CASE WESTERN RESERVE UNIVERSITY
DEPARTMENT OF OCCUPATIONAL & ENVIRONMENTAL SAFETY (DOES)
RADIATION SAFETY
ANNUAL REPORT 2009-2010

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Report Editor and Departmental Auditor

INTRODUCTION

This report is submitted to the President and designated members of the Senior Administration of the University, as required by the Radiation Safety Committee (RSC) Operating Guidelines and Case Western Reserve Universityôs State of Ohio (Nuclear Regulatory Commission Agreement State) Broadscope License. This report summarizes the activities of the Radiation Safety Office (RSOF) of the Department of Occupational & Environmental Safety (DOES) at Case Western Reserve University. Its contents cover the period from July 1, 2009 through June 30, 2010.

SUMMARY

DEPARTMENT STRENGTHS

The RSOF has a staff with broad and diverse backgrounds that can address and resolve a wide range of issues faced in Radiation Safety at Case Western Reserve University (CASE). The RSOF has developed programs that meet or exceed regulatory requirements. This program proactively anticipates new safety requirements by promulgation of new programs. Success of these programs continues is enhanced by excellent Administrative Support.

DEPARTMENT OPPORTUNITIES

The RSOF enjoys excellent interaction with other departments that are developing safety-related initiatives and outside agencies that are dedicated to improving environmental quality in our facilities.

RADIATION SAFETY ACCOMPLISHMENTS FOR 2009-2010

Over the past year, the DOES continued to improve the effectiveness of the Radiation Safety Program. Notable new accomplishments included:

Through its services to the research community at Case Western Reserve University, the Radiation Safety Program generated in-house savings accrued from meter calibration, recycling, and decay in storage programs amounting to more than $53,826 in 2009/2010.

DOES will continue to strive to improve both safety awareness and safety performance for the University as a whole. Success in these programs will be measured in terms of reduced numbers of accidents and violations found during safety inspections throughout the University.

Completed major SOP and manuals rewrites.

Began updating old RAM Protocols.

Began entering general training data into HP Assist.

Had a successful Tri-annual ODH Radiation Generating Inspection - 5/2010

Successfully renewed the universityôs Annual Low-Level Radioactive Waste (LLRW) Report ï 4/2010 with no submission problems.

Rebid Radioactive waste program contractor arrangements..

Completed OSHA 30 Hour Online Outreach Training ï Staff (10)

Attended Essentials of Hazardous Materials Management Course ï Staff (1)

Attended Council on Ionizing Radiation Measurements/Standards (CIRMS 2009) ï Staff (2)

The Google Calendar instituted to schedule all meetings.

New Radiation Waste Pickup Form was revised and implemented.

speed and size of the film used. Specifically, each dental intraoral unit needs to have a technique chart reflecting the techniques used specific to each unit.

Response ï The Technique Chart for Admitting Bay 7, GE Unit was updated to address all available settings.

5. **Technique Chart Not Available (Pedo DOA 34E, Keystone Unit) Level 3** ï A technique chart was not available at the control panel that specifies patientôs body part and size, or age in the case of pediatrics, speed and size of the film used.

   Response ï The Technique Chart for Pedo DOA 34E was updated to address all available settings.

6. **Tests for Cabinet X-Ray Systems (Wearn 519, Faxatron Unit) Level 3** ï Evidence was not available showing that applicable tests for proper operation of high radiation area control devices, interlocks, warning lights, and labels have been conducted every three months for all cabinet X-Ray systems designed to exclude the admittance of individuals. Records demonstrating compliance must be examined.

   Response ï The operator will perform and document applicable tests. The documentation will be reviewed during the quarterly inventory by a X-Ray Safety Specialist.

ODH LICENSE	EXPIRATION DATE	PURPOSE
011-011800-11	January 1, 2015	Broadscope License
09-M-06944-12	May 31, 2012	Radiation-Generating

RADIATION SAFETY PROGRAM - RESPONSIBLE PARTIES

RADIATION SAFETY COMMITTEE (RSC)

ADMINISTRATIVE CONTROLS

Administrative controls are established and approved by the Radiation Safety Committee for laboratories where radioactive material (RAM) is used. Controls include signage, training, laboratory access, and dosimetry. Written procedures document procurement, use, and the disposal of all RAM at the University.

General Safety Compliance Enforcement Procedures prescribe sanctions for those who jeopardize safety or the continued favorable relationship between the University and the Ohio Department of Health. These procedures are designed to encourage the participation and cooperation of users of RAM and to promote safe use of such materials in a manner consistent with the rules and regulations of the ODH as interpreted by the RSC and the RSOF.

There are three classes of violations defined as minor, moderate, and major severity.

Minor Severity violations are listed under the following categories:

Improper laboratory records
Improper RAM use and storage
Improper laboratory environment/general safety

Moderate Severity violations include the following:

Food/cosmetics in laboratory
RAM unsecured
RAM in unauthorized areas
Unapproved move
Unapproved disposal
Unidentified contamination
Failure to respond to written notice

Major Severity violations include the following:

Falsification of records
Unreported loss or theft of radioactive materials
Unapproved transfer of radioactive materials

There were no major severity violations found. Of the 76 moderate violations listed below, 67 were the result of unsecured RAM found during after-hours security checks and routine compliance reviews. Four (4) were food and drink violations and five (5) were assessed to laboratories that had three or more minor violations during one compliance review by the Radiation Safety staff during its routine audits. Documented follow up and resolutions were completed for all major & moderate violations.

VIOLATIONS	09/10	08/09	07/08	06/07
Minor	53	103	83	57
Moderate	76	27	43	11
Major	0	0	0	1
Total	129	130	106	69

The Assistant RSO, the RSOF staff, and RSO have updated and revised most of the Departments manuals, training, licenses, certificates, and standard operating procedures in 2009-2010.

AU CATEGORIES:

RADIATION ACTIVE (RA)

AUs who actively use RAM are ñRadiation Activeò Laboratories of these AUs are inspected by the RSOF three times per year. Audits are more frequent if there are particular concerns in a laboratory. A listing of AUs and their radioactive materials can be found in the Appendix.

RADIATION ACTIVE & RADIATION GENERATING EQUIPMENT/ X-RAY (RX)

These AUs actively use RAM and X-Ray equipment.

RADIATION GENERATING EQUIPMENT/ X-RAY (X)

These AUs actively use X-Ray equipment only.

RADIATION INACTIVE (RI)

These AUs do not currently use RAM and do not possess radioactive materials. AUs in storage mode for more than two years were placed in Radiation Inactive mode this fiscal year.

RADIATION ACTIVE (STORAGE MODE) RA (SM)

AUs who did not actively use RAM for a period of at least six months and no more than two years, but who wished to maintain their RAM inventory are, by their request, placed in storage mode status this fiscal year.

DEPARTED (D)

AUs who no longer carry out research at Case Western Reserve University and whose laboratories have been decommissioned for radioactive material use are placed in the Departed category this fiscal year.

AUs	09/10	08/09	07/08	06/07	05/06	04/05	03/04
RA	87	91	92	112	124	116	123
RX	0	0	0	0	2	3	1
X	0	23	22	22	23	27	27
RI	13	1	14	8	12	2	7
SM	3	4	5	6	4	9	8
D	3	6	8	12	11	12	12

MASTER ISOTOPE LIST

The master isotope (see APPENDIX) list shows the Universityôs isotope inventory, the sum of the AUsô inventory (excluding sealed sources), and the sum of the AU Possession Limits, relative to NRC/ODH Registration Limit.

AU RADIOISOTOPE INVENTORY

The Radioisotope Inventory Report (see APPENDIX) lists researchers along with the amount of radioactive material each is authorized to use, each AUôs possession limits, and the activity of isotopes on hand.

To report concerns of unethical activity, employees may contact the Integrity Hotline and

IRRADIATOR USERS

Personnel using irradiators are required to attend initial Radiation Safety training conducted by the RSOF and site-specific training with the manager of the irradiator. An Irradiator Worker is any person that uses an Irradiator under the supervision of an Irradiator User.

TRAINING

The RSOF documents dates of training, attendees, and content of training. Records of refresher training offered online are also maintained. Classes and online sessions attended are essential components of Case Western Reserve University safety philosophy. Training is audited on a monthly basis by the Assistant RSO to ensure compliance.

TYPE	NEW CLASSES	NEW USERS	ONLINE RETRAINING
Radiation Safety	29	279	215
X-Ray	20	52	0
Laser	11	48	35
RTK (Right to Know)	28	50	0
Custodial Contractor	4	34	0
Plant Maintenance	5	66	0
ARC (Animal Research Center)	4	57	0
Shipping	3	13	0
Protective Services	16	51	0
Custodial	3	114	0
Irradiator (site specific)	15	52	0

New isotope user training classes are offered at least three times per month. Annual radiation safety retraining is done online. X-Ray training classes are conducted once a month. AUs are responsible for machine and performance-specific annual refresher training for workers who use

Radioactive Waste Facilities:

Medical School Waste Facility (DOA990):

This facility has a separate office, and a process/storage room for radioactive material and disposal activities. This facility is maintained at negative pressure and has a filtered air exhaust system. It also has a waste compactor, waste shredder, chemical and walk-in hood, survey meters, liquid scintillation counter, air monitoring equipment, and emergency response equipment.

The storage area contains racks for the proper storage of solid and liquid waste. Waste streams consist of dry solid, bulk liquid, and liquid scintillation vials. Dry solid waste and the liquid scintillation vials are packed in standard 55-gallon drums. Liquid waste is stored in 5-gallon carboys placed in spill trays to contain leakage. Radioactive animal carcasses are kept in a designated freezer in the ARC until they are disposed.

Wolstein Building Waste Facility:

This facility has a counting room (Rm. 1120) that contains a chemical hood, a liquid process/ storage area (Rm. 1119) that contains a walk-in chemical hood, and solid process/ storage area (Rm. 1118) for disposal activities. The liquid process/ storage area and solid process/ storage area are used for short-term storage only. All waste is transferred to the DOA990 facility for

radioactive materials are not housed in the Wolstein facility. A major renovation was completed in the Robbins facility during in 2009 which added an Ultra Barrier Facility. One irradiator behind the Ultra Barrier is not in current use but is being considered for recommisioning in the program.

EQUIPMENT CALIBRATION

Annual calibration procedures consist of an electronic assessment of survey instruments, plus a measurement of their performance using calibrated isotope reference standards. Survey meters that require dose rate calibrations or repairs are not calibrated by the RSOF. These instruments are sent to an appropriate vendor by the AUôs laboratory. Instruments requiring simple repairs are repaired in-house.

Packard Auto Gamma Minaxi 500 Counter calibrations are conducted monthly for the DOES Radiation Laboratory and as needed for the LSCs in Radiation Laboratory, DOA 990 and WRB 1119. The continuous air monitor (CAM) in DOA 990 is currently out of service. The LSCs in the Radiation Laboratory, WRB 1119, and in DOA 990 were serviced and cleaned.

RADIATION SAFETY PROGRAM

PURCHASE OF RADIOACTIVE MATERIALS

AUs and their approved designees purchase radioactive material. All radioactive isotope purchases must be approved by the RSOF before the order is processed through the Purchasing Department.

AUs must be approved for the isotope and the quantity ordered. The activity, when added to the AUôs existing inventory, cannot exceed the AUôs approved possession limit for that isotope. Replacement shipments, trial kits, and free samples also must be approved by the RSOF. All deliveries are sent to the Shipping and Receiving Area for RSOF inspection and clearance before delivery to the AUsôlaboratories.

TRANSFER OF RADIOACTIVE MATERIALS

The RSOF reviews and approves the transfer of all radioactive material internally (on campus) and externally (off campus) to, or from, an AU. Before initiating a transfer, either the internal or external transfer form must be completed and forwarded to the RSOF for approval. There were 84 isotope transfers approved this year, for a total of 426 mCi.

RECEIPT OF RADIOACTIVE MATERIALS

Every package of radioactive material is inspected by the RSOF for contamination, dose rates, and evidence of damage or breakage. If a package is contaminated or has dose rates greater than 10 mR/hr at 1 meter or 200 mR/hr at the surface, the package is held by the RSOF and the laboratory is contacted. An inspection sticker and the RAM Package Receipt Form placed on the package confirm that inspection has been completed by the RSOF. Direct pickup by a laboratory designee alleviates the need to complete the Bill of Lading since the package is carried to the laboratory and not transported in a vehicle. The AU or designee is required to survey all radioactive material packages upon receipt for contamination and evidence of damage or breakage.

Radioisotope use, for biomedical research, results in frequent movement of radioactive materials to and from the campus. The Broadscope License requires that shipments be surveyed within three hours of arrival. In the past year, 315 isotope shipments (totaling 655 mCi) were inspected and approved by the RSOF after receipt on the campus.

RADIATION MATERIALS	09/10	08/09	07/08	06/07	05/06	04/05	03/04	02/03
Orders	311							

RADIATION SURVEY METER CALIBRATIONS

Case Western Reserve University's ODH Broadscope license requires annual calibration of portable survey meters. Properly calibrated meters are necessary for laboratories to perform accurate radiation surveys. AUs are responsible for the annual calibration, maintenance, and repair of their survey instruments. Count rate calibrations on survey instruments and minor repairs are provided by the RSOF as a free service. The DOES provided in-house services that generated $15,996 in cost saving over the fiscal year in lieu of using outside vendors.

CALIBRATION/ SERVICE	COST PER SERVICE	COST SAVINGS
142 meters	$78/meter	$11,076
0 pumps	$70/pump	$0
24 thyroid assays	$55/assay	$1,320
12 pre-filter changes	$75/ filter change/quarterly	$3,600
	TOTAL COST SAVINGS	$15,996

There are 195 survey meters on campus. The RSOF calibrated 142 of these meters in the last fiscal year. There were 55 meters removed from service. In service meter calibrations totaled 140. Certificates of calibration are kept in the RSOF for all meters in service at the University. Records for all meters include instrument efficiencies for isotopes used in laboratories.

The DOA prefilters are changed every 90 days. One fan unit (#2) for the walk-in hood has been out of service more than one year since it needs repair. Currently, there are four filters that are changed for two units:

Two single filter units for the chemical hood and decay area (located above the DOA office)
One double filter unit for the walk-in hood (located in DOA Radiation Area)

No operational pumps for radioactive materials were calibrated for use in the iodination hoods.

CALIBRATION/ SERVICE	09/10	08/09	07/08	06/07	05/06	04/05	03/04	02/03
Meter Calibration	142							

3.2010	11
4.2010	10
5.2010	11
6.2010	27

RAM SECURITY

Radioactive materials and potentially hazardous chemicals must be secured against unauthorized access or removal when unattended. All refrigerators, freezers, or other storage units with RAM labels that are located in unsecured areas must either have a security lock to limit access to the refrigerator or freezer or must contain a secured and labeled lock box within the storage unit. Access to isotope inventory must also be controlled when no authorized individual is in the area and constant surveillance cannot be maintained. Security checks by the RSOF are conducted on a monthly basis after normal working hours to ensure that radioactive materials are properly secured. All buildings undergo radiation security inspections each month. Only minor violations of required security procedures were found.

RAM SECURITY CHECKS	09/10	08/09	07/08	06/07	05/06	04/05

USERS OF RGE/ X-RAY

The RSOF provides special dosimeters for individuals carrying out experiments and procedures involving the use of radiation generating (x-ray) equipment, such as fluoroscopes. The four Fluoroscopy users had collar badges.

AIR EXPOSURE CONTROL & MONITORING

During the 2009 calendar year, radioactive material releases to the air were less than 10% of the maximum levels set by the EPA. Therefore, Case Western Reserve University had no reports to file, and the Un

^{125}I BIOASSAYS	09/10	08/09	07/08	06/07	05/06	04/05	03/04	02/03
RSOF Staff	24	44	44	32	64	67	64	40
Additional	0	0	0	0	7	10	13	20
Total	24	44	44	32	71	77	77	60

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and Class 4. The laser inventory was updated and new signs were posted. There are 50 Class 4 lasers, 16 Class 3B lasers, and 20 lasers in the other classes of 1, 2, and 3A. There are 13 class 3B/4 laser enclosed systems. They are completely enclosed therefore decreasing the hazard to the user.

Some of the systems were put in storage. A new laser system was added to the inventory this year. Twenty-one (21) audits were performed which reviewed personnel & inventory.

Both the Laser Safety PowerPoint presentation for new users and the online Laser retrain are being updated. They will also be incorporated with the HP Assist database. The Laser user list and inventory will be transferred to the new database. Laser Policy discussion will occur with the ad-hoc RSC member to determine Laser system exemptions and specific training requirements and frequency.

ULTRA VIOLET (UV) SAFETY PROGRAM

With increased use of UV equipment on campus, a program has been implemented. A UV safety PowerPoint presentation has been put on the DOES website. UV users are being identified through inspection and new employee orientations and training.

CLEARANCES/ RELOCATIO 0 11 0 0 1(al)6(so(O)-4(G)-4(R)-5(A)26(M)]3(cETBT1 0 0 1 284.81 527.69 Tm[(

disposed by Chemical Analytics, a commercial hazardous waste disposal company. Long-lived solid waste (at least 10 half lives) and scintillation vials are disposed by ADCO Services, a commercial radioactive waste hauler.

Non-hazardous aqueous waste is no longer held for decay. This waste is picked up from laboratories by the RSOF staff and immediate sewer disposal is carried out in the Radioactive Waste Facility since the isotope activities are significantly below our established regulatory limits as per OAC 3701:1-38-12 Appendix C. A sewer disposal log is kept in the DOES offices. Total sewer disposals are reported semi-annually to the Northeast Ohio Regional Sewer District.

COLLECTION & DISPOSAL OF ANIMAL REMAINS AND BIOHAZARDOUS WASTE

The Animal Resource Center (ARC) maintains a ï 20 C freezer for storage of radioactive animal remains and waste. Radioactive wastes are bagged and labeled in yellow bags in the same manner as dry solid waste. All waste placed in the freezer must be logged on the animal disposal sheet on the cold room door. A log sheet of animals disposed in this manner is also kept for inventory purposes by the laboratories generating the waste.

Any item that has come in contact with an etiologic agent is considered biohazardous. Etiologic agents include bacteria, viruses, and parasites and must be disinfected or decayed to background before disposal. Infected animal waste is placed in the ARC (BRB B05A) for disposal by the RSOF. Radioactive animal waste includes cage bedding, carcasses, viscera, excrement, serum, blood or other animal tissue containing radioactive materials. All waste is tagged. Additional information regarding etiological agents is placed on the tag. All animal waste is disposed by the RSOF.

RECYCLING PROGRAM

In the past fiscal year, the RSOF obtained laboratory equipment from AU's who have either left the university or ceased to use RAM. The equipment includes radiation waste containers (lead and Lucite), shielding (lead and Lucite), and survey meters. This equipment is offered to AU's if and when their funds do not allow them to buy new radioactive materials handling equipment. This cost-saving recycling program resulted in re-use of equipment that saved AUs & DOES more than $10,000 during 2009-2010 in lieu of waste disposal.

RADIATION SAFETY COMMITTEE AUDITS

Radiation Safety Committee (RSC) audits are carried out in two different ways:

Performance audits are conducted on-site at the Radiation Safety Office (RSOF) by individual RSC members at various times throughout the year

Each audit consisted of randomly selecting five (5) to twenty (20) files from the past year to ensure its contents were up-to-date, accurate, and consistent with the database.

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RSOF RESPONSE

No response required.

IRRADIATOR PROGRAM

Ten (10) files were randomly audited. Of these, there were six (6) individuals that had deficiencies with respect to training.

RSOF RESPONSE

All personnel have been trained and their files are current.

AU/WORKER TRAINING

Ten (10) files were randomly audited. Of these, one (1) individual had deficiencies with respect to training.

RSOF RESPONSE

The individual has been trained.

VALID RAM APPLICATIONS

Ten (10) files were randomly audited and deficiencies were noted on all ten (10) files. Most of

WASTE FACILITIES

Two deficiencies were noted. First, the WRB 1120 facility had weekly surveys but no monthly surveys. The second deficiency involves a lack of records for Stericycle.

RSOF RESPONSE

The Wolstein 1120 is an office that has been surveyed monthly. All files were complete and current. All Stericycle waste files were in the waste file and were complete and current.

SUPPORT STAFF TRAINING

Ten (10) AU files were randomly audited and all were found to be compliant.

RSOF RESPONSE

No response required.

INCIDENT PROGRAM

No deficiencies were reported.

RSOF RESPONSE

No response required.

SEALED SOURCES

Ancillary Staff Training
AU and Worker Training
Bioassays
Compliance Review
Isotope Orders, AU Possession Limits, and the Helix Database

BIOASSAYS

RSC AUDIT COMMENT:

Audits were conducted to verify completion of bioassays for laboratories using >10 mCi of ^{3}H and/or 1 mCi ^{125}I during the period of July 1, 2009 through June 30, 2010. No ^{125}I shipments were received during this period. Three (3) ^{3}H shipments over 10 mCi were received, and each audit was accurate.

RSOF RESPONSE

The three (3) ^{3}H shipments over 10 mCi that were received came in as 2-5mCi vials; therefore, a ^{3}H bioassay was not required.

COMPLIANCE REVIEW

RSC AUDIT COMMENT:

Fifty (50) files were examined to verify that AU laboratories were audited within the last six months and that any non-compliant issues were appropriately followed up. Examination of these

RSOF RESPONSE

We are in the midst of transferring database from the Helix database to the new HP Assist database. Several personnel were missing from Helix and were entered into the system. Six of the workers are X-Ray workers and are in the X-Ray database. All remaining dosimetry files will be reviewed and checked against the database to ensure that they have been correctly placed in the new system..

INCIDENT REPORTS

RSC AUDIT COMMENT:

During the period of July 1, 2009 and June 30, 2010, monthly incident reports were reviewed for verification and documentation of follow-up by the RSOF. During this time, there were a total of fourteen (14) incidents reported. No deficiencies were denoted.

RSOF RESPONSE

No response required.

LASER PROGRAM REVIEW

Information was reviewed for accuracy regarding laser inspections, inventory, and current training. Thirty (30) files were audited. Numerous deficiencies were found. First, inventory notes could not be assessed. Secondly, it was noted that there are no control/inventory files for several PIs in the database. Finally, there were numerous incidents of overdue inspection and training.

RSOF RESPONSE:

The Laser Program Inventory is a new system that is still being improved by the RSOF. Training will be transferred to the HP Assist database. All information will then be filed in the central filing area for Laser inventory and worker training.

LICENSING STATUS

RSC AUDIT COMMENT:

IRRADIATOR INFORMATION REVIEW

RSC AUDIT COMMENT:

Irradiator information files were examined to verify that the irradiators were audited by the RSOF within the last six months, and that non-compliance issues were appropriately followed up and pending issues resolved. Of the four (4) listed irradiators, only two (2) were active during the past year. All other files were up-to-date and compliant.

RSOF RESPONSE

No response required.

ISOTOPE SECURITY CHECKS

RSC AUDIT COMMENT:

During the period of July 1, 2009 and June 30, 2010, reports were reviewed for verification and documentation of radioisotope security checks. During this period, a total of thirty-one (31) security checks were generated. There were nineteen (19) episodes of unsecured RAM. Eighteen (18) incidences were resolved in a timely fashion. One (1) incident involving an ôinventory issueôis ongoing.

RSOF RESPONSE:

The inventory issue was resolved.

RADIATION GENERATING EQUIPMENT INVENTORY AND TRAINING

RSC AUDIT COMMENT:

Forty-five (45) files were examined for inventory status and last survey date of equipment during the period of July 1, 2009 and June 30, 2010. No deficiencies were found in any of the files examined.

RSOF RESPONSE:

No response required.

RADIATION SURVEY METERS

RSC AUDIT COMMENT:

Fifty (50) files were examined to verify that survey meters were compliant for calibration dates within the last twelve months. Fourteen (14) meters are past due for calibration. Files could not be found for two (2) survey meters.

RSOF RESPONSE:

Most of the past due meters were recalibrated. One past due meter was taken out of service until calibrated. The two missing files were for meters where the researcher is now Inactive or has left the University.

DOES WEBPAGE (RADIATION SAFETY)

An audit was performed to verify the status of all Radiation Website links as being operational, accessible, and current. All links were functional although a few web pages did not provide information regarding the last time they were updated.

RSOF RESPONSE

No response required.

ROOM SURVEYS (ACTIVE/DECOMMISSION)

Audits were performed to validate active RAM use files and decommissioned room files to verify

June 30, 2010. Of all files examined, one (1) file was denoted as exceptional for not being in the database as direct pick-up.

RSOF RESPONSE:

The package was entered into the database as a transfer.

SEMI-ANNUAL MAILINGS (AIR/ SEWER INVENTORY)

RSC AUDIT COMMENT:

Fifty (50) files were examined to verify receipt of semi-annual mailings from the last twelve months. All files were complete during the period of July 1, 2009 and June 30, 2010.

RSOF RESPONSE:

No response required.

VALID RAM APPLICATION

RSC AUDIT COMMENT:

Thirty-three (33) files were randomly audited to verify that they were valid, complete and current, during the period of July 1, 2009 and June 30, 2010. Fourteen (14) files were found to be deficient, particularly with respect to differences noted between rooms on Form 1 and inventories.

RSOF RESPONSE:

Old applications are in the midst of being updated with committee review. There have also been several recent moves caused by renovations which have accounted for the differences.

WASTE DISPOSAL FACILITIES (DOA990/WOLSTEIN) & RSOF LABORATORY

RSC AUDIT COMMENT:

The Waste Disposal facilities and Laboratories of the RSOF were inspected to ensure safe operation and adequacy of amenities as required by programs of the RSOF during the period of July 1, 2009 and June 30, 2010. All records of the Facilities Maintenance and General Housekeeping, Record Maintenance, and Waste Storage and Handling were audited and found to be compliant, adequate, orderly, and secure.

RSOF RESPONSE:

No response required.

APPENDIX

AUTHORIZED USERS

RADIATION ACTIVE

Neena Singh	9/8/2009	Hua Lou	1/12/2010
Zhenghong Lee	9/14/2009	Saba Valadkhan	4/29/2010
Lax Devireddy	2/12/2010	Krysztof Palczewski	12/8/2009
Jeff Coller	4/14/2010	Liem Nguyen	1/7/2010
Scott Welford	2/3/2010	Qingzhong Kong	2/23/2010
Helene Bernstein	5/13/2010	Derrick Taylor	3/5/2010

STORAGE MODE

Pamela Davis	1/22/2010	Clark Distelhorst	2/1/2010
Peter Harte	12/15/2009		

RADIATION INACTIVE

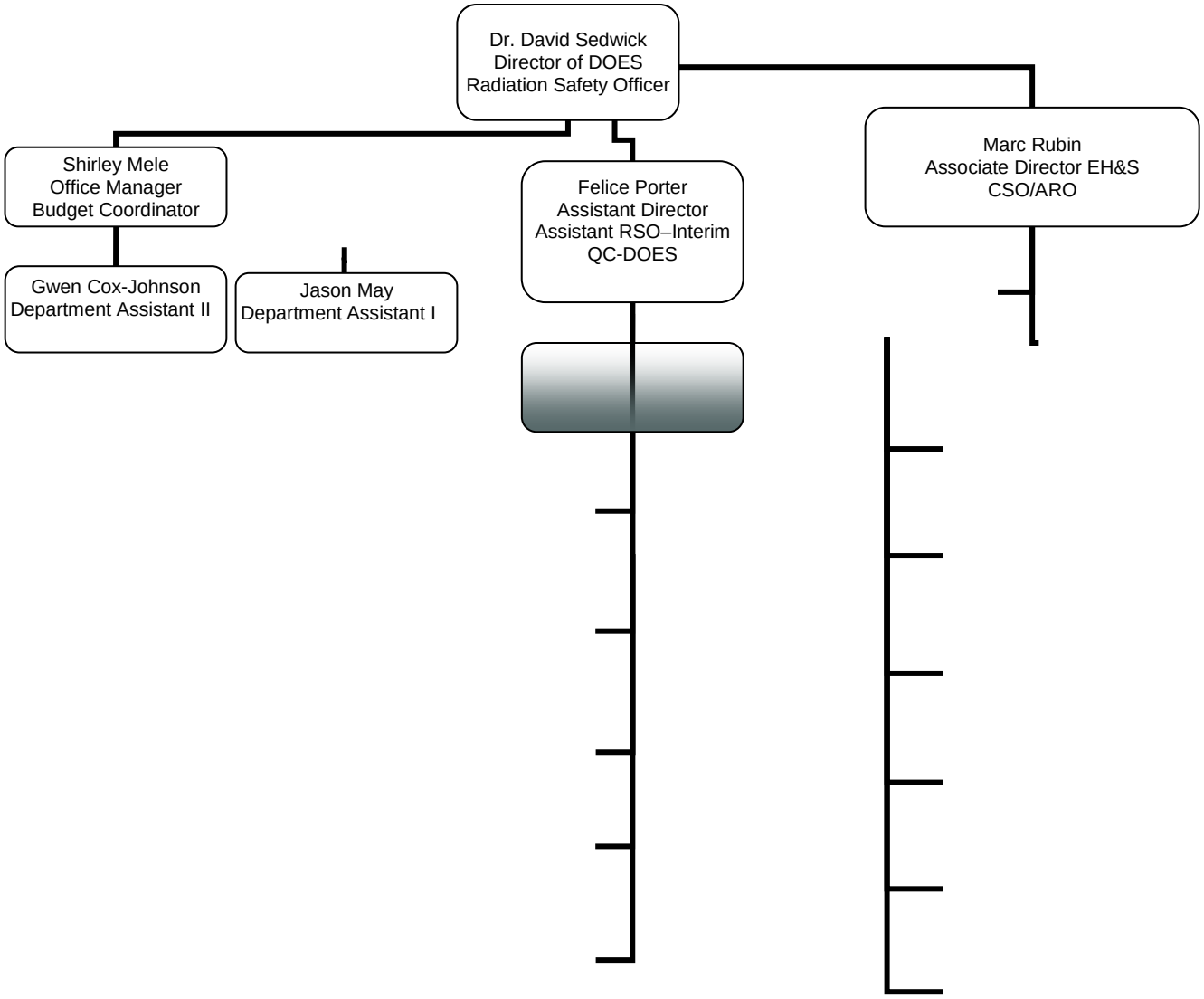
James Bruzik	11/9/2009	Evan Deneris	10/1/2009
Hung-Ying Kao	12/22/2009	Faramarz Ismail-Beigi	8/4/2009
Mary Laughlin	5/27/2010	Helen Salz	6/16/2010
Peter Scacheri	3/29/2010	Nora Singer	10/1/2009
Martin Snider	2/3/2010	Zahra Toossi	8/28/2009
Yu-Chung Yang	8/13/2009	Lan Zhou	2/3/2010
Richard Zigmond	2/11/2010		

DEPARTED

Kevin Bunting	4/16/2010	Mark Caprara	11/23/2009
Keith McCrae	2/11/2010		

X-RAY AUTHORIZED POSSESSOR LIST

AP CODE	AP NAME	CONTACT PERSON
AVI		

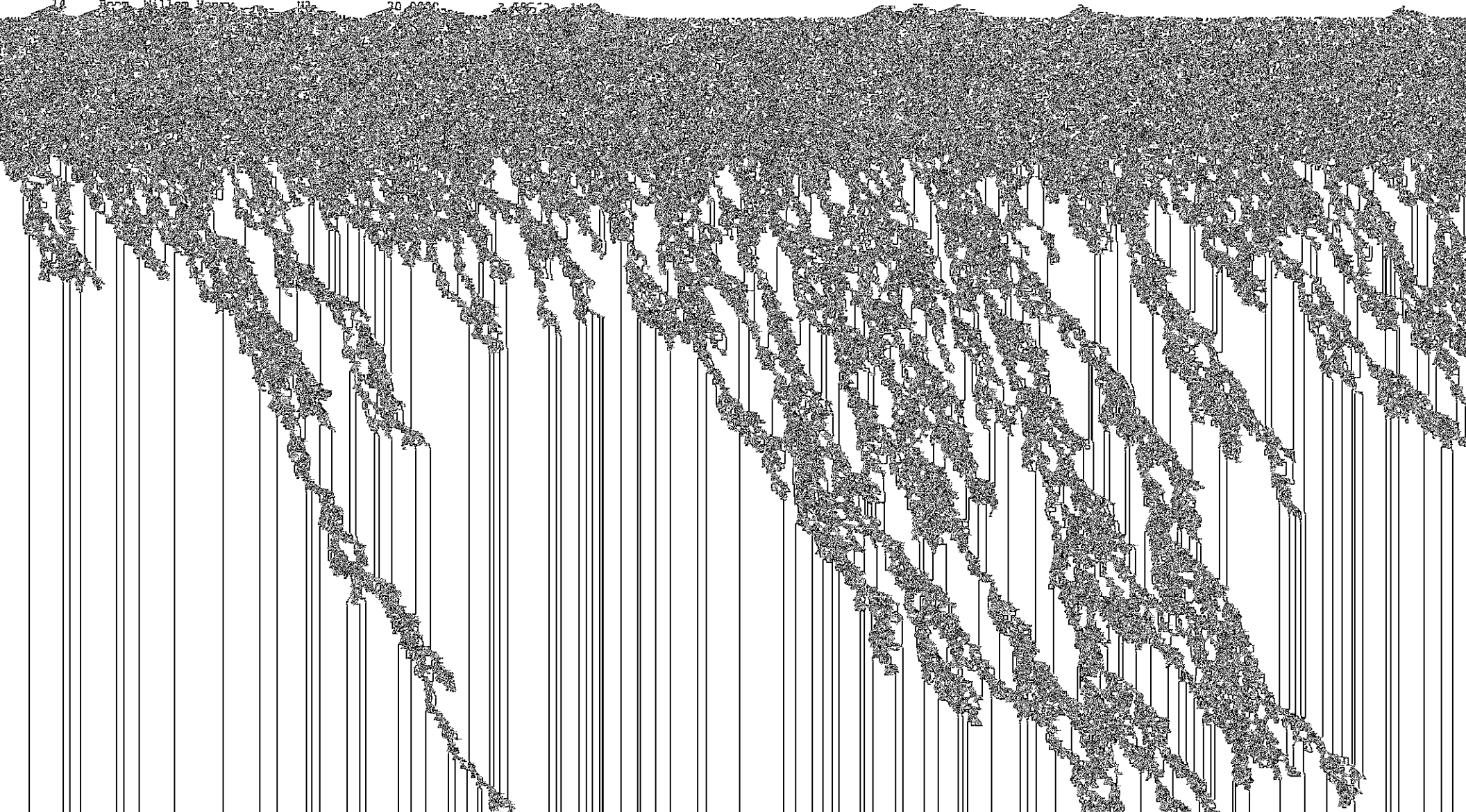

Dr. David Sedwick
Director of DOES
Radiation Safety Officer
Shirley Mele
Office Manager
Budget Coordinator
Gwen Cox-Johnson
Department Assistant II
Jason May
Department Assistant I
Felice Porter
Assistant Director
Assistant RSO–Interim
QC-DOES
Marc Rubin
Associate Director EH&S
CSO/ARO

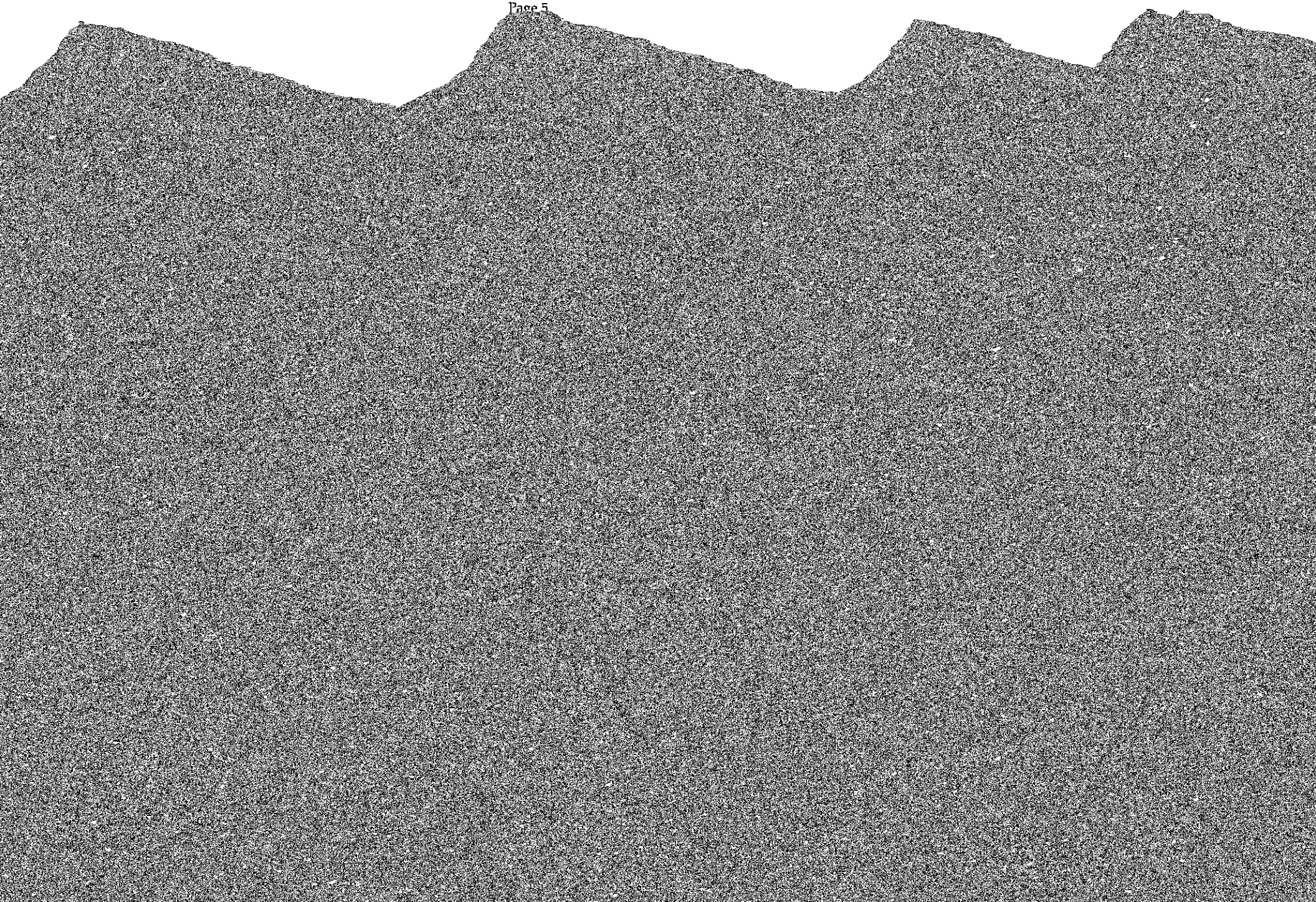
PI Rad Summary Listing and Post Screen

PI #	PI Name	Isotope	Poss Lmt	Inventory	Date
5	Anthony Sr.,Donald D.	C14	5.0000	1.25865	10/7/2010
5	Anthony Sr.,Donald D.	H3	1.0000	3.88499	10/7/2010
5	Anthony Sr.,Donald D.	P32	1.0000	0.00000	10/7/2010
14	Boom, Willem Henry	Cr51	10.0000	0.00000	10/7/2010
14	Boom, Willem Henry	H3	20.0000	2.18677	10/7/2010

PI Rad Summary Listing and Post Screen

PI #	PI Name	Isotope	Poss Lmt	Inventory	Date
55	Hanson, Richard	H3	25.0000	15.31527	10/7/2010
55	Hanson, Richard	I125	0.5000	0.00000	10/7/2010
55	Hanson, Richard	P32	10.0000	0.12139	10/7/2010
55	Hanson, Richard	C14	4.0000	1.50840	10/7/2010





	PI Name	Location	Isotope	Emits	Current Activity	
326	Matisoff, Gerald	A.W. SMITH 211E	Co57	Gamma	7.13e-8	mCi
665	Akerib, Daniel S.	Rockefeller 314B	Co57	Gamma	1.39e-9	mCi
665	Akerib, Daniel S.	Rockefeller 314B	Co57	Gamma	2.90e-8	mCi
665	Akerib, Daniel S.	Rockefeller 16	Co57	Gamma	9.06e-5	mCi
665	Akerib, Daniel S.	Rockefeller 16	Co57	Gamma	5.12e-5	mCi
665	Akerib, Daniel S.	Rockefeller 16	Co57	Gamma	1.22e-4	mCi
665	Akerib, Daniel S.	Rockefeller 16	Co57	Gamma	2.90e-4	mCi
665	Akerib, Daniel S.	Rockefeller 314B	Co57	Gamma	3.94e-7	mCi
665	Akerib, Daniel S.	Rockefeller 314B	Co57	gamma	7.96e-6	mCi
936	Shutt, Tom	Rockefeller 118	Co57	Gamma	1.10e-4	mCi
936	Shutt, Tom	Rockefeller 118	Co57	Gamma	1.56e-3	mCi