mass spectroscopy. Presented at the

national meeting of the Society for Toxicology, Charlotte, NC, March 2007.

Mathias, P.I., Gilbert, S.J., and Cheever, K.L. Developing a urinary biomarker of acrylamide exposure for worksite hygiene and risk assessment. Presented at the Toxicology and Risk Assessment Conference, West Chester, OH, April 2007.

Mathias, P.I., Gilbert, S.J., and Cheever, K.L. Evaluation of Bioanalytical SELDI-TOF MS for identification of biomarkers of acrylamide exposure. Presented at regional meeting of American Chemical Society, Covington, KY, May 2007.

Mathias, P.I., Ruder, A.M., and Butler, M.A. Quality assurance measures for specimen collection in genomic studies. Presented at the Toxicology and Risk Assessment Conference, West Chester, OH, April 2008.

PRESENTATIONS WITH PUBLISHED ABSTRACTS

Hoffmann, P., D. Richards, P. Plews, I. Heinroth-Hoffmann, M. Toraason. Depression of calcium transients in cardiac myocytes by halogenated hydrocarbons. *Toxicologist*, 13, 411, 1993.

Toraason, M., M.A. Tirmenstein, P.I. Plews, C.V. Walker, M. Wollery, H.E. Wey. Antimony induces oxidative stress in cultured cardiac myocytes. *Toxicologist* 14, 169, 1994.

Tirmenstein, M.A., J.E. Snawder, P.I. Plews, M. Toraason. Comparative effects of quinoline and 8-hydroxyquinoline on glutathione levels, DNA fragmentation and enzyme induction in cultured rat hepatocytes. *Toxicologist* 14, 193, 1994.

Richards, D.E., P.I. Mathias, Toraason, M. Intracellular calcium response to isoproterenol in cultured cardiac myocytes from neonatal rats and fetal humans. *Toxicologist* 15, 125, 1995.

Wey, H., Richards, D., Mathias, P., Tirmenstein, M., Walker, C., Toraason, M. Role of calcium and phospholipase in potassium antimonyl-tartrate-induced cardiac myocyte toxicity. *Toxicologist* 15, 310, 1995

Tirmenstein, M.A., Wey, H.E., Mathias, P.I., Toraason, M. Effects of antimony on mitochondrial function and protein thiol and adenine nucleotide status in cultured cardiac myocytes. *Toxicologist* 15, 310, 1995.

Tirmenstein, M.A., Snawder, J., Mathias, P. Antimony induction of heat shock proteins in neonatal rat cardiac myocytes. *Toxicologist* 30, 336, 1996.

Snawder, J.E., Mathias, P., and Tirmenstein, M.A. Non-lethal endotoxin (LPS) treatment decreases contraction rate and induces nitric oxidase synthase activity in cultured rat cardiac myocytes. *Toxicologist* 30, 270, 1996.

Wey, H., Richards, D., Mathias, P., Tirmenstein, M., and Toraason, M. Antimony alters kinetics of calcium transients of neonatal rat cardiac myocytes. *Toxicologist* 30, 270, 1996.

Toraason, M., Moorman, W., Mathias, P.I., Futz, C., and Witzeman, F. Two-dimensional electrophoretic analysis of myocardial proteins from lead-exposed rabbits. *Toxicologist* 36, 186, 1997.

Wey HE, Richards DE, Mathias PI, Krieg E. and Toraason MA, Antimony attenuates mobilization of Ca²⁺ during excitation and contraction in cultured cardiac myocytes. *Toxicologist* 36, 46, 1997.

Toraason M., Clark J, Dankovic, D, Mathias P, Skaggs S, Walker, C, and Werren, D. Oxidative stress and 8-hydroxyguanosine in rats following acute exposure to trichloroethylene or perchloroethylene. *Toxicologist* 48, 955, 1999.

Toraason M, Butler MA, Ruder A, Forrester C, Taylor L, Mathias P, and Wey H. Assessment of oxidative DNA damage in female workers exposed to perchlorethylene. *Toxicologist* 60, 86, 2001.

Toraason M, Mathias P, Ruder A, Butler MA, Taylor L, Forrester C, Krieg E., DeBord DG. Is there a relationship between urinary and leukocyte 8-hydroxydeoxyguanosine in humans? *Toxicologist*. 66(1-S):280. 2002.

Cheever, K.L. and Mathias, P. The Search for Novel Biomarkers of Exposure in Human Urine using SELDI-TOF Mass Spectrometry. *Toxicologist* 90(1) 2006.

Mathias, P.I., Gilbert, S.J., and Cheever, K.L. Urinary proteomic-based biomarker development for evaluation of occupational exposure using SELDI-TOF mass spectroscopy. *Toxicologist* 96(1) 2007.

TRAINING COURSES

An overview of statistical and epidemiological methods for public health research. NIH/NCCAM at Alice Hamilton Labs, September 18-19, 2008.

Emerging issues and challenges in risk assessment, Toxicology and Risk Assessment Conference, West Chester, OH, April 2008

S-PLUS: The Command Line, GUI and Statistical Modeling, provided by Insightful Corp. at Taft North training facility, June 2007.

Advanced Scientific Writing from the Reader's Perspective, CDC/NIOSH, March 2007.

Fundamentals of Modern Microbiology, NCID Science Continuing Education and Training DHHS, USPHS, CDC, May 2006.

Basic Principles and Protocols in Molecular Toxicology, Continuing Education, SOT, 2002

Choosing Tools for Toxicogenomics, Continuing Education, SOT Meeting 2001

TQM Facilitator, CDC/NIOSH, 1996.

TQM Team Leader, CDC/NIOSH, 1996.

Professional Womens Development, Cincinnati, Ohio, 1995.

TQM Team Member, CDC/NIOSH, 1994

TQM Orientation, CDC/NIOSH, 1994

Creative Problem Solving, CDC/NIOSH, 1993

Professional Womens Development, Cincinnati, Ohio, 1993.

Assertive Communications Skills for Women, Cincinnati, Ohio, 1992

Applied Procedures for the Investigation and Control of Foodborne Diseases,
USPHS/CDC, 1982.

INTERAGENCY ACTIVITIES

NIOSH Library Team, Facilitator, 1997.

DBBS Safety Committee, 1993-94.

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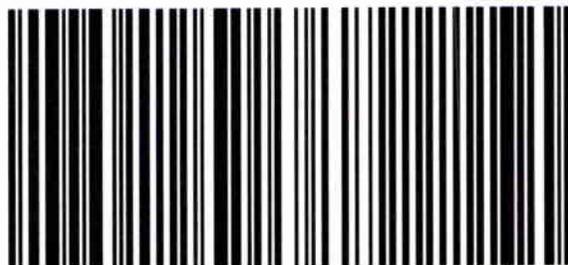
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