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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Building 889 Decommissioning Project

CLOSEOUT SURVEY REPORT

REVISION 0

Rocky Mountain Remediation Services, L.L.C.

FEB 1999

ADMIN RECORD
IA -A-00149

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Building 889
Decommissioning Project

Closeout Survey Report

Revision 0

Rocky Mountain Remediation Services, L. L. C.

September 1996

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BUILDING 889 DECOMMISSIONING PROJECT
CLOSEOUT SURVEY REPORT

REVISION 0

September 1996

This Closeout Survey Report has been reviewed and approved by:

Dennis A Russell, Radiological Engineer — 9/25/96 Date

Mark Hickman, Project Manager — 9/30/96 Date

This Closeout Survey Report was prepared by:

Richard J Sexton, Decommissioning Services Engineer — 7/19/96 Date

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BUILDING 889 DECOMMISSIONING PROJECT
CLOSEOUT SURVEY REPORT

1.0 PURPOSE

The purpose of the Closeout Survey Report (CSR) is to summarize and present the data necessary to demonstrate that the radiological, chemically hazardous, and/or toxic contaminates introduced into Building 889 have been reduced to levels that comply with established Rocky Flats Environmental Technology Site (RFETS) release criteria

2.0 DECOMMISSIONING PROJECT DESCRIPTION

The scope of the Building 889 Decommissioning Project consisted of the removal of equipment and systems from the interior of Building 889, decontamination of interior building surfaces, and the demolition of the facility to ground level The building foundation, the two sumps located in Room 106 and the connecting underground ventilation duct and piping are outside the scope of the project The Resource Conservation and Recovery Act (RCRA) permitted Unit 40, which encompasses the two sumps and the waste transfer line connecting the sumps to tanks #4 and #5 located in Building 866 will be addressed in a future project

The only known areas of radiological contamination were Rooms 105, 106, 107, 108, and the ventilation system serving those areas Decontamination of these areas was accomplished by removal of contaminated components, piping, equipment, and scabbling/scarifing the remaining contaminated floor and wall surfaces

3.0 CLOSEOUT SURVEY PLAN

The survey was performed in accordance with the Building 889 Decommissioning Project Closeout Survey Plan, Rev 0 (Attachment 1) The plan defined the acceptable survey and sampling methods, instrumentation, quality assurance, data interpretation and comparison with release criteria

4.0 RELEASE CRITERIA

4.1 RADIOLOGICAL RELEASE CRITERIA

The surface contamination limits presented on Attachment 2, "Summary of Contamination Values for Unrestricted Release," were used as the criteria to release the building equipment, components, and building structure The exposed floor surfaces and foundation were also verified to meet the Attachment 2 criteria before the building dismantlement

The survey methods and release criteria of Attachment 2 are in conformance with the following RFETS procedures

4-K62-ROI-03 01	Performance of Surface Contamination Surveys
4-S23-ROI-03 02	Radiological Requirements for Unrestricted Release
4-Q97-REP-1003	Radiological Evaluation for Unrestricted Release of Property/Waste
I-P73-HSP-18 10	Radioactive Material Transfer and Unrestricted Release of Property and Waste

4 2 BERYLLIUM RELEASE CRITERIA

The surface contamination limit for beryllium is 25 micrograms (µg) per ft ^{2} The release criteria and survey methods are in conformance with approved RFETS procedures including

1-15310-HSP-13 04	Beryllium Protection
4-15310-IHPM-5 2	Beryllium Control Program

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5.0 SCOPE OF SURVEY

The survey included all remaining interior building surfaces including the floors, walls, and ceilings identified as contaminated or potentially contaminated This included Rooms 105, 106, 107, and 108 It should be noted that the ceiling and two walls of Room 107 were removed during building stripout activities The remaining walls were surveyed as part of Room 108

All areas of the building did not have the same potential for residual contamination and, therefore, did not require the same level of survey coverage to achieve an appropriate level of confidence that building surfaces satisfy established release criteria The Closeout Survey Plan was designed such that areas with higher potential for contamination receive a higher degree of survey effort This ensured that the closeout survey process is both effective and efficient

Two classifications of areas were used to implement the Building 889 Closeout Survey Plan These classifications are defined as follows

Affected Areas
Areas that have potential contamination (based on building operating history) or known contamination (based on past or preliminary characterization survey data) This would normally include areas where radioactive materials were used and stored and where records indicate spills or other unusual occurrences could have resulted in the spread of contamination

Unaffected Areas
All areas not classified as affected or non-suspect affected These areas are not expected to contain residual contamination, based on knowledge of building history and previous survey information

Classification of Building 889 survey areas is provided below

AREA DESCRIPTION	CLASSIFICATION
Rooms 105, 106, 107, and 108 Floors, Walls, and Ceiling	Affected
Rooms 100, 101, 101A, 102, 104, 109, 110, 111, 112, 200	Unaffected (Previously Surveyed)

6.0 SURVEY RESULTS

6.1 RADIOLOGICAL SURVEY

Measurement locations in Rooms 105, 106, and 108 were identified with numbered stickers to provide a method of referencing survey results to survey measurement locations The numbered stickers were laid out at approximately 34 inch intervals A total of 1203 measurement locations were identified At each measurement location four (4) radiological measurements were obtained, total alpha, total beta, removable alpha, and removable beta Over 4,800 individual measurements were made in Rooms 105, 106, and 108

The survey of the interior building surfaces included the following

- 100% scan of accessible areas (beta and alpha)
- Total activity measurements (alpha/beta), 1 minute fixed point measurement at each grid intersection (typically at numbered sticker)

- Removable activity measurement (beta/alpha) at each grid intersection (typically at numbered sticker)

Scanning measurements, using a NE Electra with a DP6 probe, were performed over all accessible surfaces within Rooms 105, 106, and 108 The purpose of these scanning surveys was to detect areas of elevated activity or hot-spots During the course of the survey several hot-spots were identified All areas of elevated activity were remediated, resurveyed and found to meet the established release criteria

A total activity measurement, beta and alpha (1 minute fixed point measurement) was made at each grid intersection using the NE Electra with a DP6 probe A total of 1203 measurements were made in Rooms 105, 106, and 108 The data from these measurements and statistical analysis are contained in Attachment 3 A summary of the total activity measurements is provided below

Total Activity Measurements (dpm/100cm²)

Survey Area	# of Measure-ments	Beta					Alpha				
		Mean	Max	UCL	Release Criteria		Mean	Max	UCL	Release Criteria	
					Mean	Max				Mean	Max
Room 105	180	875	3564	1170	5,000	15,000	74	90	80	100	300
Room 106	660	729	4605	812	5,000	15,000	69	84	76	100	300
Room 108	363	655	3303	781	5,000	15,000	65	96	67	100	300

Smear samples were collected at each grid intersection to access the level of removable alpha/beta contamination The survey of Rooms 105, 106, and 108 included the collection and analysis of 1203 smears The smears were counted on a LB5100-W gas flow proportional counter Provided below is a summary of the results

Removable Activity Measurements (dpm/100cm²)

Survey Area	# of Measure-ments	Alpha				Beta			
		Mean	Max	UCL	Release Criteria	Mean	Max	UCL	Release Criteria
Room 105	180	13 1	19 9	13 3	20	15 1	23 7	15 5	1000
Room 106	660	12 2	18	12 4	20	29 5	20 5	32 7	1000
Room 108	363	12 1	17 2	12 3	20	15 3	23 5	15 7	1000

The overall conclusion of the radiological survey for Rooms 105, 106, and 108 is that all individual measurements comply with the established release criteria In addition, the Upper Confidence Limit (UCL) about the mean for each survey area was determined to meet the unconditional release criteria As stated in the Closeout Survey Plan, the unaffected portions of the building had been previously surveyed and were found to meet the unconditional release criteria (see Attachment 3 for survey data)

6.2 PAINT/CONCRETE SAMPLING

An evaluation of the paint and underlying surface was performed to supplement direct survey methods in Rooms 106 and 108 where surface paint has not been removed by scabbling Thirty

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(30) samples were collected from the painted upper walls and ceiling surfaces contained in Rooms 106 and 108 In addition, two (2) Quality Assurance (QA) duplicate samples were collected The sample locations were distributed across the painted surfaces with some bias given to the lower wall surfaces See Attachment 4 for a map of sample locations The samples were obtained at the grid block centers using the sampling procedure contained in the Closeout Survey Plan

The removed coating material was submitted for radiochemistry isotopic analysis The material was analyzed for activity content (plutonium, uranium, and americium) using isotopic separation chemistry and chromatographic extraction techniques and alpha spectrometry In order to expedite the analysis of samples two laboratories were used, Building 881 Laboratory and Quanterra Environmental Services Laboratory in Richland, Washington The analysis and quality control results are contained in Attachment 4

The isotopic analysis results from the painted surface samples were converted to units of dpm/100cm^2 for comparison with the release criteria using the equation provided in the CSP Provided below is a summary of the paint/concrete sample results converted to dpm/100cm^2 for comparison to the applicable release criteria

Paint/Concrete Sample Results (dpm/100cm^2)

	Mean	Max	UCL	Release Criteria
Uranium	58 6	165 8	46 2	5000
Plutonium	1 6	15 8	2 9	100

The conclusion of this sampling is that the painted surfaces meet established surface contamination limits and are acceptable for unconditional release

6.3 BERYLLIUM SURVEY RESULTS

Forty (40) beryllium smear samples were collected from the walls and floors in Rooms 106 and 108 The sample locations were distributed across the building surfaces with some bias given to the remaining painted surfaces See Attachment 5 for specific beryllium survey locations and analysis results A summary of the survey results are presented below

Beryllium Smear Survey Results (µg/ft.2)

# of Measurements	Mean	Max	UCL	Release Criteria
40	1 05	19 7	2 03	25

The conclusion of this sampling is that building surfaces meet established release criteria and are acceptable for unconditional release

6.4 ASBESTOS SURVEY RESULTS

Asbestos Containing Materials (ACM) were identified during building characterization The roofing material above the concrete masonry unit (CMU) and Room 112 were determined to contain chrysotile, trace to 35%, in a non-friable form This material was abated by a qualified contractor using wet methods No asbestos was detected with personnel air samples during roofing material removal No clearance sampling was required due to the non-friable nature of the roof material

Characterization also identified the presence of ACM on thermal system piping located in Room 104 The thermal system insulation was determined to contain Chrysotile 6-15% and Amosite 3-4% in a friable form The material was removed by a qualified contractor using standard asbestos

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abatement procedures After final cleaning and inspection, five (5) clearance samples were collected All samples were below the laboratory detection limit for asbestos fibers (< 0043 f/cc), which is well below the clearance limit of 01 f/cc (see Attachment 6 for laboratory analysis results)

7.0 QUALITY ASSURANCE (QA)

7.1 QA SAMPLING RESULTS

QA field and laboratory measurements were performed independently on selected survey measurements Approximately 5% of the field and laboratory measurements were resurveyed or replicated analysis performed Radiological Engineering designated the type and locations of QA sampling The primary QA check of the radiological contamination survey was the resurvey of the floors of Rooms 106 and 108 after building demolition Sixty-five (65) measurement locations were evenly distributed across the floor surfaces See Attachment 7 for survey data and statistical analysis The QA survey demonstrated compliance with established release criteria and were comparable to the original survey data for those areas

Two (2) paint/concrete QA duplicate samples were collected and analyzed (see Attachment 4 for results) The results were statistically comparable to other samples collected in Rooms 106 and 108, and demonstrated compliance with the release criteria

8.0 CONCLUSIONS

Based on the closeout survey data collected and analyzed in accordance with the Building 889 Closeout Survey Plan, contaminated materials, structures, and components have been successfully removed/decontaminated to levels acceptable to permit the unconditional release of the building structure and the exposed building foundation slab The building foundation, underlying soil, the capped pits, and associated components will continue to be controlled and will be investigated and remediated as part of Operable Unit (OU) 9 and OU 14

9.0 REFERENCES

NUREG/CR-5849	Manual for Conducting Radiological Surveys in Support of License Termination
DOE/EM-0142P	Decommissioning Handbook
DOE/EM-0246	Decommissioning Resource Manual
4-K62-ROI-03 01	Performance of Surface Contamination Surveys
4-S23-ROI-03 02	Radiological Requirements for Unrestricted Release
4-Q97-REP-1003	Radiological Evaluation for Unrestricted Release of Property/Waste
I-P73-HSP-18 10	Radioactive Material Transfer and Unrestricted Release of Property and Waste
1-15310-HSP-13 04	Beryllium Protection
4-15310-IHPM-5 2	Beryllium Control Program

Building 889 Decommissioning Project Waste Management Plan

Interim Characterization Report - Building 889 Decommissioning Project

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R O Gilbert and J C Simpson, Statistical Methods for Evaluating the Attainment of Cleanup Standards, Volume 2

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CLOSEOUT SURVEY REPORT
ATTACHMENT 1

BUILDING 889 FINAL STATUS

Purpose
The following is documentation of the final status of building 889 demolition project

Background
The project removed the building structure to the slab, but did not remove the slab

Status

Power
The electric power to the building was locked out/tagged out at SWGR 883-5, CKT 3C, which fed room 112, and SWGR 883-2, CKT-1B, which fed the remainder of the building Due to difficulties scheduling an outage, the wires were not removed from the switches nor pulled from the conduit The conduit in the slab containing these wires was caulked over so that bare wire was not exposed A letter was written by Kent Dorr, K-H D&D Oversite, to Plant Power documenting this condition and recommending the wires be removed from the switches at the earliest possible date

Sanitary Sewer
Sanitary sewer lines exist in the slab in rooms 110 & 111 There is an additional line west of the slab (west of room 110) These lines were dammed approximately 6 inches below ground level and grouted shut

Fire Water
The fire system entered the slab in the north-west corner of room 104 The fire valve outside of the building, north of room 105, is locked out The valve at the main header, near central avenue, was also locked out by the fire department The line in the slab, room 104, is blind flanged approximately six inches above the slab A metal cover was placed over the stub and fastened to the slab

Domestic Water
No domestic water was plumbed into the building Potable water was tapped from the fire water main Terminating the fire water put this system of service too

Sumps
Room 112 contained a sump from the steam system Sump was surveyed and no radiological contamination was detected Sump was grouted flush with the slab

Two sumps were located in room 106 The sumps in room 106 were connected by below slab ventilation ducts to the filter plenum in room 105 The room 106 sumps contained low levels of radiological contamination (See survey data in Closeout Report) The room 106 sumps and ventilation ducts were abandon in place Although they were seal welded shut with a steel plate, as part of the plant RCRA closure project, a hole was drilled in the plates and the pits were filled with foam The plate was grouted flush with the slab Room 108 contained a drain trench to the north sump in room 106 Room 106 had a drain trench to the south sump in the room These trenches were grouted flush with the slab The room 106 sumps are posted as radiologically contaminated The trenches were not contaminated

Room 104 also contained a trench which drained into the south sump in room 106 This trench had been covered with a steel plate a previous time The project grouted the plate flush with the slab The sump pit in room 104 was not radiologically contaminated The sump pit was also grouted flush with the slab

The ventilation duct between rooms 105 and 106, entered the filter plenum, room 105, through the slab These two ducts are approximately 20 inches in diameter The ducts were plugged approximately 2 feet below the slab and grouted flush with the slab The ducts are posted as radiologically contaminated

Tanks

There is an underground concrete storage tank (T-40) located west of the Building 889 foundation Tank T-40 was connected tot he sumps in room 106 These lines were blanked when the sump water was redirected to Building 866 Tank T-40 was filled with foam by a different project

Process Waste Line

A process waste line connected the sumps in room 106 with the process waste system in building 866 This line went below grade outside the south, east corner of room 101 This line is double contained below grade The line was disconnected and closed approximately 6 inches above grade The process line was closed with a locking plug The secondary containment line was blind flanged shut This line is posted as internally contaminated

For any questions concerning the final status of the Building 889 removal, contact Brian Henderson, X6560, pg 7796, or Mark Hickman, X7145, pg 3505

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Rocky Mountain
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Building 889
Decommissioning Project

Closeout Survey Plan

Revision 0

Rocky Mountain Remediation Services, L. L. C.

July 1996

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BUILDING 889 DECOMMISSIONING PROJECT
CLOSEOUT SURVEY PLAN

REVISION 0

July 1996

This Closeout Survey Plan has been reviewed and approved by:

Dennis Russel, Radiological Engineer — Date: 7-24-96

Mark Hickman, Project Manager — Date: 7-30-96

This Closeout Survey Plan was prepared by:

Richard J Sexton, Decommissioning Services Engineer — Date: 7-23-96

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BUILDING 889 DECOMMISSIONING PROJECT
CLOSEOUT SURVEY PLAN

1.0 PURPOSE

The purpose of the Closeout Survey Plan (CSP) is to define the methods for collecting, analyzing, and documenting data to demonstrate that the radiological, chemically hazardous, and/or toxic contaminates introduced into Building 889 have been reduced to levels that comply with established Rocky Flats Environmental Technology Site (RFETS) release criteria identified in Section 6 0 The survey will include both the walls and ceiling which will be removed during building demolition and the remaining concrete floor slab

2.0 PROJECT DESCRIPTION

2 1 DECOMMISSIONING PROJECT SCOPE

The scope of the Building 889 Decommissioning Project consists of the removal of equipment and systems from the interior of Building 889, decontamination of interior building surfaces, and the demolition of the facility to ground level The building foundation, the two sumps located in Room 106 and the connecting underground piping are outside the scope of the project Resource Conservation and Recovery Act (RCRA) permitted Unit 40, encompasses the two sumps and the waste transfer line connecting the sumps to tanks #4 and #5 located in Building 866 These auxiliary system components of the RCRA unit, will be addressed in a separate project plan to be initiated after the demolition of the Building 889 above-ground structure

The only known areas of radiological contamination are Rooms 105, 106, 107, 108, and the ventilation system serving those areas Decontamination of these areas will be accomplished by removal of contaminated components, piping, equipment, and scabbling/scarifing the remaining contaminated floor and wall surfaces The radiologically contaminated floors and walls will be scabbled and/or scarified, as necessary, to achieve the criteria established in the RFETS 4-Q97-REP-1003, "Radiological Evaluation For Unrestricted Release of Property/Waste "

Once the shell of the building is removed, clean surfaces will remain exposed to the environment All drains, grates, trenches, and sanitary waste lines will be closed and/or sealed Surface water run-on and run-off will be monitored as part of the Industrial Area Interim Measure/Interim Remediation Action surface water program

2 2 BUILDING 889 DECOMMISSIONING HISTORY

Building 889 was targeted as a pilot decommissioning project in the early 1990's Radiological and beryllium characterizations were completed early in the decommissioning project The pilot project was placed on hold in 1995 because of budgetary constraints In the first quarter of FY 96, work on the project was reinstated At that time, all available characterization data were evaluated Based on review of available characterization data, decommissioning activities were initiated Characterization activities have continued in parallel with the decommissioning efforts In May 1996, an Interim Characterization Report was issued All characterization data will be complied and included as supporting data to the project closeout report

2.3 FACILITY HISTORY

Building 889 was originally designed and constructed in 1968, with approximately 2,750 square feet covered Building 889 was originally used as an equipment decontamination and repackaging facility for the uranium and beryllium manufacturing operations The original building included an office (presently Room 100), locker room (presently Room 102), mechanical equipment and storage room (presently Room 104), hood room (presently the south half of Room 108), four decontamination rooms (presently Room 106 and the north half of Room 108), filter plenum room (presently Room 105), a covered, but non-enclosed wash area (presently Room

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101), and a mezzanine area above the mechanical equipment room (presently Room 200) This section of the building is referred to as the concrete masonry unit (CMU)

The original building foundation is poured reinforced concrete with spread footings and grade beams approximately 4' 0" deep The exterior walls are constructed of concrete masonry blocks The roof over this area is made of prestressed concrete twin tees spanning east to west walls The permanent equipment in Room 108 consisted of a bailer/crusher, trolley/hoist, and monorail system between Room 106 and 108 Room 106 featured a steam cleaning unit, two process waste sumps, a monorail, eyewash station, and miscellaneous (non-permanent) cleaning tools This equipment has been removed The remaining rooms were for building electrical equipment, ventilation/filter equipment, and administrative spaces Radiological surveys of the facility, have only detected contamination in Rooms 105, 106, 107, and 108 All other areas are radiologically clean Building 889 was designated and used as the non-Perimeter Security Zone decontamination, size reduction, and repackaging facility, and as a data communications hub site because of its central location in relationship to the 800 area, 400 area, and the Protected Area Materials historically handled in Building 889 included dry and wet combustibles, lead, plastic, strip coat, insulating materials, glass, light metals, surplus equipment, and High Efficiency Particulate Air (HEPA) filters The HEPA filters were contaminated with low-levels of Uranium 238 and beryllium Surplus equipment was decontaminated by steam cleaning HEPA filters, combustible wastes, plastics, glass and other materials, and unusable equipment were compacted, and placed in waste containers for disposal

The facility has four rooms known to be radioactively contaminated as a result of decontamination, size reduction, and repackaging activities These are Rooms 105, 106, 107, and 108 No plutonium material is known to be routinely processed or handled in this facility However, after the fire in 1969, some equipment (potentially contaminated with plutonium) was decontaminated in Building 889

The decontamination rooms (presently Room 106 and the north half of Room 108) had two floor ventilation exhaust sumps which were piped into the filter plenum and ducted through an exhaust fan to a 30 foot tall steel stack on the west side of the facility Process waste floor drains were located in each of the decontamination rooms, wash area, hood room, and mechanical equipment room The process waste gravity flowed from the building to a two compartment (1,000 gallons each) underground holding tank located approximately 45 feet west of Building 889 The holding tank included two pumps which transferred the waste by pipeline to the plant process waste transfer system Utilities, including health physics vacuum, plant air, plant steam, and high pressure water, were supplied to each decontamination room The mechanical equipment room contained a high pressure water system, a condensate pump, motor control center, lighting panel, transformer, chemical storage cabinet, fire sprinkler main, and alarm valves The hood room included a line of B-boxes and a line of fume hoods The mezzanine contained a heating unit operated from plant steam, a hot water storage tank, air compressor, health physics vacuum pump, and an exhaust fan for the B-box and fume hoods The exhaust from this fan, and also the vacuum pump, were directed through the building filter plenum The building was protected by a fire sprinkler system

Building 889 also included shower-locker facilities (Rooms 109, 110, and 111) at the south end of the facility This structure was an addition to the original CMU The showers enclosed approximately 613 square feet The foundation of the addition is a 3' 6" deep grade beam with an 18" diameter x 7' deep caissons located at the new columns The building addition was a framed structure with six tube steel columns Steel wide flange beams span between the columns and steel roof joists supported the steel deck roof The addition is a free standing structure

These rooms had no history of contamination This was confirmed by a Baseline Radiological Characterization Survey performed in 1995 (see Building 889 Interim Characterization Report for details) This addition was removed during the decommissioning of the CMU Removal of the shower facility did not affect the integrity of the Building 889 containment

A ventilation equipment upgrade building (Room 112) was added as an extension to Building 889 in 1988 The addition is a two-story room on the east side of Building 889 containing, approximately, 2,390 square feet of space The foundation is a grade beam with 18" to 24" wide diameter x 28' deep drilled caissons The floor is a concrete slab on grade Underneath the slab are 1'-9" x 2'-0" tie beams for structural frame The supporting structure is a ridged steel frame with pre-formed insulated metal siding The roof is a built-up roofing system This additional structure is also free standing Inside this area there is a steel framed mezzanine which supports a heating ventilation and air conditioning (HVAC) unit and filters This part of Building 889 was never put into service and has no history of any contamination This was confirmed by a Baseline Radiological Characterization Survey performed in 1995 (see the Interim Characterization Report for details) Removal of Room 112 will not affect the integrity of the Building 889 containment

3.0 SCOPE OF SURVEY

The survey will include all remaining interior surfaces including the floors, walls, and ceiling identified as contaminated or potentially contaminated This will include Rooms 105, 106, 107, and 108 The building foundation, the two sumps located in Room 106, and the connecting underground piping and ventilation ducting is outside the scope of this decommissioning project and survey

The scope of the Building 889 Decommissioning Project Closeout Survey as defined in this document is to

1 Provide a description of the graded approach used in determining the intensity of sampling and survey data gathering which must be obtained to make the determination that the Building 889 structure meets the release criteria of Section 6 0

2 State how the characterization data obtained during the project completion will be used to support the final decommissioning decision

3 Develop a survey and sampling approach which, when implemented, will obtain adequate information to demonstrate that the decontamination efforts in Building 889 have reduced contamination levels on the building's surfaces below the release levels stated in Section 6 0

4 State the release criteria which will be used to declare the Building 889 decontamination efforts complete The release of portions of the building can be made as the decontamination and release criteria are met

5 Act as the complete documentation package of sampling and survey data which is used to demonstrate acceptable release criteria was met at project completion

4.0 SURVEY OBJECTIVE

The survey is designed to demonstrate that radioactive, hazardous, and toxic contamination have been removed from the building to the extent that residual levels are below applicable release limits

The survey objectives are

1 Assemble all characterization and closeout survey data into one document

2 Provide the methods which will be used in implementing the graded approach to verifying decontamination efforts are complete

3 Provide a reliable and systematic approach to evaluating survey data used to demonstrate specific release criteria is met

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5.0 IDENTITY OF CONTAMINANTS

Based on building characterization data, review of the building historical records, process knowledge of the Building 889 equipment/systems, and knowledge of the decontamination techniques employed in Building 889, the following contaminates were identified as the contaminants of concern

1 Building records indicate that uranium is the primary radiological contaminate During operations, the building was used to decontaminate and repackage uranium components However, low levels of removable plutonium contamination have been found on some surfaces, inside the CMU structure A review of the building records was completed in an attempt to identify the source of contamination Building records do not indicate any routine handling or processing of plutonium contaminated components It has been reported that some equipment ,which was exposed to plutonium contamination during the 1969 plant fire, was transported to Building 889 for final decontamination

2 Beryllium decontamination and size reduction (filter crushing) were completed in Building 889 Initial characterization data indicated only low levels of beryllium remained in the building Based on the building's history and the desire to positively demonstrate the absence of elevated beryllium levels, beryllium will be considered a primary contaminate of concern during this project

3 The chemicals introduced into Building 889 are identified in the building's Waste Stream Identification and Characterization book The decontamination processes used in Building 889 have been discontinued for several years and there is no indication of chemical residues in the building In addition, the decommissioning techniques to be applied to building surfaces (scabbling) will remove any residual chemical contamination Unless positive indications of contamination are found during decommissioning operations, only limited sampling, in the most likely contamination areas (i e, floor) will be performed

4 Low levels of lead contamination in the building dust was identified During characterization efforts, some painted surfaces have been identified as containing lead All accessible building surfaces were vacuumed to remove the lead dust and appropriate work practices implemented to protect the workers when they are working on painted surfaces containing lead No further sampling or protective measures are required for lead.

5 Due to the age of the building, extensive sampling for asbestos was completed Asbestos was found in Room 104 in limited quantities (at insulated elbows and on the hot water tank) Asbestos has also been found in some building roof materials The asbestos containing roof material is non-friable A State qualified asbestos removal contractor has been contracted to remove all the asbestos before building dismantlement After the completion of the asbestos abatements, samples will be taken to verify the effectiveness of the asbestos removal No other sampling will be required for asbestos

6.0 RELEASE CRITERIA

6.1 RADIOLOGICAL RELEASE CRITERIA

The surface contamination limits presented on Attachment 1, "Summary of Contamination Values for Unrestricted Release," will be used as the criteria to release the building equipment, components, and building structure The floor surfaces and foundation will remain in place after the building has been removed The exposed floor surfaces and foundation will also be verified to meet the Attachment 1 criteria before the building dismantlement

The survey methods and release criteria of Attachment 1 are in conformance with the following RFETS procedures

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4-K62-ROI-03 01 Performance of Surface Contamination Surveys
4-S23-ROI-03 02 Radiological Requirements for Unrestricted Release
4-Q97-REP-1003 Radiological Evaluation for Unrestricted Release of Property/Waste
I-P73-HSP-18 10 Radioactive Material Transfer and Unrestricted Release of Property and Waste

6 2 BERYLLIUM RELEASE CRITERIA

The surface contamination limit for beryllium is 25 micrograms (μg) per ft 2 The release criteria and survey methods will conform with approved RFETS procedures including

1-15310-HSP-13 04 Beryllium Protection
4-15310-IHPM-5 2 Beryllium Control Program

7.0 CLASSIFICATION OF AREAS BY CONTAMINATION POTENTIAL

All areas of the building do not have the same potential for residual contamination and, therefore, do not require the same level of survey coverage to achieve an appropriate level of confidence that building surfaces satisfy established release criteria The Closeout Survey Plan is designed such that areas with higher potential for contamination receive a higher degree of survey effort This will ensure that the closeout survey process is both effective and efficient.

Three classifications of areas were used to design the Building 889 Closeout Survey Plan These classifications are defined as follows

Affected Areas
Areas that have potential contamination (based on building operating history) or known contamination (based on past or preliminary characterization survey data) This would normally include areas where radioactive materials were used and stored and where records indicate spills or other unusual occurrences could have resulted in the spread of contamination

Non-Suspect Affected Areas
The designation assigned to ceiling and wall surfaces above two meters within an affected area where it is not expected that radioactive materials exist at average levels in excess of 25% of the release criteria This designation is based on engineering judgement, in consideration of operational history, characterization data, and operational surveys performed in support of decommissioning

Unaffected Areas
All areas not classified as affected or non-suspect affected These areas are not expected to contain residual contamination, based on knowledge of building history and previous survey information

Initial classification of Building 889 survey areas is provided below These classifications will be either verified or updated during the conduct of the closeout survey

AREA DESCRIPTION	CLASSIFICATION
Rooms 106, 107, and 108 Floors and Walls Up To 2 Meters	Affected
Rooms 106, 107, and 108 Walls Above 2 Meters and Ceiling	Non-Suspect Affected
Room 105 Floors, Walls, Ceiling	Affected
Rooms 100, 101, 101A, 102, 104, 109, 110, 111, 112, 200	Unaffected (Previously Surveyed)

18

8.0 RESPONSIBILITIES

8 1 PROJECT MANAGER

The Project Manager is responsible for reviewing and approving the Building 889 Decommissioning Project Closeout Survey Plan and Report

8 2 DECOMMISSIONING SERVICES ENGINEER

The Decommissioning Services Engineer is responsible for

- Developing overall technical aspects, planning, and scheduling for implementation of the Closeout Survey
- Defining the content and ensuring the preparation of the Building 889 Decommissioning Project Closeout Survey Report
- Resolving issues regarding survey layout and gridding requirements
- Reviewing surveys and sample analysis results for completeness, accuracy, and legibility

8.3 RADIOLOGICAL ENGINEER

The Radiological Engineer is responsible for

- Ensuring that the Closeout Survey is developed and consistent with RFETS requirements
- Reviewing survey data for completeness, accuracy, legibility, and ensuring that discrepancies are identified and corrected
- Assisting with the preparation of the Closeout Survey Report
- Preparation of required documentation for the completion of Property/Waste Release Evaluation (P/WRE) forms
- Ensuring that appropriate background levels are applied

8.4 RADIOLOGICAL CONTROL TECHNICIANS

The Radiological Control Technicians are responsible for

- Performing surveys in accordance with this plan, approved RFETS procedures, and direction provided by the Radiological Engineer
- Providing complete, accurate, and legible documentation for all surveys performed

9.0 SURVEY AND SAMPLING METHODS AND FREQUENCY

9.1 RADIOLOGICAL

- Survey and sampling of Rooms 106, 107, and 108 will include the following

  Floors and Walls up to 2 Meters

- Scan 100% of accessible areas (beta and alpha), if elevated count rates are observed, a 1 minute fixed point measurement will be performed and the area of elevated activity will be marked

- Total activity measurements, beta and alpha (1 minute fixed point measurement) at each grid intersection or minimum of 1 5 measurement locations for each square meter surveyed in areas not gridded

- Removable activity measures (beta/alpha) at each grid intersection

Upper Walls and Ceiling

- Scan 10% of accessible areas (beta and alpha)

- 30 total activity measurements on vertical and horizontal surfaces where radioactive material would likely accumulate (horizontal surfaces where dust would settle)

- Removable activity measurements (swipe survey) at total activity measurement locations

- 30 samples from the painted wall and ceiling surfaces (see Section 11 for details)

• Room 105 (Filter Plenum Room)

- Scan 100% of accessible areas (floor/wall/ceiling) If elevated count rates are observed, perform 1 minute fixed point measurement and mark area of elevated activity

- Total activity measurements, beta and alpha (1 minute fixed point measurement) at each grid intersection or minimum of 1 5 measurement locations for each square meter surveyed in areas not gridded

- Removable activity measures (beta/alpha) at each grid intersection

• Other Areas of Building

- The Baseline Radiological Characterization Survey which was performed in 1995 included Rooms 100, 101, 101A, 102, 104, 109, 110, 112, and 200 The areas were gridded and surveyed for both fixed and removable or surveyed 100% with large area wipes with no contamination detected Additional surveys will be taken during demolition activities to ensure no contamination is present underneath the existing surfaces (upon removal of floor tiles) These surveys will be random in nature and will be for both fixed and removable

- Equipment in the uncontrolled portions of the building will be evaluated on a case-by-case basis to determine if additional surveys are required on the equipment prior to release for unrestricted use

- The immediate areas around the doorways between Rooms 101/106, 106/112, 105/104, and 104/106 (step-off pad) will be resurveyed for final closeout once all work in Rooms 105, 106, and 108 are complete Surveys will be for removable and total contamination Surveys will be performed in the immediate vicinity (one meter) of the doorways Floor tiles will be removed and the newly exposed surfaces surveyed

9 2 BERYLLIUM

The beryllium survey will include

- 30 randomly collected smear samples from the remaining painted surfaces within Rooms 106, 107, and 108

10.0 DESIGNATION OF MEASUREMENT LOCATIONS

Measurement locations will be clearly identified to provide a method of referencing survey results to survey measurement locations Gridding will be used mainly for the floors and walls (see Attachment 2 for a reference grid layout for the areas to be surveyed) The gridding layout may be modified as directed by Radiological Engineering Grids may be marked by paint, chalk line, or labels at grid block corners In areas where gridding is not practical or cost effective, measurement locations will be marked with label or similar method as directed by Radiological Engineering

11.0 SPECIAL SAMPLING

In areas where surface paint has not been removed by scabbling or other methods, an evaluation of the paint and underlying surface will be performed to supplement direct survey methods At least 30 samples will be collected from the painted upper walls and ceiling surfaces contained within Rooms 106, 107, and 108 The sample locations will be distributed across the painted surfaces with some bias given to the lower wall surface Samples will be obtained at the grid block centers At each sample location the painted surface layer will be removed from a known area (see Attachment 3 for specific paint/concrete sampling protocol)

The removed coating material will be analyzed for activity content (plutonium, uranium, and americium) using isotopic separation chemistry and chromatographic extraction techniques, followed by electrodepositon onto counting planchets, and analyzed by alpha spectrometry Each sample is spiked with a Chemistry Standards Laboratory (CSL) certified tracer of an isotope (Pu-242, U-232, or Cm-244) which behaves chemically identical to the analyte (Pu-239, U-234, -235, 238, or Am-241) and whose alpha energy can be isolated from other alpha interferences Procedure L-6235, "Isolation of Plutonium, Americium, and Uranium From Aqueous Samples" and L-6266, "Analysis of U, Pu, and Am in Soil/Sludge, Sediment by Ion Chromatography and Extraction Chromatography" will be used to perform the isotopic separations

The isotopic analysis results from the painted surface samples will be converted to units of dpm/100cm^2 for comparison with the release criteria using the equation provided on Attachment 3 The individual sample results will be compared to the average total activity criteria (Attachment 1, column 1) In addition, the 95% confidence level of the mean will be calculated for the sample population using the equation provided in Section 14 2

12.0 INSTRUMENTATION

Radiation detection and measurement instrumentation has been selected to provide reliable operations and adequate sensitivity to demonstrate that the measurements taken are sufficient to conclusively demonstrate that release limits have been met Instruments used to conduct the surveys will be calibrated and maintained in accordance with RFETS procedures Provided below is a list of instruments to be used for survey Other instruments may be used as approved by Radiological Engineering

Instrument List

Instrument	Count Type	Allowable Background (counts)	Acceptable Application	MDA (dpm/100cm^2)
NE Electra with DP6 Probe	60 sec (alpha)	2	Direct Alpha Surveys (Total Activity)	60
	60 sec (beta)	700	Direct Beta Surveys (Total Activity)	380
SAC-4	60 sec	1	Removable Alpha Swipes	18
LB5100-W	60 sec (alpha)	0 5	Simultaneous Removable Alpha and Beta Swipes	20 (alpha)
	60 sec (beta)	4		25 (beta)
BC-4	60 sec	200	Removable Beta Smears	205

13.0 QUALITY ASSURANCE (QA)

13 1 SURVEY DOCUMENTATION

Records of the survey will be maintained in a survey package The survey package will be the primary method of controlling and tracking closeout survey results The records complied in a survey package will include

- Survey Area Diagrams/Maps
- Printout of Smear Survey Analysis
- Laboratory Analysis Results
- Data Analysis Summary Sheets

13 2 QA SAMPLING

QA field and laboratory measurements will be performed independently on selected survey measurements Approximately 5% of the field and laboratory measurements will be resurveyed or replicated analysis performed Radiological Engineering will designate the type and locations of QA sampling The results of field survey results and laboratory sample analysis will be compared to the original survey measurements If the QA measurements indicate levels above established release criteria an evaluation will be conducted that may include additional measurements, evaluation, or additional remediation

13.3 CHAIN OF CUSTODY

Samples will be managed to ensure that there is an accurate record of sample collection, transport, analysis, and disposal This will insure that samples are neither lost nor tampered with and that the sample analyzed is traceable to a specific location in the field Chain of Custody documentation shall be completed for all samples submitted for laboratory analysis. The Chain of Custody form will be included as part of the closeout survey documentation

13.4 ANALYTICAL LABORATORY QA/QC

All samples collected will be analyzed by RFETS laboratories or an approved contracted laboratory The analysis will be performed by trained individuals using appropriate equipment and procedures The laboratory will have analytical capabilities for the radionuclides of interest (Pu, Am, U) and an established QA/QC program which assures the validity of the analytical results The laboratory analytical methods will be capable of measuring levels below the established release criteria All results will state the detection limit for the analysis Quality control sample results will also be reported including blank and spike sample results

14.0 DATA INTERPRETATION AND COMPARISON WITH RELEASE LIMITS

14 1 REPORTING UNITS

All measurements will be reported in units appropriate for comparison with Attachment 1 surface contamination limits Total and removable surface activity measurements will be reported in units of dpm per 100cm^2

Measurements of removable surface activity will be converted from gross count rate to units of net dpm/100cm^2 by subtracting the background count rate of the smear counting detector and correcting the net count rate for detector efficiency Measurements of total surface activity will be converted from observed gross counts per minute to net dpm/100cm^2 by subtracting the background count rate and correcting the net count rate for efficiency and detector surface area

Individual measurement results will be compared against the average and the maximum release criteria Measurement results less than the average guideline value will be deemed acceptable Measurement results greater than the maximum guideline value will indicate the need for remediation Measurement results greater than the average guideline value but less than the maximum release criteria will require investigation to determine if the average of a series of measurements exceeds the average release criteria Investigations will be performed as directed by Radiological Engineering and will demonstrate compliance with release criteria when averaged over a maximum of one square meter

The criteria outlined below will be used to demonstrate attainment of the release criteria

<u>Maximum Total Surface Activity (fixed plus removable contamination)</u>

- Plutonium (Alpha) - Not to exceed 300 dpm/100cm^2
- Uranium (Beta) - Not to exceed 15,000 dpm/100cm^2

<u>Average Total Surface Activity</u>

- Plutonium (Alpha) - Not to exceed 100 dpm/100cm^2
- Uranium (Beta) - Not to exceed 5,000 dpm/100cm2

<u>Removable Surface Activity</u>

- Plutonium (Alpha) - Not to exceed 20 dpm/100cm^2
- Uranium (Beta) - Not to exceed 1,000 dpm/100cm^2

14.2 CALCULATION OF 95% CONFIDENCE LEVEL OF THE MEAN

The 95% confidence level will be used to further demonstrate attainment of the release limits once the individual measurements have demonstrated compliance with the release criteria The confidence interval will be calculated using normal statistics (one-tailed test) at the 95% confidence level

$$U_a = \bar{x} + t_{1-\alpha,\,df} \frac{S_x}{\sqrt{n}}$$

Where

U_a	=	Upper Confidence Limit of Sample Mean
$\bar{x}$	=	Sample Mean
$t_{1-\alpha,\,df}$	=	Student *t* is the 95% confidence level obtained from Attachment 5, df (degrees of freedom) is equal to n-1, and α is 0 05 for this test
S_x	=	Sample Standard Deviation
n	=	Number of Measurements in the Survey Unit

15.0 REPORTING SURVEY FINDINGS

A Closeout Survey Report will be prepared at the conclusion of the project The report will be prepared by the Decommissioning Services Engineer and the cognizant Radiological Engineer A summary of the measurement results and overall conclusions showing that the building surfaces meets the release criteria will be provided See Attachment 4 for an example of statistical summary of survey and sampling results A tabular data summary will present the results for each survey area This tabulation will identify the number and type of measurements such as

- total surface activity
- removable surface beta-gamma
- removable surface alpha activity concentration
- results of any special sampling
- QA sampling results

In addition, the upper confidence limit (UCL) about the mean (95% confidence level) will be reported for comparison to the release criteria The Closeout Survey Report will be included in the project closeout records

16.0 REFERENCES

NUREG/CR-5849	Manual for Conducting Radiological Surveys in Support of License Termination
DOE/EM-0142P	Decommissioning Handbook
DOE/EM-0246	Decommissioning Resource Manual
4-K62-ROI-03 01	Performance of Surface Contamination Surveys
4-S23-ROI-03 02	Radiological Requirements for Unrestricted Release
4-Q97-REP-1003	Radiological Evaluation for Unrestricted Release of Property/Waste
I-P73-HSP-18 10	Radioactive Material Transfer and Unrestricted Release of Property and Waste

1-15310-HSP-13 04 Beryllium Protection

4-15310-IHPM-5 2 Beryllium Control Program

Building 889 Decommissioning Project Waste Management Plan

Interim Characterization Report - Building 889 Decommissioning Project

Draft Decommissioning Program Plan

R O Gilbert and J C Simpson, Statistical Methods for Evaluating the Attainment of Cleanup Standards, Volume 2

Attachment 1

SUMMARY OF CONTAMINATION VALUES FOR UNRESTRICTED RELEASE

RADIONUCLIDE (1)	Average Total (Fixed + Removable) dpm/100cm^2 (2), (3), (4)	Maximum Total (Fixed + Removable) dpm/100cm^2 (2), (4), (5)	Removable dpm/100cm^2 (2), (4), (6)
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100	300	20
Th-Natural, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-131, I-133	1000	3000	200
U-Natural, U-235, U-238, and associated decay products, alpha emitters	5000	15000	1000
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above (7)	5000	15000	1000

Notes

(1) Where surface contamination by both alpha and beta-gamma emitting radionuclides exists, the limits established for alpha and beta-gamma emitting radionuclides should apply independently

(2) As used in this table, disintegrations per minutes (dpm) is defined as the rate of emission by radioactive material as determined by correcting the counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation

(3) Measurements of average contamination should not be averaged over an area of more than 1 meter^2 For objects with a total surface area of less than 1 meter^2, the average should be derived for each object

(4) The average and maximum dose rates associated with surface contamination resulting from beta-gamma emitters should not exceed 0 2 mRad/hour and 1 0 mRad/hour, respectively at 1 cm

(5) The maximum contamination level applies to an area of not more than 100cm^2

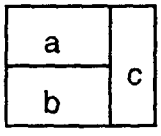
(6) The amount of removable material per 100 cm^2 of surface area should be determined by wiping an area of that size with a dry filter of soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wipe with an appropriate instrument of known efficiency When removable contamination on objects of surface area less than 100 cm^2 is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped Except for transuranics and Ra-^{228}, Ac-^{227}, Th-^{228}, Th-^{230}, Pa-^{231}, and alpha emitters, it is not necessary to use swiping techniques to measure removable contamination levels if direct scan surveys indicate the total residual surface contamination levels are within the limits for removable contamination

(7) This category of radionuclides includes mixed fission products, including the Sr-^{90} which is present in them It does not apply to Sr-^{90} which has been separated from the other fission products or mixtures where the Sr-^{90} has been enriched

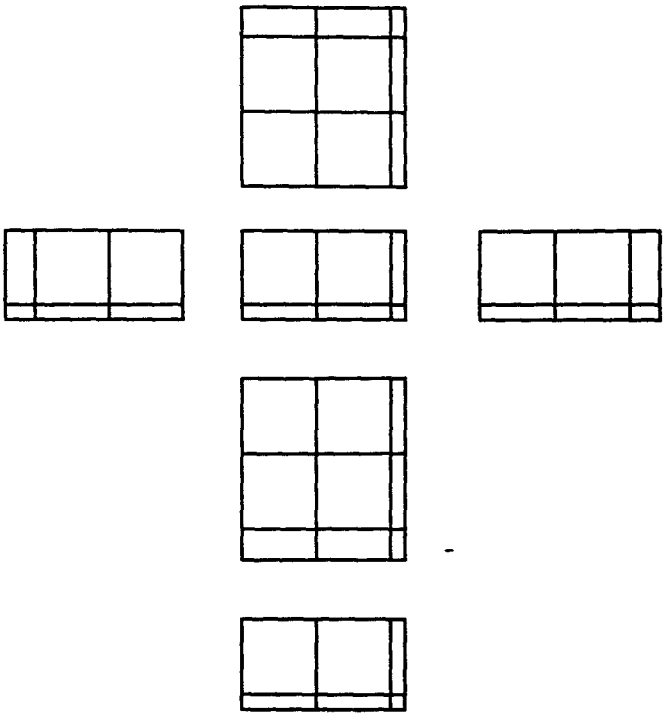
ATTACHMENT 2

BUILDING 889
ROOM 105

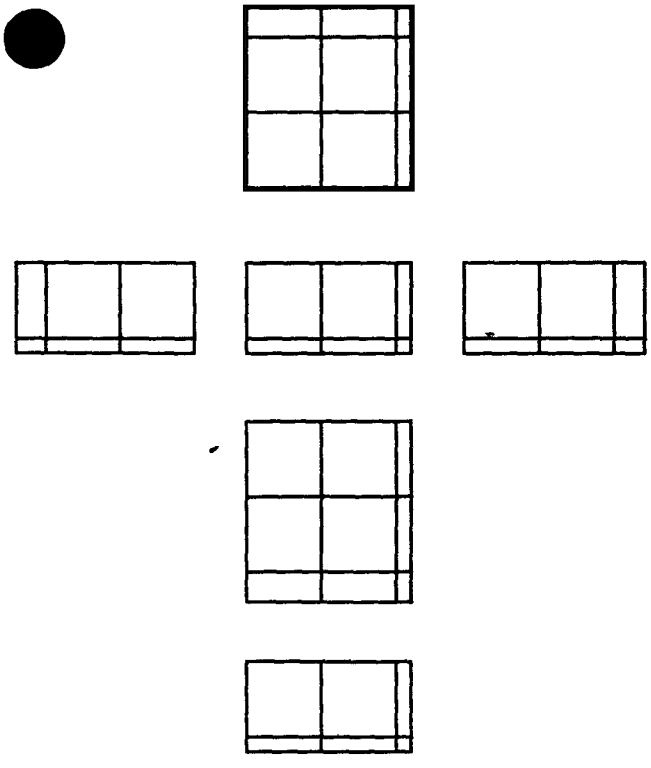
ROOM SUBDIVIDED
INTO 3 ROOM AS
SHOWN BELOW



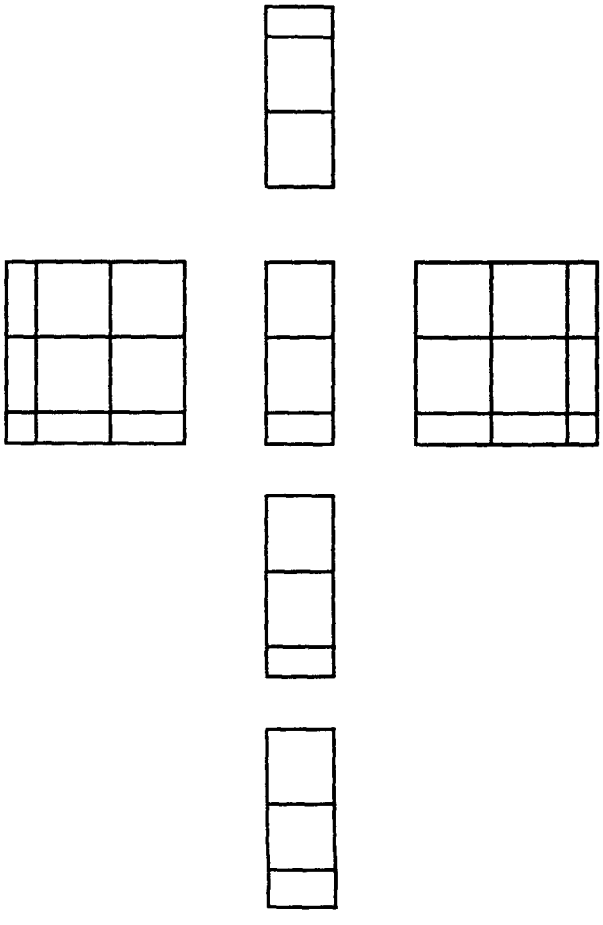
ROOM 105a



ROOM 105b

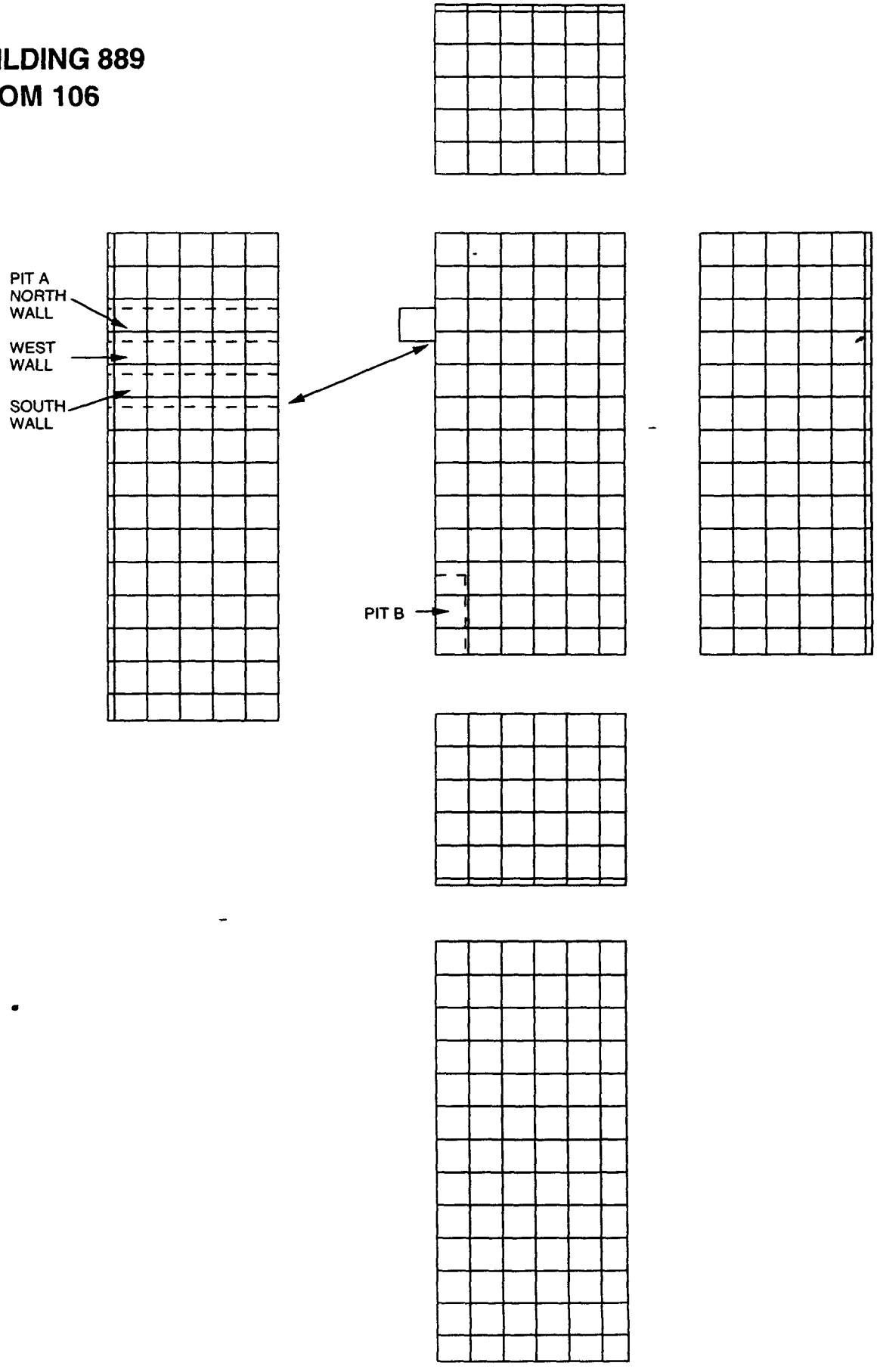


ROOM 105c



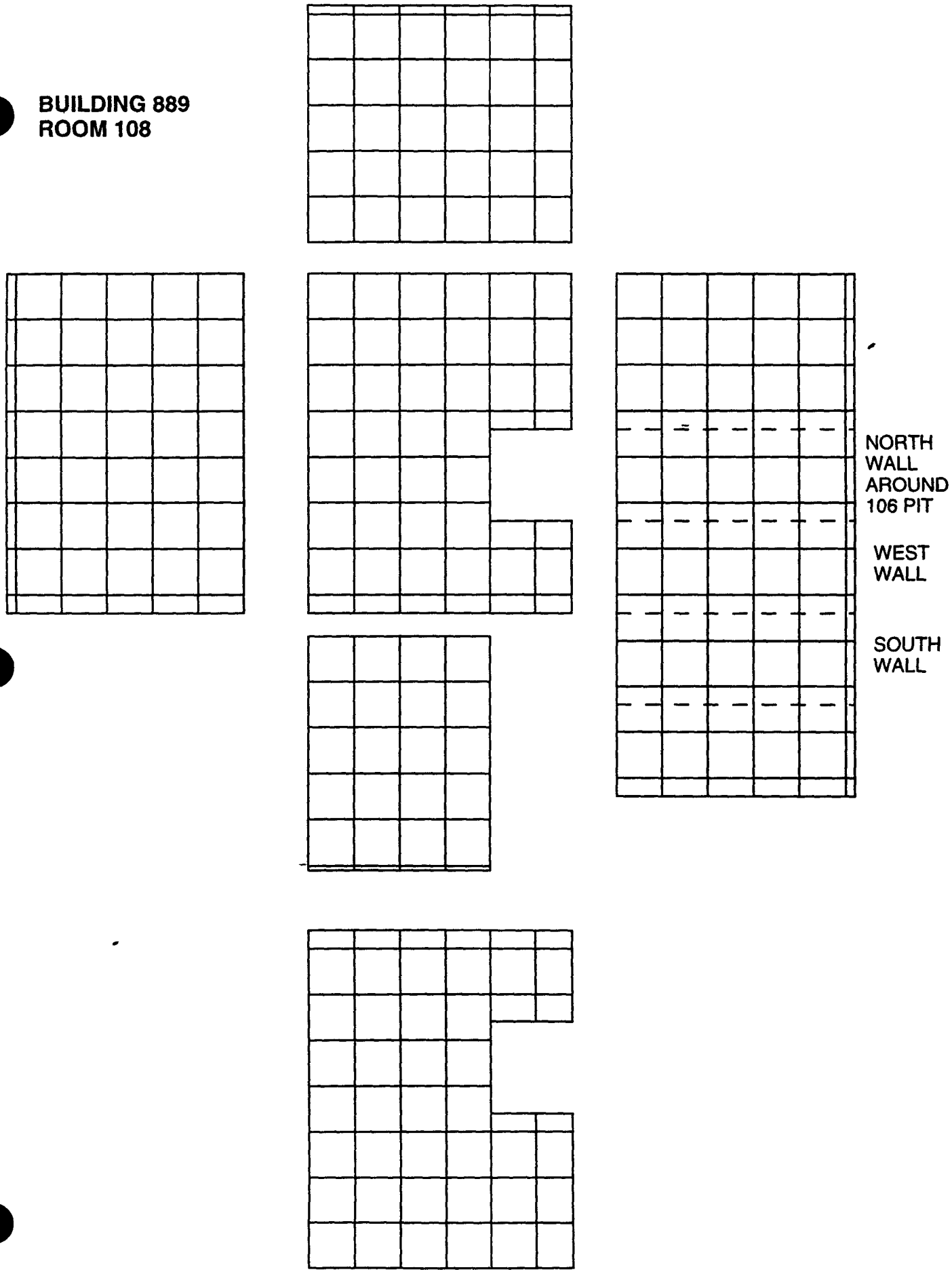
ATTACHMENT 2

BUILDING 889
ROOM 106



ATTACHMENT 2

BUILDING 889
ROOM 108



BUILDING 889 PAINT/CONCRETE SAMPLING PROTOCOL

1 At the locations designated by Radiological Engineering mark sample locations Mark an area approximately 12" X 12" or as directed by Radiological Engineering

2 Perform documented survey of sample location including fixed beta/alpha and removable beta/alpha

3 Affix plastic bag or similar device below sample location to collect sample media

4 Using a needle gun, scabble the sample area removing the paint and concrete surface to a depth of approximately 1/16 - 1/8 of an inch

5 Transfer sample material to a labeled sample container and complete required chain of custody documentation

6 Wipe down needle gun removing all loose material to prevent cross contamination of samples

7 Repeat above steps at each designated sample location

CONVERSION OF PAINT/CONCRETE SAMPLE RESULTS TO RELEASE CRITERIA UNITS

The following equation will be used to convert isotopic analysis results to units directly comparable to the release criteria contained on Attachment 1

$$\text{Total Surface Activity (dpm/100cm}^2) = \frac{\text{Sample Weight (grams)} \bullet \text{Isotopic Results (pC}_i\text{/gram)} \bullet 2.22\ \text{dpm/pC}_i \bullet 100}{\text{Sample Area (cm}^2)}$$

For example, if a sample is collected over a 12" x 12" area (928.8 cm2) and the isotopic analysis reports a Pu-238 concentration of 1.0 pC_i/gram for a 250 gram sample the calculated total activity is as follows

$$\text{Total Surface Activity (dpm/100cm}^2) = \frac{250\ \text{grams} \bullet 1.0\ \text{pC}_i\text{/gram} \bullet 2.22\ \text{dpm/pC}_i \bullet 100}{928.8\ \text{cm}^2}$$

$$\text{Total Surface Activity (dpm/100cm}^2) = 60\ \text{dpm/100cm}^2$$

Conclusion The 60 dpm/100cm2 is less than the average total activity release criteria contained on Attachment 1 (100 dpm/100cm2) The sample location meets the release criteria

Attachment 4

BUILDING 889 CLOSEOUT SURVEY
STATISTICAL SUMMARY
LOCATION: FLOORS AND WALLS ROOM 106

Total Surface Activity - Beta Survey

Number of Measurements	
Upper Confidence Limit (UCL)	dpm/100cm^2
Mean	dpm/100cm^2
Maximum	dpm/100cm^2
Minimum	dpm/100cm^2
Standard Deviation	dpm/100cm^2

Total Surface Activity - Alpha Survey

Number of Measurements	
Upper Confidence Limit (UCL)	dpm/100cm^2
Mean	dpm/100cm^2
Maximum	dpm/100cm^2
Minimum	dpm/100cm^2
Standard Deviation	dpm/100cm^2

Removable Activity - Beta Survey

Number of Measurements	
Upper Confidence Limit (UCL)	dpm/100cm^2
Mean	dpm/100cm^2
Maximum	dpm/100cm^2
Minimum	dpm/100cm^2
Standard Deviation	dpm/100cm^2

Removable Activity - Alpha Survey

Number of Measurements	
Upper Confidence Limit (UCL)	dpm/100cm^2
Mean	dpm/100cm^2
Maximum	dpm/100cm^2
Minimum	dpm/100cm^2
Standard Deviation	dpm/100cm^2

Attachment 4 (continued)

Special Sampling

Number of Measurements	
Upper Confidence Limit (UCL)	dpm/100cm^2
Mean	dpm/100cm^2
Maximum	dpm/100cm^2
Minimum	dpm/100cm^2
Standard Deviation	dpm/100cm^2

Remarks

_____

_____

_____

_____

Conclusions

The results of total activity, removable and special sampling demonstrate compliance with release criteria

Attachment 5

STUDENT "t" VALUES

Degrees of Freedom*	$t_{95\%}$
1	6 314
2	2 920
3	2 353
4	2 132
5	2 015
6	1 943
7	1 895
8	1 860
9	1 833
10	1 821
11	1 796
12	1 782
13	1 771
14	1 761
15	1 753
16	1 746
17	1 740
18	1 734
19	1 729
20	1 725
21	1 721
22	1 717
23	1 714
24	1 711
25	1 708
26	1 706
27	1 703
28	1 701
29	1 699
30	1 697
40	1 684
60	1 671
120	1 658
infinite	1 645

*Degrees of freedom is the number of samples minus 1

Attachment 2

SUMMARY OF CONTAMINATION VALUES FOR UNRESTRICTED RELEASE

RADIONUCLIDE (1)	Average Total (Fixed + Removable) dpm/100cm^2 (2), (3), (4)	Maximum Total (Fixed + Removable) dpm/100cm^2 (2), (4), (5)	Removable dpm/100cm^2 (2), (4), (6)
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100	300	20
Th-Natural, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-131, I-133	1000	3000	200
U-Natural, U-235, U-238, and associated decay products, alpha emitters	5000	15000	1000
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above (7)	5000	15000	1000

Notes

(1) Where surface contamination by both alpha and beta-gamma emitting radionuclides exists, the limits established for alpha and beta-gamma emitting radionuclides should apply independently

(2) As used in this table, disintegrations per minutes (dpm) is defined as the rate of emission by radioactive material as determined by correcting the counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation

(3) Measurements of average contamination should not be averaged over an area of more than 1 meter^2 For objects with a total surface area of less than 1 meter^2, the average should be derived for each object

(4) The average and maximum dose rates associated with surface contamination resulting from beta-gamma emitters should not exceed 0 2 mRad/hour and 1 0 mRad/hour, respectively at 1 cm

(5) The maximum contamination level applies to an area of not more than 100cm^2

(6) The amount of removable material per 100 cm^2 of surface area should be determined by wiping an area of that size with a dry filter of soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wipe with an appropriate instrument of known efficiency When removable contamination on objects of surface area less than 100 cm^2 is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped Except for transuranics and Ra-^{228}, Ac-^{227}, Th-^{228}, Th-^{230}, Pa-^{231}, and alpha emitters, it is not necessary to use swiping techniques to measure removable contamination levels if direct scan surveys indicate the total residual surface contamination levels are within the limits for removable contamination

(7) This category of radionuclides includes mixed fission products, including the Sr-^{90} which is present in them It does not apply to Sr-^{90} which has been separated from the other fission products or mixtures where the Sr-^{90} has been enriched

RADIOACTIVE MATERIALS MANAGEMENT AREA (RMMA) DETERMINATION FORM

Date of Determination 8-26-96 Building Number 889 Room Numbers All

Area Description This determination is for the entire building. Previous determinations have been performed for rooms 100, 101A, 102, 109, 110, 111 (dtd 1-29-96), 104, 200 (dtd 3-12-96), and 112 (dtd 3-12-96). The rooms not previously addressed are 101, 105, 106, 107, and 108. However, the walls of room 107 have been removed and it is now part of room 108.

For each question circle **Yes** or **No** as a response

1 YES (NO) **Does the area have potential or actual unconfined or unencapsulated radioactive material present?**

2 YES (NO) *(For this response to be YES, both 2 a and 2 b must be answered YES)*

a YES (NO) **Does the area have surface radioactive contamination levels that exceed or have the potential to exceed the unrestricted release limits of HSP-18 10?**

b YES (NO) **Do the airborne radioactivity levels for the area exceed or are they likely to exceed 10% of the Derived Airborne Concentrations for any isotope?**

3 YES (NO) **Is the area exposed to beams or other sources of particles capable of causing activation?**

4 YES (NO) **Does the area have volume contamination of materials from area surface contamination or from operations in other areas?**

5 YES (NO) **Does the area have elevated levels of radioactive material above background in the soil?**

IF ANY OF QUESTIONS ONE THROUGH FIVE WERE ANSWERED YES, THEN THE AREA IS TO BE DESIGNATED AS AN RMMA.

YES (NO) IS THE AREA AN RMMA? (CIRCLE ONE)

Dennis A. Russell — [redacted] — Signature — 8/26/96

R E Name — Signature — Date

Rationale for Determination: This building has been baseline surveyed using large area wipes, direct and removable surveys and no removable contamination exists above the release limits.

Key Personnel Interviewed

NAME	ORGANIZATION	PHONE/PAGE

Signature / Empl # / Date

Signature / Empl # / Date

List of Attached supporting documentation Surveys from the rooms 101, 105, 106, and 108 performed as part of D & D of Building 889.

Entered into RMMA Database by _____ Name _____ Date

35

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ROOM 105 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
1	S W COLD SIDE 105	12 26	14 53	60	960
2	S W COLD SIDE 105	12 26	14 53	60	732
3	S W COLD SIDE 105	12 26	14 53	60	1125
4	S W COLD SIDE 105	12 26	14 53	72	1149
5	S W COLD SIDE 105	12 26	14 53	60	651
6	S W COLD SIDE 105	12 26	14 53	66	630
7	S W COLD SIDE 105	12 26	14 53	60	1086
8	S W COLD SIDE 105	12 26	14 53	60	846
9	S W COLD SIDE 105	12 26	14 53	60	915
1	W W COLD SIDE 105	12 26	14 53	60	849
2	W W COLD SIDE 105	12 26	14 53	60	915
3	W W COLD SIDE 105	12 26	14 53	60	699
4	W W COLD SIDE 105	12 26	14 53	60	380
5	W W COLD SIDE 105	12 26	14 53	60	380
6	W W COLD SIDE 105	12 26	14 53	60	885
7	W W COLD SIDE 105	12 26	14 53	60	726
8	W W COLD SIDE 105	12 26	14 53	78	885
1	FLTR FR COLD SIDE 105	12 26	14 53	60	380
2	FLTR FR COLD SIDE 105	12 26	14 53	60	380
3	FLTR FR COLD SIDE 105	12 26	14 53	60	380
4	FLTR FR COLD SIDE 105	12 26	23 68	60	501
5	FLTR FR COLD SIDE 105	12 26	14 53	60	380
6	FLTR FR COLD SIDE 105	12 26	14 53	60	380
7	FLTR FR COLD SIDE 105	12 26	14 53	60	380
8	FLTR FR COLD SIDE 105	12 26	14 53	60	380
9	FLTR FR COLD SIDE 105	12 26	14 53	60	380
10	FLTR FR COLD SIDE 105	12 26	14 53	60	380
11	FLTR FR COLD SIDE 105	12 26	14 53	60	380
12	FLTR FR COLD SIDE 105	12 26	14 53	60	380
13	FLTR FR COLD SIDE 105	12 26	14 53	72	380
14	FLTR FR COLD SIDE 105	12 26	14 53	60	380
15	FLTR FR COLD SIDE 105	12 26	14 53	60	380

37

ROOM 105 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
16	FLTR FR COLD SIDE 105	12 26	14 53	60	380	
17	FLTR FR COLD SIDE 105	12 26	14 53	60	380	
18	FLTR FR COLD SIDE 105	12 26	18 07	60	380	
19	FLTR FR COLD SIDE 105	12 26	14 53	60	380	
20	FLTR FR COLD SIDE 105	12 26	14 53	60	380	
1	E W COLD SIDE 105	12 26	14 53	60	380	
2	E W COLD SIDE 105	12 26	14 53	60	380	
3	E W COLD SIDE 105	12 26	14 53	60	380	
4	E W COLD SIDE 105	12 26	14 53	60	380	
5	E W COLD SIDE 105	12 26	14 53	60	380	
6	E W COLD SIDE 105	12 26	14 53	60	380	
1	CEILING COLD SIDE 105	12 26	14 53	60	489	
2	CEILING COLD SIDE 105	12 26	14 53	60	380	
3	CEILING COLD SIDE 105	12 26	14 53	60	380	
4	CEILING COLD SIDE 105	12 26	14 53	60	380	
5	CEILING COLD SIDE 105	12 26	14 53	60	380	
6	CEILING COLD SIDE 105	12 26	14 53	60	380	
1	FLOOR COLD SIDE 105	12 26	14 53	60	393	
2	FLOOR COLD SIDE 105	12 26	14 53	60	380	
3	FLOOR COLD SIDE 105	12 26	14 53	60	570	
4	FLOOR COLD SIDE 105	12 26	14 53	60	591	
5	FLOOR COLD SIDE 105	12 26	14 53	60	477	
6	FLOOR COLD SIDE 105	12 26	14 53	60	381	
1	E W HOT SIDE 105	12 26	19 94	66	2013	
2	E W HOT SIDE 105	12 26	14 53	60	380	
3	E W HOT SIDE 105	12 26	14 53	60	380	
4	E W HOT SIDE 105	12 26	14 53	60	380	
5	E W HOT SIDE 105	12 26	14 53	60	380	
6	E W HOT SIDE 105	12 26	14 53	186	1557	DECON TO TOTAL BETA 1122
1	INSIDE DR HOT SIDE 105	16 97	46 11	60	9201	DECON TO TOTAL ALPHA 84
2	INSIDE DR HOT SIDE 105	16 97	33 03	60	12966	DECON TO TOTAL ALPHA 72
1	THRESH HOT SIDE 105	14 05	14 53	96	23205	DECON TO TOTAL ALPHA 90, BETA 3564

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ROOM 105 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
1	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
2	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
3	FLTR FR HOT SIDE 105	12 26	14 53	306	380	DECON TO LESS THAN MDA
4	FLTR FR HOT SIDE 105	12 26	14 53	120	380	DECON TO LESS THAN MDA
5	FLTR FR HOT SIDE 105	12 26	14 53	180	380	DECON TO LESS THAN MDA
6	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
7	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
8	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
9	FLTR FR HOT SIDE 105	12 26	18 07	60	380	
10	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
11	FLTR FR HOT SIDE 105	12 26	14 53	240	380	DECON TO LESS THAN MDA
12	FLTR FR HOT SIDE 105	16 97	16 2	60	380	
13	FLTR FR HOT SIDE 105	12 26	18 07	60	380	
14	FLTR FR HOT SIDE 105	14 05	14 53	60	380	
15	FLTR FR HOT SIDE 105	12 26	23 68	60	380	
16	FLTR FR HOT SIDE 105	14 05	19 94	60	380	
17	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
18	FLTR FR HOT SIDE 105	12 26	19 94	60	380	
19	FLTR FR HOT SIDE 105	12 26	14 53	60	380	
20	FLTR FR HOT SIDE 105	12 26	21 81	60	380	
1	W W HOT SIDE 105	12 26	14 53	144	699	DECON TO TOTAL BETA 999
2	W W HOT SIDE 105	12 26	14 53	60	380	
3	W W HOT SIDE 105	12 26	14 53	60	380	
4	W W HOT SIDE 105	12 26	14 53	60	380	
5	W W HOT SIDE 105	12 26	14 53	60	380	
6	W W HOT SIDE 105	12 26	14 53	138	1842	DECON TO TOTAL BETA 1158
1	BENCH FR HOT SIDE 105	28 68	42 3766	138	16530	BENCH FRAM REMOVED
2	BENCH FR HOT SIDE 105	12 26	14 53	486	243	BENCH FRAM REMOVED
1	CEILING HOT SIDE 105	12 26	14 53	60	380	
2	CEILING HOT SIDE 105	16 97	14 53	330	465	DECON TO TOTAL BETA 1248
3	CEILING HOT SIDE 105	12 26	14 53	60	582	
4	CEILING HOT SIDE 105	12 26	14 53	282	1143	DECON TO TOTAL BETA 1008

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ROOM 105 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
5	CEILING HOT SIDE 105	12 26	14 53	60	380	
6	CEILING HOT SIDE 105	19 9	14 53	180	1290	DECON TO TOTAL BETA 1680, ALPHA 78
1	N W HOT SIDE 105	12 26	14 53	60	543	
2	N W HOT SIDE 105	12 26	14 53	60	380	
3	N W HOT SIDE 105	12 26	14 53	60	380	
4	N W HOT SIDE 105	12 26	14 53	102	474	DECON TO TOTAL BETA 798
5	N W HOT SIDE 105	12 26	14 53	60	408	
6	N W HOT SIDE 105	12 26	14 53	60	380	
7	N W HOT SIDE 105	12 26	14 53	60	380	
8	N W HOT SIDE 105	12 26	14 53	60	380	
9	N W HOT SIDE 105	12 26	14 53	60	1032	
10	N W HOT SIDE 105	12 26	14 53	60	537	
11	N W HOT SIDE 105	12 26	14 53	60	380	
12	N W HOT SIDE 105	12 26	14 53	60	380	
1	FLOOR HOT SIDE 105	12 26	14 53	60	1632	
2	FLOOR HOT SIDE 105	12 26	14 53	60	5427	DECON TO TOTAL BETA 1323
3	FLOOR HOT SIDE 105	12 26	14 53	222	2700	DECON TO TOTAL BETA 1062
4	FLOOR HOT SIDE 105	12 26	14 53	132	975	DECON TO TOTAL BETA 1005
5	FLOOR HOT SIDE 105	12 26	14 53	90	1596	
6	FLOOR HOT SIDE 105	12 26	14 53	114	2838	DECON TO TOTAL BETA 729
1	N W AIRLOCK 105	13 8	13 9	60	380	
2	N W AIRLOCK 105	13 8	13 9	60	380	
3	N W AIRLOCK 105	13 8	13 9	60	380	
4	N W AIRLOCK 105	13 8	13 9	60	380	
5	N W AIRLOCK 105	13 8	13 9	60	380	
6	N W AIRLOCK 105	13 8	13 9	60	380	
7	N W AIRLOCK 105	13 8	13 9	60	380	
8	N W AIRLOCK 105	13 8	13 9	60	380	
1	E W AIRLOCK 105	13 8	13 9	60	380	
2	E W AIRLOCK 105	13 8	13 9	60	380	
3	E W AIRLOCK 105	13 8	13 9	60	380	
4	E W AIRLOCK 105	13 8	13 9	60	380	

ROOM 105 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
5	E W AIRLOCK 105	13 8	13 9	60	380
6	E W AIRLOCK 105	13 8	13 9	60	380
7	E W AIRLOCK 105	13 8	13 9	60	380
8	E W AIRLOCK 105	13 8	13 9	60	380
9	E W AIRLOCK 105	13 8	13 9	60	380
10	E W AIRLOCK 105	13 8	13 9	60	380
11	E W AIRLOCK 105	13 8	13 9	60	380
12	E W AIRLOCK 105	13 8	13 9	60	380
13	E W AIRLOCK 105	13 8	13 9	60	380
14	E W AIRLOCK 105	13 8	13 9	60	380
15	E W AIRLOCK 105	13 8	13 9	60	380
16	E W AIRLOCK 105	13 8	13 9	60	380
1	W W AIRLOCK 105	13 8	13 9	60	380
2	W W AIRLOCK 105	13 8	13 9	60	380
3	W W AIRLOCK 105	13 8	13 9	60	380
4	W W AIRLOCK 105	13 8	13 9	60	380
5	W W AIRLOCK 105	13 8	13 9	60	380
6	W W AIRLOCK 105	13 8	13 9	60	380
7	W W AIRLOCK 105	13 8	13 9	60	380
8	W W AIRLOCK 105	13 8	13 9	60	380
9	W W AIRLOCK 105	13 8	13 9	60	380
10	W W AIRLOCK 105	13 8	13 9	60	380
11	W W AIRLOCK 105	13 8	13 9	60	380
12	W W AIRLOCK 105	13 8	13 9	60	380
13	W W AIRLOCK 105	13 8	13 9	60	380
14	W W AIRLOCK 105	13 8	13 9	60	380
15	W W AIRLOCK 105	13 8	13 9	60	380
16	W W AIRLOCK 105	13 8	13 9	60	380
1	S W AIRLOCK 105	13 8	13 9	60	380
2	S W AIRLOCK 105	13 8	13 9	60	380
3	S W AIRLOCK 105	13 8	13 9	60	380
4	S W AIRLOCK 105	13 8	13 9	60	380

ROOM 105 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
5	S W AIRLOCK 105	13 8	13 9	60	380	
6	S W AIRLOCK 105	13 8	13 9	60	380	
7	S W AIRLOCK 105	13 8	13 9	60	380	
8	S W AIRLOCK 105	13 8	13 9	60	380	
1	FLOOR AIRLOCK 105	13 8	13 9	60	380	
2	FLOOR AIRLOCK 105	13 8	13 9	60	380	
3	FLOOR AIRLOCK 105	13 8	13 9	60	380	
4	FLOOR AIRLOCK 105	13 8	13 9	60	380	
5	FLOOR AIRLOCK 105	13 8	13 9	144	396	DECON TO LESS THAN MDA
6	FLOOR AIRLOCK 105	13 8	13 9	60	522	
7	FLOOR AIRLOCK 105	13 8	13 9	60	380	
8	FLOOR AIRLOCK 105	13 8	13 9	60	380	
1	CEILING AIRLOCK 105	13 8	13 9	60	380	
2	CEILING AIRLOCK 105	13 8	13 9	60	380	
3	CEILING AIRLOCK 105	13 8	13 9	60	426	
4	CEILING AIRLOCK 105	13 8	13 9	60	380	
5	CEILING AIRLOCK 105	13 8	13 9	60	380	
6	CEILING AIRLOCK 105	13 8	13 9	60	380	
7	CEILING AIRLOCK 105	13 8	13 9	60	380	
8	CEILING AIRLOCK 105	13 8	13 9	60	380	
	mean=	13 076	15 039	74 133	874 872	
	t(α= 05, df=179)=	1 653				
	standard deviation=	1 600	3 694	51 468	2394 840	
	upper conf limit=	13 273	15 495	80 476	1170 007	

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

FOR. ___ P/WRE ___ PRL

✓ RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM: 105 Plenum

DATE: 7-12-96 | TIME 0800

ITEM DESCRIPTION

Baseline Survey of Cold side Plenum Bldg 889

COMMENTS:

STATUS

✓ RELEASABLE ___ NOT RELEASABLE

___ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME) Munoz

[redacted] 8-19-96

RCT SIGNATURE DATE

Teresa Johnston

REVIEWED BY [signature] 8-22-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	991	892		
CAL DATE	6-27-96	5-20-96		
CAL DUE DATE	12-27-96	11-20-96		

MFR.	EBER.	EBER.	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	Bc389	Bc393		
CAL DATE	7-3-96	7-3-96		
CAL DUE DATE	1-3-97	1-3-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1405		
CAL DATE		7-15-96		
CAL DUE DATE		1-15-97		
BACKGROUND		~~Vx 2.0~~ ~~2.0~~ 2.0 ~~Bs 700~~ 8 cm B 395		

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	South wall cold side			60	960
2	South wall			<60	732
3	South wall			<60	1125
4	South wall			72	1149
5	South wall			<60	651
6	South wall			66	630
7	South wall			<60	1086
8	South wall			<60	846
9	South wall			<60	915
1	West wall Cold side			<60	849
2	West wall			<60	915
3	West wall			<60	699
4	west wall			<60	~~886~~ <380
5	west wall			<60	~~726~~ <380
6	West Wall		9-14-96	~~78~~ <60	885
7	west wall			<60	726
8	west wall			78	885
1	Filter Frame cold side			<60	<380
2	Filter Frame			<60	<380
3	Filter Frame			<60	<380
4	Filter Frame			<60	501
5	Filter Frame			<60	380

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
6	Filter Frame Cold Side			<60	<380
7	Filter Frame			<60	<380
8	Filter Frame			<60	<380
9	Filter Frame			<60	<380
10	Filter Frame			<60	<380
11	Filter Frame			<60	<380
12	Filter Frame			<60	<380
13	Filter Frame			72	<380
14	Filter Frame			<60	<380
15	Filter Frame			<60	<380
16	Filter Frame			<60	<380
17	Filter Frame			<60	<380
18	Filter frame			<60	<380
19	Filter frame			<60	<380
20	Filter Frame			<60	<380
1	East Wall Cold Side			<60	<380
2	East Wall Cold Side			<60	<380
3	East Wall Cold Side			<60	<380
4	East wall Cold Side			<60	<380
5	East wall Cold Side			<60	<380
6	East Wall Cold Side			<60	<380
1	Ceiling Cold Side			<60	489

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

PAGE 3 OF 9

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
2	Cieling cold side			<60	<380
3	Cieling			<60	<380
4	Cieling			<60	<380
5	Cieling			<60	<380
6	Cieling			<60	<380
1	Floor Cold side			<60	393
2	Floor			<60	<380
3	Floor			<60	570
4	Floor			<60	591
5	Floor			<60	477
6	Floor			<60	381

8-18-96

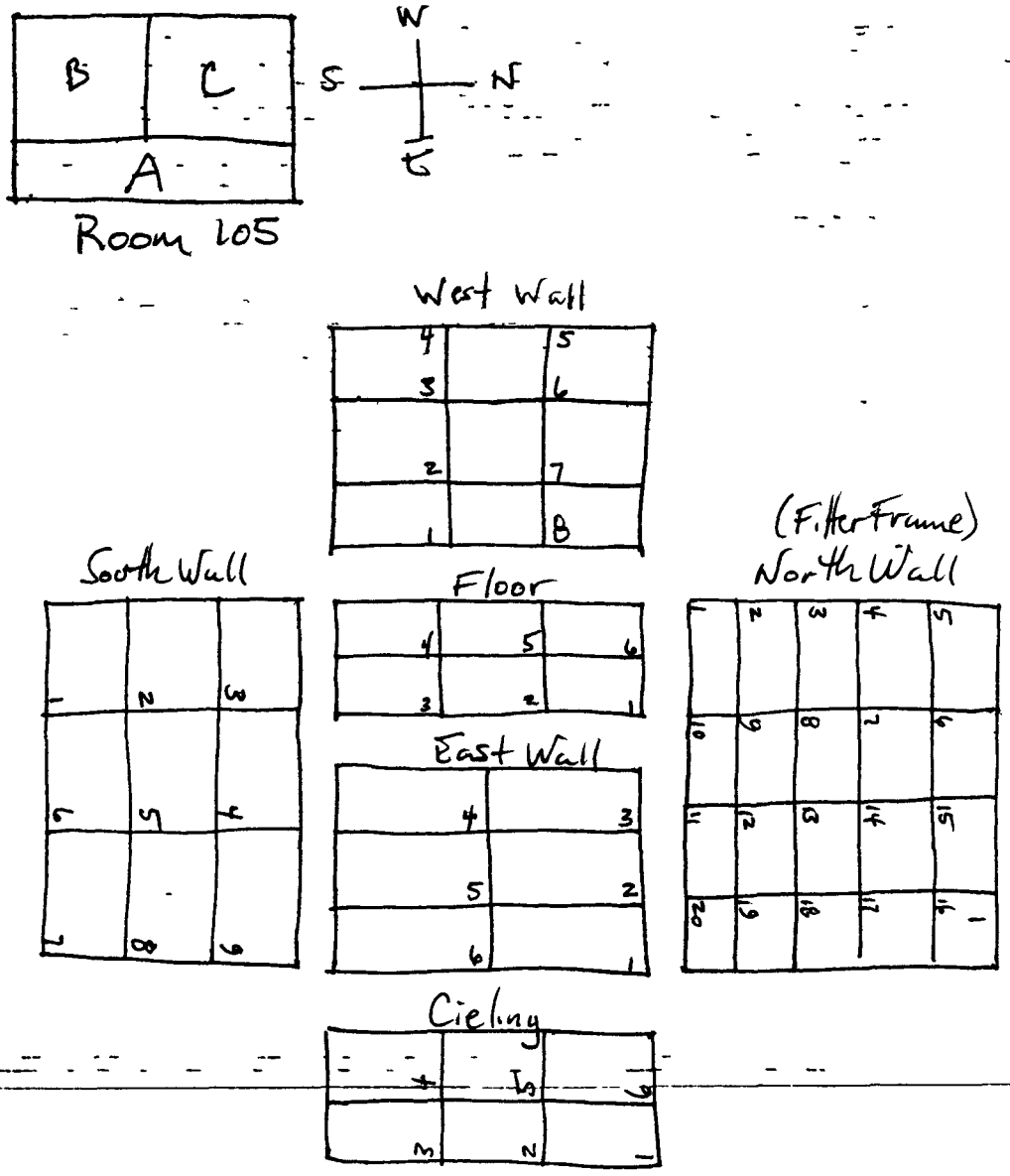
SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA

8-18-96

RADIOLOGICAL MONITORING Control No _____

Area or Equipment Drawing Showing Survey Points



Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID Filter Frame Cold Side Plenum

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A094 XLD

Batch Ended 8/12/96 10 01

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
1	1	**5 267**	4 14	<AL	12 26	**10 59**	5 30	<AL	14 53	1 00	1 800	5 67	8/12/96 9 38
2	2	**-0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	0 200	0 33	8/12/96 9 40
3	3	**-0 585**	2 93	<MDA	12 26	**14 33**	5 93	<AL	14 53	1 00	0 200	7 67	8/12/96 9 41
4	4	**2 341**	2 93	<AL	12 26	**23 68**	7 26	<AL	14 53	1 00	0 800	12 67	8/12/96 9 42
5	5	**5 267**	4 14	<AL	12 26	**8 72**	4 96	<AL	14 53	1 00	1 800	4 67	8/12/96 9 43
6	6	**5 267**	4 14	<AL	12 26	**14 33**	5 93	<AL	14 53	1 00	1 800	7 67	8/12/96 9 44
7	7	**2 341**	2 93	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 800	1 67	8/12/96 9 46
8	8	**0 585**	2 93	<MDA	12 26	**12 46**	5 63	<AL	14 53	1 00	0 200	6 67	8/12/96 9 47
9	9	**5 267**	4 14	<AL	12 26	**2 49**	1 91	<MDA	14 53	1 00	1 800	1 33	8/12/96 9 48
10	10	**5 267**	4 14	<AL	12 26	**8 72**	4 96	<AL	14 53	1 00	1 800	4 67	8/12/96 9 49
11	11	**11 119**	5 86	At AL	12 26	**12 46**	5 63	<AL	14 53	1 00	3 800	6 67	8/12/96 9 50
12	12	**2 341**	2 93	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	0 800	2 67	8/12/96 9 52
13	13	**0 585**	2 93	<MDA	12 26	**4 99**	4 20	<AL	14 53	1 00	0 200	2 67	8/12/96 9 53
14	14	**-0 585**	2 93	<MDA	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 200	1 67	8/12/96 9 54
15	15	**11 119**	5 86	At AL	12 26	**14 33**	5 93	<AL	14 53	1 00	3 800	7 67	8/12/96 9 55
16	16	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 9 57
17	17	**-0 585**	2 93	<MDA	12 26	**12 46**	5 63	<AL	14 53	1 00	0 200	6 67	8/12/96 9 58
18	18	**5 267**	4 14	<AL	12 26	**18 07**	6 50	<AL	14 53	1 00	1 800	9 67	8/12/96 9 59
19	19	**-0 585**	2 93	<MDA	12 26	**4 99**	4 20	<AL	14 53	1 00	0 200	2 67	8/12/96 10 00
20	20	**5 267**	4 14	<AL	12 26	**16 20**	6 22	<AL	14 53	1 00	1 800	8 67	8/12/96 10 01

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

66P1

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID South Wall Cold Plenum
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1B028 XLD
Batch Ended 8/12/96 10 12
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
21	1	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 10 03
22	2	**2 341**	2 93	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 800	1 67	8/12/96 10 04
23	3	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 10 05
24	4	**-0 585**	2 93	<MDA	12 26	**8 72**	4 96	<AL	14 53	1 00	0 200	4 67	8/12/96 10 06
25	5	**5 267**	4 14	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	1 800	2 67	8/12/96 10 08
26	6	**-0 585**	2 93	<MDA	12 26	**4 99**	4 20	<AL	14 53	1 00	-0 200	2 67	8/12/96 10 09
27	7	**-0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	0 200	0 33	8/12/96 10 10
28	8	**0 585**	2 93	<MDA	12 26	**0 62**	2 67	<MDA	14 53	1 00	0 200	0 33	8/12/96 10 11
29	9	**5 267**	4 14	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	1 800	2 67	8/12/96 10 12

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

7UP9

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID West Wall Cold Plenum
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1D005 XLD
Batch Ended 8/12/96 10 22
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
36	1	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	-0 200	0 67	8/12/96 10 14
37	2	**2 341**	2 93	<AL	12 26	**-2 49**	1 91	<MDA	14 53	1 00	0 800	1 33	8/12/96 10 15
38	3	**5 267**	4 14	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	1 800	1 67	8/12/96 10 16
39	4	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 10 18
40	5	**-0 585**	2 93	<MDA	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 200	1 67	8/12/96 10 19
41	6	**2 341**	2 93	<AL	12 26	**0 62**	2 67	<MDA	14 53	1 00	0 800	0 33	8/12/96 10 20
42	7	**-0 585**	2 93	<MDA	12 26	**-2 49**	1 91	<MDA	14 53	1 00	0 200	1 33	8/12/96 10 21
43	8	**-0 585**	2 93	<MDA	12 26	**-4 36**	1 91	<MDA	14 53	1 00	0 200	2 33	8/12/96 10 22

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID Floor Cold Plenum

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1E004 XLD

Batch Ended 8/12/96 10 30

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 20

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 2 33

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
44	1	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 10 24
45	2	**8 193**	5 07	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	2 800	0 67	8/12/96 10 25
46	3	**8 193**	5 07	<AL	12 26	**-2 49**	1 91	<MDA	14 53	1 00	2 800	1 33	8/12/96 10 26
47	4	**-0 585**	2 93	<MDA	12 26	**-2 49**	1 91	<MDA	14 53	1 00	0 200	1 33	8/12/96 10 27
48	5	**2 341**	2 93	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 800	1 67	8/12/96 10 29
49	6	**2 341**	2 93	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 800	1 67	8/12/96 10 30

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

96-4

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID Ceiling Cold Plenum

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1F002 XLD

Batch Ended 8/12/96 10 37

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
50	1	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 200	0 67	8/12/96 10 31
51	2	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	-0 200	0 67	8/12/96 10 32
52	3	**-0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	0 200	0 33	8/12/96 10 34
53	4	**-0 585**	2 93	<MDA	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 200	1 67	8/12/96 10 35
54	5	**-0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	-0 200	0 33	8/12/96 10 36
55	6	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 10 37

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

FOR. ___ P/WRE ___ PRL
✓ RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM 105

DATE. 8-20-96 | TIME 1300

ITEM DESCRIPTION.
Plenum Survey Hot side
Bldg 889 Rm 105

COMMENTS

STATUS: ✓ RELEASABLE ___ NOT RELEASABLE
___ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME): Muñoz

[signature] [redacted] 8-20-96
RCT SIGNATURE DATE

Teresa Johnston
REVIEWED BY [signature] 8-22-96
RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER	EBER.	Tamelec
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB 5100
SERIAL #				28125-2
CAL DATE				6-12-96
CAL DUE DATE				12-12-96

MFR	EBER.	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1405		
CAL DATE		7-15-96		
CAL DUE DATE		1-15-97		
BACKGROUND		L 1.0 B 395		

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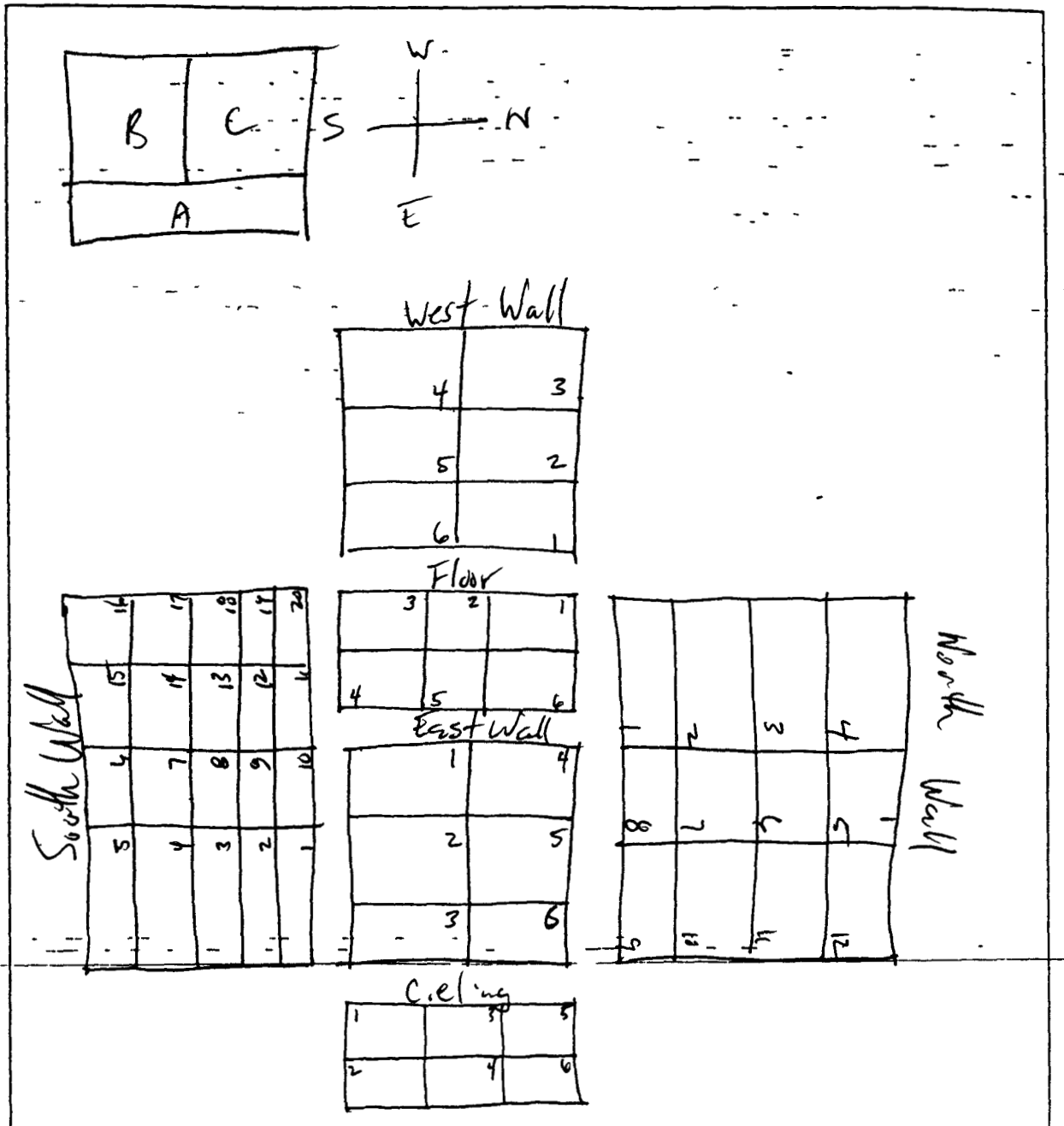
RADIOLOGICAL MONITORING Control No. _____

Area or Equipment Drawing Showing Survey Points



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LOG NUMBER 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	East Wall Hot Side			66	2013
2	East Wall			<60	<380
3	East Wall			<60	<380
4	East Wall			<60	<380
5	East Wall			<60	<380
6	East Wall			186	1557
1	Inside door Hot side			<60	9201
2	Inside door			60	12,966
1	Threshold of Inside door			96	23,205
1	Filter Frame Hotside			<60	<380
2	Filter Frame			<60	<380
3	Filter Frame			306	<380
4	Filter Frame			120	<380
5	Filter Frame			180	<380
6	Filter Frame			<60	<380
7	Filter Frame			<60	<380
8	Filter Frame			<60	<380
9	Filter Frame			<60	<380
10	Filter Frame			<60	<380
11	Filter Frame			240	<380
12	Filter Frame			<60	<380
13	Filter frame			<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
14	Filter Frame Hotside			<60	<380
15	Filter Frame			<60	<380
16	Filter Frame			<60	<380
17	Filter Frame			<60	<380
18	Filter Frame			<60	<380
19	Filter Frame			<60	<380
20	Filter Frame			<60	<380
1	West Wall Hotside			144	699
2	West Wall			<60	<380
3	West Wall			<60	<380
4	West Wall			<60	<380
5	West Wall			<60	<380
6	West Wall			138	1842
1	Bench Frame Hotside			138	16,530
2	Bench Frame Hotside			486	243
1	Cieling Hot Side			<60	<380
2	Cieling Hot Side			330	465
3	Cieling Hot Side			<60	582
4	Cieling			282	1143
5	Cieling			<60	<380
6	Cieling			180	1240
1	North Wall Hotside			<60	543

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LOG NUMBER 96-256-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
2	North Wall Hot side			<60	<380
3	North Wall			<60	<380
4	North Wall			102	474
5	North Wall			<60	408
6	North Wall			<60	<380
7	North Wall			<60	<380
8	North Wall			<60	<380
9	North Wall			<60	1032
10	North Wall			<60	537
11	North Wall			<60	<380
12	North Wall			<60	<380
1	Floor Hot side			<60	1632
2	Floor			<60	5427
3	Floor			222	2700
4	Floor			132	975
5	Floor			90	1596
6	Floor			114	2838

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID FILTER FRAME HOT SIDE PLENUM
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1A095 XLD
Batch Ended 8/12/96 12 03
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
1	1	**2 341**	2 93	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	0 800	2 67	8/12/96	11 40
2	2	**8 193**	5 07	<AL	12 26	**14 33**	5 93	<AL	14 53	1 00	2 800	7 67	8/12/96	11 41
3	3	**5 267**	4 14	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	1 800	0 67	8/12/96	11 42
4	4	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96	11 44
5	5	**0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	0 200	0 33	8/12/96	11 45
6	6	**8 193**	5 07	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	2 800	2 67	8/12/96	11 46
7	7	**11 119**	5 86	At AL	12 26	**-2 49**	1 91	<MDA	14 53	1 00	3 800	1 33	8/12/96	11 47
8	8	**5 267**	4 14	<AL	12 26	**14 33**	5 93	<AL	14 53	1 00	1 800	7 67	8/12/96	11 48
9	9	**11 119**	5 86	At AL	12 26	**18 07**	6 50	<AL	14 53	1 00	3 800	9 67	8/12/96	11 50
10	10	**8 193**	5 07	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	2 800	2 67	8/12/96	11 51
11	11	**5 267**	4 14	<AL	12 26	**8 72**	4 96	<AL	14 53	1 00	1 800	4 67	8/12/96	11 52
12	12	**16 972**	7 18	At AL	12 26	**16 20**	6 22	<AL	14 53	1 00	5 800	8 67	8/12/96	11 53
13	13	**11 119**	5 86	At AL	12 26	**18 07**	6 50	<AL	14 53	1 00	3 800	9 67	8/12/96	11 55
14	14	**14 045**	6 55	At AL	12 26	**4 99**	4 20	<AL	14 53	1 00	4 800	2 67	8/12/96	11 56
15	15	**8 193**	5 07	<AL	12 26	**23 68**	7 26	<AL	14 53	1 00	2 800	12 67	8/12/96	11 57
16	16	**14 045**	6 55	At AL	12 26	**19 94**	6 76	<AL	14 53	1 00	4 800	10 67	8/12/96	11 58
17	17	**8 193**	5 07	<AL	12 26	**8 72**	4 96	<AL	14 53	1 00	2 800	4 67	8/12/96	12 00
18	18	**0 585**	2 93	<MDA	12 26	**19 94**	6 76	<AL	14 53	1 00	0 200	10 67	8/12/96	12 01
19	19	**-0 585**	2 93	<MDA	12 26	**12 46**	5 63	<AL	14 53	1 00	0 200	6 67	8/12/96	12 02
20	20	**8 193**	5 07	<AL	12 26	**21 81**	7 02	<AL	14 53	1 00	2 800	11 67	8/12/96	12 03

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID N WALL HOT SIDE PLENUM
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1B029 XLD
Batch Ended 8/12/96 12 18
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
21	1	**2 341**	2 93	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	0 800	2 67	8/12/96 12 04
22	2	**2 341**	2 93	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 12 06
23	3	**5 267**	4 14	<AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	1 800	0 67	8/12/96 12 07
24	4	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	-0 200	0 67	8/12/96 12 08
25	5	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	-0 200	0 67	8/12/96 12 09
26	6	**-0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	-0 200	0 33	8/12/96 12 10
27	7	**-0 585**	2 93	<MDA	12 26	**6 85**	4 60	<AL	14 53	1 00	0 200	3 67	8/12/96 12 12
28	8	**0 585**	2 93	<MDA	12 26	**4 99**	4 20	<AL	14 53	1 00	0 200	2 67	8/12/96 12 13
29	9	**11 119**	5 86	At AL	12 26	**6 85**	4 60	<AL	14 53	1 00	3 800	3 67	8/12/96 12 14
30	10	**2 341**	2 93	<AL	12 26	**2 49**	1 91	<MDA	14 53	1 00	0 800	1 33	8/12/96 12 15
31	11	**-0 585**	2 93	<MDA	12 26	**-2 49**	1 91	<MDA	14 53	1 00	0 200	1 33	8/12/96 12 17
32	12	**-0 585**	2 93	<MDA	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 200	1 67	8/12/96 12 18

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12/12-96

Batch ID E WALL HOT SIDE PLENUM

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1C008 XLD

Batch Ended 8/12/96 12 26

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags **95%**

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
33	1	**8 193**	5 07	<AL	12 26	**19 94**	6 76	<AL	14 53	1 00	2 800	10 67	8/12/96 12 19
34	2	**5 267**	4 14	<AL	12 26	**-0 62**	2 67	<MDA	14 53	1 00	1 800	0 33	8/12/96 12 20
35	3	**11 119**	5 86	At AL	12 26	**1 25**	3 26	<MDA	14 53	1 00	3 800	0 67	8/12/96 12 22
36	4	**2 341**	2 93	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 800	1 67	8/12/96 12 23
37	5	**5 267**	4 14	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	1 800	1 67	8/12/96 12 24
38	6	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 200	0 67	8/12/96 12 25
39	7	**8 193**	5 07	<AL	12 26	**4 99**	4 20	<AL	14 53	1 00	2 800	2 67	8/12/96 12 26

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID W WALL HOT SIDE PLENUM
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1D006 XLD
Batch Ended 8/12/96 12 34
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity								
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date	Time
40	1	**2 341**	2 93	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 800	1 67	8/12/96	12 28
41	2	**-0 585**	2 93	<MDA	12 26	**-4 36**	1 91	<MDA	14 53	1 00	-0 200	2 33	8/12/96	12 29
42	3	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	0 200	0 67	8/12/96	12 30
43	4	**-0 585**	2 93	<MDA	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 200	1 67	8/12/96	12 31
44	5	**-0 585**	2 93	<MDA	12 26	**-4 36**	1 91	<MDA	14 53	1 00	0 200	2 33	8/12/96	12 32
45	6	**-0 585**	2 93	<MDA	12 26	**1 25**	3 26	<MDA	14 53	1 00	-0 200	0 67	8/12/96	12 34

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
1	S WALL RM 106	11 46	14 77	60	380			
2	S WALL RM 106	11 46	14 77	60	380			
3	S WALL RM 106	11 46	14 77	60	380			
4	S WALL RM 106	11 46	14 77	60	380			
5	S WALL RM 106	11 46	14 77	60	380			
6	S WALL RM 106	11 46	14 77	60	380			
7	S WALL RM 106	11 46	14 77	60	380			
8	S WALL RM 106	11 46	14 77	60	380			
9	S WALL RM 106	11 46	14 77	60	380			
10	S WALL RM 106	11 46	14 77	60	380			
11	S WALL RM 106	11 46	14 77	60	380			
12	S WALL RM 106	11 46	14 77	60	380			
13	S WALL RM 106	11 46	14 77	60	380			
14	S WALL RM 106	11 46	14 77	60	380			
15	S WALL RM 106	11 46	14 77	60	380			
16	S WALL RM 106	11 46	14 77	60	380			
17	S WALL RM 106	11 46	14 77	60	380			
18	S WALL RM 106	11 46	14 77	60	380			
19	S WALL RM 106	11 46	14 77	60	380			
20	S WALL RM 106	11 46	14 77	60	380			
21	S WALL RM 106	11 46	14 77	60	380			
22	S WALL RM 106	11 46	14 77	60	380			
23	S WALL RM 106	11 46	14 77	60	380			
24	S WALL RM 106	11 46	14 77	60	380			
25	S WALL RM 106	11 46	14 77	60	380			
26	S WALL RM 106	11 46	14 77	60	380			
27	S WALL RM 106	11 46	14 77	60	380			
28	S WALL RM 106	11 46	14 77	60	380			
29	S WALL RM 106	11 46	14 77	60	380			
30	S WALL RM 106	11 46	14 77	60	380			
31	S WALL RM 106	11 46	14 77	60	380			
32	S WALL RM 106	11 46	14 77	60	380			

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
33	S WALL RM 106	11 46	14 77	60	380			
34	S WALL RM 106	11 46	14 77	60	380			
35	S WALL RM 106	11 46	14 77	60	380			
36	S WALL RM 106	11 46	14 77	60	380			
37	S WALL RM 106	11 46	14 77	60	380			
38	S WALL RM 106	11 46	14 77	60	380			
39	S WALL RM 106	11 46	14 77	60	380			
40	S WALL RM 106	11 46	14 77	60	380			
41	S WALL RM 106	11 46	14 77	60	380			
42	S WALL RM 106	11 46	14 77	60	380			
43	S WALL RM 106	11 46	14 77	60	380			
44	S WALL RM 106	11 46	14 77	60	380			
45	S WALL RM 106	11 46	14 77	60	380			
46	S WALL RM 106	11 46	14 77	60	380			
47	S WALL RM 106	11 46	14 77	60	380			
48	S WALL RM 106	11 46	14 77	60	380			
49	S WALL RM 106	11 46	14 77	60	380			
50	S WALL RM 106	11 46	14 77	60	380			
51	S WALL RM 106	11 46	14 77	60	380			
52	S WALL RM 106	11 46	14 77	60	380			
53	S WALL RM 106	11 46	14 77	60	380			
54	S WALL RM 106	11 46	14 77	60	380			
55	S WALL RM 106	11 46	14 77	60	380			
56	S WALL RM 106	11 46	14 77	60	380			
57	S WALL RM 106	11 46	14 77	60	380			
58	S WALL RM 106	11 46	14 77	60	380			
59	S WALL RM 106	11 46	14 77	60	380			
60	S WALL RM 106	11 46	14 77	60	380			
61	S WALL RM 106	11 46	14 77	60	380			
62	S WALL RM 106	11 46	14 77	60	380			
63	S WALL RM 106	11 46	14 77	60	380			
64	S WALL RM 106	11 46	14 77	60	380			

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID FLOOR HOT SIDE PLENUM
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1E005 XLD
Batch Ended 8/12/96 12 41
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
46	1	**8 193**	5 07	<AL	12 26	**6 85**	4 60	<AL	14 53	1 00	2 800	3 67	8/12/96	12 35
47	2	**2 341**	2 93	<AL	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 800	1 67	8/12/96	12 36
48	3	**-0 585**	2 93	<MDA	12 26	**3 12**	3 76	<MDA	14 53	1 00	0 200	1 67	8/12/96	12 38
49	4	**-0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	-0 200	0 33	8/12/96	12 39
50	5	**2 341**	2 93	<AL	12 26	**14 33**	5 93	<AL	14 53	1 00	0 800	7 67	8/12/96	12 40
51	6	**8 193**	5 07	<AL	12 26	**14 33**	5 93	<AL	14 53	1 00	2 800	7 67	8/12/96	12 41

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID CEILING HOT SIDE PLENUM
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1F003 XLD
Batch Ended 8/12/96 12 48
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 20
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 33
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
52	1	**8 193**	5 07	<AL	12 26	**14 33**	5 93	<AL	14 53	1 00	2 800	7 67	8/12/96 12 42
53	2	**16 972**	7 18	At AL	12 26	**12 46**	5 63	<AL	14 53	1 00	5 800	6 67	8/12/96 12 44
54	3	**2 341**	2 93	<AL	12 26	**6 85**	4 60	<AL	14 53	1 00	0 800	3 67	8/12/96 12 45
55	4	**-0 585**	2 93	<MDA	12 26	**4 99**	4 20	<AL	14 53	1 00	0 200	2 67	8/12/96 12 46
56	5	**2 341**	2 93	<AL	12 26	**12 46**	5 63	<AL	14 53	1 00	0 800	6 67	8/12/96 12 47
57	6	**19 898**	7 75	At AL	12 26	**12 46**	5 63	<AL	14 53	1 00	6 800	6 67	8/12/96 12 48

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID THRESHOLD DOOR HOT SIDE PLENUM
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1G002 XLD
Batch Ended 8/12/96 12 50
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	**DPM**	σ	flags	MDA	**DPM**	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
58	/	**14 045**	6 55	At AL	12 26	**12 46**	5 63	<AL	14 53	1 00	4 800	6 67	8/12/96	12 50

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

1 of 14

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID INSIDE DOOR HOT SIDE PLENUM

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1H001 XLD

Batch Ended 8/12/96 12 52

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
59	1	**16 972**	7 18	At AL	12 26	**46 11**	9 76	<AL	14 53	1 00	5 800	24 67	8/12/96 12 51
60	2	**16 972**	7 18	At AL	12 26	**33 03**	8 39	<AL	14 53	1 00	5 800	17 67	8/12/96 12 52

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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8-20-96 12 of 14

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID BENCH FRAME HOT SIDE PLENUM
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE11001 XLD
Batch Ended 8/12/96 13 43
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
61	1	**28 676**	9 27	At AL	12 26	**42 37**	9 39	<AL	14 53	1 00	9 800	22 67	8/12/96 13 42
62	2	**0 585**	2 93	<MDA	12 26	**-0 62**	2 67	<MDA	14 53	1 00	0 200	0 33	8/12/96 13 43

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID INSIDE DOOR COLD SIDE PLENUM

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1J001 XLD

Batch Ended 8/12/96 13 46

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 20
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
63	1	2 341	2 93	<AL	12 26	1 25	3 26	<MDA	14 53	1 00	0 800	0 67	8/12/96 13 45
64	2	2 341	2 93	<AL	12 26	10 59	5 30	<AL	14 53	1 00	0 800	5 67	8/12/96 13 46

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER. 96-750-0021

FOR. ____ P/WRE ____ PRL

✓ RWP ____ OTHER ____

BUILDING/LOCATION 889 | ROOM Plenum

DATE 8-19-96 | TIME 1000

ITEM DESCRIPTION.

Resurvey hot spots in plenum hotside.

COMMENTS.

Bench Frame removed

STATUS:

✓ RELEASABLE ____ NOT RELEASABLE

✓ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) Munoz

[redacted], 8-19-96

RCT SIGNATURE | EMP # | DATE

REVIEWED BY Teresa Johnston, 8-20-96

RO SUPERVISION (PRINT & SIGN) | DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	991	892		
CAL DATE	6-27-96	5-20-96		
CAL DUE DATE	12-27-96	11-20-96		

MFR.	EBER.	EBER.	EBER.	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	Bc 399	Bc 393		
CAL DATE	7-3-96	7-3-96		
CAL DUE DATE	1-3-97	~~1-3-96~~ 8-19-96 1-3-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology Electra	LUDLUM	
MODEL	A-100		31	
SERIAL #		1405		
CAL DATE		7-15-96		
CAL DUE DATE		1-15-97		
BACKGROUND		~~< 200~~ < 220 B 304		

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Printed with ink on recycled paper

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Inside door hotside	~~<18~~	<205	84	<380
2	Inside door hotside	<18	<205	<60	<380
3	Inside door hotside	<18	<205	72	<380
1	Threshold hotside	<18	<205	78	3564
2	Threshold hotside	<18	<205	90	672
3	Threshold hotside	<18	<205	90	1197
1	Cieling hotside Loc. #2	<18	<205	<60	1248
2	Cieling hotside Loc. #4	<18	<205	<60	1008
3	Cieling hotside Loc. #6	<18	<205	78	1680
1	Floor hotside Loc. #2	<18	<205	<60	1323
2	Floor hotside Loc. #3	<18	<205	<60	1062
3	Floor hotside Loc. #4	<18	<205	<60	1005
4	Floor hotside Loc. #6	<18	<205	<60	729
1	North Wall hotside Loc. #4	<18	<205	<60	798
1	Filter Frame hotside Loc. #3	<18	<205	<60	<380
2	Filter Frame hotside Loc. #4	<18	<205	<60	<380
3	Filter Frame hotside Loc. #5	<18	<205	<60	<380
4	Filter Frame hotside Loc. #11	<18	<205	<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	East Wall hotside Loc. #6	<18	<205	<60	1122
1	West Wall hotside Loc. #1	<18	<205	<60	999
2	West Wall hotside Loc. #6	<18	<205	<60	1158

Initial 8-19-96

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP# 96-750-0021

FOR. ____ P/WRE ____ PRL

X RWP ____ OTHER ____

BUILDING/LOCATION	ROOM.
889	105
DATE. 8-7-96	TIME: 1645

ITEM DESCRIPTION

Baseline survey of the airlock portion of Room 105/Plenum, referred to as 105A

COMMENTS

File A-South Wall, File B-East Wall, File C-West Wall, File D-Ceiling, File E-North, File F-Floor

STATUS

✓ RELEASABLE ____ NOT RELEASABLE

____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME). BD McLean

[redacted] 8-6-96

RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-22-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER	EBER	Tennelec
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB-5100
SERIAL #				28125-2
CAL DATE				6-12-96
CAL DUE DATE				12-12-96

MFR	EBER.	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1405		
CAL DATE		7-15-96		
CAL DUE DATE		1-15-97		
BACKGROUND		8 892		

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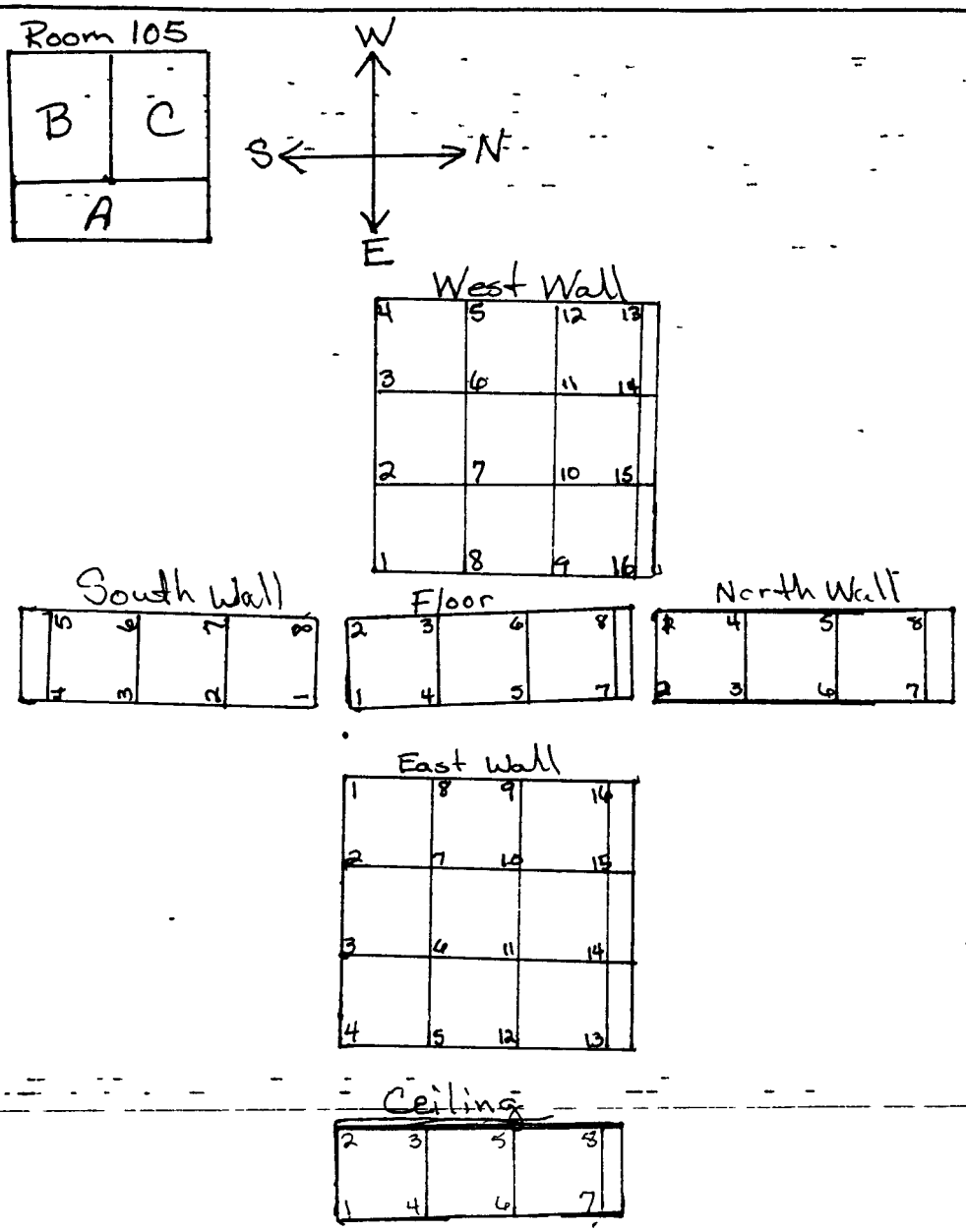
RADIOLOGICAL MONITORING Control No _____

Area or Equipment Drawing Showing Survey Points



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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID Room 105/Plenum A South Wall

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A093 XLD

Batch Ended 8/6/96 18 39

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 37

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 2 03

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
1	1	**1 853**	2 94	<MDA	13 80	**5 55**	4 20	<AL	13 90	1 00	0 633	2 97	8/6/96 18 30
2	2	**1 853**	2 94	<MDA	13 80	**1 81**	3 26	<MDA	13 90	1 00	0 633	0 97	8/6/96 18 31
3	3	**1 073**	2 94	<MDA	13 80	**3 68**	3 76	<MDA	13 90	1 00	0 367	1 97	8/6/96 18 32
4	4	**-1 073**	2 94	<MDA	13 80	**1 81**	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 18 34
5	5	**-1 073**	2 94	<MDA	13 80	**3 68**	3 76	<MDA	13 90	1 00	0 367	1 97	8/6/96 18 35
6	6	**-1 073**	2 94	<MDA	13 80	**-1 93**	1 90	<MDA	13 90	1 00	0 367	1 03	8/6/96 18 36
7	7	**1 853**	2 94	<MDA	13 80	**1 81**	3 26	<MDA	13 90	1 00	0 633	0 97	8/6/96 18 37
8	8	**-1 073**	2 94	<MDA	13 80	**-3 80**	1 90	<MDA	13 90	1 00	0 367	2 03	8/6/96 18 39

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID Room 105/Plenum A East Wall

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B027 XLD

Batch Ended 8/6/96 18 58

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 37

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 2 03

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
9	1	10 632	5 86	At AL	13 80	5 55	4 20	<AL	13 90	1 00	3 633	2 97	8/6/96 18 40
10	2	1 853	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 633	0 03	8/6/96 18 41
11	3	1 853	2 94	<MDA	13 80	9 29	4 96	<AL	13 90	1 00	0 633	4 97	8/6/96 18 42
12	4	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 18 43
13	5	1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 18 45
14	6	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 18 46
15	7	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 18 47
16	8	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 367	1 97	8/6/96 18 48
17	9	1 853	2 94	<MDA	13 80	13 02	5 62	<AL	13 90	1 00	0 633	6 97	8/6/96 18 49
18	10	10 632	5 86	At AL	13 80	3 68	3 76	<MDA	13 90	1 00	3 633	1 97	8/6/96 18 51
19	11	-1 073	2 94	<MDA	13 80	5 55	4 20	<AL	13 90	1 00	-0 367	2 97	8/6/96 18 52
20	12	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 18 53
21	13	1 073	2 94	<MDA	13 80	0 06	2 67	<MDA	13 90	1 00	0 367	0 03	8/6/96 18 54
22	14	1 853	2 94	<MDA	13 80	11 15	5 30	<AL	13 90	1 00	0 633	5 97	8/6/96 18 56
23	15	1 073	2 94	<MDA	13 80	9 29	4 96	<AL	13 90	1 00	0 367	4 97	8/6/96 18 57
24	16	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	-0 367	1 97	8/6/96 18 58

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96
Batch ID Room 105/Plenum A West Wall
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1C007 XLD
Batch Ended 8/6/96 19 18
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 37
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 03
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
25	1	-1 073	2 94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	0 367	3 97	8/6/96 18 59
26	2	-1 073	2 94	<MDA	13 80	5 55	4 20	<AL	13 90	1 00	0 367	2 97	8/6/96 19 01
27	3	13 558	6 55	At AL	13 80	13 02	5 62	<AL	13 90	1 00	4 633	6 97	8/6/96 19 02
28	4	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 367	0 03	8/6/96 19 03
29	5	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 367	1 97	8/6/96 19 04
30	6	-1 073	2 94	<MDA	13 80	5 55	4 20	<AL	13 90	1 00	0 367	2 97	8/6/96 19 05
31	7	1 853	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 633	1 97	8/6/96 19 07
32	8	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 367	1 97	8/6/96 19 08
33	9	4 779	4 15	<AL	13 80	1 93	1 90	<MDA	13 90	1 00	1 633	1 03	8/6/96 19 09
34	10	1 853	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 633	1 97	8/6/96 19 10
35	11	1 853	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 633	0 03	8/6/96 19 12
36	12	1 073	2 94	<MDA	13 80	1 93	1 90	<MDA	13 90	1 00	0 367	1 03	8/6/96 19 13
37	13	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 19 14
38	14	4 779	4 15	<AL	13 80	-0 06	2 67	<MDA	13 90	1 00	1 633	0 03	8/6/96 19 15
39	15	-1.073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 19 16
40	16	-1 073	2 94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	0 367	3 97	8/6/96 19 18

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID Room 105/Plenum A Ceiling

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1D004 XLD

Batch Ended 8/6/96 19 27

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 37

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 2 03

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
41	1	-1 073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 19 19
42	2	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	0 03	8/6/96 19 20
43	3	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 367	0 03	8/6/96 19 21
44	4	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 367	-0 03	8/6/96 19 22
45	5	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 19 24
46	6	1 853	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 633	0 97	8/6/96 19 25
47	7	-1 073	2 94	<MDA	13 80	1 93	1 90	<MDA	13 90	1 00	0 367	1 03	8/6/96 19 26
48	8	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 367	1 97	8/6/96 19 27

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96
Batch ID Room 105/Plenum A North Wall
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1E003 XLD
Batch Ended 8/6/96 19 37
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 37
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 03
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
49	1	1 853	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	0 633	-1 03	8/6/96 19 29
50	2	1 853	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	0 633	1 03	8/6/96 19 30
51	3	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	-0 367	1 97	8/6/96 19 31
52	4	1 853	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 633	-0 03	8/6/96 19 32
53	5	-1 073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 19 34
54	6	4 779	4 15	<AL	13 80	7 42	4 59	<AL	13 90	1 00	1 633	3 97	8/6/96 19 35
55	7	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	0 03	8/6/96 19 36
56	8	1 853	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 633	1 97	8/6/96 19 37

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96
Batch ID Room 105/Plenum A Floor
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1F001 XLD
Batch Ended 8/6/96 19 47
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 37
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 03
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
57	1	4 779	4 15	<AL	13 80	3 68	3 76	<MDA	13 90	1 00	1 633	1 97	8/6/96 19 38
58	2	4 779	4 15	<AL	13 80	5 55	4 20	<AL	13 90	1 00	1 633	2 97	8/6/96 19 40
59	3	-1 073	2 94	<MDA	13 80	5 55	4 20	<AL	13 90	1 00	0 367	2 97	8/6/96 19 41
60	4	1 853	2 94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	0 633	3 97	8/6/96 19 42
61	5	1 853	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	0 633	-1 03	8/6/96 19 43
62	6	1 853	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 633	-0 03	8/6/96 19 45
63	7	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 367	0 97	8/6/96 19 46
64	8	-1 073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	1 03	8/6/96 19 47

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Airlock North Wall (1)			<60	<380
2	North Wall (2)			<60	<380
3	North Wall (3)			<60	<380
4	North Wall (4)			<60	<380
5	North Wall (5)			<60	<380
6	North Wall (6)			<60	<380
7	North Wall (7)			<60	<380
8	North Wall (8)			<60	<380
9	Airlock East Wall (1)			<60	<380
10	East Wall (2)			<60	<380
11	East Wall (3)			<60	<380
12	East Wall (4)			<60	<380
13	East Wall (5)			<60	<380
14	East Wall (6)			<60	<380
15	East Wall (7)			<60	<380
16	East Wall (8)			<60	<380
17	East Wall (9)			<60	<380
18	East Wall (10)			<60	<380
19	East Wall (11)			<60	<380
20	East Wall (12)			<60	<380
21	East Wall (13)			<60	<380
22	East Wall (14)			<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
23	Airlock East Wall (15)			<60	<380
24	East Wall (16)			<60	<380
25	Airlock West Wall (1)			<60	<380
26	West Wall (2)			<60	<380
27	West Wall (3)			<60	<380
28	West Wall (4)			<60	<380
29	West Wall (5)			<60	<380
30	West Wall (6)			<60	<380
31	West Wall (7)			<60	<380
32	West Wall (8)			<60	<380
33	West Wall (9)			<60	<380
34	West Wall (10)			<60	<380
35	West Wall (11)			<60	<380
36	West Wall (12)			<60	<380
37	West Wall (13)			<60	<380
38	West Wall (14)			<60	<380
39	West Wall (15)			<60	<380
40	West Wall (16)			<60	<380
41	Airlock South Wall (1)			<60	<380
42	South Wall (2)			<60	<380
43	South Wall (3)			<60	<380
44	South Wall (4)			<60	<380

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LOG NUMBER 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM²)

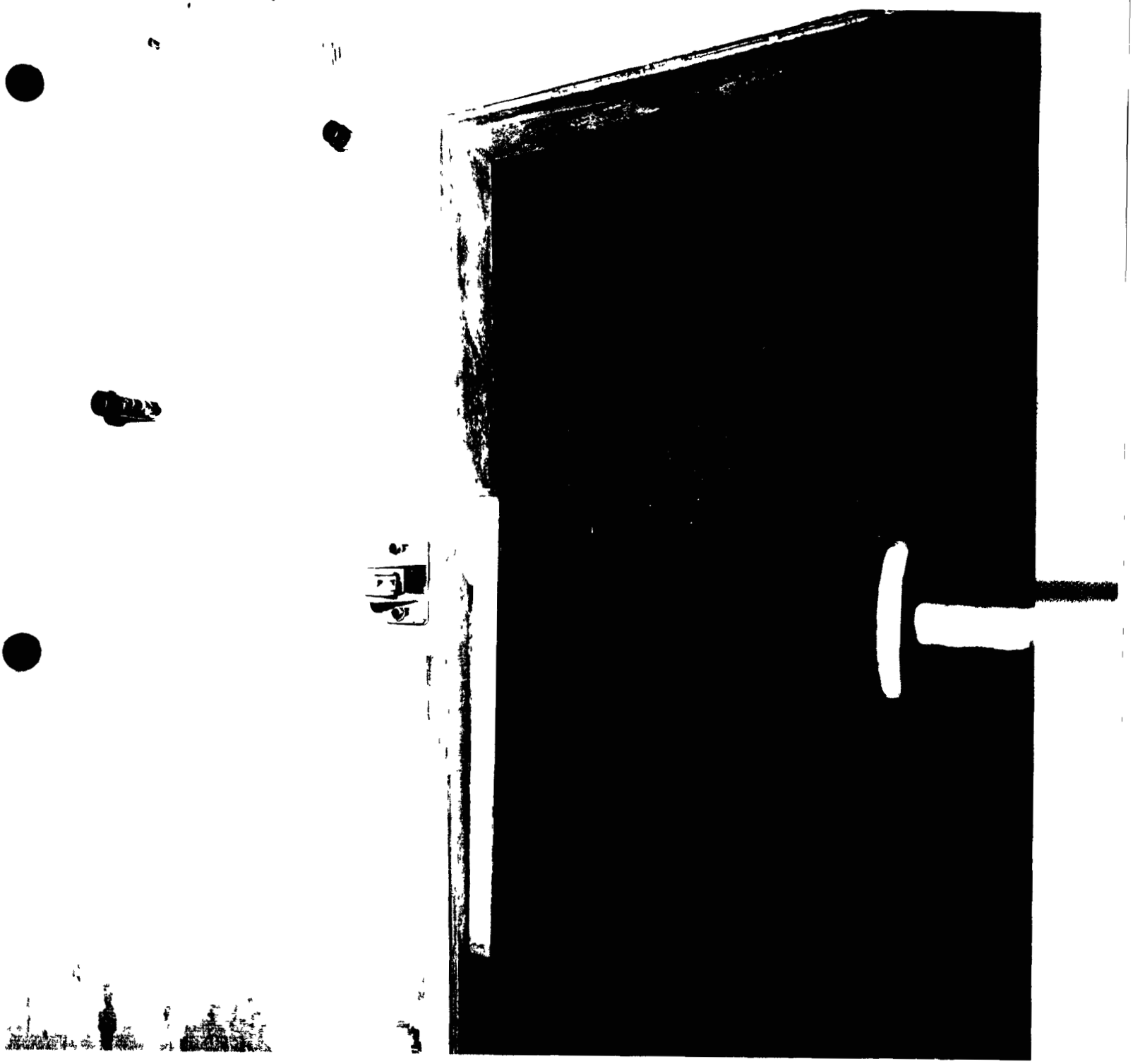
SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISH/60 SEC COUNT)	TOTAL BETA/GAMMA
45	Airlock South Wall (5)			<60	<380
46	South Wall (6)			<60	<380
47	South Wall (7)			<60	<380
48	South Wall (8)			<60	<380
49	Airlock Floor (1)			<60	<380
50	Floor (2)			<60	<380
51	Floor (3)			<60	<380
52	Floor (4)			<60	<380
53	Floor (5)			144	396
54	Floor (6)			<60	522
55	Floor (7)			<60	<380
56	Floor (8)			<60	<380
57	Airlock Cieling (1)			<60	<380
58	Cieling (2)			<60	<380
59	Cieling (3)			<60	426
60	Cieling (4)			<60	<380
61	Cieling (5)			<60	<380
62	Cieling (6)			<60	<380
63	Cieling (7)			<60	<380
64	Cieling (8)			<60	<380

Crown 8-19-96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISH/60 SEC COUNT)	TOTAL BETA/GAMMA
	Resurvey Loc. #5 Airlock	<18	<205	<60	<380

Crown 8-19-96



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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
1	E WALL RM 106	10 99	14 47	60	380			
2	E WALL RM 106	10 99	14 47	60	380			
3	E WALL RM 106	10 99	14 47	60	380			
4	E WALL RM 106	10 99	14 47	60	380			
5	E WALL RM 106	10 99	14 47	60	380			
6	E WALL RM 106	10 99	14 47	60	380			
7	E WALL RM 106	10 99	14 47	60	380			
8	E WALL RM 106	10 99	14 47	60	468			
9	E WALL RM 106	10 99	14 47	60	380			
10	E WALL RM 106	10 99	14 47	60	380			
11	E WALL RM 106	10 99	14 47	60	380			
12	E WALL RM 106	10 99	14 47	60	380			
13	E WALL RM 106	10 99	14 47	60	380			
14	E WALL RM 106	10 99	14 47	60	380			
15	E WALL RM 106	10 99	14 47	60	380			
16	E WALL RM 106	10 99	14 47	60	380			
17	E WALL RM 106	10 99	14 47	60	380			
18	E WALL RM 106	10 99	14 47	60	380			
19	E WALL RM 106	10 99	14 47	60	380			
20	E WALL RM 106	10 99	14 47	60	380			
21	E WALL RM 106	10 99	14 47	60	380			
22	E WALL RM 106	10 99	14 47	60	380			
23	E WALL RM 106	10 99	14 47	60	380			
24	E WALL RM 106	10 99	14 47	60	380			
25	E WALL RM 106	10 99	14 47	60	380			
26	E WALL RM 106	10 99	14 47	60	380			
27	E WALL RM 106	10 99	14 47	60	380			
28	E WALL RM 106	10 99	14 47	60	380			
29	E WALL RM 106	10 99	14 47	60	380			
30	E WALL RM 106	10 99	14 47	60	380			
31	E WALL RM 106	10 99	14 47	60	380			
32	E WALL RM 106	10 99	14 47	60	380			

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
33	E WALL RM 106	10 99	14 47	60	380			
34	E WALL RM 106	10 99	14 47	60	380			
35	E WALL RM 106	10 99	14 47	60	380			
36	E WALL RM 106	10 99	14 47	60	380			
37	E WALL RM 106	10 99	14 47	60	380			
38	E WALL RM 106	10 99	14 47	60	380			
39	E WALL RM 106	10 99	14 47	60	380			
40	E WALL RM 106	10 99	14 47	60	380			
41	E WALL RM 106	10 99	14 47	60	380			
42	E WALL RM 106	10 99	14 47	60	380			
43	E WALL RM 106	10 99	14 47	60	380			
44	E WALL RM 106	10 99	14 47	60	380			
45	E WALL RM 106	10 99	14 47	60	380			
46	E WALL RM 106	10 99	14 47	60	380			
47	E WALL RM 106	10 99	14 47	60	380			
48	E WALL RM 106	10 99	14 47	60	380			
49	E WALL RM 106	10 99	14 47	60	380			
50	E WALL RM 106	10 99	14 47	60	380			
51	E WALL RM 106	10 99	14 47	60	380			
52	E WALL RM 106	10 99	14 47	60	380			
53	E WALL RM 106	10 99	14 47	60	380			
54	E WALL RM 106	10 99	14 47	60	380			
55	E WALL RM 106	10 99	14 47	60	380			
56	E WALL RM 106	10 99	14 47	60	380			
57	E WALL RM 106	10 99	14 47	60	380			
58	E WALL RM 106	10 99	14 47	60	380			
59	E WALL RM 106	10 99	14 47	60	380			
60	E WALL RM 106	10 99	14 47	60	380			
61	E WALL RM 106	10 99	14 47	60	380			
62	E WALL RM 106	10 99	14 47	60	380			
63	E WALL RM 106	10 99	14 47	60	380			
64	E WALL RM 106	10 99	14 47	60	380			

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
65	E WALL RM 106	10 99	14 47	60	380			
66	E WALL RM 106	10 99	14 47	60	380			
67	E WALL RM 106	10 99	14 47	60	380			
68	E WALL RM 106	10 99	14 47	60	380			
69	E WALL RM 106	10 99	14 47	60	380			
70	E WALL RM 106	10 99	14 47	60	380			
71	E WALL RM 106	10 99	14 47	60	380			
72	E WALL RM 106	10 99	14 47	60	380			
73	E WALL RM 106	10 99	14 47	60	380			
74	E WALL RM 106	10 99	14 47	60	380			
75	E WALL RM 106	10 99	14 47	60	380			
76	E WALL RM 106	10 99	14 47	60	380			
77	E WALL RM 106	10 99	14 47	60	380			
78	E WALL RM 106	10 99	14 47	60	380			
79	E WALL RM 106	10 99	14 47	60	380			
80	E WALL RM 106	10 99	14 47	60	380			
81	E WALL RM 106	10 99	14 47	60	380			
82	E WALL RM 106	10 99	14 47	60	380			
83	E WALL RM 106	10 99	14 47	60	380			
84	E WALL RM 106	10 99	14 47	60	380			
85	E WALL RM 106	10 99	14 47	60	380			
86	E WALL RM 106	10 99	14 47	60	380			
87	E WALL RM 106	10 99	14 47	60	380			
88	E WALL RM 106	10 99	14 47	60	380			
89	E WALL RM 106	10 99	14 47	60	380			
90	E WALL RM 106	10 99	14 47	60	380			
91	E WALL RM 106	10 99	14 47	60	380			
92	E WALL RM 106	10 99	14 47	60	380			
93	E WALL RM 106	10 99	14 47	60	380			
94	E WALL RM 106	10 99	14 47	60	380			
95	E WALL RM 106	10 99	14 47	60	380			
96	E WALL RM 106	10 99	14 47	60	380			

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
97	E WALL RM 106	10 99	14 47	60	380			
98	E WALL RM 106	10 99	14 47	60	380			
99	E WALL RM 106	10 99	14 47	96	705			
100	E WALL RM 106	10 99	14 47	60	855			
101	E WALL RM 106	10 99	14 47	108	1824	DECON TO LESS THAN MDA		
102	E WALL RM 106	10 99	14 47	60	380			
103	E WALL RM 106	10 99	14 47	60	380			
104	E WALL RM 106	10 99	14 47	60	380			
105	E WALL RM 106	10 99	14 47	60	380			
106	E WALL RM 106	10 99	14 47	60	380			
107	E WALL RM 106	10 99	14 47	60	380			
108	E WALL RM 106	10 99	14 47	60	380			
109	E WALL RM 106	10 99	14 47	60	380			
110	E WALL RM 106	10 99	14 47	60	1188			
111	E WALL RM 106	10 99	14 47	60	380			
112	E WALL RM 106	10 99	14 47	60	380			
113	E WALL RM 106	10 99	14 47	60	380			
114	E WALL RM 106	10 99	14 47	60	380			
115	E WALL RM 106	10 99	14 47	60	862			
116	E WALL RM 106	10 99	14 47	60	380			
117	E WALL RM 106	10 99	14 47	60	380			
118	E WALL RM 106	10 99	14 47	60	380			
119	E WALL RM 106	10 99	14 47	60	380			
120	E WALL RM 106	10 99	14 47	60	380			
121	E WALL RM 106	10 99	14 47	60	380			
122	E WALL RM 106	10 99	14 47	60	380			
123	E WALL RM 106	10 99	14 47	60	380			
124	E WALL RM 106	10 99	14 47	60	380			
125	E WALL RM 106	10 99	14 47	60	380			
126	E WALL RM 106	10 99	14 47	60	380			
127	E WALL RM 106	10 99	14 47	60	380			
128	E WALL RM 106	10 99	14 47	60	380			

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
1	FLOOR RM 106	10 99	14 47	60	19167	DECON TO TOTAL BETA 3990
2	FLOOR RM 106	10 99	14 47	60	1068	
3	FLOOR RM 106	10 99	14 47	60	11478	DECON TO TOTAL BETA 1143, ALPHA 66
4	FLOOR RM 106	10 99	14 47	60	888	
5	FLOOR RM 106	10 99	14 47	384	933	DECON TO TOTAL BETA 412
6	FLOOR RM 106	10 99	14 47	96	1137	DECON TO LESS THAN MDA
7	FLOOR RM 106	10 99	14 47	60	380	
8	FLOOR RM 106	10 99	14 47	60	380	
9	FLOOR RM 106	10 99	14 47	60	380	
10	FLOOR RM 106	10 99	14 47	60	380	
11	FLOOR RM 106	10 99	14 47	60	903	
12	FLOOR RM 106	10 99	14 47	60	795	
13	FLOOR RM 106	10 99	14 47	60	480	
14	FLOOR RM 106	10 99	14 47	60	837	
15	FLOOR RM 106	10 99	14 47	60	867	
16	FLOOR RM 106	10 99	14 47	60	723	
17	FLOOR RM 106	10 99	14 47	60	8364	DECON TO TOTAL BETA 4110
18	FLOOR RM 106	10 99	14 47	60	858	
19	FLOOR RM 106	10 99	14 47	60	1629	
20	FLOOR RM 106	10 99	14 47	60	750	
21	FLOOR RM 106	10 99	14 47	60	380	
22	FLOOR RM 106	10 99	14 47	66	681	
23	FLOOR RM 106	10 99	14 47	60	980	
24	FLOOR RM 106	10 99	14 47	2442	1125	DECON TO LESS THAN MDA
25	FLOOR RM 106	10 99	14 47	60	1032	
26	FLOOR RM 106	10 99	14 47	60	1134	
27	FLOOR RM 106	10 99	14 47	60	909	
28	FLOOR RM 106	10 99	14 47	60	1152	
29	FLOOR RM 106	10 99	14 47	60	2199	
30	FLOOR RM 106	10 99	14 47	72	1452	
31	FLOOR RM 106	10 99	14 47	60	2700	
32	FLOOR RM 106	10 99	14 47	234	2895	DECON TO TOTAL BETA 1194

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
33	FLOOR RM 106	10 99	14 47	60	3570			
34	FLOOR RM 106	10 99	14 47	60	1230			
35	FLOOR RM 106	10 99	14 47	60	747			
36	FLOOR RM 106	10 99	14 47	60	3474			
37	FLOOR RM 106	10 99	14 47	60	1263			
38	FLOOR RM 106	10 99	14 47	60	690			
39	FLOOR RM 106	10 99	14 47	60	1314			
40	FLOOR RM 106	10 99	14 47	60	810			
41	FLOOR RM 106	10 99	14 47	60	486			
42	FLOOR RM 106	10 99	14 47	60	5082	DECON TO TOTAL BETA 1662		
43	FLOOR RM 106	10 99	14 47	108	1041	DECON TO TOTAL BETA 1713		
44	FLOOR RM 106	10 99	14 47	60	819			
45	FLOOR RM 106	10 99	14 47	84	2979			
46	FLOOR RM 106	10 99	14 47	1248	2994	DECON TO TOTAL BETA 1644, ALPHA 66		
47	FLOOR RM 106	10 99	14 47	60	7290	DECON TO TOTAL BETA 726		
48	FLOOR RM 106	10 99	14 47	72	3399			
49	FLOOR RM 106	10 99	14 47	78	4605			
50	FLOOR RM 106	10 99	14 47	60	3630			
51	FLOOR RM 106	10 99	14 47	60	645			
52	FLOOR RM 106	10 99	14 47	60	633			
53	FLOOR RM 106	10 99	14 47	60	1050			
54	FLOOR RM 106	10 99	14 47	66	1140			
55	FLOOR RM 106	10 99	14 47	72	903			
56	FLOOR RM 106	10 99	14 47	60	1158			
57	FLOOR RM 106	10 99	14 47	60	903			
58	FLOOR RM 106	10 99	14 47	60	1020			
59	FLOOR RM 106	10 99	14 47	60	999			
60	FLOOR RM 106	10 99	14 47	60	1380			
61	FLOOR RM 106	10 99	14 47	60	879			
62	FLOOR RM 106	10 99	14 47	60	774			
63	FLOOR RM 106	10 99	14 47	60	1191			
64	FLOOR RM 106	10 99	14 47	60	810			

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
65	FLOOR RM 106	10 99	14 47	60	6600	DECON TO TOTAL BETA 3740
66	FLOOR RM 106	10 99	14 47	60	6600	DECON TO TOTAL BETA 424
67	FLOOR RM 106	10 99	14 47	78	834	
68	FLOOR RM 106	10 99	14 47	60	1245	
69	FLOOR RM 106	10 99	14 47	60	380	
70	FLOOR RM 106	10 99	14 47	60	840	
71	FLOOR RM 106	10 99	14 47	60	882	
72	FLOOR RM 106	10 99	14 47	60	1154	
73	FLOOR RM 106	10 99	14 47	60	759	
74	FLOOR RM 106	10 99	14 47	60	1173	
75	FLOOR RM 106	10 99	14 47	282	1026	DECON TO TOTAL ALPHA 90
76	FLOOR RM 106	10 99	14 47	60	1266	
77	FLOOR RM 106	10 99	14 47	60	429	
78	FLOOR RM 106	10 99	14 47	60	525	
79	FLOOR RM 106	10 99	14 47	60	972	
80	FLOOR RM 106	10 99	14 47	66	1314	
81	FLOOR RM 106	10 99	14 47	96	1212	DECON TO TOTAL ALPHA 72
82	FLOOR RM 106	10 99	14 47	60	1104	
83	FLOOR RM 106	10 99	14 47	66	744	
84	FLOOR RM 106	10 99	14 47	120	1317	DECON TO LESS THAN MDA
85	FLOOR RM 106	10 99	14 47	60	762	
86	FLOOR RM 106	10 99	14 47	138	1359	DECON TO LESS THAN MDA
87	FLOOR RM 106	10 99	14 47	60	741	
88	FLOOR RM 106	10 99	14 47	60	1080	
89	FLOOR RM 106	10 99	14 47	60	538	
90	FLOOR RM 106	10 99	14 47	60	906	
91	FLOOR RM 106	10 99	14 47	60	624	
92	FLOOR RM 106	10 99	14 47	60	1122	
93	FLOOR RM 106	10 99	14 47	60	735	
94	FLOOR RM 106	10 99	14 47	60	687	
95	FLOOR RM. 106	10 99	14 47	60	1066	
96	FLOOR RM 106	10 99	14 47	60	1407	

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
97	FLOOR RM 106	10 99	14 47	60	1902			
98	FLOOR RM 106	10 99	14 47	60	2058			
99	FLOOR RM 106	10 99	14 47	60	2703			
100	FLOOR RM 106	10 99	14 47	66	2082			
101	FLOOR RM 106	10 99	14 47	60	756			
102	FLOOR RM 106	10 99	14 47	78	924			
103	FLOOR RM 106	10 99	14 47	60	1083			
104	FLOOR RM 106	10 99	14 47	60	777			
105	FLOOR RM 106	10 99	14 47	60	702			
106	FLOOR RM 106	10 99	14 47	60	450			
107	FLOOR RM 106	10 99	14 47	60	1098			
108	FLOOR RM 106	10 99	14 47	60	1122			
109	FLOOR RM 106	10 99	14 47	132	2868	DECON TO LESS THAN MDA		
110	FLOOR RM 106	10 99	14 47	60	498			
111	FLOOR RM 106	10 99	14 47	60	606			
112	FLOOR RM 106	10 99	14 47	60	380			
113	FLOOR RM 106	10 99	14 47	60	380			
114	FLOOR RM 106	10 99	14 47	60	380			
115	FLOOR RM 106	10 99	14 47	60	380			
116	FLOOR RM 106	10 99	14 47	66	1194			
117	FLOOR RM 106	10 99	14 47	60	1872			
118	FLOOR RM 106	10 99	14 47	60	1098			
119	FLOOR RM 106	10 99	14 47	60	1605			
120	FLOOR RM 106	10 99	14 47	60	864			
121	FLOOR RM 106	10 99	14 47	60	747			
122	FLOOR RM 106	10 99	14 47	60	393			
123	FLOOR RM 106	10 99	14 47	60	954			
124	FLOOR RM 106	10 99	14 47	60	549			
125	FLOOR RM 106	10 99	14 47	60	501			
126	FLOOR RM 106	10 99	14 47	60	1140			
127	FLOOR RM 106	10 99	14 47	60	1065			
128	FLOOR RM 106	10 99	14 47	60	380			

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
129	FLOOR RM 106	10 99	14 47	60	380	
130	FLOOR RM 106	10 99	14 47	60	380	
131	FLOOR RM 106	10 99	14 47	60	380	
132	FLOOR RM 106	10 99	14 47	90	1362	
133	FLOOR RM 106	10 99	14 47	60	966	
134	FLOOR RM 106	10 99	14 47	60	618	
135	FLOOR RM 106	10 99	14 47	60	735	
136	FLOOR RM 106	10 99	14 47	60	540	
137	FLOOR RM 106	10 99	14 47	60	1065	
1	W WALL RM 106	11 88	14 96	60	1752	
2	W WALL RM 106	11 88	14 96	60	1110	
3	W WALL RM 106	11 88	14 96	60	1296	
4	W WALL RM 106	11 88	14 96	90	2049	
5	W WALL RM 106	11 88	14 96	60	380	
6	W WALL RM 106	11 88	14 96	60	380	
7	W WALL RM 106	11 88	14 96	60	380	
8	W WALL RM 106	11 88	14 96	60	380	
9	W WALL RM 106	11 88	14 96	60	1029	
10	W WALL RM 106	11 88	14 96	60	380	
11	W WALL RM 106	11 88	14 96	60	380	
12	W WALL RM 106	11 88	14 96	138	15201	DECON TO TOTAL BETA 453, ALPHA 90
13	W WALL RM 106	11 88	14 96	60	1701	
14	W WALL RM 106	11 88	14 96	60	1074	
15	W WALL RM 106	11 88	14 96	60	6306	DECON TO TOTAL BETA 2634, ALPHA 90
16	W WALL RM 106	11 88	14 96	60	2094	
17	W WALL RM 106	11 88	14 96	60	1746	
18	W WALL RM 106	11 88	14 96	60	1029	
19	W WALL RM 106	11 88	14 96	60	2133	
20	W WALL RM 106	11 88	14 96	60	380	
21	W WALL RM 106	11 88	14 96	60	380	
22	W WALL RM 106	11 88	14 96	60	380	
23	W WALL RM 106	11 88	14 96	60	531	

90

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
24	W WALL RM 106	11 88	14 96	60	738
25	W WALL RM 106	11 88	14 96	60	537
26	W WALL RM 106	11 88	14 96	60	429
27	W WALL RM 106	11 88	14 96	60	516
28	W WALL RM 106	11 88	14 96	60	380
29	W WALL RM 106	11 88	14 96	60	380
30	W WALL RM 106	11 88	14 96	60	380
31	W WALL RM 106	11 88	14 96	60	380
32	W WALL RM 106	11 88	14 96	60	380
33	W WALL RM 106	11 88	14 96	60	380
34	W WALL RM 106	11 88	14 96	60	380
35	W WALL RM 106	11 88	14 96	60	380
36	W WALL RM 106	11 88	14 96	60	380
37	W WALL RM 106	11 88	14 96	60	743
38	W WALL RM 106	11 88	14 96	60	441
39	W WALL RM 106	11 88	14 96	60	380
40	W WALL RM 106	11 88	14 96	60	380
41	W WALL RM 106	11 88	14 96	60	380
42	W WALL RM 106	11 88	14 96	60	380
43	W WALL RM 106	11 88	14 96	60	380
44	W WALL RM 106	11 88	14 96	60	380
45	W WALL RM 106	11 88	14 96	60	380
46	W WALL RM 106	11 88	14 96	60	380
47	W WALL RM 106	11 88	14 96	60	380
48	W WALL RM 106	11 88	14 96	60	380
49	W WALL RM 106	11 88	14 96	60	380
50	W WALL RM 106	11 88	14 96	60	380
51	W WALL RM 106	11 88	14 96	60	405
52	W WALL RM 106	11 88	14 96	60	408
53	W WALL RM 106	11 88	14 96	60	380
54	W WALL RM 106	11 88	14 96	60	417
55	W WALL RM 106	11 88	14 96	60	380

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
56	W WALL RM 106	11 88	14 96	60	380
57	W WALL RM 106	11 88	14 96	60	380
58	W WALL RM 106	11 88	14 96	60	380
59	W WALL RM 106	11 88	14 96	60	380
60	W WALL RM 106	11 88	14 96	60	380
61	W WALL RM 106	11 88	14 96	60	380
62	W WALL RM 106	18	205	60	654
63	W WALL RM 106	18	205	66	594
64	W WALL RM 106	18	205	60	380
65	W WALL RM 106	11 88	14 96	60	380
66	W WALL RM 106	11 88	14 96	60	380
67	W WALL RM 106	11 46	13 76	60	380
68	W WALL RM 106	11 46	13 76	60	380
69	W WALL RM 106	11 46	13 76	60	380
70	W WALL RM 106	11 46	13 76	60	380
71	W WALL RM 106	11 46	13 76	60	380
72	W WALL RM 106	11 46	13 76	60	380
73	W WALL RM 106	11 46	13 76	60	380
74	W WALL RM 106	11 46	13 76	60	380
75	W WALL RM 106	18	205	60	380
76	W WALL RM 106	18	205	60	380
77	W WALL RM 106	18	205	60	380
78	W WALL RM 106	11 46	13 76	60	380
79	W WALL RM 106	11 46	13 76	60	380
80	W WALL RM 106	11 46	13 76	60	380
81	W WALL RM 106	11 46	13 76	60	380
82	W WALL RM 106	11 46	13 76	60	380
83	W WALL RM 106	11 46	13 76	60	380
84	W WALL RM 106	11 46	13 76	60	380
85	W WALL RM 106	11 46	13 76	60	380
86	W WALL RM 106	11 46	13 76	60	380
87	W WALL RM 106	11 46	13 76	60	380

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
88	W WALL RM 106	18	205	60	380			
89	W WALL RM 106	18	205	60	380			
90	W WALL RM 106	18	205	60	380			
91	W WALL RM 106	11 46	13 76	60	380			
92	W WALL RM 106	11 46	13 76	60	380			
93	W WALL RM 106	11 46	13 76	60	380			
94	W WALL RM 106	11 46	13 76	60	380			
95	W WALL RM 106	11 46	13 76	60	380			
96	W WALL RM 106	11 46	13 76	60	380			
97	W WALL RM 106	11 46	13 76	60	380			
98	W WALL RM 106	11 46	13 76	60	380			
99	W WALL RM 106	18	205	60	380			
100	W WALL RM 106	18	205	60	450			
101	W WALL RM 106	18	205	60	380			
102	W WALL RM 106	11 46	13 76	60	380			
103	W WALL RM 106	11 46	13 76	60	380			
104	W WALL RM 106	11 46	13 76	60	380			
105	W WALL RM 106	11 46	13 76	60	380			
106	W WALL RM 106	11 46	13 76	60	380			
107	W WALL RM 106	11 46	13 76	60	380			
108	W WALL RM 106	11 46	13 76	60	380			
109	W WALL RM 106	11 46	13 76	60	380			
110	W WALL RM 106	11 46	13 76	60	380			
111	W WALL RM 106	11 46	13 76	60	380			
112	W WALL RM 106	18	205	60	380			
113	W WALL RM 106	18	205	60	380			
114	W WALL RM 106	18	205	60	380			
115	W WALL RM 106	18	205	60	380			
116	W WALL RM 106	11 46	13 76	78	1008			
117	W WALL RM 106	11 46	13 76	60	4368			
118	W WALL RM 106	11 46	13 76	78	1512			
119	W WALL RM 106	11 46	13 76	60	816			

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
120	W WALL RM 106	11 46	13 76	60	996			
121	W WALL RM 106	11 46	13 76	60	924			
122	W WALL RM 106	11 46	13 76	60	380			
123	W WALL RM 106	11 46	13 76	60	600			
124	W WALL RM 106	11 46	13 76	198	2826	DECON TO TOTAL ALPHA 72		
125	W WALL RM 106	11 46	13 76	60	3702			
126	W WALL RM 106	18	205	60	380			
127	W WALL RM 106	18	205	60	380			
128	W WALL RM 106	18	205	60	380			
129	W WALL RM 106	11 46	13 76	60	648			
130	W WALL RM 106	11 46	13 76	60	380			
131	W WALL RM 106	11 46	13 76	783	5658	DECON TO TOTAL BETA 1200		
132	W WALL RM 106	18	205	102	380	DECON TO LESS THAN MDA		
1	N WALL RM 106	11 88	14 96	60	1506			
2	N WALL RM 106	11 88	14 96	60	380			
3	N WALL RM 106	11 88	14 96	60	380			
4	N WALL RM 106	11 88	14 96	60	380			
5	N WALL RM 106	11 88	14 96	60	514			
6	N WALL RM 106	11 88	14 96	60	380			
7	N WALL RM 106	11 88	14 96	60	380			
8	N WALL RM 106	11 88	14 96	60	380			
9	N WALL RM 106	11 88	14 96	60	396			
10	N WALL RM 106	11 88	14 96	60	380			
11	N WALL RM 106	11 88	14 96	60	380			
12	N WALL RM 106	11 88	14 96	60	380			
13	N WALL RM 106	11 88	14 96	60	380			
14	N WALL RM 106	11 88	14 96	60	380			
15	N WALL RM 106	11 88	14 96	60	380			
16	N WALL RM 106	11 88	14 96	60	380			
17	N WALL RM 106	11 88	14 96	60	380			
18	N WALL RM 106	11 88	14 96	60	380			
19	N WALL RM 106	11 88	14 96	60	380			

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ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
20	N WALL RM 106	11 88	14 96	60	380
21	N WALL RM 106	11 88	14 96	60	380
22	N WALL RM 106	11 88	14 96	60	380
23	N WALL RM 106	11 88	14 96	60	380
24	N WALL RM 106	11 88	14 96	60	380
25	N WALL RM 106	11 88	14 96	60	380
26	N WALL RM 106	11 88	14 96	60	380
27	N WALL RM 106	11 88	14 96	60	380
28	N WALL RM 106	11 88	14 96	60	380
29	N WALL RM 106	11 88	14 96	60	380
30	N WALL RM 106	11 88	14 96	60	380
31	N WALL RM 106	11 88	14 96	60	380
32	N WALL RM 106	11 88	14 96	60	380
33	N WALL RM 106	11 88	14 96	60	380
34	N WALL RM 106	11 88	14 96	60	380
35	N WALL RM 106	11 88	14 96	60	380
36	N WALL RM 106	11 88	14 96	60	380
37	N WALL RM 106	11 88	14 96	60	380
38	N WALL RM 106	11 88	14 96	60	380
39	N WALL RM 106	11 88	14 96	60	380
40	N WALL RM 106	11 88	14 96	60	380
41	N WALL RM 106	11 88	14 96	60	380
42	N WALL RM 106	11 88	14 96	60	380
43	N WALL RM 106	11 88	14 96	60	380
44	N WALL RM 106	11 88	14 96	60	380
45	N WALL RM 106	11 88	14 96	60	380
46	N WALL RM 106	11 88	14 96	60	380
47	N WALL RM 106	11 88	14 96	60	380
48	N WALL RM 106	11 88	14 96	60	380
49	N WALL RM 106	11 88	14 96	60	380
50	N WALL RM 106	11 88	14 96	60	380
51	N WALL RM 106	11 88	14 96	60	380

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
52	N WALL RM 106	11 88	14 96	60	380			
53	N WALL RM 106	11 88	14 96	60	380			
54	N WALL RM 106	11 88	14 96	60	380			
55	N WALL RM 106	11 88	14 96	60	380			
56	N WALL RM 106	11 88	14 96	60	380			
57	N WALL RM 106	11 88	14 96	60	380			
58	N WALL RM 106	11 88	14 96	60	380			
59	N WALL RM 106	11 88	14 96	60	380			
60	N WALL RM 106	11 88	14 96	60	380			
61	N WALL RM 106	11 88	14 96	60	380			
62	N WALL RM 106	11 88	14 96	60	380			
63	N WALL RM 106	11 88	14 96	60	380			
64	N WALL RM 106	11 88	14 96	60	380			
1	CEILING RM 106	13 8	13 9	60	380			
2	CEILING RM 106	13 8	13 9	60	380			
3	CEILING RM 106	13 8	13 9	60	380			
4	CEILING RM 106	13 8	13 9	60	380			
5	CEILING RM 106	13 8	13 9	60	501			
6	CEILING RM 106	13 8	13 9	60	380			
7	CEILING RM 106	13 8	13 9	60	627			
8	CEILING RM 106	13 8	13 9	60	684			
9	CEILING RM 106	13 8	13 9	60	480			
10	CEILING RM 106	13 8	13 9	60	554			
11	CEILING RM 106	13 8	13 9	60	390			
12	CEILING RM 106	13 8	13 9	60	516			
13	CEILING RM 106	13 8	13 9	60	471			
14	CEILING RM 106	13 8	13 9	60	477			
15	CEILING RM 106	13 8	13 9	60	380			
16	CEILING RM 106	13 8	13 9	60	380			
17	CEILING RM 106	13 8	13 9	60	533			
18	CEILING RM 106	13 8	13 9	60	465			
19	CEILING RM 106	13 8	13 9	60	435			

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
20	CEILING RM 106	13 8	13 9	60	380			
21	CEILING RM 106	13 8	13 9	60	380			
22	CEILING RM 106	13 8	13 9	60	606			
23	CEILING RM 106	13 8	13 9	60	380			
24	CEILING RM 106	13 8	13 9	60	380			
25	CEILING RM 106	13 8	13 9	60	380			
26	CEILING RM 106	13 8	13 9	60	380			
27	CEILING RM 106	13 8	13 9	60	380			
28	CEILING RM 106	13 8	13 9	60	380			
29	CEILING RM 106	13 8	13 9	60	380			
30	CEILING RM 106	13 8	13 9	60	380			
31	CEILING RM 106	13 8	13 9	60	480			
32	CEILING RM 106	13 8	13 9	60	504			
33	CEILING RM 106	13 8	13 9	60	501			
34	CEILING RM 106	13 8	13 9	60	380			
35	CEILING RM 106	13 8	13 9	60	380			
36	CEILING RM 106	13 8	13 9	60	504			
37	CEILING RM 106	13 8	13 9	60	380			
38	CEILING RM 106	13 8	13 9	60	384			
39	CEILING RM 106	13 8	13 9	60	380			
40	CEILING RM 106	13 8	13 9	60	426			
41	CEILING RM 106	13 8	13 9	60	666			
42	CEILING RM 106	13 8	13 9	60	504			
43	CEILING RM 106	13 8	13 9	60	380			
44	CEILING RM 106	13 8	13 9	60	380			
45	CEILING RM 106	13 8	13 9	60	444			
46	CEILING RM 106	13 8	13 9	60	498			
47	CEILING RM 106	13 8	13 9	60	564			
48	CEILING RM 106	13 8	13 9	60	528			
49	CEILING RM 106	13 8	13 9	60	636			
50	CEILING RM 106	13 8	13 9	60	510			
51	CEILING RM 106	13 8	13 9	60	426			

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
52	CEILING RM 106	13 8	13 9	60	380			
53	CEILING RM 106	13 8	13 9	60	606			
54	CEILING RM 106	13 8	13 9	60	558			
55	CEILING RM 106	13 8	13 9	60	912			
56	CEILING RM 106	13 8	13 9	60	588			
57	CEILING RM 106	13 8	13 9	60	480			
58	CEILING RM 106	13 8	13 9	60	630			
59	CEILING RM 106	13 8	13 9	60	438			
60	CEILING RM 106	13 8	13 9	60	540			
61	CEILING RM 106	13 8	13 9	60	414			
62	CEILING RM 106	13 8	13 9	60	380			
63	CEILING RM 106	13 8	13 9	60	480			
64	CEILING RM 106	13 8	13 9	60	380			
65	CEILING RM 106	13 8	13 9	60	633			
66	CEILING RM 106	13 8	13 9	60	612			
67	CEILING RM 106	13 8	13 9	60	732			
68	CEILING RM 106	13 8	13 9	60	714			
69	CEILING RM 106	13 8	13 9	60	918			
70	CEILING RM 106	13 8	13 9	60	510			
71	CEILING RM 106	13 8	13 9	60	936			
72	CEILING RM 106	13 8	13 9	60	492			
73	CEILING RM 106	13 8	13 9	60	504			
74	CEILING RM 106	13 8	13 9	60	558			
75	CEILING RM 106	13 8	13 9	60	825			
76	CEILING RM 106	13 8	13 9	60	546			
77	CEILING RM 106	13 8	13 9	60	696			
78	CEILING RM 106	13 8	13 9	60	380			
79	CEILING RM 106	13 8	13 9	60	582			
80	CEILING RM 106	13 8	13 9	60	534			
81	CEILING RM 106	13 8	13 9	60	570			
82	CEILING RM 106	13 8	13 9	60	510			
83	CEILING RM 106	13 8	13 9	60	588			

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
84	CEILING RM 106	13 8	13 9	60	630			
85	CEILING RM 106	13 8	13 9	60	576			
86	CEILING RM 106	13 8	13 9	60	380			
87	CEILING RM 106	13 8	13 9	60	708			
88	CEILING RM 106	13 8	13 9	60	498			
89	CEILING RM 106	13 8	13 9	60	438			
90	CEILING RM 106	13 8	13 9	60	384			
91	CEILING RM 106	13 8	13 9	60	636			
92	CEILING RM 106	13 8	13 9	60	504			
93	CEILING RM 106	13 8	13 9	60	444			
94	CEILING RM 106	13 8	13 9	60	474			
95	CEILING RM 106	13 8	13 9	60	654			
96	CEILING RM 106	13 8	13 9	60	534			
97	CEILING RM 106	13 8	13 9	60	630			
98	CEILING RM 106	13 8	13 9	60	678			
99	CEILING RM 106	13 8	13 9	60	456			
100	CEILING RM 106	13 8	13 9	60	396			
101	CEILING RM 106	13 8	13 9	60	390			
102	CEILING RM 106	13 8	13 9	60	564			
103	CEILING RM 106	13 8	13 9	60	558			
104	CEILING RM 106	18	205	60	380			
105	CEILING RM 106	18	205	60	528			
106	CEILING RM 106	18	205	60	552			
107	CEILING RM 106	18	205	60	594			
108	CEILING RM 106	18	205	60	492			
109	CEILING RM 106	18	205	60	432			
110	CEILING RM 106	18	205	60	696			
111	CEILING RM 106	18	205	60	402			
112	CEILING RM 106	18	205	60	380			
113	CEILING RM 106	18	205	60	380			
114	CEILING RM 106	18	205	60	380			
115	CEILING RM 106	18	205	60	380			

ROOM 106 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
116	CEILING RM 106	18	205	60	380
117	CEILING RM 106	18	205	60	380
118	CEILING RM 106	18	205	60	380
119	CEILING RM 106	18	205	60	380
120	CEILING RM 106	18	205	60	380
121	CEILING RM 106	18	205	60	380
122	CEILING RM 106	18	205	60	380
123	CEILING RM 106	18	205	60	380
124	CEILING RM 106	18	205	60	380
125	CEILING RM 106	18	205	60	380
126	CEILING RM 106	18	205	60	380
127	CEILING RM 106	18	205	60	380
128	CEILING RM 106	18	205	60	380
129	CEILING RM 106	18	205	60	380
130	CEILING RM 106	18	205	60	380
131	CEILING RM 106	18	205	60	380
132	CEILING RM 106	18	205	60	380
133	CEILING RM 106	18	205	60	380
134	CEILING RM 106	18	205	60	380
135	CEILING RM 106	18	205	60	380
	mean=	12 233	29 463	68 995	729 411
	t(α= 05, df=659)=	1 647			
	standard deviation=	1 938	51 376	108 752	1289 638
	upper conf limit=	12 357	32 757	75 968	812 097

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER

FOR ____ P/WRE ____ PRL

X RWP ____ OTHER 96-750-0021

BUILDING/LOCATION	ROOM
889 Rm 106	106
DATE 8-17-96	TIME 0800

ITEM DESCRIPTION

Base Line Room 106
East Wall + Floor

COMMENTS

STATUS

____ RELEASABLE ____ NOT RELEASABLE

✓ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) J.L Johnston

J.L. Johnston [redacted] 08-17-96

RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-22-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER	EBER	EBER	Tennelec
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB 5100 W
SERIAL #				28125-2
CAL DATE				06 12-96
CAL DUE DATE				12-12-96

MFR	EBER	EBER	EBER	NE Technology
MODEL	B.C.-4	B.C.-4	B.C.-4	Electra
SERIAL #				1369
CAL DATE				07 8 96
CAL DUE DATE				01-8-97
				1.0α / 350

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	NE Technology
MODEL	A-100	Electra	31	Electra
SERIAL #		1248		1503
CAL DATE		02-21-96		04-25-96
CAL DUE DATE		08 21-96		10 25 96
BACKGROUND		1.0α / 60 SB		2.0α / 436 B

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101

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

1110

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06 12 96 **Cal Due Date** 12-12-96

Batch ID BLDG 889 Room 106 East Wall Base L

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B032 XLD

Batch Ended 8/17/96 13 22

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 10

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 2 30

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
8	1	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 10 46
9	2	**0 293**	2 93	<MDA	10 99	**5 05**	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96 10 47
10	3	**2 634**	2 93	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 10 48
11	4	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 10 49
12	5	**0 293**	2 93	<MDA	10 99	**4 30**	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 10 51
13	6	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 10 52
14	7	**0 293**	2 93	<MDA	10 99	**4 30**	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 10 53
15	8	**0 293**	2 93	<MDA	10 99	**6 92**	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96 10 54
16	9	**0 293**	2 93	<MDA	10 99	**6 92**	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96 10 56
17	10	**2 634**	2 93	<AL	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96 10 57
18	11	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 10 58
19	12	**0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 10 59
20	13	**0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 11 00
21	14	**2 634**	2 93	<AL	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96 11 02
22	15	**0 293**	2 93	<MDA	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 11 03
23	16	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 11 04
24	17	**2 634**	2 93	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 11 05
25	18	**0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 11 07
26	19	**2 634**	2 93	<AL	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 11 08
27	20	**2 634**	2 93	<AL	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 11 09
28	21	**0 293**	2 93	<MDA	10 99	**6 92**	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96 11 10
29	22	**0 293**	2 93	<MDA	10 99	**4 30**	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 11 11
30	23	**2 634**	2 93	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 11 13
31	24	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 11 14
32	25	**2 634**	2 93	<AL	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 900	1 30	8/17/96 11 15

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID BLDG 889 Room 106 East Wall Base Lab
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1B032 XLD
Batch Ended 8/17/96 13 22
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 30
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
33	26	2 634	2 93	<AL	10 99	2 43	1 91	<MDA	14 47	1 00	0 900	1 30	8/17/96 11 16
34	27	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 11 18
35	28	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 19
36	29	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 11 20
37	30	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 21
38	31	2 634	2 93	<AL	10 99	2 43	1 91	<MDA	14 47	1 00	0 900	1 30	8/17/96 11 23
39	32	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 11 24
40	33	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 11 25
41	34	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 11 26
42	35	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 11 27
43	36	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 29
44	37	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 30
45	38	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 11 31
66	39	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 11 32
67	40	2 634	2 93	<AL	10 99	3 18	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96 11 34
68	41	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 11 35
69	42	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 11 36
70	43	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 37
46	44	5 560	4 14	<AL	10 99	5 05	4 20	<AL	14 47	1 00	1 900	2 70	8/17/96 11 38
47	45	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 11 40
48	46	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 41
49	47	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 11 42
50	48	2 634	2 93	<AL	10 99	6 92	4 60	<AL	14 47	1 00	0 900	3 70	8/17/96 11 43
51	49	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 11 45
52	50	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 11 46
53	51	0 293	2 93	<MDA	10 99	6 92	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96 11 47
54	52	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 11 48
55	53	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 50
56	54	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8 17/96 11 51

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06 12-96 **Cal Due Date** 12-12-96
Batch ID BLDG 889 Room 106 East Wall Base L
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1B032 XLD
Batch Ended 8/17/96 13 22
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 30
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
57	55	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 52
58	56	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 11 53
59	57	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 54
60	58	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 11 56
61	59	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 11 57
62	60	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 58
63	61	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 11 59
64	62	0 293	2 93	<MDA	10 99	5 05	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96 12 01
65	63	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 12 02
1	64	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 12 03
2	65	5 560	4 14	<AL	10 99	3 18	3 76	<MDA	14 47	1 00	1 900	1 70	8/17/96 12 04
3	66	0 293	2 93	<MDA	10 99	12 53	5 63	<AL	14 47	1 00	0 100	6 70	8/17/96 12 06
4	67	2 634	2 93	<AL	10 99	3 18	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96 12 07
5	68	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 12 08
6	69	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 12 09
7	70	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 12 10
8	71	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 12 12
9	72	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 12 13
10	73	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 12 14
11	74	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 12 15
12	75	-0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 12 17
13	76	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 12 18
14	77	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 12 19
15	78	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 12 20
16	79	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 12 22
17	80	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 12 23
18	81	2 634	2 93	<AL	10 99	3 18	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96 12 24
19	82	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 12 25
20	83	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 12 26

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06 12-96 **Cal Due Date** 12-12-96
Batch ID BLDG 889 Room 106 East Wall Base Lab
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1B032 XLD
Batch Ended 8/17/96 13 22
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 30
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
21	84	0 293	2 93	<MDA	10 99	5 05	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96	12 28
22	85	2 634	2 93	<AL	10 99	2 43	1 91	<MDA	14 47	1 00	0 900	1 30	8/17/96	12 29
23	86	2 634	2 93	<AL	10 99	5 05	4 20	<AL	14 47	1 00	0 900	2 70	8/17/96	12 30
24	87	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	12 31
25	88	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96	12 32
26	89	0 293	2 93	<MDA	10 99	5 05	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96	12 34
27	90	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	12 35
28	91	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	12 36
29	92	0 293	2 93	<MDA	10 99	5 05	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96	12 37
30	93	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96	12 39
31	94	0 293	2 93	<MDA	10 99	18 13	6 50	<AL	14 47	1 00	0 100	9 70	8/17/96	12 40
32	95	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	12 41
33	96	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	12 42
34	97	2 634	2 93	<AL	10 99	5 05	4 20	<AL	14 47	1 00	0 900	2 70	8/17/96	12 44
35	98	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	12 45
36	99	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	12 46
37	100	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	12 47
38	101	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	12 48
39	102	2 634	2 93	<AL	10 99	3 18	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96	12 50
40	103	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	12 51
41	104	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96	12 52
42	105	2 634	2 93	<AL	10 99	8 79	4 96	<AL	14 47	1 00	0 900	4 70	8/17/96	12 53
43	106	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	12 55
44	107	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	12 56
45	108	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	12 57
66	109	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	12 58
67	110	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96	12 59
68	111	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	13 01
69	112	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	13 02

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06 12 96 **Cal Due Date** 12 12 96

Batch ID BLDG 889 Room 106 East Wall Base Lab

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B032 XLD

Batch Ended 8/17/96 13 22

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
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Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
70	113	**0 293**	2 93	<MDA	10 99	**4 30**	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96	13 03
46	114	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	13 04
47	115	**2 634**	2 93	<AL	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96	13 06
48	116	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	13 07
49	117	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	13 08
50	118	**0 293**	2 93	<MDA	10 99	**4 30**	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96	13 09
51	119	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	13 11
52	120	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	13 12
53	121	**0 293**	2 93	<MDA	10 99	**4 30**	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96	13 13
54	122	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	13 14
55	123	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	13 15
56	124	**0 293**	2 93	<MDA	10 99	**6 92**	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96	13 17
57	125	**0 293**	2 93	<MDA	10 99	**4 30**	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96	13 18
58	126	**0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	13 19
59	127	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	13 20
60	128	**0 293**	2 93	<MDA	10 99	**6 92**	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96	13 22

106

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RWP [illegible]
Base Line [illegible] Wall
Tennelec → ONE/1B&99 [illegible], Rain 106

LOG NUMBER

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE OF

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/40 SEC COUNT)	TOTAL BETA/GAMMA
1	East Wall			<60	<350
2	East Wall			<60	<350
3	East Wall			<60	<350
4	East Wall			<60	<350
5	East Wall			<60	<350
6	East Wall			<60	<350
7	East Wall			<60	<350
8	East Wall			<60	468
9	East Wall			<60	<350
10	East Wall			<60	<350
11	East Wall			<60	<350
12	East Wall			<60	<350
13	East Wall			<60	<350
14	East Wall			<60	<350
15	East Wall			<60	<350
16	East Wall			<60	<350
17	East Wall			<60	350
18	East Wall			<60	<350
19	East Wall			<60	<350
20	East Wall			<60	<350
21	East Wall			<60	<350
22	East Wall			<60	<350

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/40 SEC COUNT)	TOTAL BETA/GAMMA
23	East Wall			<60	<350
24	East Wall			<60	<350
25	East Wall			<60	<350
26	East Wall			<60	<350
27	East Wall			<60	<350
28	East Wall			<60	<350
29	East Wall			<60	<350
30	East Wall			<60	<350
31	East Wall			<60	<350
32	East Wall			<60	<350
33	East Wall			<60	<350
34	East Wall			<60	<350
35	East Wall			<60	<350
36	East Wall			<60	<350
37	East Wall			<60	<350
38	East Wall			<60	350
39	East Wall			<60	<350
40	East Wall			<60	<350
41	East Wall			<60	350
42	East Wall			<60	<350
43	East Wall			<60	<350
44	East Wall			<60	<350

Print ink on recycled paper

NWT 10 /3C-0021
Base Line Fa[illegible] Hall
Tennelec → CN-/1B-19 [illegible], Room 106

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (PRISM 0 SEC COUNT)	TOTAL BETA/GAMMA
45	East Wall			<60	<350
46	East Wall			<60	<350
47	East Wall			<60	<350
48	East Wall			<60	<350
49	East Wall			<60	<350
50	East Wall			<60	<350
51	East Wall			<60	<350
52	East Wall			<60	<350
53	East Wall			<60	<350
54	East Wall			<60	<350
55	East Wall			<60	<350
56	East Wall			<60	<350
57	East Wall			<60	<350
58	East Wall			<60	<350
59	East Wall			<60	<350
60	East Wall			<60	<350
61	East Wall			<60	<350
62	East Wall			<60	<350
63	East Wall			<60	<350
64	East Wall			<60	<350
65	East Wall			<60	<350
66	East Wall			<60	<350

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (PRISM 0 SEC COUNT)	TOTAL BETA/GAMMA
67	East Wall			<60	<350
68	East Wall			<60	<350
69	East Wall			<60	<350
70	East Wall			<60	<350
71	East Wall			<60	<350
72	East Wall			<60	<350
73	East Wall			<60	<350
74	East Wall			<60	<350
75	East Wall			<60	<350
76	East Wall			<60	<350
77	East Wall			<60	<350
78	East Wall			<60	<350
79	East Wall			<60	<350
80	East Wall			<60	<350
81	East Wall			<60	<350
82	East Wall			<60	<350
83	East Wall			<60	<350
84	East Wall			<60	<350
85	East Wall			<60	<350
86	East Wall			<60	<350
87	East Wall			<60	<350
88	East Wall			<60	<350

28

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KCUP 4K 15C [illegible]
Bus L.N.K [illegible] Wall
Termelex → ONY/13099 R-D, Room 106

LOG NUMBER

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 1 OF 18

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FR18K/40 SEC COUNT)	TOTAL BETA/GAMMA
89	East Wall			<60	<350
90	East Wall			<60	<350
91	East Wall			<60	<350
92	East Wall			<60	<350
93	East Wall			<60	<350
94	East Wall			<60	<350
95	East Wall			<60	<350
96	East Wall			<60	<350
97	East Wall			<60	<350
98	East Wall			<60	<350
99	East Wall			160	705
100	East Wall			<60	855
101	East Wall			105	1824
102	East Wall			<60	<350
103	East Wall			<60	<350
104	East Wall			<60	<350
105	East Wall			<60	<350
106	East Wall			<60	<350
107	East Wall			<60	<350
108	East Wall			<60	<350
109	East Wall			<60	<350
110	East Wall			<60	1188

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FR18K/40 SEC COUNT)	TOTAL BETA/GAMMA
111	East Wall			<60	<350
112	East Wall			<60	<350
113	East Wall			<60	<350
114	East Wall			<60	<350
115	East Wall			<60	802
116	East Wall			<60	<350
117	East Wall			<60	<350
118	East Wall			<60	<350
119	East Wall			<60	<350
120	East Wall			<60	<350
121	East Wall			<60	<350
122	East Wall			<60	<350
123	East Wall			<60	<350
124	East Wall			<60	<350
125	East Wall			<60	<350
126	East Wall			<60	<350
127	East Wall			<60	<350
128	East Wall			<60	<350

105

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12 96

Batch ID BLDG 889 Room 106 Floor Base Line Alpha activity action level (DPM) **20**

Counting Unit id 1 Beta activity action level (DPM) **1000**

Data file name C \LBXL\UNIT1\ONE1A099 XLD Certainty level for MDA and flags 95%

Batch Ended 8/17/96 10 44 High Voltage Setting 1350

Crosstalk Correction Not Applied

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 30
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity								
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date	Time
1	1	**0 293**	2 93	<MDA	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	7 57
2	2	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	7 59
3	3	**2 634**	2 93	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96	8 00
4	4	**8 486**	5 07	<AL	10 99	**3 18**	3 76	<MDA	14 47	1 00	2 900	1 70	8/17/96	8 01
5	5	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	8 02
6	6	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	8 03
7	7	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	8 05
8	8	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	8 06
9	9	**0 293**	2 93	<MDA	10 99	**5 05**	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96	8 07
10	10	**-0 293**	2 93	<MDA	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	8 08
11	11	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	8 10
12	12	**0 293**	2 93	<MDA	10 99	**5 05**	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96	8 11
13	13	**2 634**	2 93	<AL	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 900	1 30	8/17/96	8 12
14	14	**-0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	8 13
15	15	**-0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	8 15
16	16	**-0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	8 16
17	17	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	8 17
18	18	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	8 18
19	19	**-0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	8 19
20	20	**-0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	8 21
21	21	**0 293**	2 93	<MDA	10 99	**6 92**	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96	8 22
22	22	**5 560**	4 14	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	1 900	0 70	8/17/96	8 23
23	23	**2 634**	2 93	<AL	10 99	**6 92**	4 60	<AL	14 47	1 00	0 900	3 70	8/17/96	8 24
24	24	**5 560**	4 14	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	1 900	0 70	8/17/96	8 26
25	25	**0 293**	2 93	<MDA	10 99	**5 05**	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96	8 27

01

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

11/1/18

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID BLDG 889 Room 106 Floor Base Line Alpha activity action level (DPM) **20**

Counting Unit id 1 Beta activity action level (DPM) **1000**

Data file name C \LBXL\UNIT1\ONE1A099 XLD Certainty level for MDA and flags 95%

Batch Ended 8/17/96 10 44 High Voltage Setting 1350

Crosstalk Correction Not Applied

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 30
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
26	26	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 8 28
27	27	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 8 29
28	28	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 8 31
29	29	2 634	2 93	<AL	10 99	4 30	1 91	<MDA	14 47	1 00	0 900	2 30	8/17/96 8 32
30	30	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 8 33
31	31	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 8 34
32	32	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 8 35
33	33	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 8 37
34	34	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 8 38
35	35	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 8 39
36	36	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 8 40
37	37	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 8 42
38	38	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 8 43
39	39	0 293	2 93	<MDA	10 99	6 92	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96 8 44
40	40	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 8 45
41	41	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 8 46
42	42	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 8 48
43	43	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 8 49
44	44	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 8 50
45	45	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 8 51
46	46	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96 8 53
47	47	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 8 54
48	48	2 634	2 93	<AL	10 99	2 43	1 91	<MDA	14 47	1 00	0 900	1 30	8/17/96 8 55
49	49	0 293	2 93	<MDA	10 99	5 05	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96 8 56
50	50	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 8 57
51	51	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 8 59
52	52	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 9 00
53	53	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 9 01
54	54	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 9 02

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

1 / 1 / 16

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID BLDG 889 Room 106 Floor Base Line Alpha activity action level (DPM) **20**
Counting Unit id 1 Beta activity action level (DPM) **1000**
Data file name C \LBXL\UNIT1\ONE1A099 XLD Certainty level for MDA and flags 95%
Batch Ended 8/17/96 10 44 High Voltage Setting 1350
Crosstalk Correction Not Applied

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 10
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 30
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
55	55	0 293	2 93	<MDA	10 99	-4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96	9 04
56	56	-0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	9 05
57	57	0 293	2 93	<MDA	10 99	5 05	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96	9 06
58	58	-0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	9 07
59	59	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	9 09
60	60	-0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	9 10
61	61	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	9 11
62	62	-0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	9 12
63	63	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	9 13
64	64	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	9 15
65	65	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96	9 16
1	66	2 634	2 93	<AL	10 99	4 30	1 91	<MDA	14 47	1 00	0 900	2 30	8/17/96	9 17
2	67	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	9 18
3	68	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	9 20
4	69	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96	9 21
5	70	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	9 22
6	71	8 486	5 07	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	2 900	0 30	8/17/96	9 23
7	72	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96	9 25
8	73	5 560	4 14	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	1 900	0 30	8/17/96	9 26
9	74	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	9 27
10	75	0 293	2 93	<MDA	10 99	6 92	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96	9 28
11	76	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	9 29
12	77	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	9 31
13	78	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96	9 32
14	79	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	9 33
15	80	2 634	2 93	<AL	10 99	0 56	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96	9 34
16	81	2 634	2 93	<AL	10 99	3 18	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96	9 36
17	82	5 560	4 14	<AL	10 99	2 43	1 91	<MDA	14 47	1 00	1 900	1 30	8/17/96	9 37
18	83	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	9 38

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID BLDG 889 Room 106 Floor Base Line Alpha activity action level (DPM) **20**

Counting Unit id 1 Beta activity action level (DPM) **1000**

Data file name C \LBXL\UNIT1\ONE1A099 XLD Certainty level for MDA and flags 95%

Batch Ended 8/17/96 10 44 High Voltage Setting 1350

Crosstalk Correction Not Applied

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 30
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
19	84	5 560	4 14	<AL	10 99	2 43	1 91	<MDA	14 47	1 00	1 900	1 30	8/17/96 9 39
20	85	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 9 41
21	86	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 9 42
22	87	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 9 43
23	88	2 634	2 93	<AL	10 99	5 05	4 20	<AL	14 47	1 00	0 900	2 70	8/17/96 9 44
24	89	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 9 45
25	90	0 293	2 93	<MDA	10 99	12 53	5 63	<AL	14 47	1 00	0 100	6 70	8/17/96 9 47
26	91	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 9 48
27	92	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 9 49
28	93	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 9 50
29	94	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 9 52
30	95	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 9 53
31	96	2 634	2 93	<AL	10 99	1 31	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96 9 54
32	97	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 9 55
33	98	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 9 57
34	99	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 9 58
35	100	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 9 59
36	101	2 634	2 93	<AL	10 99	3 18	3 76	<MDA	14 47	1 00	0 900	1 70	8/17/96 10 00
37	102	0 293	2 93	<MDA	10 99	4 30	1 91	<MDA	14 47	1 00	0 100	2 30	8/17/96 10 01
38	103	0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 10 03
39	104	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 10 04
40	105	0 293	2 93	<MDA	10 99	5 05	4 20	<AL	14 47	1 00	0 100	2 70	8/17/96 10 05
41	106	5 560	4 14	<AL	10 99	5 05	4 20	<AL	14 47	1 00	1 900	2 70	8/17/96 10 06
42	107	0 293	2 93	<MDA	10 99	0 56	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96 10 08
43	108	-0 293	2 93	<MDA	10 99	2 43	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96 10 09
44	109	0 293	2 93	<MDA	10 99	3 18	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96 10 10
45	110	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 10 11
46	111	0 293	2 93	<MDA	10 99	1 31	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96 10 13
47	112	0 293	2 93	<MDA	10 99	6 92	4 60	<AL	14 47	1 00	0 100	3 70	8/17/96 10 14

113

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID BLDG 889 Room 106 Floor Base Line Alpha activity action level (DPM) **20**

Counting Unit id 1 Beta activity action level (DPM) **1000**

Data file name C \LBXL\UNIT1\ONE1A099 XLD Certainty level for MDA and flags 95%

Batch Ended 8/17/96 10 44 High Voltage Setting 1350

Crosstalk Correction Not Applied

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 30
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity								
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date	Time
48	113	**2 634**	2 93	<AL	10 99	**8 79**	4 96	<AL	14 47	1 00	0 900	4 70	8/17/96	10 15
49	114	**0 293**	2 93	<MDA	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	10 16
50	115	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	10 17
51	116	**0 293**	2 93	<MDA	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	10 19
52	117	**2 634**	2 93	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 900	0 70	8/17/96	10 20
53	118	**0 293**	2 93	<MDA	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	10 21
54	119	**2 634**	2 93	<AL	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96	10 22
55	120	**0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	10 24
56	121	**2 634**	2 93	<AL	10 99	**5 05**	4 20	<AL	14 47	1 00	0 900	2 70	8/17/96	10 25
57	122	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	10 26
58	123	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	10 27
59	124	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	10 29
60	125	**0 293**	2 93	<MDA	10 99	**2 43**	1 91	<MDA	14 47	1 00	0 100	1 30	8/17/96	10 30
61	126	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	10 31
62	127	**0 293**	2 93	<MDA	10 99	**3 18**	3 76	<MDA	14 47	1 00	0 100	1 70	8/17/96	10 32
63	128	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	10 33
64	129	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	10 35
65	130	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	10 36
1	131	**5 560**	4 14	<AL	10 99	**1 31**	3 26	<MDA	14 47	1 00	1 900	0 70	8/17/96	10 37
2	132	**2 634**	2 93	<AL	10 99	**6 92**	4 60	<AL	14 47	1 00	0 900	3 70	8/17/96	10 38
3	133	**0 293**	2 93	<MDA	10 99	**1 31**	3 26	<MDA	14 47	1 00	0 100	0 70	8/17/96	10 40
4	134	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	10 41
5	135	**2 634**	2 93	<AL	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 900	0 30	8/17/96	10 42
6	136	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	10 43
7	137	**0 293**	2 93	<MDA	10 99	**0 56**	2 67	<MDA	14 47	1 00	0 100	0 30	8/17/96	10 44

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Tennelec → ONE/11099 XLD

Base Line Floor Room 106

LOG NUMBER

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE [illegible] OF 10

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (RISK/0 SEC COUNT)	TOTAL BETA/GAMMA
1	Floor			<60	19167
2	Floor			<60	1665
3	Floor			<60	11478
4	Floor			<60	888
5	Floor			384	933
6	Floor			96	1137
7	Floor			<60	<380
8	Floor			<60	<380
9	Floor			<60	<380
10	Floor			<60	<380
11	Floor			<60	903
12	Floor			<60	745
13	Floor			60	480
14	Floor			<60	837
15	Floor			60	867
16	Floor			<60	723
17	Floor			<60	8364
18	Floor			<60	858
19	Floor			<60	1629
20	Floor			<60	750
21	Floor			<60	179
22	Floor			60	681

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (RISK/0 SEC COUNT)	TOTAL BETA/GAMMA
23	Floor			60	480
24	Floor			[illegible]	1125
25	Floor			[illegible]	[illegible]
26	Floor			<60	1134
27	Floor			<60	909
28	Floor			<60	1152
29	Floor			<60	2199
30	Floor			72	1952
31	Floor			[illegible]	2760
32	Floor			234	2845
33	Floor			<60	3576
34	Floor			<60	1230
35	Floor			<60	147
36	Floor			<60	3474
37	Floor			<60	1263
38	Floor			<60	690
39	Floor			60	1314
40	Floor			<60	810
41	Floor			<60	486
42	Floor			<60	5082
43	Floor			108	1041
44	Floor			<60	819

KWP 98-750-0021
Baseline [illegible], Room 106
Tensilee → ONE/1A099 x [illegible]

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LOG NUMBER

RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM²)

SWIP	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FINISH/AD SEC COUNT)	TOTAL BETA/GAMMA
45	Floor			84	2474
46	Floor			1248	2944
47	Floor			<60	7240
48	Floor			72	3344
49	Floor			78	4605
50	Floor			<60	3630
51	Floor			<60	645
52	Floor			<60	633
53	Floor			<60	1050
54	Floor			66	1140
55	Floor			72	903
56	Floor			<60	1158
57	Floor			<60	903
58	Floor			<60	1020
59	Floor			<60	999
60	Floor			<60	1380
61	Floor			<60	879
62	Floor			<60	774
63	Floor			<60	1191
64	Floor			<60	810
65	Floor			<60	6600
66	Floor			60	6600

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FINISH/AD SEC COUNT)	TOTAL BETA/GAMMA
67	Floor			78	834
68	Floor			60	2[illegible]5
69	Floor			<60	<380
70	Floor			<60	640
71	Floor			60	862
72	Floor			<60	1154
73	Floor			<60	159
74	Floor			<60	1173
75	Floor			282	1026
76	Floor			60	1266
77	Floor			<60	429
78	Floor			<60	525
79	Floor			<60	972
80	Floor			66	1314
81	Floor			96	1212
82	Floor			<60	1164
83	Floor			66	744
84	Floor			126	13[illegible]
85	Floor			<60	762
86	Floor			138	1359
87	Floor			<60	741
88	Floor			<60	1080

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Rwip 96-750-0021
Baseline Floor Room 106
Template → are/1A099.XLD

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER

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SURVEY RESULTS (DPM/100 CM²)

SWIP	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
89	Floor			<60	558
90	Floor			<60	906
91	Floor			<60	624
92	Floor			<60	1122
93	Floor			<60	735
94	Floor			<60	687
95	Floor			<60	1066
96	Floor			60	1407
97	Floor			<60	1902
98	Floor			<60	2058
99	Floor			<60	2703
100	Floor			66	2082
101	Floor			<60	756
102	Floor			75	924
103	Floor			60	1083
104	Floor			<60	777
105	Floor			<60	702
106	Floor			<60	450
107	Floor			<60	1098
108	Floor			<60	1122
109	Floor			132	2868
110	Floor			60	498

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
111	Floor			<60	606
112	Floor			<60	<380
113	Floor			<60	<380
114	Floor			<60	<380
115	Floor			<60	<380
116	Floor			66	1194
117	Floor			<60	1872
118	Floor			<60	1098
119	Floor			<60	1605
120	Floor			<60	864
121	Floor			<60	747
122	Floor			<60	393
123	Floor			<60	954
124	Floor			<60	549
125	Floor			<60	501
126	Floor			<60	1140
127	Floor			<60	1065
128	Floor			<60	<380
129	Floor			<60	<380
130	Floor			<60	<380
131	Floor			<60	<380
132	Floor			96	1362

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Tennessee → [illegible] Baseline F[illegible] Rain 106 [illegible]

LOG NUMBER

RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FINISH/0 SEC COUNT)	TOTAL BETA/GAMMA
133	Floor			<60	996
134	Floor			<60	618
135	Floor			<60	735
136	Floor			<60	546
137	Floor			<60	1665

08-19-96 [illegible]

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FINISH/0 SEC COUNT)	TOTAL BETA/GAMMA

08-19-96 [illegible]

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: RWP 96-750-0021

FOR: ___ P/WRE ___ PRL

___ RWP ___ OTHER ___

BUILDING/LOCATION: 889 | ROOM: 106

DATE: 08-20-96 | TIME: 1930

ITEM DESCRIPTION: Resurvey After decon Floor and East wall Room 106

COMMENTS:

STATUS: ✓ RELEASABLE ___ NOT RELEASABLE

___ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME): J. L. Johnston

[signature] [redacted] 08-20-96

RCT SIGNATURE DATE

REVIEWED BY: Teresa Johnston 8-20-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.	
MODEL.	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	991	892		
CAL DATE	06-27-96	05-20-96		
CAL DUE DATE:	12-27-96	11-20-96		

MFR.	EBER.	EBER.	EBER.	
MODEL.	B.C.-4	B.C.-4	B.C.-4	
SERIAL #.	389	393		
CAL. DATE	07-03-96	07-03-96		
CAL DUE DATE:	01-03-97	01-03-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR:	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #:		1503		
CAL. DATE:		04-25-96		
CAL. DUE DATE:		10-25-96		
BACKGROUND:		2.002/6950		

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP 96-750-021

SURVEY RESULTS (DPM/100 CM²)

	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FPM/100 SEC COUNT)	TOTAL BETA/GAMMA
	EAST WALL	<18	<205	<60	<380
	Floor Rm 106	<18	<205	<60	3990
	Floor Rm 106	<18	<205	66	1143
	Floor Rm 106	<18	<205	<60	[illegible]
	Floor Rm 106	<18	<205	<60	<380
	Floor Rm 106	<18	<205	<60	4110
	Floor Rm 106	<18	<205	<60	<380
32	Floor Rm 106	<18	<205	<60	1194
42	Floor Rm 106	<18	<205	<60	1662
43	Floor Rm 106	<18	<205	<60	1713
46	Floor Rm 106	<18	<205	66	1644
65	Floor Rm 106	<18	<205	60	3740
[illegible]	Floor Rm 106	<18	<205	<60	424
75	Floor Rm 106	<18	<205	90	<380
81	Floor Rm 106	<18	<205	72	<380
84	Floor Rm 106	<18	<205	<60	<380
86	Floor Rm 106	<18	<205	<60	<380
109	Floor Rm 106	<18	<205	<60	<380
	08-20-96 [illegible]				

SURVEY RESULTS (DPM/100 CM²)

RWP	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FPM/100 SEC COUNT)	TOTAL BETA/GAMMA
	08-20-96 [illegible]				

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LOG / SURVEY NUMBER 46-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM SQ)

SWIP #S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/ GAMMA
97	FLOOR 106	<18	425	<60	726

08-22-96

SURVEY RESULTS (DPM/100 CM SQ)

SWIP #S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/ GAMMA

08-22-96

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RADIOLOGICAL CONTAMINATION SURVEY FORM

DOC NUMBER: RWP 96-750-0021

FOR: ___ P/WRE ___ PRL
___ RWP ✓ OTHER Baseline

BUILDING/LOCATION: 889 | ROOM: 106/WESTWALL

DATE: 08-15-96 | TIME: 1500

ITEM DESCRIPTION: 889 Baseline

COMMENTS:

STATUS:
___ RELEASABLE ___ NOT RELEASABLE
✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME). J. L. Johnston

[redacted] 08-15-96
RCT SIGNATURE DATE

REVIEWED BY. Teresa Johnston, 8-22-96
RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.
MODEL.	S.A.C.-4	S.A.C.-4	S.A.C.-4
SERIAL #.			
CAL. DATE.			
CAL. DUE DATE			

MFR.	EBER.	EBER.	EBER.
MODEL	B.C.-4	B.C.-4	B.C.-4
SERIAL #:			
CAL DATE			
CAL DUE DATE			

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	BICRON	NE Technology	LUDLUM
MODEL	A-100	Electra	31
SERIAL #		6248	
CAL DATE		02-21-96	
CAL DUE DATE		08-21-96	
BACKGROUND		2,024/2/91B	

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LOG NUMBER RWP 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 2 OF 10

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
[illegible]	West WALL 106			<60	1752
2	West WALL 106			<60	1110
3	West WALL 106			<60	1296
4	West WALL 106			90	2049
5	West WALL 106			<60	<380
6	West WALL 106			<60	<380
7	West WALL 106			<60	<380
8	West WALL 106			<60	<380
9	West WALL 106			<60	1029
10	West WALL 106			<60	<380
[illegible]	West WALL 106			<60	<380
[illegible]	West WALL 106			138	15201
[illegible]	West WALL 106			<60	1701
[illegible]	West WALL 106			[illegible]	1074
[illegible]	West WALL 106			[illegible]	1306
[illegible]	West WALL 106			[illegible]	5094
[illegible]	West WALL 106			<60	1746
[illegible]	West WALL 106			<60	1028
[illegible]	West WALL 106			<60	2133
[illegible]	West WALL 106			[illegible]	<380
[illegible]	West WALL 106			[illegible]	[illegible]
[illegible]	West WALL 106			[illegible]	[illegible]

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
23	West WALL 106			<60	53[illegible]
24	West WALL 106			<60	7[illegible]
25	West WALL 106			<60	[illegible]
26	West WALL 106			<60	[illegible]
27	West WALL 106			<60	5[illegible]
28	West WALL 106			<60	<38[illegible]
29	West WALL 106			<60	<38[illegible]
30	West WALL 106			<60	<3[illegible]
31	West WALL 106			<60	[illegible]
32	West WALL 106			<60	[illegible]
33	West WALL 106			<60	[illegible]
34	West WALL 106			<60	[illegible]
35	West WALL 106			<60	[illegible]
36	West WALL 106			<6[illegible]	[illegible]
37	West WALL 106			<6[illegible]	[illegible]
38	West WALL 106			<6[illegible]	[illegible]
39	West WALL 106			<6[illegible]	[illegible]
40	West WALL 106			<6[illegible]	[illegible]
41	West WALL 106			<6[illegible]	[illegible]
42	West WALL 106			[illegible]	[illegible]
43	West WALL 106			[illegible]	[illegible]
44	West WALL 106			[illegible]	[illegible]

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LOG NUMBER Rwp 96-750-00[redacted]

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA	TOTAL BETA/GAMMA
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			[redacted]	<380
[redacted]	West WALL 106			[redacted]	[redacted]
[redacted]	West WALL 106			[redacted]	<380
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	405
[redacted]	West WALL 106			<60	408
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	417
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	<380
[redacted]	West WALL 106			<60	<380
60	West WALL 106			<60	<380
61	West WALL 106			<60	<380
62	West WALL 106	<18	<205	<60	654
63	West WALL 106	<18	<205	66	594
64	West WALL 106	<18	<205	<60	<380
65	West WALL 106			<60	<380
66	West WALL 106			<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA	TOTAL BETA/GAMMA
67	West WALL 106			<60	[redacted]
68	West WALL 106			<60	[redacted]
69	West WALL 106			[redacted]	[redacted]
70	West WALL 106			[redacted]	[redacted]
71	West WALL 106			[redacted]	[redacted]
72	West WALL 106			<60	[redacted]
73	West WALL 106			<60	[redacted]
74	West WALL 106			<60	[redacted]
75	West WALL 106	<18	<205	<60	[redacted]
76	West WALL 106	<18	<205	[redacted]	[redacted]
77	West WALL 106	<18	<205	[redacted]	[redacted]
78	West WALL 106			<60	[redacted]
79	West WALL 106			<60	[redacted]
80	West WALL 106			<60	[redacted]
81	West WALL 106			<60	[redacted]
82	West WALL 106			<60	[redacted]
83	West WALL 106			<60	[redacted]
84	West WALL 106			<60	[redacted]
85	West WALL 106			<60	[redacted]
86	West WALL 106			<60	[redacted]
87	West WALL 106			<60	[redacted]
88	West WALL 106	<18	<205	<60	[redacted]

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LOG NUMBER Rwp 96-750

RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA	TOTAL BETA/GAMMA
89	West WALL 106	<18	<205	<60	<380
90	West WALL 106	<18	<205	<60	<380
91	West WALL 106			<60	<380
92	West WALL 106			<60	<380
93	West WALL 106			<60	<380
94	West WALL 106			<60	<380
95	West WALL 106			<60	<380
96	West WALL 106			<60	<380
97	West WALL 106			<60	<380
98	West WALL 106			<60	<380
99	West WALL 106	<18	<205	<60	<380
100	West WALL 106	<18	<205	<60	450
101	West WALL 106	<18	<205	<60	<380
102	West WALL 106			<60	<380
103	West WALL 106			<60	<380
104	West WALL 106			<60	<380
105	West WALL 106			<60	<380
106	West WALL 106			<60	<380
107	West WALL 106			<60	<380
108	West WALL 106			<60	<380
109	West WALL 106			<60	<380
110	West WALL 106			<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA	TOTAL BETA/GAMMA
111	West WALL 106			<60	[illegible]
112	West WALL 106	<18	<205	<60	[illegible]
113	West WALL 106	<18	<205	<60	[illegible]
114	West WALL 106	<18	<205	<60	[illegible]
115	West WALL 106	<18	<205	<60	[illegible]
116	West WALL 106			78	[illegible]
117	West WALL 106			<60	[illegible]
118	West WALL 106			78	[illegible]
119	West WALL 106			60	[illegible]
120	West WALL 106			<60	[illegible]
121	West WALL 106			<60	[illegible]
122	West WALL 106			<60	[illegible]
123	West WALL 106			<60	[illegible]
124	West WALL 106			198	[illegible]
125	West WALL 106			<60	[illegible]
126	West WALL 106	<18	<205	<60	[illegible]
127	West WALL 106	<18	<205	<60	[illegible]
128	West WALL 106	<18	<205	<60	[illegible]
129	West WALL 106			<60	[illegible]
130	West WALL 106			<60	[illegible]
131	West WALL 106			78	[illegible]
132	West WALL 106			[illegible]	[illegible]

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg 889 Instrument Serial # 228125-2 Cal Date 06-12-96 Cal Due Date ~~10-25-96~~ 12-12-96

Batch ID West Wall Rm 106 First Half

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B030 XLD

Batch Ended 8/15/96 12 58

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 17
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 55
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	1	-0 488	2 93	<MDA	11 88	0.84	3 26	<MDA	14 96	1 00	-0.167	0 45	8/15/96 11:42
2	2	-0 488	2 93	<MDA	11.88	-1.03	2 67	<MDA	14 96	1.00	-0.167	-0 55	8/15/96 11:43
3	3	8 291	5 07	<AL	11.88	-1.03	2 67	<MDA	14.96	1 00	2.833	-0 55	8/15/96 11:44
4	4	-0 488	2 93	<MDA	11.88	-4.77	1 91	<MDA	14 96	1 00	-0 167	-2 55	8/15/96 11:45
5	5	2 438	2 93	<AL	11 88	2.71	3 76	<MDA	14.96	1 00	0 833	1 45	8/15/96 11:47
6	6	2 438	2 93	<AL	11 88	-0.84	3 26	<MDA	14.96	1.00	0 833	0 45	8/15/96 11:48
7	7	-0 488	2.93	<MDA	11.88	-1.03	2.67	<MDA	14.96	1 00	-0.167	-0 55	8/15/96 11:49
8	8	5 365	4 14	<AL	11.88	1.03	2 67	<MDA	14.96	1.00	1.833	-0 55	8/15/96 11:50
9	9	-0 488	2 93	<MDA	11.88	2.71	3 76	<MDA	14.96	1 00	-0 167	1 45	8/15/96 11:52
10	10	-0 488	2 93	<MDA	11.88	-2.90	1.91	<MDA	14.96	1.00	-0.167	-1 55	8/15/96 11:53
11	11	-0 488	2 93	<MDA	11.88	-2.90	1.91	<MDA	14.96	1.00	-0.167	-1 55	8/15/96 [illegible]
12	12	8 291	5 07	<AL	11.88	[illegible]	4.20	<MDA	14.96	1.00	2.833	2.45	8/15/96 [illegible]
13	13	-0 488	2.93	<MDA	11.88	[illegible]	4 20	<MDA	14.96	1.00	-0.167	2.45	8/15/96 [illegible]
14	14	2 438	2 93	<AL	11.88	4.58	4.20	<MDA	14.96	1.00	0.833	2 45	8/15/96 11:58
15	15	2 438	2.93	<AL	11.88	-1.03	2 67	<MDA	14.96	1.00	0.833	-0 55	8/15/96 11:59
16	16	-0 488	2 93	<MDA	11.88	4.58	4 20	<MDA	14.96	1 00	-0.167	2 45	8/15/96 12:00
17	17	-0 488	2 93	<MDA	11.88	-0.84	3 26	<MDA	14.96	1.00	-0.167	0.45	8/15/96 12:01
18	18	-0 488	2 93	<MDA	11.88	-4.77	1.91	<MDA	14 96	1.00	-0.167	-2.55	8/15/96 12:03
19	19	5 365	4.14	<AL	11 88	0.84	3 26	<MDA	14 96	1 00	1.833	0 45	8/15/96 12:04
20	20	2 438	2.93	<AL	11.88	0.84	3 26	<MDA	14.96	1.00	0.833	0.45	8/15/96 12:05
21	21	-0 488	2.93	<MDA	11.88	-2.90	1 91	<MDA	14.96	1.00	-0.167	-1 55	8/15/96 12:06
22	22	-0 488	2 93	<MDA	11 88	2.71	3 76	<MDA	14 96	1 00	-0.167	1 45	8/15/96 12:08
23	23	-0 488	2 93	<MDA	11.88	-2.90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12:09
24	24	-0 488	2 93	<MDA	11.88	-1.03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 12:10
25	25	-0 488	2 93	<MDA	11:88	2.71	3 76	<MDA	14 96	1 00	-0 167	1 45	8/15/96 12:11

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg 889 Instrument Serial # 228125-2 Cal Date 06-12-96 Cal Due Date 12-12-96 ~~10-25-96~~

Batch ID West Wall Rm 106 First Half

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B030 XLD

Batch Ended 8/15/96 12 58

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 17

Alpha Correction Factor 1 000

Beta efficiency log file: SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 2 55

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
26	26	2 438	2 93	<AL	11.88	-4.77	1 91	<MDA	14 96	1.00	0 833	-2 55	8/15/96 12:12
27	27	2 438	2 93	<AL	11 88	-1.03	2 67	<MDA	14 96	1.00	0 833	-0 55	8/15/96 12:1[illegible]
28	28	-0 488	2 93	<MDA	11 88	-1.03	2 67	<MDA	14 96	1 00	-0.167	-0 55	8/15/96 12:[illegible]
29	29	-0 488	2 93	<MDA	11 88	0.84	3 26	<MDA	14 96	1 00	-0.167	0 45	8/15/96 12:[illegible]
30	30	-0 488	2 93	<MDA	11.88	0 84	3 26	<MDA	14 96	1 00	-0.167	0 45	8/15/96 12:[illegible]
31	31	-0 488	2 93	<MDA	11 88	-4 77	1 91	<MDA	14 96	1 00	-0.167	-2 55	8/15/96 12:19
32	32	2 438	2 93	<AL	11 88	6 45	4 60	<AL	14 96	1 00	0 833	3 45	8/15/96 12:20
33	33	-0 488	2 93	<MDA	11 88	4 58	4 20	<MDA	14 96	1 00	-0 167	2 45	8/15/96 12.21
34	34	-0 488	2 93	<MDA	11 88	0.84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 12 22
35	35	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0.55	8/15/96 12:23
36	36	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 12 25
37	37	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12:26
38	38	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12 27
39	39	-0 488	2 93	<MDA	11 88	2 71	3 76	<MDA	14 96	1 00	-0 167	1 45	8/15/96 12:28
40	40	5 365	4 14	<AL	11 88	-1 03	2 67	<MDA	14 96	1 00	1 833	-0 55	8/15/96 12:29
41	41	-0 488	2 93	<MDA	11 88	2 71	3 76	<MDA	14 96	1.00	-0 167	1 45	8/15/96 12:31
42	42	-0 488	2 93	<MDA	11 88	0.84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 12.32
43	43	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 12 33
44	44	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12 34
45	45	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 12 36
46	46	-0 488	2 93	<MDA	11 88	6 45	4 60	<AL	14 96	1 00	-0 167	3 45	8/15/96 12 37
47	47	-0.488	2 93	<MDA	11 88	-4 77	1 91	<MDA	14 96	1 00	-0 167	-2 55	8/15/96 12:38
48	48	-0 488	2 93	<MDA	11 88	-4 77	1 91	<MDA	14 96	1 00	-0 167	-2 55	8/15/96 12.39
49	49	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12 41
50	50	5 365	4 14	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	1 833	0 45	8/15/96 12 42
51	51	2 438	2 93	<AL	11 88	2 71	3 76	<MDA	14 96	1 00	0 833	1 45	8/15/96 12 43
52	52	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 12 44
53	53	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12 45
54	54	2 438	2 93	<AL	11 88	4 58	4 20	<MDA	14 96	1 00	0 833	2 45	8/15/96 12:47

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** ~~10-12-96~~ 12-12-96

Batch ID West Wall Rm 106 First Half

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B030 XLD

Batch Ended 8/15/96 12 58

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 17
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 55
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
55	55	2 438	2 93	<AL	11 88	-1 03	2 67	<MDA	14 96	1 00	0 833	-0 55	8/15/96 12 48
56	56	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12 49
57	57	-0 488	2 93	<MDA	11 88	4 58	4 20	<MDA	14 96	1 00	-0 167	2 45	8/15/96 12 50
58	58	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 12.51
59	59	2 438	2 93	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	0 833	0 45	8/15/96 12.53
60	60	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 12 54
61	61	-0 488	2 93	<MDA	11 88	2 71	3 76	<MDA	14 96	1 00	-0 167	1 45	8/15/96 12 55
62	65	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 12 57
63	66	5 365	4 14	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	1 833	0 45	8/15/96 12 58

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg 889 Instrument Serial # 228125-2 Cal Date 06-12-96 Cal Due Date 12-12-96

Batch ID West Wall Rm 106 Second Half

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B031 XLD

Batch Ended 8/16/96 13 34

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	1 97
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	67	-0 390	2 93	<MDA	11 46	-3.68	1.90	<MDA	13 76	1 00	-0.133	-1 97	8/16/96 12:36
2	68	-0 390	2 93	<MDA	11 46	-3.68	1 90	<MDA	13 76	1.00	-0 133	-1 97	8/16/96 12:37
3	69	-0 390	2 93	<MDA	11 46	-1.81	1 90	<MDA	13 76	1.00	-0.133	-0 97	8/16/96 12:38
4	70	5 462	4.14	<AL	11 46	-1.81	1 90	<MDA	13 76	1.00	0.867	-0 97	8/16/96 12:39
5	71	-0 390	2 93	<MDA	11 46	0.06	2 67	<MDA	13 76	1 00	-0.133	0 03	8/16/96 12:41
6	72	-0 390	2 93	<MDA	11.46	0.06	2 67	<MDA	13 76	1 00	-0.133	0 03	8/16/96 12:42
7	73	-0 390	2 93	<MDA	11 46	1.93	3 26	<MDA	13 76	1.00	-0.133	1 03	8/16/96 12:43
8	74	-0 390	2 93	<MDA	11.46	0.06	2 67	<MDA	13 76	1 00	-0 133	0 03	8/16/96 12:44
9	78	-0 390	2 93	<MDA	11 46	0.06	2 67	<MDA	13 76	1 00	-0 133	0 03	8/16/96 12 46
10	79	-0 390	2 93	<MDA	11.46	0.06	2 67	<MDA	13 76	1.00	-0.133	0 03	8/16/96 12:47
11	80	-0 390	2 93	<MDA	11.46	-1.81	1 90	<MDA	13 76	1.00	-0.133	-0.97	8/16/96 12:48
12	81	-0 390	2 93	<MDA	11 46	1.93	3 26	<MDA	13 76	1.00	-0.133	1.03	8/16/96 12:49
13	82	-0 390	2.93	<MDA	11 46	1.93	3 26	<MDA	13 76	1.00	-0.133	1 03	8/16/96 12:50
14	83	-0 390	2 93	<MDA	11 46	5.67	4 20	<AL	13 76	1 00	-0.133	3 03	8/16/96 12:52
15	84	-0 390	2 93	<MDA	11 46	1.93	3 26	<MDA	13 76	1.00	-0.133	1 03	8/16/96 12:53
16	85	2 536	2.93	<AL	11 46	-3 68	1 90	<MDA	13 76	1 00	0.867	-1 97	8/16/96 12:54
17	86	-0 390	2 93	<MDA	11 46	-3.68	1 90	<MDA	13 76	1 00	-0.133	-1 97	8/16/96 12:55
18	87	-0 390	2 93	<MDA	11 46	1.93	3 26	<MDA	13 76	1 00	-0.133	1 03	8/16/96 12 57
19	91	-0 390	2 93	<MDA	11 46	0 06	2 67	<MDA	13 76	1 00	-0.133	0 03	8/16/96 12:58
20	92	-0.390	2 93	<MDA	11 46	0.06	2 67	<MDA	13 76	1 00	-0.133	0 03	8/16/96 12:59
21	93	-0 390	2 93	<MDA	11 46	1.93	3 26	<MDA	13 76	1 00	-0.133	1 03	8/16/96 13:00
22	94	2 536	2 93	<AL	11 46	1 93	3 26	<MDA	13 76	1 00	0 867	1 03	8/16/96 13:01
23	95	-0 390	2 93	<MDA	11 46	-1.81	1 90	<MDA	13 76	1 00	-0 133	-0 97	8/16/96 13:03
24	96	-0 390	2 93	<MDA	11 46	0 06	2 67	<MDA	13 76	1 00	-0 133	0 03	8/16/96 13:04
25	97	-0 390	2 93	<MDA	11 46	3.80	3 76	<MDA	13 76	1 00	-0 133	2 03	8/16/96 13 06

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

09 of 10

Bldg 889 Instrument Serial # 228125-2 **Cal Date** _____ **Cal Due Date** _____

Batch ID West Wall Rm 106 Second Half

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B031 XLD

Batch Ended 8/16/96 13 34

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 13

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 1 97

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
26	98	-0 390	2 93	<MDA	11 46	3 80	3 76	<MDA	13 76	1 00	-0 133	2 03	8/16/96 13 06
27	102	-0 390	2 93	<MDA	11 46	1 93	3 26	<MDA	13 76	1 00	-0 133	1 03	8/16/96 13 07
28	103	-0 390	2 93	<MDA	11 46	1 93	3 26	<MDA	13 76	1 00	-0 133	1 03	8/16/96 13 09
29	104	-0 390	2 93	<MDA	11 46	1 93	3 26	<MDA	13 76	1 00	-0 133	1 03	8/16/96 13 10
30	105	-0 390	2 93	<MDA	11 46	0 06	2 67	<MDA	13 76	1 00	-0 133	0 03	8/16/96 13 11
31	106	-0 390	2 93	<MDA	11 46	3 80	3 76	<MDA	13 76	1 00	-0 133	2 03	8/16/96 13 12
32	107	-0 390	2 93	<MDA	11 46	0 06	2 67	<MDA	13 76	1 00	-0 133	0 03	8/16/96 13 14
33	108	2 536	2 93	<AL	11 46	0 06	2 67	<MDA	13 76	1 00	0 867	0 03	8/16/96 13 15
34	109	-0 390	2 93	<MDA	11 46	7 54	4 59	<AL	13 76	1 00	-0 133	4 03	8/16/96 13 16
35	110	-0 390	2 93	<MDA	11 46	3 80	3 76	<MDA	13 76	1 00	-0 133	2 03	8/16/96 13 17
36	111	-0 390	2 93	<MDA	11 46	-1 81	1 90	<MDA	13 76	1 00	-0 133	-0 97	8/16/96 13 19
37	116	-0 390	2 93	<MDA	11 46	3 80	3 76	<MDA	13 76	1 00	-0 133	2 03	8/16/96 13 20
38	117	-0 390	2 93	<MDA	11 46	-3 68	1 90	<MDA	13 76	1 00	-0 133	-1 97	8/16/96 13 21
39	118	-0 390	2 93	<MDA	11 46	-1 81	1 90	<MDA	13 76	1 00	-0 133	-0 97	8/16/96 13 22
40	119	2 536	2 93	<AL	11 46	-1 81	1 90	<MDA	13 76	1 00	0 867	-0 97	8/16/96 13 23
41	120	-0 390	2 93	<MDA	11 46	0 06	2 67	<MDA	13 76	1.00	-0 133	0 03	8/16/96 13 25
42	121	-0 390	2 93	<MDA	11 46	1 93	3 26	<MDA	13 76	1 00	-0 133	1 03	8/16/96 13 26
43	122	-0 390	2 93	<MDA	11 46	-1 81	1 90	<MDA	13 76	1 00	-0 133	-0 97	8/16/96 13 27
44	123	-0 390	2 93	<MDA	11 46	0 06	2 67	<MDA	13 76	1 00	-0 133	0 03	8/16/96 13 28
45	124	-0 390	2 93	<MDA	11 46	-1 81	1 90	<MDA	13 76	1 00	-0 133	-0 97	8/16/96 13 30
46	125	-0 390	2 93	<MDA	11 46	3 80	3 76	<MDA	13 76	1 00	-0 133	2 03	8/16/96 13 31
47	129	-0 390	2 93	<MDA	11 46	0.06	2 67	<MDA	13 76	1 00	-0 133	0 03	8/16/96 13.32
48	130	-0 390	2 93	<MDA	11 46	3 80	3 76	<MDA	13 76	1 00	-0 133	2 03	8/16/96 13 33
49	131	2 536	2 93	<AL	11 46	3 80	3 76	<MDA	13 76	1 00	0 867	2 03	8/16/96 13 34

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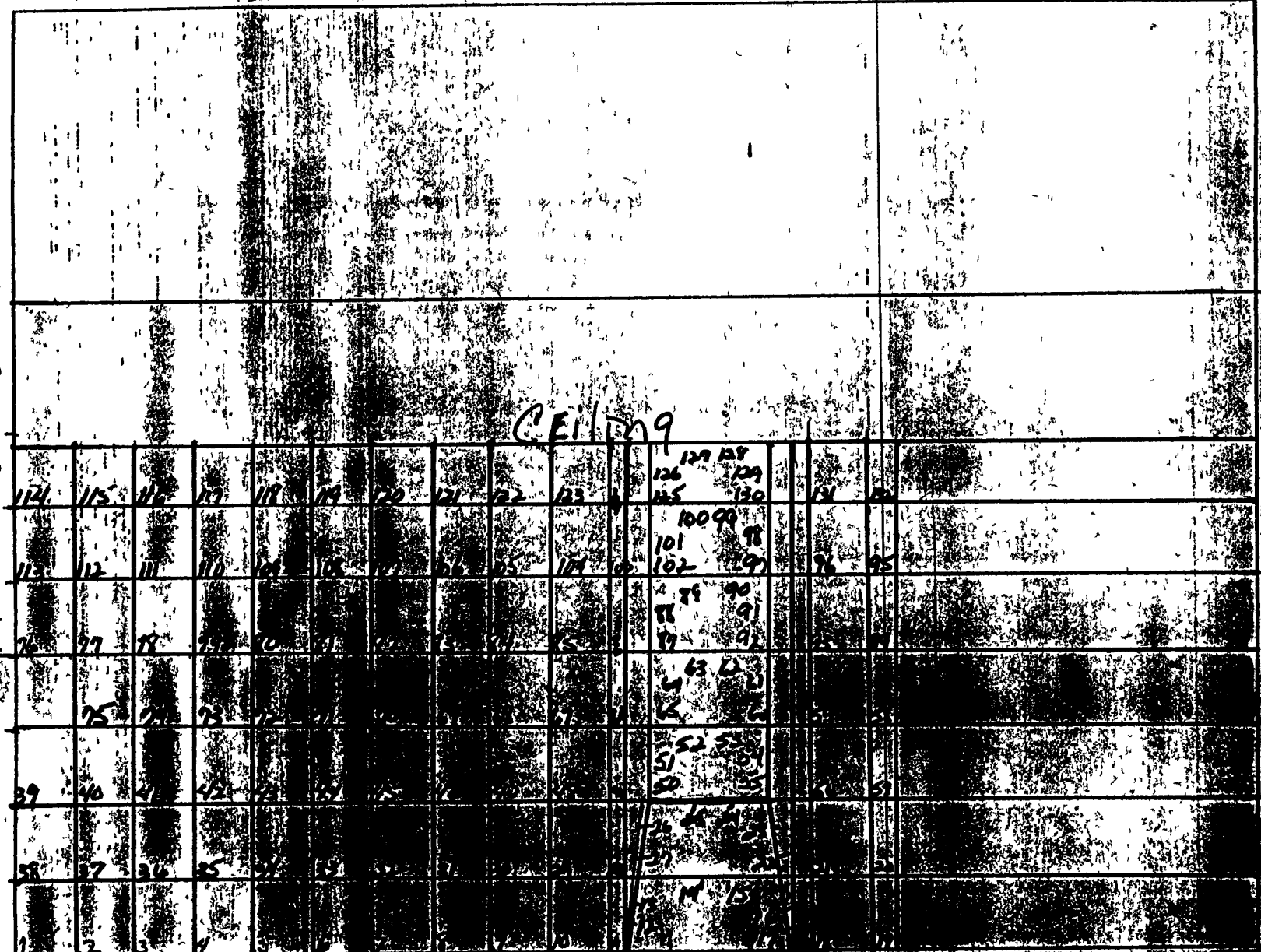
RADIOLOGICAL MONITORING Control No. _____

Area or Equipment Drawing Showing Survey Points



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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: RWP 96-950-0021

FOR: ____ P/WRE ____ PRL

____ RWP ____ OTHER

BUILDING/LOCATION: 889 | ROOM: 106

DATE: 08-20-96 | TIME: 1930

ITEM DESCRIPTION: Resurvey After decon West WAll Room 106

COMMENTS:

STATUS:
✓ RELEASABLE ____ NOT RELEASABLE
____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME): J. L. Johnston

[signature] [redacted] 08-20-96
RCT SIGNATURE EMP. # DATE

REVIEWED BY Teresa Johnston [signature] 8-22-96
RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.
MODEL.	S.A.C.-4	S.A.C.-4	S.A.C.-4
SERIAL #.	991	892	
CAL DATE	06-27-96	05-20-96	
CAL DUE DATE	12-27-96	11-20-96	

MFR.	EBER.	EBER.	EBER.
MODEL.	B.C.-4	B.C.-4	B.C.-4
SERIAL #.	389	393	
CAL DATE	07-03-96	07-03-96	
CAL DUE DATE	01-03-97	01-03-97	

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	BICRON	NE Technology	LUDLUM
MODEL	A-100	Electra	31
SERIAL #		1503	
CAL DATE		04-25-96	
CAL. DUE DATE.		10-25-96	
BACKGROUND		2.0α/695β	

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER. Rwp 96-750-001

PAGE 2 OF 3

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/60 SEC COUNT)	TOTAL BETA/GAMMA
124	WEST WALL	<18	<205	72	<380
131	WEST WALL	<18	<205	<60	1200
132	WEST WALL	<18	<205	<60	<380

08-20-96

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/60 SEC COUNT)	TOTAL BETA/GAMMA

133

Resurvey After Decon

LOG / SURVEY NUMBER Rwp 96-750 005A

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM SQ)

SWIP #'S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/ GAMMA
12	West wall Rm 106	<18	<205	90	453
15	West wall Rm 106	<18	<205	90	2634

SURVEY RESULTS (DPM/100 CM SQ)

SWIP #'S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/ GAMMA

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RADIOLOGICAL CONTAMINATION SURVEY FORM

7 of 8/22/96

LOG NUMBER RWP # 96-750-0021

FOR ___ P/WRE ___ PRL

X RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM 106

DATE 7/27/96 | TIME 0830

ITEM DESCRIPTION

South Wall Rm # 106

Fixed & Removable Contamination Survey

COMMENTS

STATUS

___ RELEASABLE ___ NOT RELEASABLE

✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME) J.L. Johnston

[redacted] 07-27-96

RCT SIGNATURE DATE

Teresa Johnston

REVIEWED BY Teresa Johnston 7-29-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER	EBER	[illegible]	TENNELEC
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB-5100
SERIAL #				28125-2
CAL DATE				6/12/96
CAL DUE DATE				12/12/96

MFR	EBER	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	N.E. TECH.	LUDLUM	
MODEL	A-100	ELECTRA	31	
SERIAL #		1569		
CAL DATE		6/18/96		
CAL DUE DATE		12/18/96		
BACKGROUND		α ≤ 20 β ≤ 700		

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER [illegible]

PAGE 2 OF 7

JH 8/22/96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Rm 106 SWALL			<60	<350
2	Rm 106 SWALL			<60	<350
3	Rm 106 SWALL			<60	<350
4	Rm 106 SWALL			<60	<350
5	Rm 106 SWALL			<60	<350
6	Rm 106 SWALL			<60	<350
7	Rm 106 SWALL			<60	<350
8	Rm 106 SWALL			<60	<350
9	Rm 106 SWALL			<60	<350
10	Rm 106 SWALL			<60	<350
11	Rm 106 SWALL			<60	<350
12	Rm 106 SWALL			<60	<350
13	Rm 106 SWALL			<60	<350
14	Rm 106 SWALL			<60	<350
15	Rm 106 SWALL			<60	<350
16	Rm 106 SWALL			<60	<350
17	Rm 106 SWALL			<60	<350
18	Rm 106 SWALL			<60	<350
19	Rm 106 SWALL			<60	<350
20	Rm 106 SWALL			<60	<350
21	Rm 106 SWALL			<60	<350
22	Rm 106 SWALL			<60	<350

8-22-96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
23	Rm 106 SWALL			<60	<350
24	Rm 106 SWALL			<60	<350
25	Rm 106 SWALL			<60	<350
26	Rm 106 SWALL			<60	<350
27	Rm 106 SWALL			<60	<350
28	Rm 106 SWALL			<60	<350
29	Rm 106 SWALL			<60	<350
30	Rm 106 SWALL			<60	<350
31	Rm 106 SWALL			<60	<350
32	Rm 106 SWALL			<60	<350
33	Rm 106 SWALL			<60	<350
34	Rm 106 SWALL			<60	<350
35	Rm 106 SWALL			<60	<350
36	Rm 106 SWALL			<60	<350
37	Rm 106 SWALL			<60	<350
38	Rm 106 SWALL			<60	<350
39	Rm 106 SWALL			<60	<350
40	Rm 106 SWALL			<60	<350
41	Rm 106 SWALL			<60	<350
42	Rm 106 SWALL			<60	<350
43	Rm 106 SWALL			<60	<350
44	Rm 106 SWALL			<60	<350

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER [illegible]

PAGE [illegible] OF [illegible] 7

8/22/96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/AD SEC COUNT)	TOTAL BETA/GAMMA
45	Rm 106 SWALL			<60	<380
46	Rm 106 SWALL			<60	<380
47	Rm 106 SWALL			<60	<380
48	Rm 106 SWALL			<60	<380
49	Rm 106 SWALL			<60	<380
50	Rm 106 SWALL			<60	<380
51	Rm 106 SWALL			<60	<380
52	Rm 106 SWALL			<60	<380
53	Rm 106 SWALL			<60	<380
54	Rm 106 SWALL			<60	<380
55	Rm 106 SWALL			<60	<380
56	Rm 106 SWALL			<60	<380
57	Rm 106 SWALL			<60	<380
58	Rm 106 SWALL			<60	<380
59	Rm 106 SWALL			<60	<380
60	Rm 106 SWALL			<60	<380
61	Rm 106 SWALL			<60	<380
62	Rm 106 SWALL			<60	<380
63	Rm 106 SWALL			<60	<380
64	Rm 106 SWALL			<60	<380
	0727 96 [illegible]				

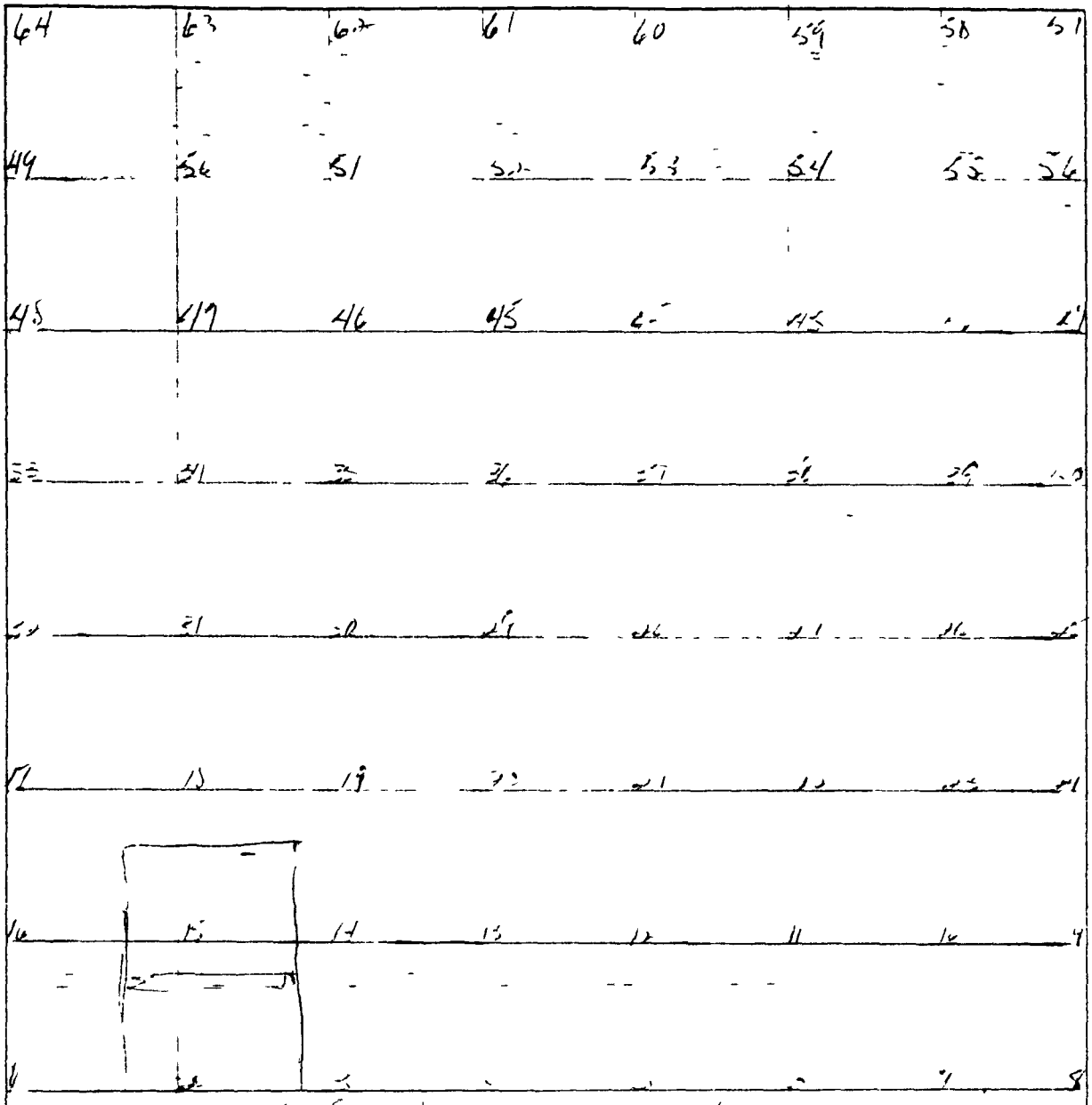
SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/AD SEC COUNT)	TOTAL BETA/GAMMA

Pg 4 of 4 JA 8/22/96

RADIOLOGICAL MONITORING Control No RWP96-750-00[illegible]

Area or Equipment Drawing Showing Survey Points



[illegible] South wall

[illegible]

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID RM 106 S WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1E002 XLD

Batch Ended 7/27/96 16 03

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 13
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 45
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity								
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date	Time
49	1	0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	14 46
50	2	0 390	2 93	<MDA	11 46	2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	14 48
51	3	0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96	14 49
52	4	2 536	2 93	<AL	11 46	2 71	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96	14 50
53	5	0 390	2 93	<MDA	11 46	2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	14 51
54	6	0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96	14 52
55	7	0 390	2 93	<MDA	11 46	4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96	14 54
56	8	0 390	2 93	<MDA	11 46	2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	14 55
57	9	0 390	2 93	<MDA	11 46	2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	14 56
58	10	0 390	2 93	<MDA	11 46	0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	14 57
59	11	2 536	2 93	<AL	11 46	0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96	14 59
60	12	0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	0 133	3 55	7/27/96	15 00
61	13	0 390	2 93	<MDA	11 46	2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	15 01
62	14	0 390	2 93	<MDA	11 46	4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96	15 02
63	15	0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96	15 04
64	16	0 390	2 93	<MDA	11 46	2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	15 05
65	17	0 390	2 93	<MDA	11 46	2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	15 06
66	18	0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	15 07
67	19	0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	15 08
68	20	2 536	2 93	<AL	11 46	0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96	15 10
69	21	0 390	2 93	<MDA	11 46	4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96	15 11
70	22	5 462	4 14	<AL	11 46	0 84	2 67	<MDA	14 77	1 00	1 867	0 45	7/27/96	15 12
71	23	0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96	15 13
72	24	0 390	2 93	<MDA	11 46	0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	15 14
73	25	2 536	2 93	<AL	11 46	2 71	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96	15 16

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Page 7

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06 12 96 **Cal Due Date** 1- 12 96

Batch ID RM 106 S WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1E002 XLD

Batch Ended 7/27/96 16 03

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
74	26	**2 536**	2 93	<AL	11 46	**2 90**	3 76	<MDA	14 77	1 00	0 867	1 55	7/27/96 15 17
75	27	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 15 18
76	28	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 15 19
77	29	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 15 21
78	30	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 15 22
79	31	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 15 23
80	32	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 15 24
81	33	**0 390**	2 93	<MDA	11 46	**4 77**	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 15 25
82	34	**2 536**	2 93	<AL	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96 15 27
83	35	**0 390**	2 93	<MDA	11 46	**4 58**	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 15 28
84	36	**2 536**	2 93	<AL	11 46	**4 58**	1 91	<MDA	14 77	1 00	0 867	2 45	7/27/96 15 29
85	37	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 15 30
86	38	**0 390**	2 93	<MDA	11 46	**4 58**	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 15 32
87	39	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 15 33
88	40	**5 462**	4 14	<AL	11 46	**2 71**	1 91	<MDA	14 77	1 00	1 867	1 45	7/27/96 15 34
89	41	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 15 35
90	42	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 15 37
91	43	**2 536**	2 93	<AL	11 46	**6 64**	4 60	<AL	14 77	1 00	0 867	3 55	7/27/96 15 38
92	44	**2 536**	2 93	<AL	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96 15 39
93	45	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 15 40
94	46	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 15 41
95	47	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 15 43
96	48	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 15 44
97	49	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 15 45
98	50	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 15 46
99	51	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 15 47
100	52	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 15 49
1	53	**2 536**	2 93	<AL	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 15 50
2	54	**-0 390**	2 93	<MDA	11 46	**6 64**	4 60	<AL	14 77	1 00	0 133	3 55	7/27/96 15 51

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Page 7

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06 12 96 **Cal Due Date** 12-12-96

Batch ID RM 106 S WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1E002 XLD

Batch Ended 7/27/96 16 03

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
3	55	**0 390**	2 93	<MDA	11 46	**2 90**	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96	15 52
4	56	**2 536**	2 93	<AL	11 46	**4 77**	4 20	<MDA	14 77	1 00	0 867	2 55	7/27/96	15 54
5	57	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	15 55
6	58	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	15 56
7	59	**0 390**	2 93	<MDA	11 46	**2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	15 57
8	60	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	15 58
9	61	**0 390**	2 93	<MDA	11 46	**4 58**	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96	16 00
10	62	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	16 01
11	63	**0 390**	2 93	<MDA	11 46	**0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	16 02
12	64	**0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	16 03

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RADIOLOGICAL CONTAMINATION SURVEY FORM

[illegible] NUMBER: RWP 96-750-0021	
FOR: ___ P/WRE ___ PRI	
___ RWP ✓ OTHER Baseline	
BUILDING/LOCATION: 889/NorthWall	ROOM: 106
DATE: 8-14-96	TIME: 1500
ITEM DESCRIPTION: Baseline North Wall	
COMMENTS:	
STATUS: ✓ RELEASABLE ___ NOT RELEASABLE	
✓ POSTED ___ NOT POSTED	
PERFORMED BY (PRINT NAME): J. L. Johnston	
[signature] [redacted] / 08-14-96	
RCT SIGNATURE	DATE

Teresa Johnston

REVIEWED BY: [signature] / 8-22-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR:	EBER.	EBER.	EBER.	Tennelec
MODEL.	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB 5100
SERIAL #				28125-2
CAL DATE				6-12-96
CAL DUE DATE.				12-12-96

MFR.	EBER.	EBER.	EBER.	
MODEL.	B.C.-4	B.C.-4	B.C.-4	
SERIAL #.				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR:	BICRON	NE Technology	LUDLUM	NE Technology
MODEL	A-100	Electra	31	Electra
SERIAL #		1503		1520
CAL. DATE		4-25-96		6-6-96
CAL DUE DATE		10-25-96		12-6-96
BACKGROUND		✓ 0.0 B 431		✓ 2.0 B 542

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LOG NUMBER 96 750-0021

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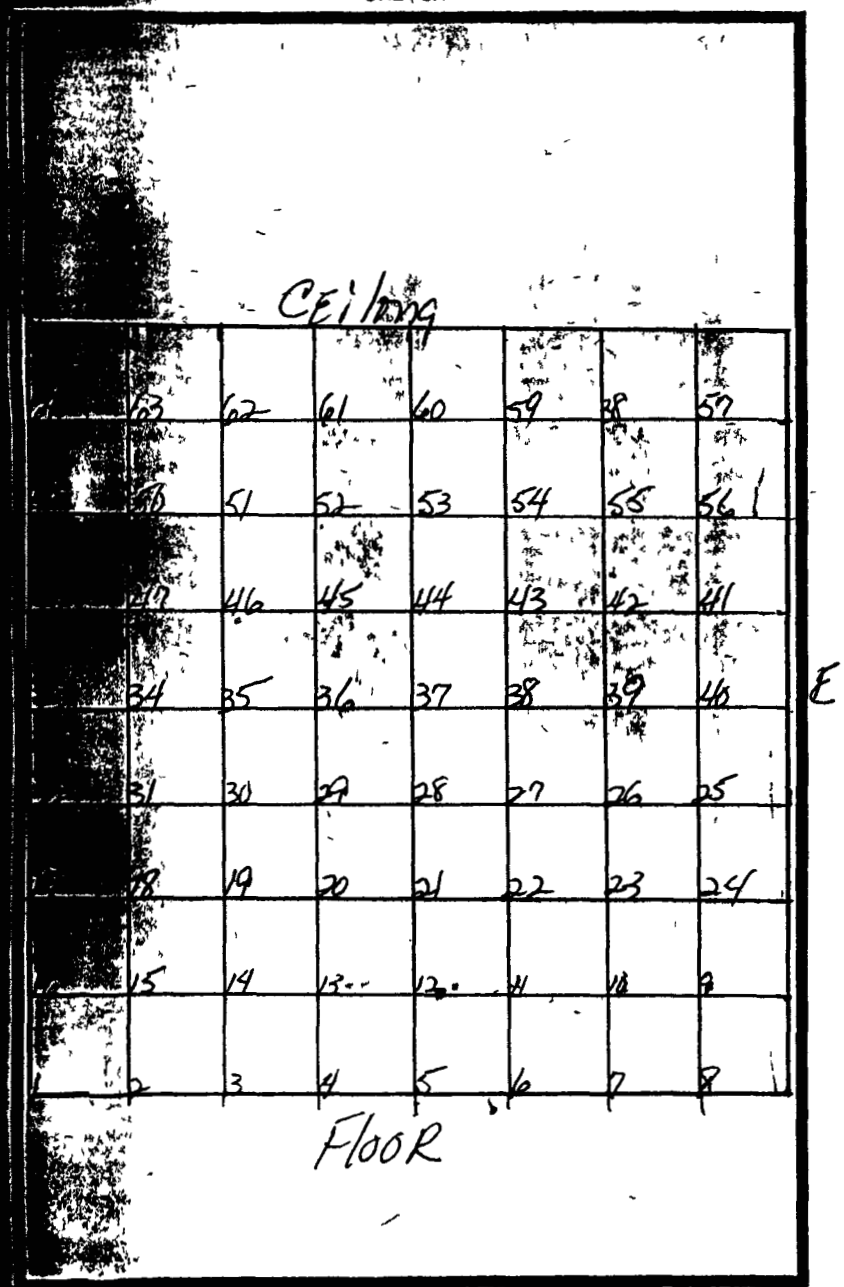
RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	North WALL Rm 106			<60	1506
2	North WALL Rm 106			<60	<380
3	North WALL Rm 106			<60	<380
4	North WALL Rm 106			<60	<380
5	North WALL Rm 106			<60	514
6	North WALL Rm 106			<60	<380
7	North WALL Rm 106			<60	<380
8	North WALL Rm 106			<60	<380
9	North WALL Rm 106			<60	396
10	North WALL Rm 106			<60	<380
11	North WALL Rm 106			<60	<380
12	North WALL Rm 106			<60	<380
13	North WALL Rm 106			<60	<380
14	North WALL Rm 106			<60	<380
15	North WALL Rm 106			<60	<380
16	North WALL Rm 106			<60	<380
17	North WALL Rm 106			<60	<380
18	North WALL Rm 106			<60	<380
19	North WALL Rm 106			<60	<380
20	North WALL Rm 106			<60	<380
21	North WALL Rm 106			<60	<380
22	North WALL Rm 106			<60	<380

08-14-96

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER Rwp 96-250-0021

PAGE 3 OF 6

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/60 SEC COUNT)	TOTAL BETA/GAMMA
23	North WALL Rm106			<60	<380
24	North WALL Rm106			<60	<380
25	North WALL Rm106			<60	<380
26	North WALL Rm106			<60	<380
27	North WALL Rm106			<60	<380
28	North WALL Rm106			<60	<380
29	North WALL Rm106			<60	<380
30	North WALL Rm106			<60	<380
31	North WALL Rm106			<60	<380
32	North WALL Rm106			<60	<380
33	North WALL Rm106			<60	<380
34	North WALL Rm106			<60	<380
35	North WALL Rm106			<60	<380
36	North WALL Rm106			<60	<380
37	North WALL Rm106			<60	<380
38	North WALL Rm106			<60	<380
39	North WALL Rm106			<60	<380
40	North WALL Rm106			<60	<380
41	North WALL Rm106			<60	<380
42	North WALL Rm106			<60	<380
43	North WALL Rm106			<60	<380
44	North WALL Rm106			<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/60 SEC COUNT)	TOTAL BETA/GAMMA
45	North WALL Rm106			<60	<380
46	North WALL Rm106			<60	<380
47	North WALL Rm106			<60	<380
48	North WALL Rm106			<60	<380
49	North WALL Rm106			<60	<380
50	North WALL Rm106			<60	<380
51	North WALL Rm106			<60	<380
52	North WALL Rm106			<60	<380
53	North WALL Rm106			<60	<380
54	North WALL Rm106			<60	<380
55	North WALL Rm106			<60	<380
56	North WALL Rm106			<60	<380
57	North WALL Rm106			<60	<380
58	North WALL Rm106			<60	<380
59	North WALL Rm106			<60	<380
60	North WALL Rm106			<60	<380
61	North WALL Rm106			<60	<380
62	North WALL Rm106			<60	<380
63	North WALL Rm106			<60	<380
64	North WALL Rm106			<60	<380
	08-14-96 [illegible]				

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg. 889 Instrument Serial #: 228125-2 Cal Date: 6-12-96 Cal Due Date 12-12-96
Batch ID: North Wall Rm 106
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\ONE1A098.XLD
Batch Ended: 8/15/96 11 00
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 1000
Certainty level for MDA and flags: 95%
High Voltage Setting: 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 17
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 55
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	1	-0.488	2 93	<MDA	11 88	-2 90	1.91	<MDA	14.96	1 00	-0 167	-1 55	8/15/96 9 43
2	2	-0 488	2 93	<MDA	11.88	0 84	3 26	<MDA	14.96	1 00	-0 167	0 45	8/15/96 9 44
3	3	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 9 45
4	4	2 438	2 93	<AL	11 88	2 71	3 76	<MDA	14 96	1 00	0 833	1 45	8/15/96 9 47
5	5	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 9 48
6	6	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 9 49
7	7	5 365	4 14	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	1 833	0 45	8/15/96 9 50
8	8	-0 488	2 93	<MDA	11 88	4 58	4 20	<MDA	14 96	1.00	-0 167	2 45	8/15/96 9 52
9	9	2 438	2 93	<AL	11 88	-4 77	1 91	<MDA	14.96	1 00	0 833	-2 55	8/15/96 9 53
10	10	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 9 54
11	11	-0 488	2 93	<MDA	11 88	-1 03	2.67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 9 55
12	12	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14.96	1 00	-0 167	-0 55	8/15/96 9 57
13	13	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 9 58
14	14	2 438	2 93	<AL	11 88	-4 77	1 91	<MDA	14 96	1 00	0 833	-2 55	8/15/96 9 59
15	15	2 438	2 93	<AL	11 88	4 58	4 20	<MDA	14 96	1 00	0 833	2 45	8/15/96 10 00
16	16	-0.488	2 93	<MDA	11 88	4 58	4 20	<MDA	14 96	1 00	-0 167	2 45	8/15/96 10 01
17	17	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 03
18	18	2 438	2 93	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	0 833	0 45	8/15/96 10 04
19	19	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 05
20	20	-0 488	2 93	<MDA	11 88	-4 77	1 91	<MDA	14 96	1 00	-0 167	-2 55	8/15/96 10 06
21	21	-0 488	2 93	<MDA	11 88	4 58	4 20	<MDA	14 96	1 00	-0 167	2 45	8/15/96 10 07
22	22	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 10 09
23	23	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 10 10
24	24	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 10 11
25	25	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 12

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

2 of 6

Bldg 889 Instrument Serial # 228125-2 Cal Date 6-12-96 Cal Due Date 12-12-96
Batch ID North Wall Rm 106
Counting Unit id. 1
Data file name C \LBXL\UNIT1\ONE1A098 XLD
Batch Ended 8/15/96 11.00
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 17
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 55
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
26	26	-0 488	2 93	<MDA	11 88	4 58	4 20	<MDA	14 96	1 00	-0 167	2 45	8/15/96 10 14
27	27	-0 488	2 93	<MDA	11 88	4 58	4 20	<MDA	14 96	1 00	-0 167	2 45	8/15/96 10 15
28	28	-0 488	2 93	<MDA	11 88	2 71	3 76	<MDA	14 96	1 00	-0 167	1 45	8/15/96 10 16
29	29	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 10 17
30	30	2 438	2 93	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	0 833	0 45	8/15/96 10.18
31	31	-0 488	2.93	<MDA	11 88	2 71	3.76	<MDA	14 96	1 00	-0 167	1 45	8/15/96 10 20
32	32	-0 488	2 93	<MDA	11 88	2 71	3 76	<MDA	14.96	1 00	-0 167	1 45	8/15/96 10 21
33	33	-0 488	2 93	<MDA	11.88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 22
34	34	-0 488	2,93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 10 23
35	35	-0.488	2 93	<MDA	11 88	0 84	3 26	<MDA	14.96	1 00	-0 167	0 45	8/15/96 10 25
36	36	-0 488	2 93	<MDA	11 88	-4 77	1 91	<MDA	14.96	1 00	-0 167	-2 55	8/15/96 10 26
37	37	-0.488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0.167	-1 55	8/15/96 10 27
38	38	8 291	5 07	<AL	11 88	0 84	3 26	<MDA	14.96	1 00	2 833	0 45	8/15/96 10 28
39	39	2 438	2 93	<AL	11 88	-1 03	2 67	<MDA	14.96	1.00	0 833	-0 55	8/15/96 10 30
40	40	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA-	14 96	1 00	-0 167	-0 55	8/15/96 10 31
41	41	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 32
42	42	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 10.33
43	43	-0.488	2.93	<MDA	11.88	-2 90	1.91	<MDA	14.96	1 00	-0 167	-1 55	8/15/96 10 34
44	44	-0.488	2.93	<MDA	11.88	-2.90	1.91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 10.36
45	45	2.438	2.93	<AL	11.88	-2 90	1.91	<MDA	14.96	1 00	0 833	-1 55	8/15/96 10·37
46	46	-0.488	2.93	<MDA	11.88	-1 03	2 67	<MDA	14.96	1.00	-0 167	-0 55	8/15/96 10 38
47	47	-0.488	2.93	<MDA	11.88	-1 03	2.67	<MDA	14.96	1.00	-0 167	-0 55	8/15/96 10 39
48	48	-0.488	2.93	<MDA	11.88	-2 90	1.91	<MDA	14.96	1.00	-0 167	-1 55	8/15/96 10.40
49	49	-0.488	2.93	<MDA	11.88	0 84	3.26	<MDA	14.96	1.00	-0 167	0 45	8/15/96 10 42
50	50	-0.488	2.93	<MDA	11.88	6.45	4.60	<AL	14.96	1.00	-0 167	3 45	8/15/96 10.43
51	51	2.438	2.93	<AL	11.88	2 71	3 76	<MDA	14.96	1.00	0 833	1 45	8/15/96 10 44
52	52	-0.488	2.93	<MDA	11.88	2 71	3 76	<MDA	14.96	1.00	-0 167	1 45	8/15/96 10.45
53	53	2.438	2.93	<AL	11 88	-2 90	1 91	<MDA	14.96	1.00	0 833	-1 55	8/15/96 10.47
54	54	-0.488	2.93	<MDA	11.88	-2 90	1 91	<MDA	14.96	1 00	-0 167	-1 55	8/15/96 10·48

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg. 889 Instrument Serial # 228125-2 Cal Date 6-12-96 Cal Due Date 12-12-96
Batch ID North Wall Rm 106
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1A098 XLD
Batch Ended 8/15/96 11 00
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 17
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 55
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
55	55	2 438	2 93	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	0 833	0 45	8/15/96 10 49
56	56	2 438	2 93	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	0 833	0 45	8/15/96 10 50
57	57	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 10 52
58	58	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 53
59	59	-0 488	2 93	<MDA	11 88	-2 90	1 91	<MDA	14 96	1 00	-0 167	-1 55	8/15/96 10 54
60	60	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 55
61	61	-0 488	2 93	<MDA	11 88	0 84	3 26	<MDA	14 96	1 00	-0 167	0 45	8/15/96 10 56
62	62	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 58
63	63	-0 488	2 93	<MDA	11 88	-1 03	2 67	<MDA	14 96	1 00	-0 167	-0 55	8/15/96 10 59
64	64	2 438	2 93	<AL	11 88	0 84	3 26	<MDA	14 96	1 00	0 833	0 45	8/15/96 11 00

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: Rwp 96-750-0021

FOR: ___ P/WRE ___ PRL

___ RWP ✓ OTHER BASELINE

BUILDING/LOCATION: 889 | ROOM: 106

DATE: 8-6-96 | TIME: 1510

ITEM DESCRIPTION BASELINE SURVEY OF BLD. 889 ROOM 106 CEILING, SUSPE LOCATIONS #1 THRU #103

COMMENTS:

STATUS: ✓ RELEASABLE ___ NOT RELEASABLE

___ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME): Munoz J.L. Johnston

[signature] [redacted] 8-22-96

RCT SIGNATURE DATE

REVIEWED BY: [signature] 8-22-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER	EBER	EBER	TENELEC
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LBS100W
SERIAL #	991	892		28125-2
CAL DATE	06-27-96	05-20-96		6-12-96
CAL DUE DATE	12-27-96	11-20-96		12-12-96

MFR	EBER.	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	389	393		
CAL DATE	07-03-96	07-03-96		
CAL. DUE DATE	01-03-97	01-03-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	BICRON	NET Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #.		1427		
CAL. DATE		04-29-96		
CAL. DUE DATE		10-29-96		
BACKGROUND.		2.00 ~~965 BH~~ 1669 B		

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LOG NUMBER RWP 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/49 SEC COUNT)	TOTAL BETA/GAMMA
	CEILING Rm 106			<60	<380
2	CEILING Rm 106			<60	<380
3	CEILING Rm 106			<60	<380
4	CEILING Rm 106			<60	<380
5	CEILING Rm 106			<60	501
6	CEILING Rm 106			<60	<380
7	CEILING Rm 106			<60	627
8	CEILING Rm 106			<60	684
9	CEILING Rm 106			<60	480
10	CEILING Rm 106			<60	554
11	CEILING Rm 106			<60	390
12	CEILING Rm 106			<60	516
13	CEILING Rm 106			<60	471
14	CEILING Rm 106			<60	477
15	CEILING Rm 106			<60	<380
16	CEILING Rm 106			<60	<380
17	CEILING Rm 106			<60	533
18	CEILING Rm 106			<60	465
19	CEILING Rm 106			<60	435
20	CEILING Rm 106			<60	<380
21	CEILING Rm 106			<60	<380
22	CEILING Rm 106			<60	606

SURVEY RESULTS (DPM/100 CM²)

RWP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/49 SEC COUNT)	TOTAL BETA/GAMMA
23	CEILING Rm 106			<60	<380
24	CEILING Rm 106			<60	<380
25	CEILING Rm 106			<60	<380
26	CEILING Rm 106			<60	<380
27	CEILING Rm 106			<60	<380
28	CEILING Rm 106			<60	<380
29	CEILING Rm 106			<60	<380
30	CEILING Rm 106			<60	<380
31	CEILING Rm 106			<60	480
32	CEILING Rm 106			<60	504
33	CEILING Rm 106			<60	501
34	CEILING Rm 106			<60	<380
35	CEILING Rm 106			<60	<380
36	CEILING Rm 106			<60	504
37	CEILING Rm 106			<60	<380
38	CEILING Rm 106			<60	384
39	CEILING Rm 106			<60	<380
40	CEILING Rm 106			<60	426
41	CEILING Rm 106			<60	666
42	CEILING Rm 106			<60	504
43	CEILING Rm 106			<60	<380
44	CEILING Rm 106			<60	<380

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RP96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
[illegible]	CEILING Rm 106			<60	444
[illegible]	CEILING Rm 106			<60	498
[illegible]	CEILING Rm 106			<60	564
[illegible]	CEILING Rm 106			<60	528
[illegible]	CEILING Rm 106			<60	636
[illegible]	CEILING Rm 106			<60	510
[illegible]	CEILING Rm 106			<60	426
[illegible]	CEILING Rm 106			<60	~~288~~
[illegible]	CEILING Rm 106			<60	606
[illegible]	CEILING Rm 106			<60	558
[illegible]	CEILING Rm 106			<60	912
[illegible]	CEILING Rm 106			<60	588
[illegible]	CEILING Rm 106			<60	480
[illegible]	CEILING Rm 106			<60	630
[illegible]	CEILING Rm 106			<60	438
[illegible]	CEILING Rm 106			<60	570
[illegible]	CEILING Rm 106			<60	414
[illegible]	CEILING Rm 106			<60	<380
[illegible]	CEILING Rm 106			<60	480
[illegible]	CEILING Rm 106			~~<60~~ <60	<380
[illegible]	CEILING Rm 106			<60	633
[illegible]	CEILING Rm 106			<60	612

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
67	CEILING Rm 106			<60	732
68	CEILING Rm 106			60	714
69	CEILING Rm 106			<60	918
70	CEILING Rm 106			<60	510
71	CEILING Rm 106			<60	936
72	CEILING Rm 106			<60	492
73	CEILING Rm 106			<60	[illegible]
74	CEILING Rm 106			<60	558
75	CEILING Rm 106			<60	822
76	CEILING Rm 106			<60	[illegible]
77	CEILING Rm 106			<60	[illegible]
78	CEILING Rm 106			<60	[illegible]
79	CEILING Rm 106			<60	582
80	CEILING Rm 106			<60	534
81	CEILING Rm 106			<60	570
82	CEILING Rm 106			<60	570
83	CEILING Rm 106			<60	588
84	CEILING Rm 106			<60	654
85	CEILING Rm 106			<60	576
86	CEILING Rm 106			<60	<380
87	CEILING Rm 106			<60	708
88	CEILING Rm 106			<60	458

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
[illegible]	CEILING Rm 106			<60	438
[illegible]	CEILING Rm 106			<60	384
91	CEILING Rm 106			<60	636
92	CEILING Rm 106			<60	504
[illegible]	CEILING Rm 106			<60	444
[illegible]	CEILING Rm 106			<60	474
95	CEILING Rm 106			<60	654
96	CEILING Rm 106			<60	534
97	CEILING Rm 106			<60	630
98	CEILING Rm 106			<60	678
[illegible]	CEILING Rm 106			<60	456
[illegible]	CEILING Rm 106			<60	396
[illegible]	CEILING Rm 106			<60	390
102	CEILING Rm 106			<60	564
103	CEILING Rm 106			<60	558
[illegible]	Ceiling Rm 106	<18	<205	<60	<380
[illegible]	Ceiling Rm 106	<18	<205	<60	528
[illegible]	Ceiling Rm 106	<18	<205	<60	552
[illegible]	Ceiling Rm 106	<18	<205	<60	594
[illegible]	Ceiling Rm 106	<18	<205	<60	492
[illegible]	Ceiling Rm 106	<18	<205	<60	432
[illegible]	Ceiling Rm 106	<18	<205	<60	696

08-22-96

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
111	Ceiling Rm 106	<18	<205	<60	402
112	Ceiling Rm 106	<18	<205	<60	<380
113	Ceiling Rm 106	<18	<205	<60	<380
114	Ceiling Rm 106	<18	<205	<60	<380
115	Ceiling Rm 106	<18	<205	<60	<380
116	Ceiling Rm 106	<18	<205	<60	<380
117	Ceiling Rm 106	<18	<205	<60	<380
118	Ceiling Rm 106	<18	<205	<60	<380
119	Ceiling Rm 106	<18	<205	<60	<380
120	Ceiling Rm 106	<18	<205	<60	<380
121	Ceiling Rm 106	<18	<205	<60	<380
122	Ceiling Rm 106	<18	<205	<60	<380
123	Ceiling Rm 106	<18	<205	<60	<380
124	Ceiling Rm 106	<18	<205	<60	<380
125	Ceiling Rm 106	<18	<205	<60	<380
126	Ceiling Rm 106	<18	<205	<60	<380
127	Ceiling Rm 106	<18	<205	<60	<380
128	Ceiling Rm 106	<18	<205	<60	<380
129	Ceiling Rm 106	<18	<205	<60	<380
130	Ceiling Rm 106	<18	<205	<60	<380
131	Ceiling Rm 106	<18	<205	<60	<380
132	Ceiling Rm 106	<18	<205	<60	<380

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM SQ)

SWIP #'S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/GAMMA
	Ceiling Rm106	<18	<205	<60	<380
	Ceiling Rm106	<18	<205	<60	<380
	Ceiling Rm106	<18	<205	<60	<380

08-22-96 [illegible]

SURVEY RESULTS (DPM/100 CM SQ)

SWIP #'S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/GAMMA

08-22-96 [illegible]

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RADIOLOGICAL CONTAMINATION SURVEY FORM

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SURVEY RESULTS (DPM/100 CM SQ)

SWIP #'S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/ GAMMA
50	Ceiling 106	<18	<205		
51	Ceiling Rm106	<18	<205		
52	Ceiling Rm106	<18	<205		
53	Ceiling Rm106	<18	<205		
54	Ceiling Rm106	<18	<205		
55	Ceiling Rm106	<18	<205		

08-22-96

SURVEY RESULTS (DPM/100 CM SQ)

SWIP #'S	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK / 60 SEC COUNT)	TOTAL BETA/ GAMMA

08-22-96

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg. 889 Instrument Serial #: 228125-2 Cal Date: 6-12-96 Cal Due Date 12-12-96

Batch ID: 889 RM 106 [illegible] KIA

Counting Unit: [illegible]

Data file name: C:\LBX\INIT1\ONE1A093.XLD

Batch Ended: [illegible]

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20

Beta activity action level (DPM): 1000

Certainty level for MDA and flags: 95%

High Voltage Setting: 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 37
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 03
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	1	-1.073	2.94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	-0 367	3 97	8/6/96 11 55
2	2	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 11 56
3	3	-1.073	2.94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	-0 367	3 97	8/6/96 11 57
4	4	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 11 59
5	5	1 853	2 94	<MDA	13 80	5 55	4 20	<AL	13 90	1 00	0 633	2 97	8/6/96 12 00
6	6	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 01
7	7	-1.073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 12 02
8	8	-1 073	2 94	<MDA	13 80	-3 80	1 90	<MDA	13 90	1 00	-0 367	-2 03	8/6/96 12 04
9	9	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 05
10	10	1 853	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 633	0 97	8/6/96 12 06
11	11	-1.073	2 94	<MDA	13 80	5.55	4 20	<AL	13 90	1 00	-0 367	2 97	8/6/96 12 07
12	12	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 08
13	13	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 10
14	14	4.779	4 15	<AL	13 80	-0 06	2 67	<MDA	13 90	1 00	1 633	-0 03	8/6/96 12 11
15	15	-1 073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 12 12
16	16	-1.073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 12 13
17	17	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 14
18	18	-1.073	2.94	<MDA	13.80	3 68	3 76	<MDA	13 90	1 00	-0 367	1 97	8/6/96 12 16
19	19	-1.073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 12 17
20	20	-1.073	2 94	<MDA	13 80	-3 80	1 90	<MDA	13 90	1 00	-0 367	-2 03	8/6/96 12.18
21	21	1 853	2 94	<MDA	13.80	-1 93	1 90	<MDA	13 90	1 00	0 633	-1 03	8/6/96 12 19
22	22	-1.073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 12 21
23	23	1 853	2 94	<MDA	13 80	5 55	4 20	<AL	13.90	1 00	0 633	2 97	8/6/96 12 22
24	24	1.853	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 633	1 97	8/6/96 12 23
25	25	1.853	2 94	<MDA	13 80	-1 93	1 90	<MDA	13.90	1 00	0 633	-1 03	8/6/96 12 24

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg 889 Instrument Serial # 228125-2 Cal Date 6-12-96 Cal Due Date 12-12-96
Batch ID 889 RM 106 #1THRU103
Counting Unit id. 1
Data file name C \LBXL\UNIT1\ONE1A093 XLD
Batch Ended. 8/6/96 13.42
Crosstalk Correction. Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 37
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency. 53 49%
Beta into Alpha Crosstalk. 1 06%
Beta Background (CPM) 2 03
Beta Correction Factor 1 000

Carrier	Swipe #	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
26	26	1.853	2.94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	0 633	-0 03	8/6/96 12 25
27	27	-1.073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	-0 367	0 97	8/6/96 12 27
28	28	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 28
29	29	1 853	2.94	<MDA	13.80	3 68	3 76	<MDA	13 90	1 00	0 633	1 97	8/6/96 12 29
30	30	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 30
31	31	-1.073	2 94	<MDA	13 80	-3.80	1 90	<MDA	13 90	1 00	-0 367	-2 03	8/6/96 12 31
32	32	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 33
33	33	-1 073	2 94	<MDA	13.80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 34
34	34	1 853	2 94	<MDA	13 80	1 81	3 26	<MDA	13.90	1 00	0 633	0 97	8/6/96 12.35
35	35	-1.073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 36
36	36	1 853	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	0 633	1 97	8/6/96 12 38
37	37	-1.073	2.94	<MDA	13.80	-0 06	2 67	<MDA	13.90	1 00	-0 367	-0 03	8/6/96 12 39
38	38	-1.073	2.94	<MDA	13.80	-1 93	1 90	<MDA	13.90	1 00	-0 367	-1 03	8/6/96 12.40
39	39	-1.073	2.94	<MDA	13.80	11.15	5.30	<AL	13 90	1 00	-0 367	5 97	8/6/96 12.41
40	40	7.705	5.08	<AL	13.80	1 81	3.26	<MDA	13.90	1 00	2 633	0 97	8/6/96 12.42
41	41	-1.073	2 94	<MDA	13.80	-0.06	2 67	<MDA	13.90	1 00	-0 367	-0 03	8/6/96 12.44
42	42	-1.073	2.94	<MDA	13.80	-0 06	2.67	<MDA	13.90	1 00	-0 367	-0 03	8/6/96 12.45
43	43	-1.073	2.94	<MDA	13.80	-1.93	1 90	<MDA	13.90	1 00	-0 367	-1 03	8/6/96 12.46
44	44	-1.073	2.94	<MDA	13.80	-3 80	1 90	<MDA	13 90	1 00	-0 367	-2 03	8/6/96 12.47
45	45	-1.073	2 94	<MDA	13.80	3.68	3 76	<MDA	13 90	1 00	-0 367	1 97	8/6/96 12 49
46	46	1.853	2.94	<MDA	13.80	-0 06	2 67	<MDA	13 90	1 00	0 633	-0 03	8/6/96 12.50
47	47	1.853	2.94	<MDA	13.80	-1 93	1 90	<MDA	13 90	1 00	0 633	-1 03	8/6/96 12 51
48	48	-1.073	2.94	<MDA	13 80	3.68	3 76	<MDA	13 90	1 00	-0 367	1 97	8/6/96 12.52
49	49	-1.073	2.94	<MDA	13.80	1 81	3 26	<MDA	13 90	1 00	-0 367	0 97	8/6/96 12 54
50	50	-1.073	2.94	<MDA	13.80	-0.06	2.67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 12 55
51	51	-1.073	2.94	<MDA	13.80	3.68	3 76	<MDA	13.90	1 00	-0 367	1 97	8/6/96 12 56
52	52	-1.073	2.94	<MDA	13.80	-3 80	1 90	<MDA	13 90	1 00	-0 367	-2 03	8/6/96 12.57
53	53	1.853	2 94	<MDA	13 80	-3 80	1 90	<MDA	13.90	1 00	0 633	-2 03	8/6/96 12 58
54	54	1 853	2.94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	0 633	3 97	8/6/96 13 00

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg. 889 Instrument Serial #. 228125-2 Cal Date. 6-12-96 Cal Due Date 12-12-96
Batch ID. 889 RM 106 #1THRU103
Counting Unit Id. 1
Data file name. C:\LBXL\UNIT1\ONE1A093 XLD
Batch Ended: 8/6/96 13.42
Crosstalk Correction. Not Applied.

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 37
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 03
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
55	55	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1.00	-0 367	0 97	8/6/96 13.01
56	56	-1 073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 13 02
57	57	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	-0 367	1 97	8/6/96 13 03
58	58	-1.073	2.94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 13 04
59	59	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	-0 367	0 97	8/6/96 13 06
60	60	1 853	2 94	<MDA	13.80	13 02	5 62	<AL	13 90	1 00	0 633	6 97	8/6/96 13 07
61	61	-1 073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 13 08
62	62	1 853	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 633	0 97	8/6/96 13 09
63	63	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 13 11
64	64	-1 073	2 94	<MDA	13 80	3 68	3 76	<MDA	13 90	1 00	-0 367	1 97	8/6/96 13 12
65	65	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 13 13
66	66	-1 073	2 94	<MDA	13 80	-3 80	1 90	<MDA	13 90	1 00	-0 367	-2 03	8/6/96 13 14
67	107	4 779	4.15	<AL	13 80	-0 06	2 67	<MDA	13 90	1 00	1 633	-0 03	8/6/96 13 16
68	68	4 779	4 15	<AL	13 80	-0 06	2 67	<MDA	13 90	1 00	1 633	-0 03	8/6/96 13 17
69	69	-1 073	2 94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	-0 367	3 97	8/6/96 13 18
70	70	-1 073	2.94	<MDA	13.80	-1 93	1.90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 13 19
71	71	-1 073	2 94	<MDA	13.80	-3 80	1 90	<MDA	13.90	1 00	-0 367	-2 03	8/6/96 13 20
72	72	-1 073	2 94	<MDA	13 80	-1 93	1 90	<MDA	13 90	1 00	-0 367	-1 03	8/6/96 13.22
73	73	-1.073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	-0 367	0 97	8/6/96 13 23
74	74	-1.073	2 94	<MDA	13 80	7 42	4 59	<AL	13 90	1 00	-0 367	3 97	8/6/96 13.24
75	75	-1.073	2.94	<MDA	13.80	-0 06	2.67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 13 25
76	76	1.853	2.94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	0 633	0 97	8/6/96 13 27
77	77	-1.073	2.94	<MDA	13.80	3.68	3 76	<MDA	13 90	1.00	-0 367	1 97	8/6/96 13 28
78	78	1.853	2.94	<MDA	13.80	-1.93	1.90	<MDA	13 90	1.00	0 633	-1 03	8/6/96 13 29
79	79	-1.073	2.94	<MDA	13 80	-0.06	2 67	<MDA	13 90	1.00	-0 367	-0 03	8/6/96 13 30
80	80	1.853	2.94	<MDA	13.80	-0.06	2 67	<MDA	13.90	1.00	0 633	-0 03	8/6/96 13.32
81	81	-1.073	2.94	<MDA	13 80	5.55	4 20	<AL	13 90	1 00	-0 367	2 97	8/6/96 13 33
82	82	-1.073	2.94	<MDA	13.80	-0.06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 13.34
83	83	-1.073	2.94	<MDA	13.80	3 68	3 76	<MDA	13 90	1.00	-0 367	1 97	8/6/96 13 35

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg. 889 Instrument Serial #: 228125-2 Cal Date 6-12-96 Cal Due Date 12-12-96

Batch ID: 889 RM 106 #1THRU103

Counting Unit Id: 1

Data file name: CALBX\UNIT1\ONE1A093.XLD

Batch Ended: 8/6/96 13:42

Crosstalk Correction: Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting. 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 37
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53.49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 03
Beta Correction Factor	1 000

Swipe #	Alpha Activity DPM			MDA	Beta Activity DPM		flag	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
84	-1.073	2.94	<MDA	13.80	5.55	4.20	<AL	13.90	00	-0 367	2 97	8/6/96 13:37
85	1.853	2.94	<MDA	13.80	5.55	4.20	<AL	13.90	00	0 633	2 97	8/6/96 13:38
86	-1.073	2.94	<MDA	13.80	5 55	4.20	<AL	13.90	00	-0 367	2 97	8/6/96 13:39
87	-1.073	2.94	<MDA	13.80	-1.93	1.90	<MDA	13.90	00	-0 367	-1 03	8/6/96 13 40
88	-1 073	2.94	<MDA	13.80	-3 80	1.90	<MDA	13.90	00	-0 367	-2 03	8/6/96 13 42

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg 889 Instrument Serial # 228125-2 Cal Date _____ Cal Due Date _____

Batch ID 889 BM106 #89THRU103

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B026.XLD

Batch Ended 8/6/96 14.26

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

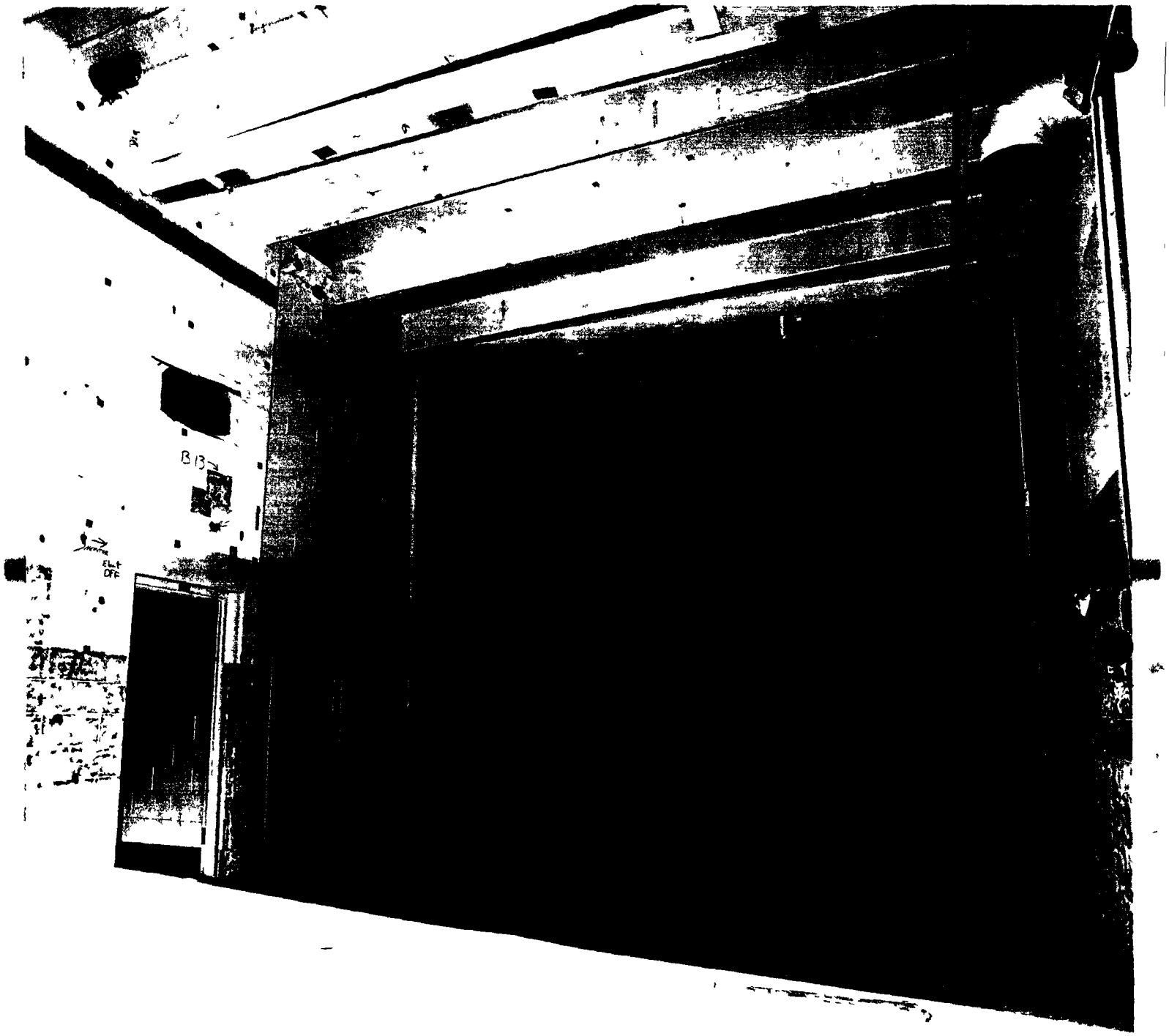
Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 37
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 03
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
89	89	-1.073	2 94	<MDA	13.80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 14 09
90	90	4.779	4.15	<AL	13.80	5 55	4 20	<AL	13 90	1.00	1 633	2 97	8/6/96 14 10
91	91	-1 073	2.94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 14 11
92	92	-1 073	2.94	<MDA	13 80	5 55	4 20	<AL	13 90	1 00	-0 367	2 97	8/6/96 14 12
93	93	-1 073	2 94	<MDA	13 80	1 81	3 26	<MDA	13 90	1 00	-0 367	0 97	8/6/96 14 13
94	94	-1 073	2 94	<MDA	13.80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 14 15
95	95	-1 073	2 94	<MDA	13 80	-0 06	2 67	<MDA	13 90	1 00	-0 367	-0 03	8/6/96 14 16
96	96	1.853	2.94	<MDA	13.80	3 68	3.76	<MDA	13 90	1 00	0 633	1.97	8/6/96 14 17
97	97	1.853	2.94	<MDA	13.80	-0 06	2 67	<MDA	13 90	1 00	0 633	-0 03	8/6/96 14 18
98	98	-1.073	2.94	<MDA	13 80	1 81	3 26	<MDA	13.90	1 00	-0 367	0 97	8/6/96 14 20
99	99	-1.073	2.94	<MDA	13.80	-0 06	2.67	<MDA	13.90	1 00	-0 367	-0 03	8/6/96 14 21
100	100	-1 073	2.94	<MDA	13 80	-1.93	1.90	<MDA	13.90	1 00	-0 367	-1 03	8/6/96 14.22
101	101	-1.073	2.94	<MDA	13.80	3.68	3 76	<MDA	13 90	1.00	-0 367	1 97	8/6/96 14.23
102	102	-1.073	2 94	<MDA	13.80	5.55	4 20	<AL	13.90	1 00	-0 367	2 97	8/6/96 14.25
103	103	4.779	4.15	<AL	13.80	-1 93	1.90	<MDA	13.90	1.00	1 633	-1 03	8/6/96 14 26



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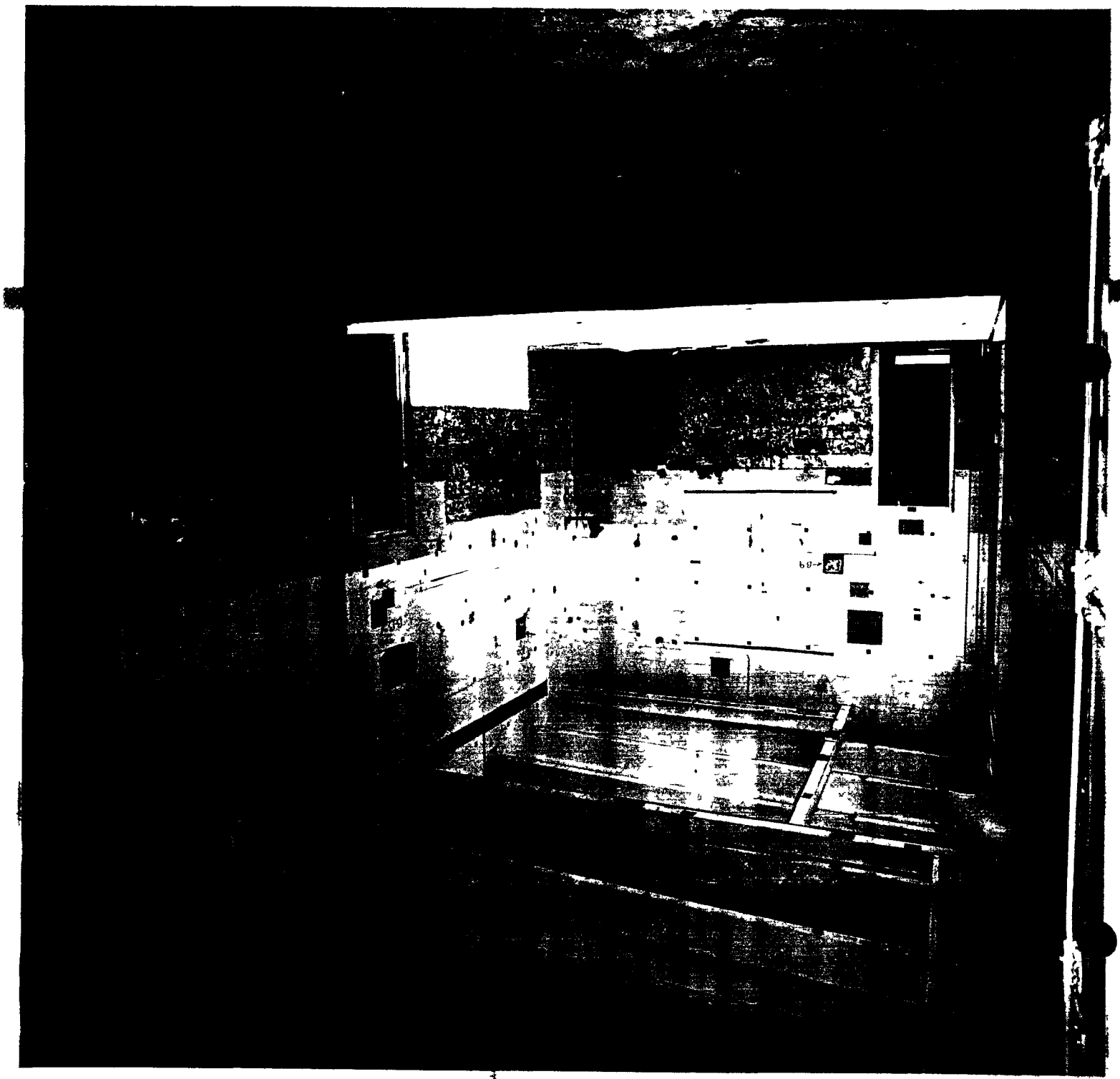
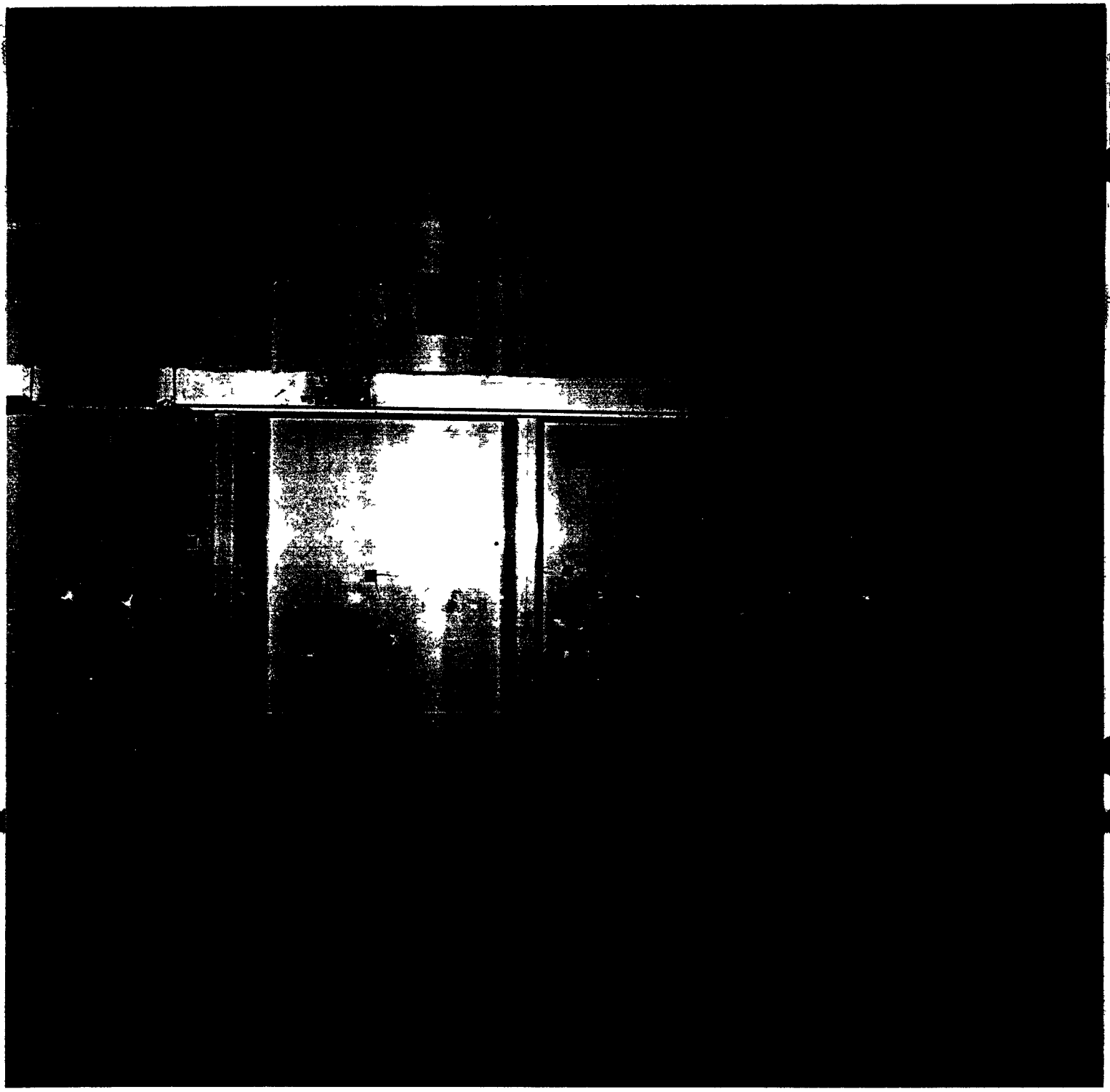
H-9
H-8

091





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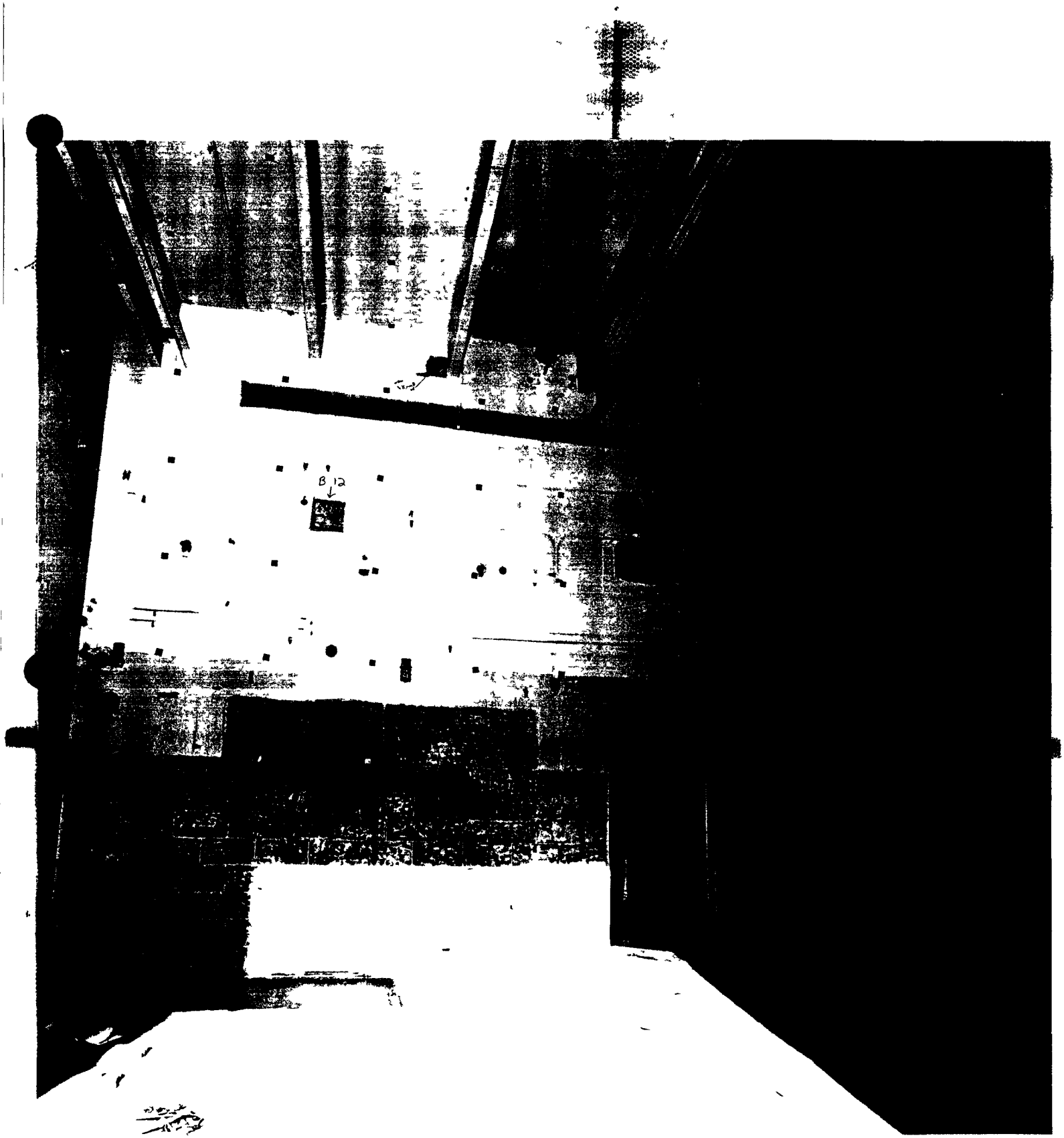
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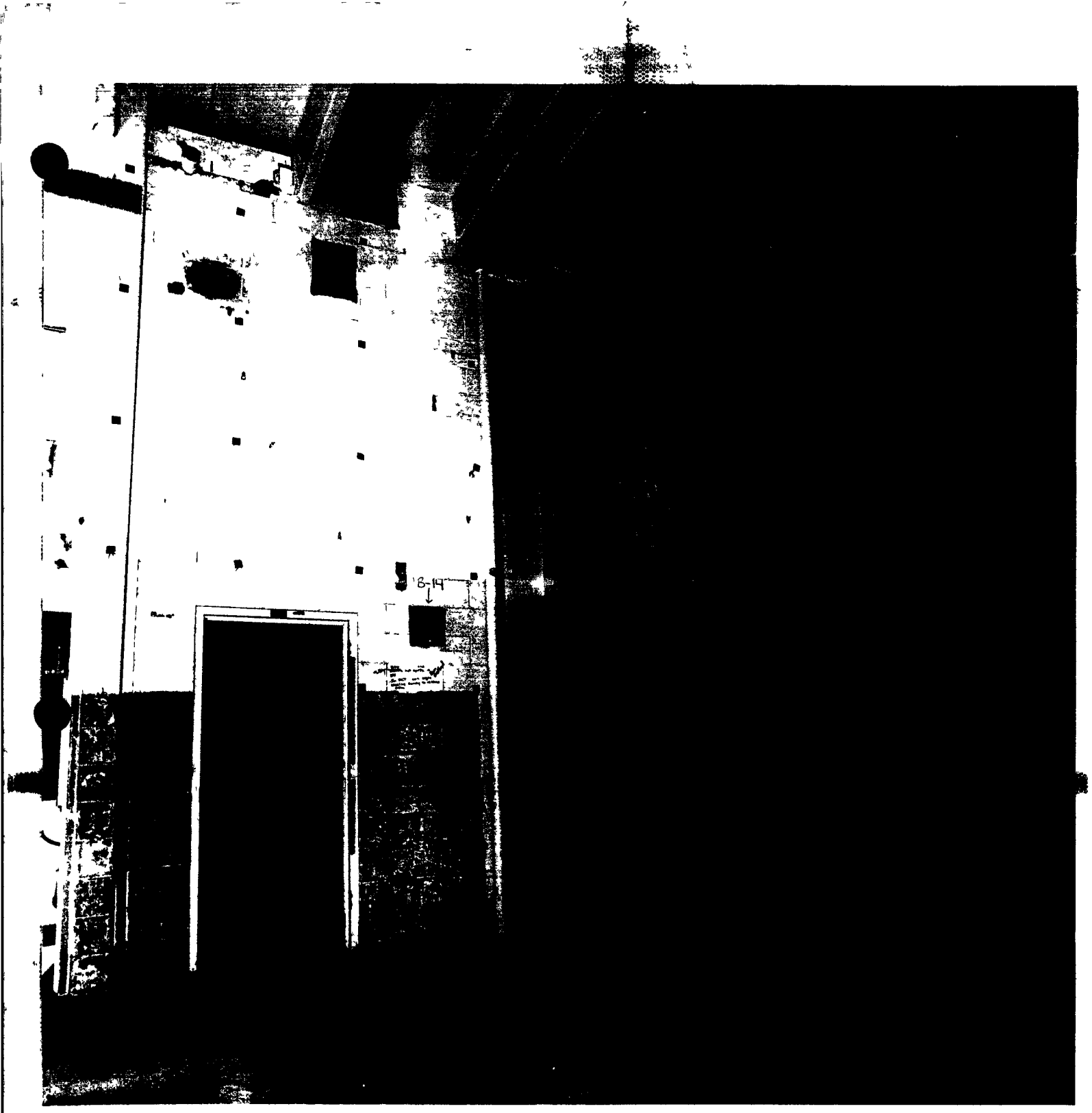

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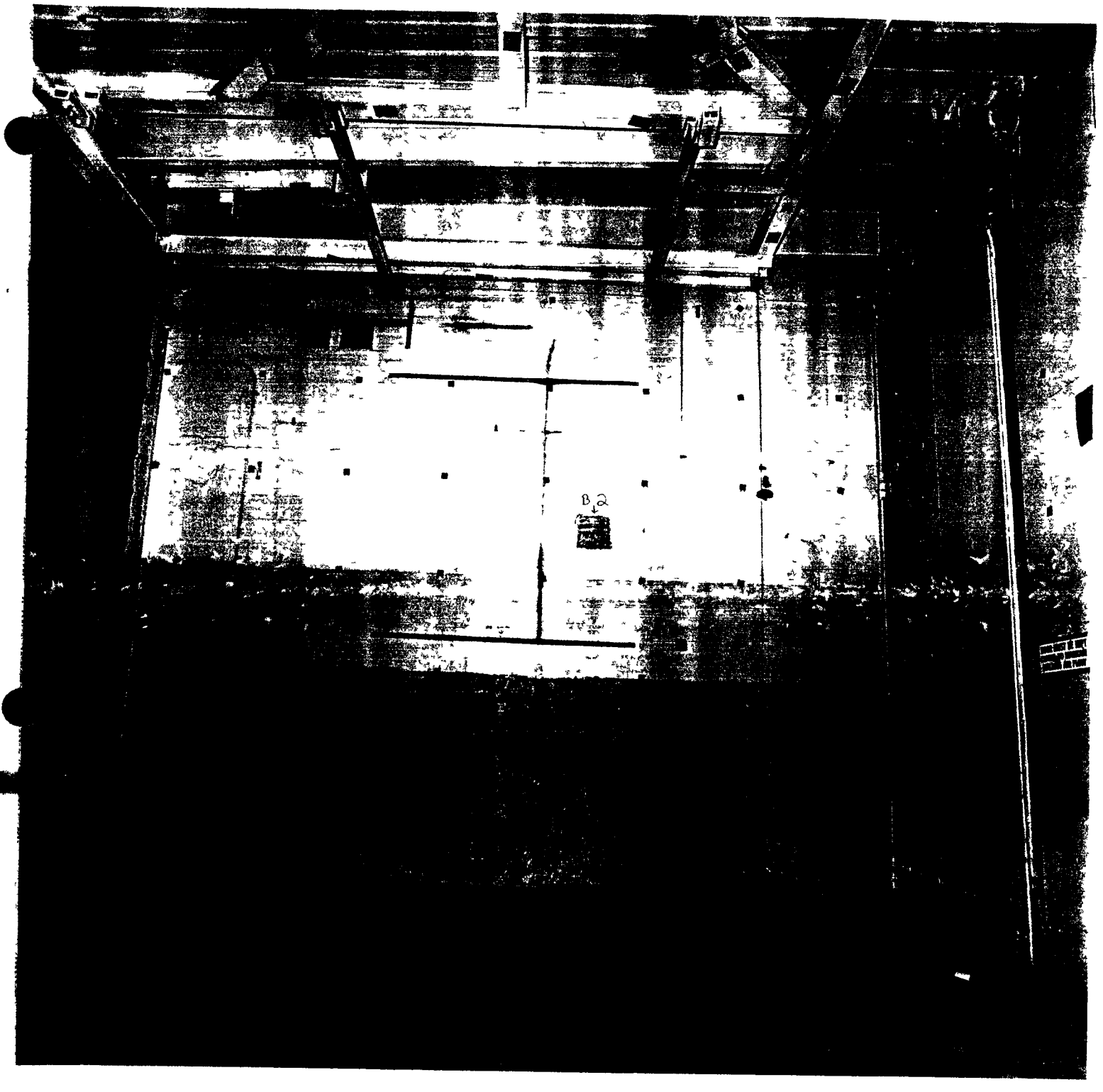

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
1	CEILING RM 108	11 68	14 08	60	380			
2	CEILING RM 108	11 68	14 08	60	380			
3	CEILING RM 108	11 68	14 08	60	380			
4	CEILING RM 108	11 68	14 08	60	380			
5	CEILING RM 108	11 68	14 08	60	380			
6	CEILING RM 108	11 68	14 08	60	380			
7	CEILING RM 108	11 68	14 08	60	380			
8	CEILING RM 108	11 68	14 08	60	591			
9	CEILING RM 108	11 68	14 08	60	380			
10	CEILING RM 108	11 68	14 08	60	380			
11	CEILING RM 108	11 68	14 08	60	380			
12	CEILING RM 108	11 68	14 08	60	380			
13	CEILING RM 108	11 68	14 08	60	380			
14	CEILING RM 108	11 68	14 08	60	380			
15	CEILING RM 108	11 68	14 08	60	380			
16	CEILING RM 108	11 68	14 08	60	380			
17	CEILING RM 108	11 68	14 08	60	380			
18	CEILING RM 108	11 68	14 08	60	380			
19	CEILING RM 108	11 68	14 08	60	380			
20	CEILING RM 108	11 68	14 08	60	380			
21	CEILING RM 108	11 68	14 08	60	380			
22	CEILING RM 108	11 68	14 08	60	380			
23	CEILING RM 108	11 68	14 08	60	380			
24	CEILING RM 108	11 68	14 08	60	380			
25	CEILING RM 108	11 68	14 08	60	380			
26	CEILING RM 108	11 68	14 08	60	380			
27	CEILING RM 108	11 68	14 08	60	380			
28	CEILING RM 108	11 68	14 08	60	380			
29	CEILING RM 108	11 68	14 08	60	380			
30	CEILING RM 108	11 68	14 08	60	380			
31	CEILING RM 108	11 68	14 08	60	380			
32	CEILING RM 108	11 68	14 08	72	380			

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
33	CEILING RM 108	11 68	14 08	60	380			
34	CEILING RM 108	11 68	14 08	60	380			
35	CEILING RM 108	11 68	14 08	60	380			
36	CEILING RM 108	11 68	14 08	60	380			
37	CEILING RM 108	11 68	14 08	60	380			
38	CEILING RM 108	11 68	14 08	60	380			
39	CEILING RM 108	11 68	14 08	60	380			
40	CEILING RM 108	11 68	14 08	60	380			
41	CEILING RM 108	11 68	14 08	60	380			
42	CEILING RM 108	11 68	14 08	60	380			
43	CEILING RM 108	11 68	14 08	60	380			
44	CEILING RM 108	11 68	14 08	60	380			
45	CEILING RM 108	11 68	14 08	60	380			
46	CEILING RM 108	11 68	14 08	60	380			
47	CEILING RM 108	11 68	14 08	60	380			
48	CEILING RM 108	11 68	14 08	60	380			
49	CEILING RM 108	11 68	14 08	60	380			
50	CEILING RM 108	11 68	14 08	60	380			
51	CEILING RM 108	11 68	14 08	60	380			
52	CEILING RM 108	11 68	14 08	60	380			
53	CEILING RM 108	11 68	14 08	60	380			
54	CEILING RM 108	11 68	14 08	60	380			
55	CEILING RM 108	11 68	14 08	60	380			
56	CEILING RM 108	11 68	14 08	60	380			
57	CEILING RM 108	11 68	14 08	60	380			
58	CEILING RM 108	11 68	14 08	60	380			
59	CEILING RM 108	11 68	14 08	60	380			
60	CEILING RM 108	11 68	14 08	60	380			
61	CEILING RM 108	11 68	14 08	60	380			
62	CEILING RM 108	11 68	14 08	60	380			
1	S WALL RM 108	11 46	14 77	60	380			
2	S WALL RM 108	11 46	14 77	60	380			

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
3	S WALL RM 108	11 46	14 77	60	380			
4	S WALL RM 108	11 46	14 77	60	380			
5	S WALL RM 108	11 46	14 77	60	380			
6	S WALL RM 108	11 46	14 77	60	380			
7	S WALL RM 108	11 46	14 77	60	380			
8	S WALL RM 108	11 46	14 77	60	380			
9	S WALL RM 108	11 46	14 77	60	380			
10	S WALL RM 108	11 46	14 77	60	380			
11	S WALL RM 108	11 46	14 77	60	380			
12	S WALL RM 108	11 46	14 77	60	380			
13	S WALL RM 108	11 46	14 77	60	380			
14	S WALL RM 108	11 46	14 77	60	380			
15	S WALL RM 108	11 46	14 77	60	380			
16	S WALL RM 108	11 46	14 77	60	380			
17	S WALL RM 108	11 46	14 77	60	380			
18	S WALL RM 108	11 46	14 77	60	380			
19	S WALL RM 108	11 46	14 77	60	380			
20	S WALL RM 108	11 46	14 77	60	380			
21	S WALL RM 108	11 46	14 77	60	380			
22	S WALL RM 108	11 46	14 77	60	441			
23	S WALL RM 108	11 46	14 77	60	380			
24	S WALL RM 108	11 46	14 77	60	380			
25	S WALL RM 108	11 46	14 77	60	380			
26	S WALL RM 108	11 46	14 77	60	380			
27	S WALL RM 108	11 46	14 77	450	13600	CONDUIT REMOVED		
28	S WALL RM 108	11 46	14 77	60	380			
29	S WALL RM 108	11 46	14 77	60	380			
30	S WALL RM 108	11 46	14 77	60	380			
31	S WALL RM 108	11 46	15 98	60	380			
32	S WALL RM 108	11 46	14 77	60	380			
33	S WALL RM 108	11 46	14 77	60	380			
34	S WALL RM 108	11 46	14 77	60	380			

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
35	S WALL RM 108	11 46	14 77	60	380			
36	S WALL RM 108	11 46	14 77	60	380			
37	S WALL RM 108	11 46	14 77	60	380			
38	S WALL RM 108	11 46	14 77	60	380			
39	S WALL RM 108	11 46	14 77	60	380			
40	S WALL RM 108	11 46	14 77	60	380			
41	S WALL RM 108	11 46	14 77	60	380			
42	S WALL RM 108	11 46	14 77	60	380			
43	S WALL RM 108	11 46	14 77	60	380			
44	S WALL RM 108	11 46	14 77	60	380			
45	S WALL RM 108	11 46	14 77	60	380			
46	S WALL RM 108	11 46	14 77	60	380			
47	S WALL RM 108	11 46	14 77	60	380			
48	S WALL RM 108	11 46	14 77	60	380			
49	S WALL RM 108	11 46	14 77	60	380			
50	S WALL RM 108	11 46	14 77	60	380			
51	S WALL RM 108	11 46	14 77	60	380			
52	S WALL RM 108	11 46	14 77	60	380			
53	S WALL RM 108	11 46	14 77	60	380			
54	S WALL RM 108	11 46	14 77	60	380			
55	S WALL RM 108	11 46	14 77	60	380			
56	S WALL RM 108	11 46	14 77	60	380			
1	E WALL RM 108	11 46	14 77	60	380			
2	E WALL RM 108	11 46	14 77	60	612			
3	E WALL RM 108	11 46	14 77	60	1215			
4	E WALL RM 108	11 46	14 77	60	1032			
5	E WALL RM 108	11 46	14 77	60	1290			
6	E WALL RM 108	11 46	14 77	60	1320			
7	E WALL RM 108	11 46	14 77	60	1482			
8	E WALL RM 108	11 46	14 77	60	708			
9	E WALL RM 108	11 46	14 77	60	1512			
10	E WALL RM 108	11 46	14 77	60	933			

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
11	E WALL RM 108	11 46	14 77	60	380	
12	E WALL RM 108	11 46	14 77	60	444	
13	E WALL RM 108	11 46	14 77	60	480	
14	E WALL RM 108	11 46	14 77	60	380	
15	E WALL RM 108	11 46	14 77	60	380	
16	E WALL RM 108	11 46	14 77	60	380	
17	E WALL RM 108	11 46	14 77	60	380	
18	E WALL RM 108	11 46	14 77	60	380	
19	E WALL RM 108	11 46	14 77	60	380	
20	E WALL RM 108	11 46	14 77	60	380	
21	E WALL RM 108	11 46	14 77	60	380	
22	E WALL RM 108	11 46	14 77	60	380	
23	E WALL RM 108	11 46	14 77	60	380	
24	E WALL RM 108	11 46	14 77	60	380	
25	E WALL RM 108	11 46	14 77	60	380	
26	E WALL RM 108	11 46	14 77	60	380	
27	E WALL RM 108	11 46	14 77	60	380	
28	E WALL RM 108	11 46	14 77	60	380	
29	E WALL RM 108	11 46	14 77	60	380	
30	E WALL RM 108	11 46	14 77	60	380	
31	E WALL RM 108	11 46	14 77	102	19590	REMEDIATED TO LESS THAN MDA
32	E WALL RM 108	11 46	14 77	156	10650	REMEDIATED TO LESS THAN MDA
33	E WALL RM 108	11 46	14 77	204	9175	REMEDIATED TO LESS THAN MDA
34	E WALL RM 108	11 46	14 77	60	380	
35	E WALL RM 108	11 46	14 77	156	380	REMEDIATED TO LESS THAN MDA
36	E WALL RM 108	11 46	14 77	60	380	
37	E WALL RM 108	11 46	14 77	60	380	
38	E WALL RM 108	11 46	14 77	60	380	
39	E WALL RM 108	11 46	14 77	60	750	
40	E WALL RM 108	11 46	14 77	60	380	
41	E WALL RM 108	11 46	14 77	60	380	
42	E WALL RM 108	11 46	14 77	60	380	

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
43	E WALL RM 108	11 46	14 77	60	380	
44	E WALL RM 108	11 46	14 77	60	380	
45	E WALL RM 108	11 46	14 77	60	380	
46	E WALL RM 108	11 46	14 77	60	975	
47	E WALL RM 108	11 46	14 77	60	1104	
48	E WALL RM 108	11 46	14 77	60	978	
49	E WALL RM 108	11 46	14 77	60	380	
50	E WALL RM 108	11 46	14 77	60	380	
51	E WALL RM 108	11 46	14 77	60	380	
52	E WALL RM 108	11 46	14 77	102	380	REMEDIATED TO LESS THAN MDA
53	E WALL RM 108	11 46	14 77	60	380	
54	E WALL RM 108	11 46	14 77	204	380	REMEDIATED TO LESS THAN MDA
55	E WALL RM 108	11 46	14 77	60	380	
56	E WALL RM 108	11 46	14 77	60	380	
57	E WALL RM 108	11 46	14 77	60	380	
58	E WALL RM 108	11 46	14 77	60	380	
59	E WALL RM 108	11 46	14 77	60	960	
60	E WALL RM 108	11 46	14 77	60	380	
61	E WALL RM 108	11 46	14 77	60	380	
62	E WALL RM 108	11 46	14 77	60	380	
63	E WALL RM 108	11 46	14 77	60	909	
64	E WALL RM 108	11 46	14 77	90	390	
65	E WALL RM 108	11 46	14 77	60	380	
66	E WALL RM 108	11 46	14 77	60	380	
67	E WALL RM 108	11 46	14 77	60	380	
68	E WALL RM 108	11 46	14 77	60	380	
69	E WALL RM 108	11 46	14 77	60	380	
70	E WALL RM 108	11 46	14 77	60	380	
1	N WALL RM 108	11 46	14 77	60	657	
2	N WALL RM 108	11 46	21 59	60	380	
3	N WALL RM 108	11 46	14 77	60	380	
4	N WALL RM 108	11 46	14 77	60	380	

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA	
5	N WALL RM 108	11 46	14 77	60	380	
6	N WALL RM 108	11 46	14 77	60	380	
7	N WALL RM 108	23 019	27 2	60	380	REMEDIATED TO LESS THAN MDA
8	N WALL RM 108	11 46	14 77	60	380	
9	N WALL RM 108	11 46	14 77	60	380	
10	N WALL RM 108	11 46	14 77	60	380	
11	N WALL RM 108	11 46	14 77	60	380	
12	N WALL RM 108	11 46	14 77	60	380	
13	N WALL RM 108	11 46	14 77	60	380	
14	N WALL RM 108	11 46	14 77	60	380	
15	N WALL RM 108	11 46	14 77	60	380	
16	N WALL RM 108	11 46	14 77	60	380	
17	N WALL RM 108	11 46	14 77	72	380	
18	N WALL RM 108	11 46	14 77	60	380	
19	N WALL RM 108	11 46	14 77	60	380	
20	N WALL RM 108	11 46	14 77	60	380	
21	N WALL RM 108	20 093	19 72	60	380	REMEDIATED TO LESS THAN MDA
22	N WALL RM 108	11 46	14 77	60	380	
23	N WALL RM 108	23 019	14 77	90	380	REMEDIATED TO LESS THAN MDA
24	N WALL RM 108	23 019	17 85	60	882	REMEDIATED TO LESS THAN MDA
25	N WALL RM 108	11 46	15 98	90	380	
26	N WALL RM 108	11 46	14 77	60	380	
27	N WALL RM 108	11 46	14 77	72	380	
28	N WALL RM 108	11 46	14 77	60	380	
29	N WALL RM 108	11 46	14 77	60	380	
30	N WALL RM 108	11 46	14 77	60	380	
31	N WALL RM 108	11 46	14 77	72	380	
32	N WALL RM 108	11 46	14 77	60	380	
33	N WALL RM 108	11 46	14 77	72	380	
34	N WALL RM 108	11 46	14 77	60	380	
35	N WALL RM 108	11 46	14 77	60	380	
36	N WALL RM 108	11 46	14 77	60	380	

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
37	N WALL RM 108	11 46	14 77	72	380			
38	N WALL RM 108	11 46	14 77	90	380			
39	N WALL RM 108	11 46	14 77	60	380			
40	N WALL RM 108	11 46	14 77	60	380			
41	N WALL RM 108	11 46	14 77	60	380			
42	N WALL RM 108	11 46	14 77	60	380			
43	N WALL RM 108	11 46	14 77	60	380			
44	N WALL RM 108	11 46	14 77	60	380			
45	N WALL RM 108	11 46	14 77	60	380			
46	N WALL RM 108	11 46	14 77	60	380			
47	N WALL RM 108	11 46	14 77	60	380			
48	N WALL RM 108	11 46	14 77	60	380			
49	N WALL RM 108	11 46	14 77	60	380			
50	N WALL RM 108	11 46	14 77	60	380			
51	N WALL RM 108	11 46	14 77	60	380			
52	N WALL RM 108	11 46	14 77	60	380			
53	N WALL RM 108	11 46	14 77	96	380			
54	N WALL RM 108	11 46	14 77	60	380			
55	N WALL RM 108	11 46	14 77	60	380			
56	N WALL RM 108	11 46	14 77	60	380			
1	W WALL RM 108	11 46	14 77	60	380			
2	W WALL RM 108	11 46	14 77	60	380			
3	W WALL RM 108	11 46	14 77	60	603			
4	W WALL RM 108	11 46	14 77	60	678			
5	W WALL RM 108	11 46	14 77	60	380			
6	W WALL RM 108	23 019	42 16	60	380	REMEDIATED TO LESS THAN MDA		
7	W WALL RM 108	28 871	62 72	60	380	REMEDIATED TO LESS THAN MDA		
8	W WALL RM 108	46 428	62 72	60	380	REMEDIATED TO LESS THAN MDA		
9	W WALL RM 108	37 65	38 42	60	380	REMEDIATED TO LESS THAN MDA		
10	W WALL RM 108	17 167	14 77	60	546			
11	W WALL RM 108	14 241	23 46	60	380			
12	W WALL RM 108	11 46	19 72	60	380			

ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
13	W WALL RM 108	11 46	17 85	60	380			
14	W WALL RM 108	11 46	14 77	60	380			
15	W WALL RM 108	11 46	14 77	60	380			
16	W WALL RM 108	11 46	14 77	60	380			
17	W WALL RM 108	11 46	14 77	60	380			
18	W WALL RM 108	11 46	14 77	60	380			
19	W WALL RM 108	11 46	14 77	60	380			
20	W WALL RM 108	11 46	14 77	60	380			
21	W WALL RM 108	11 46	14 77	72	380			
22	W WALL RM 108	11 46	14 77	60	380			
23	W WALL RM 108	11 46	14 77	60	380			
24	W WALL RM 108	11 46	14 77	60	380			
25	W WALL RM 108	11 46	14 77	60	380			
26	W WALL RM 108	11 46	14 77	60	380			
27	W WALL RM 108	11 46	14 77	60	380			
28	W WALL RM 108	11 46	14 77	60	380			
29	W WALL RM 108	11 46	14 77	60	380			
30	W WALL RM 108	11 46	14 77	60	380			
31	W WALL RM 108	11 46	14 77	60	380			
32	W WALL RM 108	11 46	14 77	60	380			
33	W WALL RM 108	11 46	14 77	60	380			
34	W WALL RM 108	11 46	14 77	60	380			
35	W WALL RM 108	11 46	14 77	60	380			
36	W WALL RM 108	17 167	14 77	60	380			
37	W WALL RM 108	11 46	14 77	90	380			
38	W WALL RM 108	11 46	14 77	108	380	REMEDIATED TO LESS THAN MDA		
39	W WALL RM 108	11 46	14 77	60	380			
40	W WALL RM 108	11 46	14 77	60	380			
41	W WALL RM 108	11 46	14 77	60	380			
42	W WALL RM 108	11 46	14 77	60	380			
43	W WALL RM 108	11 46	14 77	60	380			
44	W WALL RM 108	11 46	14 77	60	380			

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
45	W WALL RM 108	11 46	14 77	60	380			
46	W WALL RM 108	11 46	14 77	60	380			
47	W WALL RM 108	11 46	14 77	60	380			
48	W WALL RM 108	11 46	14 77	60	380			
49	W WALL RM 108	11 46	14 77	60	380			
50	W WALL RM 108	11 46	14 77	60	380			
51	W WALL RM 108	11 46	14 77	60	380			
52	W WALL RM 108	11 46	14 77	60	380			
53	W WALL RM 108	11 46	14 77	60	380			
54	W WALL RM 108	11 46	14 77	60	380			
55	W WALL RM 108	11 46	14 77	60	380			
56	W WALL RM 108	11 46	14 77	60	380			
57	W WALL RM 108	11 46	14 77	60	380			
58	W WALL RM 108	11 46	14 77	60	380			
59	W WALL RM 108	11 46	14 77	60	380			
60	W WALL RM 108	11 46	14 77	60	380			
61	W WALL RM 108	11 46	14 77	60	380			
62	W WALL RM 108	11 46	14 77	60	380			
63	W WALL RM 108	11 46	14 77	60	380			
64	W WALL RM 108	11 46	14 77	60	380			
1	FLOOR RM 108	12 61	15 8	60	440			
2	FLOOR RM 108	12 61	15 8	60	612			
3	FLOOR RM 108	12 61	15 8	60	1176			
4	FLOOR RM 108	12 61	15 8	60	1206			
5	FLOOR RM 108	12 61	15 8	66	1329			
6	FLOOR RM 108	12 61	15 8	60	380			
7	FLOOR RM 108	12 61	15 8	60	609			
8	FLOOR RM 108	12 61	15 8	60	380			
9	FLOOR RM 108	12 61	15 8	60	576			
10	FLOOR RM 108	12 61	15 8	60	1464			
11	FLOOR RM 108	12 61	15 8	60	2427			
12	FLOOR RM 108	12 61	15 8	60	1269			

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
13	FLOOR RM 108	12 61	15 8	60	912			
14	FLOOR RM 108	12 61	15 8	60	435			
15	FLOOR RM 108	12 61	15 8	60	639			
16	FLOOR RM 108	12 61	15 8	66	1785			
17	FLOOR RM 108	12 61	15 8	60	1575			
18	FLOOR RM 108	12 61	15 8	60	915			
19	FLOOR RM 108	12 61	15 8	96	2100			
20	FLOOR RM 108	12 61	15 8	60	380			
21	FLOOR RM 108	12 61	15 8	60	453			
22	FLOOR RM 108	12 61	15 8	60	555			
23	FLOOR RM 108	12 61	15 8	60	723			
24	FLOOR RM 108	12 61	15 8	60	3255			
25	FLOOR RM 108	12 61	15 8	84	3303			
26	FLOOR RM 108	12 61	15 8	60	380			
27	FLOOR RM 108	12 61	15 8	84	1107			
28	FLOOR RM 108	12 61	15 8	60	645			
29	FLOOR RM 108	12 61	15 8	60	380			
30	FLOOR RM 108	12 61	15 8	60	495			
31	FLOOR RM 108	12 61	15 8	60	485			
32	FLOOR RM 108	12 61	15 8	60	540			
33	FLOOR RM 108	12 61	15 8	60	380			
34	FLOOR RM 108	12 61	15 8	78	380			
35	FLOOR RM 108	12 61	15 8	60	380			
36	FLOOR RM 108	12 61	15 8	72	525			
37	FLOOR RM 108	12 61	15 8	60	471			
38	FLOOR RM 108	12 61	15 8	96	843			
39	FLOOR RM 108	12 61	15 8	162	3162	REMEDIATED-MDA EXCEPT 870 TOTAL BETA		
40	FLOOR RM 108	12 61	15 8	60	993			
41	FLOOR RM 108	12 61	15 8	60	846			
42	FLOOR RM 108	12 61	15 8	90	807			
43	FLOOR RM 108	12 61	15 8	162	1401	REMEDIATED-MDA EXCEPT 2295 TOTAL BETA		
44	FLOOR RM 108	12 61	15 8	84	1062			

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ROOM 108 SURVEY DATA

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA			
45	FLOOR RM 108	12 61	15 8	70	1011			
46	FLOOR RM 108	12 61	15 8	72	1206			
47	FLOOR RM 108	12 61	15 8	60	1458			
48	FLOOR RM 108	12 61	15 8	120	1011	REMEDIATED-MDA EXCEPT 2316 TOTAL BETA		
49	FLOOR RM 108	12 61	15 8	60	993			
50	FLOOR RM 108	12 61	15 8	72	1011			
51	FLOOR RM 108	12 61	15 8	72	1137			
52	FLOOR RM 108	12 61	15 8	60	1023			
53	FLOOR RM 108	12 61	15 8	60	1356			
54	FLOOR RM 108	12 61	15 8	60	909			
55	FLOOR RM 108	12 61	15 8	96	2091			
	mean=	12 079	15 341	65 052	655 408			
	t(α= 05, df=362)=	1 649						
	standard deviation=	2 796	4 147	26 141	1448 362			
	upper conf limit=	12 321	15 700	67 315	780 769			

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP 96-750-0021

FOR. ___ P/WRE ___ PRL

✓ RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM 108

DATE. 08-06-96 | TIME. 1900

ITEM DESCRIPTION South ~~entrance~~ WALLS

Fixed Contamination Surveys

COMMENTS

STATUS

___ RELEASABLE ___ NOT RELEASABLE

✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME) L.K. Espinoza / J.L. Johnston

[redacted] 08-06-96

[redacted] 08-06-96

RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-12-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER.	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

MFR	EBER.	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	NE Technology
MODEL	A-100	Electra	31	Electra
SERIAL #		1265		1570
CAL DATE		02-13-96		08-06-96
CAL DUE DATE		08-13-96		12-06-96
BACKGROUND		1.0cx/63cpB		2.0cx/50cpB

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LOG NUMBER Rwp 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	S. WALL 108			<60	<380
2	S. WALL 108			<60	<380
3	S. WALL 108			<60	<380
4	S. WALL 108			<60	<380
5	S. WALL 108			<60	<380
6	S. WALL 108			<60	<380
7	S. WALL 108			<60	<380
8	S. WALL 108			<60	<380
9	S. WALL 108			<60	<380
10	S. WALL 108			<60	<380
11	S. WALL 108			<60	<380
12	S. WALL 108			<60	<380
13	S. WALL 108			<60	<380
14	S WALL 108			<60	<380
15	S WALL 108			<60	<380
16	S. WALL 108			<60	<380
17	S. WALL 108			<60	<380
18	S. WALL 108			<60	<380
19	S. WALL 108			<60	<380
20	S. WALL 108			<60	<380
21	S. WALL 108			<60	441
22	S. WALL 108			<60	<380

08-06-96 [illegible]

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
23	S. WALL 108			<60	<380
24	S. WALL 108			<60	<380
25	S. WALL 108			<60	<380
26	S. WALL 108			450	13600
27	S WALL 108			<60	<380
28	S. WALL 108			<60	<380
29	S. WALL 108			<60	<380
30	S. WALL 108			<60	<380
31	S. WALL 108			<60	<380
32	S. WALL 108			<60	<380
33	S. WALL 108			<60	<380
34	S. WALL 108			<60	<380
35	S. WALL 108			<60	<380
36	S. WALL 108			<60	<380
37	S. WALL 108			<60	<380
38	S. WALL 108			<60	<380
39	S. WALL 108			<60	<380
40	S. WALL 108			<60	<380
41	S. WALL 108			<60	<380
42	S. WALL 108			<60	<380
43	S. WALL 108			<60	<380
44	S. WALL 108			<60	<380

08-06-96 [illegible]

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LOG NUMBER TWP 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
45	S. WALL 108			<60	<380
46	S. WALL 108			<60	<380
47	S. WALL 108			<60	<380
48	S. WALL 108			<60	<380
49	S. WALL 108			<60	<380
50	S. WALL 108			<60	<380
51	S. WALL 108			<60	<380
52	S. WALL 108			<60	<380
53	S. WALL 108			<60	<380
54	S. WALL 108			<60	<380
55	S. WALL 108			<60	<380
56	S. WALL 108			<60	<380

08-06-96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA

08-06-96

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID RM 108 S WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1C006 XLD

Batch Ended 7/27/96 13 20

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
22	1	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 12 13
23	2	2 536	2 93	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	0 867	1 55	7/27/96 12 14
24	3	0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96 12 15
25	4	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96 12 17
26	5	0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 12 18
27	6	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 12 19
28	7	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 12 20
29	8	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 12 21
30	9	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 12 23
31	10	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 12 24
32	11	-0 390	2 93	<MDA	11 46	8 51	4 96	<AL	14 77	1 00	0 133	4 55	7/27/96 12 25
33	12	0 390	2 93	<MDA	11 46	0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 12 26
34	13	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	0 133	3 55	7/27/96 12 27
35	14	2 536	2 93	<AL	11 46	2 71	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96 12 29
36	15	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 12 30
37	16	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 12 31
38	17	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 12 32
39	18	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 12 33
40	19	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 12 35
41	20	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 12 36
42	21	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	-0 45	7/27/96 12 37
44	22	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 12 38
45	23	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96 12 40
46	24	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 12 41
47	25	2 536	2 93	<AL	11 46	8 51	4 96	<AL	14 77	1 00	0 867	4 55	7/27/96 12 42

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID RM 108 S WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1C006 XLD

Batch Ended 7/27/96 13 20

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags **95%**

High Voltage Setting **1350**

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
48	26	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	-0 133	0 45	7/27/96	12 43
49	27	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	12 44
50	28	5 462	4 14	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	1 867	1 55	7/27/96	12 46
51	29	5 462	4 14	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	1 867	0 55	7/27/96	12 47
52	30	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96	12 48
53	31	11 314	5 86	At AL	11 46	15 98	6 22	<AL	14 77	1 00	3 867	8 55	7/27/96	12 49
54	32	2 536	2 93	<AL	11 46	6 64	4 60	<AL	14 77	1 00	0 867	3 55	7/27/96	12 51
55	33	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	12 52
56	34	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	12 53
57	35	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96	12 54
58	36	2 536	2 93	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96	12 56
59	37	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	0 133	3 55	7/27/96	12 57
60	38	5 462	4 14	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	1 867	1 45	7/27/96	12 58
61	39	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	12 59
62	40	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	13 00
63	41	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	13 02
64	42	5 462	4 14	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	1 867	1 55	7/27/96	13 03
65	43	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	13 04
66	44	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	13 05
67	45	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96	13 06
68	46	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	13 08
69	47	5 462	4 14	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	1 867	0 45	7/27/96	13 09
70	48	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	13 10
71	49	-0 390	2 93	<MDA	11 46	10 38	5 31	<AL	14 77	1 00	0 133	5 55	7/27/96	13 11
72	50	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96	13 13
73	51	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96	13 14
74	52	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96	13 15
75	53	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96	13 16
76	54	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	13 17

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

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Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID RM 108 S WALL 889BLDG
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1C006 XLD
Batch Ended 7/27/96 13 20
Crosstalk Correction Not Applied

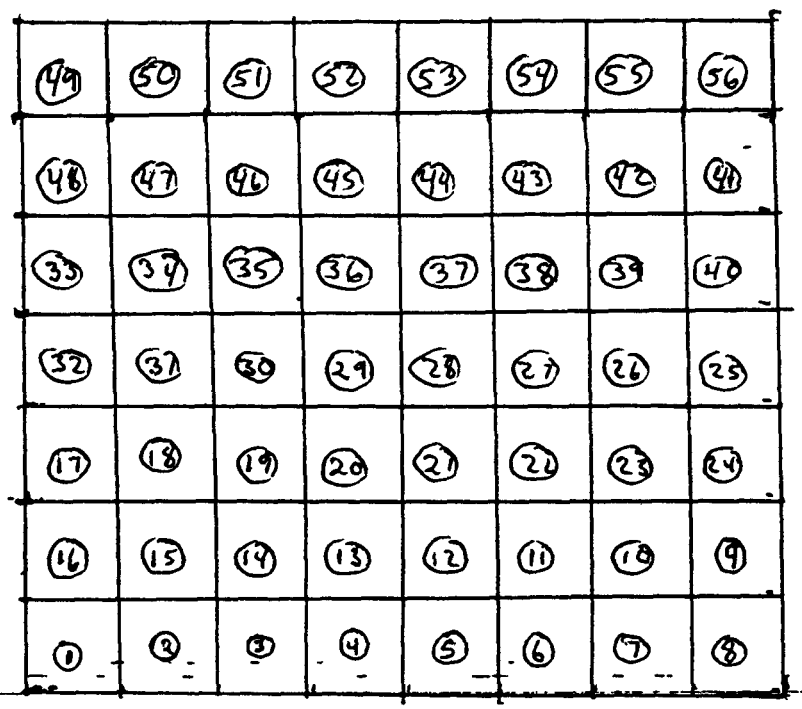
Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
77	55	**-0 390**	2 93	<MDA	11 46	**-0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 13 19
78	56	**5 462**	4 14	<AL	11 46	**-2 71**	1 91	<MDA	14 77	1 00	1 867	1 45	7/27/96 13 20

RADIOLOGICAL MONITORING Control No. 96-750-00

Area or Equipment Drawing Showing Survey Points



South Wall - Rm 108 - Bldg 889

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
7	North wall Rm 108 Resurvey				
	After Decon 08-06-96	<18	<205	<60	<380
21	North wall Rm 108 Resurvey				
	After Decon 08-06-96	<18	<205	<60	<380
23	North wall Rm 108 Resurvey	<18	<205	<60	<380
24	After Decon 08-06-96	<18	<205	<60	<380
6	West wall Rm 108 Resurvey	<18	<205	<60	<380
7	After Decon 08-06-96	<18	<205	<60	<380
8		<18	<205	<60	<380
9		<18	<205	<60	<380
46	West wall Rm 108 Resurvey				
	Contamination on Conduit.				
	Conduit removed, bagged				
	And Crated	<18	<205	<60	<380
48	West wall Rm 108 Resurvey				
	After Decon 08-07-96	<18	<205	<60	<380
31	East wall Rm 108 Resurvey	<18	<205	<60	<380
32	After Decon 08-07-96	<18	<205	<60	<380
33		<18	<205	<60	<380
35		<18	<205	<60	<380
26	South wall Rm 108 Resurvey				
	Contamination on Conduit.				

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
	Conduit removed, bagged				
	and placed in crate	<18	<205	<60	<380
52	East wall Rm 108	<18	<205	<60	<380
54	East wall Rm 108	<18	<205	<60	<380
38	West wall Rm 108	<18	<205	<60	<380

08-22-96

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

FOR. ___ P/WRE ___ PRL
✓ RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM 108

DATE 8-8-96 | TIME 1230

ITEM DESCRIPTION

West wall Rm 108
Direct readings only

COMMENTS

These readings are taken at the sticker locations

STATUS
___ RELEASABLE ___ NOT RELEASABLE
✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME) Munoz

Munoz [redacted] 8-8-96
RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-12-96
RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER	EBER	EBER	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

MFR	EBER	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1248		
CAL DATE		2-21-96		
CAL DUE DATE		8-21-96		
BACKGROUND		β < 2 β < 700		

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LOG NUMBER 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	West Wall Rm 108			<60	<380
2	West wall Rm 108			<60	<380
3	West wall Rm 108			<60	603
4	West Wall Rm 108			<60	678
5	West wall Rm 108			<60	<380
6	West wall Rm 108			<60	<380
7	west wall Rm 108			<60	<380
8	West wall Rm 108			<60	<380
9	west wall Rm 108			<60	<380
10	west wall Rm 108			<60	546
11	west wall Rm 108			<60	<380
12	west wall Rm 108			<60	<380
13	west wall Rm 108			<60	<380
14	west wall Rm 108			<60	<380
15	west wall Rm 108			<60	<380
16	west wall Rm 108			<60	<380
17	west wall Rm 108			<60	<380
18	west wall Rm 108			<60	<380
19	west wall Rm 108			<60	<380
20	west wall Rm 108			<60	<380
21	west wall Rm 108			72	<380
22	west wall Rm 108			<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
23	West wall Rm 108			<60	<380
24	west wall Rm 108			<60	<380
25	west wall Rm 108			<60	<380
26	west wall Rm 108			<60	<380
27	West wall Rm 108			<60	<380
28	west wall Rm 108			<60	<380
29	west wall Rm 108			<60	<380
30	west wall Rm 108			<60	<380
31	west wall Rm 108			<60	<380
32	West wall Rm 108			<60	<380
33	West wall Rm 108			<60	<380
34	west wall Rm 108			<60	<380
35	West wall Rm 108			<60	<380
36	West wall Rm 108			<60	<380
37	West wall Rm 108			90	<380
38	west wall Rm 108			108	<380
39	west wall Rm 108			<60	<380
40	west wall Rm 108			<60	<380
41	West wall Rm 108			<60	<380
42	West wall Rm 108			<60	<380
43	west wall Rm 108			<60	<380
44	west wall Rm 108			<60	<380

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Printed ink on recycled paper

LOG NUMBER 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FBISK/60 SEC COUNT)	TOTAL BETA/GAMMA
45	west wall Rm 108			<60	<380
46	west wall Rm 108			<60	<380
47	west wall Rm 108			<60	<380
48	west wall Rm 108			<60	<380
49	west wall Rm 108			<60	<380
50	west wall Rm 108			<60	<380
51	west wall Rm 108			<60	<380
52	west wall Rm 108			<60	<380
53	west wall Rm 108			<60	<380
54	west wall Rm 108			<60	<380
55	west wall Rm 108			<60	<380
56	west wall Rm 108			<60	<380
57	west wall Rm 108			<60	<380
58	west wall Rm 108			<60	<380
59	west wall Rm 108			<60	<380
60	west wall Rm 108			<60	<380
61	west wall Rm 108			<60	<380
62	west wall Rm 108			<60	<380
63	west wall Rm 108			<60	<380
64	west wall Rm 108			<60	<380
	[illegible] 8-8-96				

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FBISK/60 SEC COUNT)	TOTAL BETA/GAMMA

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** Oct 12 96 **Cal Due Date** 12-12-96

Batch ID RM108 W WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B025 XLD

Batch Ended 7/27/96 12 12

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 13

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 2 45

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
57	1	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 10 54
58	2	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 10 55
59	3	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	-0 45	7/27/96 10 56
60	4	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 10 57
61	5	-0 390	2 93	<MDA	11 46	12 25	5 63	<AL	14 77	1 00	0 133	6 55	7/27/96 10 59
62	6	23.019	8 29	At AL	11 46	42 16	9 39	<AL	14 77	1 00	7 867	22 55	7/27/96 11 00
63	7	28.871	9 27	At AL	11 46	62 72	11 28	<AL	14 77	1 00	9 867	33 55	7/27/96 11 01
64	8	46.428	11 73	>AL	11 46	62 72	11 28	<AL	14 77	1 00	15 867	33 55	7/27/96 11 02
65	9	37 850	10 57	>AL	11 46	38 42	9 00	<AL	14 77	1 00	12 867	20 55	7/27/96 11 03
66	10	17.167	7 18	At AL	11 46	14 11	5 93	<AL	14 77	1 00	5 867	7 55	7/27/96 11 05
67	11	14 241	6 55	At AL	11 46	23 46	7 26	<AL	14 77	1 00	4 867	12 55	7/27/96 11 06
68	12	11 314	5 86	At AL	11 46	19 72	6 76	<AL	14 77	1 00	3 867	10 55	7/27/96 11 07
69	13	-0 390	2 93	<MDA	11 46	17 85	6 50	<AL	14 77	1 00	0 133	9 55	7/27/96 11 08
70	14	8 388	5 07	<AL	11 46	12 25	5 63	<AL	14 77	1 00	2 867	6 55	7/27/96 11 10
71	15	5 462	4 14	<AL	11 46	8 51	4 96	<AL	14 77	1 00	1 867	4 55	7/27/96 11 11
72	16	8 388	5 07	<AL	11 46	0 84	2 67	<MDA	14 77	1 00	2 867	0 45	7/27/96 11 12
73	17	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 11 13
74	18	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 11 14
75	19	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 11 16
76	20	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 11 17
77	21	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	0 133	3 55	7/27/96 11 18
78	22	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96 11 19
79	23	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 11 20
80	24	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 11 22
81	25	5 462	4 14	<AL	11 46	4 77	4 20	<MDA	14 77	1 00	1 867	2 55	7/27/96 11 23

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID RM108 W WALL 889BLDG
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1B025 XLD
Batch Ended 7/27/96 12 12
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
82	26	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 11 24
83	27	2 536	2 93	<AL	11 46	10 38	5 31	<AL	14 77	1 00	0 867	5 55	7/27/96 11 25
84	28	5 462	4 14	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	1 867	1 55	7/27/96 11 27
85	29	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 11 28
86	30	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 11 29
87	31	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	-0 133	2 55	7/27/96 11 30
88	32	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	-0 133	3 55	7/27/96 11 31
89	33	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	-0 45	7/27/96 11 33
90	34	2 536	2 93	<AL	11 46	6 64	4 60	<AL	14 77	1 00	0 867	3 55	7/27/96 11 34
91	35	5 462	4 14	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	1 867	-0 45	7/27/96 11 35
92	36	17 167	7 18	At AL	11 46	10 38	5 31	<AL	14 77	1 00	5 867	5 55	7/27/96 11 36
93	37	5 462	4 14	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	1 867	1 55	7/27/96 11 37
94	38	2 536	2 93	<AL	11 46	6 64	4 60	<AL	14 77	1 00	0 867	3 55	7/27/96 11 39
95	39	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 11 40
96	40	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 11 41
97	41	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 11 42
98	42	5 462	4 14	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	1 867	0 45	7/27/96 11 44
99	43	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 11 45
100	44	2 536	2 93	<AL	11 46	10 38	5 31	<AL	14 77	1 00	0 867	5 55	7/27/96 11 46
1	45	2 536	2 93	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	0 867	1 55	7/27/96 11 47
2	46	14 241	6 55	At AL	11 46	-0 84	2 67	<MDA	14 77	1 00	4 867	0 45	7/27/96 11 48
3	47	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 11 50
4	48	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 11 51
5	49	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	-0 133	2 45	7/27/96 11 52
6	50	5 462	4 14	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	1 867	0 45	7/27/96 11 53
7	51	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96 11 54
8	52	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 11 56
9	53	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 11 57
10	54	5 462	4 14	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	1 867	0 55	7/27/96 11 58

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID RM108 W WALL 889BLDG
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1B025 XLD
Batch Ended 7/27/96 12 12
Crosstalk Correction Not Applied

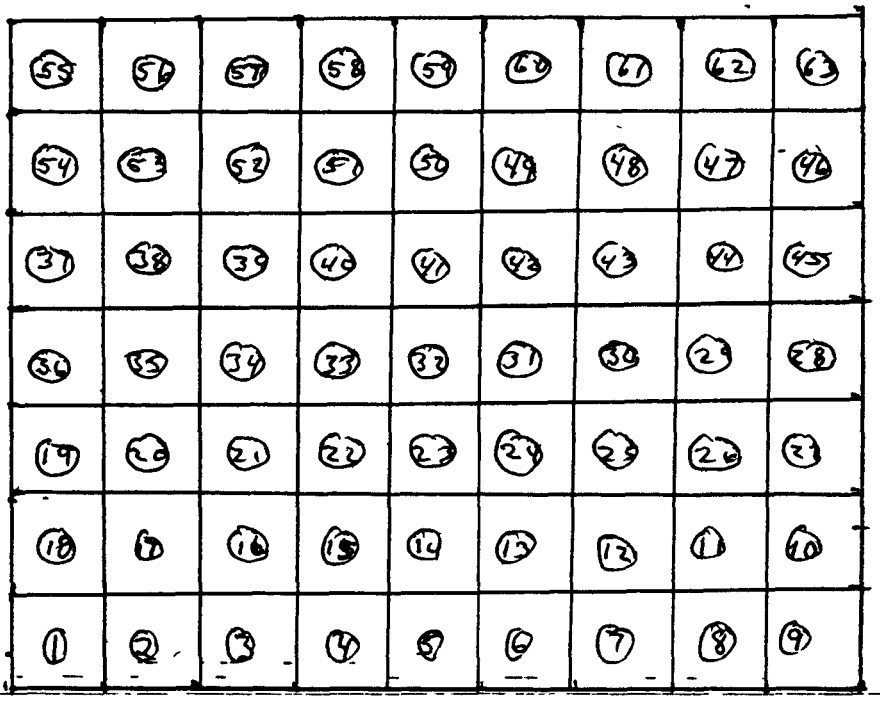
Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
11	55	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 11 59
12	56	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	-0 133	3 55	7/27/96 12 01
13	57	2 536	2 93	<AL	11 46	4 77	4 20	<MDA	14 77	1 00	0 867	2 55	7/27/96 12 02
14	58	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 12 03
15	59	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 12 04
16	60.	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 12 05
17	61	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96 12 07
18	62	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	-0 133	-0 45	7/27/96 12 08
19	63	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 12 09
20		-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 12 10
21		2 536	2 93	<AL	11 46	10 38	5 31	<AL	14 77	1 00	0 867	5 55	7/27/96 12 12

RADIOLOGICAL MONITORING Control No. 96-750-0021

Area or Equipment Drawing Showing Survey Points



West Wall - Rm 108 - Bldg 889

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1 of 2

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
7	North wall Rm 108 Resurvey				
	After Decon 08-06-96	<18	<205	<60	<380
21	North wall Rm 108 Resurvey				
	After Decon 08-06-96	<18	<205	<60	<380
23	North wall Rm 108 Resurvey	<18	<205	<60	<380
24	After Decon 08-06-96	<18	<205	<60	<380
6	West wall Rm 108 Resurvey	<18	<205	<60	<380
7	After Decon 08-06-96	<18	<205	<60	<380
8		<18	<205	<60	<380
9		<18	<205	<60	<380
46	West wall Rm 108 Resurvey				
	Contamination on Conduit.				
	Conduit removed, bagged				
	And Crated	<18	<205	<60	<380
48	West wall Rm 108 Resurvey				
	After Decon 08-07-96	<18	<205	<60	<380
31	East wall Rm 108 Resurvey	<18	<205	<60	<380
32	After Decon 08-07-96	<18	<205	<60	<380
33		<18	<205	<60	<380
35		<18	<205	<60	<380
26	South wall Rm 108 Resurvey				
	Contamination on Conduit.				

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
	Conduit removed, bagged				
	and placed in crate	<18	<205	<60	<380
52	EAST WALL Rm 108	[illegible]	[illegible]	<60	<380
54	EAST WALL Rm 108	<18	<205	<60	<380
38	West wall Rm 108	<18	<205	<60	<380

08-22-96

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP#96-750-0021

FOR. ___ P/WRE ___ PRL ✓ RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM. 108

DATE 08-08-96 | TIME 1430

ITEM DESCRIPTION

North Wall of room 108

COMMENTS These are direct readings only, taken at the sticker location

STATUS

___ RELEASABLE ___ NOT RELEASABLE

✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME) BD McLean

[redacted] 18-8-96

RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-12-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER.	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

MFR	EBER	EBER.	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1570		
CAL DATE		06-06-96		
CAL DUE DATE		12-06-96		
BACKGROUND		α<20 β<700		

Printed with soy ink on recycled paper

Printed on recycled paper

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER _____

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Room 108 North Wall			<60	657
2	Room 108 North Wall			<60	<380
3	Room 108 North Wall			<60	<380
4	Room 108 North Wall			<60	<380
5	Room 108 North Wall			<60	<380
6	Room 108 North Wall			<60	<380
7	Room 108 North Wall			<60	<380
8	Room 108 North Wall			<60	<380
9	Room 108 North Wall			<60	<380
10	Room 108 North Wall			<60	<380
11	Room 108 North Wall			<60	<380
12	Room 108 North Wall			<60	<380
13	Room 108 North Wall			<60	<380
14	Room 108 North Wall			<60	<380
15	Room 108 North Wall			<60	<380
16	Room 108 North Wall			<60	<380
17	Room 108 North Wall			72	<380
18	Room 108 North Wall			<60	<380
19	Room 108 North Wall			<60	<380
20	Room 108 North Wall			<60	<380
21	Room 108 North Wall			<60	<380
22	Room 108 North Wall			<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
23	Room 108 North Wall			90	<380
24	Room 108 North Wall			<60	882
25	Room 108 North Wall			90	<380
26	Room 108 North Wall			<60	<380
27	Room 108 North Wall			72	<380
28	Room 108 North Wall			<60	<380
29	Room 108 North Wall			<60	<380
30	Room 108 North Wall			<60	<380
31	Room 108 North Wall			72	<380
32	Room 108 North Wall			<60	<380
33	Room 108 North Wall			72	<380
34	Room 108 North Wall			<60	<380
35	Room 108 North Wall			<60	<380
36	Room 108 North Wall			<60	<380
37	Room 108 North Wall			72	<380
38	Room 108 North Wall			90	<380
39	Room 108 North Wall			<60	<380
40	Room 108 North Wall			<60	<380
41	Room 108 North Wall			<60	<380
42	Room 108 North Wall			<60	<380
43	Room 108 North Wall			<60	<380
44	Room 108 North Wall			<60	<380

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LOG NUMBER _____

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
45	Room 108 North Wall			<60	<380
46	Room 108 North Wall			<60	<380
47	Room 108 North Wall			<60	<380
48	Room 108 North Wall			<60	<380
49	Room 108 North Wall			<60	<380
50	Room 108 North Wall			<60	<380
51	Room 108 North Wall			<60	<380
52	Room 108 North Wall			<60	<380
53	Room 108 North Wall			96	<380
54	Room 108 North Wall			<60	<380
55	Room 108 North Wall			<60	<380
56	Room 108 North Wall			<60	<380

DJM 8-8-96

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA

DJM 8-8-96

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 Cal Date 06-12-96 Cal Due Date 12-12-96
Batch ID RM 108 N WALL 889BLDG
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1A088 XLD
Batch Ended 7/27/96 10 52
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	1	5 462	4 14	<AL	11 46	8 51	4 96	<AL	14 77	1 00	1 867	4 55	7/27/96 9 46
2	2	5 462	4 14	<AL	11 46	21 59	7 02	<AL	14 77	1 00	1 867	11 55	7/27/96 9 47
3	3	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 9 48
4	4	14 241	6 55	At AL	11 46	2 90	3 76	<MDA	14 77	1 00	4 867	1 55	7/27/96 9 49
5	5	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 9 50
6	6	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 9 52
7	7	23.019	8 29	At AL	11 46	27 20	7 73	<AL	14 77	1 00	7 867	14 55	7/27/96 9 53
8	8	2 536	2 93	<AL	11 46	12 25	5 63	<AL	14 77	1 00	0 867	6 55	7/27/96 9 54
9	9	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 9 55
10	10	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14-77	1 00	0 133	1 55	7/27/96 9 57
11	11	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96 9 58
12	12	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 9 59
13	13	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 10 00
14	14	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 10 01
15	15	2 536	2 93	<AL	11 46	8 51	4 96	<AL	14 77	1 00	0 867	4 55	7/27/96 10 03
16	16	5 462	4 14	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	1 867	1 45	7/27/96 10 04
17	17	5 462	4 14	<AL	11 46	12 25	5 63	<AL	14 77	1 00	1 867	6 55	7/27/96 10 05
18	18	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96 10 06
19	19	-0 390	2 93	<MDA	11 46	10 38	5 31	<AL	14 77	1 00	0 133	5 55	7/27/96 10 07
20	20	8 388	5 07	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	2 867	1 55	7/27/96 10 09
21	21	20 093	7 75	At AL	11 46	19 72	6 76	<AL	14 77	1 00	6 867	10 55	7/27/96 10 10
22	22	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 10 11
23	23	23 019	8 29	At AL	11 46	1 03	3 26	<MDA	14 77	1 00	7 867	0 55	7/27/96 10 12
24	24	23 019	8 29	At AL	11 46	17 85	6 50	<AL	14 77	1 00	7 867	9 55	7/27/96 10 14
25	25	-0 390	2 93	<MDA	11 46	15 98	6 22	<AL	14 77	1 00	0 133	8 55	7/27/96 10 15

201

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-94 **Cal Due Date** 12-12-96

Batch ID RM 108 N WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A088 XLD

Batch Ended 7/27/96 10 52

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
26	26	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	-0 133	3 55	7/27/96	10 16
27	27	2 536	2 93	<AL	11 46	4 77	4 20	<MDA	14 77	1 00	0 867	2 55	7/27/96	10 17
28	28	2 536	2 93	<AL	11 46	4 77	4 20	<MDA	14 77	1 00	0 867	2 55	7/27/96	10 18
29	29	2 536	2 93	<AL	11 46	6 64	4 60	<AL	14 77	1 00	0 867	3 55	7/27/96	10 20
30	30	5 462	4 14	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	1 867	0 55	7/27/96	10 21
31	31	2 536	2 93	<AL	11 46	6 64	4 60	<AL	14 77	1 00	0 867	3 55	7/27/96	10 22
32	32	2 536	2 93	<AL	11 46	-4 58	1 91	<MDA	14 77	1 00	0 867	2 45	7/27/96	10 23
33	33	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	-0 133	2 55	7/27/96	10 25
34	34	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96	10 26
35	35	5 462	4 14	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	1 867	0 45	7/27/96	10 27
36	36	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	-0 133	-0 45	7/27/96	10 28
37	37	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	10 29
38	38	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	-0 133	1 45	7/27/96	10 31
39	39	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	0 133	2 55	7/27/96	10 32
40	40	5 462	4 14	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	1 867	0 55	7/27/96	10 33
41	41	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96	10 34
42	42	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96	10 35
43	43	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	-0 133	0 45	7/27/96	10 37
44	44	5 462	4 14	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	1 867	0 55	7/27/96	10 38
45	45	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	-0 133	1 45	7/27/96	10 39
46	46	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	10 40
47	47	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96	10 41
48	48	2 536	2 93	<AL	11 46	4 77	4 20	<MDA	14 77	1 00	0 867	2 55	7/27/96	10 43
49	49	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	10 44
50	50	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96	10 45
51	51	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96	10 46
52	52	2 536	2 93	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	0 867	1 55	7/27/96	10 48
53	53	-0 390	2 93	<MDA	11 46	8 51	4 96	<AL	14,77	1 00	0 133	4 55	7/27/96	10 49
54	54	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	10 50

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID RM 108 N WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A088 XLD

Batch Ended 7/27/96 10 52

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

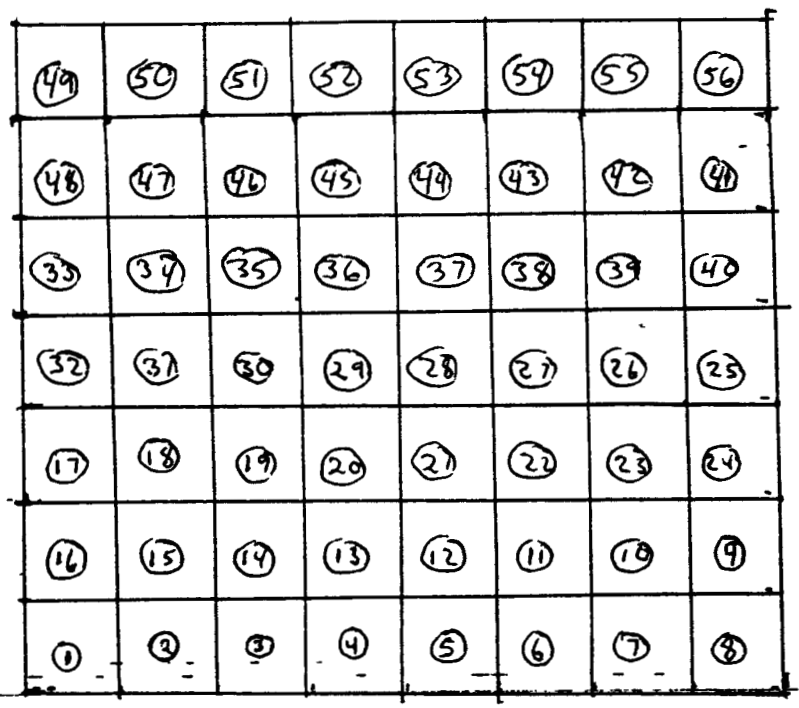
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
55	55	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	10 51
56	56	5 462	4 14	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	1 867	0 55	7/27/96	10 52

RADIOLOGICAL MONITORING Control No. 96-750-0021

Area or Equipment Drawing Showing Survey Points



North Wall - RM 108 - Bldg 889

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
7	North wall Rm 108 Resurvey				
	After Decon 08-06-96	<18	<205	<60	<380
21	North wall Rm 108 Resurvey				
	After Decon 08-06-96	<18	<205	<60	<380
23	North wall Rm 108 Resurvey	<18	<205	<60	<380
24	After Decon 08-06-96	<18	<205	<60	<380
6	West wall Rm 108 Resurvey	<18	<205	<60	<380
7	After Decon 08-06-96	<18	<205	<60	<380
8		<18	<205	<60	<380
9		<18	<205	<60	<380
46	West wall Rm 108 Resurvey				
	Contamination on Conduit.				
	Conduit removed, bagged				
	And Crated	<18	<205	<60	<380
48	West wall Rm 108 Resurvey				
	After Decon 08-07-96	<18	<205	<60	<380
31	East wall Rm 108 Resurvey	<18	<205	<60	<380
32	After Decon 08-07-96	<18	<205	<60	<380
33		<18	<205	<60	<380
35		<18	<205	<60	<380
26	South wall Rm 108 Resurvey				
	Contamination on Conduit.				

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
	Conduit removed, bagged				
	and placed in crate	<18	<205	<60	<380
52	EAST WALL Rm 108	<18	<205	<60	<380
54	EAST WALL Rm 108	<18	<205	<60	<380
38	West WALL Rm 108	<18	<205	<60	<380

08-22-96

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: RWP96-750-0021

FOR. ___ P/WRE ___ PRL ✓ RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM. 108

DATE. 08-08-96 | TIME 1430

ITEM DESCRIPTION: EAST WALL Room 108
Direct Readings only

COMMENTS. These readings are taken at the sticker locations

STATUS
___ RELEASABLE ___ NOT RELEASABLE
✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME) J.L. Johnston

J. Johnston [redacted] 08-08-96
RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-12-96
RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

MFR	EBER	EBER.	EBER.	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1265		
CAL DATE		02-13-96		
CAL DUE DATE		08-13-96		
BACKGROUND		20a/68b		

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM 60 SEC COUNT)	TOTAL BETA/GAMMA
1	E. WALL Rm 108			<60	<380
2	E. WALL Rm 108			260 ~~448~~	612
3	E. WALL Rm 108			<60	1215
4	E. WALL Rm 108			<60	1032
5	E. WALL Rm 108			<60	1290
6	E. WALL Rm 108			<60	1320
7	E. WALL Rm 108			<60	1482
8	E. WALL Rm 108			<60	708
9	E. WALL Rm 108			<60	1512
10	E. WALL Rm 108			<60	933
11	E. WALL Rm 108			<60	<380
12	E WALL Rm 108			<60	444
13	E. WALL Rm 108			<60	480
14	E. WALL Rm 108			<60	<380
15	E. WALL Rm 108			<60	<380
16	E. WALL Rm 108			<60	<380
17	E. WALL Rm 108			<60	<380
18	E. WALL Rm 108			<60	<380
19	E. WALL Rm 108			<60	<380
20	E WALL Rm 108			<60	<380
21	E. WALL Rm 108			<60	<380
22	E WALL Rm 108			<60	<380

06-28-96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM 60 SEC COUNT)	TOTAL BETA/GAMMA
23	E. WALL Rm 108			<60	<380
24	E. WALL Rm 108			<60	<380
25	E WALL Rm 108			<60	<380
26	E. WALL Rm 108			<60	<380
27	E. WALL Rm 108			<60	<380
28	E WALL Rm 108			<60	<380
29	E WALL Rm 108			<60	<380
30	E. WALL Rm 108			<60	<380
31	E. WALL Rm 108			102	[illegible]
32	E. WALL Rm 108			156	[illegible]
33	E. WALL Rm 108			204	[illegible]
34	E. WALL Rm 108			<60	<380
35	E. WALL Rm 108			156	<380
36	E. WALL Rm 108			<60	<380
37	E WALL Rm 108			<60	<380
38	E. WALL Rm 108			<60	<380
39	E WALL Rm 108			<60	750
40	E. WALL Rm 108			<60	<380
41	E. WALL Rm 108			<60	<380
42	E. WALL Rm 108			<60	<380
43	E WALL Rm 108			<60	<380
44	E. WALL Rm 108			<60	<380

06-28-96

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

PAGE 3 OF 8

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
45	E. WALL Rm 108			<60	<380
46	E. WALL Rm 108			<60	975
47	E. WALL Rm 108			<60	1104
48	E. WALL Rm 108			<60	978
49	E. WALL Rm 108			<60	<380
50	E. WALL Rm 108			<60	<380
51	E. WALL Rm 108			<60	<380
52	E. WALL Rm 108			102	<380
53	E. WALL Rm 108			<60	<380
54	E. WALL Rm 108			204	<380
55	E. WALL Rm 108			<60	<380
56	E. WALL Rm 108			<60	<380
57	E. WALL Rm 108			<60	<380
58	E. WALL Rm 108			<60	<380
59	E. WALL Rm 108			<60	960
60	E. WALL Rm 108			<60	<380
61	E. WALL Rm 108			<60	<380
62	E. WALL Rm 108			<60	<380
63	E. WALL Rm 108			<60	909
64	E. WALL Rm 108			90	390
65	E. WALL Rm 108			<60	<380
66	E. WALL Rm 108			<60	<380

08-08-96 [illegible]

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
67	E. WALL Rm 108			<60	<380
68	E. WALL Rm 108			<60	<380
69	E. WALL Rm 108			<60	<380
70	E WALL Rm 108			<60	<380

08-08-96 [illegible]

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 Cal Date 06-12-96 Cal Due Date 12-12-96
Batch ID RM 108 E WALL 889BLDG
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1D003 XLD
Batch Ended 7/27/96 14 45
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 13
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 45
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
79	1	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	-0 133	-2 45	7/27/96 13 21
80	2	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 13 22
81	3	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	-0 45	7/27/96 13 23
82	4	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	-0 133	-0 45	7/27/96 13 25
83	5	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	-0 133	-0 45	7/27/96 13 26
84	6	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96 13 27
85	7	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 13 28
86	8	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 13 30
87	9	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	-0 45	7/27/96 13 31
88	10	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96 13 32
89	11	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	-0 133	1 45	7/27/96 13 33
90	12	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96 13 35
91	13	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96 13 36
92	14	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 13 37
93	15	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 13 38
94	16	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	-0 133	2 45	7/27/96 13 39
95	17	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 13 41
96	18	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 13 42
97	19	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 13 43
98	20	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 13 44
99	21	-0 390	2 93	<MDA	11 46	2 90	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96 13 45
100	22	5 462	4 14	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	1 867	1 55	7/27/96 13 47
1	23	5 462	4 14	<AL	11 46	4 77	4 20	<MDA	14 77	1 00	1 867	2 55	7/27/96 13 48
2	24	5 462	4 14	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	1 867	0 45	7/27/96 13 49
3	25	11 314	5 86	At AL	11 46	10 38	5 31	<AL	14 77	1 00	3 867	5 55	7/27/96 13 50

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID RM 108 E WALL 889BLDG
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1D003 XLD
Batch Ended 7/27/96 14 45
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date Time
4	26	11 314	5 86	At AL	11 46	2 90	3 76	<MDA	14 77	1 00	3 867	1 55	7/27/96 13 52
5	27	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	-0 133	3 55	7/27/96 13 53
6	28	2 536	2 93	<AL	11 46	0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 13 54
7	29	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 13 55
8	30	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 13 56
9	31	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 13 58
10	32	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 13 59
11	33	11 314	5 86	At AL	11 46	1 03	3 26	<MDA	14 77	1 00	3 867	0 55	7/27/96 14 00
12	34	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 14 01
13	35	5 462	4 14	<AL	11 46	4 77	4 20	<MDA	14 77	1 00	1 867	2 55	7/27/96 14 02
14	36	2 536	2 93	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96 14 04
15	37	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 14 05
16	38	2 536	2 93	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96 14 06
17	39	-0 390	2 93	<MDA	11 46	-4 58	1 91	<MDA	14 77	1 00	0 133	2 45	7/27/96 14 07
18	40	5 462	4 14	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	1 867	1 45	7/27/96 14 09
19	41	5 462	4 14	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	1 867	0 55	7/27/96 14 10
20	42	-0 390	2 93	<MDA	11 46	1 03	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96 14 11
21	43	2 536	2 93	<AL	11 46	1 03	3 26	<MDA	14 77	1 00	0 867	0 55	7/27/96 14 12
22	44	2 536	2 93	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96 14 13
23	45	-0 390	2 93	<MDA	11 46	4 77	4 20	<MDA	14 77	1 00	-0 133	2 55	7/27/96 14 15
24	46	2 536	2 93	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96 14 16
25	47	-0 390	2 93	<MDA	11 46	6 64	4 60	<AL	14 77	1 00	-0 133	3 55	7/27/96 14 17
26	48	2 536	2 93	<AL	11 46	2 90	3 76	<MDA	14 77	1 00	0 867	1 55	7/27/96 14 18
27	49	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96 14 20
28	50	5 462	4 14	<AL	11 46	-0 84	2 67	<MDA	14 77	1 00	1 867	0 45	7/27/96 14 21
29	51	-0 390	2 93	<MDA	11 46	-2 71	1 91	<MDA	14 77	1 00	-0 133	1 45	7/27/96 14 22
30	52	-0 390	2 93	<MDA	11 46	-0 84	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96 14 23
31	53	5 462	4 14	<AL	11 46	-2 71	1 91	<MDA	14 77	1 00	1 867	1 45	7/27/96 14 25
32	54	2 536	2 93	<AL	11 46	6 64	4 60	<AL	14 77	1 00	0 867	3 55	7/27/96 14 26

012.

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

6 of 8

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID RM 108 E WALL 889BLDG

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1D003 XLD

Batch Ended 7/27/96 14 45

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

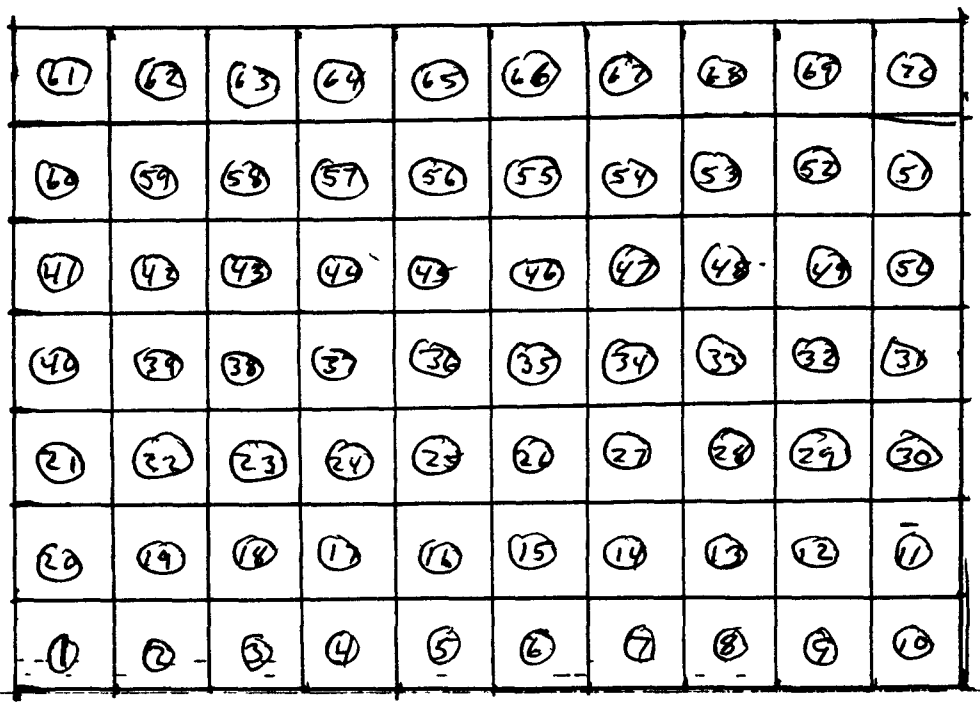
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 13
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 45
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
33	55	**5 462**	4 14	<AL	11 46	**-2 71**	1 91	<MDA	14 77	1 00	1 867	1 45	7/27/96	14 27
34	56	**2 536**	2 93	<AL	11 46	**8 51**	4 96	<AL	14 77	1 00	0 867	4 55	7/27/96	14 28
35	57	**-0 390**	2 93	<MDA	11 46	**2 90**	3 76	<MDA	14 77	1 00	-0 133	1 55	7/27/96	14 29
36	58	**-0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	0 133	0 55	7/27/96	14 31
37	59	**2 536**	2 93	<AL	11 46	**-0 84**	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96	14 32
38	60	**-0 390**	2 93	<MDA	11 46	**-2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	14 33
39	61	**2 536**	2 93	<AL	11 46	**-2 71**	1 91	<MDA	14 77	1 00	0 867	1 45	7/27/96	14 34
40	62	**-0 390**	2 93	<MDA	11 46	**-0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	14 35
41	63	**-0 390**	2 93	<MDA	11 46	**-2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	14 37
42	64	**-0 390**	2 93	<MDA	11 46	**-0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	14 38
43	65	**-0 390**	2 93	<MDA	11 46	**2 90**	3 76	<MDA	14 77	1 00	0 133	1 55	7/27/96	14 39
44	66	**-0 390**	2 93	<MDA	11 46	**-2 71**	1 91	<MDA	14 77	1 00	0 133	1 45	7/27/96	14 40
45	67	**-0 390**	2 93	<MDA	11 46	**-0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	14 42
46	68	**-0 390**	2 93	<MDA	11 46	**-0 84**	2 67	<MDA	14 77	1 00	0 133	0 45	7/27/96	14 43
47	69	**2 536**	2 93	<AL	11 46	**-0 84**	2 67	<MDA	14 77	1 00	0 867	0 45	7/27/96	14 44
48	70	**-0 390**	2 93	<MDA	11 46	**1 03**	3 26	<MDA	14 77	1 00	-0 133	0 55	7/27/96	14 45

RADIOLOGICAL MONITORING Control No. 96-750-0021

Area or Equipment Drawing Showing Survey Points



EAST WALL - RM 108 - Bldg 889

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
7	North wall Rm 108 Resurvey After Decon 08-06-96	<18	<205	<60	<380
21	North wall Rm 108 Resurvey After Decon 08-06-96	<18	<205	<60	<380
23	North wall Rm 108 Resurvey	<18	<205	<60	<380
24	After Decon 08-06-96	<18	<205	<60	<380
6	WEST WALL Rm 108 Resurvey	<18	<205	<60	<380
7	AFTER Decon 08-06-96	<18	<205	<60	<380
8		<18	<205	<60	<380
9		<18	<205	<60	<380
46	WEST WALL Rm 108 Resurvey Contamination on Conduit. Conduit removed, bagged And Crated	<18	<205	<60	<380
48	WEST WALL Rm 108 Resurvey After Decon 08-07-96	<18	<205	<60	<380
31	EAST WALL Rm 108 Resurvey	<18	<205	<60	<380
32	After Decon 08-07-96	<18	<205	<60	<380
33		<18	<205	<60	<380
35		<18	<205	<60	<380
26	South wall Rm 108 Resurvey Contamination on Conduit.				

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
	Conduit removed, bagged and placed in crate	<18	<205	<60	<380
52	EAST WALL Rm 108	<18	<205	<60	<380
54	EAST WALL Rm 108	<18	<205	<60	<380
38	West WALL Rm 108	<18	<205	<60	<380

08-22-96

213

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: 96-750-0021

FOR: ___ P/WRE ___ PRL ___ RWP ✓ OTHER Baseline Survey

BUILDING/LOCATION: 889

ROOM: 108

DATE: 8-14-96

TIME: 0900

ITEM DESCRIPTION:

Rm 108 Floor Survey

COMMENTS:

STATUS

___ RELEASABLE ___ NOT RELEASABLE

✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME): Munoz

[redacted] 8-22-96

RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-22-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	991	892		
CAL DATE	6-27-96	5-20-96		
CAL DUE DATE	12-27-96	11-20-96		

MFR	EBER.	EBER.	EBER.	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	Bc389	Bc393		
CAL DATE	7-3-96	7-3-96		
CAL DUE DATE	1-3-97	1-3-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1503		
CAL DATE		4-25-96		
CAL DUE DATE		10-25-96		
BACKGROUND		α 0.0 β 431		

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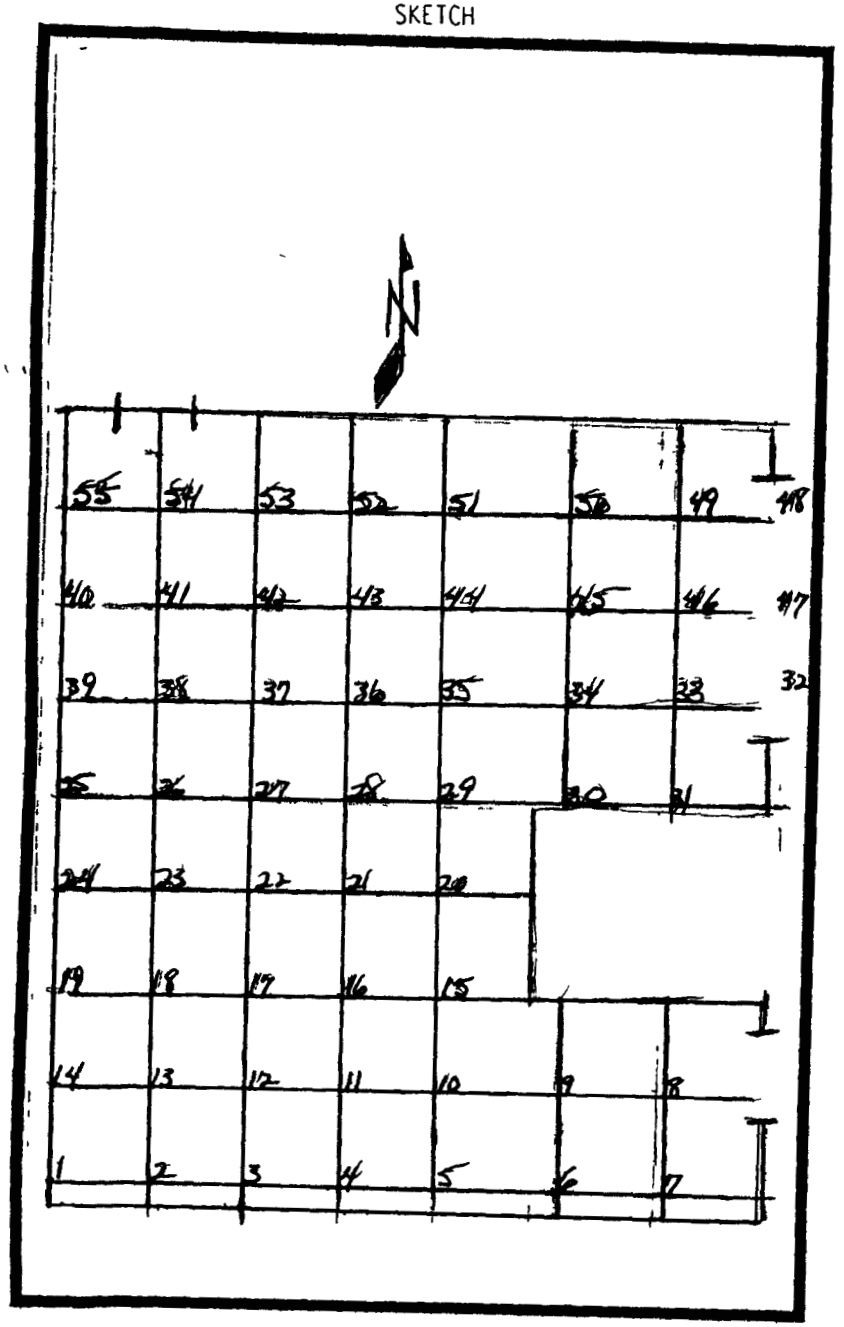
LOG NUMBER Rwp96-[illegible]-0021

PAGE 2 OF 6

RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (PRUNE/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Floor Rm 108			<60	440
2	Floor Rm 108			<60	612
3	Floor Rm 108			<60	1176
4	Floor Rm 108			<60	1206
5	Floor Rm 108			66	1329
6	Floor Rm 108			<60	<380
7	Floor Rm 108			<60	609
8	Floor Rm 108			<60	<380
9	Floor Rm 108			<60	576
10	Floor Rm 108			<60	1464
11	Floor Rm 108			<60	2427
12	Floor Rm 108			<60	1269
13	Floor Rm 108			<60	912
14	Floor Rm 108			<60	435
15	Floor Rm 108			<60	639
16	Floor Rm 108			66	1785
17	Floor Rm 108			<60	1575
18	Floor Rm 108			<60	915
19	Floor Rm 108			96	2100
20	Floor Rm 108			<60	<380
21	Floor Rm 108			<60	453
22	Floor Rm 108			<60	555

08-14-96

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER Eup 96 750 0021

PAGE 3 OF 6

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM 60 SEC COUNT)	TOTAL BETA/GAMMA
23	Floor Rm 108			<60	723
24	Floor Rm 108			<60	3255
25	Floor Rm 108			84	3303
26	Floor Rm 108			<60	<380
27	Floor Rm 108			84	1107
28	Floor Rm 108			<60	645
29	Floor Rm 108			<60	<380
30	Floor Rm 108			60	495
31	Floor Rm 108			<60	485
32	Floor Rm 108			<60	540
33	Floor Rm 108			<60	<380
34	Floor Rm 108			78	<380
35	Floor Rm 108			<60	<380
36	Floor Rm 108			72	525
37	Floor Rm 108			<60	471
38	Floor Rm 108			96	843
39	Floor Rm 108			162	3162
40	Floor Rm 108			<60	993
41	Floor Rm 108			<60	846
42	Floor Rm 108			96	807
43	Floor Rm 108			162	1401
44	Floor Rm 108			84	1062

08-14-96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM 60 SEC COUNT)	TOTAL BETA/GAMMA
45	Floor Rm 108			76	1011
46	Floor Rm 108			72	1206
47	Floor Rm 108			<60	1458
48	Floor Rm 108			120	1011
49	Floor Rm 108			<60	993
50	Floor Rm 108			72	1011
51	Floor Rm 108			72	1137
52	Floor Rm 108			<60	1023
53	Floor Rm 108			<60	1356
54	Floor Rm 108			<60	909
55	Floor Rm 108			96	2091

08-14-96

912

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

4 6

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID 889 RM 108 FLOOR

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A096 XLD

Batch Ended 8/13/96 12 34

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file PU239AB

Alpha Efficiency 34 17%

Alpha to Beta Crosstalk 8 63%

Alpha Background (CPM) 0 23

Alpha Correction Factor 1 000

Beta efficiency log file SR90AB

Beta Efficiency 53 49%

Beta into Alpha Crosstalk 1 06%

Beta Background (CPM) 3 00

Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	1	2 243	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 767	-1 00	8/13/96 11 28
2	2	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	-0 233	1 00	8/13/96 11 29
3	3	2 243	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 767	1 00	8/13/96 11 30
4	4	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 233	1 00	8/13/96 11 31
5	5	-0 683	2 93	<MDA	12 61	3 74	4 20	<MDA	15 80	1 00	-0 233	2 00	8/13/96 11 33
6	6	-0 683	2 93	<MDA	12 61	3 74	4 20	<MDA	15 80	1 00	0 233	2 00	8/13/96 11 34
7	7	-0 683	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	-0 233	0 00	8/13/96 11 35
8	8	-0 683	2 93	<MDA	12 61	-3 74	1 92	<MDA	15 80	1 00	0 233	2 00	8/13/96 11 36
9	9	-0 683	2 93	<MDA	12 61	-3 74	1 92	<MDA	15 80	1 00	-0 233	2 00	8/13/96 11 37
10	10	2 243	2 93	<MDA	12 61	1 87	3 76	<MDA	15 80	1 00	0 767	1 00	8/13/96 11 39
11	11	2 243	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 767	1 00	8/13/96 11 40
12	12	-0 683	2 93	<MDA	12 61	5 61	4 60	<AL	15 80	1 00	0 233	3 00	8/13/96 11 41
13	13	-0 683	2 93	<MDA	12 61	1 87	3 76	<MDA	15 80	1 00	-0 233	1 00	8/13/96 11 42
14	14	-0 683	2 93	<MDA	12 61	-3 74	1 92	<MDA	15 80	1 00	0 233	2 00	8/13/96 11 44
15	15	-0 683	2 93	<MDA	12 61	1 87	3 76	<MDA	15 80	1 00	0 233	1 00	8/13/96 11 45
16	16	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	-0 233	1 00	8/13/96 11 46
17	17	2 243	2 93	<MDA	12 61	1 87	3 76	<MDA	15 80	1 00	0 767	1 00	8/13/96 11 47
18	18	2 243	2 93	<MDA	12 61	-3 74	1 92	<MDA	15 80	1 00	0 767	-2 00	8/13/96 11 48
19	19	2 243	2 93	<MDA	12 61	1 87	3 76	<MDA	15 80	1 00	0 767	1 00	8/13/96 11 50
20	20	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	-0 233	1 00	8/13/96 11 51
21	21	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	-0 233	-1 00	8/13/96 11 52
22	22	2 243	2 93	<MDA	12 61	3 74	4 20	<MDA	15 80	1 00	0 767	2 00	8/13/96 11 53
23	23	-0 683	2 93	<MDA	12 61	5 61	4 60	<AL	15 80	1 00	-0 233	3 00	8/13/96 11 54
24	24	-0 683	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	0 233	0 00	8/13/96 11 56
25	25	2 243	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	0 767	0 00	8/13/96 11 57

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96
Batch ID 889 RM 108 FLOOR
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1A096 XLD
Batch Ended 8/13/96 12 34
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 23
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	3 00
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
26	26	-0 683	2 93	<MDA	12 61	-5 61	1 92	<MDA	15 80	1 00	0 233	3 00	8/13/96 11 58
27	27	2 243	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 767	1 00	8/13/96 11 59
28	28	-0 683	2 93	<MDA	12 61	-5 61	1 92	<MDA	15 80	1 00	-0 233	3 00	8/13/96 12 01
29	29	2 243	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 767	1 00	8/13/96 12 02
30	30	2 243	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	0 767	0 00	8/13/96 12 03
31	31	2 243	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 767	1 00	8/13/96 12 04
32	32	-0 683	2 93	<MDA	12 61	-5 61	1 92	<MDA	15 80	1 00	0 233	3 00	8/13/96 12 06
33	33	-0 683	2 93	<MDA	12 61	5 61	4 60	<AL	15 80	1 00	0 233	3 00	8/13/96 12 07
34	34	-0 683	2 93	<MDA	12 61	3 74	1 92	<MDA	15 80	1 00	0 233	2 00	8/13/96 12 08
35	35	-0 683	2 93	<MDA	12 61	3 74	1 92	<MDA	15 80	1 00	0 233	2 00	8/13/96 12 09
36	36	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 233	1 00	8/13/96 12 10
37	37	2 243	2 93	<MDA	12 61	5 61	4 60	<AL	15 80	1 00	0 767	3 00	8/13/96 12 12
38	38	-0 683	2 93	<MDA	12 61	1 87	2 68	<MDA	15 80	1 00	0 233	1 00	8/13/96 12 13
39	39	-0 683	2 93	<MDA	12 61	1 87	3 76	<MDA	15 80	1 00	0 233	1 00	8/13/96 12 14
40	40	-0 683	2 93	<MDA	12 61	-5 61	1 92	<MDA	15 80	1 00	0 233	3 00	8/13/96 12 15
41	41	2 243	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	0 767	0 00	8/13/96 12 17
42	42	5 170	4 14	<AL	12 61	0 00	3 27	<MDA	15 80	1 00	1 767	0 00	8/13/96 12 18
43	43	5 170	4 14	<AL	12 61	3 74	4 20	<MDA	15 80	1 00	1 767	2 00	8/13/96 12 19
44	44	-0 683	2 93	<MDA	12 61	1 87	3 76	<MDA	15 80	1 00	-0 233	1 00	8/13/96 12 20
45	45	-0 683	2 93	<MDA	12 61	-5 61	1 92	<MDA	15 80	1 00	0 233	3 00	8/13/96 12 21
46	46	2 243	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 767	1 00	8/13/96 12 23
47	47	2 243	2 93	<MDA	12 61	5 61	4 60	<AL	15 80	1 00	0 767	3 00	8/13/96 12 24
48	48	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	-0 233	1 00	8/13/96 12 25
49	49	-0 683	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	0 233	0 00	8/13/96 12 26
50	50	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	-0 233	1 00	8/13/96 12 27
51	51	-0 683	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	0 233	0 00	8/13/96 12 29
52	52	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 233	1 00	8/13/96 12 30
53	53	-0 683	2 93	<MDA	12 61	0 00	3 27	<MDA	15 80	1 00	-0 233	0 00	8/13/96 12 31
54	54	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	-0 233	1 00	8/13/96 12 32

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228126-2 **Cal Date** 06-12-96 **Cal Due Date** 12-12-96

Batch ID 889 RM 108 FLOOR

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A096 XLD

Batch Ended 8/13/96 12 34

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 23
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	3 00
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
55	55	-0 683	2 93	<MDA	12 61	-1 87	2 68	<MDA	15 80	1 00	0 233	1 00	8/13/96 12 34

219

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: RWP 96-750-0021

FOR. ____ P/WRE ____ PRL

____ RWP ✓ OTHER Baseline

BUILDING/LOCATION: 889 | ROOM. 108

DATE. 08-20-96 | TIME: ~~AM~~ 1030

ITEM DESCRIPTION. Resurvey After decon Floor Area Rm 108

COMMENTS.

STATUS:

✓ RELEASABLE ____ NOT RELEASABLE

____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) J. L. Johnston

[redacted] 108-20-96

RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 8-20-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	891	892		
CAL DATE	06-27-96	05-20-96		
CAL DUE DATE	12-27-96	11-20-96		

MFR	EBER.	EBER.	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	354	393		
CAL DATE	07-03-96	07-03-96		
CAL DUE DATE	01-03-97	01-03-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE TECHNOLOGY	LUDLUM	
MODEL	A-100	ELECTRET	31	
SERIAL #		1503		
CAL DATE		04-25-96		
CAL DUE DATE		11-25-96		
BACKGROUND		2.00/1955		

Printed with soy ink on recycled paper

022

Print nk on recycled paper

LOG NUMBER Kwp 46-753 2021

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 2 OF 2

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
39	Floor Rm 108	<18	<205	<60	870
43	Floor Rm 108	<18	<205	<60	2295
48	Floor Rm 108	<18	<205	<60	2316

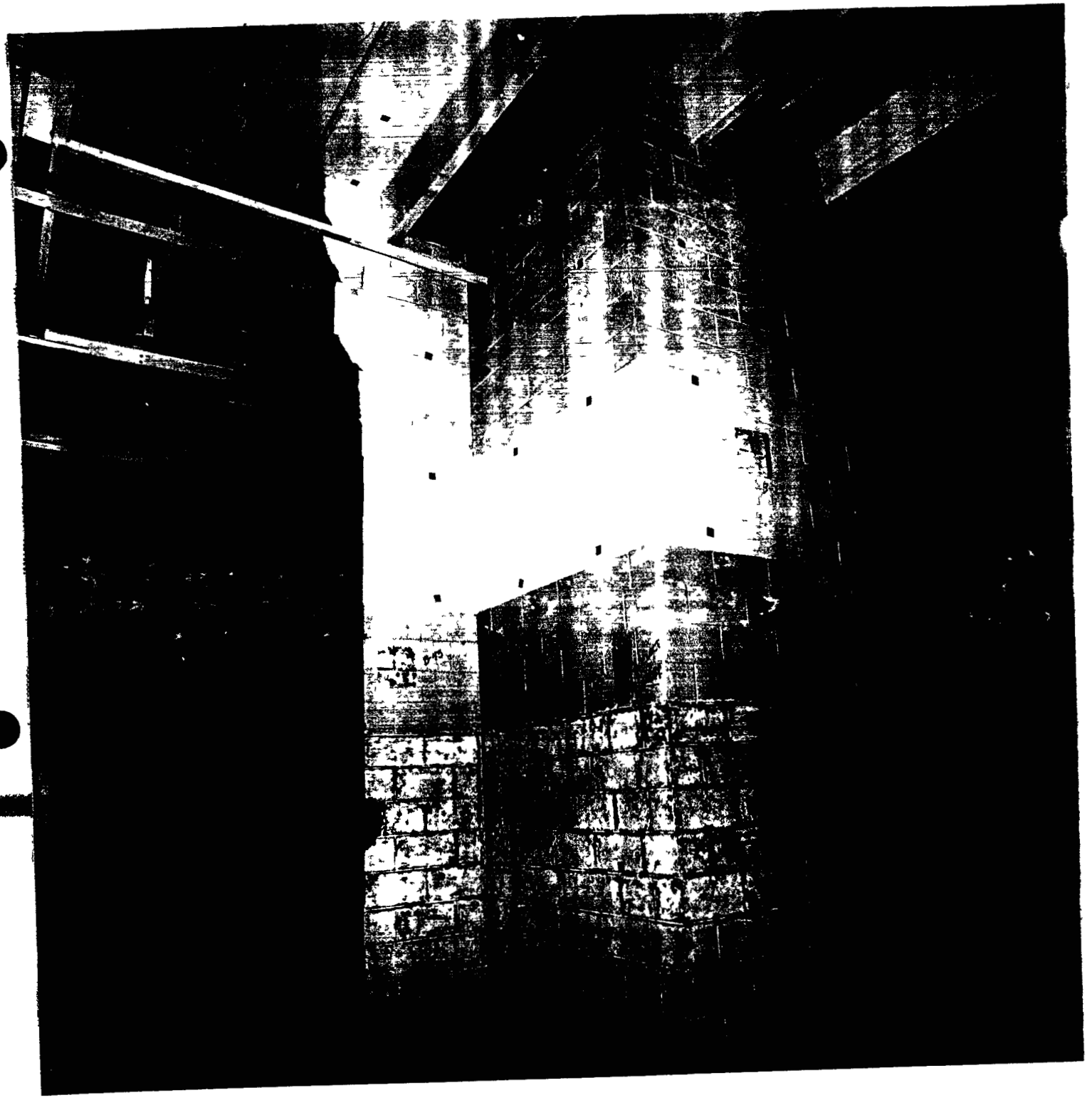
08-20-96 [illegible]

SURVEY RESULTS (DPM/100 CM²)

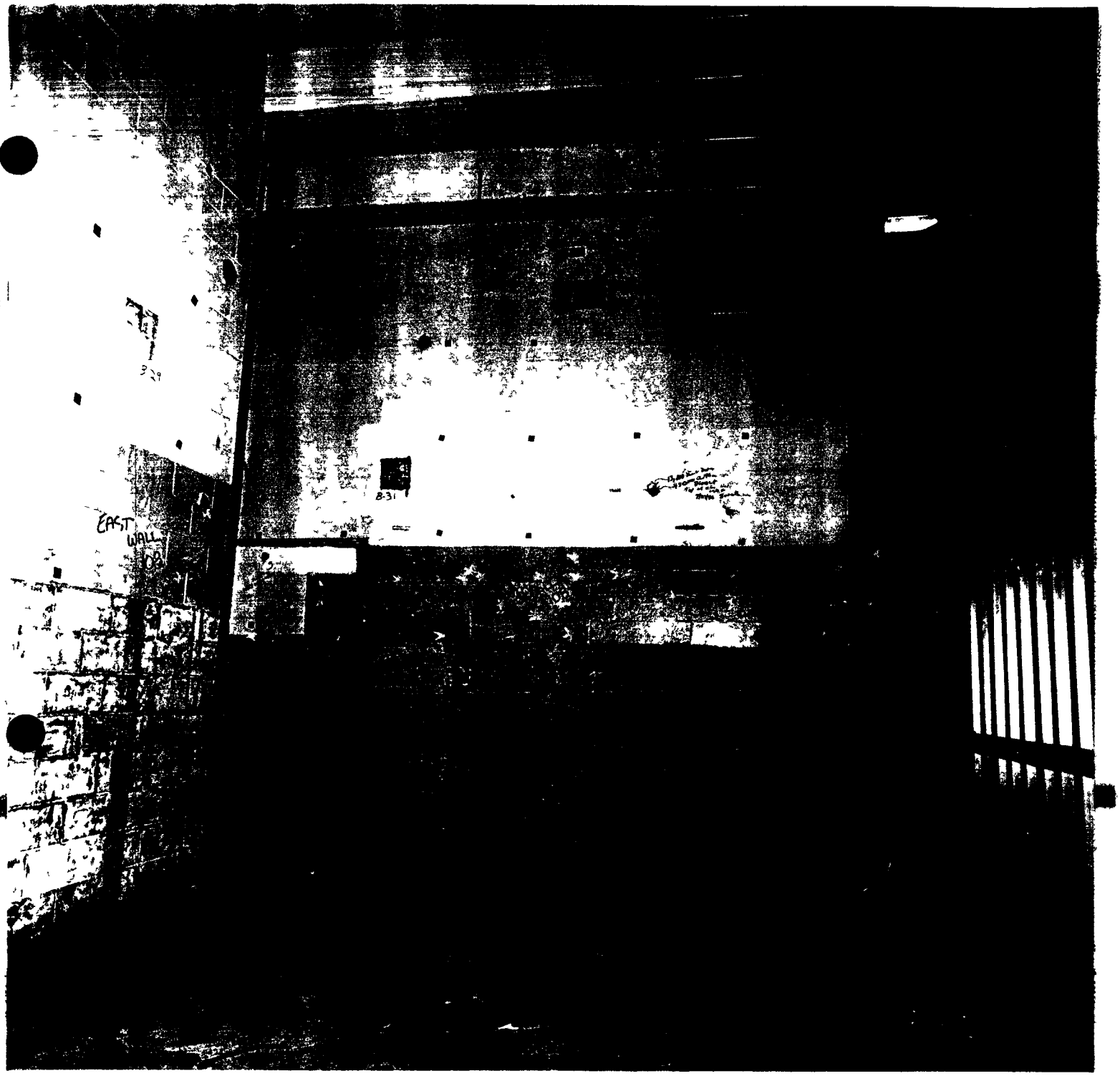
SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA

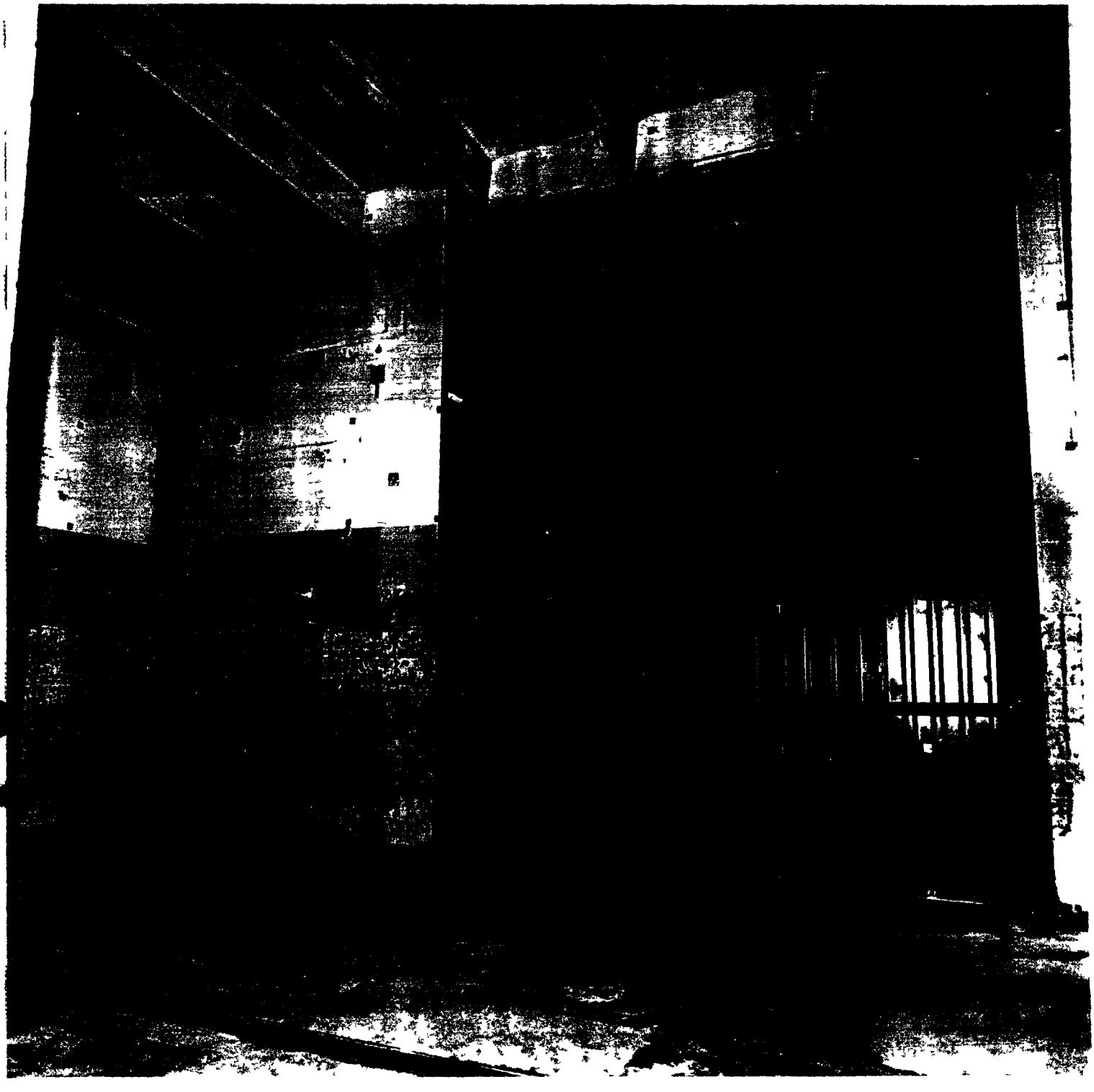
08-20-96 [illegible]

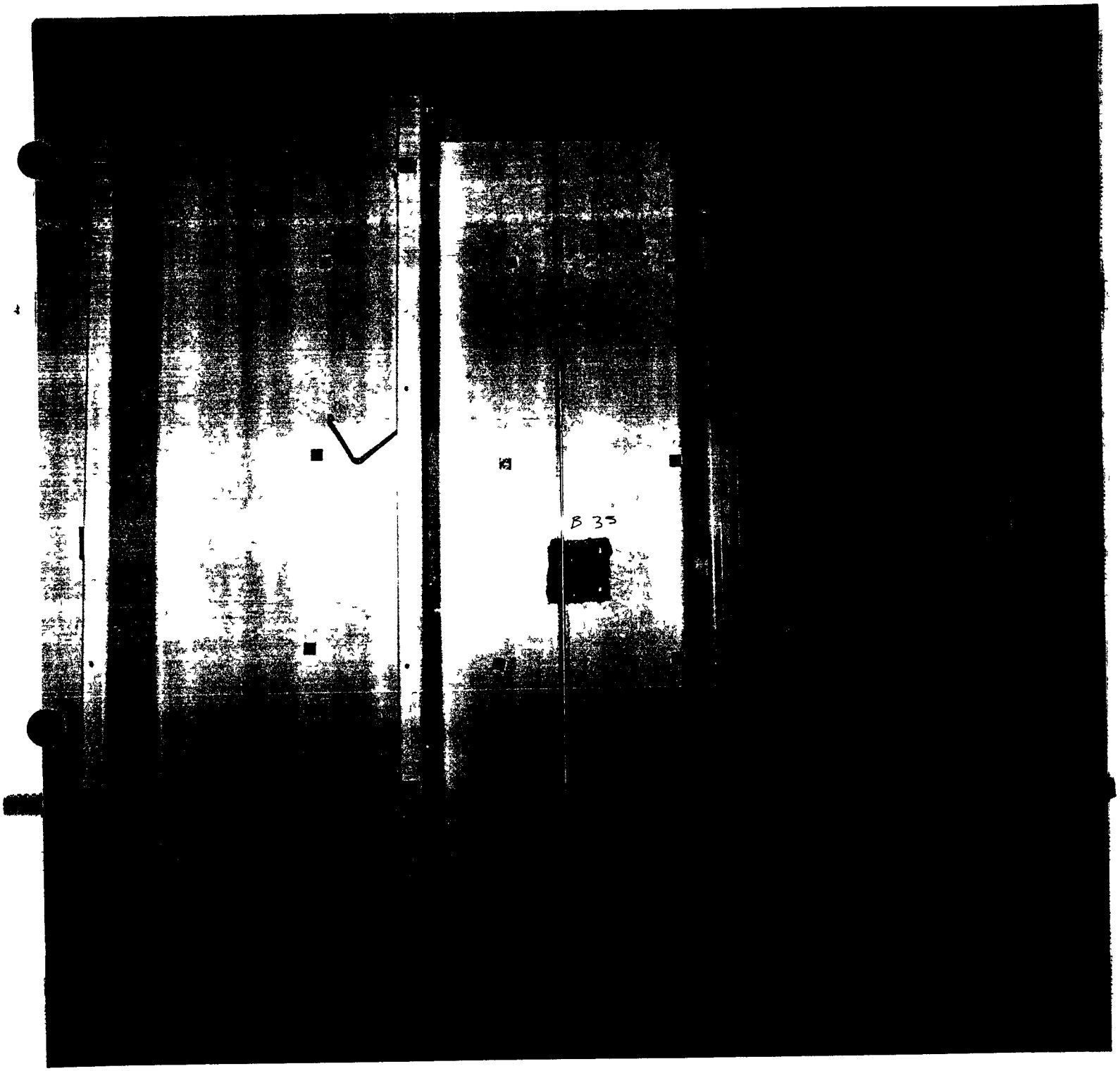
B-27
B-29

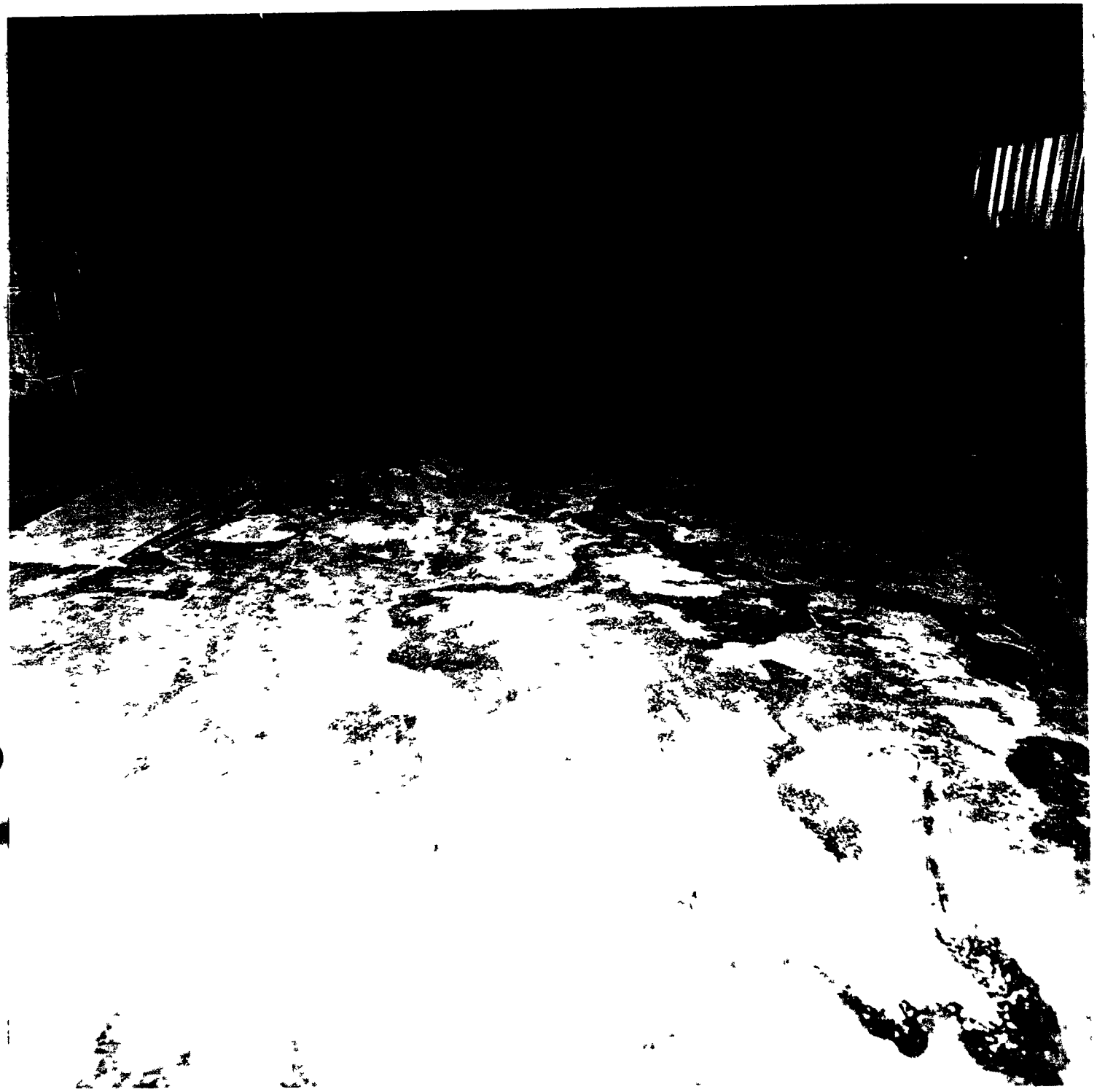


222

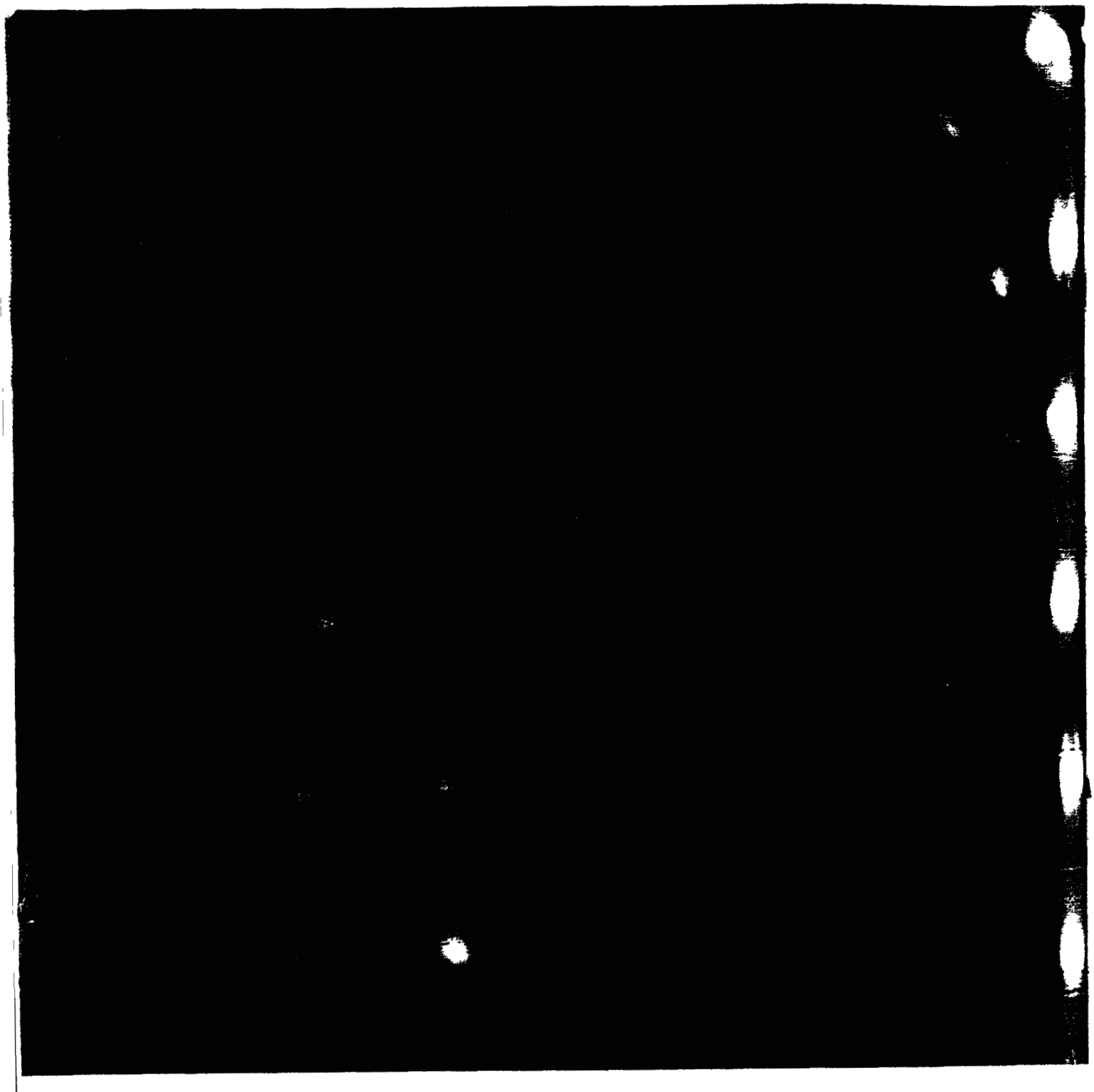

EAST
WALL
B-31




B 35



227



228

RADIOACTIVE MATERIALS MANAGEMENT AREA (RMMA) DETERMINATION FORM

Date of Determination 1-29-96 Building Number 889 Room Numbers 100, 101A, 102, 109, 110, and 111

Area Description These rooms constitute the main office areas and locker rooms of the building.

For each question circle **Yes** or **No** as a response

1 YES (NO) **Does the area have potential or actual unconfined or unencapsulated radioactive material present?**

2 YES (NO) *(For this response to be YES both 2 a and 2 b must be answered YES)*

a YES (NO) **Does the area have surface radioactive contamination levels that exceed or have the potential to exceed the unrestricted release limits of HSP-18 10?**

b YES (NO) **Do the airborne radioactivity levels for the area exceed or are they likely to exceed 10% of the Derived Airborne Concentrations for any isotope?**

3 YES (NO) **Is the area exposed to beams or other sources of particles capable of causing activation?**

4 YES (NO) **Does the area have volume contamination of materials from area surface contamination or from operations in other areas?**

5 YES (NO) **Does the area have elevated levels of radioactive material above background in the soil?**

IF ANY OF QUESTIONS ONE THROUGH FIVE WERE ANSWERED YES, THEN THE AREA IS TO BE DESIGNATED AS AN RMMA

YES NO IS THE AREA AN RMMA? (CIRCLE ONE)

Dennis A. Russell [redacted] 1/29/96
R E Name Signature Date

Rationale for Determination These rooms have been baseline surveyed either by gridding and surveying or large area wipes and no contamination was found. Additionally, the history of these areas indicates that no radioloigcal work was performed in any of these areas.

Key Personnel Interviewed

NAME	ORGANIZATION	PHONE/PAGE

Signature / Empl # / Date

Signature / Empl # / Date

List of Attached supporting documentation Surveys from the rooms performed as part of D & D of Building 889.

ntered into RMMA Database by _____ _____
Name Date

229

BUILDING 889 BASELINE CHARACTERIZATION

Date 3/27/95

ROOM 100

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1153	942	763	838		
Date Calib'd	12/12/94	11/9/94	5/2/94	5/2/94		
Cal Due Date	6/95	5/95	5/95	5/95		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	LUDLUM	BICRON	BICRON			
Model	31	A-100	A-100			
Serial	52506	B396L	B396L			
Date Calib'd	1/5/95	3/9/95	3/9/95			
Cal Due Date	7/95	9/95	9/95			
Background	<100	0	1			
Efficiency		22.75% 3/27/95	22.75% 3/23/95			

230

BUILDING 889 BASELINE CHARACTERIZATION

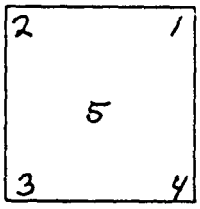
ROOM NUMBER 100 DATE 3/27/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 1	1	3	15	15	<1894
	2	<3	<3	20	<1894
	3	3	<3	<15	<1894
	4	3	6	15	<1894
	5	<3	<3	15	<1894
Grid # 2	1	<3	6	<15	<1894
	2	<3	<3	15	<1894
	3	9	9	30	<1894
	4	6	<3	20	<1894
	5	3	<3	<15	<1894
Grid # 3	1	<3	6	20	<1894
	2	<3	<3	15	<1894
	3	6	<3	15	<1894
	4	<3	12	15	<1894
	5	<3	<3	<15	<1894
Grid # 4	1	<3	27	20	<1894
	2	<3	30	<15	<1894
	3	<3	45	25	<1894
	4	3	<3	<15	<1894
	5	3	42	20	<1894
Grid # 5	1	3	<3	25	<1894
	2	9	12	35	<1894
	3	6	3	<15	<1894
	4	6	<3	15	<1894
	5	3	<3	15	<1894

Indicate location of survey points



COMMENTS GRID #5 - THERE ARE TWO SINKS, A SOAP DISPENSER, AND A PAPER TOWEL DISPENSER

Reviewed by [signature] 3-27-95
RO Foreman

Reviewed by [signature]
Rad Engineer

231

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 100 DATE 3/28/95 GRID SIZE

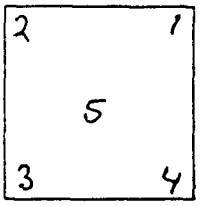
SURVEYED BY R Haines EMPLOYEE # [redacted]

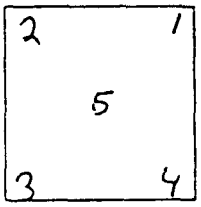
SIGNATURE

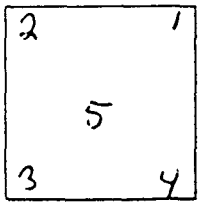
SURVEY RESULTS (dpm/100cm2)

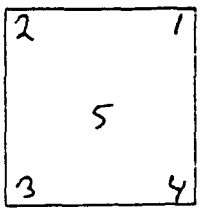
	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 6	1	3	<3	<15	<1894
	2	<3	3	20	<1894
	3	3	6	<15	<1894
	4	<3	9	<15	<1894
	5	<3	3	15	<1894
Grid # 7	1	<3	27	<15	<1894
	2	<3	33	15	<1894
	3	3	6	<15	<1894
	4	<3	<3	<15	<1894
	5	<3	18	15	<1894
Grid # 8	1	3	3	<15	<1894
	2	<3	<3	<15	<1894
	3	<3	<3	<15	<1894
	4	3	15	<15	<1894
	5	3	15	<15	<1894
Grid # 9	1	<3	<3	20	<1894
	2	<3	3	<15	<1894
	3	<3	<3	<15	<1894
	4	<3	<3	<15	<1894
	5	3	<3	<15	<1894
Grid # 10	1	<3	<3	15	<1894
	2	<3	48	15	<1894
	3	<3	27	<15	<1894
	4	3	<3	<15	<1894
	5	6	24	<15	<1894

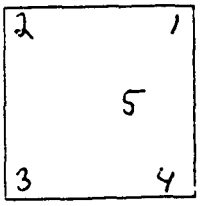
Indicate location of survey points











COMMENTS GRID #7 - has attached exit sign; Grids #9, #10 - have attached ceiling lights

Reviewed by [signature] 3-29-95
RO Foreman

Reviewed by [signature]
Rad Engineer

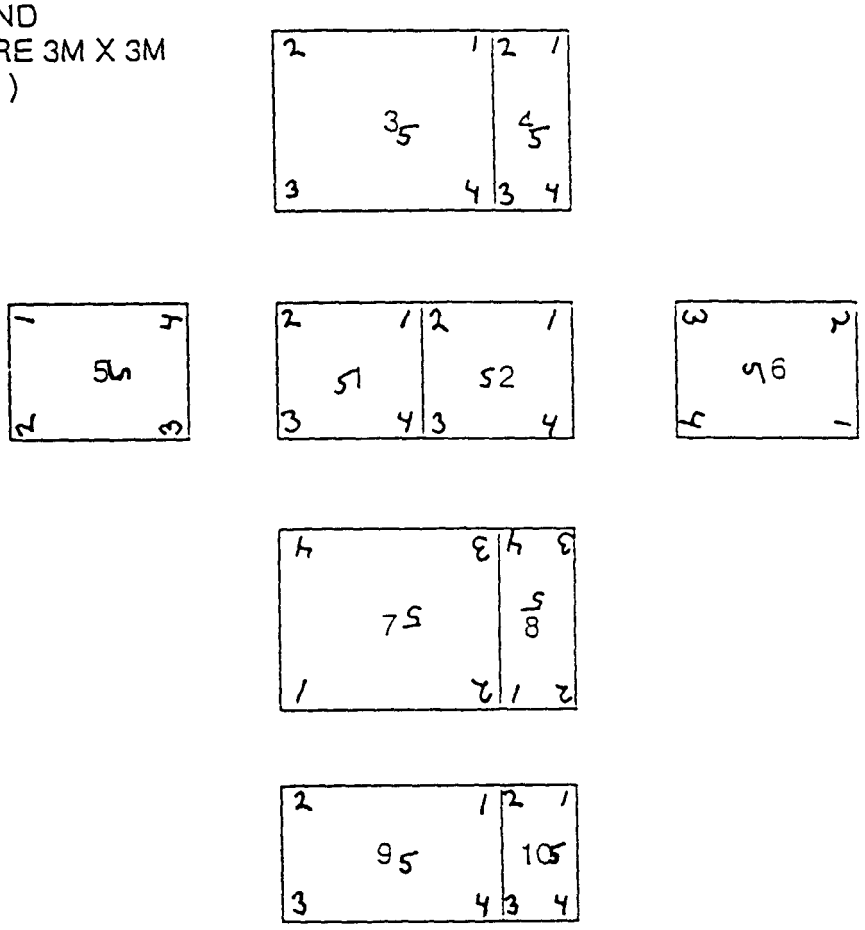
232

NORTH

BUILDING 889
ROOM 100

1 FLOOR IS 2M X 2M GRIDS (MAX)

2 WALLS AND CEILINGS ARE 3M X 3M GRIDS (MAX)



233

BUILDING 889 BASELINE CHARACTERIZATION

Date 3/24/95 Room 101A.

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1158	842	763	838		
Date Calib'd	12/12/94	11/9/94	5/2/94	5/2/94		
Cal Due Date	6/95	5/95	5/95	5/95		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	LUDLUM	BICRON	BICRON			
Model	3L	A-100	A-100			
Serial	82806	B3966L	B3966L			
Date Calib'd	1/5/95	3/9/95	3/9/95			
Cal Due Date	7/95	9/95	9/95			
Background	5100	0	1			
Efficiency		22.25% 3/29/95	22.25% 3/30/95			

234

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 101A DATE 3/29/95 GRID SIZE [redacted]

SURVEYED BY R Harris EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 1	1	<3	<3	<15	<1894	2 1 5 3 4
	2	<3	<3	20	<1894	
	3	<3	<3	25	<1894	
	4	<3	<3	<15	<1894	
	5	<3	6	<15	<1894	
Grid # 2	1	<3	<3	20	<1894	2 1 5 3 4
	2	3	<3	30	<1894	
	3	<3	<3	15	<1894	
	4	<3	<3	15	<1894	
	5	<3	24	<15	<1894	
Grid # 3	1	9	<3	15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	<3	18	<15	<1894	
	4	<3	3	<15	<1894	
	5	<3	3	<15	<1894	
Grid # 4	1	6	<3	<15	<1894	2 1 5 3 4
	2	<3	<3	25	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	15	<1894	
	5	<3	<3	<15	<1894	
Grid # 5	1	6	<3	20	<1894	2 1 5 3 4
	2	6	<3	25	<1894	
	3	<3	<3	15	<1894	
	4	6	<3	20	<1894	
	5	<3	<3	20	<1894	

COMMENTS

Reviewed by [signature] 3-29-95
RO Foreman

Reviewed by [signature]
Rad Engineer

235

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 101 A DATE 3/29/95 GRID SIZE

SURVEYED BY R Harris EMPLOYEE # [redacted]

SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 6	1	<3	15	<15	<1894	
	2	<3	<3	<15	<1894	
	3	9	<3	<15	<1894	
	4	<3	27	20	<1894	
	5	3	<3	<15	<1894	
Grid # 7	1	3	<3	20	<1894	
	2	3	<3	30	<1894	
	3	<3	24	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	20	<1894	
Grid # 8	1	<3	<3	<15	<1894	
	2	<3	<3	30	<1894	
	3	<3	15	35	<1894	
	4	<3	<3	<15	<1894	
	5	<3	18	20	<1894	
Grid # 9	1	3	<3	<15	<1894	
	2	3	15	20	<1894	
	3	<3	<3	15	<1894	
	4	<3	9	30	<1894	
	5	<3	<3	<15	<1894	
Grid # 10	1	<3	15	<15	<1894	
	2	6	6	<15	<1894	
	3	6	12	<15	<1894	
	4	3	<3	25	<1894	
	5	<3	12	15	<1894	

COMMENTS GRIDS #6 AND #8 - ARE ONLY 15" WIDE

Reviewed by [signature] 3-29-95 RO Foreman

Reviewed by [signature] Rad Engineer

236

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 101A DATE 3/30/95 GRID SIZE _____

SURVEYED BY R Harris EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 11	1	3	<3	<15	<1894	2 1 5 3 4
	2	3	<3	25	<1894	
	3	<3	<3	15	<1894	
	4	<3	3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 12	1	<3	<3	15	<1894	1 2 3 4 5
	2	3	<3	25	<1844	
	3	3	<3	<15	<1844	
	4	<3	18	<15	<1844	
	5	3	<3	<15	<1844	
Grid # ____	1	------	------	---------	---------	
	2	------	------	---------	---------	
	3	------	------	---------	---------	
	4	------	------	---------	---------	
	5	------	------	---------	---------	
Grid # ____	1	------	------	---------	---------	
	2	------	------	---------	---------	
	3	------	------	---------	---------	
	4	------	------	---------	---------	
	5	------	------	---------	---------	
Grid # ____	1	------	------	---------	---------	
	2	------	------	---------	---------	
	3	------	------	---------	---------	
	4	------	------	---------	---------	
	5	------	------	---------	---------	

COMMENTS GRID # 12 - is only 18" wide

Reviewed by [signature] 3-30-95
RO Foreman

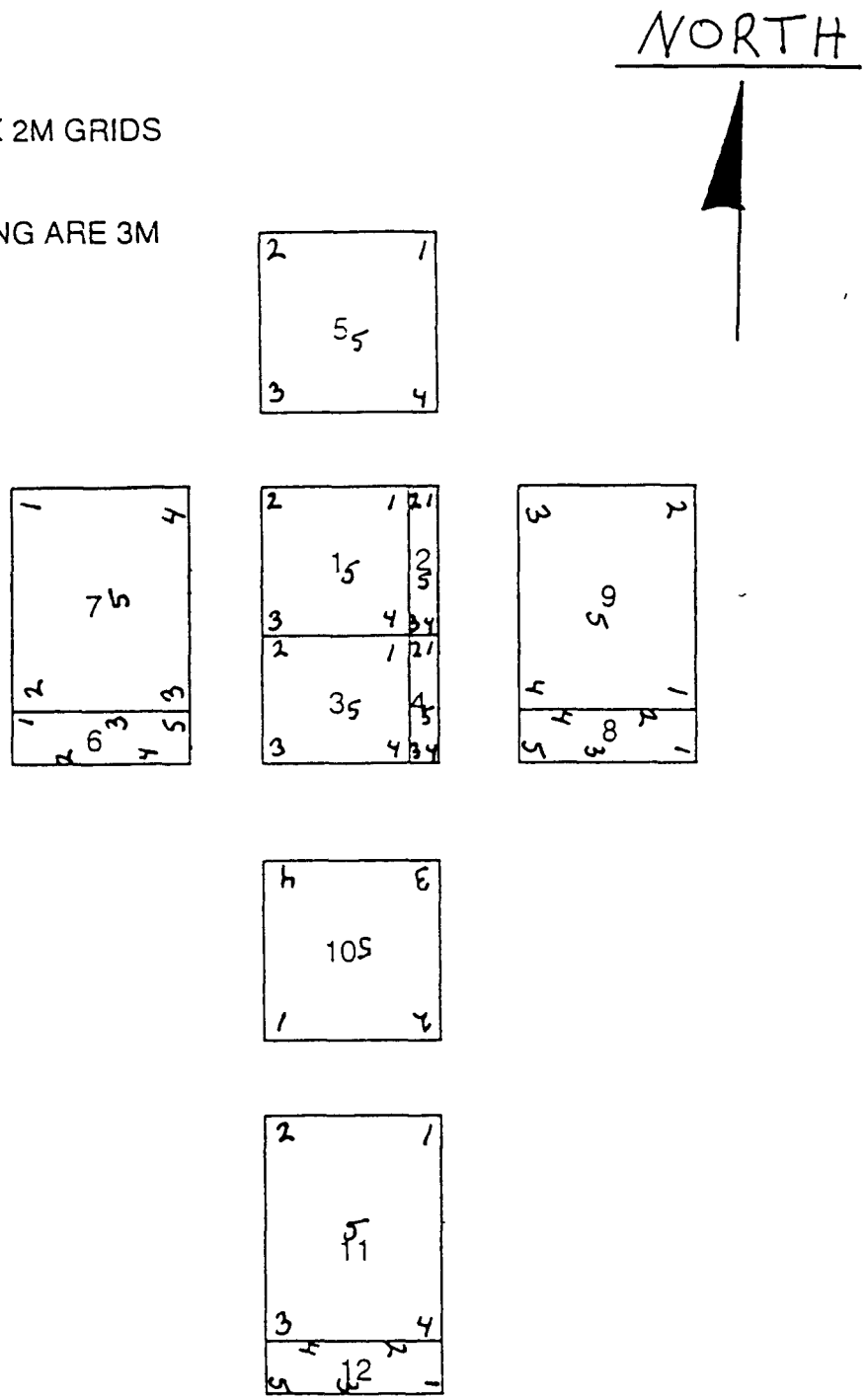
Reviewed by [signature]
Rad Engineer

237

BUILDING 889
ROOM 101A

1 FLOORS ARE 2M X 2M GRIDS (MAX)

2 WALLS AND CEILING ARE 3M X 3M GRIDS (MAX)



238

BUILDING 889 BASELINE CHARACTERIZATION

Date 5/16/95

[redacted]

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1160	861	869	838		
Date Calib'd	4/3/95	4/7/95	3/9/95	5/3/95		
Cal Due Date	10/95	10/95	3/96	5/96		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	LUDLUM	BICRON	BICRON	BICRON		
Model	31	A-100	A-100	A-100		
Serial	101214	B937A	B937A	B937A		
Date Calib'd	4/25/95	4/25/95	4/25/95	4/25/95		
Cal Due Date	10/95	10/95	10/95	10/95		
Background	<100	0	1	0		
Efficiency	N/A	19.87	19.87	19.87		
		5/16/95	5/17/95	5/18/95		

239

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 101 HALLWAY ! DATE 5/16/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 1	1	<3	<3	<15	<1894	
	2	<3	<3	15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	6	<15	<1894	
	5	<3	6	<15	<1894	
Grid # 2	1	3	24	<15	<1894	
	2	3	6	<15	<1894	
	3	<3	54	<15	<1894	
	4	3	<3	<15	<1894	
	5	<3	39	<15	<1894	
Grid # 3	1	<3	12	<15	<1894	
	2	<3	<3	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	15	<15	<1894	
	5	<3	21	<15	<1894	
Grid # 4	1	<3	15	<15	<1894	
	2	<3	12	<15	<1894	
	3	<3	45	<15	<1894	
	4	3	9	<15	<1894	
	5	<3	3	<15	<1894	
Grid # 5	1	<3	<3	15	<1894	
	2	<3	6	<15	<1894	
	3	6	21	<15	<1894	
	4	<3	9	<15	<1894	
	5	<3	9	<15	<1894	

COMMENTS GRID #3 - has attached power supply; GRID #4 - has attached power supply and air vent;

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

2YO

BUILDING 889 BASELINE CHARACTERIZATION

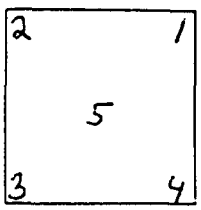
ROOM NUMBER 101 HALLWAY 1 DATE 5/17/95 GRID SIZE _____

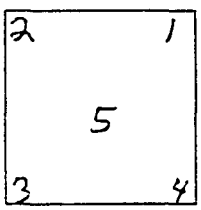
SURVEYED BY R Haines [redacted]
SIGNATURE

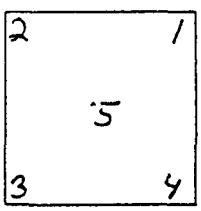
SURVEY RESULTS (dpm/100cm2)

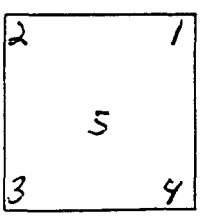
	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 6	1	3	21	15	<1894
	2	<3	<3	<15	<1894
	3	<3	<3	15	<1894
	4	<3	<3	<15	<1894
	5	3	<3	<15	<1894
Grid # 7	1	<3	<3	<15	<1894
	2	<3	<3	15	<1894
	3	<3	<3	20	<1894
	4	<3	<3	15	<1894
	5	<3	<3	<15	<1894
Grid # 8	1	<3	21	<15	<1894
	2	<3	<3	<15	<1894
	3	3	<3	<15	<1894
	4	<3	45	<15	<1894
	5	<3	33	<15	<1894
Grid # 9	1	<3	6	<15	<1894
	2	<3	21	<15	<1894
	3	<3	<3	<15	<1894
	4	<3	24	<15	<1894
	5	<3	12	<15	<1894
Grid # 10	1	<3	<3	<15	<1894
	2	<3	<3	<15	<1894
	3	<3	<3	<15	<1894
	4	<3	<3	15	<1894
	5	<3	<3	15	<1894

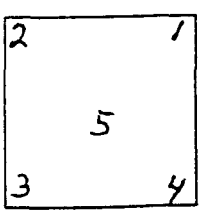
Indicate location of survey points











COMMENTS Grids #7, #8 - have attached coat rack;

Reviewed by _____
RO Foreman

Reviewed by _____
Rad Engineer

241

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 101 HALLWAY DATE 5/18/95 GRID SIZE

SURVEYED BY R Haines EMPLOYEE # [redacted]

SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 11	1	<3	9	<15	<1894	2 1 5 3 4
	2	3	<3	15	<1894	
	3	3	3	<15	<1894	
	4	<3	33	15	<1894	
	5	<3	<3	20	<1894	
Grid # 12	1	<3	<3	<15	<1894	2 1 5 3 4
	2	<3	27	<15	<1894	
	3	<3	<3	<15	<1894	
	4	3	0	<15	<1894	
	5	<3	6	<15	<1894	
Grid # 15	1	<3	<3	15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	3	<3	<15	<1894	
	4	<3	6	20	<1894	
	5	<3	<3	<15	<1894	
Grid # 16	1	3	36	<15	<1894	2 1 5 3 4
	2	3	<3	<15	<1894	
	3	<3	12	<15	<1894	
	4	<3	9	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 17	1	<3	<3	<15	<1894	2 1 5 3 4
	2	6	3	<15	<1894	
	3	3	<3	15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	15	<1894	

COMMENTS GRID #11 - HAS ATTACHED ALARM PANEL AND FIRE EXTINGUISHER; GRID #12 - HAS ATTACHED ALARM PANEL AND EXIT SIGN; GRIDS #15, #16, #17 - HAVE ATTACHED ELECTRICAL PANELS AND HEATING VENT

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

242

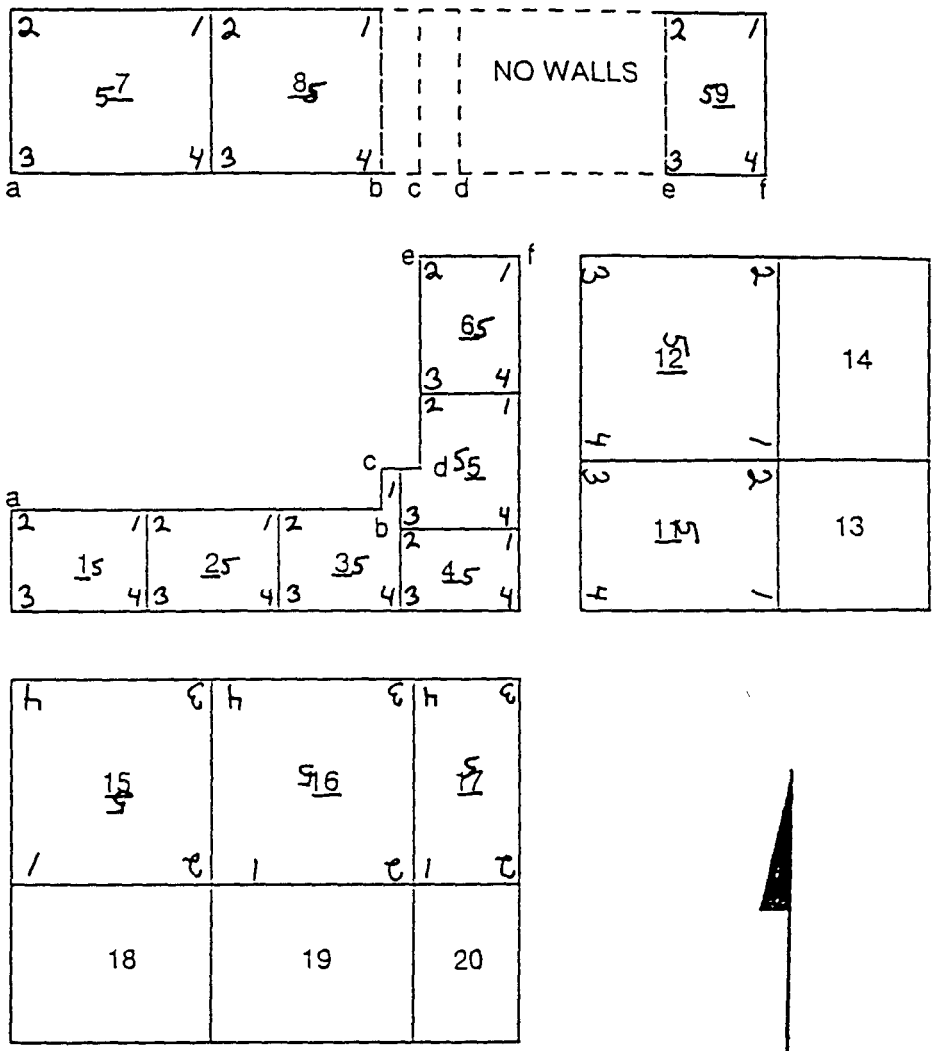
BUILDING 889

101

HALLWAY

1 FLOOR IS IN 2M X 2M GRIDS (MAX)

2 WALLS AND CEILING ARE IN 3M X 3M GRIDS (MAX)



NORTH

FOR CEILING OVER 101/101A HALLWAY SEE MAP FOR 101 MEZZANINE

243

BUILDING 889 BASELINE CHARACTERIZATION

Date 5/19/95

[redacted]

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1160	861	869	838		
Date Calib'd	4/3/95	4/7/95	3/9/95	5/3/95		
Cal Due Date	10/95	10/95	3/96	5/96		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	LUDLUM	BICRON				
Model	31	A-100				
Serial	101214	B937A				
Date Calib'd	4/25/95	4/25/95				
Cal Due Date	10/95	10/95				
Background	<100	0				
Efficiency	N/A	19.87				

244

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 101 DATE 5/19/95 GRID SIZE

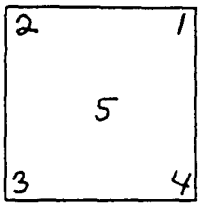
SURVEYED BY R Haines EMPLOYEE # [redacted]

SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 1	1	3	12	<15	<1894
	2	<3	12	15	<1894
	3	<3	<3	15	<1894
	4	<3	19	15	<1894
	5	6	12	25	<1894
Grid # 2	1	<3	<3	25	<1894
	2	<3	<3	<15	<1894
	3	<3	3	<15	<1894
	4	<3	<3	<15	<1894
	5	<3	<3	<15	<1894
Grid # 3	1	<3	<3	<15	<1894
	2	3	<3	<15	<1894
	3	<3	<3	<15	<1894
	4	<3	<3	<15	<1894
	5	<3	<3	<15	<1894
Grid # 4	1	<3	<3	<15	<1894
	2	<3	<3	20	<1894
	3	<3	<3	<15	<1894
	4	<3	<3	<15	<1894
	5	<3	<3	<15	<1894
Grid # 5	1	3	<3	<15	<1894
	2	<3	<3	<15	<1894
	3	<3	<3	<15	<1894
	4	<3	12	<15	<1894
	5	<3	12	<15	<1894

Indicate location of survey points



COMMENTS GRID #2 - HAS ATTACHED STAIRWAY AND LOCKERS; GRID #4 - HAS ATTACHMENT FOR GAS CYLINDERS AND ATTACHED LOCKERS;

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

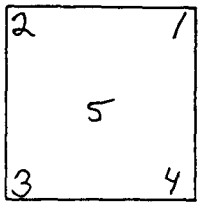
245

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 101 DATE 5/19/95 GRID SIZE _____

SURVEYED BY R Haine EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 6	1	3	<3	20	<1894	
	2	<3	<3	15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # ____	1	____	____	____	____	
	2	____	____	____	____	
	3	____	____	____	____	
	4	____	____	____	____	
	5	____	____	____	____	
Grid # ____	1	____	____	____	____	
	2	____	____	____	____	
	3	____	____	____	____	
	4	____	____	____	____	
	5	____	____	____	____	
Grid # ____	1	____	____	____	____	
	2	____	____	____	____	
	3	____	____	____	____	
	4	____	____	____	____	
	5	____	____	____	____	
Grid # ____	1	____	____	____	____	
	2	____	____	____	____	
	3	____	____	____	____	
	4	____	____	____	____	
	5	____	____	____	____	

COMMENTS GRID #6 - IS 20" WIDE;

Reviewed by [signature]
RO Foreman

Reviewed by [signature]
Rad Engineer

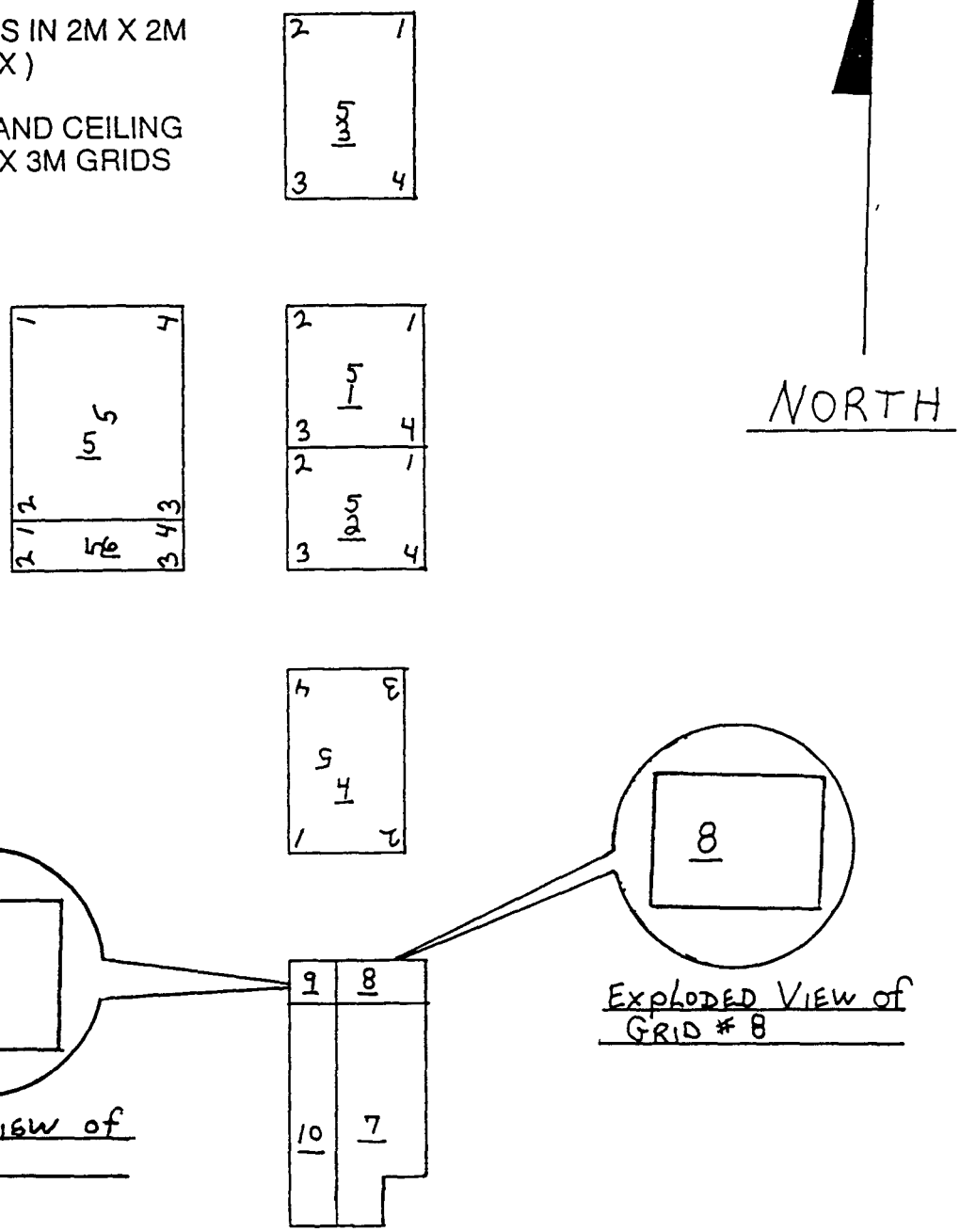
246

BUILDING 889

⊛ ROOM 101

1 FLOOR IS IN 2M X 2M GRIDS (MAX)

2 WALLS AND CEILING ARE IN 3M X 3M GRIDS (MAX)



⊛ Refer To 101 Hallway for Additional Information on Grids

247

BUILDING 889 BASELINE CHARACTERIZATION

Date 4/4/95

Room 102

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1158	842	763	838		
Date Calib'd	12/12/94	11/9/94	5/2/94	5/2/94		
Cal Due Date	6/95	5/95	5/95	5/95		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	LUDLUM	BICRON	BICRON	BICRON		
Model	3L	A-100	A-100	A-100		
Serial	82806	B396L	B396L	B396L		
Date Calib'd	1/5/95	3/9/95	3/9/95	3/9/95		
Cal Due Date	7/95	9/95	9/95	9/95		
Background	<100	1	1	2		
Efficiency	N/A	22.75% 4/4/95	22.75% 4/5/95	22.75% 4/6/95		

248

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 102 DATE 4/4/95 GRID SIZE

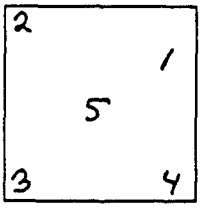
SURVEYED BY R Haines EMPLOYEE # [redacted]

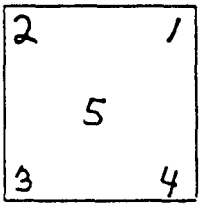
SIGNATURE

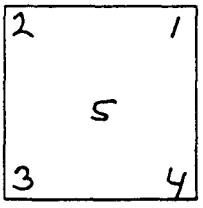
SURVEY RESULTS (dpm/100cm2)

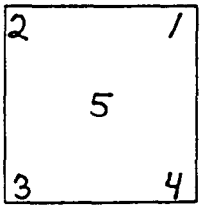
	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 1	1	3	9	<15	<1894
	2	<3	57	<15	<1894
	3	3	<3	<15	<1894
	4	<3	24	15	<1894
	5	<3	<3	<15	<1894
Grid # 2	1	6	12	<15	<1894
	2	<3	<3	<15	<1894
	3	<3	33	<15	<1894
	4	3	<3	25	<1894
	5	3	6	<15	<1894
Grid # 3	1	3	<3	<15	<1894
	2	3	36	<15	<1894
	3	<3	<3	20	<1894
	4	3	<3	<15	<1894
	5	<3	<3	15	<1894
Grid # 4	1	<3	<3	<15	<1894
	2	6	<3	<15	<1894
	3	<3	<3	<15	<1894
	4	<3	39	<15	<1894
	5	<3	<3	<15	<1894
Grid # 5	1	<3	<3	<15	<1894
	2	3	6	20	<1894
	3	<3	<3	<15	<1894
	4	3	39	20	<1894
	5	<3	<3	<15	<1894

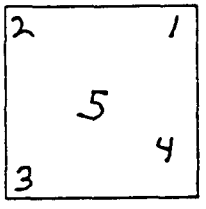
Indicate location of survey points











COMMENTS GRID #1 - CABINET with SINK IN NORTH-EAST CORNER; GRID #2 - CABINET with SINK IN NORTH-WEST CORNER; GRID #5 - BASE CABINET AND WALL CABINET

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

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BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 102 DATE 4/5/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 6	1	<3	21	15	<1894	
	2	3	15	<15	<1894	
	3	3	3	<15	<1894	
	4	3	<3	<15	<1894	
	5	3	6	30	<1894	
Grid # 7	1	<3	<3	25	<1894	
	2	<3	18	15	<1894	
	3	3	<3	<15	<1894	
	4	<3	4	25	<1894	
	5	<3	<3	<15	<1894	
Grid # 8	1	<3	<3	15	<1894	
	2	<3	18	<15	<1894	
	3	3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	27	15	<1894	
Grid # 9	1	3	6	<15	<1894	
	2	<3	<3	<15	<1894	
	3	3	12	15	<1894	
	4	<3	<3	<15	<1894	
	5	3	<3	15	<1894	
Grid # 10	1	<3	33	<15	<1894	
	2	3	<3	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	18	<15	<1894	
	5	<3	<3	<15	<1894	

COMMENTS GRID #6 - NORTH WEST CORNER WALL HAS BASE CABINET AND SINK AND ATTACHED CABINET TO WALL; GRID #9 - IS 2" WIDE; GRID #10 - HAS A CLOCK AND EMERGENCY LIGHT

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

250

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 102 DATE 4/5/95 GRID SIZE _____

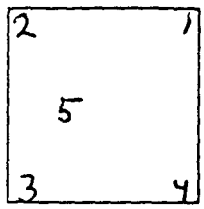
SURVEYED BY R Haines EMPLOYEE # [redacted]

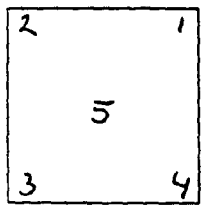
SIGNATURE

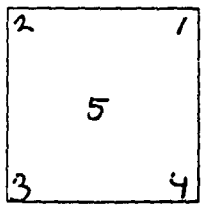
SURVEY RESULTS (dpm/100cm2)

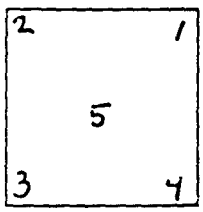
	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 11	1	<3	18	<15	<1894
	2	6	15	<15	<1894
	3	3	9	<15	<1894
	4	<3	33	<15	<1894
	5	<3	12	<15	<1894
Grid # 12	1	<3	3	<15	<1894
	2	6	<3	25	<1894
	3	<3	15	<15	<1894
	4	3	6	<15	<1894
	5	<3	<3	<15	<1894
Grid # 13	1	<3	15	<15	<1894
	2	3	30	15	<1894
	3	<3	<3	20	<1894
	4	3	<3	<15	<1894
	5	6	<3	<15	<1894
Grid # 14	1	<3	<3	<15	<1894
	2	3	21	15	<1894
	3	<3	24	15	<1894
	4	3	<3	30	<1894
	5	<3	27	<15	<1894
Grid # 15	1	<3	12	30	<1894
	2	3	27	<15	<1894
	3	3	<3	20	<1894
	4	3	9	20	<1894
	5	<3	27	20	<1894

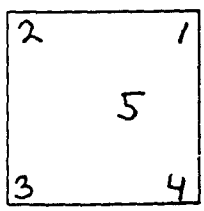
Indicate location of survey points











COMMENTS GRIDS #14 AND #15 - HAVE ATTACHED CEILING lights

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

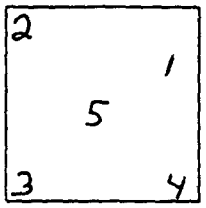
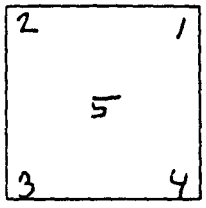
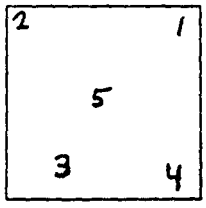
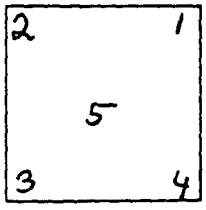
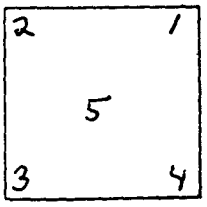
251

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 102 DATE 4/6/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 16	1	6	<3	<15	<1894	
	2	<3	<3	<15	<1894	
	3	<3	48	15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 17	1	<3	<3	<15	<1894	
	2	<3	18	<15	<1894	
	3	<3	9	30	<1894	
	4	6	39	<15	<1894	
	5	<3	27	<15	<1894	
Grid # 18	1	<3	33	<15	<1894	
	2	<3	<3	<15	<1894	
	3	3	15	20	<1894	
	4	<3	9	15	<1894	
	5	3	39	<15	<1894	
Grid # 19	1	<3	21	25	<1894	
	2	<3	<3	25	<1894	
	3	<3	3	20	<1894	
	4	3	<3	20	<1894	
	5	<3	9	<15	<1894	
Grid # 20	1	6	<3	<15	<1894	
	2	<3	<3	<15	<1894	
	3	3	21	15	<1894	
	4	<3	<3	30	<1894	
	5	3	15	<15	<1894	

COMMENTS. GRID #16 - HAS ATTACHED CEILING LIGHT; GRID #18 - HAS ATTACHED SINK; GRID #19 - HAS ATTACHED BROOM HOLDER.

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

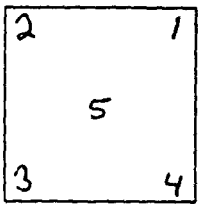
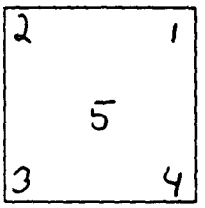
252

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 102 DATE 4/6/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 21	1	3	<3	<15	<1894	
	2	3	<3	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	3	3	<15	<1894	
Grid # 22	1	<3	3	<15	<1894	
	2	<3	3	<15	<1894	
	3	<3	18	<15	<1894	
	4	6	9	30	<1894	
	5	3	15	<15	<1894	
Grid # ____	1	------	------	----------	----------	
	2	------	------	----------	----------	
	3	------	------	----------	----------	
	4	------	------	----------	----------	
	5	------	------	----------	----------	
Grid # ____	1	------	------	----------	----------	
	2	------	------	----------	----------	
	3	------	------	----------	----------	
	4	------	------	----------	----------	
	5	------	------	----------	----------	
Grid # ____	1	------	------	----------	----------	
	2	------	------	----------	----------	
	3	------	------	----------	----------	
	4	------	------	----------	----------	
	5	------	------	----------	----------	

COMMENTS _____

Reviewed by _____ RO Foreman

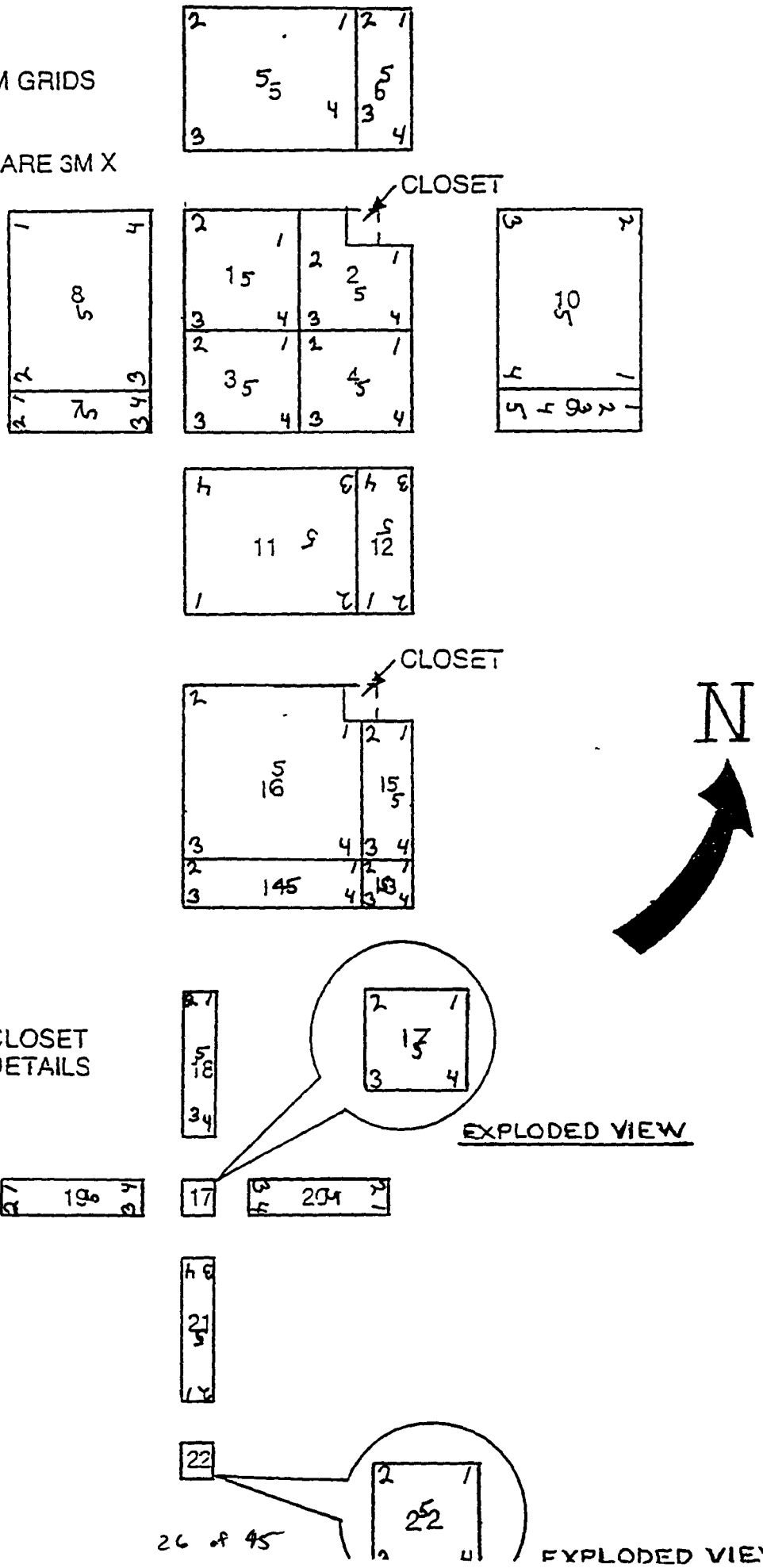
Reviewed by _____ Rad Engineer

253

BUILDING 889
ROOM 102

1. FLOORS ARE 2M X 2M GRIDS (MAX.)

2 WALLS AND CEILING ARE 3M X 3M GRIDS (MAX).



Jack Shah
4/7/95

254

BUILDING 889 BASELINE CHARACTERIZATION

Date 4/18/95

Room 1091

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1160	861	763	838		
Date Calib'd	4/3/95	4/7/95	5/2/94	5/2/94		
Cal Due Date	10/95	10/95	5/95	5/95		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	Ludlum	BICRON	BICRON	BICRON		
Model	31	A-100	A-100	A-100		
Serial	87804	B396L	B396L	B396L		
Date Calib'd	3/17/95	3/9/95	3/9/95	3/9/95		
Cal Due Date	9/17/95	9/95	9/95	9/95		
Background	<100	0	2	0		
Efficiency	N/A	22.75%	22.75%	22.75%		
		4/18/95	4/19/95	4/20/95		

255

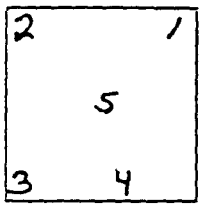
BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 109 DATE 4/18/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 1	1	<3	<3	<15	<1894	
	2	3	6	<15	<1894	
	3	3	<3	15	<1894	
	4	3	<3	20	<1894	
	5	<3	<3	15	<1894	
Grid # 2	1	3	<3	<15	<1894	
	2	<3	3	<15	<1894	
	3	3	12	35	<1894	
	4	<3	<3	<15	<1894	
	5	6	<3	<15	<1894	
Grid # 3	1	<3	6	<15	<1894	
	2	6	12	<15	<1894	
	3	<3	<3	15	<1894	
	4	<3	<3	30	<1894	
	5	<3	<3	<15	<1894	
Grid # 4	1	3	<3	25	<1894	
	2	<3	9	15	<1894	
	3	<3	6	15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	3	15	<1894	
Grid # 5	1	<3	<3	30	<1894	
	2	<3	6	20	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	20	<1894	
	5	<3	<3	<15	<1894	



COMMENTS _____

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

256

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 109 DATE 4/19/95 GRID SIZE _____

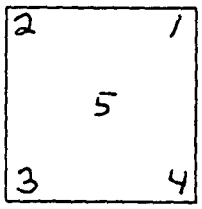
SURVEYED BY R Haines [redacted]
SIGNATURE

EMPLOYEE # [redacted]

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 6	1	<3	<3	<15	<1894
	2	<3	9	15	<1894
	3	3	39	<15	<1894
	4	<3	6	<15	<1894
	5	<3	21	<15	<1894
Grid # 7	1	<3	<3	<15	<1894
	2	3	18	<15	<1894
	3	<3	9	<15	<1894
	4	<3	9	<15	<1894
	5	<3	24	20	<1894
Grid # 8	1	<3	45	<15	<1894
	2	<3	<3	<15	<1894
	3	3	9	<15	<1894
	4	<3	<3	<15	<1894
	5	<3	<3	15	<1894
Grid # 9	1	<3	<3	20	<1894
	2	<3	<3	<15	<1894
	3	<3	<3	<15	<1894
	4	<3	<3	<15	<1894
	5	<3	3	<15	<1894
Grid # 10	1	<3	12	<15	<1894
	2	3	12	35	<1894
	3	3	30	<15	<1894
	4	3	27	<15	<1894
	5	<3	45	15	<1894

Indicate location of survey points



COMMENTS GRIDS #9, #10 - HAVE ATTACHED EXIT SIGNS

Reviewed by Jc Klot
RO Foreman

Reviewed by [signature]
Rad Engineer

257

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 1091 DATE 4/19/95 GRID SIZE

SURVEYED BY R Haines EMPLOYEE # [redacted]

SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 11	1	-3	15	<15	<1894	2 1 5 3 4
	2	<3	3	<15	<1894	
	3	<3	24	<15	<1894	
	4	<3	30	<15	<1894	
	5	<3	6	<15	<1894	
Grid # 12	1	<3	3	<15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	<3	<3	15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 13	1	<3	39	<15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	<3	24	<15	<1894	
	4	<3	3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 14	1	3	<3	25	<1894	2 1 5 3 4
	2	<3	30	15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	33	<15	<1894	
	5	<3	<3	15	<1894	
Grid # 15	1	<3	27	15	<1894	2 1 5 3 4
	2	<3	24	<15	<1894	
	3	<3	24	<15	<1894	
	4	3	9	<15	<1894	
	5	3	66	<15	<1894	

COMMENTS GRID #11 - IS only 10"X15"; GRID #12 - has FIREplane ATTACHED; GRID #14 - has FIRE bell ATTACHED

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

258

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 709 DATE 4/20/95 GRID SIZE _____

SURVEYED BY R Hamer EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 16	1	<3	<3	15	<1894	
	2	6	<3	25	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	25	<1894	
Grid # 17	1	<3	66	55	<1894	
	2	<3	<3	15	<1894	
	3	<3	6	<15	<1894	
	4	3	<3	15	<1894	
	5	<3	<3	<15	<1894	
Grid # 18	1	<3	<3	15	<1894	
	2	<3	6	20	<1894	
	3	<3	24	<15	<1894	
	4	<3	<3	15	<1894	
	5	<3	48	<15	<1894	
Grid # 19	1	9	6	25	<1894	
	2	<3	<3	20	<1894	
	3	<3	<3	15	<1894	
	4	<3	<3	25	<1894	
	5	<3	6	<15	<1894	
Grid # 20	1	<3	18	20	<1894	
	2	<3	21	<15	<1894	
	3	<3	27	20	<1894	
	4	<3	<3	<15	<1894	
	5	<3	3	20	<1894	

COMMENTS GRID #16 - IS 10"X 22", GRIDS #17, #18, #19, #20 - HAVE RECESSED LIGHTING;

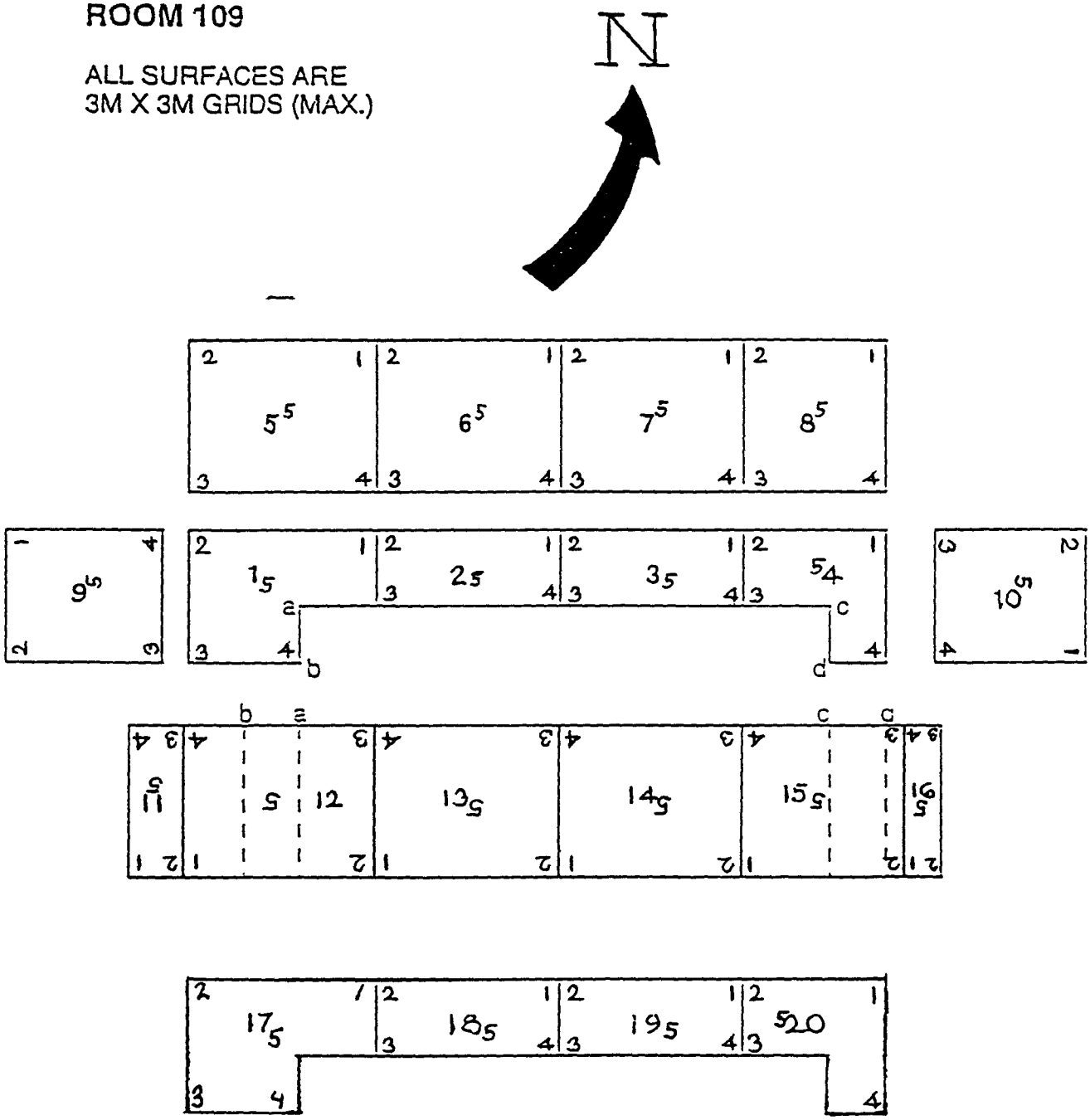
Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

259

BUILDING 889
ROOM 109

ALL SURFACES ARE
3M X 3M GRIDS (MAX.)



260

BUILDING 889 BASELINE CHARACTERIZATION

Date 5/10/95

Room-1104

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1160	861	763	869		
Date Calib'd	4/3/95	4/7/95	5/2/94	3/9/95		
Cal Due Date	10/95	10/95	5/95	3/96		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	Ludlum	BICRON	BICRON	BICRON		
Model	31	A-100	A-100	A-100		
Serial	82804	B941A	B941A	B941A		
Date Calib'd	3/95	4/95	4/95	4/95		
Cal Due Date	9/95	10/95	10/95	10/95		
Background	5100	1	0	1		
Efficiency	N/A	25.6% 5/10/95	25.6% 5/11/95	25.6% 5/12/95		

241

BUILDING 889 BASELINE CHARACTERIZATION

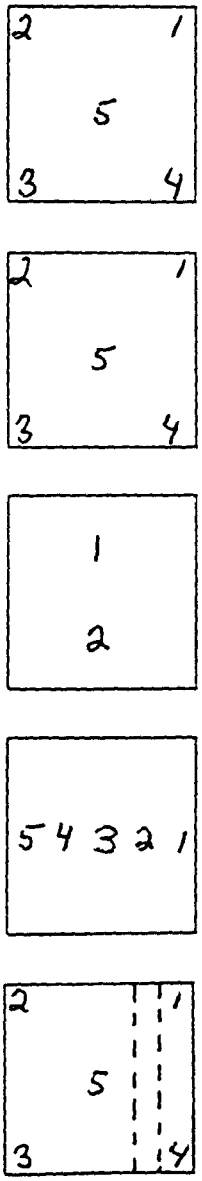
ROOM NUMBER: 110-1 DATE 5/10/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta
Grid # 1	1	<3	<3	<15	<1894
	2.	<3	12	<15	<1894
	3	<3	<3	<15	<1894
	4	3	18	<15	<1894
	5	<3	30	<15	<1894
Grid # 2	1	<3	<3	<15	<1894
	2	<3	<3	<15	<1894
	3	3	21	<15	<1894
	4	3	12	<15	<1894
	5	3	<3	<15	<1894
Grid # 3	1	3	<3	<15	<1894
	2	<3	9	<15	<1894
	3	N/A	N/A	N/A	N/A
	4	N/A	N/A	N/A	N/A
	5	N/A	N/A	N/A	N/A
Grid # 4	1	3	6	20	<1894
	2	<3	<3	<15	<1894
	3	<3	<3	<15	<1894
	4	3	<3	<15	<1894
	5	<3	27	<15	<1894
Grid # 5	1	<3	27	<15	<1894
	2	<3	24	<15	<1894
	3	<3	24	<15	<1894
	4	<3	<3	<15	<1894
	5	<3	<3	<15	<1894

Indicate location of survey points



COMMENTS GRID#1 - HAS ATTACHED STOOL; GRID#2 - HAS TWO ATTACHED SHOWER BASES; GRID#3 - IS 3" X 13"; GRID #4 - HAS RAISED FLOOR AND IS 13" WIDE; GRID #5 - HAS ATTACHED SINK WITH COUNTER TOP

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

262

BUILDING 889 BASELINE CHARACTERIZATION

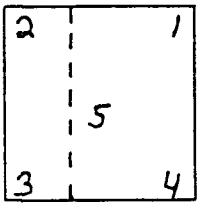
ROOM NUMBER 170 DATE 5/10/95 GRID SIZE _____

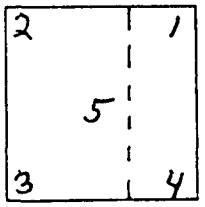
SURVEYED BY R Haines EMPLOYEE # [redacted]

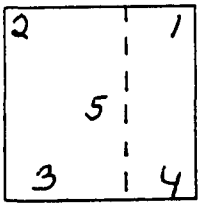
SIGNATURE

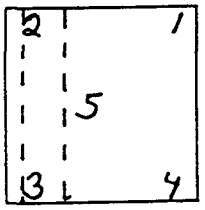
SURVEY RESULTS (dpm/100cm2)

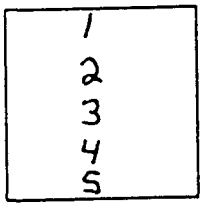
	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 6	1	<3	<3	<15	<1894	
	2	<3	<3	<15	<1894	
	3	3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 7	1	<3	21	<15	<1894	
	2	<3	<3	<15	<1894	
	3	<3	21	<15	<1894	
	4	<3	15	<15	<1894	
	5	3	<3	<15	<1894	
Grid # 8	1	<3	33	<15	<1894	
	2	<3	9	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	9	<15	<1894	
Grid # 9	1	<3	<3	<15	<1894	
	2	<3	<3	<15	<1894	
	3	<3	6	<15	<1894	
	4	<3	6	<15	<1894	
	5	3	<3	<15	<1894	
Grid # 10	1	<3	30	<15	<1894	
	2	<3	<3	<15	<1894	
	3	3	<3	<15	<1894	
	4	6	<3	<15	<1894	
	5	3	54	<15	<1894	











COMMENTS GRID #6 - has attached lite, sink with countertop; GRID #9 - has attached paper dispenser; GRID #10 - has attached shower stall, and is 12" wide

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

263

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 110 DATE 5/11/95 GRID SIZE _____

SURVEYED BY R Hamer EMPLOYEE # [redacted]

SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 11	1	<3	<3	<15	<1894	2 1 5 3 4
	2	3	39	<15	<1894	
	3	<3	6	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	21	<15	<1894	
Grid # 12	1	<3	24	<15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	39	<15	<1894	
	5	3	51	15	<1894	
Grid # 13	1	<3	27	20	<1894	2 1 15 3 4
	2	<3	3	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	3	3	<15	<1894	
Grid # 14	1	<3	<3	15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	15	<1894	
	5	3	42	<15	<1894	
Grid # 15	1	<3	15	25	<1894	1 2 5 3 4
	2	<3	27	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	3	27	15	<1894	

COMMENTS GRID #11 - has attached shower stall; GRID #13 - has attached shower stall; GRID #15 - has recessed lite.

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

264

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 1/D31 DATE 5/12/95 GRID SIZE _____

SURVEYED BY R. Haines EMPLOYEE # [redacted]

SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 16	1	<3	<3	20	<1894	2 1 5 3 4
	2	3	9	20	<1894	
	3	3	36	<15	<1894	
	4	<3	6	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 17	1	<3	9	<15	<1894	1 2
	2	<3	<3	<15	<1894	
	3	N/A	N/A	N/A	N/A	
	4	N/A	N/A	N/A	N/A	
	5	N/A	N/A	N/A	N/A	
Grid # 18	1	<3	12	<15	<1894	5 4 3 2 1
	2	<3	24	<15	<1894	
	3	<3	3	<15	<1894	
	4	6	9	<15	<1894	
	5	<3	33	<15	<1894	
Grid # ____	1					
	2					
	3					
	4					
	5					
Grid # ____	1					
	2					
	3					
	4					
	5					

COMMENTS GRID #16 - HAS RECESSED LITE; GRID #17 - IS 6"X12"; GRID #18 - IS ONLY 12" WIDE

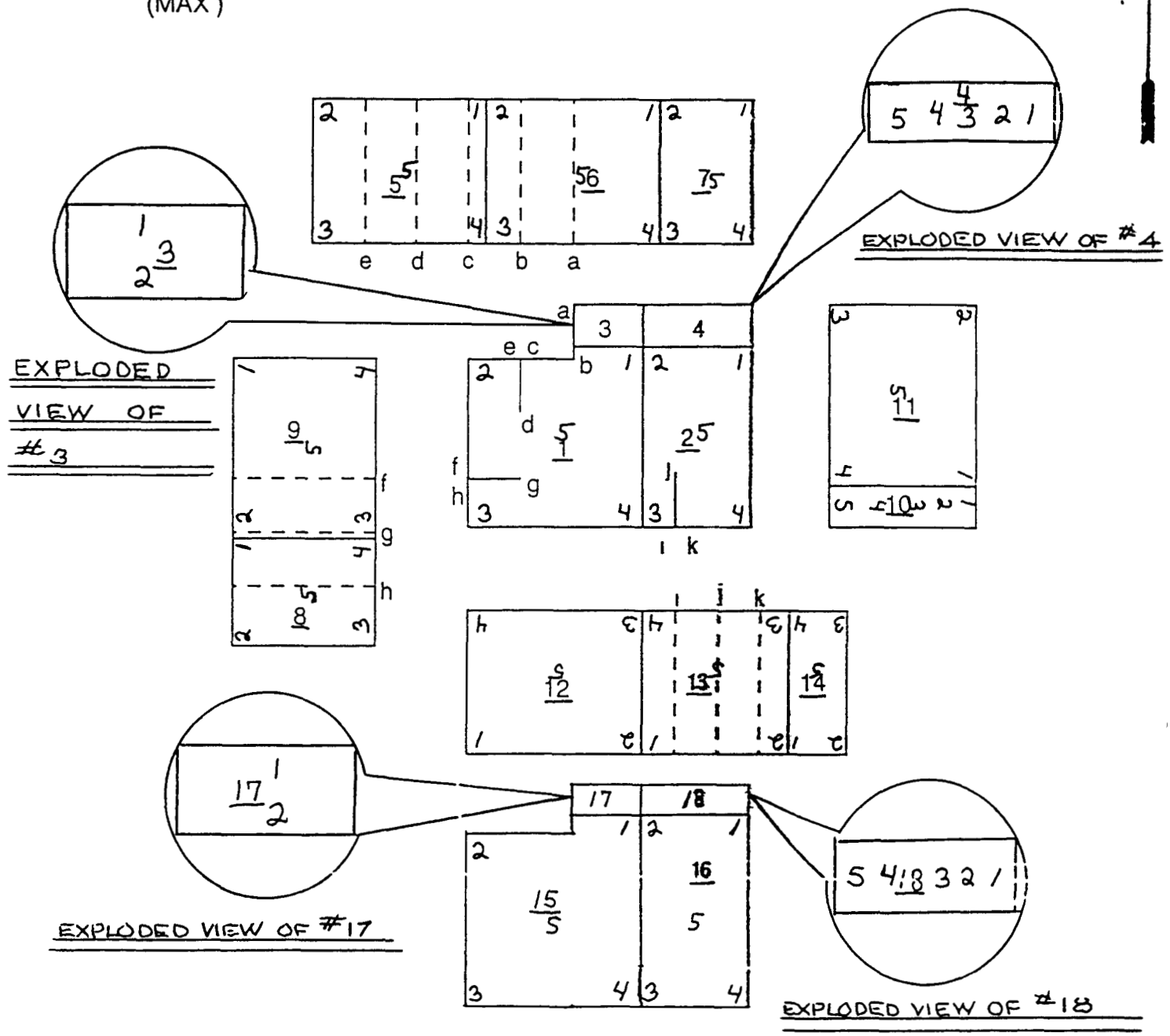
Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

265

BUILDING 889
ROOM 110

ALL SURFACES ARE
3M X 3M GRIDS
(MAX)



BUILDING 889 BASELINE CHARACTERIZATION

Date 4/24/95

ROOM 114

INSTRUMENTATION USED
REMOVABLE CONTAMINATION COUNTERS

Mfg	EBERLINE	EBERLINE	EBERLINE	EBERLINE		
Model	SAC-4	SAC-4	BC-4	BC-4		
Serial	1160	861	763	838		
Date Calib'd	4/3/95	4/7/95	5/2/94	5/2/94		
Cal Due Date	10/95	10/95	5/95	5/95		

TOTAL (FIXED + REMOVABLE) SURVEY INSTRUMENTS

Mfg	LUDLUM	BICRON	BICRON	BICRON	BICRON	
Model	31	A-100	A-100	A-100	A-100	
Serial	82804	B396L	B396L	B396L	B396L	
Date Calib'd	3/17/95	3/9/95	3/9/95	3/9/95	3/9/95	
Cal Due Date	9/17/95	9/95	9/95	9/95	9/95	
Background	5100	2	1	0	1	
Efficiency	N/A	22.75% 4/24/95	22.75% 4/25/95	22.75% 4/26/95	22.75% 4/27/95	

267

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 1-113 DATE 4/24/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 1	1	<3	<3	<15	<1894	2 1 5 3 4
	2	3	<3	<15	<1894	
	3	3	<3	<15	<1894	
	4	3	24	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 2	1	<3	<3	<15	<1894	2 1 5 3 4
	2	3	9	<15	<1894	
	3	3	6	<15	<1894	
	4	3	<3	<15	<1894	
	5	3	<3	<15	<1894	
Grid # 3	1	<3	<3	<15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	<3	21	15	<1894	
	4	3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 4	1	<3	<3	30	<1894	2 1 5 3 4
	2	<3	<3	20	<1894	
	3	3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	6	30	<15	<1894	
Grid # 5	1	3	<3	<15	<1894	2 1 5 3 4
	2	<3	<3	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	9	<15	<1894	

COMMENTS GRIDS #1 AND #2 - HAVE 8" RAISED FLOOR THAT SUPPORTS LOCKERS; GRID #3 - HAS TWO ATTACHED SHOWER BASES; GRID #4 - HAS ATTACHED STOOL;

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

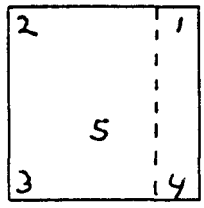
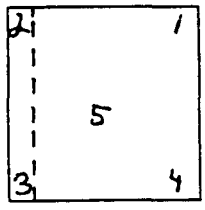
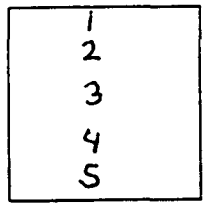
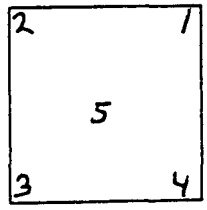
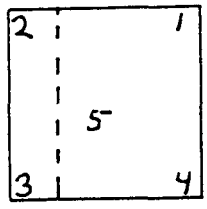
268

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER. 111 DATE 4/25/95 GRID SIZE

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 6	1	<3	<3	<15	<1894	
	2	<3	18	30	<1894	
	3	<3	3	<15	<1894	
	4	<3	6	15	<1894	
	5	<3	<3	<15	<1894	
Grid # 7	1	3	<3	15	<1894	
	2	<3	3	<15	<1894	
	3	<3	3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 8	1	<3	9	15	<1894	
	2	<3	<3	<15	<1894	
	3	<3	<3	25	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 9	1	<3	9	<15	<1894	
	2	<3	21	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	6	<15	<1894	
	5	3	<3	25	<1894	
Grid # 10	1	<3	18	20	<1894	
	2	<3	<3	20	<1894	
	3	<3	<3	25	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	

COMMENTS GRID #6 - has fixed lite, mirror, two sinks and counter top; GRIDS #8 and #9 - has attached shower stall; GRID #10 - has fixed toilet paper holder GRID #8 - is 12" wide

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

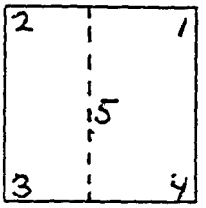
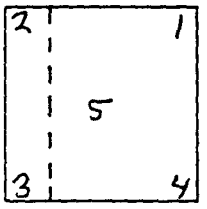
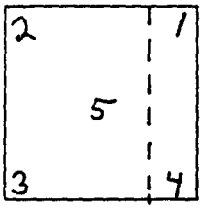
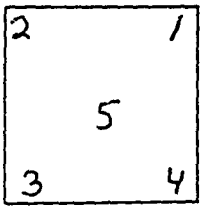
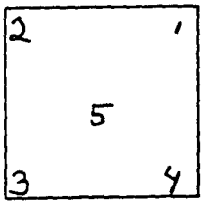
269

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER 111 DATE 4/26/95 GRID SIZE _____

SURVEYED BY R Hamer EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 11	1	<3	<3	30	<1894	
	2	3	39	<15	<1894	
	3	3	<3	<15	<1894	
	4	3	33	<15	<1894	
	5	<3	12	<15	<1894	
Grid # 12	1	<3	<3	<15	<1894	
	2	<3	<3	25	<1894	
	3	<3	3	25	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	15	<1894	
Grid # 13	1	<3	<3	15	<1894	
	2	<3	<3	<15	<1894	
	3	<3	<3	20	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	20	<1894	
Grid # 14	1	<3	12	20	<1894	
	2	<3	<3	20	<1894	
	3	<3	3	<15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	25	<1894	
Grid # 15	1	<3	<3	20	<1894	
	2	<3	<3	15	<1894	
	3	<3	<3	25	<1894	
	4	<3	18	<15	<1894	
	5	<3	<3	<15	<1894	

COMMENTS GRID #12 - has two shower stalls; GRID #14 - has attached urinal; GRID #15 - has attached recessed lighting

Reviewed by [signature] RO Foreman

Reviewed by [signature] Rad Engineer

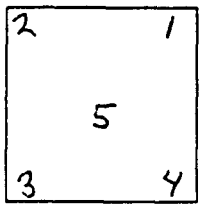
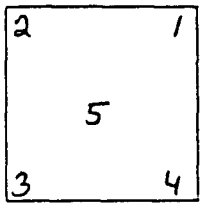
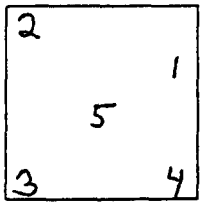
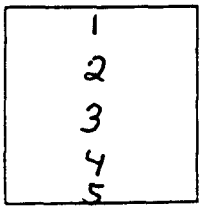
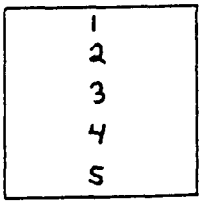
270

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 111 DATE 4/27/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]
SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 16	1	<3	<3	<15	<1894	
	2	<3	39	<15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	12	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 17	1	3	15	20	<1894	
	2	<3	54	<15	<1894	
	3	<3	3	15	<1894	
	4	3	3	<15	<1894	
	5	3	<3	<15	<1894	
Grid # 18	1	<3	12	<15	<1894	
	2	3	<3	<15	<1894	
	3	<3	39	15	<1894	
	4	<3	<3	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 19	1	<3	3	<15	<1894	
	2	<3	15	15	<1894	
	3	<3	<3	<15	<1894	
	4	<3	12	<15	<1894	
	5	<3	<3	<15	<1894	
Grid # 20	1	<3	12	<15	<1894	
	2	<3	6	<15	<1894	
	3	<3	<3	<15	<1894	
	4	3	45	20	<1894	
	5	<3	<3	<15	<1894	

COMMENTS GRID #16 - HAS RECESSED LITE; GRID #17 - HAS RECESSED LITE AND FURNACE VENT; GRID #18 - HAS RECESSED LITE; GRIDS #19, #20 - IS 9" WIDE

Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

271

BUILDING 889 BASELINE CHARACTERIZATION

ROOM NUMBER: 111 DATE 4/27/95 GRID SIZE _____

SURVEYED BY R Haines EMPLOYEE # [redacted]

SIGNATURE

SURVEY RESULTS (dpm/100cm2)

	Survey Point	Removable Alpha	Removable Beta	Fixed & Removable Alpha	Fixed & Removable Beta	Indicate location of survey points
Grid # 21	1	<3	6	<15	<1894	1
	2	<3	12	<15	<1894	2
	3	<3	24	<15	<1894	3
	4	<3	36	<15	<1894	4
	5	<3	18	<15	<1894	5
Grid # 22	1	<3	39	<15	<1894	1
	2	<3	6	20	<1894	2
	3	<3	6	<15	<1894	3
	4	<3	<3	<15	<1894	4
	5	<3	30	20	<1894	5
Grid # ____	1					
	2					
	3					
	4					
	5					
Grid # ____	1					
	2					
	3					
	4					
	5					
Grid # ____	1					
	2					
	3					
	4					
	5					

COMMENTS GRIDS #21, #22 - ARE 9" WIDE;

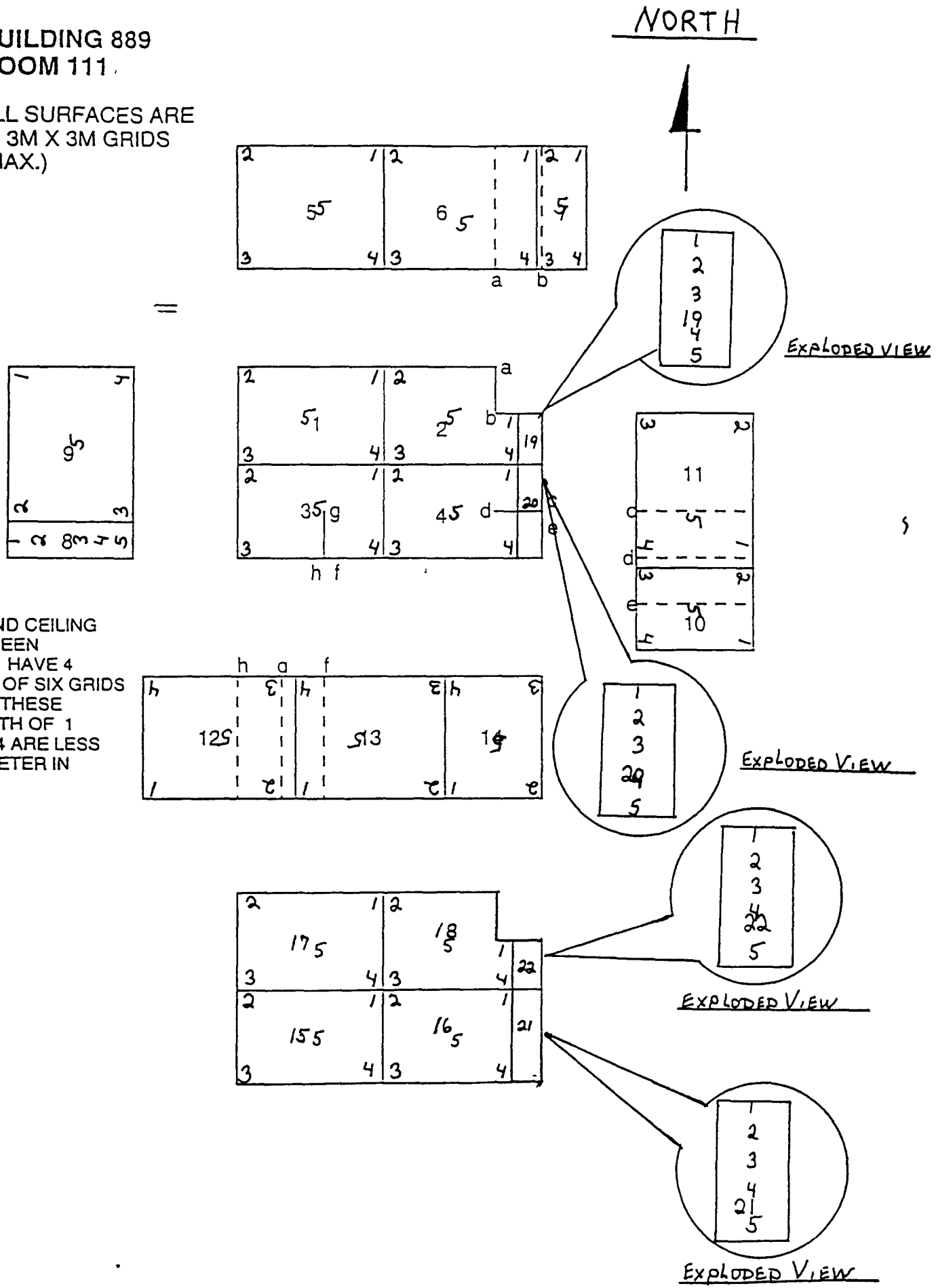
Reviewed by _____ RO Foreman

Reviewed by _____ Rad Engineer

272

BUILDING 889
ROOM 111

ALL SURFACES ARE IN 3M X 3M GRIDS (MAX.)



TH[illegible]OOR AND CEILING G[illegible] HAVE BEEN ADJUSTED TO HAVE 4 GRIDS IN LIEU OF SIX GRIDS WITH TWO OF THESE HAVING A WIDTH OF 1 METERS (ALL 4 ARE LESS THAN 9 SQ METER IN AREA)

273

RADIOACTIVE MATERIALS MANAGEMENT AREA (RMMA) DETERMINATION FORM

ate of Determination 3-12-96 Building Number 889 Room Numbers 104 and 200

rea Description Room 104 contains the main electrical components for the building. Room 200 is the mezzanine above room 104.

For each question circle Yes or No as a response

1 YES (NO) **Does the area have potential or actual unconfined or unencapsulated radioactive material present?**

2 YES (NO) *(For this response to be YES both 2 a and 2 b must be answered YES)*

a YES (NO) **Does the area have surface radioactive contamination levels that exceed or have the potential to exceed the unrestricted release limits of HSP-18 10?**

b YES (NO) **Do the airborne radioactivity levels for the area exceed or are they likely to exceed 10% of the Derived Airborne Concentrations for any isotope?**

3 YES (NO) **Is the area exposed to beams or other sources of particles capable of causing activation?**

4 YES (NO) **Does the area have volume contamination of materials from area surface contamination or from operations in other areas?**

5 YES (NO) **Does the area have elevated levels of radioactive material above background in the soil?**

IF ANY OF QUESTIONS ONE THROUGH FIVE WERE ANSWERED YES, THEN THE AREA IS TO BE DESIGNATED AS AN RMMA

YES (NO) IS THE AREA AN RMMA? (CIRCLE ONE)

Dennis A. Russell — [redacted] — D A Russell — 3/12/96

R E Name — Signature — Date

Rationale for Determination These rooms have been baseline surveyed using large area wipes and no contamination was found. Additionally, the history of these areas indicates that no radiological work was performed in any of these areas.

Key Personnel Interviewed

NAME	ORGANIZATION	PHONE/PAGE

Signature / Empl # / Date

Signature / Empl # / Date

List of Attached supporting documentation Surveys from the rooms performed as part of D & D of Building 889.

ntered into RMMA Database by _____ Name _____ Date

274

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: MASSLIN Survey of Rooms 104 & 200

FOR ____ P/WRE ____ PRL

____ RWP ✓ OTHER RWP-96-750 0021

BUILDING/LOCATION	ROOM
889	104 & 200
DATE	**TIME**
01-18-96	1230

ITEM DESCRIPTION: MASSLIN BASELINE OF Rooms 104 & 200

COMMENTS

STATUS

____ RELEASABLE ____ NOT RELEASABLE

____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME): J.L. Johnston / Scott Graham

[redacted] 01-18-96

RCT SIGNATURE DATE

REVIEWED BY: C. Michel 1-18-96 1-29-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER	EBER	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

MFR	EBER	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1354		
CAL DATE		01-04-96		
CAL DUE DATE		07-04-96		
BACKGROUND		0.0α/665-13		

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Bldg 887 01-18-96

LOG NUMBER MASS Initial Survey of Rooms 104 200

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Floor (104)	<20	<1000		
2	Floor (104)	<20	<1000		
3	Floor (104)	<20	<1000		
4	Floor (104)	<20	<1000		
5	Floor (104)	<20	<1000		
6	Floor (104)	<20	<1000		
7	Floor (104)	<20	<1000		
8	Floor (104)	<20	<1000		
9	Floor (104)	<20	<1000		
10	Ladder (104)	<20	<1000		
11	East wall (104)	<20	<1000		
12	East wall (104)	<20	<1000		
13	East wall (104)	<20	<1000		
14	East wall (104)	<20	<1000		
15	East wall (104)	<20	<1000		
16	East wall (104)	<20	<1000		
17	North wall (104)	<20	<1000		
18	North wall (104)	<20	<1000		
19	North wall (104)	<20	<1000		
20	North wall (104)	<20	<1000		
21	North wall (104)	<20	<1000		
22	North wall (104)	<20	<1000		

01-18-96

SURVEY RESULTS (DPM/100 CM²)

SWIP #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
23	West wall (104)	<20	<1000		
24	West wall (104)	<20	<1000		
25	West wall (104)	<20	<1000		
26	West wall (104)	<20	<1000		
27	West wall (104)	<20	<1000		
28	West wall (104)	<20	<1000		
29	South wall (104)	<20	<1000		
30	South wall (104)	<20	<1000		
31	South wall (104)	<20	<1000		
32	South wall (104)	<20	<1000		
33	South wall (104)	<20	<1000		
34	South wall (104)	<20	<1000		
35	South wall (104)	<20	<1000		
36	South wall (104)	<20	<1000		
37	Ventilation System (200)	<20	<1000		
38	Ventilation System (200)	<20	<1000		
39	Ventilation System (200)	<20	<1000		
40	Ventilation System (200)	<20	<1000		
41	Ventilation System (200)	<20	<1000		
42	Ventilation System (200)	<20	<1000		
43	Floor (200)	<20	<1000		
44	Floor (200)	<20	<1000		

01-18-96

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Bldg 337 01-18-96

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LOG NUMBER Mass/Inn survey of Rms 104 & 200

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 3 OF 6

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
45	Floor (200)	<20	<1000		
46	Floor (200)	<20	<1000		
47	Floor (200)	<20	<1000		
48	Floor (200)	<20	<1000		
49	Floor (200)	<20	<1000		
50	Floor (200)	<20	<1000		
51	North Wall (200)	<20	<1000		
52	North Wall (200)	<20	<1000		
53	East Wall (200)	<20	<1000		
54	East Wall (200)	<20	<1000		
55	East Wall (200)	<20	<1000		
56	East Wall (200)	<20	<1000		
57	East Wall (200)	<20	<1000		
58	East Wall (200)	<20	<1000		
59	East Wall (200)	<20	<1000		
60	East Wall (200)	<20	<1000		
61	East Wall (200)	<20	<1000		
62	South Wall (200)	<20	<1000		
63	South Wall (200)	<20	<1000		
64	South Wall (200)	<20	<1000		
65	Ceiling	<20	<1000		
66	Ceiling	<20	<1000		

01-18-96 [illegible]

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
67	Ceiling	<20	<1000		
68	Ceiling	<20	<1000		
69	Ceiling	<20	<1000		
70	Ceiling	<20	<1000		
71	Ceiling	<20	<1000		
72	Ceiling	<20	<1000		
73	Ceiling	<20	<1000		
74	Ceiling	<20	<1000		
75	Ceiling	<20	<1000		
76	Ceiling	<20	<1000		
77	Ceiling	<20	<1000		
78	Ceiling	<20	<1000		
79	Direct Around door to Rm 106			<60	<380
80	Direct Around door to Rm 106			<60	<380
81	Direct Around door to Rm 106			<60	<380
82	Direct Around door to Rm 106			<60	<380
83	Direct Around door to Rm 106			<60	<380
84	Direct Around door to Rm 106			<60	<380
85	Direct Around door to Rm 106			<60	<380
86	Direct Around door to Rm 105			<60	<380
87	Direct Around door to Rm 105			<60	<380
88	Direct Around door to Rm 105			<60	<380

01-18-96 [illegible]

01-18-96 [illegible]

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Bldg 084 01-18-96

LOG NUMBER Mass/Lim Survey of Rms 104 & 200

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 4 OF 6

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
89	Direct Around door to Rm 105			<60	<380
90	Direct Around door to Rm 105			<60	<380
91	Direct Around door to Rm 105			<60	<380
92	Direct Around door to Rm 105			<60	<380

01-18-96 [illegible]

01-18-96 [illegible]

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA

01-18-96 [illegible]

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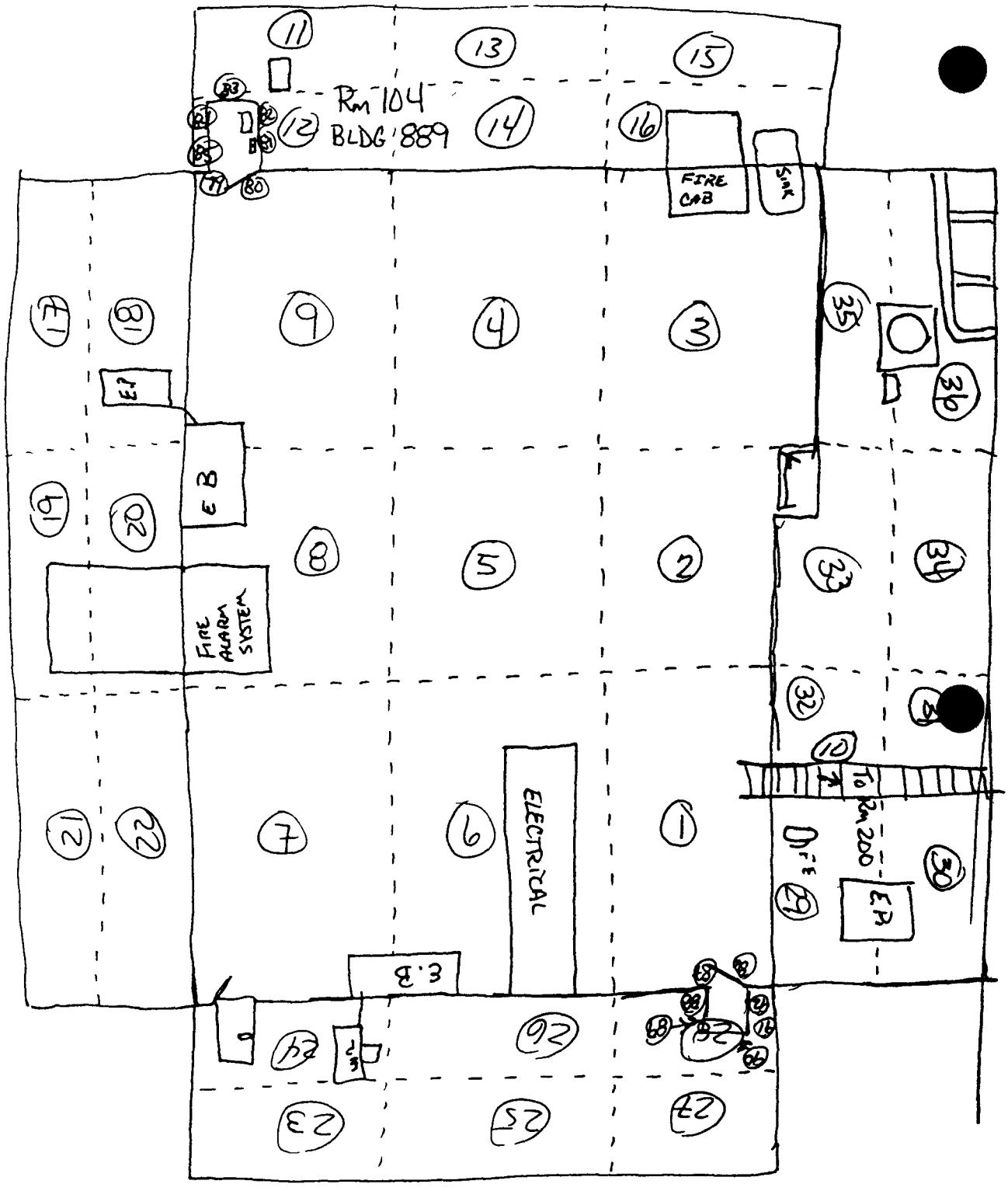
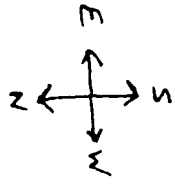
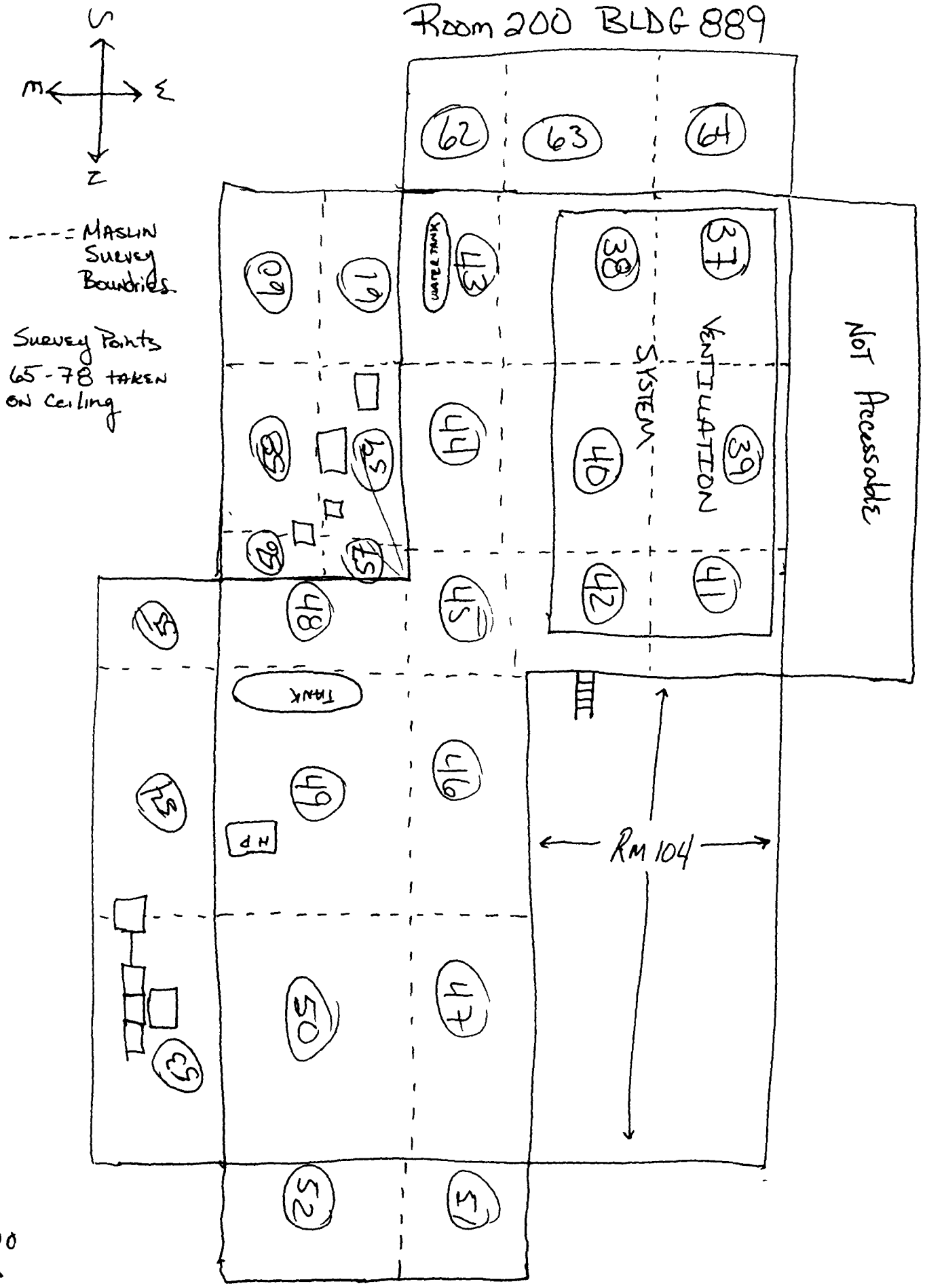




---- Maslin Wipe boundary AREAS

Survey Points 79-92 are for Fixed Contamination only

Room 200 BLDG 889



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RADIOACTIVE MATERIALS MANAGEMENT AREA (RMMA) DETERMINATION FORM

ıte of Determination 3-12-96 Building Number 889 Room Numbers 112

rea Description Room 112 is the newest addition to the building and contains a unused ventilation plenum.

For each question circle **Yes** or **No** as a response

1 YES (NO) **Does the area have potential or actual unconfined or unencapsulated radioactive material present?**

2 YES (NO) *(For this response to be YES, both 2 a. and 2 b must be answered YES)*

a YES (NO) **Does the area have surface radioactive contamination levels that exceed or have the potential to exceed the unrestricted release limits of HSP-18 10?**

b YES (NO) **Do the airborne radioactivity levels for the area exceed or are they likely to exceed 10% of the Derived Airborne Concentrations for any isotope?**

3 YES (NO) **Is the area exposed to beams or other sources of particles capable of causing activation?**

4 YES (NO) **Does the area have volume contamination of materials from area surface contamination or from operations in other areas?**

5 YES (NO) **Does the area have elevated levels of radioactive material above background in the soil?**

IF ANY OF QUESTIONS ONE THROUGH FIVE WERE ANSWERED YES, THEN THE AREA IS TO BE DESIGNATED AS AN RMMA

YES (NO) IS THE AREA AN RMMA? (CIRCLE ONE)

Dennis A. Russell — R E Name

[redacted]

DA Russell — Signature

3/12/96 — Date

Rationale for Determination This room has been baseline surveyed using large area wipes and no contamination was found. Additionally, the history of these areas indicates that no radiolorgcal work was performed in any of these areas.

Key Personnel Interviewed

NAME	ORGANIZATION	PHONE/PAGE

Signature / Empl # / Date

Signature / Empl # / Date

List of Attached supporting documentation Surveys from the rooms performed as part of D & D of Building 889.

ntered into RMMA Database by _____ Name _____ Date

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP 96-750-0021

FOR ____ P/WRE ____ PRL

____ RWP ✓ OTHER ____

BUILDING/LOCATION 889 | ROOM 112

DATE 01-25-96 | TIME 0930

ITEM DESCRIPTION MAZZLINN LARGE AREA Wipe Survey

COMMENTS

STATUS

____ RELEASABLE ____ NOT RELEASABLE

✓ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) S L Graham J.L. Johnston

[signature] [redacted] ~~10-25~~ 1-25-96

J.L. Johnston 1 [redacted] 01-25-96

RCT SIGNATURE DATE

REVIEWED BY C. Michel 1-29-96 1-29-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER	EBER	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	1188			
CAL DATE	11-07-95			
CAL DUE DATE	05-07-96			

MFR	EBER	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	389	393		
CAL DATE	01-04-96	01-04-96		
CAL DUE DATE	07-04-96	07-04-96		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	IUE Technology	LUDLUM	
MODEL	A-100	ElectrA	31	
SERIAL #		1354		
CAL DATE		01-04-96		
CAL DUE DATE		07-04-96		
BACKGROUND		0.0α/596β		

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LOG NUMBER RWP # 96-750-0021

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RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM 3)

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT	TOTAL BETA/ GAMMA
1	Floor	<20	<1000 ~~<300~~		
2	Floor	<20	<1000		
3	Floor	<20	<1000		
4	Floor	<20	<1000		
5	Floor	<20	<1000		
6	Floor	<20	<1000		
7	Floor	<20	<1000		
8	Floor	<20	<1000		
9	Floor	<20	<1000		
10	Floor	<20	<1000		
11	Floor	<20	<1000		
12	Floor	<20	<1000		
13	Floor	<20	<1000		
14	Floor	<20	<1000		
15	Floor	<20	<1000		
16	Floor	<20	<1000		
17	Floor	<20	<1000		
18	Floor	<20	<1000		
19	Floor	<20	<1000		
20	Floor	<20	<1000		
21	Floor	<20	<1000		
22	Floor	<20	<1000		

SURVEY RESULTS (DPM/100 CM 3)

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT	TOTAL BETA/ GAMMA
23	Floor	<20	<1000		
24	Floor	<20	<1000		
25	Floor	<20	<1000		
26	Floor	<20	<1000		
27	Floor	<20	<1000		
28	Floor	<20	<1000		
29	Floor	<20	<1000		
30	Floor	<20	<1000		
31	Floor	<20	<1000		
32	Floor	<20	<1000		
33	Floor	<20	<1000		
34	Floor	<20	<1000		
35	Floor	<20	<1000		
36	Floor	<20	<1000		
37	Floor	<20	<1000		
38	Floor	<20	<1000		
39	Floor	<20	<1000		
40	Floor	<20	<1000		
41	Floor	<20	<1000		
42	Floor	<20	<1000		
43	Floor	<20	<1000		
44	Floor	<20	<1000		

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LOG NUMBER [illegible]

PAGE 3 OF 12

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT	TOTAL BETA/ GAMMA
45	Floor	<20	<1000		
46	Floor	<20	<1000		
47	Floor	<20	<1000		
48	Floor	<20	<1000		
49	Floor	<20	<1000		
50	Floor	<20	<1000		
51	Floor	<20	<1000		
52	Floor	<20	<1000		
53	Floor	<20	<1000		
54	Floor	<20	<1000		
55	Floor	<20	<1000		
56	Floor	<20	<1000		
57	Floor	<20	<1000		
58	Floor	<20	<1000		
59	Floor	<20	<1000		
60	Floor	<20	<1000		
61	Floor	<20	<1000		
62	Floor	<20	<1000		
63	Floor	<20	<1000		
64	Floor	<20	<1000		
65	Floor	<20	<1000		
66	Floor	<20	<1000		

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT	TOTAL BETA/ GAMMA
67	Floor	<20	<1000		
68	Floor	<20	<1000		
69	Floor	<20	<1000		
70	Floor	<20	<1000		
71	Floor	<20	<1000		
72	Floor	<20	<1000		
73	Floor	<20	<1000		
74	Floor	<20	<1000		
75	Floor	<20	<1000		
76	Floor	<20	<1000		
77	Floor	<20	<1000		
78	Floor	<20	<1000		
79	Floor	<20	<1000		
80	Floor	<20	<1000		
81	Floor	<20	<1000		
82	Floor	<20	<1000		
83	Floor	<20	<1000		
84	Floor	<20	<1000		
85	Floor	<20	<1000		
86	Floor	<20	<1000		
87	Floor	<20	<1000		
88	Floor	<20	<1000		

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG/PRE NUMBER: [illegible] # 96-750 001

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/NO) SEC. COUNT	TOTAL BETA/GAMMA
89	Floor	<20	<1000		
90	Floor	<20	<1000		
91	Floor	<20	<1000		
92	Floor	<20	<1000		
93	Floor	<20	<1000		
94	Floor	<20	<1000		
95	Floor	<20	<1000		
96	Floor	<20	<1000		
97	Floor	<20	<1000		
98	Floor	<20	<1000		
99	Floor	<20	<1000		
100	Floor	<20	<1000		
101	Floor	<20	<1000		
102	Floor	<20	<1000		
103	Floor	<20	<1000		
104	Floor	<20	<1000		
105	Floor	<20	<1000		
106	Floor	<20	<1000		
107	Floor	<20	<1000		
108	Floor	<20	<1000		
109	Floor	<20	<1000		
110	Floor	<20	<1000		
111	Floor	<20	<1000		
112	Floor	<20	<1000		
113	Floor	<20	<1000		

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/NO) SEC. COUNT	TOTAL BETA/GAMMA
114	Floor	<20	<1000		
115	Floor	<20	<1000		
116	Floor	<20	<1000		
117	Floor	<20	<1000		
118	Floor	<20	<1000		
119	Floor	<20	<1000		
120	Floor	<20	<1000		
121	Floor	<20	<1000		
122	Floor	<20	<1000		
123	Floor	<20	<1000		
124	Floor	<20	<1000		
125	Floor	<20	<1000		
126	Floor	<20	<1000		
127	Floor	<20	<1000		
128	Floor	<20	<1000		
129	Floor	<20	<1000		
130	Floor	<20	<1000		
131	Floor	<20	<1000		
132	Floor	<20	<1000		
133	Floor	<20	<1000		
134	Floor	<20	<1000		
135	Floor	<20	<1000		
136	Floor	<20	<1000		
137	Mezzanine Floor	<20	<1000		
138	Mezzanine Floor	<20	<1000		

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LOG NUMBER RWP # 96-750-0021

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RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/ GAMMA
139	Mezzanine Floor	<20	<1000		
140	Mezzanine Floor	<20	<1000		
141	Mezzanine Floor	<20	<1000		
142	Mezzanine Floor	<20	<1000		
143	Mezzanine Floor	<20	<1000		
144	Mezzanine Floor	<20	<1000		
145	Mezzanine Floor	<20	<1000		
146	Mezzanine Floor	<20	<1000		
147	Mezzanine Floor	<20	<1000		
148	Mezzanine Floor	<20	<1000		
149	Mezzanine Floor	<20	<1000		
150	Mezzanine Floor	<20	<1000		
151	Mezzanine Floor	<20	<1000		
152	Mezzanine Floor	<20	<1000		
153	Mezzanine Floor	<20	<1000		
154	Mezzanine Floor	<20	<1000		
155	Mezzanine Floor	<20	<1000		
156	Mezzanine Floor	<20	<1000		
157	Mezzanine Floor	<20	<1000		
158	Mezzanine Floor	<20	<1000		
159	Mezzanine Floor	<20	<1000		
160	Mezzanine Floor	<20	<1000		

01-25-96 [illegible]

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/ GAMMA
161	Mezzanine Floor	<20	<1000		
162	Mezzanine Floor	<20	<1000		
163	Mezzanine Floor	<20	<1000		
164	Mezzanine Floor	<20	<1000		
165	Mezzanine Floor	<20	<1000		
166	Mezzanine Floor	<20	<1000		
167	Mezzanine Floor	<20	<1000		
168	Mezzanine Floor	<20	<1000		
169	Mezzanine Floor	<20	<1000		
170	Mezzanine Floor	<20	<1000		
171	Mezzanine Floor	<20	<1000		
172	Mezzanine Floor	<20	<1000		
173	Mezzanine Floor	<20	<1000		
174	Mezzanine Floor	<20	<1000		
175	Mezzanine Floor	<20	<1000		
176	Mezzanine Floor	<20	<1000		
177	Mezzanine Floor	<20	<1000		
178	Mezzane Floor	<20	<1000		
179	Mezzanine Floor	<20	<1000		
180	Mezzanine Floor	<20	<1000		
181	Mezzanine Floor	<20	<1000		
182	Mezzanine Floor	<20	<1000		

01-25-96 [illegible]

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER Dup # 96 752-0021

PAGE 6 OF 13

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/ GAMMA
183	Mezzanine Floor	<20	<1000		
184	Mezzanine Floor	<20	<1000		
185	Mezzanine Floor	<20	<1000		
186	Mezzanine Floor	<20	<1000		
187	Mezzanine Floor	<20	<1000		
188	Mezzanine Floor	<20	<1000		
189	Mezzanine Floor	<20	<1000		
190	Mezzanine Floor	<20	<1000		
191	Mezzanine Floor	<20	<1000		
192	Mezzanine Floor	<20	<1000		
193	Mezzanine Floor	<20	<1000		
194	Mezzanine Floor	<20	<1000		
195	Mezzanine Floor	<20	<1000		
196	Mezzanine Floor	<20	<1000		
197	Mezzanine Floor	<20	<1000		
198	Exhaust Motor	<20	<1000		
199	Exhaust Motor	<20	<1000		
200	Exhaust Motor	<20	<1000		
201	Exhaust Motor	<20	<1000		
202	Exhaust Motor	<20	<1000		
203	Exhaust Motor	<20	<1000		
204	Exhaust Motor	<20	<1000		

01-25-96 [illegible]

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/ GAMMA
205	Exhaust Motor	<20	<1000		
206	Exhaust Motor	<20	<1000		
207	Exhaust Motor	<20	<1000		
208	Exhaust Motor	<20	<1000		
209	Exhaust Motor	<20	<1000		
210	Exhaust Motor	<20	<1000		
211	Exhaust Motor	<20	<1000		
212	Exhaust Motor	<20	<1000		
213	Exhaust Motor	<20	<1000		
214	Exhaust Motor	<20	<1000		
215	Exhaust Motor	<20	<1000		
216	Exhaust Motor	<20	<1000		
217	Exhaust Motor	<20	<1000		
218	Exhaust Motor	<20	<1000		
219	Exhaust Motor	<20	<1000		
220	Exhaust Motor	<20	<1000		
221	Exhaust Motor	<20	<1000		
222	Exhaust Motor	<20	<1000		
223	Exhaust Motor	<20	<1000		
224	Exhaust Motor	<20	<1000		
225	Exhaust Motor	<20	<1000		
226	Exhaust Motor	<20	<1000		

01-25-96 [illegible]

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG/PRE NUMBER: [illegible] #96 [illegible]

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/NO) SEC. COUNT	TOTAL BETA/GAMMA
227	Exhaust Motor	<20	<1000		
228	Exhaust Motor	<20	<1000		
229	Filter Housing	<20	<1000		
230	Filter Housing	<20	<1000		
231	Filter Housing	<20	<1000		
232	Filter Housing	<20	<1000		
233	Filter Housing	<20	<1000		
234	Filter Housing	<20	<1000		
235	Filter Housing	<20	<1000		
236	Filter Housing	<20	<1000		
237	Filter Housing	<20	<1000		
238	Filter Housing	<20	<1000		
239	Filter Housing	<20	<1000		
240	Filter Housing	<20	<1000		
241	Filter Housing	<20	<1000		
242	Filter Housing	<20	<1000		
243	Filter Housing	<20	<1000		
244	Filter Housing	<20	<1000		
245	Filter Housing	<20	<1000		
246	Filter Housing	<20	<1000		
247	Filter Housing	<20	<1000		
248	Filter Housing	<20	<1000		
249	Plenum Wall	<20	<1000		
250	Plenum Wall	<20	<1000		
251	Plenum Wall	<20	<1000		

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/NO) SEC. COUNT	TOTAL BETA/GAMMA
252	Plenum Wall	<20	<1000		
253	Plenum Wall	<20	<1000		
254	Plenum Wall	<20	<1000		
255	Plenum Wall	<20	<1000		
256	Plenum Wall	<20	<1000		
257	Plenum Wall	<20	<1000		
258	Plenum Wall	<20	<1000		
259	Plenum Wall	<20	<1000		
260	Plenum Wall	<20	<1000		
261	Plenum Wall	<20	<1000		
262	Plenum Wall	<20	<1000		
262	Plenum Wall	<20	<1000		
263	Plenum Wall	<20	<1000		
264	Plenum Wall	<20	<1000		
265	Plenum Wall	<20	<1000		
266	Plenum Wall	<20	<1000		
267	Plenum Wall	<20	<1000		
268	Plenum Wall	<20	<1000		
269	Plenum Wall	<20	<1000		
270	Plenum Wall	<20	<1000		
271	Plenum Wall	<20	<1000		
272	Plenum Wall	<20	<1000		
273	Plenum Wall	<20	<1000		
274	Plenum Wall	<20	<1000		
275	Plenum Walls	<20	<1000		

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER CWI # 96 752-CC-1

PAGE 8 OF 13

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/ GAMMA
276	Plenum Wall	<20	<1000		
277	Plenum Wall	<20	<1000		
278	Plenum Wall	<20	<1000		
279	Plenum Wall	<20	<1000		
280	Plenum Wall	<20	<1000		
281	Plenum Wall	<20	<1000		
282	Plenum Wall	<20	<1000		
283	Plenum Wall	<20	<1000		
284	Plenum Wall	<20	<1000		
285	Plenum Wall	<20	<1000		
286	Plenum Wall	<20	<1000		
287	Plenum Wall	<20	<1000		
288	Plenum Wall	<20	<1000		
289	112 Wall	<20	<1000		
290	112 Wall	<20	<1000		
291	112 Wall	<20	<1000		
292	112 Wall	<20	<1000		
293	112 Wall	<20	<1000		
294	112 Wall	<20	<1000		
295	112 Wall	<20	<1000		
296	112 Wall	<20	<1000		
297	112 Wall	<20	<1000		

SURVEY RESULTS (DPM/100 CM ^{3})

SWIPE #	LOCATION / DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/ GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/ GAMMA
298	112 Wall	<20	<1000		
299	112 Wall	<20	<1000		
300	112 Wall	<20	<1000		
301	112 Wall	<20	<1000		
302	112 Wall	<20	<1000		
303	112 Wall	<20	<1000		
304	112 Wall	<20	<1000		
305	112 Wall	<20	<1000		
306	112 Wall	<20	<1000		
307	112 Wall	<20	<1000		
308	112 Wall	<20	<1000		
309	112 Wall	<20	<1000		
310	112 Wall	<20	<1000		
311	112 Wall	<20	<1000		
312	112 Wall	<20	<1000		
313	112 Wall	<20	<1000		
314	112 Wall	<20	<1000		
315	112 Wall	<20	<1000		
316	112 Wall	<20	<1000		
317	112 Wall	<20	<1000		
318	112 Wall	<20	<1000		
319	112 Wall	<20	<1000		

482

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LOG NUMBER Rwp # 96 750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
320	112 Wall	<20	<1000		
321	112 Wall	<20	<1000		
322	112 Wall	<20	<1000		
323	112 Wall	<20	<1000		
324	112 Wall	<20	<1000		
325	112 Wall	<20	<1000		
326	112 Wall	<20	<1000		
327	112 Wall	<20	<1000		
328	112 Wall	<20	<1000		
329	112 Wall	<20	<1000		
330	112 Wall	<20	<1000		
331	112 Wall	<20	<1000		
332	112 Wall	<20	<1000		
333	112 Wall	<20	<1000		
334	112 Wall	<20	<1000		
335	112 Wall	<20	<1000		
336	112 Wall	<20	<1000		
337	112 Wall	<20	<1000		
338	112 Wall	<20	<1000		
339	112 Wall	<20	<1000		
340	112 Wall	<20	<1000		
341	112 Wall	<20	<1000		

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/60 SEC COUNT)	TOTAL BETA/GAMMA
342	112 Wall	<20	<1000		
343	112 Wall	<20	<1000		
344	112 Wall	<20	<1000		
345	112 Wall	<20	<1000		
346	112 Wall	<20	<1000		
347	112 Wall	<20	<1000		
348	112 Wall	<20	<1000		
349	112 Wall	<20	<1000		
350	112 Wall	<20	<1000		
351	112 Wall	<20	<1000		
352	112 Wall	<20	<1000		
353	112 Wall	<20	<1000		
354	112 Wall	<20	<1000		
355	112 Wall	<20	<1000		
356	112 Wall	<20	<1000		
357	112 Wall	<20	<1000		
358	112 Wall	<20	<1000		
359	112 Wall	<20	<1000		
360	112 Wall	<20	<1000		
361	112 Wall	<20	<1000		
362	112 Wall	<20	<1000		
363	112 Wall	<20	<1000		

01-25-96

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG/PRE NUMBER: RCUD #96 750-0021

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/FIX) SEC. COUNT	TOTAL BETA/GAMMA
364	112 Wall	<20	<1000		
365	112 Wall	<20	<1000		
366	112 Wall	<20	<1000		
367	112 Wall	<20	<1000		
368	112 Wall	<20	<1000		
369	112 Wall	<20	<1000		
370	112 Wall	<20	<1000		
371	112 Wall	<20	<1000		
372	112 Wall	<20	<1000		
373	112 Wall	<20	<1000		
374	112 Wall	<20	<1000		
375	112 Wall	<20	<1000		
376	112 Wall	<20	<1000		
377	112 Wall	<20	<1000		
378	112 Wall	<20	<1000		
379	112 Wall	<20	<1000		
380	112 Wall	<20	<1000		
381	112 Wall	<20	<1000		
382	112 Wall	<20	<1000		
383	112 Wall	<20	<1000		
384	112 Wall	<20	<1000		
385	112 Wall	<20	<1000		
386	112 Wall	<20	<1000		
387	112 Wall	<20	<1000		
388	112 Wall	<20	<1000		

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/FIX) SEC. COUNT	TOTAL BETA/GAMMA
389	112 Wall	<20	<1000		
390	112 Wall	<20	<1000		
391	112 Wall	<20	<1000		
392	112 Wall	<20	<1000		
393	112 Wall	<20	<1000		
394	112 Wall	<20	<1000		
395	112 Wall	<20	<1000		
396	112 Wall	<20	<1000		
397	112 Wall	<20	<1000		
398	112 Wall	<20	<1000		
399	112 Wall	<20	<1000		
400	112 Wall	<20	<1000		
401	112 Wall	<20	<1000		
402	112 Wall	<20	<1000		
403	112 Wall	<20	<1000		
404	112 Wall	<20	<1000		
405	112 Wall	<20	<1000		
406	112 Wall	<20	<1000		
407	112 Wall	<20	<1000		
408	112 Wall	<20	<1000		
409	112 Wall	<20	<1000		
410	112 Wall	<20	<1000		
411	112 Wall	<20	<1000		
412	112 Wall	<20	<1000		
413	112 Wall	<20	<1000		

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

LOG# RWP# 96-350-0021

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
414	Wall	<20	<1000		
415	Wall	<20	<1000		
416	Wall	<20	<1000		
417	Wall	<20	<1000		
418	Wall	<20	<1000		
419	Wall	<20	<1000		
420	Wall	<20	<1000		
421	Wall	<20	<1000		
422	Wall	<20	<1000		
423	Wall	<20	<1000		
424	Wall	<20	<1000		
425	Wall	<20	<1000		
426	Wall	<20	<1000		
427	Wall	<20	<1000		
428	Wall	<20	<1000		
429	Wall	<20	<1000		
430	Wall	<20	<1000		
431	Wall	<20	<1000		
432	Wall	<20	<1000		
433	Wall	<20	<1000		
434	Wall	<20	<1000		
435	Wall	<20	<1000		
436	Wall	<20	<1000		
437	Wall	<20	<1000		
438	Wall	<20	<1000		
439	Wall	<20	<1000		
440	Wall	<20	<1000		
441	Wall	<20	<1000		
442	Wall	<20	<1000		
443	Wall	<20	<1000		
444	Wall	<20	<1000		

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
445	Wall	<20	<1000		
446	Wall	<20	<1000		
447	Wall	<20	<1000		
448	Wall	<20	<1000		
449	Wall	<20	<1000		
450	Wall	<20	<1000		
451	Wall	<20	<1000		
452	Wall	<20	<1000		
453	Wall	<20	<1000		
454	Wall	<20	<1000		
455	Wall	<20	<1000		
456	Wall	<20	<1000		
457	Wall	<20	<1000		
458	Wall	<20	<1000		
459	Wall	<20	<1000		
460	Wall	<20	<1000		
461	Wall	<20	<1000		
462	Wall	<20	<1000		
463	Wall	<20	<1000		
464	Wall	<20	<1000		
465	Wall	<20	<1000		
466	Wall	<20	<1000		
467	Wall	<20	<1000		
468	Wall	<20	<1000		
469	Wall	<20	<1000		
470	Wall	<20	<1000		
471	Wall	<20	<1000		
472	Wall	<20	<1000		
473	Wall	<20	<1000		
474	Wall	<20	<1000		
475	Wall	<20	<1000		

292

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG/PRE NUMBER: _____

SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60) SEC. COUNT	TOTAL BETA/GAMMA
476	Wall	<20	<1000		
477	Wall	<20	<1000		
478	Wall	<20	<1000		
479	Wall	<20	<1000		
480	Wall	<20	<1000		
481	Wall	<20	<1000		
482	Wall	<20	<1000		
483	Wall	<20	<1000		
484	Wall	<20	<1000		
485	Wall	<20	<1000		
486	Wall	<20	<1000		

BPM 1-25-96

BPM 1-25-96

SURVEY RESULTS (DPM/100 CM²)

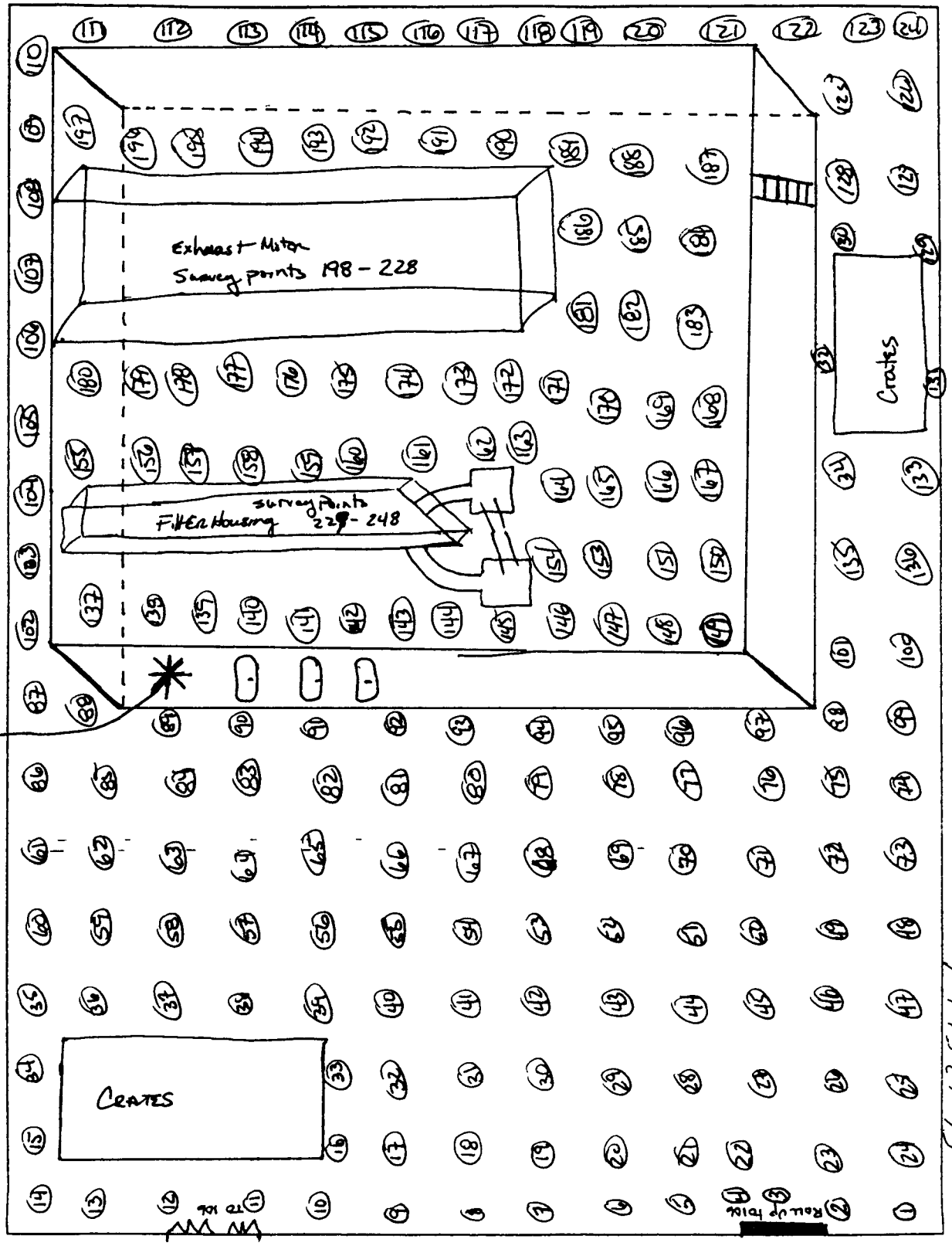
SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60) SEC. COUNT	TOTAL BETA/GAMMA

BPM 1-25-96

293

RADIOLOGICAL MONITORING Control No _____

Area or Equipment Drawing Showing Survey Points



294

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP# 96-750-0021

FOR. ____ P/WRE ____ PRL

____ RWP ✓ OTHER ____

BUILDING/LOCATION 889	ROOM 112
DATE 6-24-96	TIME 1000

ITEM DESCRIPTION

Posting reduction
Survey Rm 112

COMMENTS 45-48 & 75-78 No Wall surface at these points.
1-30 Floor
31-60 3' Wall
61-90 6' Wall

STATUS
✓ RELEASABLE ____ NOT RELEASABLE
____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) Munoz

[redacted] / 6-24-96
RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston 6-27-96
RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER	EBER	Tennelec
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB5100
SERIAL #				28125-2
CAL DATE				6-12-96
CAL DUE DATE				12-12-96

MFR	EBER	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1420		
CAL DATE		6-10-96		
CAL DUE DATE		12-10-96		
BACKGROUND		α 1.0 β 615		

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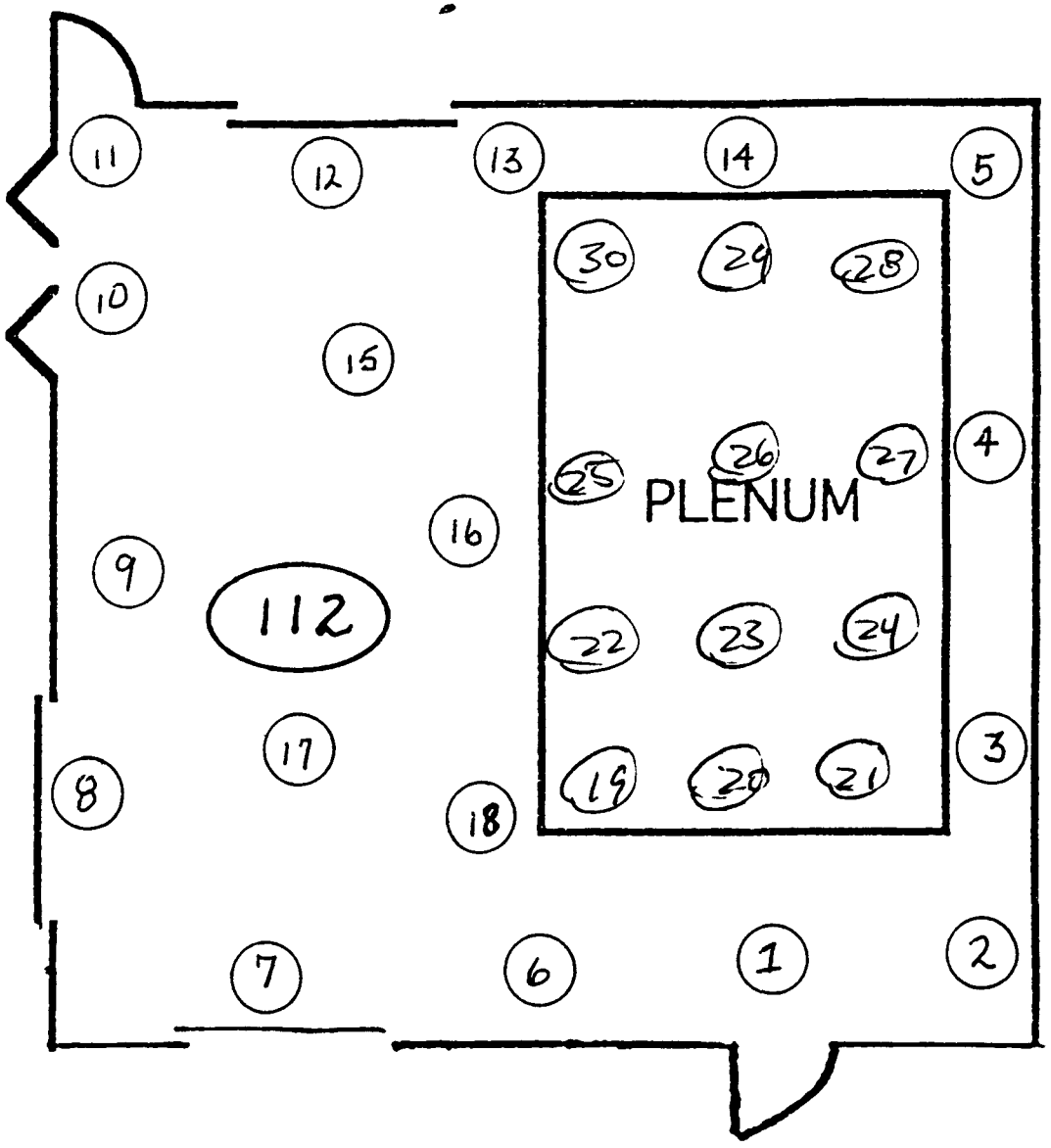
Control No. _____

Radiological Operations
Area or Equipment Drawing Showing Survey Points



18 Total Survey Points

L32

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LOG NUMBER

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1			See attached survey results form	<60	<380
2				<60	<380
3				<60	<380
4				<60	<380
5				<60	<380
6				<60	<380
7				<60	<380
8				<60	<380
9				<60	<380
10				<60	<380
11				<60	<380
12				<60	<380
13				<60	<380
14				<60	<380
15				<60	<380
16				<60	<380
17				<60	<380
18				<60	<380
19				<60	<380
20				<60	<380
21				<60	<380
22				<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
23			See attached survey results form	<60	<380
24				<60	<380
25				<60	<380
26				<60	<380
27				<60	<380
28				<60	<380
29				<60	<380
30				<60	<380
31				<60	<380
32				<60	<380
33				<60	<380
34				<60	<380
35				<60	<380
36				<60	<380
37				<60	<380
38				<60	<380
39				<60	<380
40				<60	<380
41				<60	<380
42				<60	<380
43				<60	<380
44				<60	<380

232

Printed on recycled paper

LOG NUMBER

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
45	~~[illegible] 06-24-96~~			<60	<380
46				<60	<380
47				<60	<380
48			See attached survey results form	<60	<380
49				<60	<380
50				<60	<380
51				<60	<380
52				<60	<380
53				<60	<380
54				<60	<380
55				<60	<380
56				<60	<380
57				<60	<380
58				<60	<380
59				<60	<380
60				<60	<380
61				<60	<380
62				<60	<380
63				<60	<380
64				<60	<380
65				<60	<380
66				<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
67				<60	<380
68				<60	<380
69				<60	<380
70			See attached survey results form	<60	<380
71				<60	<380
72				<60	<380
73				<60	<380
74				<60	<380
75	~~[illegible] 06-24-96~~			<60	<380
76				<60	<380
77				<60	<380
78				<60	<380
79				<60	<380
80				<60	<380
81				<60	<380
82				<60	<380
83				<60	<380
84				<60	<380
85				<60	<380
86				<60	<380
87				<60	<380
88				<60	<380

532

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER _____

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
89			See attached survey results form	<60	<380
90				<60	<380

[illegible] 06-24-96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA

[illegible] 06-24-96

300

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 6-12 96 **Cal Due Date** 12-12-96

Batch ID ~~Baseline~~ Floor Rm 112

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A071 XLD

Batch Ended 6/24/96 12 49

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 05
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 13
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity								
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date	Time
1	1	-0 146	2 93	<MDA	10 09	3 99	1 90	<MDA	14 12	1 00	0 050	2 13	6/24/96	12 14
2	2	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96	12 15
3	3	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 17
4	4	2 780	2 93	<AL	10 09	3 49	3 76	<MDA	14 12	1 00	0 950	1 87	6/24/96	12 18
5	5	0 146	2 93	<MDA	10 09	3 99	1 90	<MDA	14 12	1 00	0 050	2 13	6/24/96	12 19
6	6	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96	12 20
7	7	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96	12 21
8	8	2 780	2 93	<AL	10 09	3 49	3 76	<MDA	14 12	1 00	0 950	1 87	6/24/96	12 23
9	9	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	0 050	1 87	6/24/96	12 24
10	10	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 25
11	11	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96	12 26
12	12	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 27
13	13	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96	12 29
14	14	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	-0 050	1 87	6/24/96	12 30
15	15	-0 146	2 93	<MDA	10 09	-3 99	1 90	<MDA	14 12	1 00	0 050	2 13	6/24/96	12 31
16	16	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 32
17	17	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 33
18	18	-0 146	2 93	<MDA	10 09	-3 99	1 90	<MDA	14 12	1 00	0 050	2 13	6/24/96	12 35
19	19	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96	12 36
20	20	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	-0 050	0 87	6/24/96	12 37
21	21	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 38
22	22	-0 146	2 93	<MDA	10 09	7 23	4 60	<AL	14 12	1 00	0 050	3 87	6/24/96	12 39
23	23	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96	12 41
24	24	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	-0 13	6/24/96	12 42
25	25	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	-0 050	1 87	6/24/96	12 43

301

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID ~~Baseline~~ 6-24-96 Floor Rm 112

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1A071 XLD

Batch Ended 6/24/96 12 49

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 05
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 13
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
26	26	**-0 146**	2 93	<MDA	10 09	**2 12**	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 44
27	27	**-0 146**	2 93	<MDA	10 09	**-0 25**	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96	12 45
28	28	**-0 146**	2 93	<MDA	10 09	**0 25**	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96	12 47
29	29	**-0 146**	2 93	<MDA	10 09	**2 12**	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	12 48
30	30	**-0 146**	2 93	<MDA	10 09	**3 49**	3 76	<MDA	14 12	1 00	0 050	1 87	6/24/96	12 49

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 Cal Date 6-12-96 Cal Due Date 12-12-96

Batch ID ~~Baseline~~ 6-24-96 3' Rm 112

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B020 XLD

Batch Ended 6/24/96 13 25

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 05
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 13
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
31	31	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	-0 050	0 87	6/24/96 12 50
32	32	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96 12 51
33	33	2 780	2 93	<AL	10 09	1 62	3 26	<MDA	14 12	1 00	0 950	0 87	6/24/96 12 53
34	34	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	-0 050	0 13	6/24/96 12 54
35	35	0 146	2 93	<MDA	10 09	7 23	4 60	<AL	14 12	1 00	-0 050	3 87	6/24/96 12 55
36	36	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	0 050	1 87	6/24/96 12 56
37	37	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96 12 58
38	38	-0 146	2 93	<MDA	10 09	7 23	4 60	<AL	14 12	1 00	0 050	3 87	6/24/96 12 59
39	39	2 780	2 93	<AL	10 09	1 62	3 26	<MDA	14 12	1 00	0 950	0 87	6/24/96 13 00
40	40	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	0 050	1 87	6/24/96 13 01
41	41	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96 13 02
42	42	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96 13 04
43	43	0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96 13 05
44	44	0 146	2 93	<MDA	10 09	0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96 13 06
45	Blank	~~-0.146~~	~~2 93~~	~~<MDA~~	~~10 09~~	~~1 62~~	~~3.26~~	~~<MDA~~	~~14.12~~	~~1.00~~	~~0.050~~	~~0.87~~	~~6/24/96 13 07~~
46	Blank	~~-0 146~~	~~2 93~~	~~<MDA~~	~~10 09~~	~~-0 25~~	~~2 67~~	~~<MDA~~	~~14 12~~	~~1 00~~	~~0 050~~	~~0.13~~	~~6/24/96 13.08~~
47	Blank	~~2 780~~	~~2 93~~	~~<AL~~	~~10 09~~	~~3 49~~	~~3 76~~	~~<MDA~~	~~14 12~~	~~1 00~~	~~0 950~~	~~1 87~~	~~6/24/96 13 10~~
48	Blank	~~-0.146~~	~~2 93~~	~~<MDA~~	~~10 09~~	~~-0 25~~	~~2 67~~	~~<MDA~~	~~14 12~~	~~1 00~~	~~0 050~~	~~0 13~~	~~6/24/96 13:11~~
49	49	0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96 13 12
50	50	-0 146	2 93	<MDA	10 09	-3 99	1 90	<MDA	14 12	1 00	0 050	2 13	6/24/96 13 13
51	51	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96 13 15
52	52	0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96 13 16
53	53	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96 13 17
54	54	2 780	2 93	<AL	10 09	1 62	3 26	<MDA	14 12	1 00	0 950	0 87	6/24/96 13 18
55	55	0 146	2 93	<MDA	10 09	0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96 13 19

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID Baseline 3 Rm 112

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B020 XLD

Batch Ended 6/24/96 13 25

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 05
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 13
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
56	56	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96	13 21
57	57	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	13 22
58	58	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	0 050	1 87	6/24/96	13 23
59	59	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	0 050	1 87	6/24/96	13 24
60	60	-0 146	2 93	<MDA	10 09	-3 99	1 90	<MDA	14 12	1 00	0 050	2 13	6/24/96	13 25

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96
Batch ID Baseline 6 Rm 112
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1C004 XLD
Batch Ended 6/24/96 14 06
Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**
Beta activity action level (DPM) **1000**
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 05
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 13
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date Time
61	61	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96 13 27
62	62	8 632	5 07	<AL	10 09	-0 25	2 67	<MDA	14 12	1 00	2 950	0 13	6/24/96 13 28
63	63	2 780	2 93	<AL	10 09	5 36	4 20	<AL	14 12	1 00	0 950	2 87	6/24/96 13 29
64	64	-0 146	2 93	<MDA	10 09	-3 99	1 90	<MDA	14 12	1 00	0 050	2 13	6/24/96 13 30
65	65	2 780	2 93	<AL	10 09	7 23	4 60	<AL	14 12	1 00	0 950	3 87	6/24/96 13 32
66	66	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96 13 33
67	67	2 780	2 93	<AL	10 09	1 62	3 26	<MDA	14 12	1 00	0 950	0 87	6/24/96 13 34
68	68	2 780	2 93	<AL	10 09	1 62	3 26	<MDA	14 12	1 00	0 950	0 87	6/24/96 13 35
69	69	5 706	4 14	<AL	10 09	-2 12	1 90	<MDA	14 12	1 00	1 950	-1 13	6/24/96 13 36
70	70	-0 146	2 93	<MDA	10 09	2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96 13 38
71	71	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96 13 39
72	72	2 780	2 93	<AL	10 09	-2 12	1 90	<MDA	14 12	1 00	0 950	1 13	6/24/96 13 40
73	73	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	-0 050	1 13	6/24/96 13 41
74	74	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	-0 050	1 87	6/24/96 13 42
75	Blank	~~-0.146~~	~~2 93~~	~~<MDA~~	~~10 09~~	~~-2.12~~	~~1 90~~	~~<MDA~~	~~14 12~~	~~1 00~~	~~-0 050~~	~~1 13~~	~~6/24/96 13 44~~
76	Blank	~~-0.146~~	~~2 93~~	~~<MDA~~	~~10 09~~	~~-2.12~~	~~1 90~~	~~<MDA~~	~~14.12~~	~~1 00~~	~~-0 050~~	~~-1 13~~	~~6/24/96 13 45~~
77	Blank	~~2 780~~	~~2 93~~	~~<AL~~	~~10 09~~	~~-3 99~~	~~1 90~~	~~<MDA~~	~~14 12~~	~~1.00~~	~~0 950~~	~~2.13~~	~~6/24/96 13 46~~
78	Blank	~~-0.146~~	~~2 93~~	~~<MDA~~	~~10 09~~	~~1 62~~	~~3 26~~	~~<MDA~~	~~14 12~~	1 00	-0 050	~~0 87~~	~~6/24/96 13 47~~
79	79	2 780	2 93	<AL	10 09	3 49	3 76	<MDA	14 12	1 00	0 950	1 87	6/24/96 13 49
80	80	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96 13 50
81	81	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	-0 050	-0 13	6/24/96 13 54
82	82	-0 146	2 93	<MDA	10 09	9 10	4 96	<AL	14 12	1 00	0 050	4 87	6/24/96 13 56
83	83	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	-0 050	0 87	6/24/96 13 57
84	84	-0 146	2 93	<MDA	10 09	3 49	3 76	<MDA	14 12	1 00	0 050	1 87	6/24/96 13 58
85	85	-0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	-0 050	-0 13	6/24/96 14 00

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Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125 2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID Baseline 6 Rm 112

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1C004 XLD

Batch Ended 6/24/96 14 06

Crosstalk Correction Not Applied

Alpha activity action level (DPM) **20**

Beta activity action level (DPM) **1000**

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 05
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 13
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
86	86	-0 146	2 93	<MDA	10 09	-2 12	1 90	<MDA	14 12	1 00	0 050	1 13	6/24/96	14 01
87	87	0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96	14 02
88	88	0 146	2 93	<MDA	10 09	-0 25	2 67	<MDA	14 12	1 00	0 050	0 13	6/24/96	14 03
89	89	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96	14 04
90	90	-0 146	2 93	<MDA	10 09	1 62	3 26	<MDA	14 12	1 00	0 050	0 87	6/24/96	14 06

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96 8-26-96 ~~960~~ 750-0021	
P/WRE ____ R.W.P ____	ROUTINE ____ OTHER Baseline
BUILDING/LOCATION 889	ROOM#: 101
DATE: 8-23-96	TIME: 0900

ITEM DESCRIPTION:
Baseline Survey
Run 101 RMA & RBA

COMMENTS

STATUS:
✓ RELEASABLE ____ NOT RELEASABLE
____ POSTED ____ NOT POSTED
____ WITHIN LIMITS ____ LIMITS EXCEEDED

PERFORMED BY (PRINT NAME): [redacted]
R.C.T SIGNATURE EMP # [redacted] DATE 8-23-96

REVIEWED BY (PRINT NAME) Teresa Johnson
R.O. SUPERVISOR SIGNATURE EMP # [redacted] DATE 8-26-96

Removable Contamination Counters

Mfg	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #	1188	767	795	
Date Calib'd.	5-23-96	5-31-96	8-15-96	
Cal due Date:	11-23-96	12-1-96	9-15-96	

Mfg	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	Bc 770	Bc 389	Bc 393	
Date Calib'd:	8-6-96	7-3-96	7-3-96	
Cal. due Date:	1-6-97	~~1-3-96~~ ~~1-3-96~~ 1-3-97	1-3-97	

Total (Fixed + Removable) Survey Instruments

Mfg.	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #.	1405			
Date Calib'd	7-15-96			
Cal Due Date:	1-15-97			
Background:	2.0α/516β			
Efficiency:	18.6α/314β			

Mfg.	Ludlum	Ludlum		
Model	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency.	N/A	N/A		

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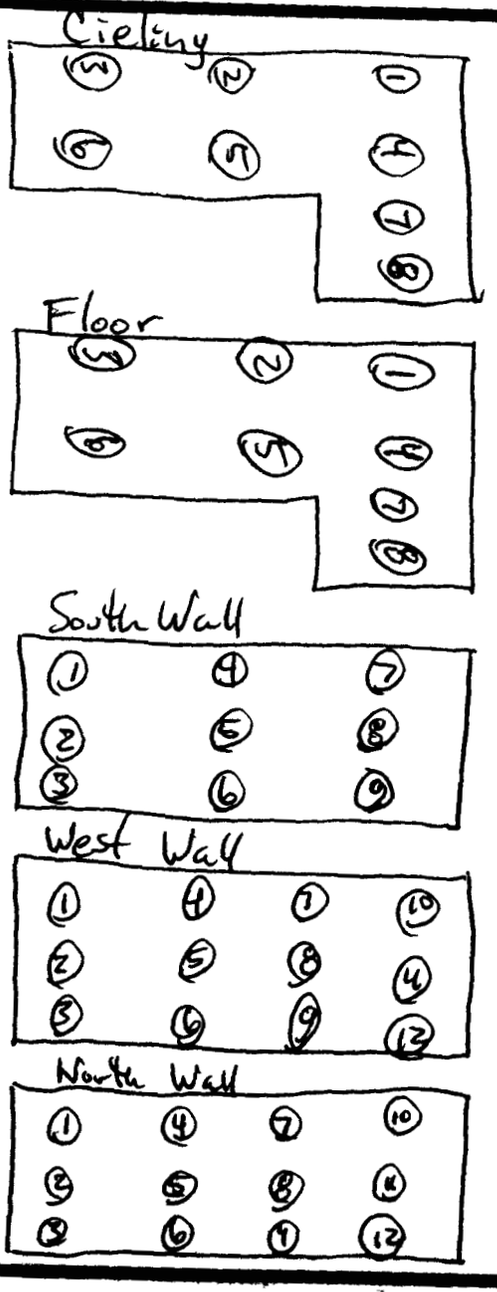
LOG NUMBER ~~960~~ 96 750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 2 OF 3

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM 60 SEC COUNT)	TOTAL BETA/GAMMA
1	Cieling Rm 101 R.MA. & RBA	<18	<205	<60	<380
2	Cieling	<18	<205	<60	<380
3	Cieling	<18	<205	<60	<380
4	Cieling	<18	<205	<60	<380
5	Cieling	<18	<205	<60	<380
6	Cieling	<18	<205	<60	<380
7	Cieling	<18	<205	<60	<380
8	Cieling	<18	<205	<60	<380
1	Floor Rm 101 RMA & RBA	<18	<205	<60	1233
2	Floor	<18	<205	<60	1008
3	Floor	<18	<205	<60	2652
4	Floor	<18	<205	<60	1503
5	Floor	<18	<205	<60	1128
6	Floor	<18	<205	<60	1295
7	Floor	<18	<205	<60	1131
8	Floor	<18	<205	<60	1407
1	South Wall Rm 101 RMA & RBA	<18	<205	<60	<380
2	South Wall	<18	<205	<60	<380
3	South Wall	<18	<205	<60	<380
4	South Wall	<18	<205	<60	<380
5	South Wall	<18	<205	<60	<380
6	South Wall	<18	<205	<60	<380

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LOG NUMBER 96-750-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

PAGE 3 OF 3

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
7	South Wall Run 101 RMA&RBA	<18	<205	<60	<380
8	South Wall	<18	<205	<60	<380
9	South Wall	<18	<205	<60	<380
1	West Wall Run 101 RMA&RBA	<18	<205	<60	<380
2	West Wall	<18	<205	<60	<380
3	West Wall	<18	<205	<60	<380
4	West Wall	<18	<205	<60	<380
5	West Wall	<18	<205	<60	<380
6	West Wall	<18	<205	<60	<380
7	West Wall	<18	<205	<60	<380
8	West Wall	<18	<205	<60	<380
9	West Wall	<18	<205	<60	<380
10	West Wall	<18	<205	<60	<380
11	West Wall	<18	<205	<60	<380
12	West Wall	<18	<205	<60	<380
1	North Wall Run 101 RMA&RBA	<18	<205	<60	<380
2	North Wall	<18	<205	<60	<380
3	North Wall	<18	<205	<60	<380
4	North Wall	<18	<205	<60	<380
5	North Wall	<18	<205	<60	<380
6	North Wall	<18	<205	<60	<380
7	North Wall	<18	<205	<60	<380

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
8	North Wall	<18	<205	<60	<380
9	North Wall	<18	<205	<60	<380
10	North Wall	<18	<205	<60	<380
11	North Wall	<18	<205	<60	<380
12	North Wall	<18	<205	<60	<380

Cm 8-23-96

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER 96-750-0021

FOR. ____ P/WRE ____ PRL

✓ RWP ____ OTHER ____

BUILDING/LOCATION	ROOM
889	101
DATE	**TIME**
8-26-96	0800

ITEM DESCRIPTION

MASSTAN Large Area Wipe
Survey Rm. 101

COMMENTS Readings per RoI 3.01
Section 6.2.1

STATUS

✓ RELEASABLE ____ NOT RELEASABLE

____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) J.L. Johnston

[redacted] 8-26-96

RCT SIGNATURE DATE

Teresa Johnston

REVIEWED BY Teresa Johnston 8-26-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER.	EBER	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

MFR	EBER	EBER.	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1405		
CAL DATE		7-15-96		
CAL DUE DATE		~~7-15-96~~ 1-15-97		
BACKGROUND		α 2.0 β 516		

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LOG NUMBER Rwp 96-Su-0021

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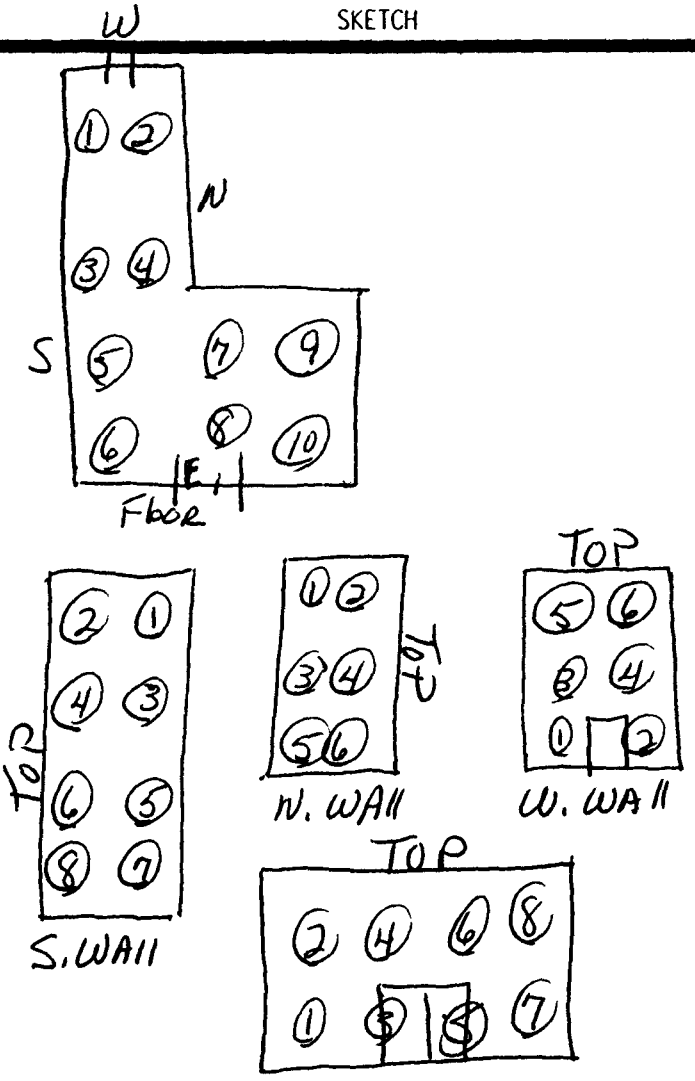
RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FREISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Floor Rm 101	<20	<1000		
2	Floor Rm 101	<20	<1000		
3	Floor Rm 101	<20	<1000		
4	Floor Rm 101	<20	<1000		
5	Floor Rm 101	<20	<1000		
6	Floor Rm 101	<20	<1000		
7	Floor Rm 101	<20	<1000		
8	Floor Rm 101	<20	<1000		
9	Floor Rm 101	<20	<1000		
10	Floor Rm 101	<20	<1000		
1	S. Wall Rm 101	<20	<1000		
2	S. Wall Rm 101	<20	<1000		
3	S. Wall Rm 101	<20	<1000		
4	S. Wall Rm 101	<20	<1000		
5	S. Wall Rm 101	<20	<1000		
6	S. Wall Rm 101	<20	<1000		
7	S. Wall Rm 101	<20	<1000		
8	S. Wall Rm 101	<20	<1000		
1	N. Wall Rm 101	<20	<1000		
2	N. Wall Rm 101	<20	<1000		
3	N. Wall Rm 101	<20	<1000		
4	N. Wall Rm 101	<20	<1000		

06-26-96

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

LOG# R.W.P. 96-750-0021

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/Gamma	Total Alpha 60 sec count	Total Beta/Gamma
5	W. Wall Rm 101	<20	<1000		
6	W. Wall Rm 101	<20	<1000		
1	W. Wall Rm 101	<20	<1000		
2	W. Wall Rm 101	<20	<1000		
3	W. Wall Rm 101	<20	<1000		
4	W. Wall Rm 101	<20	<1000		
5	W. WALL Rm 101	<20	<1000		
6	W. WALL Rm 101	<20	<1000		
1	E WALL Rm 101	<20	<1000		
2	E WALL Rm 101	<20	<1000		
3	E WALL Rm 101	<20	<1000		
4	E. WALL Rm 101	<20	<1000		
5	E WALL Rm 101	<20	<1000		
6	E. WALL Rm 101	<20	<1000		
7	E. WALL Rm 101	<20	<1000		
8	E. WALL Rm 101	<20	<1000		

08-26-96

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/Gamma	Total Alpha 60 sec count	Total Beta/Gamma

08-26-96

312

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP# 96-750-0021

FOR. ___ P/WRE ___ PRL

✓ RWP ✓ OTHER

BUILDING/LOCATION 889 | ROOM: Rm 106

DATE: 7-19-96 | TIME 1000

ITEM DESCRIPTION.

North & South Pits
Rm 106 Bldg 889

COMMENTS·

Removable survey only

STATUS·

___ RELEASABLE ___ NOT RELEASABLE

✓ POSTED ___ NOT POSTED

PERFORMED BY (PRINT NAME)· Munoz

[signature] / [redacted] / 7-19-96

RCT SIGNATURE DATE

REVIEWED BY Teresa Johnston [signature] / 7-23-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	991	882		
CAL DATE	6-96	5-96		
CAL DUE DATE	12-96	11-96		

MFR.	EBER.	EBER.	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	Bc 389	Bc 393		
CAL DATE	7-96	7-96		
CAL DUE DATE	1-97	1-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	BICRON		LUDLUM	
MODEL	A-100		31	
SERIAL #				
CAL DATE.				
CAL DUE DATE				
BACKGROUND				

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313

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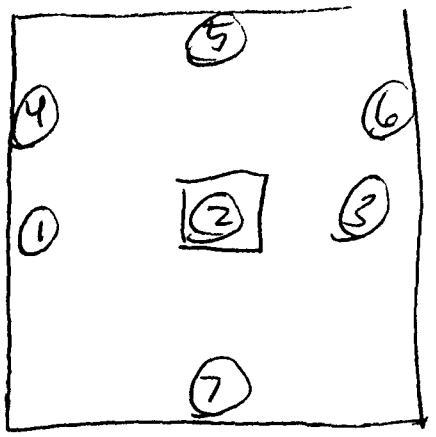
LOG NUMBER _____

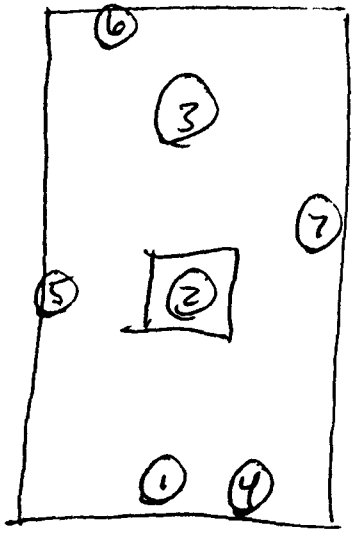
RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH

North Pit Rm 106



South Pit Rm 106



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Floor South Pit	<18	<205		
2	Floor South Pit	<18	<205		
3	Floor South Pit	<18	<205		
4	South Wall So. Pit	<18	<205		
5	~~South~~ West Wall So Pit	<18	<205		
6	North Wall So. Pit.	<18	<205		
7	East wall So. Pit	<18	<205		
1	Floor North Pit	60	<205		
2	Floor North Pit	36	<205		
3	Floor North Pit	<18	<205		
4	West wall No Pit	42	<205		
5	North wall No. Pit.	<18	<205		
6	East wall No Pit.	<18	<205		
7	South wall No. Pit	21	<205		

2-17-88

314

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER Rwp 96-750-0021

FOR ___ P/WRE ___ PRL

✓ RWP ___ OTHER ___

BUILDING/LOCATION 889 | ROOM 104 Pit

DATE. 08-13-96 | TIME. 0815

ITEM DESCRIPTION Survey of 104 Pit prior to Filling w/Concrete

COMMENTS

STATUS

✓ RELEASABLE ___ NOT RELEASABLE

___ POSTED ___ NOT POSTED

PERFORMED [redacted]

RCT SIGN [redacted]

Teresa Johnston

REVIEWED BY Teresa Johnston 8-15-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER	EBER.	EBER.	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	991	892		
CAL DATE	06-27-96	05-20-96		
CAL DUE DATE	12-27-96	11-20-96		

MFR	EBER	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	389	393		
CAL DATE	07-03-96	07-03-96		
CAL DUE DATE	01-03-97	01-03-97		

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1503		
CAL DATE		04-25-96		
CAL DUE DATE		10-25-96		
BACKGROUND		20α/690β		

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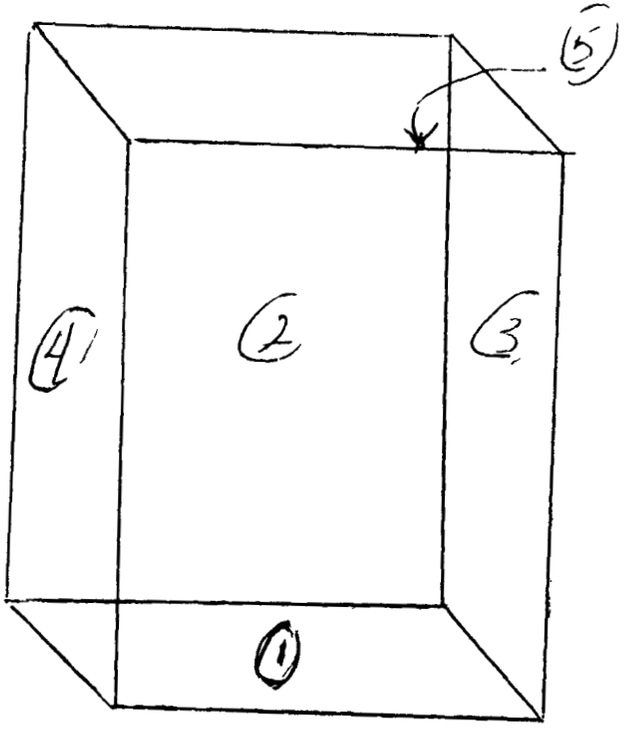
LOG NUMBER KWP 96-[illegible]-0021

PAGE 2 OF 2

RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM 60 SEC COUNT)	TOTAL BETA/GAMMA
1	Bottom	<18	<205	<60	624
2	South Side	<18	<205	<60	482
3	WEST Side	<18	<205	<60	531
4	EAST Side	<18	<205	<60	528
5	North Side	<18	<205	<60	603

08-13-96

3/6

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER Rwp 96-750-0021

FOR ____ P/WRE ____ PRL

____ RWP ____ OTHER ____

BUILDING/LOCATION	ROOM
889	Plenum
DATE	**TIME**
09-03-96	0815

ITEM DESCRIPTION Plenum Floor ducts and Covers

COMMENTS.

STATUS

____ RELEASABLE ✓ NOT RELEASABLE

____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) J.L. Johnston

J L Johnston [redacted] 09-03-96

RCT SIGNATURE DATE

REVIEWED BY: Teresa Johnston, 9-3-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER.	EBER.	EBER	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	1188	767	795	
CAL DATE	05-23-96	05-31-96	03-15-96	
CAL DUE DATE	11-23-96	12-01-96	09-15-96	

MFR	EBER.	EBER.	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	770	389	393	
CAL DATE	08-06-96	07-03-96	07-03-96	
CAL DUE DATE	01-06-97	01-03-97	01-03-97	

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1503		
CAL DATE		04-25-96		
CAL DUE DATE		10-25-96		
BACKGROUND		20α/438β		

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L12

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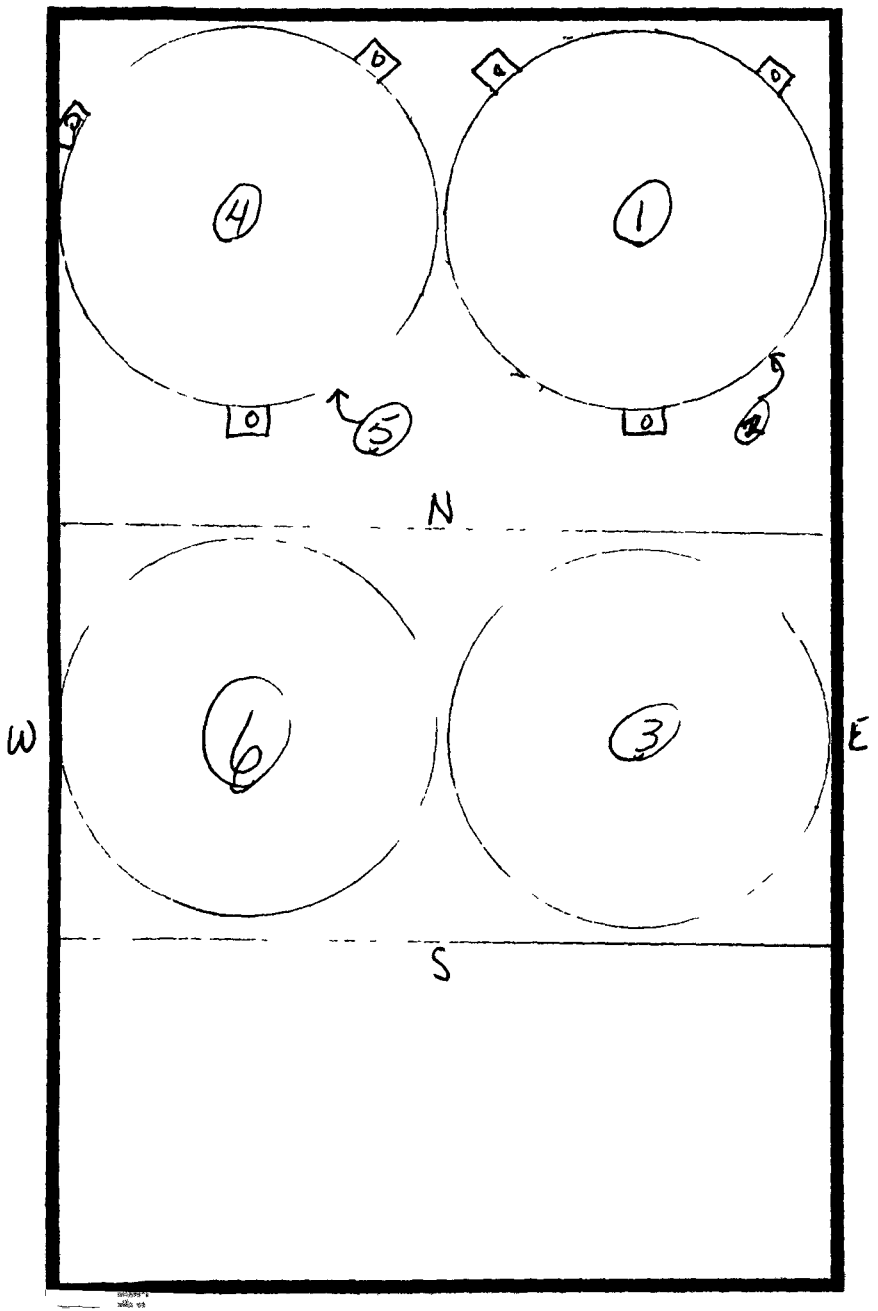
LOG NUMBER RWP 96-TSU-0021

RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	EAST DUCT Lid inside	<18	<205	<60	<380
2	EAST DUCT Lid outside	<18	<205	<60	<380
3	EAST DUCT	21	<205	<60	9369
4	WEST DUCT Lid inside	<18	<205	<60	<380
5	WEST DUCT Lid outside	<18	<205	<60	<380
6	WEST DUCT	126	<205		
	West duct work wet direct readings not taken				

09-03-96 [illegible]

312

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER RWP# 96-549-6034

FOR: ____ P/WRE ____ PRL

X RWP ____ OTHER ____

BUILDING/LOCATION 889 | ROOM: 108

DATE. 7-16-96 | TIME. 0930

ITEM DESCRIPTION

Survey of floor drain/trench in room 108.

COMMENTS

STATUS

____ RELEASABLE ____ NOT RELEASABLE

X POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) BD McLean

[redacted] / 7-16-96

RCT SIGNATURE / DATE

REVIEWED BY Teresa Johnston / 7-16-96

RO SUPERVISION (PRINT & SIGN) / DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER	EBER	Tennelec
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB-5100
SERIAL #				28125-2
CAL DATE				6-12-96
CAL DUE DATE				12-12-96

MFR	EBER.	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1570		
CAL DATE		6-6-96		
CAL DUE DATE		12-6-96		
BACKGROUND		α<2 β<700		

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319

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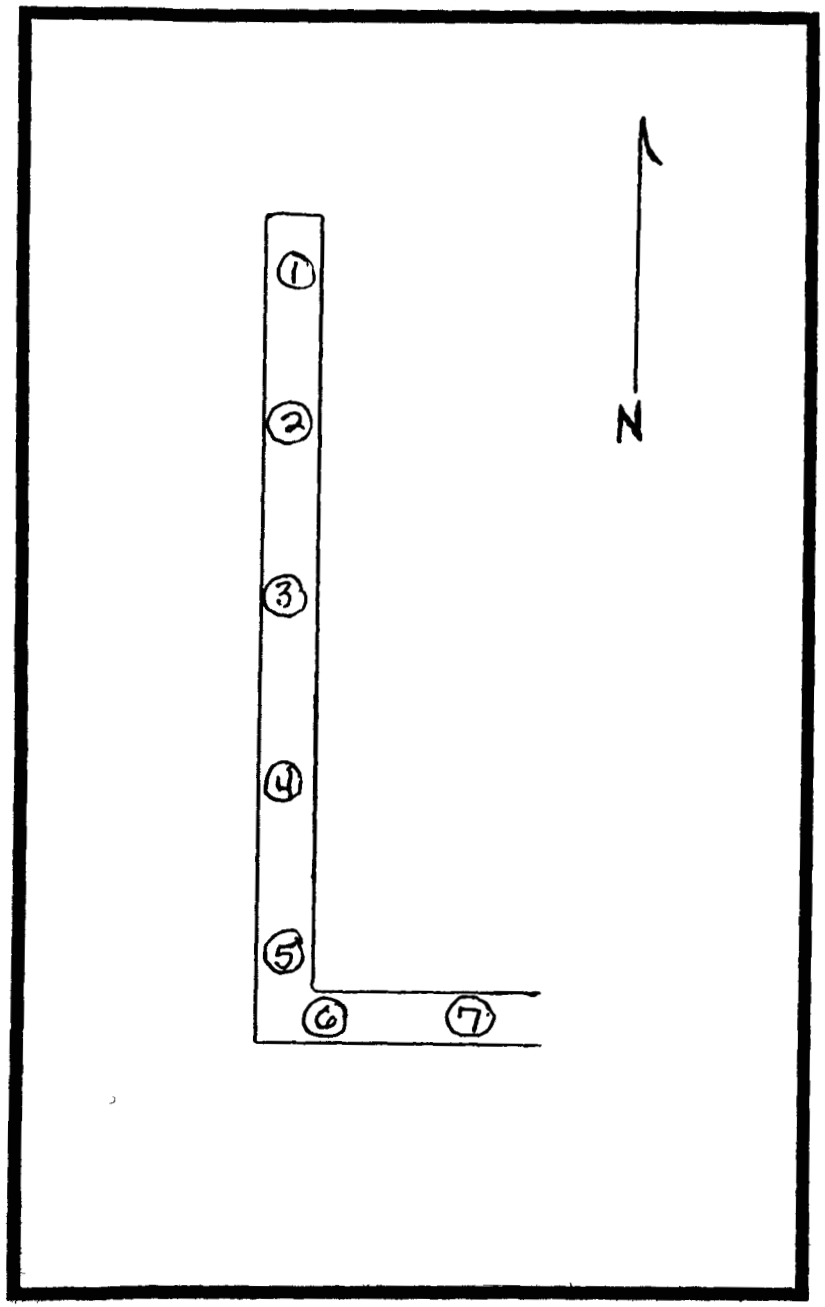
LOG NUMBER _____

RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	See Map	See Page 3		<60	18,357
2	See Map			<60	27,216
3	See Map			<60	18,792
4	See Map			<60	5,691
5	See Map			<60	6,207
6	See Map			<60	2,883
7	See Map			<60	9,195

7-16-96

320

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 **Cal Date** 6-12-96 **Cal Due Date** 12-12-96

Batch ID room 108 floor drain/trench

Counting Unit id 1

Data file name C \LBXL\UNIT1\ONE1B021 XLD

Batch Ended 7/16/96 10 34

Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20

Beta activity action level (DPM) 1000

Certainty level for MDA and flags 95%

High Voltage Setting 1350

Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 10
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 15
Beta Correction Factor	1 000

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion	
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date	Time
21	1	163 571	22 08	>AL	10 99	246 49	22 07	<AL	14 15	1 00	55 900	131 85	7/16/96	10 27
22	2	274 764	28 77	>AL	10 99	388 57	27 93	<AL	14 15	1 00	93 900	207 85	7/16/96	10 28
23	3	242 576	26 99	>AL	10 99	424 09	29 25	<AL	14 15	1 00	82 900	226 85	7/16/96	10 30
24	4	131 383	19 76	>AL	10 99	272 66	23 24	<AL	14 15	1 00	44 900	145 85	7/16/96	10 31
25	5	72 861	14 69	>AL	10 99	126 84	15 80	<AL	14 15	1 00	24 900	67 85	7/16/96	10 32
26	6	105 048	17 65	>AL	10 99	117 50	15 22	<AL	14 15	1 00	35 900	62 85	7/16/96	10 33
27	7	84 565	15 83	>AL	10 99	158 63	17 66	<AL	14 15	1 00	28 900	84 85	7/16/96	10 34

321

RADIOLOGICAL CONTAMINATION SURVEY FORM

 BDM 7-17-96

LOG NUMBER. 96-549-6034

FOR. ____ P/WRE ____ PRL

✓ RWP ✗ OTHER ____

BUILDING/LOCATION. 889	ROOM. 106
DATE. 7-17-96	TIME: 1500

ITEM DESCRIPTION

Survey of Floor Drain/Trench in room 106.

COMMENTS Includes 2 survey for removable contamination; 1-Before wipedown and 1-After Wipedown. Direct survey taken after wipedown

STATUS

____ RELEASABLE ✗ NOT RELEASABLE

✗ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME). B.D. McLean

BDMcLe [redacted] 17-17-96

RCT SIGNATURE DATE

Teresa Johnston

REVIEWED BY Teresa Johnston 7-23-96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	EBER.	EBER.	EBER.	Tennelec
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	LB-5100
SERIAL #				28125-2
CAL DATE				6-12-96
CAL DUE DATE				12-12-96

MFR.	EBER.	EBER.	EBER.	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #				
CAL DATE				
CAL DUE DATE				

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR.	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1570		
CAL DATE		6-6-96		
CAL DUE DATE		12-6-96		
BACKGROUND		α<2 β<700		

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225

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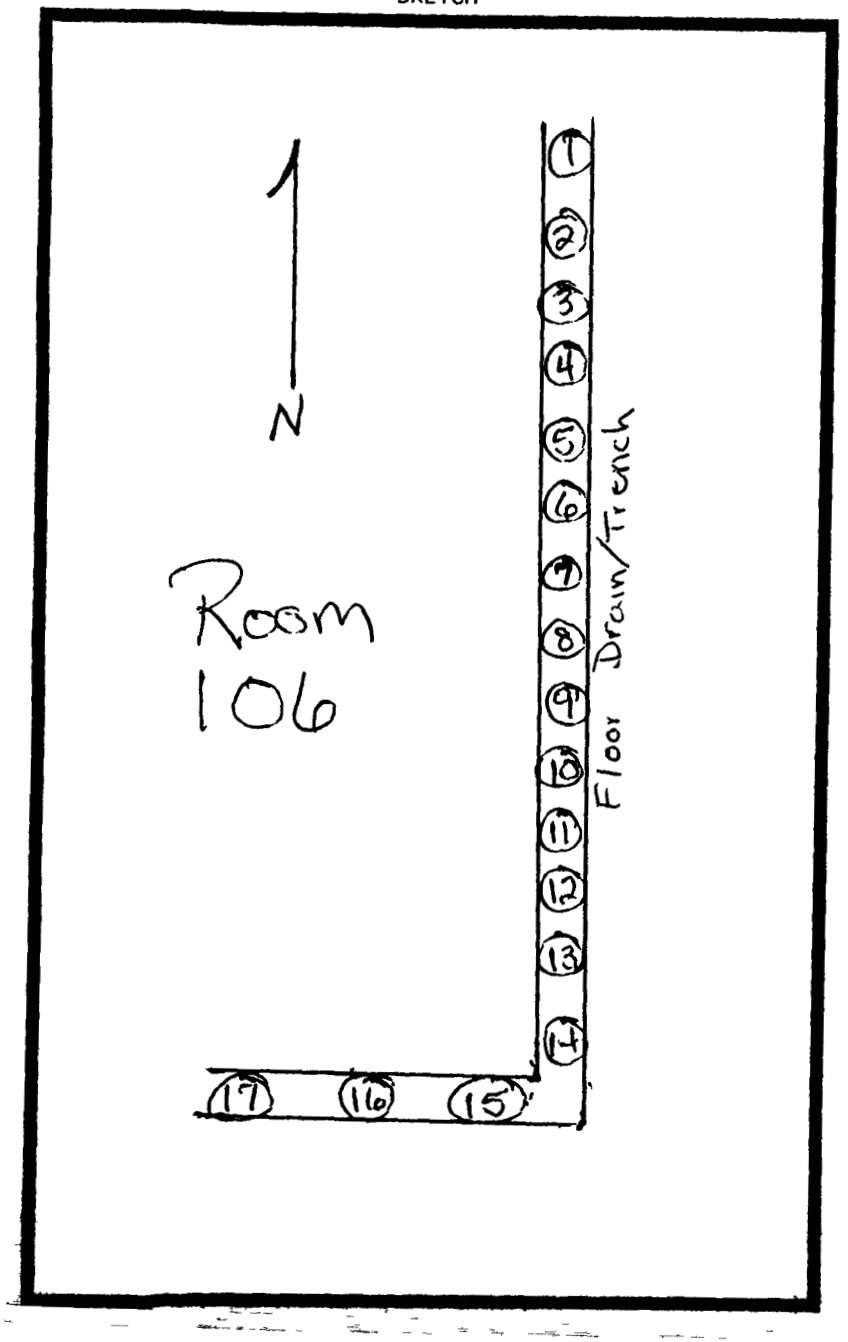
LOG NUMBER _____

RADIOLOGICAL CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (DPM/100 CM²)

SWIPE #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FIXED/60 SEC COUNT)	TOTAL BETA/GAMMA
1	See Map			<60	1398
2	See Map			<60	2802
3	See Map			<60	3489
4	See Map			<60	735
5	See Map			<60	2589
6	See Map			<60	771
7	See Map			<60	825
8	See Map			<60	411
9	See Map			<60	<380
10	See Map			<60	3957
11	See Map			<60	699
12	See Map			<60	987
13	See Map			<60	609
14	See Map			<60	<380
15	See Map			<60	390
16	See Map			<60	429
17	See Map			<60	1059

7-17-96

323

Oxford Instruments Tennelec LB5100-W -- Swipe Analysis Report

Bldg 889 Instrument Serial # 228125-2 Cal Date 6-12-96 Cal Due Date 12-12-96
Batch ID room 106 floor drain/trench
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1C005 XLD
Batch Ended 7/16/96 10 55
Crosstalk Correction Not Applied

Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

Alpha efficiency log file PU239AB
Alpha Efficiency 34 17%
Alpha to Beta Crosstalk 8 63%
Alpha Background (CPM) 0 10
Alpha Correction Factor 1 000

Beta efficiency log file SR90AB
Beta Efficiency 53 49%
Beta into Alpha Crosstalk 1 06%
Beta Background (CPM) 2 15
Beta Correction Factor 1 000

		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
28	1	11 412	5 86	At AL	10 99	12 81	5 63	<AL	14 15	1 00	3 900	6 85	7/16/96 10 36
29	2	14 338	6 55	At AL	10 99	18 41	6 49	<AL	14 15	1 00	4 900	9 85	7/16/96 10 37
30	3	28 969	9 27	At AL	10 99	44 59	9 57	<AL	14 15	1 00	9 900	23 85	7/16/96 10 38
31	4	11 412	5 86	At AL	10 99	20 28	6 76	<AL	14 15	1 00	3 900	10 85	7/16/96 10 39
32	5	11 412	5 86	At AL	10 99	14 68	5 93	<AL	14 15	1 00	3 900	7 85	7/16/96 10 40
33	6	11 412	5 86	At AL	10 99	24 02	7 26	<AL	14 15	1 00	3 900	12 85	7/16/96 10 42
34	7	11 412	5 86	At AL	10 99	14 68	5 93	<AL	14 15	1 00	3 900	7 85	7/16/96 10 43
35	8	11 412	5 86	At AL	10 99	20 28	6 76	<AL	14 15	1 00	3 900	10 85	7/16/96 10 44
36	9	17 264	7 17	At AL	10 99	29 63	7 96	<AL	14 15	1 00	5 900	15 85	7/16/96 10 45
37	10	17 264	7 17	At AL	10 99	35 24	8 60	<AL	14 15	1 00	5 900	18 85	7/16/96 10 47
38	11	5 560	4 14	<AL	10 99	27 76	7 73	<AL	14 15	1 00	1 900	14 85	7/16/96 10 48
39	12	-0 293	2 93	<MDA	10 99	10 94	5 30	<AL	14 15	1 00	-0 100	5 85	7/16/96 10 49
40	13	14 338	6 55	At AL	10 99	20 28	6 76	<AL	14 15	1 00	4 900	10 85	7/16/96 10 50
41	14	2 634	2 93	<AL	10 99	5 33	4 20	<AL	14 15	1 00	0 900	2 85	7/16/96 10 51
42	15	5 560	4 14	<AL	10 99	25 89	7 50	<AL	14 15	1 00	1 900	13 85	7/16/96 10 53
43	16	-0 293	2 93	<MDA	10 99	12 81	5 63	<AL	14 15	1 00	-0 100	6 85	7/16/96 10 54
44	17	8 486	5 07	<AL	10 99	7 20	4 60	<AL	14 15	1 00	2 900	3 85	7/16/96 10 55

O[illegible] Instruments Tennelec LB5100-W -- Swipe Analysi[illegible]port

4

324

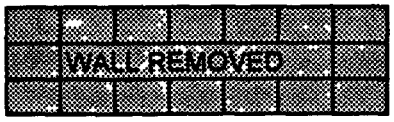
Bldg 889 Instrument Serial # 228125-2 Cal Date 6-12-96 Cal Due Date 12-12-96
Batch ID Trench Rm 106, After Wipedown
Counting Unit id 1
Data file name C \LBXL\UNIT1\ONE1A081 XLD
Batch Ended 7/17/96 13 39
Crosstalk Correction Not Applied

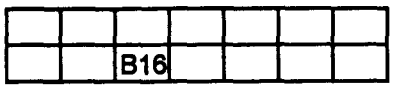
Alpha activity action level (DPM) 20
Beta activity action level (DPM) 1000
Certainty level for MDA and flags 95%
High Voltage Setting 1350

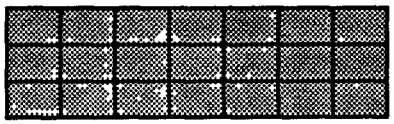
Alpha efficiency log file	PU239AB
Alpha Efficiency	34 17%
Alpha to Beta Crosstalk	8 63%
Alpha Background (CPM)	0 23
Alpha Correction Factor	1 000
Beta efficiency log file	SR90AB
Beta Efficiency	53 49%
Beta into Alpha Crosstalk	1 06%
Beta Background (CPM)	2 33
Beta Correction Factor	1 000

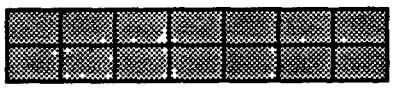
		Alpha Activity				Beta Activity							
Carrier	Swipe #	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	1	-0 683	2 93	<MDA	12 61	6 85	4 60	<AL	14 53	1 00	-0 233	3 67	7/17/96 13 20
2	2	2 243	2 93	<MDA	12 61	8 72	4 96	<AL	14 53	1 00	0 767	4 67	7/17/96 13 21
3	3	2 243	2 93	<MDA	12 61	3 12	3 76	<MDA	14 53	1 00	0 767	1 67	7/17/96 13 22
4	4	5 170	4 14	<AL	12 61	14 33	5 93	<AL	14 53	1 00	1 767	7 67	7/17/96 13 24
5	5	2 243	2 93	<MDA	12 61	6 85	4 60	<AL	14 53	1 00	0 767	3 67	7/17/96 13 25
6	6	-0 683	2 93	<MDA	12 61	10 59	5 30	<AL	14 53	1 00	-0 233	5 67	7/17/96 13 26
7	7	8 096	5 07	<AL	12 61	12 46	5 63	<AL	14 53	1 00	2 767	6 67	7/17/96 13 27
8	8	2 243	2 93	<MDA	12 61	6 85	4 60	<AL	14 53	1 00	0 767	3 67	7/17/96 13 28
9	9	8 096	5 07	<AL	12 61	16 20	6.22	<AL	14 53	1 00	2 767	8 67	7/17/96 13 30
10	10	-0 683	2 93	<MDA	12 61	3 12	3 76	<MDA	14 53	1 00	-0 233	1 67	7/17/96 13 31
11	11	-0 683	2 93	<MDA	12 61	3 12	3 76	<MDA	14 53	1 00	-0 233	1 67	7/17/96 13 32
12	12	2 243	2 93	<MDA	12 61	1 25	3 26	<MDA	14 53	1 00	0 767	0 67	7/17/96 13 33
13	13	5 170	4 14	<AL	12 61	6 85	4 60	<AL	14 53	1 00	1 767	3 67	7/17/96 13 34
14	14	2 243	2 93	<MDA	12 61	6 85	4 60	<AL	14 53	1 00	0 767	3 67	7/17/96 13 36
15	15	2 243	2 93	<MDA	12 61	3 12	3 76	<MDA	14 53	1 00	0 767	1 67	7/17/96 13 37
16	16	-0 683	2 93	<MDA	12 61	3 12	3 76	<MDA	14 53	1 00	-0 233	1 67	7/17/96 13 38
17	17	2 243	2 93	<MDA	12 61	8 72	4 96	<AL	14 53	1 00	0 767	4 67	7/17/96 13 39

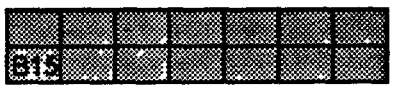
PAINT/CONCRETE SAMPLES
BUILDING 889
ROOM 106

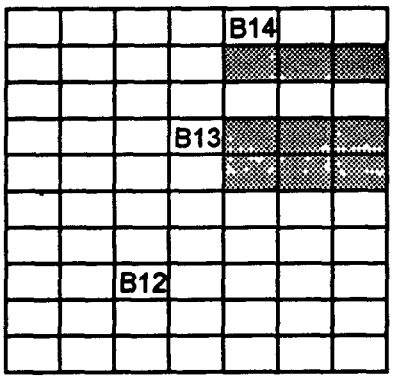




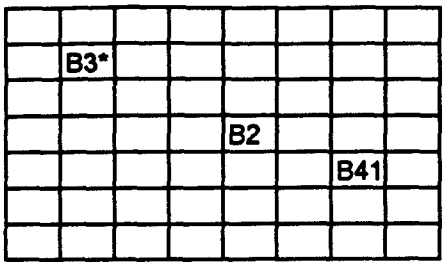




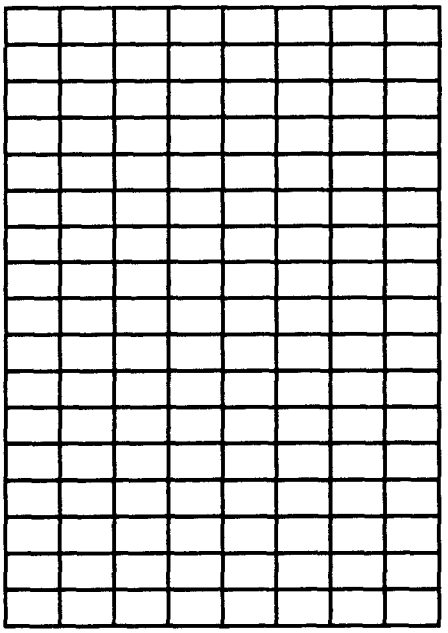




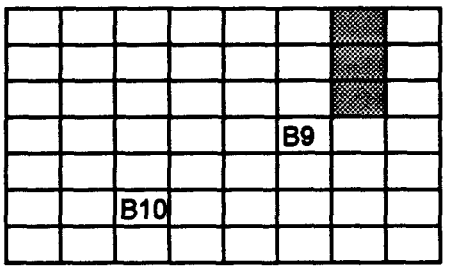
WEST WALL



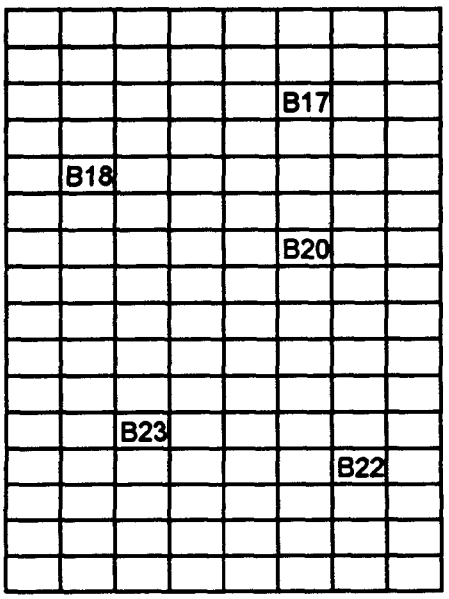
NORTH WALL



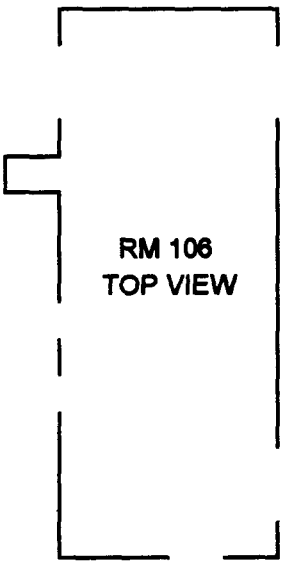
FLOOR



SOUTH WALL



CEILING



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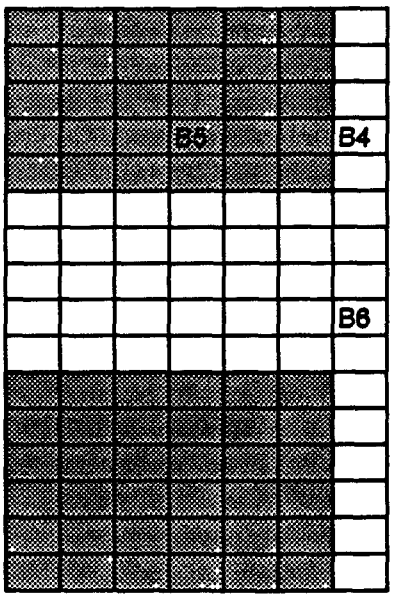

EAST WALL

* An additional QA sample was taken at these locations

B19 & B21 Taken from top of track of hoist trolley

B39 Taken on top edge of electrical outlet

B40 Taken at edge of wall and floor

Shaded areas are, door ways openings and other changes in straight wall

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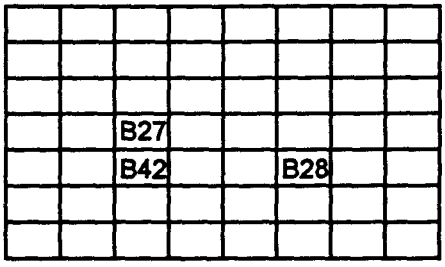
PAINT/CONCRETE SAMPLES
BUILDING 889
ROOM 108



NORTH WALL

N
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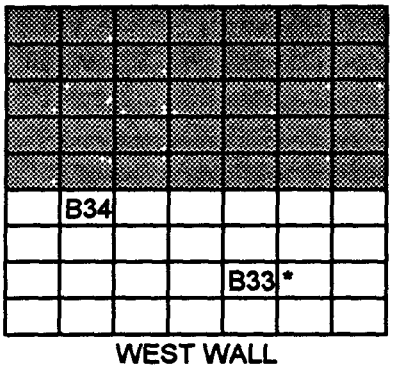

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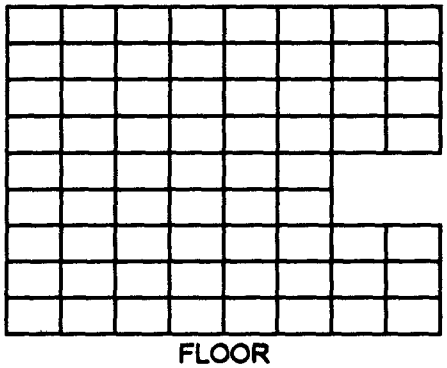
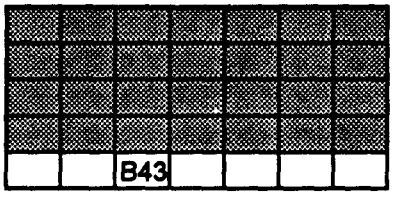
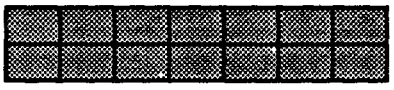
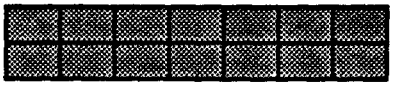
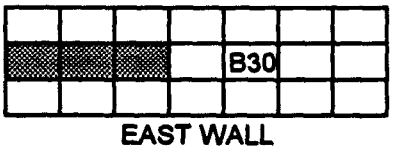


FLOOR

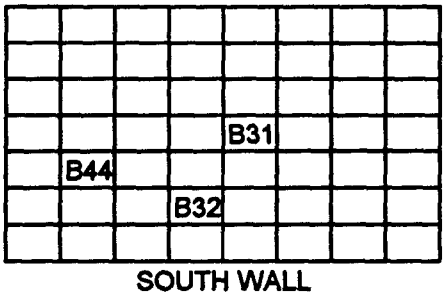




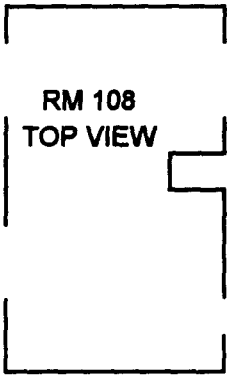


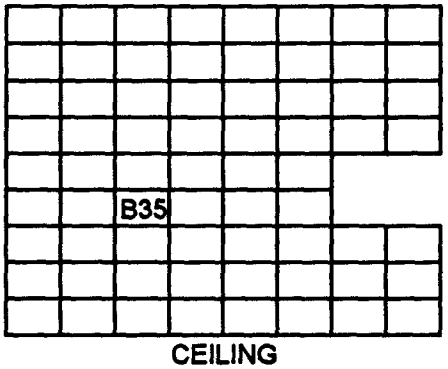


EAST WALL



SOUTH WALL





CEILING

* An additional QA sample was taken at these locations

Shaded areas are, door ways openings and other changes in straight wall

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BUILDING 889 CONCRETE/PAINT SAMPLES

SAMPLE NO.	LOCATION		LAB	SAMPLE ID	SAMPLE WT (grams)	URANIUM (pCi/gram)	PLUTONIUM (pCi/gram)	AMERICIUM (pCi/gram)	AVERAGE TOTAL SURFACE ACTIVITY (dpm/100cm²)	
									Uranium	Transuranic
Bkgd #1	Rm 106	Ext Wall	881	96L2181-01	129 9	0 497	0 048	0 002	15	2
Bkgd #2	Rm 106	Ext Wall	881	96L2181-02	164 2	0 608	0 016	0 017	24	1
B-2	Rm 106	North Wall	Quanterra	60726511	167 9	3 876	0 046	0 004	156	2
B-3	Rm 106	North Wall	Quanterra	60726512	84 0	1 168	0 046	0 005	23	1
B-4	Rm 106	East Wall	881	96L2181-04	46 1	2 104	0 084	0 069	23	2
B-5	Rm 106	East Wall	881	96L2181-03	24 0	12 579	0 121	0 111	72	1
B-6	Rm 106	East Wall	Quanterra	60726513	98 2	1 518	0 020	0 000	36	0
B-9	Rm 106	South Wall	Quanterra	60726601	189 5	1 429	0 120	0 009	65	6
B-10	Rm 106	South Wall	Quanterra	60726602	149 4	0 969	0 100	0 006	35	4
B-12	Rm 106	West Wall	Quanterra	60726603	131 4	2 534	0 100	0 020	80	4
B-13	Rm 106	West Wall	Quanterra	60726604	123 5	1 064	0 100	0 004	31	3
B-14	Rm 106	West Wall	Quanterra	60726605	115 4	2 352	0 013	0 004	65	0
B-15	Rm 106	West Wall	Quanterra	60726606	96 1	2 574	0 026	0 012	59	1
B-16	Rm 106	West Wall	Quanterra	60726607	69 5	2 940	0 015	0 004	49	0
B-17	Rm 106	Ceiling	Quanterra	60726501	46 8	1 125	0 033	0 022	13	1
B-18	Rm 106	Ceiling	Quanterra	60726502	48 6	1 011	0 006	0 004	12	0
B-20	Rm 106	Ceiling	Quanterra	60726503	35 1	0 697	0 008	0 000	6	0
B-22	Rm 106	Ceiling	Quanterra	60726504	52 6	0 822	0 013	0 007	10	0
B-23	Rm 106	Ceiling	Quanterra	60726505	48 2	1 591	0 012	0 004	18	0
B-27	Rm 108	North Wall	Quanterra	60726506	119 5	2 250	0 008	0 003	64	0
B-28	Rm 108	North Wall	881	96L2181-06	37 8	18 353	0 056	0 032	166	1
B-29	Rm 108	East Wall	881	96L2181-07	60 8	11 351	0 016	0 023	165	1
B-30	Rm 108	East Wall	881	96L2181-08	65 1	7 713	1 006	0 008	120	16
B-31	Rm 108	South Wall	Quanterra	60726507	142 9	4 136	0 029	0 019	141	2
B-32	Rm 108	South Wall	881	96L2181-09	117 4	1 232	0 014	0 004	35	1
B-33	Rm 108	West Wall	Quanterra	60726508	107 8	2 288	0 024	0 000	59	1
B-34	Rm 108	West Wall	Quanterra	60726509	61 4	2 800	0 048	0 003	41	1
B-35	Rm 108	Ceiling	881	96L2181-05	28 2	1 477	0 047	0 025	10	0
B-41	Rm 106	North Wall	Quanterra	60726609	84 5	4 466	0 027	0 000	90	1
B-42	Rm 108	North Wall	Quanterra	60726610	98 2	1 370	0 017	0 000	32	0
B-43	Rm 108	East Wall	Quanterra	60726611	66 8	4 671	0 045	0 008	75	1
B-44	Rm 108	South Wall	Quanterra	60726612	87 7	1 519	0 000	0 009	32	0

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BUILDING 889 CONCRETE/PAINT SAMPLES

SAMPLE NO	LOCATION		LAB	SAMPLE ID	SAMPLE WT (grams)	URANIUM (pCi/gram)	PLUTONIUM (pCi/gram)	AMERICIUM (pCi/gram)	AVERAGE TOTAL SURFACE ACTIVITY (dpm/100cm²)	
									Uranium	Transuranic
B-3QA	Rm 106	North Wall	Quanterra	60726510	131 0	0 837	0 004	0 010	26	0
B-33QA	Rm 108	West Wall	Quanterra	60726608	122 5	2 273	0 006	0 011	67	0
				mean=	92 706	3 182	0 067	0 014	56 281	1 561
						Statistical Summary				
							No of Measurements		32	32
							t (α= 05, df=31)		1 696	1 696
							Upper Confidence Limit		72 40	2 44
							Mean		58 57	1 57
							Maximum		165 80	15 78
							Standard Deviation		46 16	2 90

FINAL REPORT

from the

APO OFFICE

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KAISER HILL
COMPANY

INTEROFFICE MEMORANDUM

DATE August 20, 1996

TO V Idecker, APO, Building 881, X3437

FROM W A Sticka, Kaiser-Hill Analytical Laboratories, Building 881, X7049

SUBJECT SAMPLE PACKAGE SUBMITTAL

Enclose d at the Building 881 Laboratory on July 24

The sar

Sample ID#	APO#
C5290- 96L2181-01	Background 1
C5291 96L2181-02	Background 2
C5293- 96L2181-04	B-4
C5292 96L2181-03	B-5
C5295- 96L2181-06	B-28
C5296 - 96L2181-07	B-29
C5297- 96L2181-08	B-30
C5298- 96L2181-09	B-32
C5294- 96L2181-05	B-35

Please see the Summary Narrative for all information pertaining to any anomalies for these samples

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the narrative summary Release of the data contained in the hard copy data and the package and in the computer-readable data submitted has been authorized by the Laboratory Manager or her designee, as verified by the following signature "

Wendy A. Sticka
Wendy A Sticka
Manager, Building 881 Laboratory

Recieved in APO office by B. Ridley Date 8/21/96

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ISOTOPIC DATA SHEETS AND SPECTRA	PAGE 11 TO 83
ENERGY CALIBRATIONS, EFFICIENCIES and BACKGROUNDS	PAGE 84 TO 85
CHEMISTRY STANDARDS CERTIFICATES	PAGE 86 TO 92
BENCH SHEETS and INTERNAL PROCEDURES	PAGE 93 TO 99
CONTROL, SPIKE and SAMPLE LOGBOOK	PAGE 100 TO 110

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CASE NARRATIVE

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KAISER-HILL ROCKY FLATS, CO
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P O BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

CASE NARRATIVE

SDG NUMBER: 96L2181
DATE: 08/07/96
DATA: *RADIOCHEMISTRY ISOTOPICS REPORT*

SAMPLE DESCRIPTION:

SAMPLE ID	LAB ID	LIMS ID
BACKGROUND 1	96L2181-01	117682
BACKGROUND 2	96L2181-02	117683
B-4	96L2181-04	117686
B-5	96L2181-03	117685
B-28	96L2181-06	117688
B-29	96L2181-07	117690
B-30	96L2181-08	117692
B-32	96L2181-09	117693
B-35	96L2181-05	117687

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KAISER-HILL ROCKY FLATS, INC
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

RADIOCHEMISTRY ISOTOPICS REPORT SDG NUMBER: 96L2181 DATE 08-07-96

Method summary

Depending upon the sample matrix, pretreatment of the sample (as determined by the responsible chemist) may be required to obtain an aqueous solution which is necessary to perform the isotopic separation chemistry Plutonium (Pu-239,240), uranium (U-233,234, U-235 and U-238) and americium (Am-241) isotopes are separated from the prepared sample using ion-exchange and chromatographic extraction techniques, followed by electrodeposition onto counting planchets, and analyzed by alpha spectrometry Each sample is spiked with a Chemistry Standards Laboratory (CSL) certified tracer of an isotope (Pu-242, U-232 or Cm-244) which behaves chemically identical to the analyte (Pu-239, U-234,-235,-238 or Am-241) and whose alpha energy can be isolated with no other alpha interference's Procedure L-6235, "Isolation of Plutonium, Americium and Uranium From Aqueous Samples" and L-6266, "Analysis of U, Pu, and Am in Soil/Sludge, Sediment by Ion Chromatography and Extraction Chromatography," are used to perform the isotopic separations The areas of the tracer and analyte peaks or regions of interest are ratioed and the analyte activity in disintegrations per minute (dpm) is solved from the proportion All analyte and tracer peak areas in counts per minute (cpm) are corrected for the detector background cpm in the particular region of interest In addition, since the standard tracers are not isotopically pure and may contain small quantities of the analyte, a preparation blank is required with each batch of samples for each analyte The blank consists of the tracer aliquot only, and from it, the amount of interferant is quantitated. The sample's analyte activity in dpm is then corrected for the preparation blank and the result in Pico-curies per liter or per gram (pCi/L or pCi/g) is calculated using the blank corrected dpm and the sample volume or weight analyzed. For Environmental Restoration samples the blank consists of the tracer aliquot only, and from it, the amount of interferant is quantitated, but the sample results are not blank corrected However, the blank results are reported.

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GENERAL LABORATORY
BUILDING 881

RADIOCHEMISTRY ISOTOPICS REPORT SDG NUMBER· 96L2181 DATE. 08-07-96

Quality Control Summary

The samples are analyzed in batches where each batch consists of a maximum of 9 samples, a preparation blank, a CSL certified control and a laboratory duplicate (at least 10 percent of the samples are analyzed in duplicate) Again, each of these is spiked with a known quantity of standard tracer The batch in which a sample was analyzed is denoted by the "Batch #" and all quality control samples are traceable to any particular sample by the QC batch number

The MDA (minimum detectable activity) for this analytical method is dependent on the uncertainty of the preparation blank activity, for Environmental Restoration samples the MDA for this analytical method is dependent on the detector background Both methods are also dependent on detector efficiency, chemical recovery and volume or weight of sample analyzed The chemical recovery represents the percentage of standard tracer that was recoverable through the sample preparation process The result uncertainty is calculated by propagation of the uncertainties due to counting statistics of the sample and of the preparation blank The uncertainties are stated at the two sigma level

Significant Figures

The results and uncertainties are reported in pCi/l or pCi/g as follows:

Sample Raw Result	Reported Sample Result and Uncertainty
<1 0	nearest thousandth digit (0.001)
1 0 to 9.9	nearest hundredth digit (0.01)
10 0 to 99 9	nearest tenth digit (0 1)
100 0 to 999 9	nearest 1's digit (whole number)
1000 to 9999	nearest 10's digit

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... HILL ROCKY FLATS, INC.
... FLATS ENVIRONMENTAL TECHNOLOGY SITE
P ... X 464
...LDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

RADIOCHEMISTRY ISOTOPICS REPORT SDG NUMBER· 96L2181 DATE· 08-07-96

Report Format Description

The sample isotopic activities and uncertainties are reported in the "Isotopic Analysis Results" section of the report. The result uncertainty in pCi/L or pCi/g is designated as the "+/-" value and represents the uncertainty at the 2 sigma level The letter "D" prefix indicates a field duplicate sample (a sample which is taken in duplicate while in the field) This differs from a laboratory duplicate which is a sample analyzed in duplicate

The associated QA/QC results for the CSL controls analyzed in each respective batch number are reported in the "Quality Assurance/Quality Control Data" section of the report The "Analysis Date" refers to the date the analysis was completed

Definition of Data Qualifiers

There are no data qualifier symbols defined for Radiochemistry All qualified data are explained in the narrative section of this report Qualified results may be flagged with "*" followed by an explanation

Exceptions or Deviations to Base Methods

Depending upon the sample matrix and if there are solids or particulates present, deviations from procedure L-6235 or L-6266 may be required. These deviations are detailed in a procedure filed with the raw data.

Narrative for 96L2181

Nine concrete/paint samples were delivered to the lab for the analysis of plutonium, americium and uranium. The concrete/paint samples were tared and weighed out to obtain a net weight of each sample This net weight is reported with the isotopic results

Samples were ground with a mortar and pestle to obtain a representative sample aliquot One half gram was taken from one section of the sample jar, the sample jar was shaken and another half

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RADIOCHEMISTRY ISOTOPICS REPORT SDG NUMBER 96L2181 DATE: 08-07-96

gram was taken out for a total of one gram for each sample

The samples were spiked and then dissolved using the microwave oven according to procedure L-6290. Vessel #5 sample B-35 ruptured the relief disk and some of the sample was lost. This ruptured disk AND sample loss accounts for the lower yield on this samples results

The analysis for each sample was run according to procedure L-6235 The samples were very difficult to run due to the amount of paint combined with concrete Uranium samples ran well with the exception of B-35 which was noted above. The plutonium samples also ran well with only the low yield for sample B-35 The americium samples were more difficult to run due to the nature of the matrix The only yield problem was again with B-35

MDAs are higher than normal due to the small sample aliquot The nature of the matrix, being a difficult matrix to work with, was the reason for the one gram aliquot versus two grams

No other problems occurred during the analysis All QA/QC was acceptable If there are any questions feel free to call me at 7128

Chemist Approval N K Harward Date 8/7/96

Chemist Review for K M. Hagglund Date 8/14/96

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ISOTOPIC RESULTS

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RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALPHA SPECTROMETRY

SAMPLE ID	URANIUM 238 (pCi/g)	BATCH #
BACKGROUND 1	0 254 ± 0 032 (MDA 0 028)	ISO96-067
BACKGROUND 2	0 233 ± 0 030 (MDA 0 026)	ISO96-067
B-4	0 974 ± 0 066 (MDA 0 010)	ISO96-067
B-5	1 33 ± 0 08 (MDA 0 035)	ISO96-067
B-28	13 3 ± 0 4 (MDA 0 01)	ISO96-067
B-29	9 06 ± 0 31 (MDA 0 03)	ISO96-067
B-30	6 11 ± 0 22 (MDA 0 03)	ISO96-067
B-32	0 735 ± 0 057 (MDA 0 010)	ISO96-067
B-32 D	0 788 ± 0 060 (MDA 0 036)	ISO96-067
B-35	0 677 ± 0 115 (MDA 0 047)	ISO96-067

SAMPLE ID	URANIUM 235 (pCi/g)	BATCH #
BACKGROUND 1	0 011 ± 0 006 (MDA 0 010)	ISO96-067
BACKGROUND 2	0 007 ± 0 007 (MDA 0 026)	ISO96-067
B-4	0 030 ± 0 011 (MDA 0 010)	ISO96-067
B-5	0 349 ± 0 038 (MDA 0 027)	ISO96-067
B-28	0 253 ± 0 031 (MDA 0 010)	ISO96-067
B-29	0 111 ± 0 020 (MDA 0 010)	ISO96-067
B-30	0 083 ± 0 017 (MDA 0 010)	ISO96-067
B-32	0 019 ± 0 008 (MDA 0 010)	ISO96-067
B-32 D	0 035 ± 0 012 (MDA 0 011)	ISO96-067
B-35	0 000 ± 0 034 (MDA 0 161)	ISO96-067

SAMPLE ID	URANIUM 233/234 (pCi/g)	BATCH #
BACKGROUND 1	0 232 ± 0 030 (MDA 0 010)	ISO96-067
BACKGROUND 2	0 368 ± 0 037 (MDA 0 010)	ISO96-067
B-4	1 10 ± 0 071 (MDA 0 010)	ISO96-067
B-5	10 9 ± 0 4 (MDA 0 01)	ISO96-067
B-28	4 80 ± 0 19 (MDA 0 010)	ISO96-067
B-29	2 18 ± 0 11 (MDA 0 010)	ISO96-067
B-30	1 52 ± 0 09 (MDA 0 010)	ISO96-067
B-32	0 478 ± 0 045 (MDA 0 028)	ISO96-067
B-32 D	0 579 ± 0 050 (MDA 0 011)	ISO96-067
B-35	*0 795 ± 0 126 (MDA 0 047)	ISO96-067

*DUPLICATE PASSES AT 3 SIGMA

General Lab, Building 881 | Lab Number. 96L2181 | Report Date 8/7/96
Sample Date 07/24/96

RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALPHA SPECTROMETRY

SAMPLE ID	PLUTONIUM 239/240 (pCi/g)	BATCH #
BACKGROUND 1	0 048 ± 0 010 (MDA 0 006)	ISO96-067
BACKGROUND 2	0 016 ± 0 007 (MDA 0 008)	ISO96-067
B-4	0 084 ± 0 013 (MDA 0 014)	ISO96-067
B-5	0 121 ± 0 017 (MDA 0 016)	ISO96-067
B-28	0 056 ± 0 010 (MDA 0 005)	ISO96-067
B-29	0 016 ± 0 007 (MDA 0 019)	ISO96-067
B-30	0 006 ± 0 006 (MDA 0 023)	ISO96-067
B-32	0 014 ± 0 007 (MDA 0 022)	ISO96-067
B-32 D	0 013 ± 0 006 (MDA 0 014)	ISO96-067
B-35	0 047 ± 0 020 (MDA 0 022)	ISO96-067

SAMPLE ID	AMERICIUM 241 (pCi/g)	BATCH #
BACKGROUND 1	0 002 ± 0 003 (MDA 0 014)	ISO96-067
BACKGROUND 2	0 017 ± 0 006 (MDA 0 005)	ISO96-067
B-4	0 069 ± 0 014 (MDA 0 018)	ISO96-067
B-5	0 111 ± 0 032 (MDA 0 055)	ISO96-067
B-28	0 032 ± 0 015 (MDA 0 040)	ISO96-067
B-29	0 023 ± 0 010 (MDA 0 024)	ISO96-067
B-30	0 008 ± 0 012 (MDA 0 046)	ISO96-067
B-32	0 004 ± 0 004 (MDA 0 014)	ISO96-067
B-32 D	0 010 ± 0 006 (MDA 0 018)	ISO96-067
B-35	0 025 ± 0 015 (MDA 0 023)	ISO96-067

SAMPLE ID	NET SAMPLE WEIGHT (grams)
BACKGROUND 1	129 9
BACKGROUND 2	164 2
B-4	46 1
B-5	24
B-28	37 8
B-29	60 8
B-30	65 1
B-32	117 4
B-35	28 2

RADIOCHEMISTRYREPORT
ISOTOPIC ANALYSIS RESULTS BY ALHPA SPECTROSCOPY

Quality Assurance/Quality Control Data

ANALYSIS		CSL CONTROL		CONTROL STANDARD (d/m/ml)	
BATCH #	DATE	ID NUMBER	ISOTOPE	OBSERVED VALUE	STANDARD VALUE
ISO96-067	8/7/96	CSL 610796	U-238	10 5± 0 5	9 8 ± 0 5
ISO96-067	8/7/96	CSL 610796	U-233/234	10 2 ± 0 5	10 1 ± 0 5
ISO96-067	8/5/96	CSL 650165	PU-239/240	2 00 ± 0 12	2 04 ± 0 04
ISO96-067	8/6/96	CSL 610720	AM-241	1 91 ± 0 12	2 02 ± 0 02

REAGENT BLANK

BATCH #	DATE	ID NUMBER	ISOTOPE	ACTIVITY	UNITS
ISO96-067	8/7/96	U96-525-067	U-238	0 014 ± 0 010	pCi/g
ISO96-067	8/7/96	U96-525-067	U-233/234	0 021 ± 0 009	pCi/g
ISO96-067	8/5/96	PU96-525-067	PU-239/240	0 002 ± 0 005	pCi/g
ISO96-067	8/6/96	AM96-525-067	AM-241	0 011 ± 0 004	pCi/g

ISOTOPIC DATA SHEETS
AND
SPECTRA

342

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: U96-515-067 96L2181 BKG1 889 **Type:** Unknown

Batch ID U96-067
Acquisition Start August 06, 1996 14 01 20
Analysis Date August 07, 1996 08 55 17
Procedure ER Uranium samples
Device ALP-TWO 01 01
Analysis Method ROI Analysis
Spectrum File 78356196 OXS LiveTime 43,200 00

Calibrations
Energy = -1 023E+01 +2 437E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 52 36 Std CSL# 604127 EXP 6/97
Shape not Calibrated
Efficiency = 2 807E-01 ± 4 931E-03
Calibration Date July 11, 1996 14 11 56 Std CSL# 604127 EXP 6/97

Tracer Recovery 0 596 ± 0 020
Total Efficiency 0 167 ± 0 005

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 015 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5083 0	5379 0	5319 1	28 3
2 U234	U233	4633 2	4800 5	4768 4	3 3
3 U235	U235	4333 8	4475 4	4405 3	2 4
4 U238	U238	4082 5	4244 4	4198 1	12 5

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,211 0 ± 35 0	7 00	1 682 ± 0 049	Tracer
U234	63 0 ± 7 9	0 00	0 088 ± 0 011	Unknown
U235	3 0 ± 1 7	0 00	4 17E-03 ± 2 41E-03	Unknown
U238	69 0 ± 8 4	1 00	0 096 ± 0 012	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 464 ± 0 00E+00	0 056
U234	U233	1 000	0 232 ± 0 030	0 010
U235	U235	1 000	0 011 ± 6 39E-03	0 010
U238	U238	1 000	0 254 ± 0 032	0 028

Activity reported as of August 06, 1996 14 01 20

ANALYSIS REVIEWED BY N K Howard

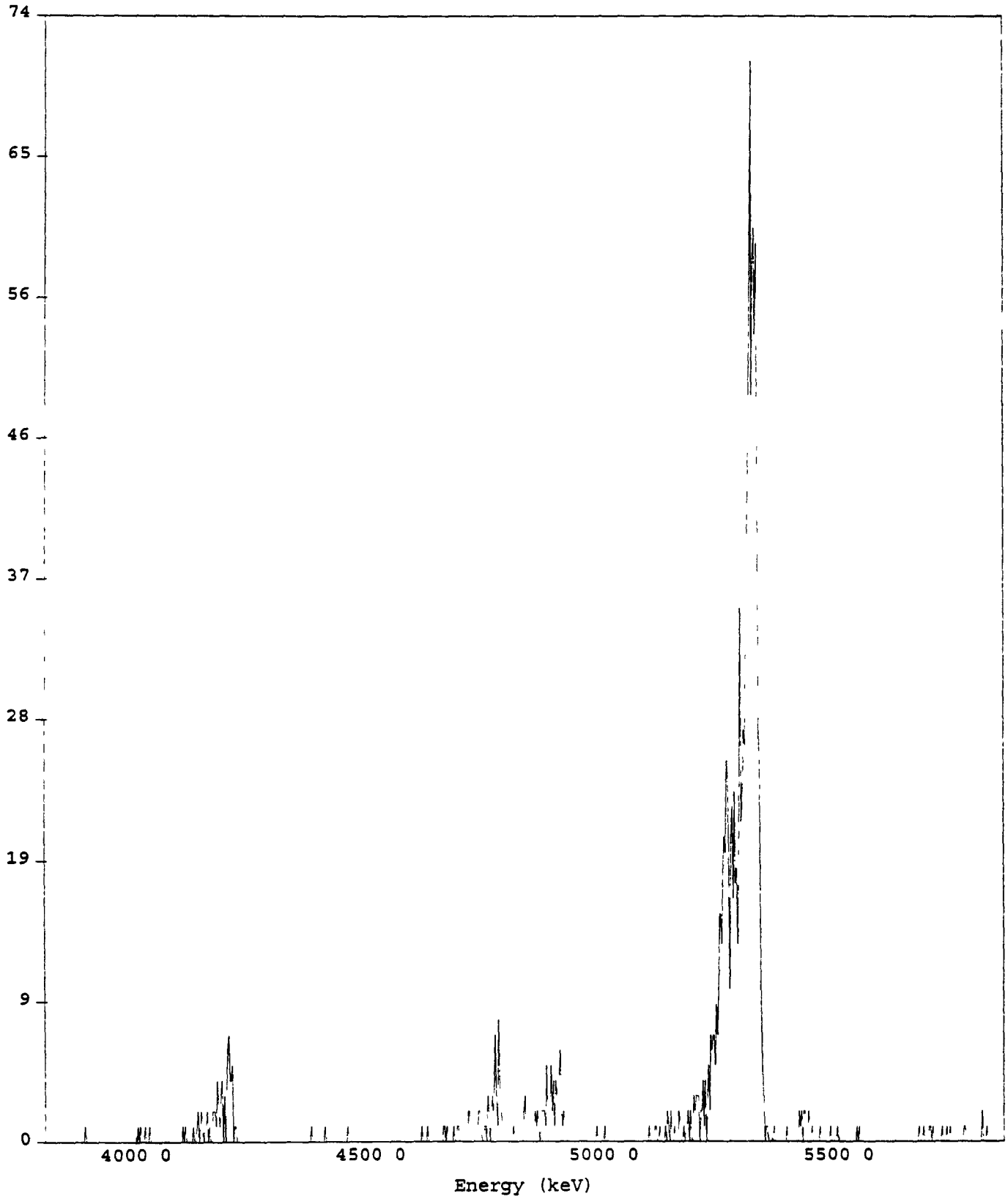
APPROVED BY N K Howard

00012

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78356196 OXS Date 06-Aug-96 14 01 20 LT 43,200 00 RT 43,200 73
ID(6) U96-515-067 96L2181 BKG1 889



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344

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: U96-516-067 96L2181 BKG2 889 **Type:** Unknown

Batch ID	U96-067
Acquisition Start	August 06, 1996 14 01 22
Analysis Date	August 07, 1996 09 00 06
Procedure	ER Uranium samples
Device	ALP-TWO 01 02
Analysis Method	ROI Analysis
Spectrum File	78356549 OXS

LiveTime 43,200 00

Calibrations
Energy = -1 203E+00 +2 366E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 24 24 Std CSL# 604128 EXP 6/97
Shape not Calibrated
Efficiency = 2 763E-01 ± 4 841E-03
Calibration Date July 11, 1996 14 38 54 Std CSL# 604128 EXP 6/97

Tracer Recovery	0 638 ± 0 021
Total Efficiency	0 176 ± 0 005
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 020 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5091 5	5359 1	5309 6	55 7
2 U234	U233	4644 5	4807 1	4737 2	2 7
3 U235	U235	4324 4	4465 9	4394 1	2 4
4 U238	U238	4045 8	4225 9	4183 6	2 8

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,277 0 ± 35 9	5 00	1 774 ± 0 050	Tracer
U234	106 0 ± 10 3	0 00	0 147 ± 0 014	Unknown
U235	2 0 ± 2 0	1 00	2 78E-03 ± 2 78E-03	Unknown
U238	67 0 ± 8 3	1 00	0 093 ± 0 012	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM. PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 439 ± 0 00E+00	0 047
U234	U233	1 000	0 368 ± 0 037	9 60E-03
U235	U235	1 000	6 95E-03 ± 6 95E-03	0 026
U238	U238	1 000	0 233 ± 0 030	0 026

Activity reported as of August 06, 1996 14 01 22

ANALYSIS REVIEWED BY N K Howard

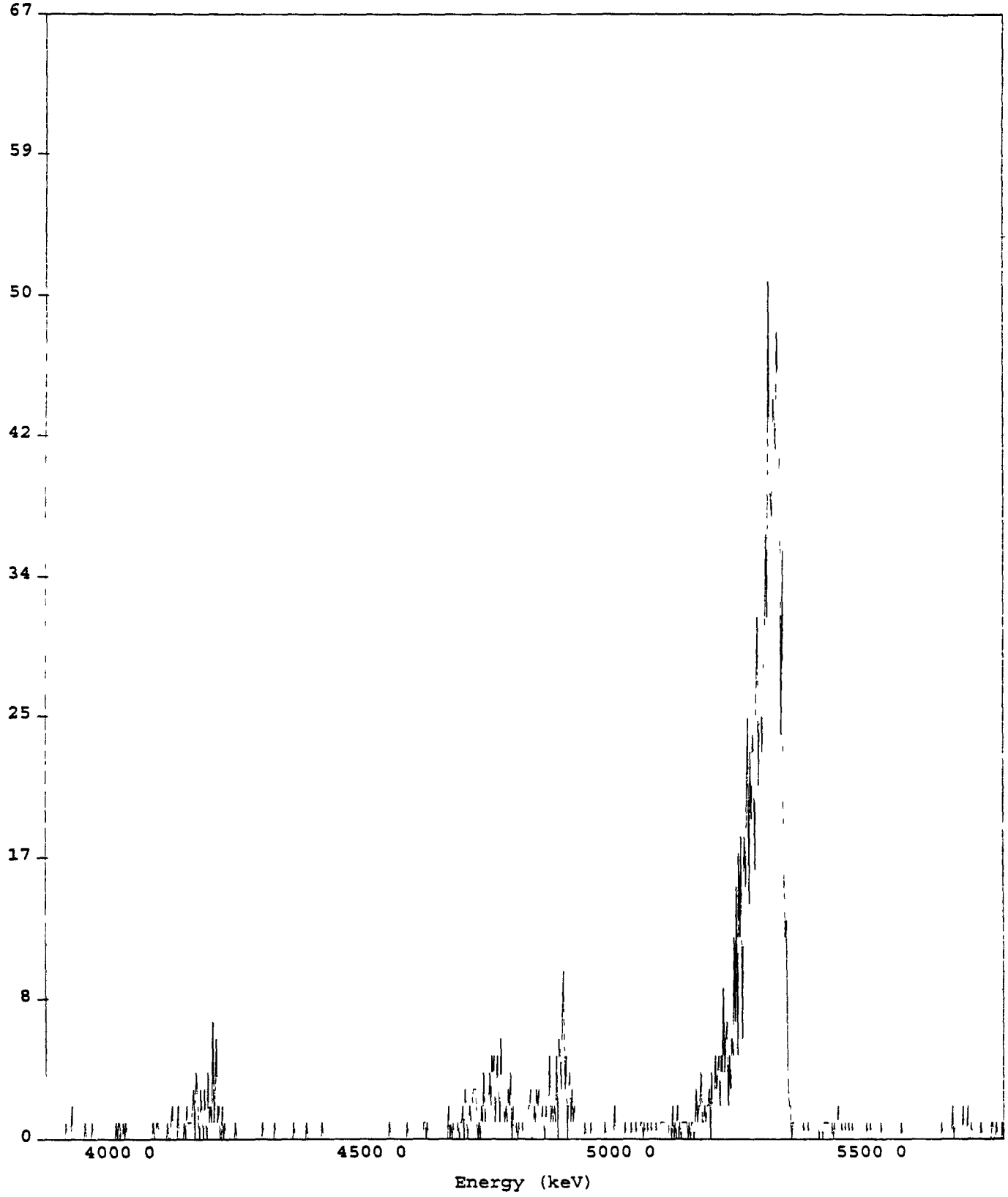
APPROVED BY N K Howard

345

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78356549 OXS Date 06-Aug-96 14 01 22 LT 43,200 00 RT 43,200 80
D(6) U96-516-067 96L2181 BKG2 889



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346

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID	U96-518-067 96L2181 B-4 889	Type:	Unknown
Batch ID	U96-067		
Acquisition Start	August 06, 1996 14 01 26		
Analysis Date	August 07, 1996 09 06 24		
Procedure	ER Uranium samples		
Device	ALP-TWO 01 05		
Analysis Method	ROI Analysis		
Spectrum File	78356704 OXS	LiveTime	43,200 00

Calibrations
Energy = 1 494E+01 +2 349E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 54 04 Std CSL# 604131 EXP 6/97
Shape not Calibrated
Efficiency = 2 844E-01 ± 4 993E-03
Calibration Date July 11, 1996 14 43 39 Std CSL# 604131 EXP 6/97

Tracer Recovery	0 581 ± 0 020
Total Efficiency	0 165 ± 0 005
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 018 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5108 2	5380 7	5322 6	35 8
2 U234	U233	4602 6	4826 2	4777 8	16 2
3 U235	U235	4310 3	4463 6	4385 6	2 3
4 U238	U238	4066 3	4256 6	4195 3	6 3

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,197 0 ± 34 6	1 00	1 663 ± 0 048	Tracer
U234	296 0 ± 17 2	0 00	0 411 ± 0 024	Unknown
U235	8 0 ± 2 8	0 00	0 011 ± 3 93E-03	Unknown
U238	262 0 ± 16 2	0 00	0 364 ± 0 022	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 450 ± 0 00E+00	0 028
U234	U233	1 000	1 100 ± 0 071	0 010
U235	U235	1 000	0 030 ± 0 011	0 010
U238	U238	1 000	0 974 ± 0 066	0 010

Activity reported as of August 06, 1996 14 01 26

ANALYSIS REVIEWED BY dk Harward

APPROVED BY dk Harward

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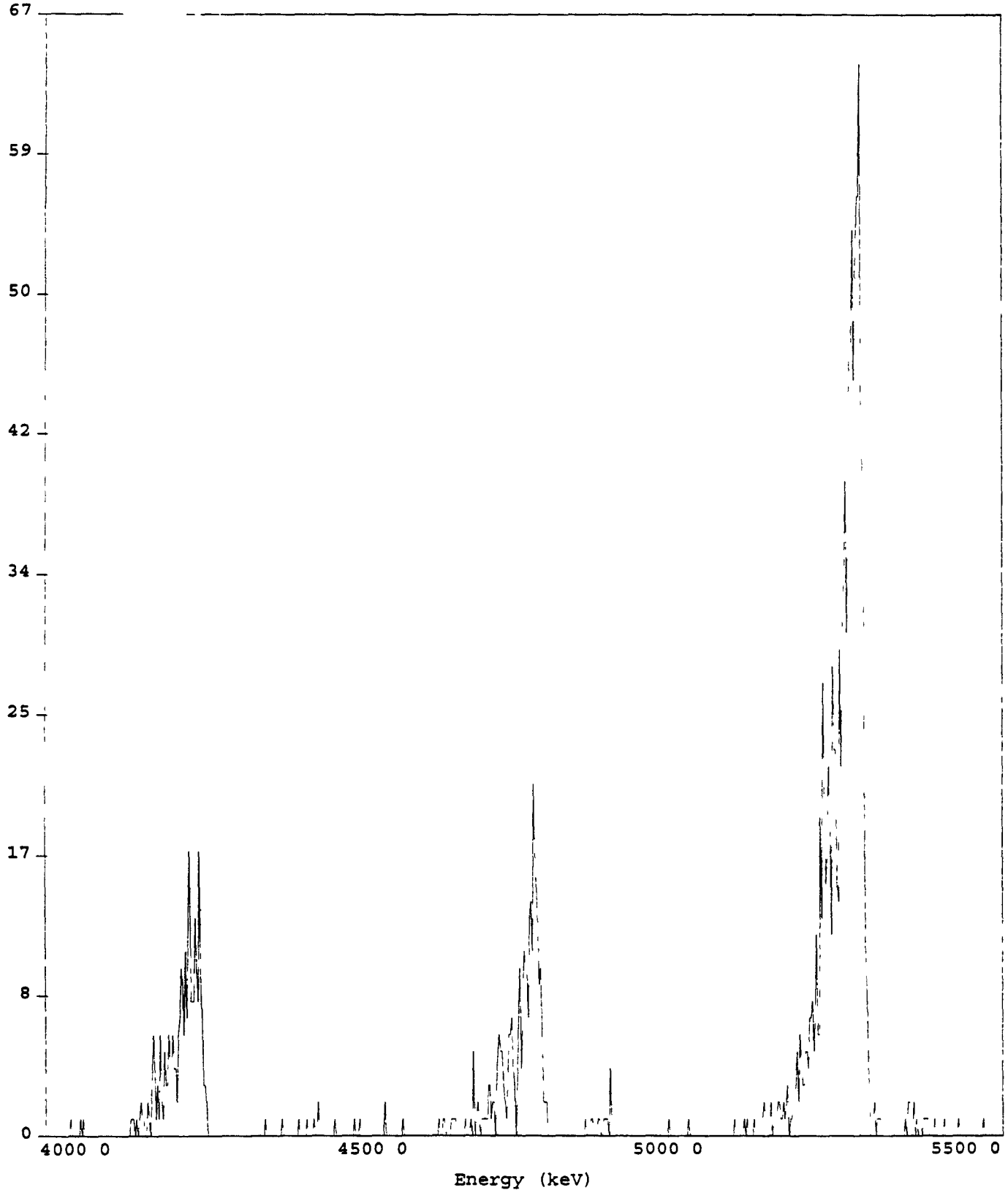
_ ·c Analysis by Alpha Spectrometry

ats Technologies Site, Analytical Labs Bldg. 881

Monday, August 12, 1996

File(6) 783 ‹ ‹ Date 06-Aug-96 14 01 26 LT 43,200 00 RT 43,200 79

ID(6) U96-5 .2181 B-4 889



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348

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: U96-517-067 96L2181 B-5 889 **Type:** Unknown

Batch ID U96-067
Acquisition Start August 06, 1996 14 01 24
Analysis Date August 07, 1996 09 03 06
Procedure ER Uranium samples
Device ALP-TWO 01 03
Analysis Method ROI Analysis
Spectrum File 78356631 OXS LiveTime 43,200 00

Calibrations
Energy = 1 873E+01 +2 307E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 25 52 Std CSL# 604129 EXP 6/97
Shape not Calibrated
Efficiency = 2 623E-01 ± 4 602E-03
Calibration Date July 11, 1996 14 40 28 Std CSL# 604129 EXP 6/97

Tracer Recovery 0 641 ± 0 022
Total Efficiency 0 168 ± 0 005

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 013 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5094 8	5363 1	5313 2	41 1
2 U234	U233	4569 6	4838 4	4764 1	60 3
3 U235	U235	4306 1	4468 5	4401 9	6 1
4 U238	U238	4029 8	4235 9	4189 7	15 0

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,218 0 ± 35 1	8 00	1 692 ± 0 049	Tracer
U234	2,962 0 ± 54 4	0 00	4 114 ± 0 076	Unknown
U235	95 0 ± 9 8	1 00	0 132 ± 0 014	Unknown
U238	363 0 ± 19 2	2 00	0 504 ± 0 027	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 469 ± 0 00E+00	0 059
U234	U233	1 000	10 869 ± 0 372	0 010
U235	U235	1 000	0 349 ± 0 038	0 027
U238	U238	1 000	1 332 ± 0 080	0 035

Activity reported as of August 06, 1996 14 01 24

ANALYSIS REVIEWED BY JK Howard

APPROVED BY JK Howard

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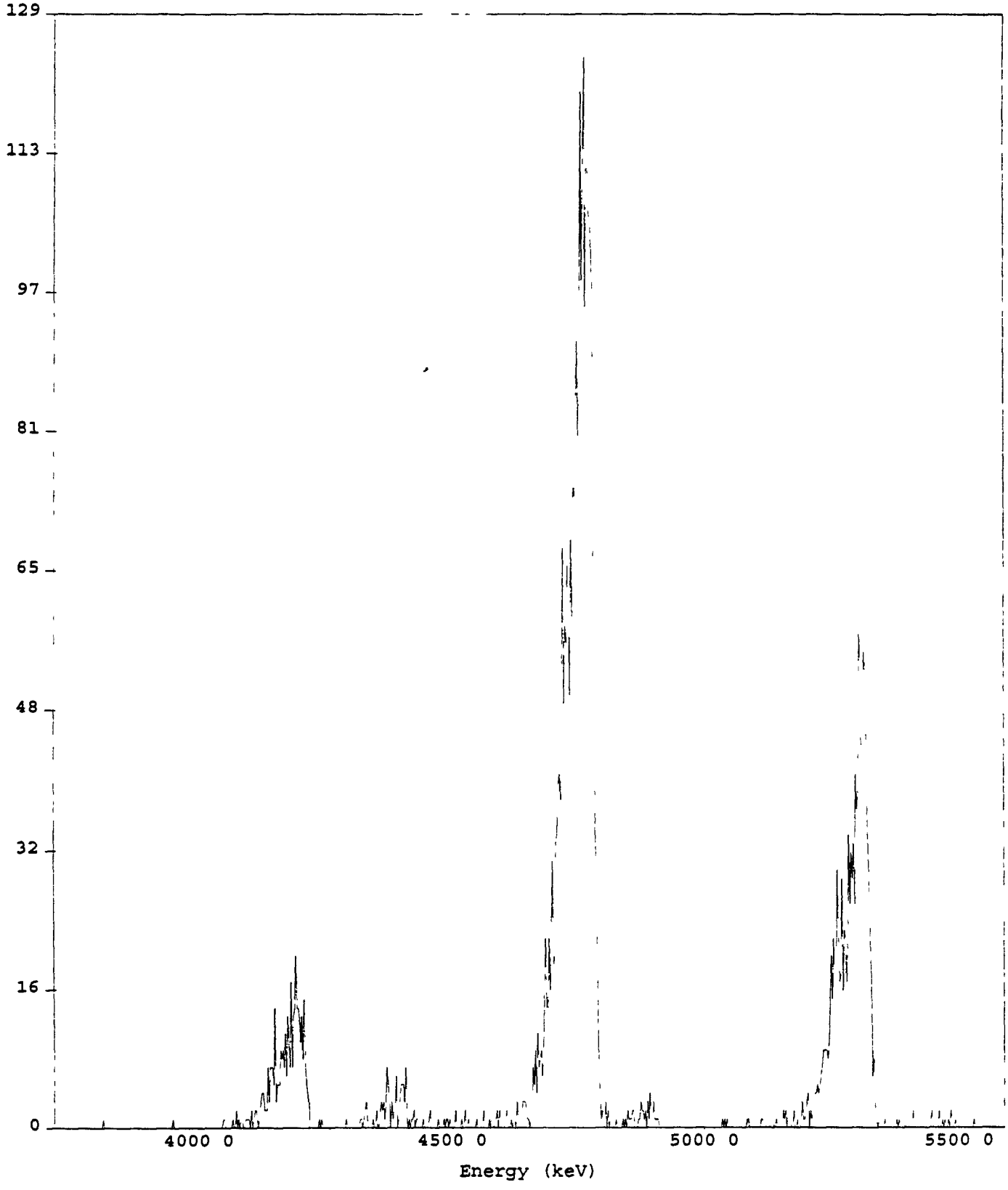
Isotopic Analy alpha Spectrometry
Rocky Flats Technol Analytical Labs Bldg. 881
Mon st 12, 1996

File(6) · 78356631 OXS Date 06-Au - 24 LT 43,200 00 RT 43,200 72
ID(6) U96-517-067 96L2181 B-5 889



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Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07 1996

Sample ID: U96-520-067 96L2181 B-28 8 **Type:** Unknown

Batch ID	U96-067
Acquisition Start	August 06, 1996 14 01 30
Analysis Date	August 07, 1996 09 17 05
Procedure	ER Uranium samples
Device	ALP-TWO 01 07
Analysis Method	ROI Analysis
Spectrum File	78356838 OXS

LiveTime 43,200 00

Calibrations
Energy = 8 133E+00 +2 243E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 57 01 Std CSL# 604133 EXP 6/97
Shape not Calibrated
Efficiency = 2 822E-01 ± 4 953E-03
Calibration Date July 11, 1996 14 46 48 Std CSL# 604133 EXP 6/97

Tracer Recovery	0 602 ± 0 020
Total Efficiency	0 170 ± 0 005
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 019 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5120 5	5371 6	5310 4	25 3
2 U234	U233	4570 8	4917 5	4772 1	33 9
3 U235	U235	4318 1	4484 4	4395 3	5 6
4 U238	U238	3960 6	4234 2	4193 4	45 8

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,230 0 ± 35 1	1 00	1 708 ± 0 049	Tracer
U234	1,327 0 ± 36 4	0 00	1 843 ± 0 051	Unknown
U235	70 0 ± 8 4	0 00	0 097 ± 0 012	Unknown
U238	3,690 0 ± 60 7	0 00	5 125 ± 0 084	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 447 ± 0 00E+00	0 027
U234	U233	1 000	4 798 ± 0 190	9 97E-03
U235	U235	1 000	0 253 ± 0 031	9 97E-03
U238	U238	1 000	13 341 ± 0 440	9 97E-03

Activity reported as of August 06, 1996 14 01 30

ANALYSIS REVIEWED BY K Howard

APPROVED BY K Howard

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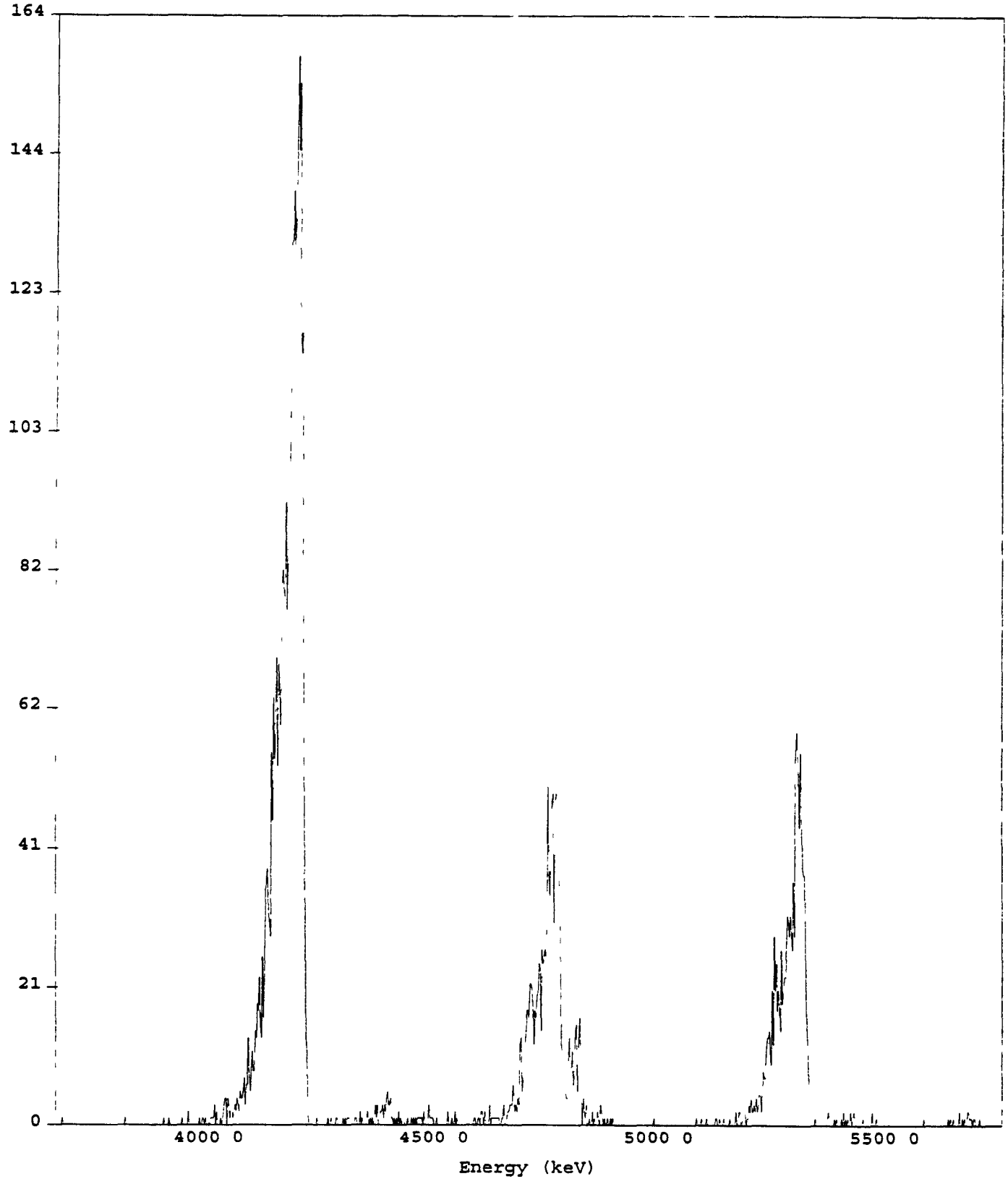
351

Isotopic Analysis by Alpha Spec[illegible]etry

Rocky Flats Technologies Site, Analytical [illegible] Bldg 881

Monday, August 12, 1996

File(6) 78356838 OXS Date 06-Aug-96 14 01 30 LT [illegible] RT 43,200 85
ID(6) U96-520-067 96L2181 B-28 889



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Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg 881
Wednesday, August 07, 1996

Sample ID: U96-521-067 96L2181 B-29 889 **Type:** Unknown

Batch ID U96-067
Acquisition Start August 06, 1996 14 01 32
Analysis Date August 07, 1996 09 20 40
Procedure. ER Uranium samples
Device. ALP-TWO 01 08
Analysis Method ROI Analysis
Spectrum File 78356912 OXS LiveTime 43,200 00

Calibrations
Energy = 2 330E+00 +2 307E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 58 29 Std CSL# 604134 EXP 6/97
Shape not Calibrated.
Efficiency = 2 737E-01 ± 4.837E-03
Calibration Date July 11, 1996 14.48 23 Std CSL# 604134 EXP 6/97

Tracer Recovery 0 629 ± 0 021
Total Efficiency 0 172 ± 0 005

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 013 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5090 2	5363 1	5312 4	30 9
2 U234	U233	4560 4	4838 4	4768 0	25 4
3 U235	U235	4333 8	4456 9	4380 5	3 5
4 U238	U238	3845 3	4242 8	4191 3	38 8

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,246 0 ± 35 3	0 00	1 731 ± 0 049	Tracer
U234	606 0 ± 24 6	0 00	0 842 ± 0 034	Unknown
U235	31 0 ± 5 6	0 00	0 043 ± 7 73E-03	Unknown
U238	2,524 0 ± 50 3	2 00	3 506 ± 0 070	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM. PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 473 ± 0 00E+00	9 84E-03
U234	U233	1 000	2 176 ± 0 108	9 84E-03
U235	U235	1 000	0 111 ± 0 020	9 84E-03
U238	U238	1 000	9 062 ± 0 314	0 034

Activity reported as of August 06, 1996 14 01 32

ANALYSIS REVIEWED BY _____

APPROVED BY _____

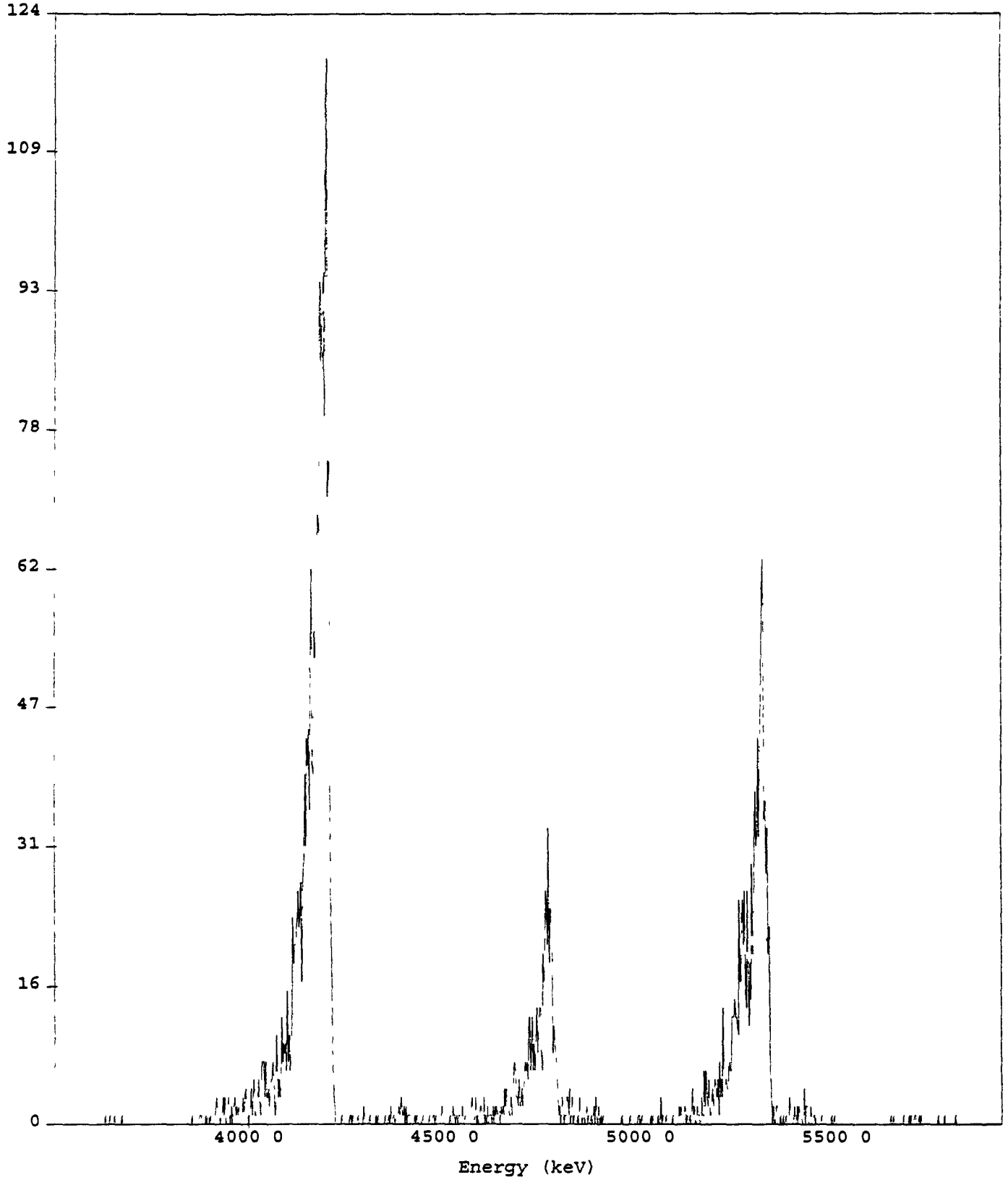
00022

353

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78356912 OXS Date 06-Aug-96 14 01 32 LT 43,200 00 RT 43,200 69
ID(6) U96-521-067 96L2181 B-29 889



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Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: U96-522-067 96L2181 B-30 889 **Type:** Unknown

Batch ID U96-067
Acquisition Start· August 06, 1996 14 01 34
Analysis Date August 07, 1996 09 23 07
Procedure ER Uranium samples
Device ALP-TWO.02 01
Analysis Method ROI Analysis
Spectrum File 78357031 OXS LiveTime 43,200 00

Calibrations
Energy = 2 265E+01 +2 190E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 28 48 Std CSL# 604135 EXP 6/97
Shape not Calibrated
Efficiency = 2 782E-01 ± 4 875E-03
Calibration Date July 11, 1996 14 13 33 Std CSL# 604135 EXP 6/97

Tracer Recovery 0 617 ± 0 021
Total Efficiency 0 172 ± 0 005

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 016 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5153 6	5366 4	5319 6	27 7
2 U234	U233	4650 4	4822 1	4776 5	21 1
3 U235	U235	4333 8	4475 4	4404 3	2 2
4 U238	U238	4074 5	4256 6	4202 8	29 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,242 0 ± 35 4	4 00	1 725 ± 0 049	Tracer
U234	423 0 ± 20 6	0 00	0 588 ± 0 029	Unknown
U235	23 0 ± 4 8	0 00	0 032 ± 6 66E-03	Unknown
U238	1,701 0 ± 41 3	2 00	2 363 ± 0 057	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 459 ± 0 00E+00	0 044
U234	U233	1 000	1 519 ± 0 086	9 87E-03
U235	U235	1 000	0 083 ± 0 017	9 87E-03
U238	U238	1 000	6 107 ± 0 228	0 034

Activity reported as of August 06, 1996 14 01 34

ANALYSIS REVIEWED BY N K Harward

APPROVED BY N K Harward

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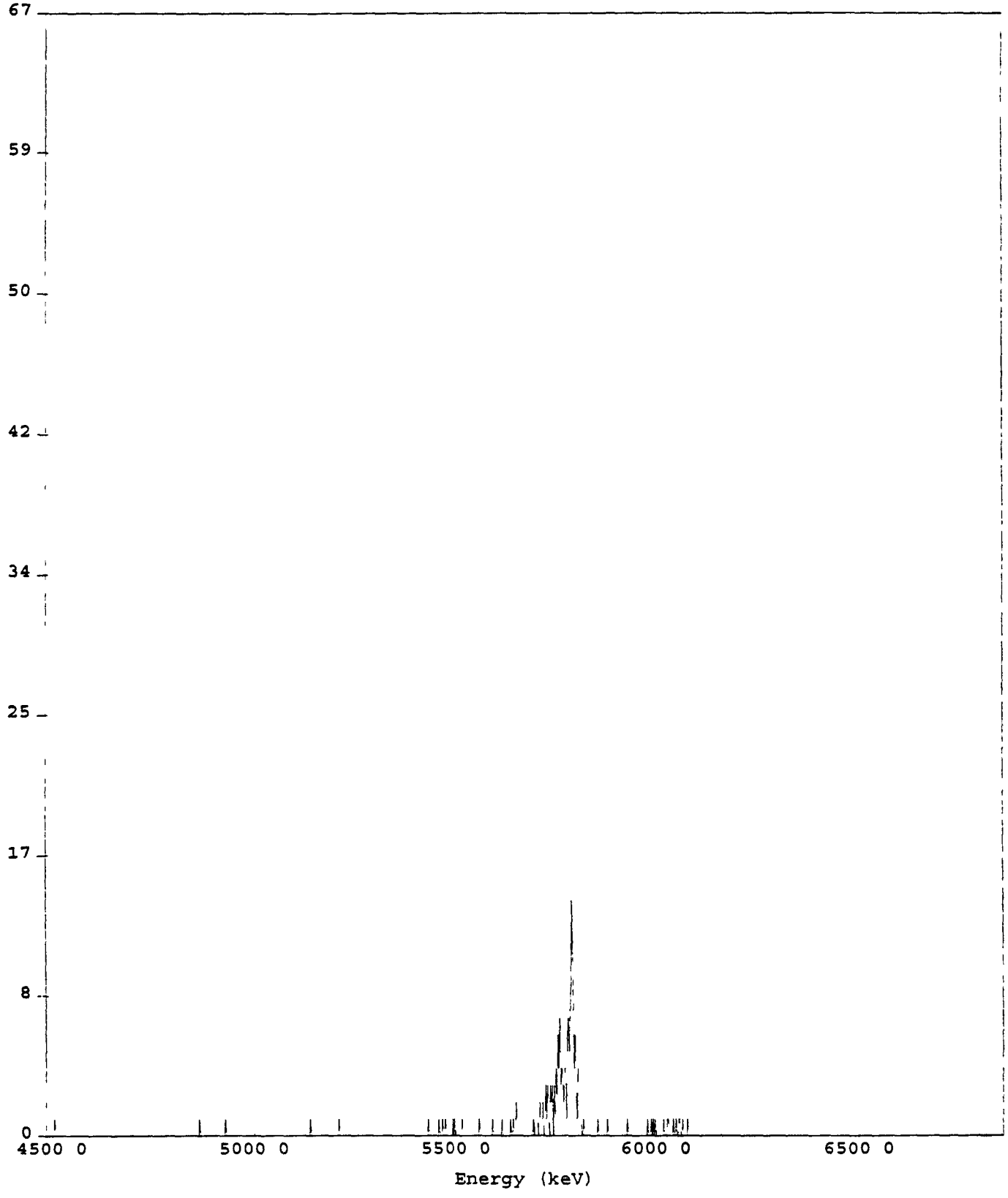
Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg 881
Monday, August 12, 1996

File(6) 78359252 OXS Date 06-Aug-96 15 04 19 LT 43,200 00 RT 43,200 64
ID(6) AM96-520-067 96L2181 B-28 889



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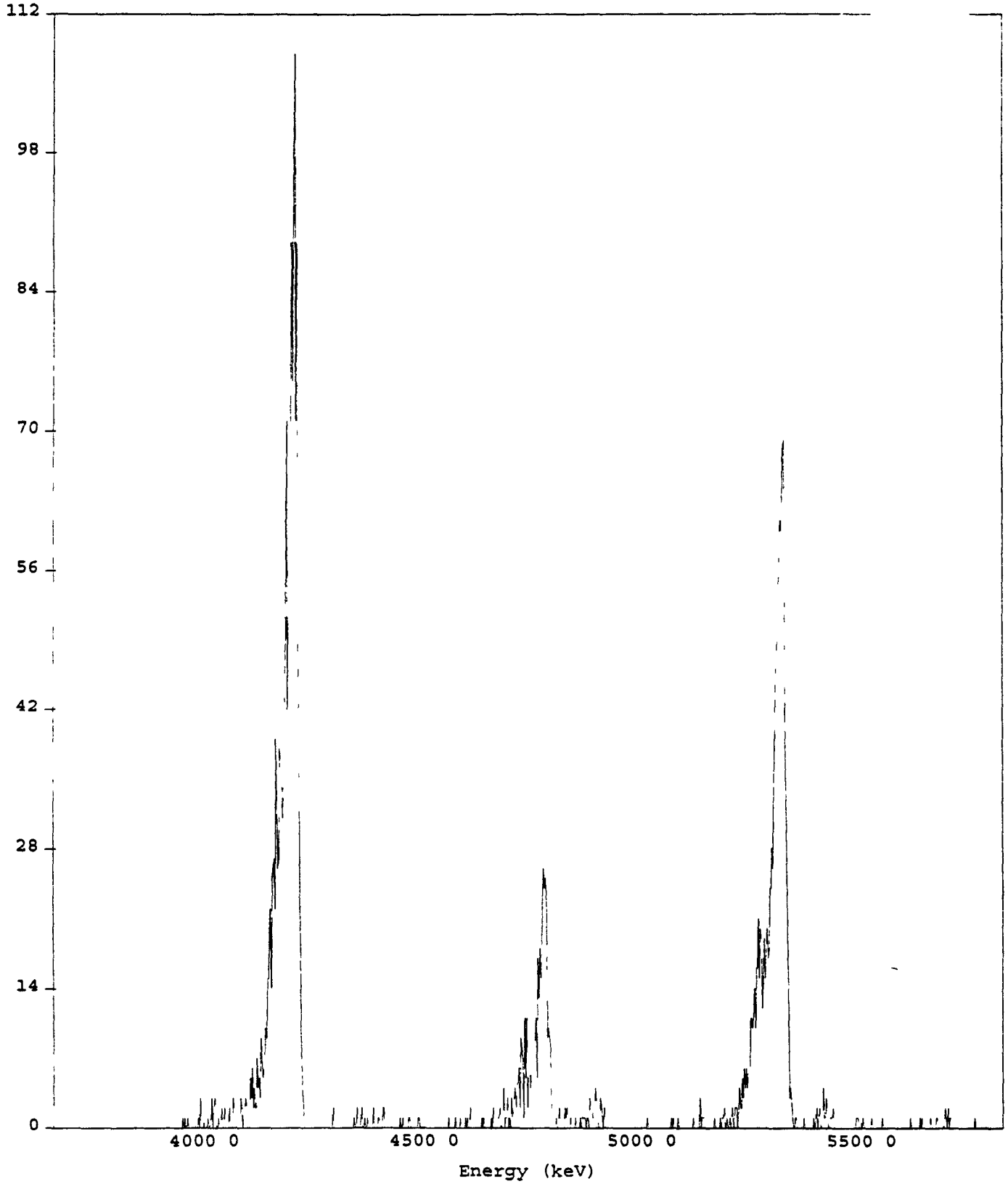
Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78357031 OXS Date 06-Aug-96 14 01 34 LT 43,200 00 RT
ID(6) U96-522-067 96L2181 B-30 889



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Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: U96-523-067 96L2181 B-32 889 **Type:** Unknown

Batch ID U96-067
Acquisition Start August 06, 1996 14 01 36
Analysis Date August 07, 1996 09 25 04
Procedure. ER Uranium samples
Device ALP-TWO 02 02
Analysis Method: ROI Analysis
Spectrum File 78357225 OXS LiveTime 43,200 00

Calibrations.
Energy = 7 384E+00 +2 197E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14·30 17 Std: CSL# 604136 EXP 6/97
Shape not Calibrated
Efficiency = 2 798E-01 ± 4 906E-03
Calibration Date July 11, 1996 14 15 09 Std CSL# 604136 EXP 6/97

Tracer Recovery 0 579 ± 0 020
Total Efficiency 0 162 ± 0 005

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 026 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5162 5	5361 8	5313 9	27 5
2 U234	U233	4659 0	4817 5	4773 3	3 2
3 U235	U235	4333 8	4475 4	4404 2	2 2
4 U238	U238	4092 5	4256 6	4199 8	17 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,172 0 ± 34 2	0 00	1 628 ± 0 048	Tracer
U234	127 0 ± 11 4	1 00	0 176 ± 0 016	Unknown
U235	5 0 ± 2 2	0 00	6 94E-03 ± 3 11E-03	Unknown
U238	195 0 ± 14 0	0 00	0 271 ± 0 019	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 415 ± 0 00E+00	0 010
U234	U233	1 000	0 478 ± 0 045	0 028
U235	U235	1 000	0 019 ± 8 44E-03	0 010
U238	U238	1 000	0 735 ± 0 057	0 010

Activity reported as of August 06, 1996 14 01 36

ANALYSIS REVIEWED BY dk Howard

APPROVED BY dk Howard

E 238 0.08 dk dk E 234 0.07 36 0101

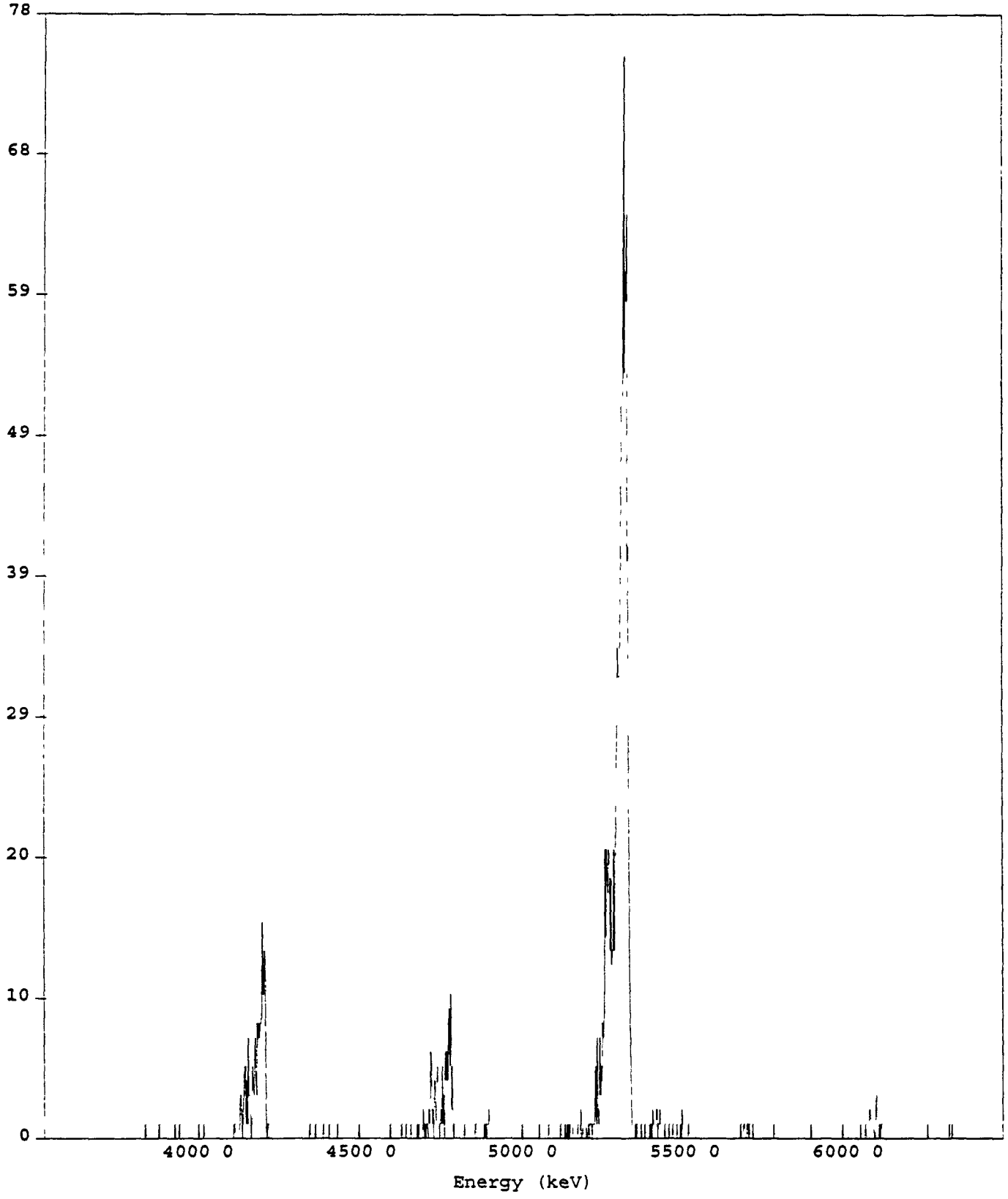
Page F1 238 0.05 F 234 0.101 00026

358

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78357225 OXS Date 06-Aug-96 14 01 36 LT 43,200 00 RT 43,201 45
ID(6) U96-523-067 96L2181 B-32 889



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358

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: **U96-524-067 96L2181 B-32 889D** **Type·** **Duplicate**

Batch ID U96-067
Acquisition Start August 06, 1996 14 01 38
Analysis Date August 07, 1996 09 26 34
Procedure ER Uranium samples
Device ALP-TWO 02 03
Analysis Method ROI Analysis
Spectrum File 78357314 OXS LiveTime 43,200 00

Calibrations
Energy = 2 053E+01 +2 190E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 31 44 Std CSL# 604137 EXP 6/97
Shape not Calibrated
Efficiency = 2 758E-01 ± 4 833E-03
Calibration Date July 11, 1996 14 16 42 Std CSL# 604137 EXP 6/97

Tracer Recovery 0 578 ± 0 020
Total Efficiency 0 159 ± 0 005

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 016 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5166 8	5383 9	5317 4	24 8
2 U234	U233	4650 4	4817 7	4772 1	6 3
3 U235	U235	4333 8	4475 4	4404 3	4 4
4 U238	U238	4074 5	4256 6	4200 6	11 7

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,154 0 ± 34 1	3 00	1 603 ± 0 047	Tracer
U234	150 0 ± 12 2	0 00	0 208 ± 0 017	Unknown
U235	9 0 ± 3 0	0 00	0 013 ± 4 17E-03	Unknown
U238	204 0 ± 14 4	2 00	0 283 ± 0 020	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1.000	4 458 ± 0 00E+00	0 042
U234	U233	1 000	0 579 ± 0 050	0 011
U235	U235	1 000	0 035 ± 0 012	0 011
U238	U238	1 000	0 788 ± 0 060	0 036

Activity reported as of August 06, 1996 14 01 38

ANALYSIS REVIEWED BY _____

APPROVED BY _____

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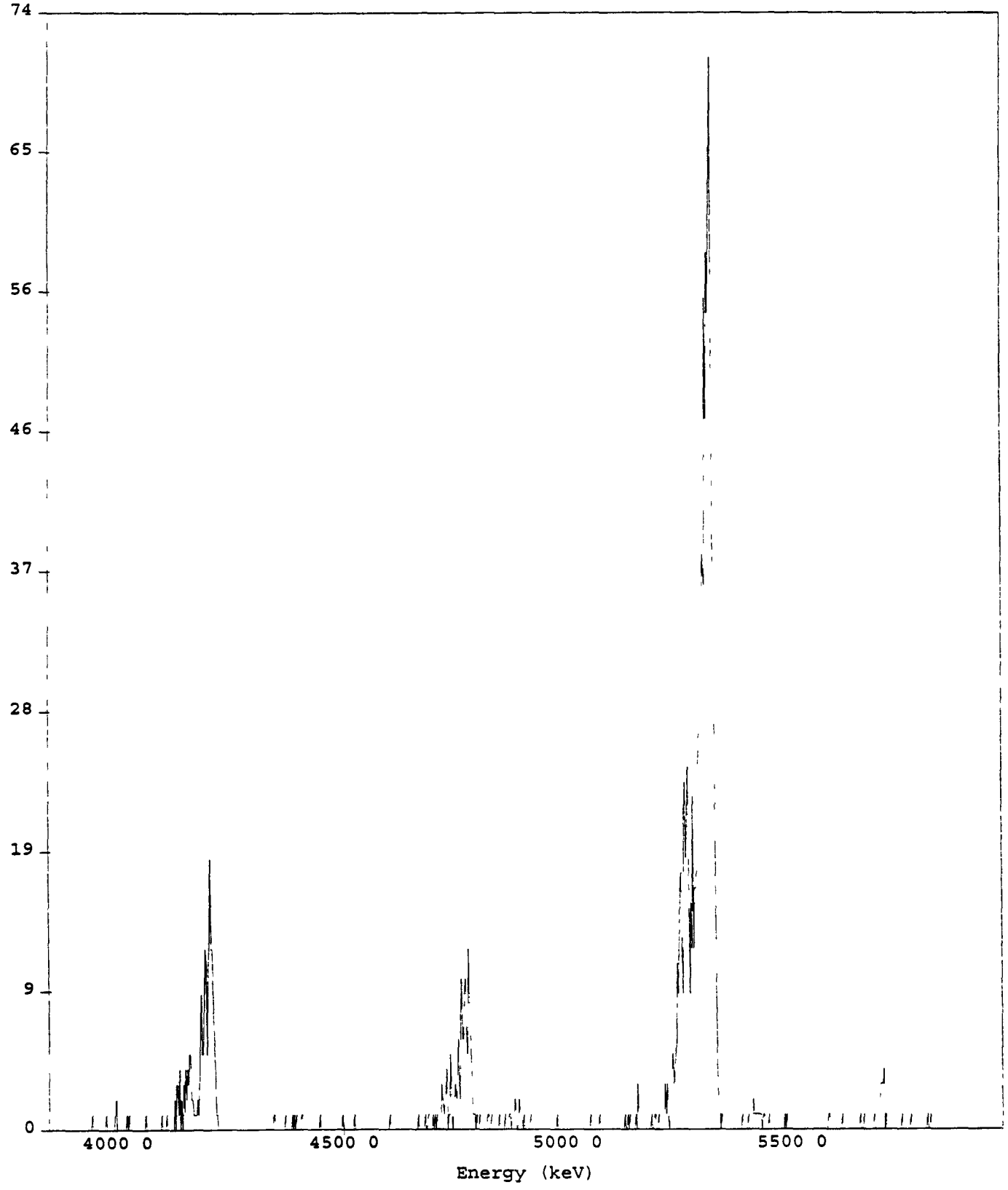
360

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg 881
Monday, August 12, 1996

le(6) 78357314 OXS Date 06-Aug-96 14 01 38 LT 43,200 00 RT 43,201 44
ID(6) U96-524-067 96L2181 B-32 889D



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361

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: U96-519-067 96L2181 B-35 889 **Type:** Unknown

Batch ID U96-067
Acquisition Start August 06, 1996 14 01 28
Analysis Date August 07, 1996 09 09 06
Procedure ER Uranium samples
Device ALP-TWO 01 06
Analysis Method ROI Analysis
Spectrum File 78356777 OXS LiveTime 43,200 00

Calibrations:
Energy = 3 138E+01 +2 340E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 55 33 Std CSL# 604132 EXP 6/97
Shape not Calibrated
Efficiency = 2 804E-01 ± 4 919E-03
Calibration Date July 11, 1996 14 45 14 Std CSL# 604132 EXP 6/97

Tracer Recovery 0 129 ± 0 008
Total Efficiency 0 036 ± 0 002

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 026 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5131 7	5404 3	5317 7	21 8
2 U234	U233	4694 2	4861 5	4770 2	4 1
3 U235	U235	4333 8	4498 8	4416 8	2 3
4 U238	U238	4089 3	4256 6	4201 5	2 9

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	261 0 ± 16 2	0 00	0 363 ± 0 022	Tracer
U234	47 0 ± 6 9	0 00	0 065 ± 9 52E-03	Unknown
U235	0 0 ± 2 0	2 00	0 00E+00 ± 2 78E-03	Unknown
U238	40 0 ± 6 3	0 00	0 056 ± 8 78E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 417 ± 0 00E+00	0 047
U234	U233	1 000	0 795 ± 0 126	0 047
U235	U235	1 000	0 00E+00 ± 0 034	0 161
U238	U238	1 000	0 677 ± 0 115	0 047

Activity reported as of August 06, 1996 14 01 28

ANALYSIS REVIEWED BY NK Howard

APPROVED BY NK Howard

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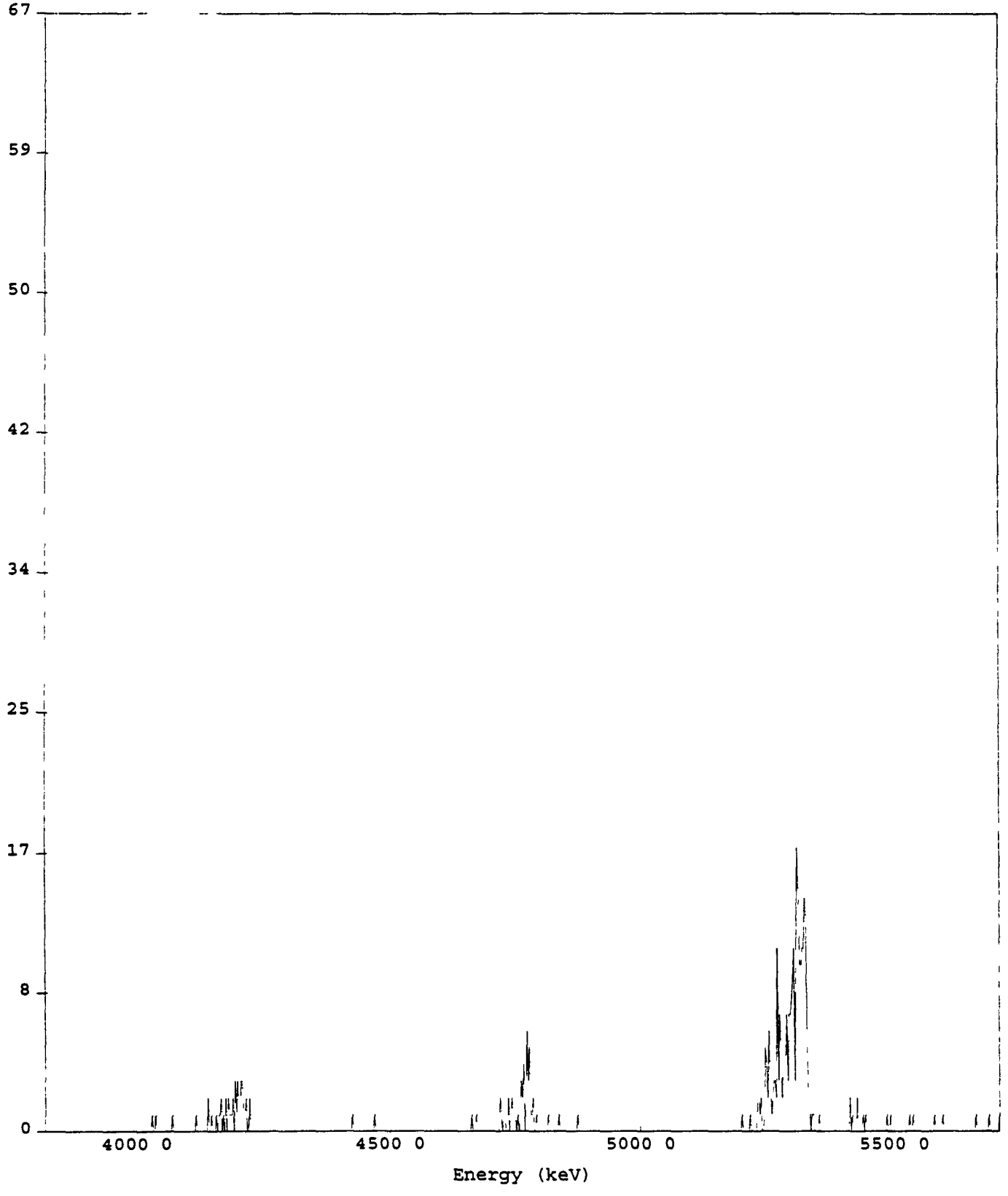
362

pic Analysis by Alpha Spectrometry

lets Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78s Date 06-Aug-96 14 01 28 LT 43,200 00 RT 43,200 75
ID(6) U96-5 2181 B-35 889



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363

Isot[illegible] [illegible]lysis by Alpha Spectrometry

Rocky Fl[illegible] [illegible]logies Site, Analytical Labs Bldg. 881
[illegible]dnesday, August 07, 1996

Sample ID: [illegible] [illegible]7 **REAGENT BLANK** **Type:** **Blank**

Batch ID	U[illegible] 7
Acquisition Start	Au[illegible] 06, 1996 14 01 39
Analysis Date	Augu[illegible] 07, 1996 09 27 44
Procedure	ER Ura[illegible]ium samples
Device	ALP-TWO 02 04
Analysis Method	ROI Analysis
Spectrum File	78357407 OXS

LiveTime 43,200 00

Calibrations
Energy = 3 105E+00 +2 197E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 33 15 Std CSL# 604138 EXP 6/97
Shape not Calibrated
Efficiency = 2 790E-01 ± 4 893E-03
Calibration Date July 11, 1996 14 18 16 Std CSL# 604138 EXP 6/97

Tracer Recovery	0 633 ± 0 021
Total Efficiency	0 177 ± 0 005
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 000 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5175 7	5383 8	5322 7	22 0
2 U234	U233	4694 2	4861 5	4777 7	4 4
3 U235	U235	4333 8	4475 4	4404 2	1 1
4 U238	U238	3960 6	4256 6	4107 6	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	1,278 0 ± 35 8	1 00	1 775 ± 0 050	Tracer
U234	6 0 ± 2 4	0 00	8 33E-03 ± 3 40E-03	Unknown
U235	0 0 ± 0 0	0 00	0 00E+00 ± 0 00E+00	Unknown
U238	4 0 ± 2 8	2 00	5 56E-03 ± 3 93E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
U232	U232	1 000	4 530 ± 0 00E+00	0 026
U234	U233	1 000	0 021 ± 8 70E-03	9 59E-03
U235	U235	1 000	0 00E+00 ± 0 00E+00	9 59E-03
U238	U238	1 000	0 014 ± 0 010	0 033

Activity reported as of August 06, 1996 14 01 39

ANALYSIS REVIEWED BY [illegible]

APPROVED BY [illegible]

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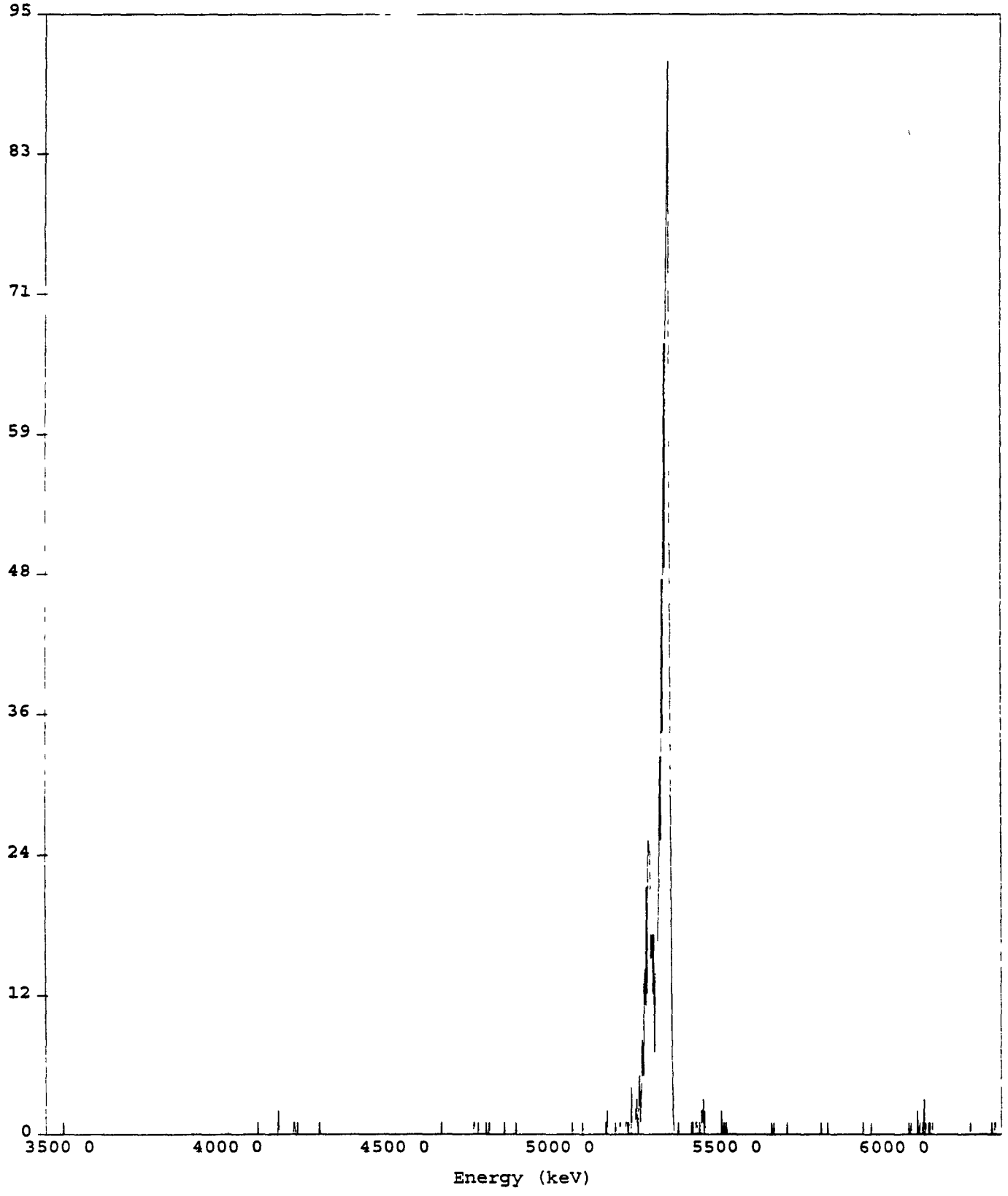
Isotopic Ana[illegible]y Alpha Spectrometry

Rocky Flats Techno[illegible]e, Analytical Labs Bldg. 881

Mon[illegible]gust 12, 1996

File(6) 78357407 OXS Date 06-Au[illegible] . 01 39 LT 43,200 00 RT 43,201 64
ID(6) U96-525-067 REAGENT BLANK



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Isotopic Analysis b[illegible] pectrometry

Rocky Flats Technologies 3[illegible] [illegible]l Labs Bldg. 881
Wednesday, A[illegible] 96

Sample ID: U96-535-068 CONTROL [illegible] **Type:** LabCntrlSamp

Batch ID U96-068
Acquisition Start August 06, 1996 19 49 [illegible]
Analysis Date August 07, 1996 10 28 [illegible]
Procedure ER Uranium samples
Device ALP-TWO 03 05
Analysis Method: ROI Analysis
Spectrum File. 78262847 OXS LiveTime 43,200 00

Calibrations
Energy = 3 555E+00 +2 197E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 14 46 35 Std CSL# 604147 EXP 6/97
Shape not Calibrated
Efficiency = 2 496E-01 ± 4 379E-03
Calibration Date July 11, 1996 14 32 23 Std CSL# 604147 EXP 6/97

Tracer Recovery 0 425 ± 0 017
Total Efficiency 0 106 ± 0 004

Original Sample Amount 1 000 ± 0 000 ml
Aliquot Amount 1 000 ± 0 000 ml

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 U232	U232	5131 7	5427 7	5323 4	24 8
2 U234	U233	4705 2	4806 5	4778 4	15 9
3 U235	U235	4333 8	4475 4	4393 9	2 5
4 U238	U238	4127 6	4212 7	4200 5	21 7

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
U232	768 0 ± 27 7	1 00	1 067 ± 0 039	Tracer
U234	776 0 ± 27 9	0 00	1 078 ± 0 039	Unknown
U235	40 0 ± 6 3	0 00	0 056 ± 8 78E-03	Unknown
U238	805 0 ± 28 4	0 00	1 118 ± 0 039	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (dpm/ml)	MDA (dpm)
U232	U232	1 000	10 056 ± 0 00E+00	0 096
U234	U233	1 000	10 161 ± 0.518	0 035
U235	U235	1 000	0 524 ± 0 085	0 035
U238	U238	1 000	10 541 ± 0 532	0 035

Activity reported as of August 06, 1996 19 49 26

ANALYSIS REVIEWED BY [illegible]

APPROVED BY [illegible]

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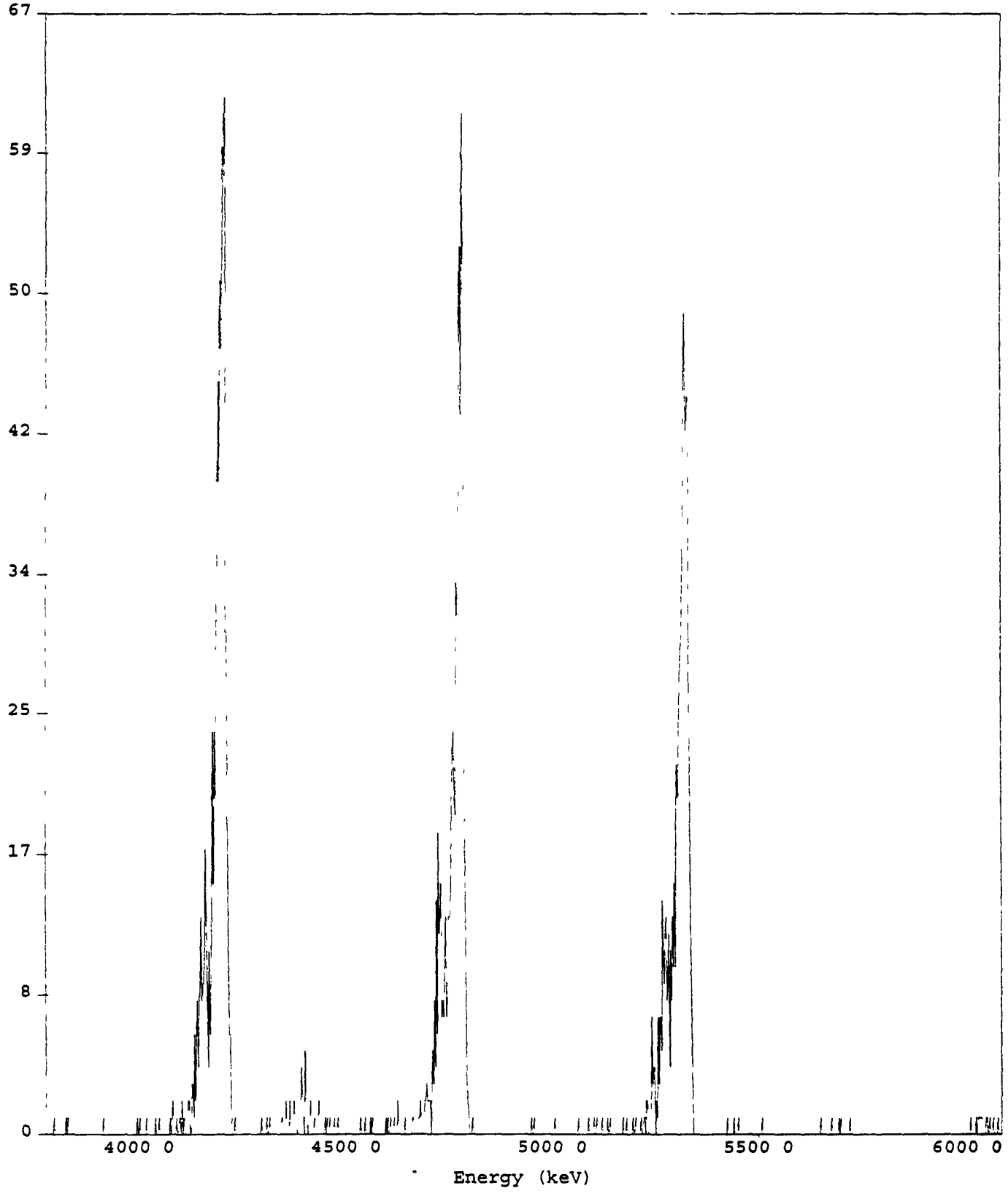
366

Isotopic Analysis by Alpha S[illegible]metry

Rocky Flats Technologies Site, Analytical [illegible] Bldg. 881

Monday, August 12, 1996

File(6) 78262847 OXS Date 06-Aug-96 19 49 26 LT 43,200 00 RT 43,200 42
ID(6) U96-535-068 CONTROL 1453



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Isotopic Analysis by Alpha Spectro...

Rocky Flats Technologies Site, Analytical Labs Bl...
Monday, August 05, 1996

Sample ID: **PU96-515-067 96L2181 BKG1 889** **Type**

Batch ID	PU96-067
Acquisition Start	August 02, 1996 21 32 22
Analysis Date	August 05, 1996 06 19 23
Procedure	ER PU SAMPLE
Device	ALP-ONE 01 01
Analysis Method	ROI Analysis
Spectrum File	77955681 OXS

LiveTime 43,_ 0 00

Calibrations
Energy = -3 531E+00 +2 197E+00 * Chn Coeff of Correlation -0 99
Calibration Date July 10, 1996 11 58 58 Std CSL# 604127 EXP 6/97
Shape not Calibrated
Efficiency = 3 941E-01 ± 6 892E-03
Calibration Date July 11, 1996 11 52 08 Std CSL# 604127 EXP 6/97

Tracer Recovery	0 780 ± 0 039
Total Efficiency	0 307 ± 0 014
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 015 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4903 0	9 0
2 Pu239	Pu240	4973 3	5201 5	5146 9	3 0
3 Pu238	Pu238	5380 4	5530 1	5454 5	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	456 0 ± 21 4	0 00	0 633 ± 0 030	Tracer
Pu239	24 0 ± 4 9	0 00	0 033 ± 6 80E-03	Unknown
Pu238	3 0 ± 2 2	1 00	4 17E-03 ± 3 11E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000	0 914 ± 0 00E+00	5 51E-03
Pu239	Pu240	1 000	0 048 ± 0 010	5 51E-03
Pu238	Pu238	1 000	6 02E-03 ± 4 49E-03	0 015

Activity reported as of August 02, 1996 21 32 22

ANALYSIS REVIEWED BY DK Hanward

APPROVED BY DK Hanward

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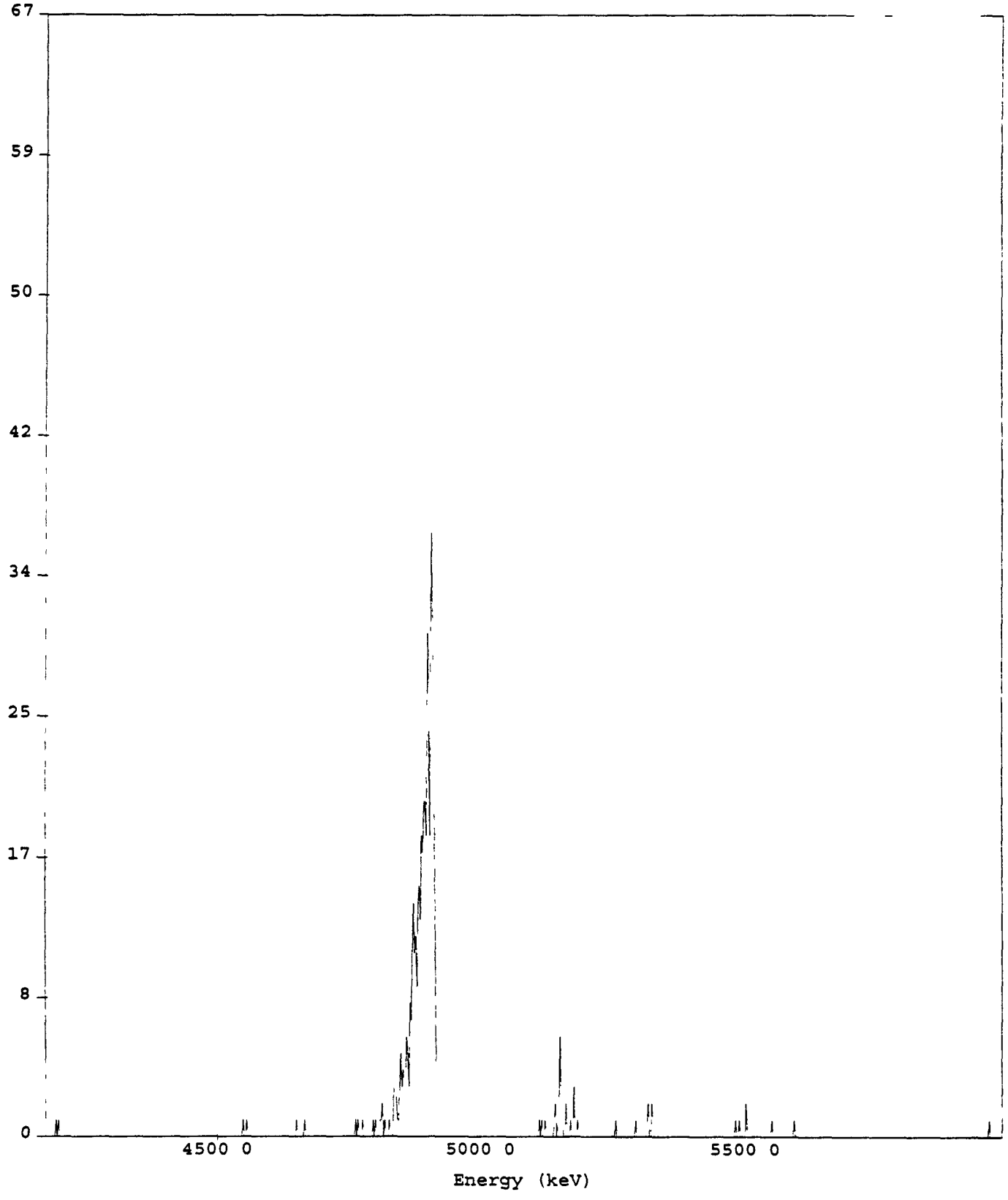
Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 77955681 OXS Date 02-Aug-96 21 32 22 LT 43,200 00 RT
ID(6) PU96-515-067 96L2181 BKG1 889



369

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 05, 1996

Sample ID: **PU96-516-067 96L2181 BKG 2 889** **Type:** **Unknown**

Batch ID PU96-067
Acquisition Start August 02, 1996 21 32 25
Analysis Date. August 05, 1996 06 19 51
Procedure ER PU SAMPLE
Device ALP-ONE 01 02
Analysis Method ROI Analysis
Spectrum File 77955920 OXS LiveTime 43,200 00

Calibrations·
Energy = 7 655E+00 +2 332E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 11 59·34 Std CSL# 604128 EXP 6/97
Shape not Calibrated
Efficiency = 3 825E-01 ± 6 681E-03
Calibration Date July 11, 1996 12 02 46 Std CSL# 604128 EXP 6/97

Tracer Recovery 0 590 ± 0 034
Total Efficiency 0 226 ± 0 012

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 020 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4904 1	17 3
2 Pu239	Pu240	4973 3	5201 5	5088 3	2 3
3 Pu238	Pu238	5380 4	5530 1	5454 4	1 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	335 0 ± 18 4	1 00	0 465 ± 0 025	Tracer
Pu239	6 0 ± 2 4	0 00	8 33E-03 ± 3 40E-03	Unknown
Pu238	0 0 ± 0 0	0 00	0 00E+00 ± 0 00E+00	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000		0 909 ± 0 00E+00	0 020
Pu239	Pu240	1 000		0 016 ± 6 71E-03	7 50E-03
Pu238	Pu238	1 000		0 00E+00 ± 0 00E+00	7 50E-03

Activity reported as of August 02, 1996 21 32 25

ANALYSIS REVIEWED BY JK Howard

APPROVED BY JK Howard

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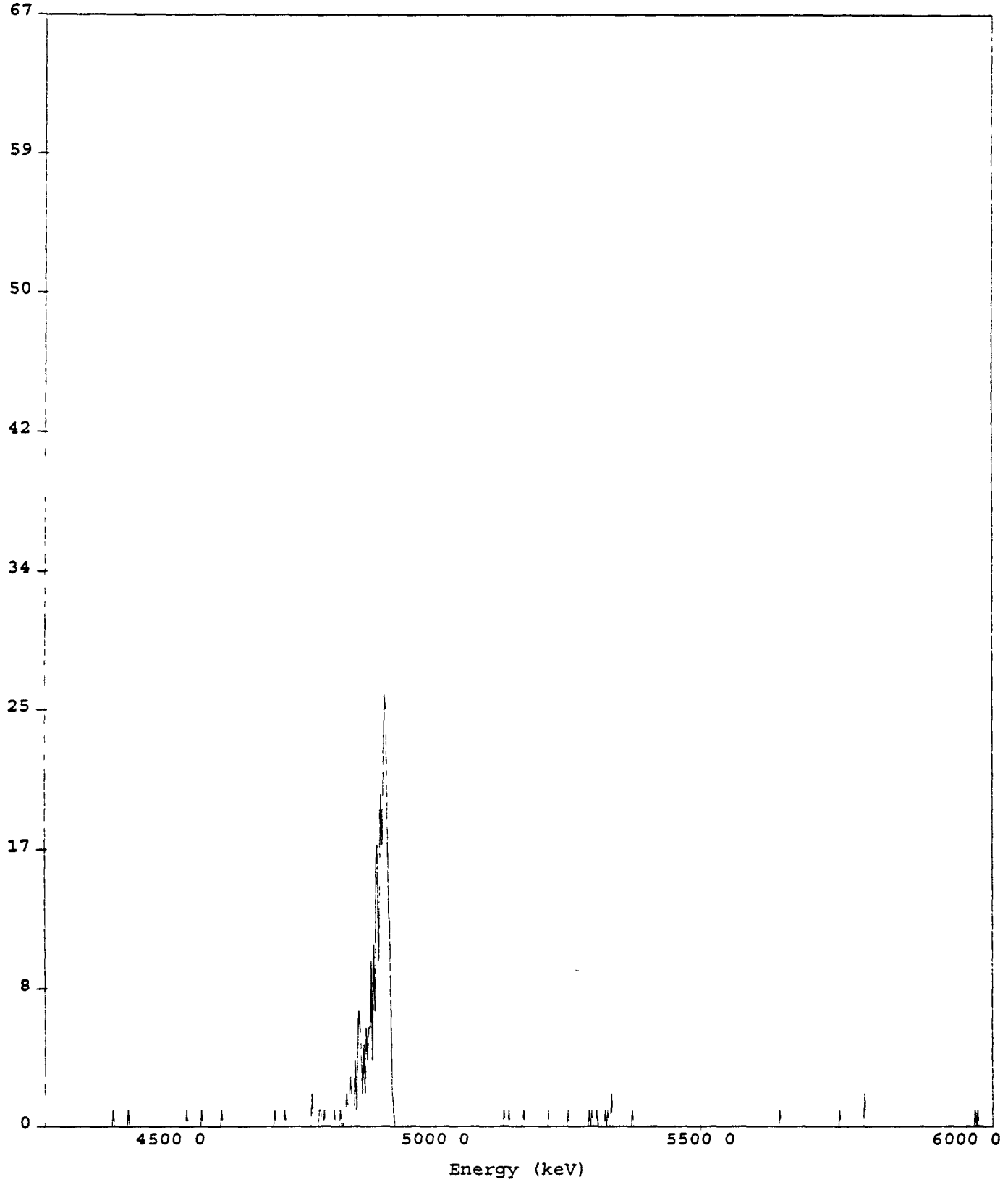
370

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg 881
Monday, August 12, 1996

File(6) 77955920 OXS Date 02-Aug-96 21 32 25 LT 43,200 00 RT 43,200 95
ID(6) PU96-516-067 96L2181 BKG 2 889



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Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 05, 1996

Sample ID: **PU96-518-067 96L2181 B-4 889** **Type:** **Unknown**

Batch ID PU96-067
Acquisition Start August 02, 1996 21 32 30
Analysis Date August 05, 1996 06 20 27
Procedure ER PU SAMPLE
Device ALP-ONE 01 04
Analysis Method ROI Analysis
Spectrum File 77956178 OXS LiveTime 43,200 00

Calibrations
Energy = -2 037E+00 +2 315E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 00 46 Std CSL# 604130 EXP 6/97
Shape not Calibrated
Efficiency = 3 834E-01 ± 6 697E-03
Calibration Date July 11, 1996 12 03 59 Std CSL# 604130 EXP 6/97

Tracer Recovery 0 863 ± 0 042
Total Efficiency 0 331 ± 0 015

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 018 ± 0 000 gdry

ROI DATA

ROI ID #		ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1	Pu242trac	Pu242	4590 0	4933 2	4898 9	10 2
2	Pu239	Pu240	4973 3	5201 5	5139 7	11 6
3	Pu238	Pu238	5380 4	5530 1	5454 6	2 3

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	491 0 ± 22 2	1 00	0 682 ± 0 031	Tracer
Pu239	45 0 ± 6 9	1 00	0 063 ± 9 52E-03	Unknown
Pu238	1 0 ± 1 7	1 00	1 39E-03 ± 2 41E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000		0 912 ± 0 00E+00	0 014
Pu239	Pu240	1 000		0 084 ± 0 013	0 014
Pu238	Pu238	1 000		1 86E-03 ± 3 22E-03	0 014

Activity reported as of August 02, 1996 21 32 30

ANALYSIS REVIEWED BY D K Hammond

APPROVED BY D K Hammond

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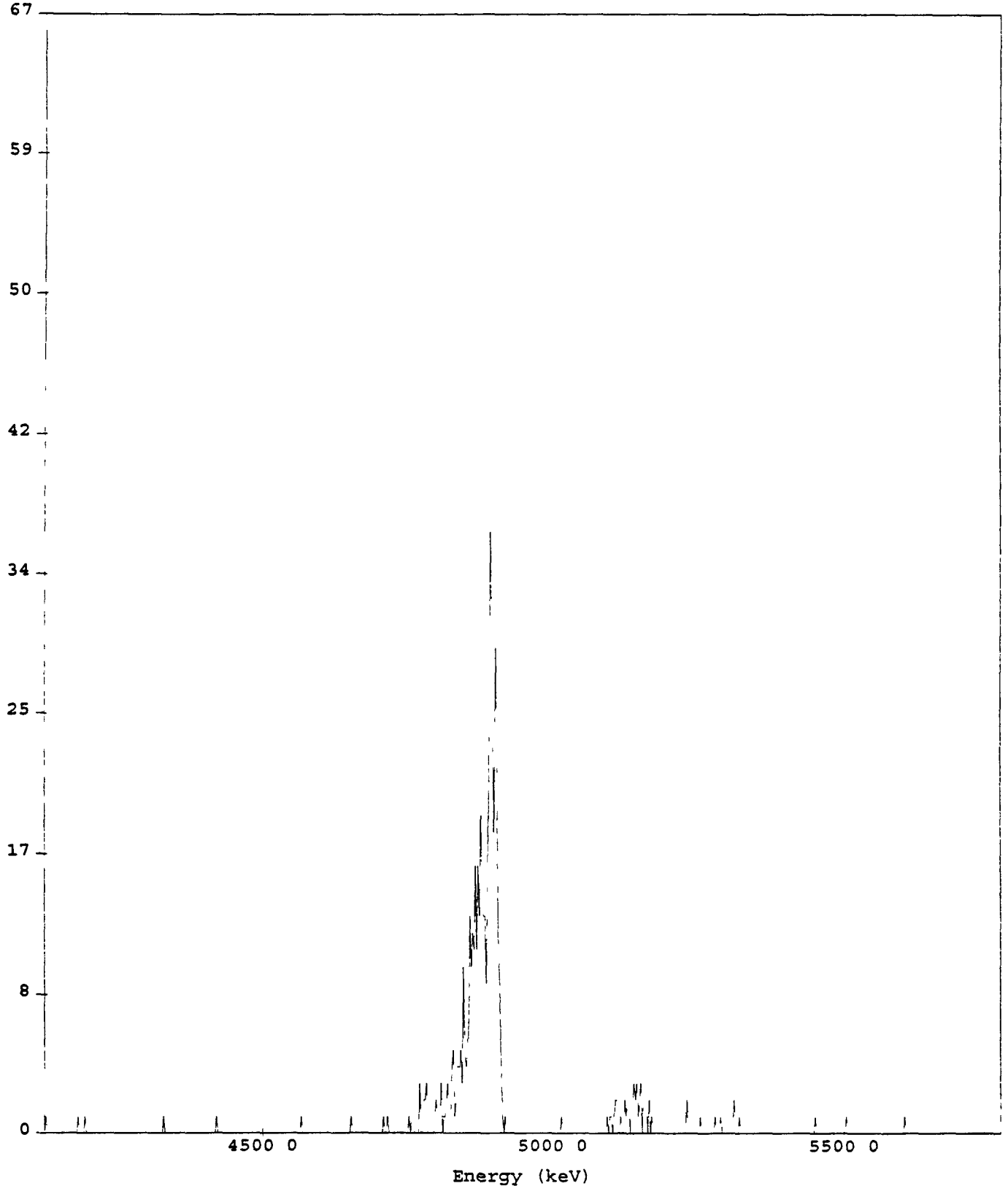
372

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 77956178 OXS Date 02-Aug-96 21 32 30 LT 43,200 00 RT 43,200 88
ID(6) PU96-518-067 96L2181 B-4 889



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Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 05, 1996

Sample	PU96-517-067 96L2181 B-5 889	Type:	Unknown
Batch ID	PU96-067		
Acquisition Start	August 02, 1996 21 32 28		
Analysis Date	August 05, 1996 06 20 08		
Procedure	ER PU SAMPLE		
Device	ALP-ONE 01 03		
Analysis Method	ROI Analysis		
Spectrum File	77956007 OXS	LiveTime	43,200 00

Calibrations
Energy = 1 452E+01 +2 235E+00 * Chn Coeff of Correlation -0 999
Calibration Date. July 10, 1996 12 00 10 Std CSL# 604129 EXP 6/97
Shape not Calibrated
Efficiency = 3 756E-01 ± 6 566E-03
Calibration Date July 11, 1996 12 03 23 Std CSL# 604129 EXP 6/97

Tracer Recovery	0 788 ± 0 040	
Total Efficiency	0 296 ± 0 014	
Original Sample Amount	1 000 ± 0 000	gdry
Aliquot Amount	1 013 ± 0 000	gdry

ROI DATA

ROI ID #		ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1	Pu242trac	Pu242	4590 0	4933 2	4902 7	13 1
2	Pu239	Pu240	4973 3	5201 5	5148 6	6 9
3	Pu238	Pu238	5380 4	5530 1	5454 8	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	439 0 ± 21 0	0 00	0 610 ± 0 029	Tracer
Pu239	58 0 ± 7 7	1 00	0 081 ± 0 011	Unknown
Pu238	4 0 ± 2 4	1 00	5 56E-03 ± 3 40E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000		0 916 ± 0 00E+00	5 72E-03
Pu239	Pu240	1 000		0 121 ± 0 017	0 016
Pu238	Pu238	1 000		8 34E-03 ± 5 12E-03	0 016

Activity reported as of August 02, 1996 21 32 28

ANALYSIS REVIEWED BY JK Howard

APPROVED BY JK Howard

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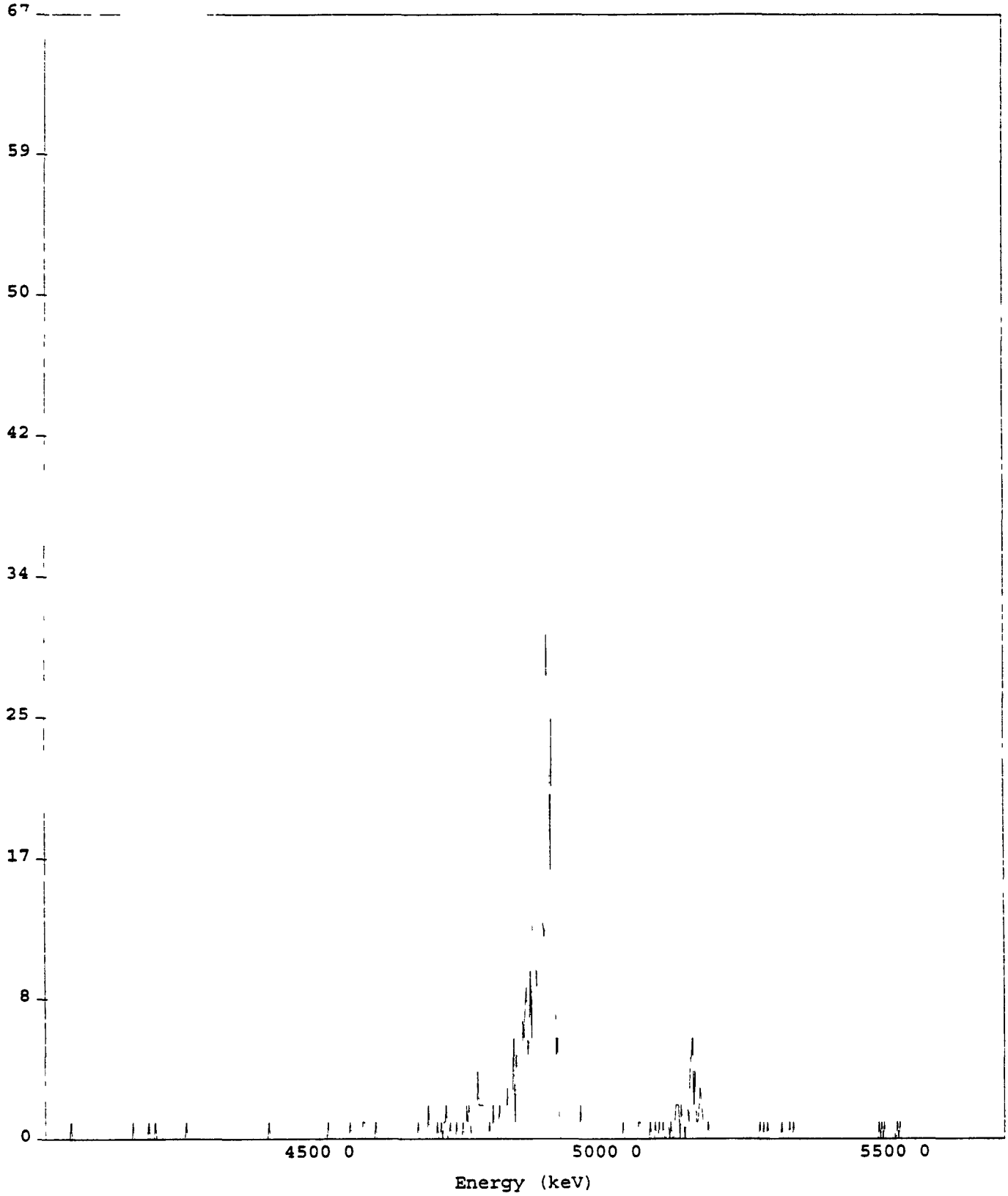
...pic Analysis by Alpha Spectrometry

...lats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 7... Date 02-Aug-96 21 32 28 LT 43,200 00 RT 43,200 90
ID(6) PU36 ...6L2181 B-5 889



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375

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 05, 1996

Sample ID: PU95 520 067 96L2181 B-28 889 **Type:** Unknown

Batch ID	PU96 067
Acquisition Start	August 02, 1996 21 32 34
Analysis Date	August 05, 1996 06 21 14
Procedure	ER PU SAMPLE
Device	ALP-ONE 01 06
Analysis Method	ROI Analysis
Spectrum File	77956331 OXS

LiveTime 43,200 00

Calibrations
Energy = 7 800E+00 +2 365E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 01 57 Std CSL# 604132 EXP 6/97
Shape not Calibrated
Efficiency = 3 749E-01 ± 6 555E-03
Calibration Date July 11, 1996 12 05 13 Std CSL# 604132 EXP 6/97

Tracer Recovery	0 942 ± 0 044
Total Efficiency	0 353 ± 0 015
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 019 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4904 4	23 1
2 Pu239	Pu240	4973 3	5201 5	5157 5	4 9
3 Pu238	Pu238	5380 4	5530 1	5455 5	3 5

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	524 0 ± 22 9	1 00	0 728 ± 0 032	Tracer
Pu239	32 0 ± 5 7	0 00	0 044 ± 7 86E-03	Unknown
Pu238	8 0 ± 3 2	1 00	0 011 ± 4 39E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000	0 911 ± 0 00E+00	0 013
Pu239	Pu240	1 000	0 056 ± 0 010	4 79E-03
Pu238	Pu238	1 000	0 014 ± 5 53E-03	0 013

Activity reported as of August 02, 1996 21 32 34

ANALYSIS REVIEWED BY [signature]

APPROVED BY [signature]

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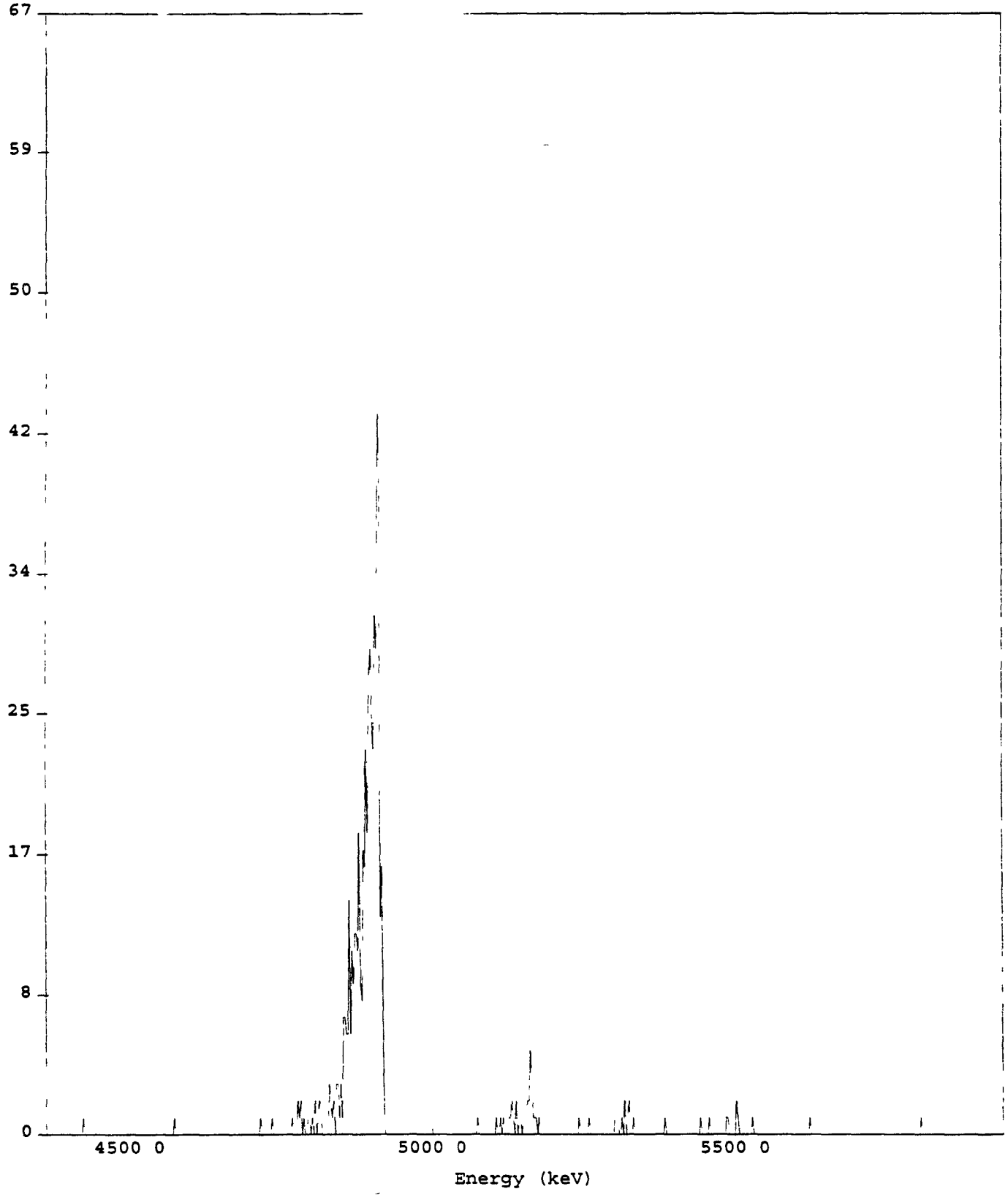
376

Isotopic An Alpha Spectrometry
Rocky Flats Tech , Analytical Labs Bldg. 881
  t 12, 1996

File(6) 77956331 OXS Date 02- 2 34 LT 43,200 00 RT 43,201 07
ID(6) PU96-520-067 96L2181 B-28



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377

Isotopic Analysis by [illegible] Spectrometry

Rocky Flats Technologies Site [illegible] cal Labs Bldg 881
Monday, Augus[illegible] 1996

Sample ID: **PU96-521-067 96L2181 B-2** [illegible] **Type.** **Unknown**

Batch ID	PU96-067
Acquisition Start	August 02, 1996 21 32 36
Analysis Date	August 05, 1996 06 21 33
Procedure	ER PU SAMPLE
Device	ALP-ONE 01 07
Analysis Method	ROI Analysis
Spectrum File	77956395 OXS

LiveTime 43,200 00

Calibrations
Energy = 1 898E+01 +2 205E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 02 33 Std CSL# 604133 EXP 6/97
Shape not Calibrated
Efficiency = 3 906E-01 ± 6 833E-03
Calibration Date July 11, 1996 12 05 50 Std CSL# 604133 EXP 6/97

Tracer Recovery	0 889 ± 0 042
Total Efficiency	0 347 ± 0 015
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 013 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4871 6	22 8
2 Pu239	Pu240	4973 3	5201 5	5087 7	3 3
3 Pu238	Pu238	5380 4	5530 1	5455 9	3 3

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	515 0 ± 22 7	1 00	0 715 ± 0 032	Tracer
Pu239	9 0 ± 3 9	3 00	0 013 ± 5 38E-03	Unknown
Pu238	1 0 ± 1 7	1 00	1 39E-03 ± 2 41E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000		0 916 ± 0 00E+00	0 013
Pu239	Pu240	1 000		0 016 ± 6 93E-03	0 019
Pu238	Pu238	1 000		1 78E-03 ± 3 08E-03	0 013

Activity reported as of August 02, 1996 21 32 36

ANALYSIS REVIEWED BY K Harward

APPROVED BY K Harward

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378

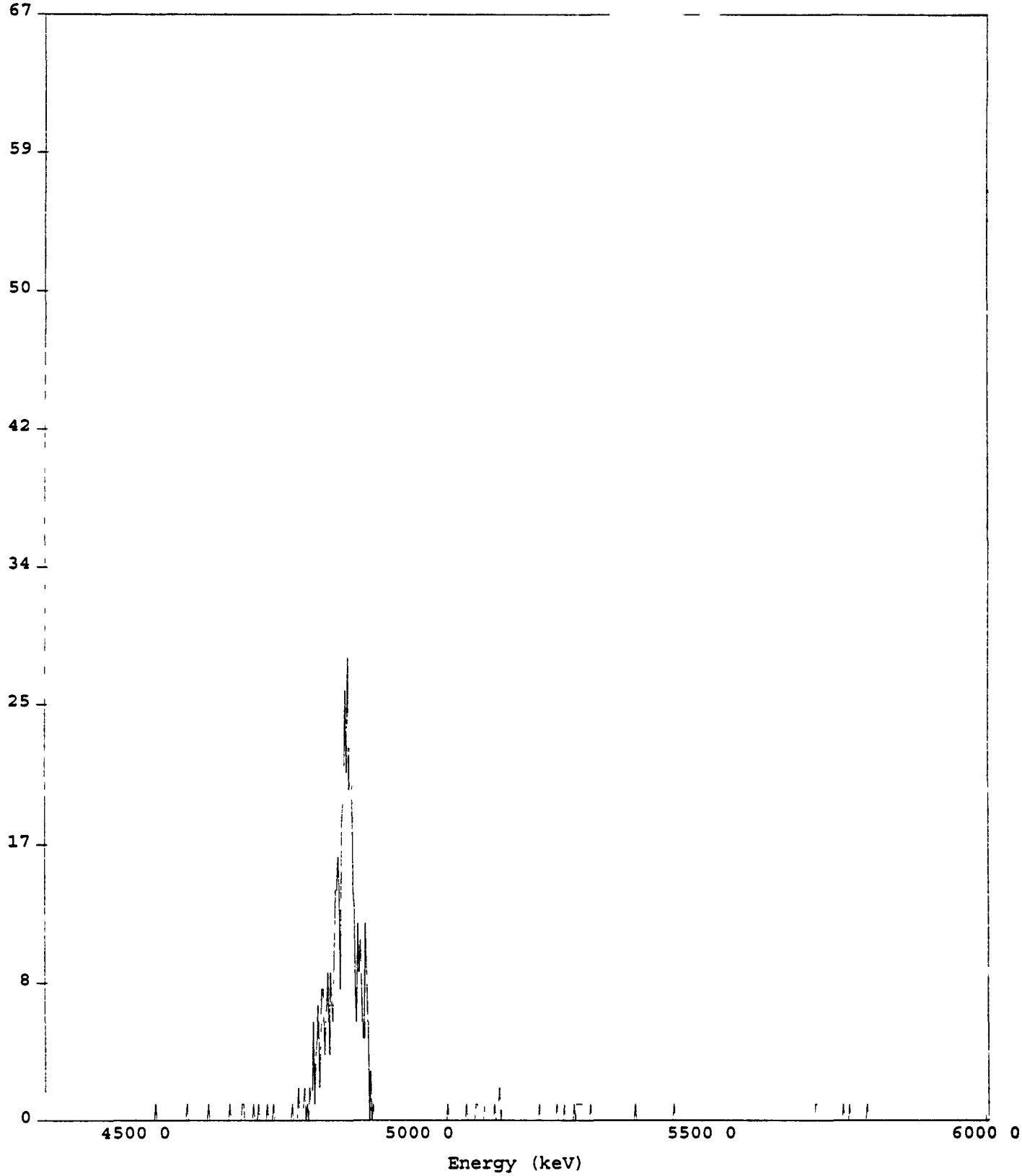
Isotopic Analysis by Alpha Spectroscopy

Rocky Flats Technologies Site, Analytical Bldg. 881

Monday, August 12, 1996

File(6) 77956395 OXS Date 02-Aug-96 21 32 36 LT 0 RT 43,200 92

ID(6) PU96-521-067 96L2181 B-29 889



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379

Isotopic Analysis by Alpha Spectr...

Rocky Flats Technologies Site, Analytical Labs
Monday, August 05, 1996

Sample ID: PU96-522-067 96L2181 B-30 889 **Type:**

Batch ID	PU96-067
Acquisition Start	August 02, 1996 21 32 38
Analysis Date	August 05, 1996 06 21 53
Procedure	ER PU SAMPLE
Device	ALP-ONE 01 08
Analysis Method	ROI Analysis
Spectrum File	77956456 OXS

LiveTime 43 200 00

Calibrations
Energy = -9 600E-01 +2 227E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 03 09 Std CSL# 604134 EXP 6/97
Shape not Calibrated
Efficiency = 3 808E-01 ± 6 706E-03
Calibration Date July 11, 1996 12 06 27 Std CSL# 604134 EXP 6/97

Tracer Recovery	0 763 ± 0 039
Total Efficiency	0 291 ± 0 014
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 016 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4901 7	16 0
2 Pu239	Pu240	4973 3	5201 5	5086 6	2 2
3 Pu238	Pu238	5380 4	5530 1	5454 1	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	431 0 ± 20 8	1 00	0 599 ± 0 029	Tracer
Pu239	3 0 ± 3 0	3 00	4 17E-03 ± 4 17E-03	Unknown
Pu238	0 0 ± 2 4	3 00	0 00E+00 ± 3 40E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000	0 913 ± 0 00E+00	0 016
Pu239	Pu240	1 000	6 36E-03 ± 6 37E-03	0 023
Pu238	Pu238	1 000	0 00E+00 ± 5 19E-03	0 023

Activity reported as of August 02, 1996 21 32 38

ANALYSIS REVIEWED BY WK Harward

APPROVED BY WK Harward

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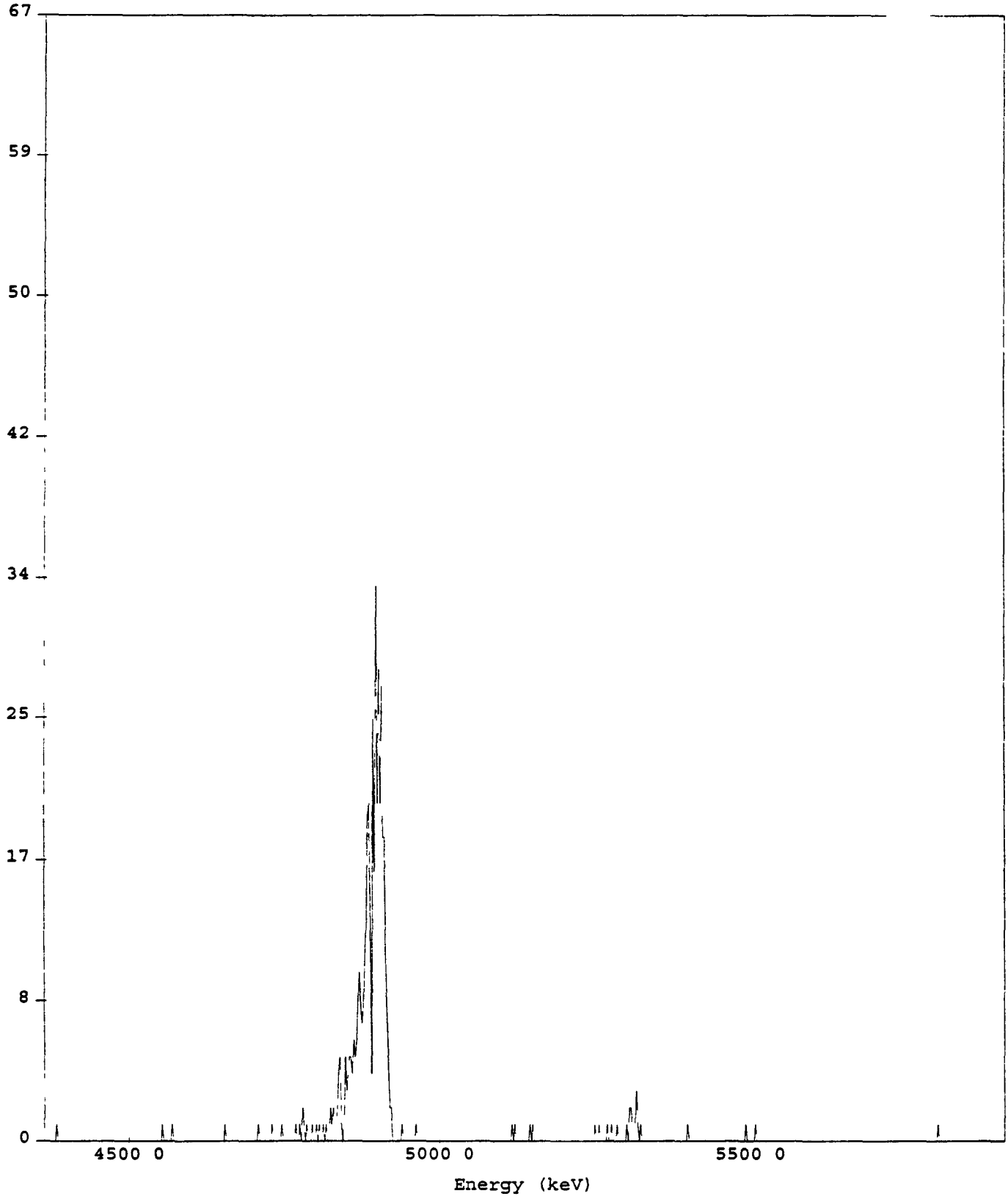
380

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 77956456 OXS Date 02-Aug-96 21 32 38 LT 43,200 00 RT 43 [illegible] 25
ID(6) PU96-522-067 96L2181 B-30 889



[illegible]

381

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 05, 1996

Sample ID: PU96-523-067 96L2181 B-32 889 **Type** Unknown

Batch ID PU96-067
Acquisition Start August 02, 1996 21 32 41
Analysis Date August 05, 1996 06 22 17
Procedure ER PU SAMPLE
Device ALP-ONE 02 01
Analysis Method ROI Analysis
Spectrum File. 77956510 OXS LiveTime 43,200 00

Calibrations
Energy = 1 071E+01 +2 251E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 03 46 Std· CSL# 604135 EXP 6/97
Shape not Calibrated
Efficiency = 3 830E-01 ± 6 689E-03
Calibration Date July 11, 1996 11 52 45 Std CSL# 604135 EXP 6/97

Tracer Recovery 0 799 ± 0 040
Total Efficiency 0 306 ± 0 014

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 026 ± 0 000 gdry

ROI DATA

ROI ID #		ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1	Pu242trac	Pu242	4590 0	4933 2	4901 6	15 3
2	Pu239	Pu240	4973 3	5201 5	5086.2	2 3
3	Pu238	Pu238	5380 4	5530 1	5455 3	2 3

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	454 0 ± 21 3	0 00	0 631 ± 0 030	Tracer
Pu239	7 0 ± 3 6	3 00	9 72E-03 ± 5 01E-03	Unknown
Pu238	3 0 ± 2 2	1 00	4 17E-03 ± 3 11E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000		0 904 ± 0 00E+00	5 53E-03
Pu239	Pu240	1 000		0 014 ± 7 21E-03	0 022
Pu238	Pu238	1 000		5 98E-03 ± 4 46E-03	0 015

Activity reported as of August 02, 1996 21 32 41

ANALYSIS REVIEWED BY [signature]

APPROVED BY [signature]

Dups pass!

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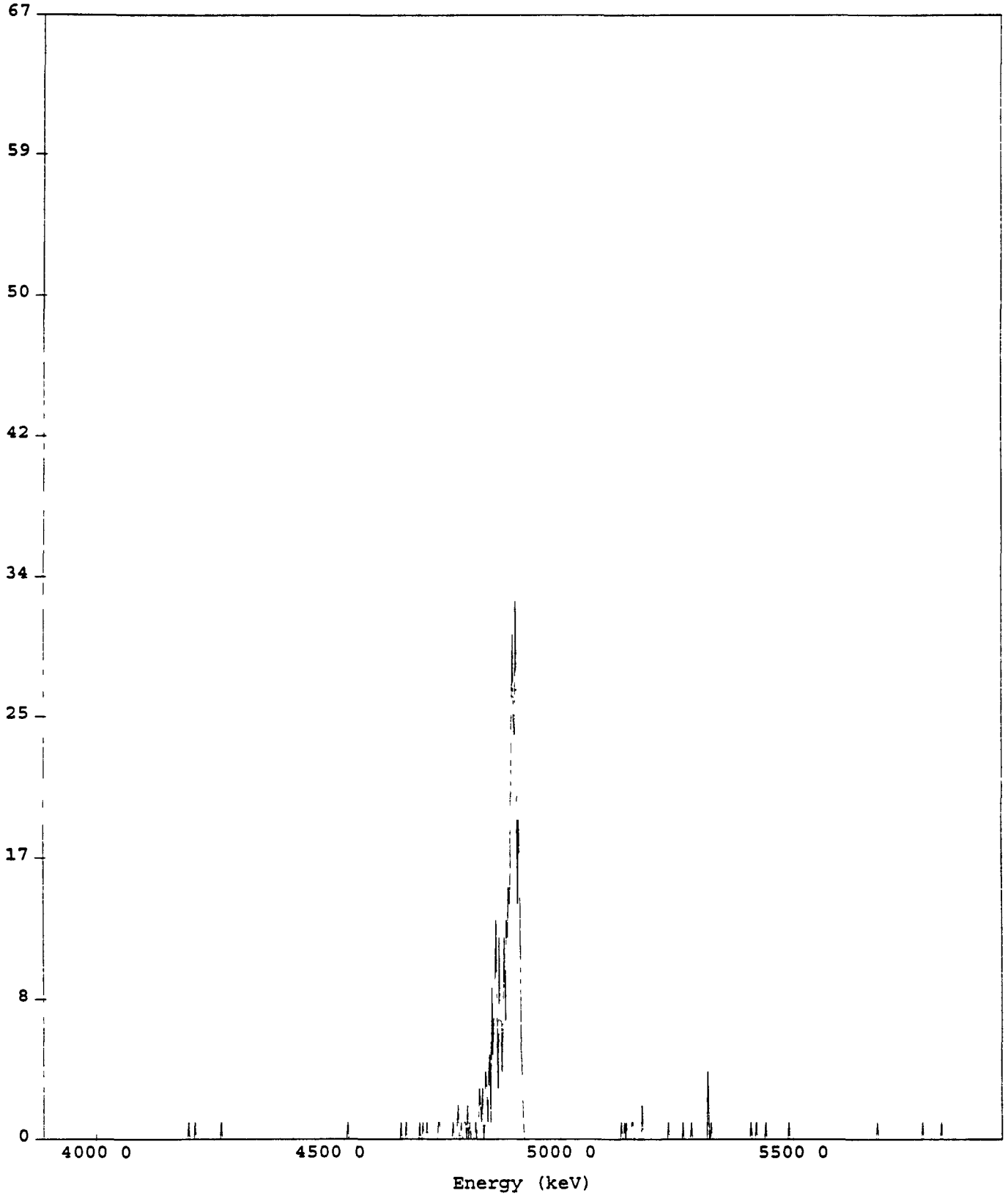
382

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 77956510 OXS Date 02-Aug-96 21 32 41 LT 43,200 00 RT 43,201 72
ID(6) PU96-523-067 96L2181 B-32 889



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383

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 05, 1996

Sample ID: **PU96-524-067 96L2181 B-32D 889** **Type:** **Unknown**

Batch ID PU96-067
Acquisition Start August 02, 1996 21 32 42
Analysis Date August 05, 1996 06 22 37
Procedure ER PU SAMPLE
Device ALP-ONE 02 02
Analysis Method ROI Analysis
Spectrum File 77956612 OXS LiveTime 43,200 00

Calibrations.
Energy = 1 558E+01 +2 392E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 05 29 Std CSL# 604136 EXP 6/97
Shape not Calibrated
Efficiency = 3 903E-01 ± 6 821E-03
Calibration Date July 11, 1996 11 53 21 Std CSL# 604136 EXP 6/97

Tracer Recovery 0 819 ± 0 040
Total Efficiency 0 320 ± 0 015

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 016 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4901 9	18 9
2 Pu239	Pu240	4973 3	5201 5	5086 1	3 0
3 Pu238	Pu238	5380 4	5530 1	5485 5	3 0

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	474 0 ± 21 8	0 00	0 658 ± 0 030	Tracer
Pu239	7 0 ± 3 0	1 00	9 72E-03 ± 4 17E-03	Unknown
Pu238	21 0 ± 4 8	1 00	0 029 ± 6 66E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000	0 913 ± 0 00E+00	5 30E-03
Pu239	Pu240	1 000	0 013 ± 5 81E-03	0 014
Pu238	Pu238	1 000	0 040 ± 9 42E-03	0 014

Activity reported as of August 02, 1996 21 32 42

ANALYSIS REVIEWED BY NK Hamward

APPROVED BY NK Hamward

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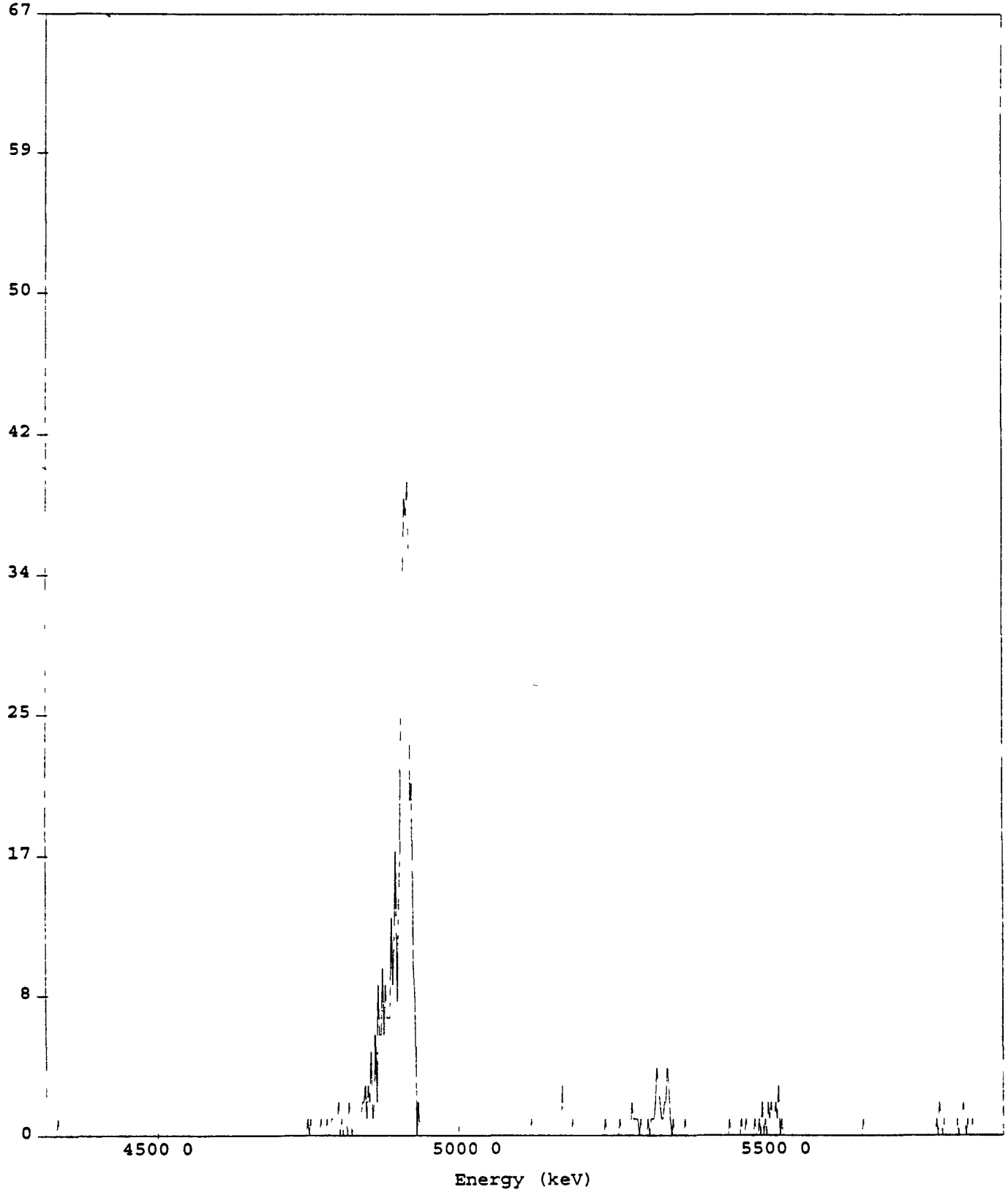
384

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg 881
Monday, August 12, 1996

ıle(6) 77956612 OXS Date 02-Aug-96 21 32 42 LT 43,200 00 RT 43,201 82
ıD(6) PU96-524-067 96L2181 B-32D 889



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335

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 05, 1996

PU96-519-067 96L2181 B-35 889 Type: Unknown

[illegible] ID	PU96-067
[illegible]tion Start	August 02, 1996 21 32 32
A[illegible]is Date	August 05, 1996 06 20 58
P[illegible]e	ER PU SAMPLE
De[illegible]	ALP-ONE 01 05
Analysis Method	ROI Analysis
Spectrum File	77956272 OXS

LiveTime 43,200 00

Calibrations
Energy = 1 234E+00 +2 235E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 01 22 Std CSL# 604131 EXP 6/97
Shape not Calibrated
Efficiency = 3 943E-01 ± 6 899E-03
Calibration Date July 11, 1996 12 04 36 Std CSL# 604131 EXP 6/97

Tracer Recovery	0 198 ± 0 019
Total Efficiency	0 078 ± 0 007
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 026 ± 0 000 gdry

ROI DATA

ROI #	ID	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1	Pu242trac	Pu242	4590 0	4933 2	4902 7	6 4
2	Pu239	Pu240	4973 3	5201 5	5088 2	2 2
3	Pu238	Pu238	5380 4	5530 1	5454 8	1 1

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	116 0 ± 10 8	0 00	0 161 ± 0 015	Tracer
Pu239	6 0 ± 2 4	0 00	8 33E-03 ± 3 40E-03	Unknown
Pu238	2 0 ± 1 4	0 00	2 78E-03 ± 1 96E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000		0 905 ± 0 00E+00	0 022
Pu239	Pu240	1 000		0 047 ± 0 020	0 022
Pu238	Pu238	1 000		0 016 ± 0 011	0 022

Activity reported as of August 02, 1996 21 32 32

ANALYSIS REVIEWED BY DK Howard

APPROVED BY DK Howard

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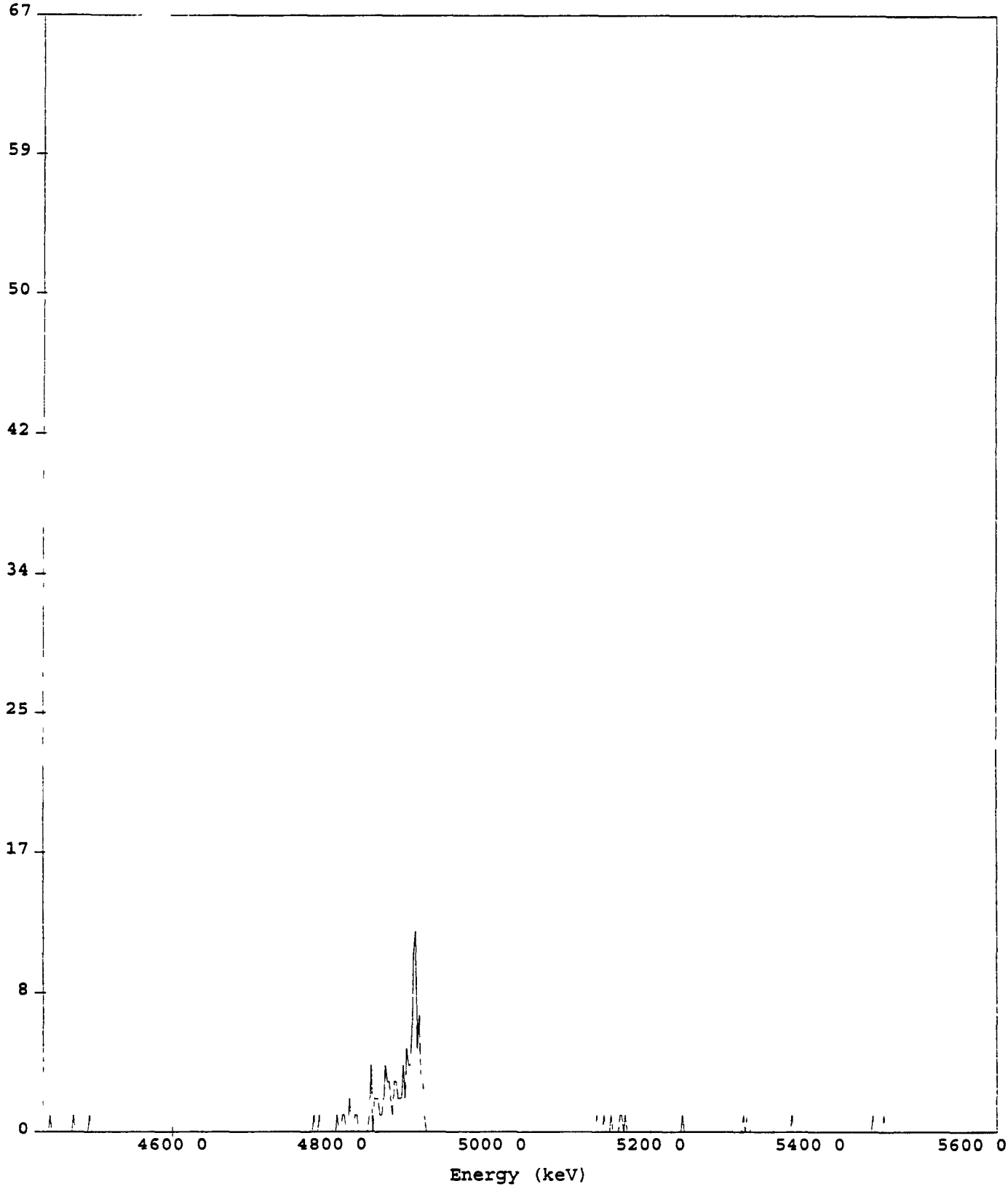
386

opic Analysis by Alpha Spectrometry

, Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 77956272 ... Date 02-Aug-96 21 32 32 LT 43,200 00 RT 43,200 66
ID(6) PU96-519-0... 96L2181 B-35 889



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387

Iso.. ..ysis by Alpha Spectrometry

Rocky ..ologies Site, Analytical Labs Bldg. 881
..onday, August 05, 1996

Sample ID: ..67 REAGENT BLANK **Type:** Blank

Batch ID PU..
Acquisition Start Aug ..2, 1996 21 33 04
Analysis Date Aug ..05, 1996 06 23 04
Procedure ER .. AMPLE
Device. AL.. ..L 02 03
Analysis Method RO.. Analysis
Spectrum File 779..6663 OXS LiveTime 43,200 00

Calibrations
Energy = 8 423E+00 +2 400E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 06 05 Std CSL# 604137 EXP 6/97
Shape not Calibrated
Efficiency = 3 712E-01 ± 6 486E-03
Calibration Date July 11, 1996 11 53 57 Std CSL# 604137 EXP 6/97

Tracer Recovery 0 957 ± 0 045
Total Efficiency 0 355 ± 0 015

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 000 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4898 2	24 0
2 Pu239	Pu240	4973 3	5201 5	5085 5	2 4
3 Pu238	Pu238	5380 4	5530 1	5455 1	2 4

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	527 0 ± 23 0	0 00	0 732 ± 0 032	Tracer
Pu239	1 0 ± 3 0	4 00	1 39E-03 ± 4 17E-03	Unknown
Pu238	4 0 ± 2 0	0 00	5 56E-03 ± 2 78E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Pu242trac	Pu242	1 000	0 928 ± 0 00E+00	4 76E-03
Pu239	Pu240	1 000	1 76E-03 ± 5 28E-03	0 021
Pu238	Pu238	1 000	7 04E-03 ± 3 53E-03	4 76E-03

Activity reported as of August 02, 1996 21 33 04

ANALYSIS REVIEWED BY JK Hanward

APPROVED BY JK Hanward

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388

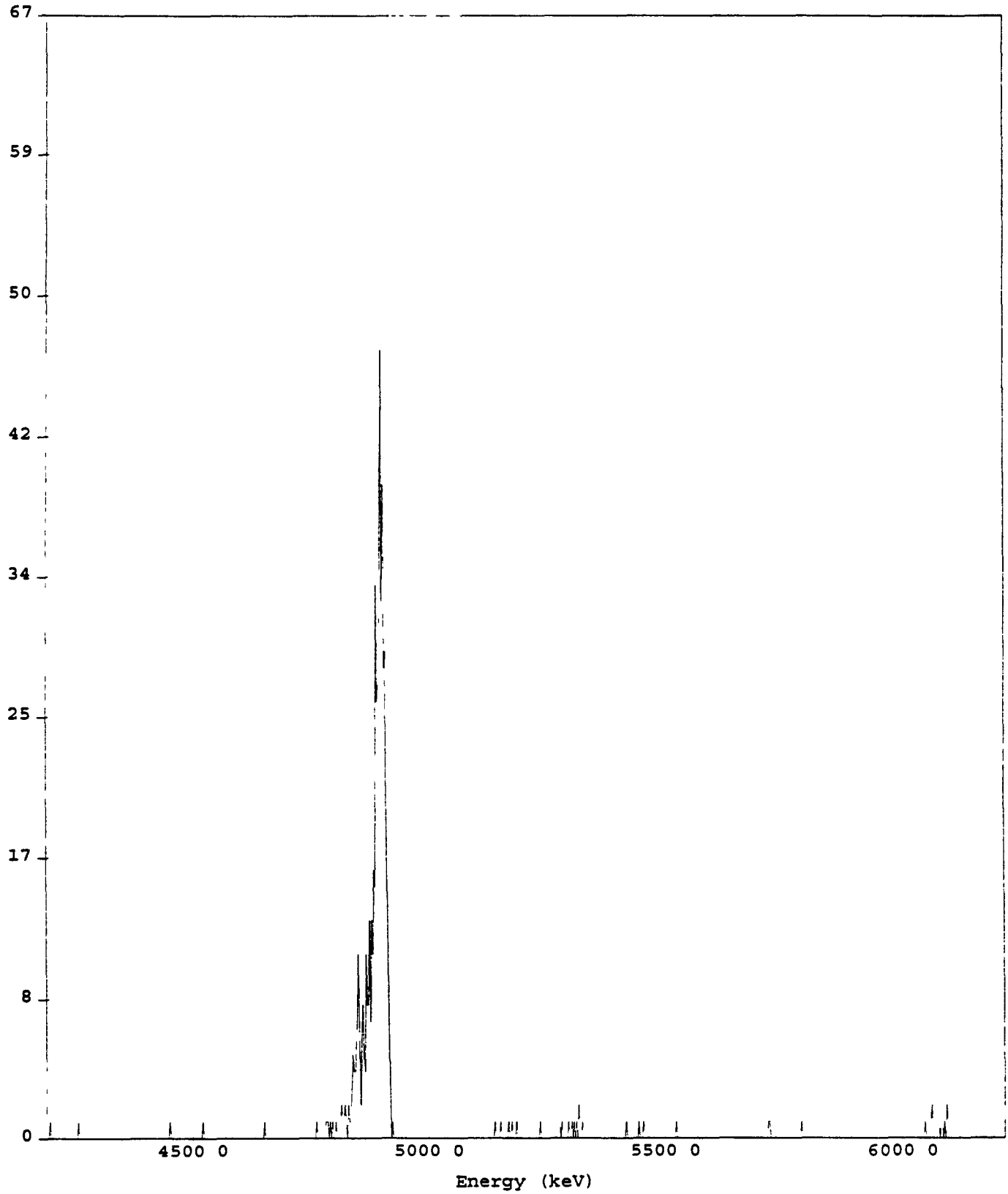
Isotopic A[illegible]y Alpha Spectrometry

Rocky Flats Tec[illegible]ite, Analytical Labs Bldg. 881

[illegible]ust 12, 1996

File(6) 77956663 OXS Date 02-[illegible] 3 04 LT 43,200 00 RT 43,202 07

ID(6) PU96-525-067 REAGENT BLAN[illegible]



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389

Isotopic Analysis by Spectrometry

Rocky Flats Technologies Site ...l Labs Bldg. 881
Monday, August 96

Sample ID: PU96-526-067 CONTROL 14... **Type:** LabCntrlSamp

Batch ID	PU96-067
Acquisition Start	August 02, 1996 21 33 06
Analysis Date.	August 05, 1996 06 23 24
Procedure	ER PU SAMPLE
Device	ALP-ONE 02 04
Analysis Method	ROI Analysis
Spectrum File	77956770 OXS

LiveTime 43,200 00

Calibrations·
Energy = 1 265E+01 +2 365E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 08 36 Std CSL# 604138 EXP 6/97
Shape not Calibrated
Efficiency = 3 853E-01 ± 6 735E-03
Calibration Date: July 11, 1996 11 54 34 Std CSL# 604138 EXP 6/97

Tracer Recovery	0 961 ± 0 044
Total Efficiency·	0 370 ± 0 016
Original Sample Amount.	1 000 ± 0 000 ml
Aliquot Amount	1 000 ± 0 000 ml

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Pu242trac	Pu242	4590 0	4933 2	4902 0	20 7
2 Pu239	Pu240	4973 3	5201 5	5157.5	17 5
3 Pu238	Pu238	5380 4	5530 1	5455 5	2 4

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Pu242trac	549 0 ± 23 4	0 00	0 763 ± 0 033	Tracer
Pu239	533 0 ± 23 1	0 00	0 740 ± 0 032	Unknown
Pu238	1 0 ± 1 0	0 00	1 39E-03 ± 1 39E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (dpm/ml)	MDA (dpm)
Pu242trac	Pu242	1 000	2 060 ± 0 00E+00	0 010
Pu239	Pu240	1 000	2 000 ± 0 122	0 010
Pu238	Pu238	1 000	3 75E-03 ± 3 76E-03	0 010

Activity reported as of August 02, 1996 21 33 06

ANALYSIS REVIEWED BY NK Harward

APPROVED BY. NK Harward

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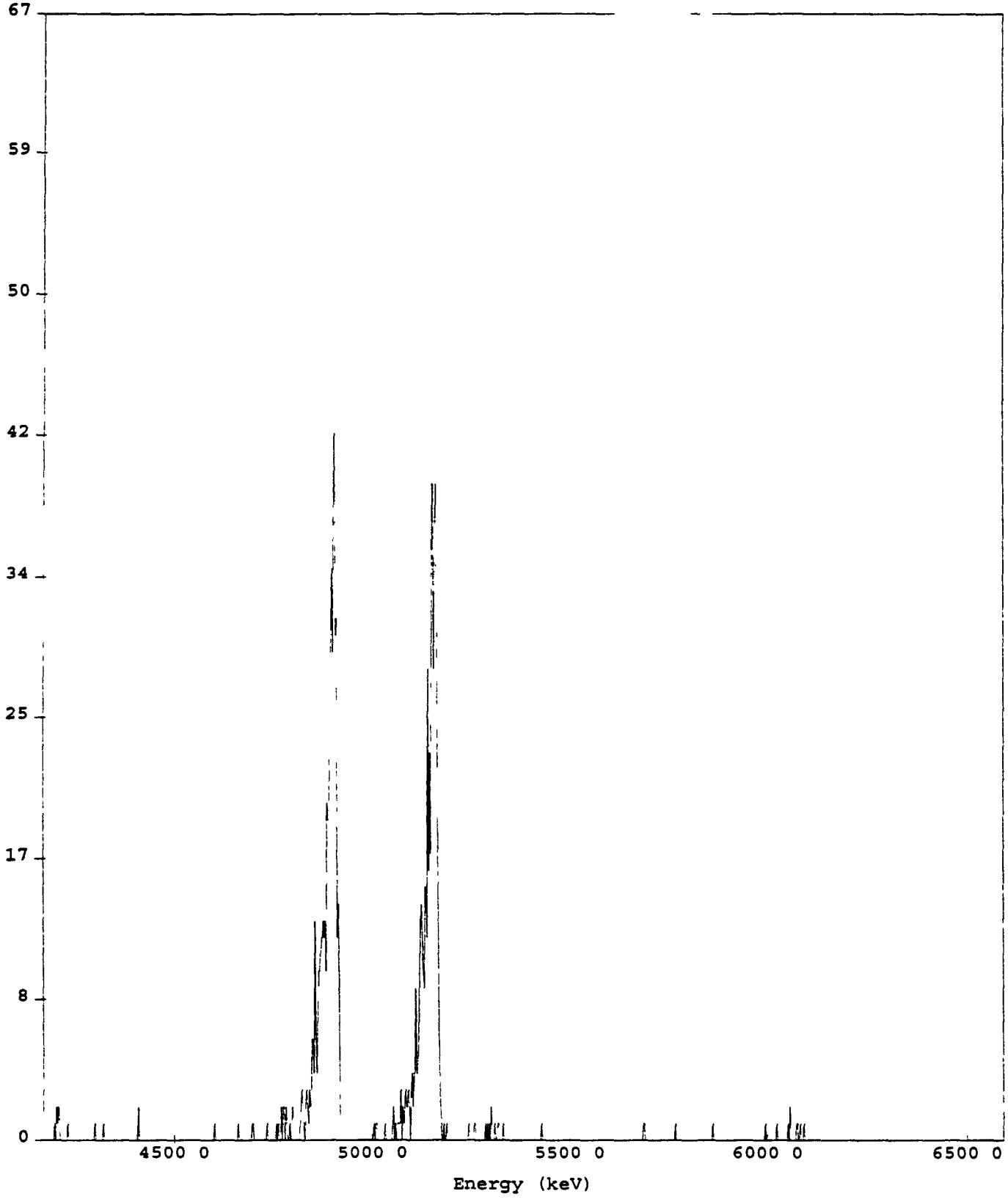
390

Isotopic Analysis by Alph[illegible]try

Rocky Flats Technologies Site, Analy[illegible] [illegible]dg. 881

Monday, August 12, [illegible]9[illegible]

File(6)· 77956770 OXS Date 02-Aug-96 21 33 06 1T 00 RT 43,202 27
ID(6) PU96-526-067 CONTROL 1452



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00059

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bld- 31
Wednesday, August 07, 1996

Sample ID: **AM96-515-067 96L2181 BKG1 889** **Type:** Unknown

Batch ID AM96-067
Acquisition Start August 06, 1996 15 04 05
Analysis Date August 07, 1996 09 32 41
Procedure ER AM SAMPLES
Device ALP-ONE 01 01
Analysis Method ROI Analysis
Spectrum File 78358653 OXS LiveTime 43,200 00

Calibrations
Energy = -3 531E+00 +2 197E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 11 58 58 Std CSL# 604127 EXP 6/97
Shape not Calibrated.
Efficiency = 3 941E-01 ± 6 892E-03
Calibration Date July 11, 1996 11.52 08 Std CSL# 604127 EXP 6/97

Tracer Recovery 0 824 ± 0 041
Total Efficiency 0 325 ± 0 015

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 015 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5648 7	5848 4	5803 9	35 7
2 am241	Am241	5362 2	5545 8	5454 5	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	462 0 ± 21 5	1 00	0 642 ± 0 030	Tracer
am241	1 0 ± 1 7	1 00	1 39E-03 ± 2 41E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000		0 877 ± 0 00E+00	0 014
am241	Am241	1 000		1 90E-03 ± 3 29E-03	0 014

Activity reported as of August 06, 1996 15 04 05

ANALYSIS REVIEWED BY JK Harward

APPROVED BY JK Harward

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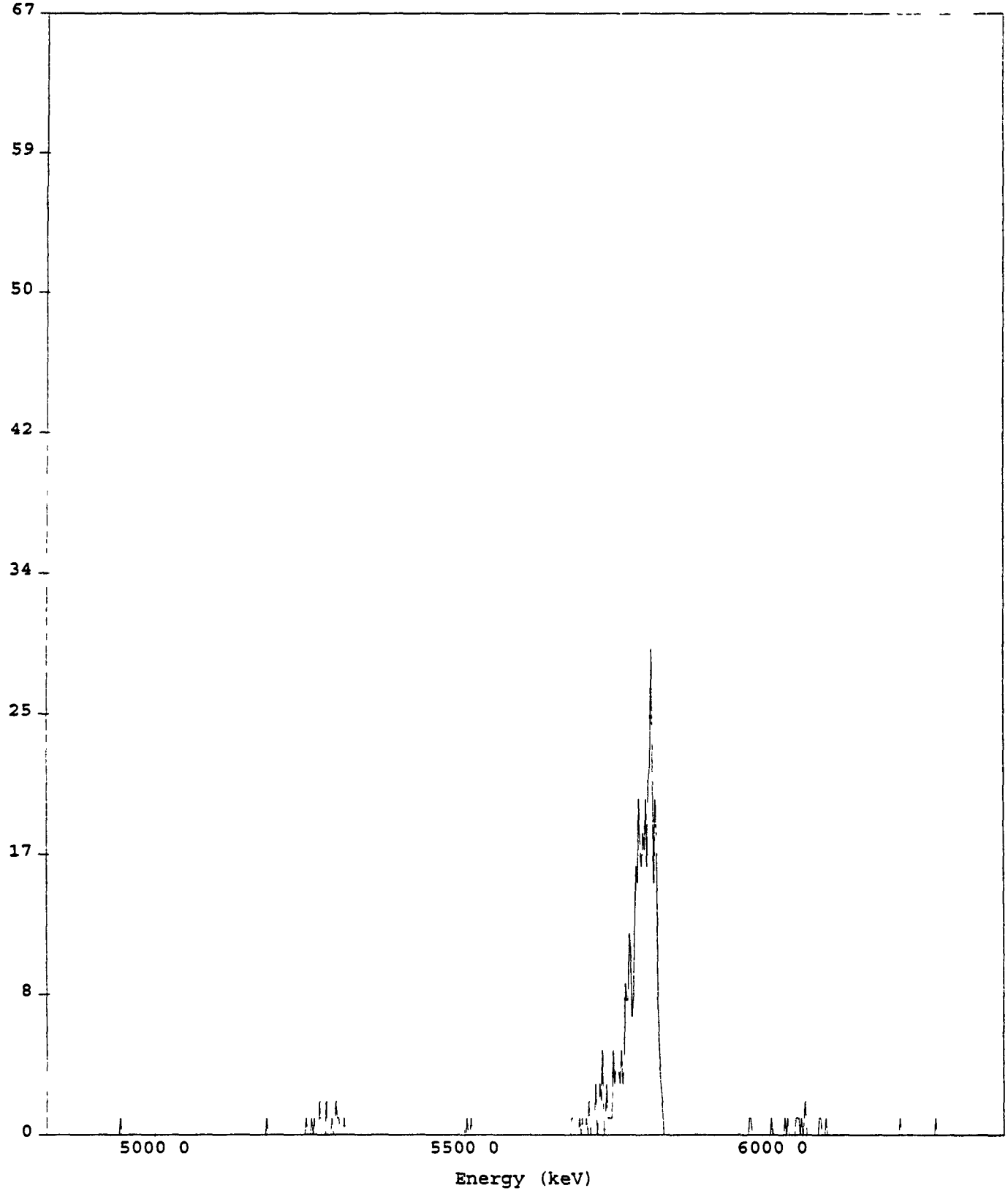
Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78358653 OXS Date 06-Aug-96 15 04 05 LT 43,200 00 RT
ID(6) AM96-515-067 96L2181 BKG1 889



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393

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: AM96-516-067 96L2181 BKG2 889 **Type:** Unknown

Batch ID AM96-067
Acquisition Start August 06, 1996 15 04 09
Analysis Date August 07, 1996 09 33 45
Procedure ER AM SAMPLES
Device. ALP-ONE.01 02
Analysis Method ROI Analysis
Spectrum File 78358919 OXS LiveTime 43,200 00

Calibrations
Energy = 7 655E+00 +2 332E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 11 59 34 Std. CSL# 604128 EXP. 6/97
Shape not Calibrated
Efficiency = 3 825E-01 ± 6 681E-03
Calibration Date July 11, 1996 12 02 46 Std CSL# 604128 EXP 6/97

Tracer Recovery 0 840 ± 0 042
Total Efficiency 0 321 ± 0 015

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 020 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5636 5	5848 4	5801 8	28 7
2 am241	Am241	5352 9	5555 1	5452 0	2 3

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	457 0 ± 21 4	0 00	0 635 ± 0 030	Tracer
am241	9 0 ± 3 0	0 00	0 013 ± 4 17E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 872 ± 0 00E+00	5 27E-03
am241	Am241	1 000	0 017 ± 5 78E-03	5 27E-03

Activity reported as of August 06, 1996 15 04 09

ANALYSIS REVIEWED BY _____

APPROVED BY _____

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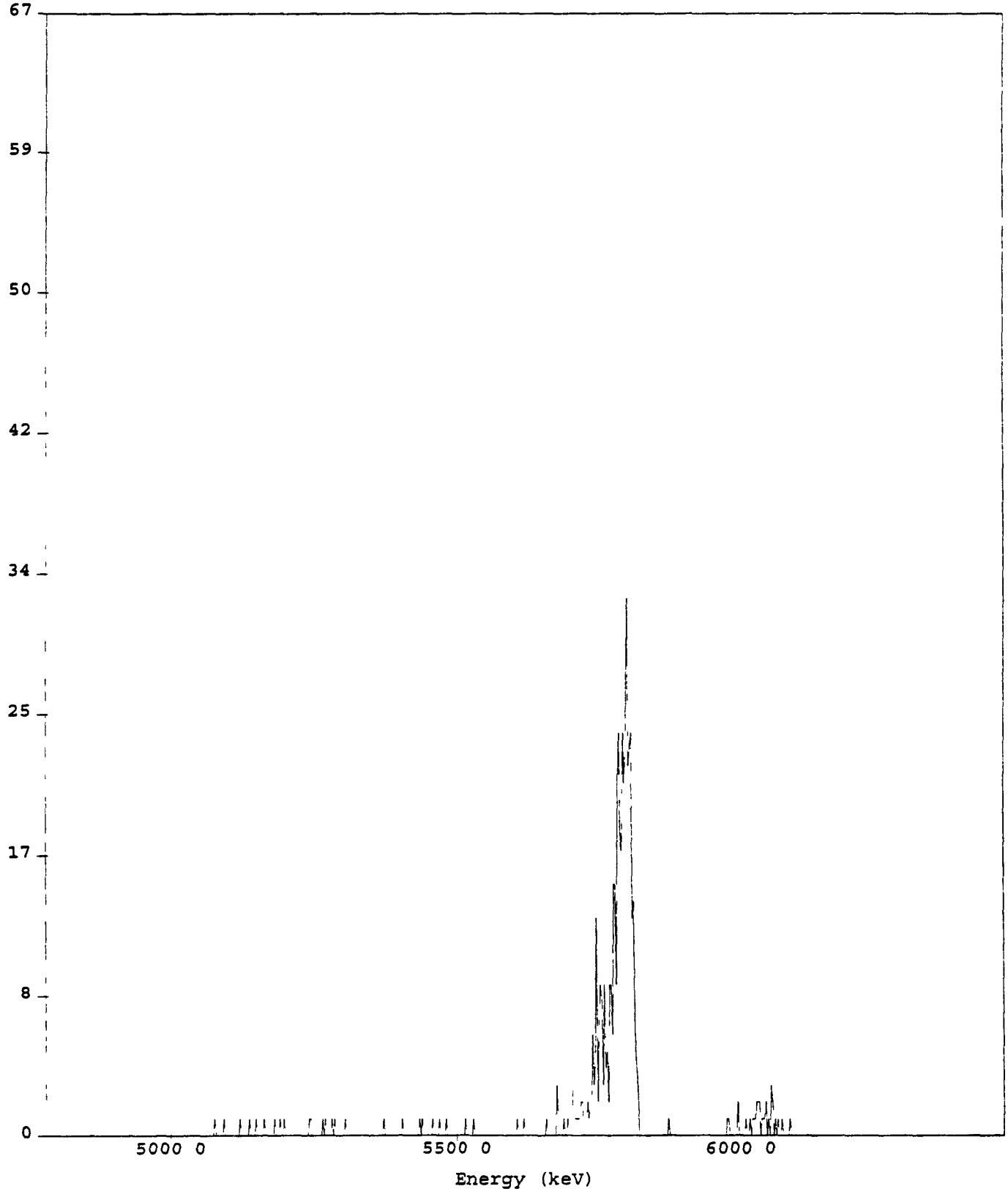
394

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78358919 OXS Date 06-Aug-96 15 04 09 LT 43,200 00 RT 43,200 84
ID(6) AM96-516-067 96L2181 BKG2 889



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395

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: **AM96-518-067 96L2181 B-4 889** **Type.** **Unknown**

Batch ID. AM96-067
Acquisition Start August 06, 1996 15 04 14
Analysis Date August 07, 1996 09 35 31
Procedure ER AM SAMPLES
Device ALP-ONE:01 04
Analysis Method ROI Analysis
Spectrum File 78359128 OXS LiveTime 43,200 00

Calibrations
Energy = -2 037E+00 +2 315E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 00 46 Std CSL# 604130 EXP 6/97
Shape not Calibrated
Efficiency = 3 834E-01 ± 6 697E-03
Calibration Date July 11, 1996 12 03 59 Std CSL# 604130 EXP 6/97

Tracer Recovery 0 679 ± 0 037
Total Efficiency 0 260 ± 0 014

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 018 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5626 6	5848 4	5794 9	30 9
2 am241	Am241	5362 2	5555 1	5480 0	3 5

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	370 0 ± 19 2	0 00	0 514 ± 0 027	Tracer
am241	29 0 ± 5 6	1 00	0 040 ± 7 73E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 874 ± 0 00E+00	6 51E-03
am241	Am241	1 000	0 069 ± 0 014	0 018

Activity reported as of August 06, 1996 15 04 14

ANALYSIS REVIEWED BY dK Harward

APPROVED BY dK Harward

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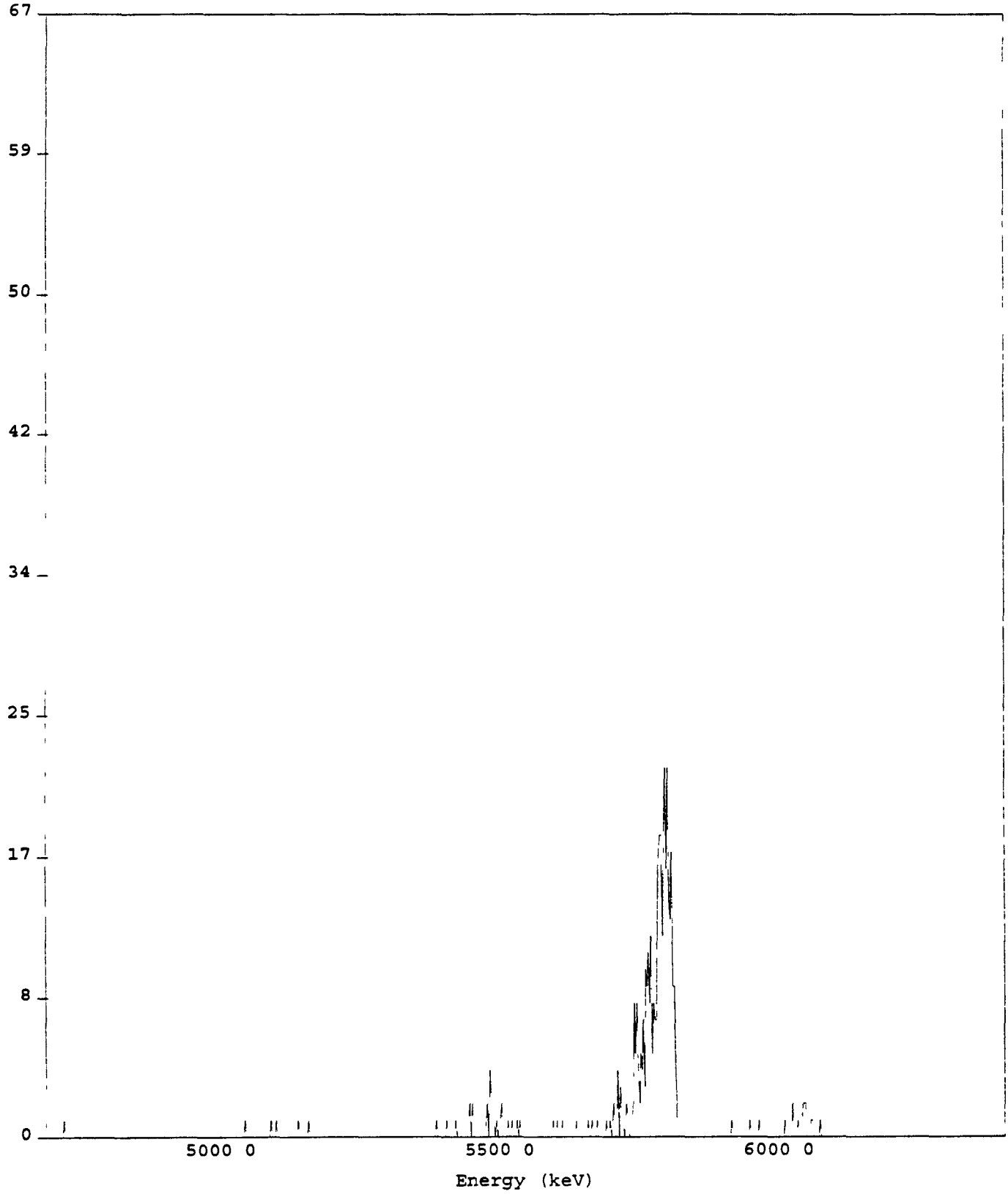
396

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

le(6) 78359128 OXS Date 06-Aug-96 15 04 14 LT 43,200 00 RT 43,200 78
)(6) AM96-518-067 96L2181 B-4 889



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397

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

[illegible] ID:	AM96-517-067 96L2181 B-5 889	Type:	Unknown

Batch ID	AM96-067
Acquisition Start	August 06, 1996 15 04 12
Analysis Date	August 07, 1996 09 34 38
Procedure	ER AM SAMPLES
Device	ALP-ONE 01 03
Analysis Method	ROI Analysis
Spectrum File	78359057 OXS

LiveTime 43,200 00

Calibrations
Energy = 1 452E+01 +2 235E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 00 10 Std CSL# 604129 EXP 6/97
Shape not Calibrated
Efficiency = 3 756E-01 ± 6 566E-03
Calibration Date July 11, 1996 12 03 23 Std CSL# 604129 EXP 6/97

Tracer Recovery	0 223 ± 0 021
Total Efficiency	0 084 ± 0 008
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 013 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5677 4	5848 4	5799 0	7 6
2 am241	Am241	5344 3	5563 7	5454 8	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	119 0 ± 11 0	1 00	0 165 ± 0 015	Tracer
am241	15 0 ± 4 1	1 00	0 021 ± 5 73E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 878 ± 0 00E+00	0 055
am241	Am241	1 000	0 111 ± 0 032	0 055

Activity reported as of August 06, 1996 15 04 12

ANALYSIS REVIEWED BY: N K Harward

APPROVED BY: N K Harward

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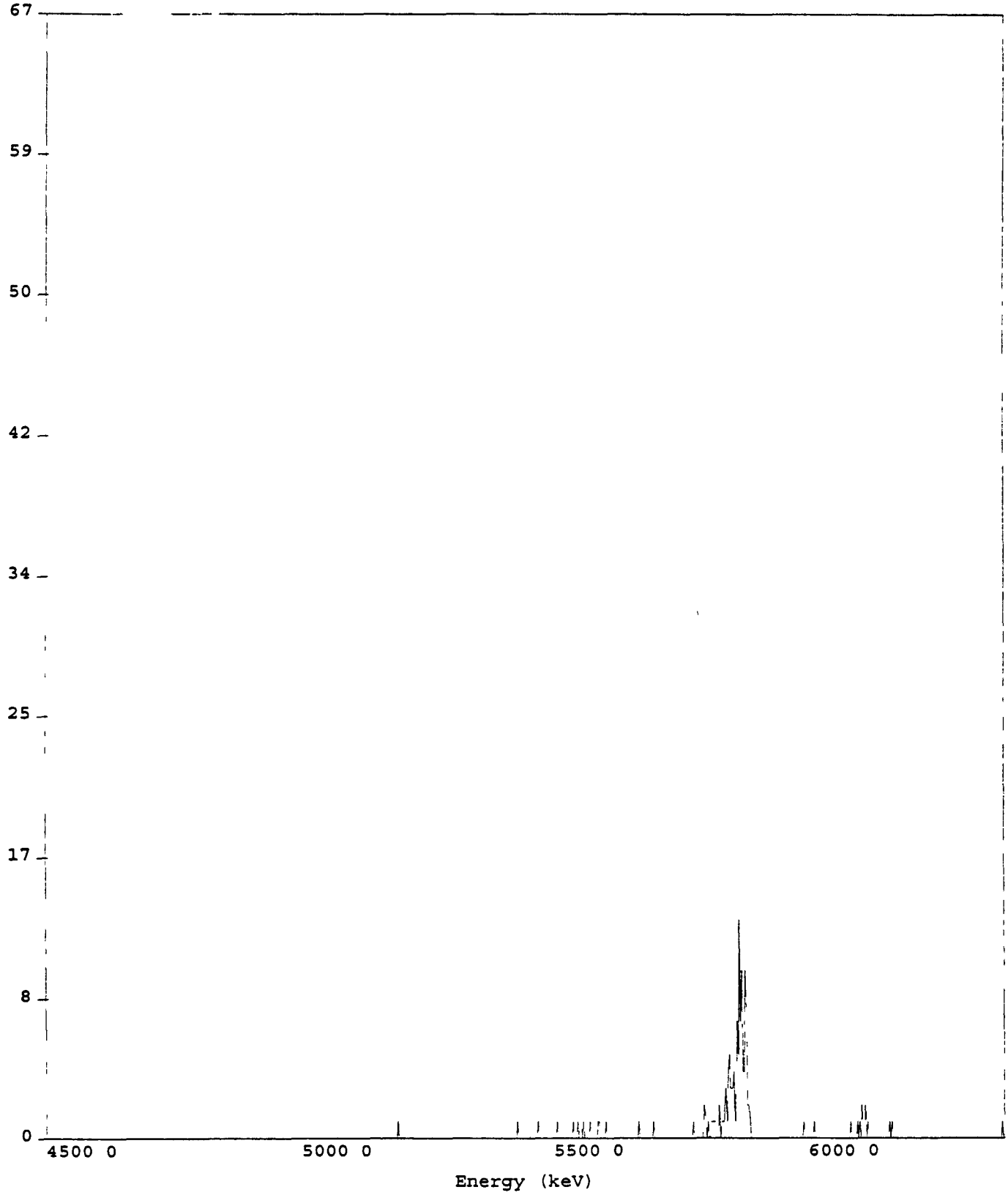
398

ic Analysis by Alpha Spectrometry

ats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 7 Date 06-Aug-96 15 04 12 LT 43,200 00 RT 43,200 80
ID(6) AM96-5 9 L2181 B-5 889



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399

Isc' ...alysis by Alpha Spectrometry

Rocky F... ...nologies Site, Analytical Labs Bldg. 881
...ednesday, August 07, 1996

Sample ID: ...-067 96L2181 B-28 889 **Type:** **Unknown**

Batch ID	... - 067
Acquisition Start	August 06, 1996 15 04 19
Analysis Date	August 07, 1996 09 37 24
Procedure	EP AM SAMPLES
Device	ALP-ONF 01 06
Analysis Method	ROI Analysis
Spectrum File	78359252 OXS

LiveTime 43,200 00

Calibrations
Energy = 7 800E+00 +2 365E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 01 57 Std CSL# 604132 EXP 6/97
Shape not Calibrated
Efficiency = 3 749E-01 ± 6 555E-03
Calibration Date July 11, 1996 12 05 13 Std CSL# 604132 EXP 6/97

Tracer Recovery	0 306 ± 0 025
Total Efficiency	0 115 ± 0 009
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 019 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5666 3	5848 4	5789 1	8 3
2 am241	Am241	5362 2	5545 8	5453 2	2 4

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	163 0 ± 12 8	0 00	0 226 ± 0 018	Tracer
am241	6 0 ± 2 8	1 00	8 33E-03 ± 3 93E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 874 ± 0 00E+00	0 015
am241	Am241	1 000	0 032 ± 0 015	0 040

Activity reported as of August 06, 1996 15 04 19

ANALYSIS REVIEWED BY NK Harward

APPROVED BY NK Harward

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400

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: **AM96-521-067 96L2181 B-29 889** **Type:** **Unknown**

Batch ID	AM96-067
Acquisition Start	August 06, 1996 15 04 21
Analysis Date	August 07, 1996 09 38 20
Procedure	ER AM SAMPLES
Device	ALP-ONE 01 07
Analysis Method	ROI Analysis
Spectrum File	78359318 OXS

LiveTime 43,200 00

Calibrations
Energy = 1 898E+01 +2 205E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 02 33 Std CSL# 604133 EXP 6/97
Shape not Calibrated
Efficiency = 3 906E-01 ± 6 833E-03
Calibration Date July 11, 1996 12 05 50 Std CSL# 604133 EXP 6/97

Tracer Recovery	0 484 ± 0 031
Total Efficiency	0 189 ± 0 012
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 013 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5596 2	5848 4	5738 1	3 7
2 am241	Am241	5362 2	5554 6	5458 1	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	269 0 ± 16 5	2 00	0 374 ± 0 023	Tracer
am241	7 0 ± 3 0	1 00	9 72E-03 ± 4 17E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 879 ± 0 00E+00	0 031
am241	Am241	1 000	0 023 ± 9 90E-03	0 024

Activity reported as of August 06, 1996 15 04 21

ANALYSIS REVIEWED BY NK Hamward

APPROVED BY NK Hamward

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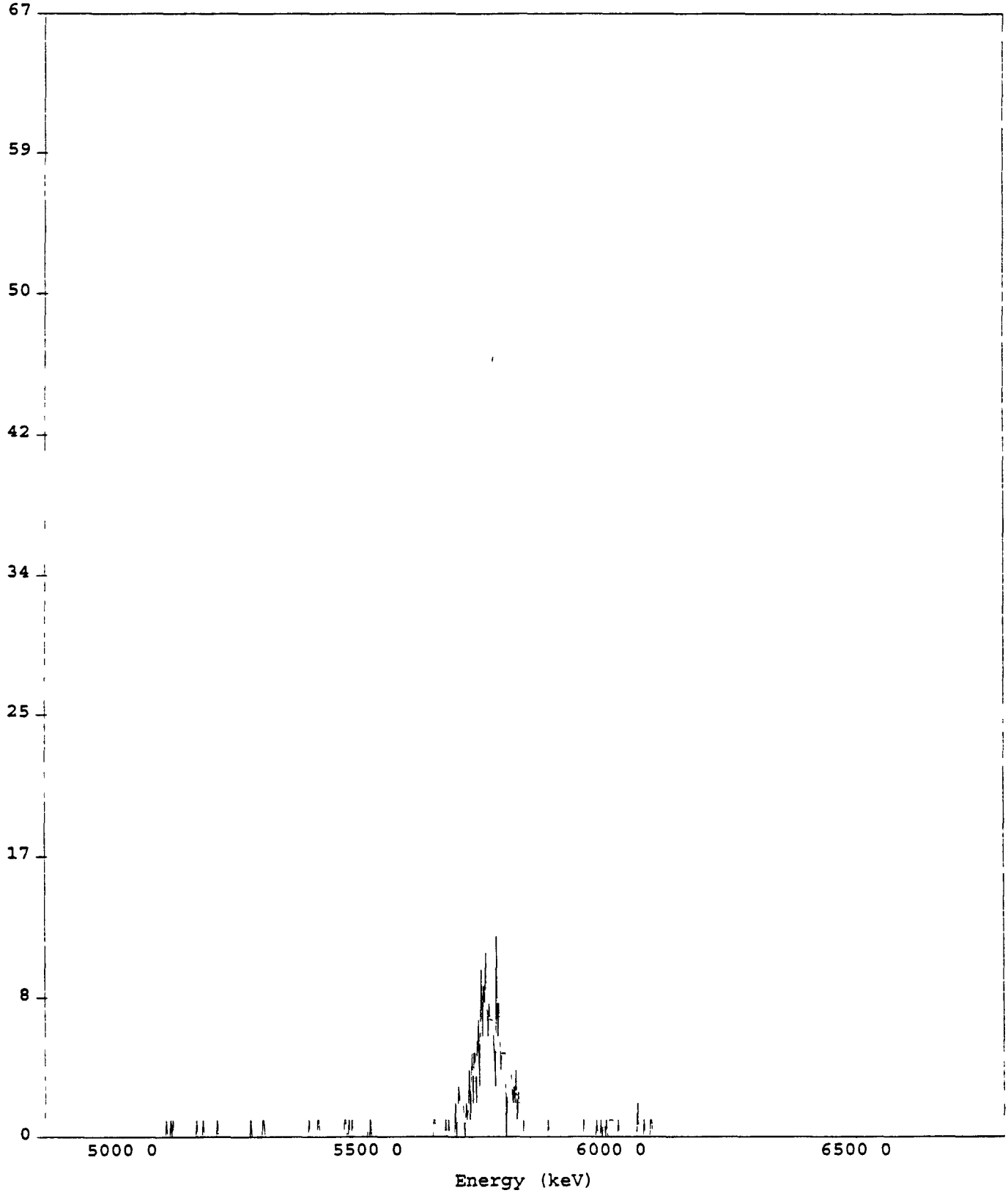
401

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78359318 OXS Date 06-Aug-96 15 04 21 LT 43,200 00 RT 43,200 63
ID(6) AM96-521-067 96L2181 B-29 889



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402

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

S[illegible]	**AM96-522-067 96L2181 B-30 889**	**Type:**	**Unknown**
Ba[illegible]	AM96-067		
A[illegible]ation Start	August 06, 1996 15 04 23		
[illegible] Date	August 07, 1996 09 39 02		
Procedure	ER AM SAMPLES		
De[illegible]	ALP-ONE 01 08		
Analysis Method	ROI Analysis		
Spectrum File	78359417 OXS	LiveTime	43,200 00

Calibrations
Energy = -9 600E-01 +2 227E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 03 09 Std CSL# 604134 EXP 6/97
Shape not Calibrated
Efficiency = 3 808E-01 ± 6 706E-03
Calibration Date July 11, 1996 12 06 27 Std CSL# 604134 EXP 6/97

Tracer Recovery	0 384 ± 0 028	
Total Efficiency	0 146 ± 0 010	
Original Sample Amount	1 000 ± 0 000	gdry
Aliquot Amount	1 016 ± 0 000	gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5632 4	5857 3	5803 8	7 8
2 am241	Am241	5362 2	5545 8	5454 1	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	208 0 ± 14 5	1 00	0 289 ± 0 020	Tracer
am241	2 0 ± 2 8	3 00	2 78E-03 ± 3 93E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 876 ± 0 00E+00	0 031
am241	Am241	1 000	8 42E-03 ± 0 012	0 046

Activity reported as of August 06, 1996 15 04 23

ANALYSIS REVIEWED BY NKHarward

APPROVED BY NK Harward

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403

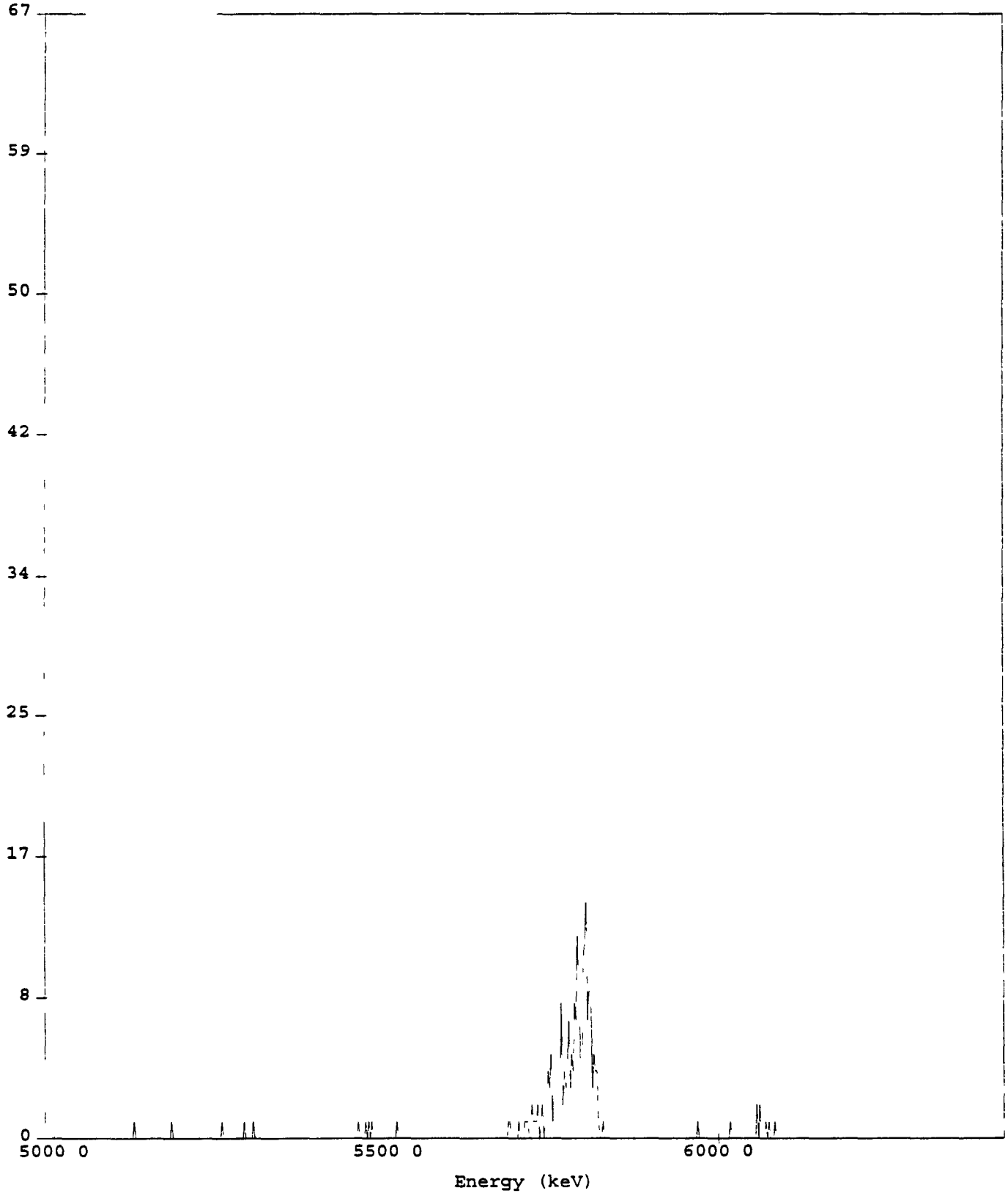
pic Analysis by Alpha Spectrometry

lats Technologies Site, Analytical Labs Bldg 881

Monday, August 12, 1996

File(6) Date 06-Aug-96 15 04 23 LT 43,200 00 RT 43,200 69

ID(6) 'SL2181 B-30 889



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404

Isot[illegible] [illegible]lysis by Alpha Spectrometry

Rocky [illegible] [illegible]nologies Site, Analytical Labs Bldg. 881
[illegible]ednesday, August 07, 1996

Sample ID: AM[illegible]5-52[illegible]-[illegible]67 96L2181 B-32 889 **Type.** **Unknown**

Batch ID AM[illegible] [illegible]7
Acquisition Start Au[illegible] [illegible], 1996 15 04 25
Analysis Date August [illegible]7, 1996 09 40 02
Procedure ER AM SAMPLES
Device ALP-ONE 02 01
Analysis Method ROI Analysis
Spectrum File 78[illegible]9479 OXS LiveTime 43,200 00

Calibrations
Energy = 1 071E+01 +2 251E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 03 46 Std CSL# 604135 EXP 6/97
Shape not Calibrated
Efficiency = 3 830E-01 ± 6 689E-03
Calibration Date July 11, 1996 11 52 45 Std CSL# 604135 EXP 6/97

Tracer Recovery 0 839 ± 0 042
Total Efficiency 0 321 ± 0 015

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 026 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5597 3	5848 4	5777 2	40 0
2 am241	Am241	5353 2	5554 8	5453 1	2 3

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	457 0 ± 21 4	0 00	0 635 ± 0 030	Tracer
am241	2 0 ± 2 0	1 00	2 78E-03 ± 2 78E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM	PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000		0 867 ± 0 00E+00	5 27E-03
am241	Am241	1 000		3 80E-03 ± 3 80E-03	0 014

Activity reported as of August 06, 1996 15 04 25

ANALYSIS REVIEWED BY [signature]

APPROVED BY [signature]

F = 0.006

E = 0 007 ok Dup

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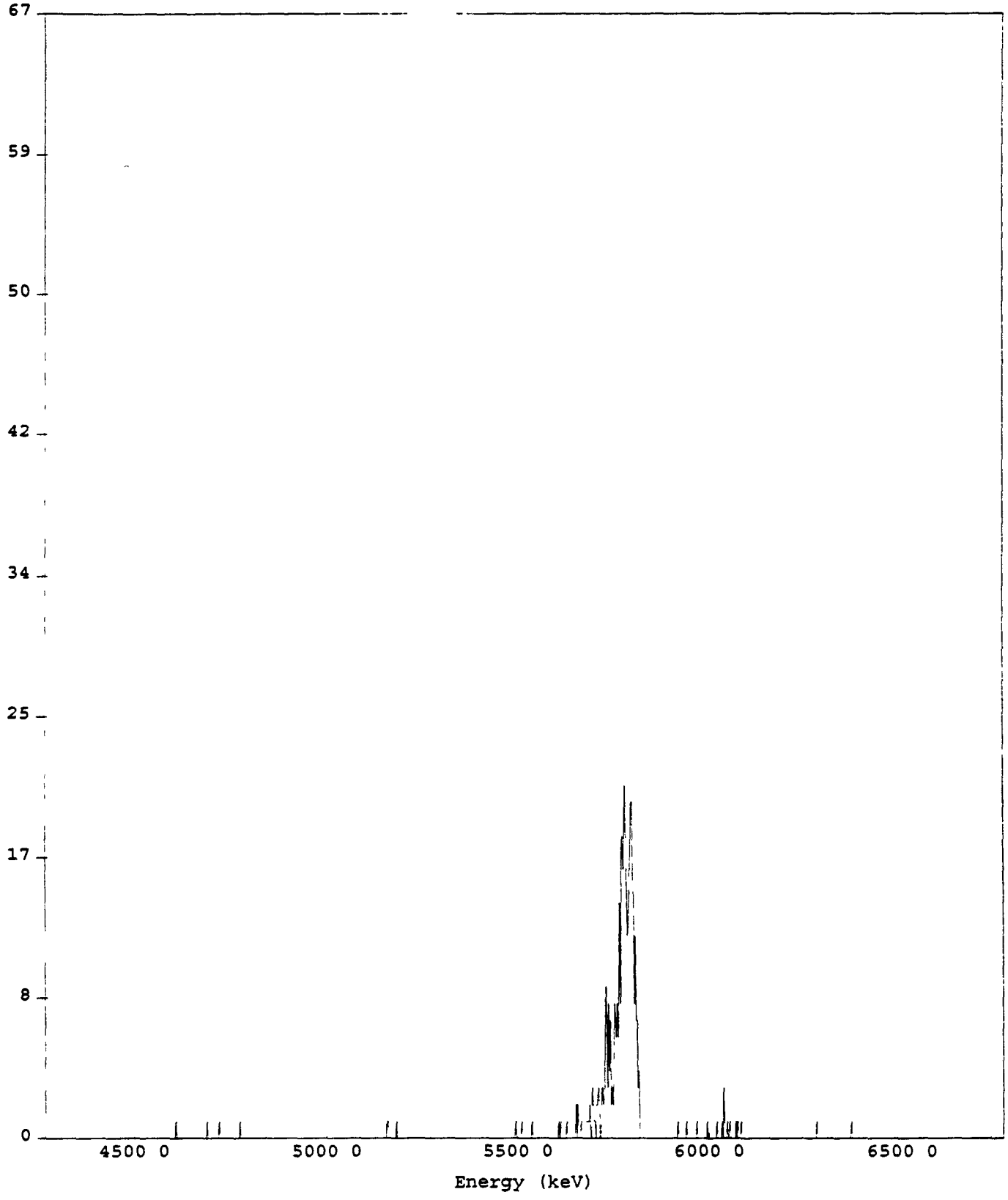
405

Isotopic An · Alpha Spectrometry
Rocky Flats Tec e Analytical Labs Bldg 881
ust 12, 1996

File(6) 78359479 OXS Date 06- 4 25 LT 43,200 00 RT 43,200 68
ID(6) AM96-523-067 96L2181 B-32



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406

Isotopic Analysis Spectrometry

Rocky Flats Technologies s ..al Labs Bldg. 881
Wednesday, A 1996

Sample ID: AM96-524-067 96L2181 - **Type:** Duplicate

Batch ID AM96-067
Acquisition Start August 06, 1996 15 0- 1
Analysis Date August 07, 1996 09 40 18
Procedure ER AM SAMPLES
Device ALP-ONE 02 02
Analysis Method ROI Analysis
Spectrum File 78359552 OXS LiveTime 43,200 00

Calibrations
Energy = 1 558E+01 +2 392E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 05 29 Std CSL# 604136 EXP 6/97
Shape not Calibrated
Efficiency = 3 903E-01 ± 6 821E-03
Calibration Date July 11, 1996 11 53 21 Std CSL# 604136 EXP 6/97

Tracer Recovery 0 638 ± 0 036
Total Efficiency 0 249 ± 0 013

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 016 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5591 1	5848 4	5798 8	26 1
2 am241	Am241	5362 2	5545 8	5452 0	2 4

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	354 0 ± 18 9	1 00	0 492 ± 0 026	Tracer
am241	4 0 ± 2 4	1 00	5 56E-03 ± 3 40E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 876 ± 0 00E+00	0 018
am241	Am241	1 000	9 89E-03 ± 6 08E-03	0 018

Activity reported as of August 06, 1996 15 04 26

ANALYSIS REVIEWED BY AK Harward

APPROVED BY AK Harward

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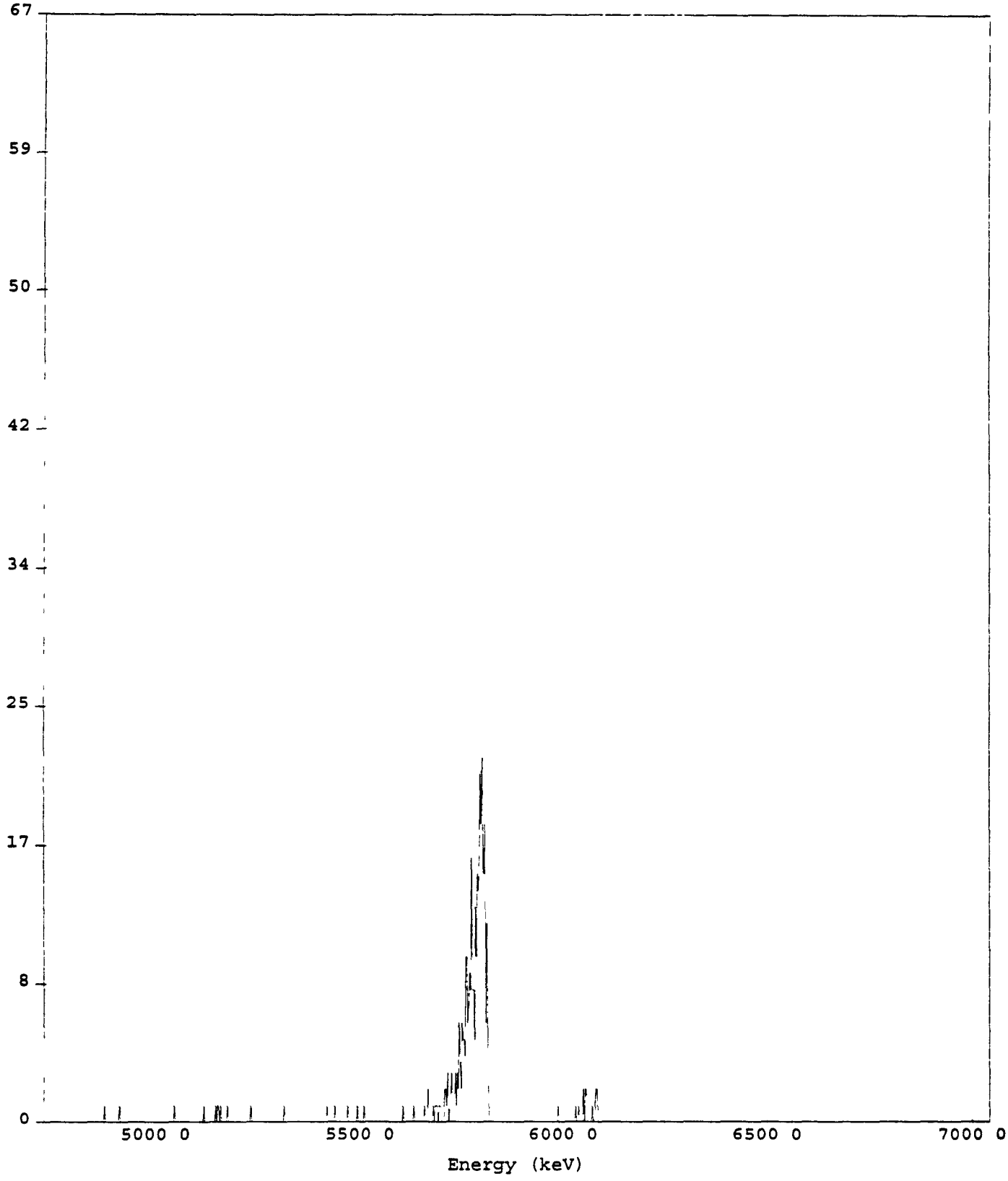
407

Isotopic Analysis by Alpha [illegible]etry

Rocky Flats Technologies Site, Analytic[illegible] [illegible]dg 881

Monday, August 12, 19[illegible]6

File(6) 78359552 OXS Date 06-Aug-96 15 04 26 LT [illegible] 00 RT 43,200 77
ID(6) AM96-524-067 96L2181 B-32 889D



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408

Isotopic Analysis by Alpha Spec

Rocky Flats Technologies Site, Analytical Lab
Wednesday, August 07, 1996

Sample ID: **AM96-519-067 96L2181 B-35 889** **Type.**

Batch ID	AM96-067
Acquisition Start	August 06, 1996 15 04 17
Analysis Date	August 07, 1996 09 36 19
Procedure	ER AM SAMPLES
Device	ALP-ONE 01 05
Analysis Method	ROI Analysis
Spectrum File	78359179 OXS

LiveTime 200 00

Calibrations
Energy = 1 234E+00 +2 235E+00 • Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 01 22 Std CSL# 604131 EXP 6/97
Shape not Calibrated
Efficiency = 3 943E-01 ± 6 899E-03
Calibration Date July 11, 1996 12.04·36 Std CSL# 604131 EXP 6/97

Tracer Recovery	0 185 ± 0 018
Total Efficiency	0 073 ± 0 007
Original Sample Amount	1 000 ± 0 000 gdry
Aliquot Amount	1 026 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5695 2	5848 4	5805 7	3 3
2 am241	Am241	5362 2	5563 7	5463 7	2 2

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	104 0 ± 10 2	0 00	0 144 ± 0 014	Tracer
am241	3 0 ± 1 7	0 00	4 17E-03 ± 2 41E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 868 ± 0 00E+00	0 023
am241	Am241	1 000	0 025 ± 0 015	0 023

Activity reported as of August 06, 1996 15 04 17

ANALYSIS REVIEWED BY NK Harward

APPROVED BY NK Harward

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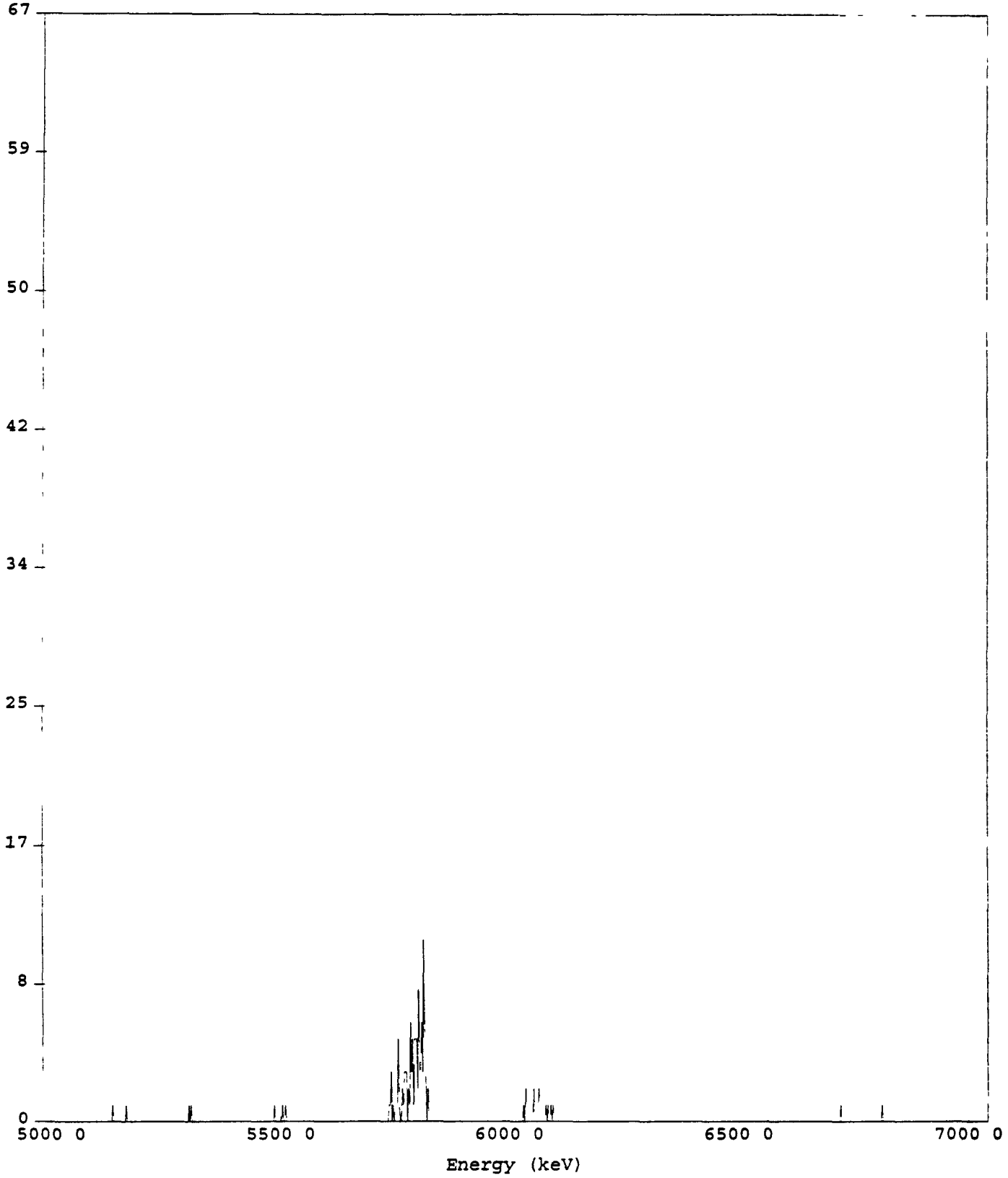
909

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78359179 OXS Date 06-Aug-96 15 04 17 LT 43,200 00 RT 60
ID(6) AM96-519-067 96L2181 B-35 889



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4/6

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID: **AM96-525-067 REAGENT BLANK** **Type:** **Blank**

Batch ID AM96-067
Acquisition Start August 06, 1996 15 04 28
Analysis Date August 07, 1996 09 41 32
Procedure ER AM SAMPLES
Device ALP-ONE 02 03
Analysis Method ROI Analysis
Spectrum File 78359682 OXS LiveTime 43,200 00

Calibrations
Energy = 8 423E+00 +2 400E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 06 05 Std CSL# 604137 EXP 6/97
Shape not Calibrated
Efficiency = 3 712E-01 ± 6 486E-03
Calibration Date July 11, 1996 11 53 57 Std CSL# 604137 EXP 6/97

Tracer Recovery 0 907 ± 0 044
Total Efficiency 0 337 ± 0 015

Original Sample Amount 1 000 ± 0 000 gdry
Aliquot Amount 1 000 ± 0 000 gdry

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5677 7	5848 4	5803 2	20 3
2 am241	Am241	5362 2	5545 8	5452 7	2 4

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	479 0 ± 21 9	1 00	0 665 ± 0 030	Tracer
am241	6 0 ± 2 4	0 00	8 33E-03 ± 3 40E-03	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (pCi/gdry)	MDA (pCi)
Cm244	Cm244	1 000	0 890 ± 0 00E+00	0 014
am241	Am241	1 000	0 011 ± 4 58E-03	5 03E-03

Activity reported as of August 06, 1996 15 04 28

ANALYSIS REVIEWED BY _____

APPROVED BY _____

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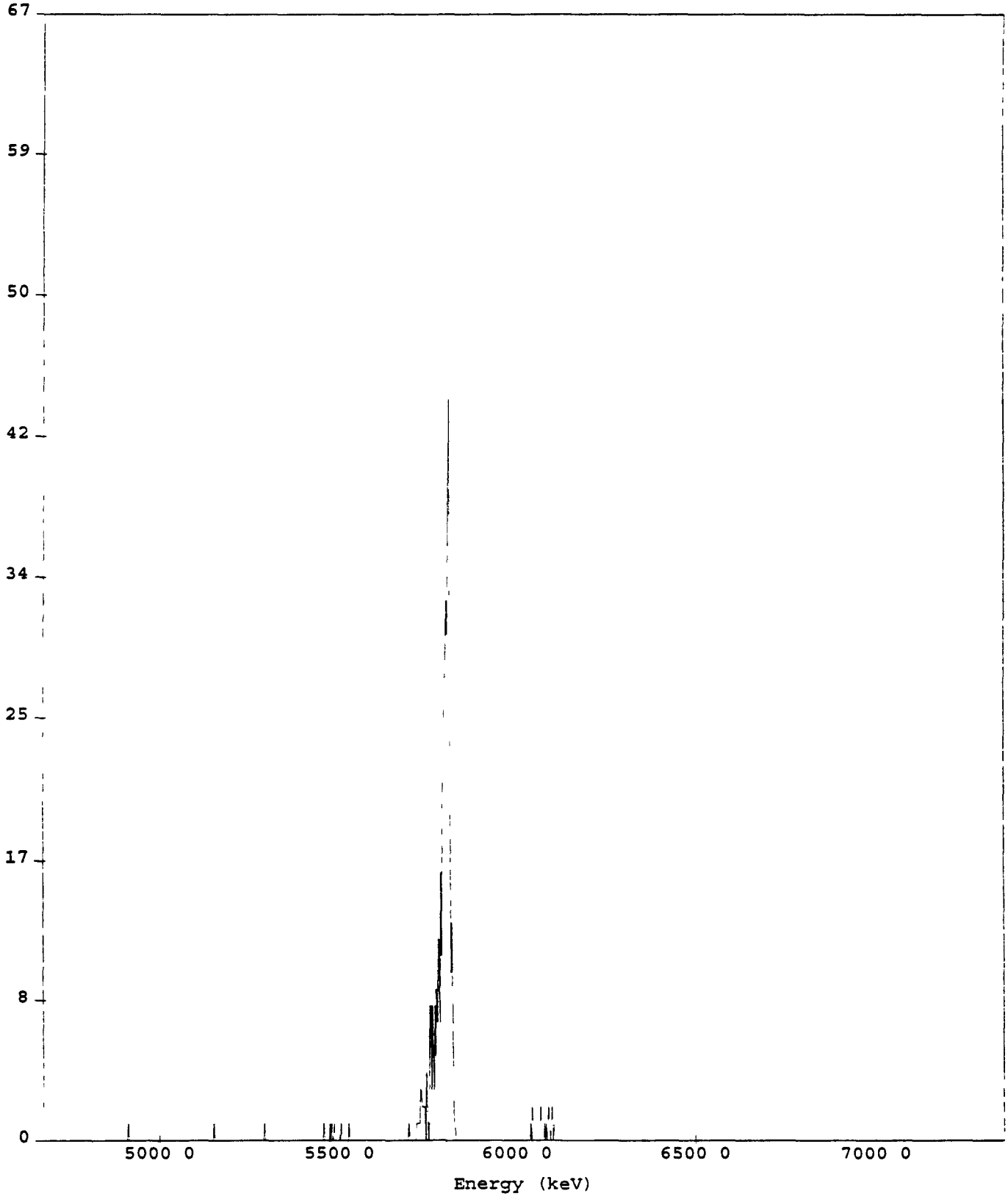
44

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78359682 OXS Date 06-Aug-96 15 04 28 LT 43,200 00 RT 43,200 81
ID(6) AM96-525-067 REAGENT BLANK



00081

412

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Wednesday, August 07, 1996

Sample ID:	**AM96-526-067 CONTROL #1452**	**Type:**	**LabCntrlSamp**
Batch ID	AM96-067		
Acquisition Start	August 06, 1996 15 04 30		
Analysis Date	August 07, 1996 09 43 31		
Procedure	ER AM SAMPLES		
Device	ALP-ONE 02 04		
Analysis Method	ROI Analysis		
Spectrum File	78359737 OXS	LiveTime	43,200 00

Calibrations.
Energy = 1 265E+01 +2 365E+00 * Chn Coeff of Correlation -0 999
Calibration Date July 10, 1996 12 08 36 Std CSL# 604138 EXP 6/97
Shape not Calibrated
Efficiency = 3 853E-01 ± 6 735E-03
Calibration Date July 11, 1996 11 54 34 Std CSL# 604138 EXP 6/97

Tracer Recovery	0 962 ± 0 045
Total Efficiency	0 371 ± 0 016
Original Sample Amount	1 000 ± 0 000 ml
Aliquot Amount	1 000 ± 0 000 ml

ROI DATA

ROI ID #	ASSOCIATED NUCLIDE	EXTENTS START	EXTENTS END	PK EN (keV)	FWHM (keV)
1 Cm244	Cm244	5708 8	5848 4	5805 6	17 9
2 am241	Am241	5390 6	5571 8	5491 0	21 6

ROI ANALYSIS RESULTS

ROI ID	NET COUNTS	BKG/INTERF	CPM	ROI TYPE
Cm244	527 0 ± 23 0	1 00	0 732 ± 0 032	Tracer
am241	510 0 ± 22 6	0 00	0 708 ± 0 031	Unknown

NUCLIDE ANALYSIS RESULTS

ROI ID	ASSOC NUC	EMM PROB	ACTIVITY (dpm/ml)	MDA (dpm)
Cm244	Cm244	1 000	1 975 ± 0 00E+00	0 028
am241	Am241	1 000	1 912 ± 0 119	0 010

Activity reported as of August 06, 1996 15 04 30

ANALYSIS REVIEWED BY [signature]

APPROVED BY [signature]

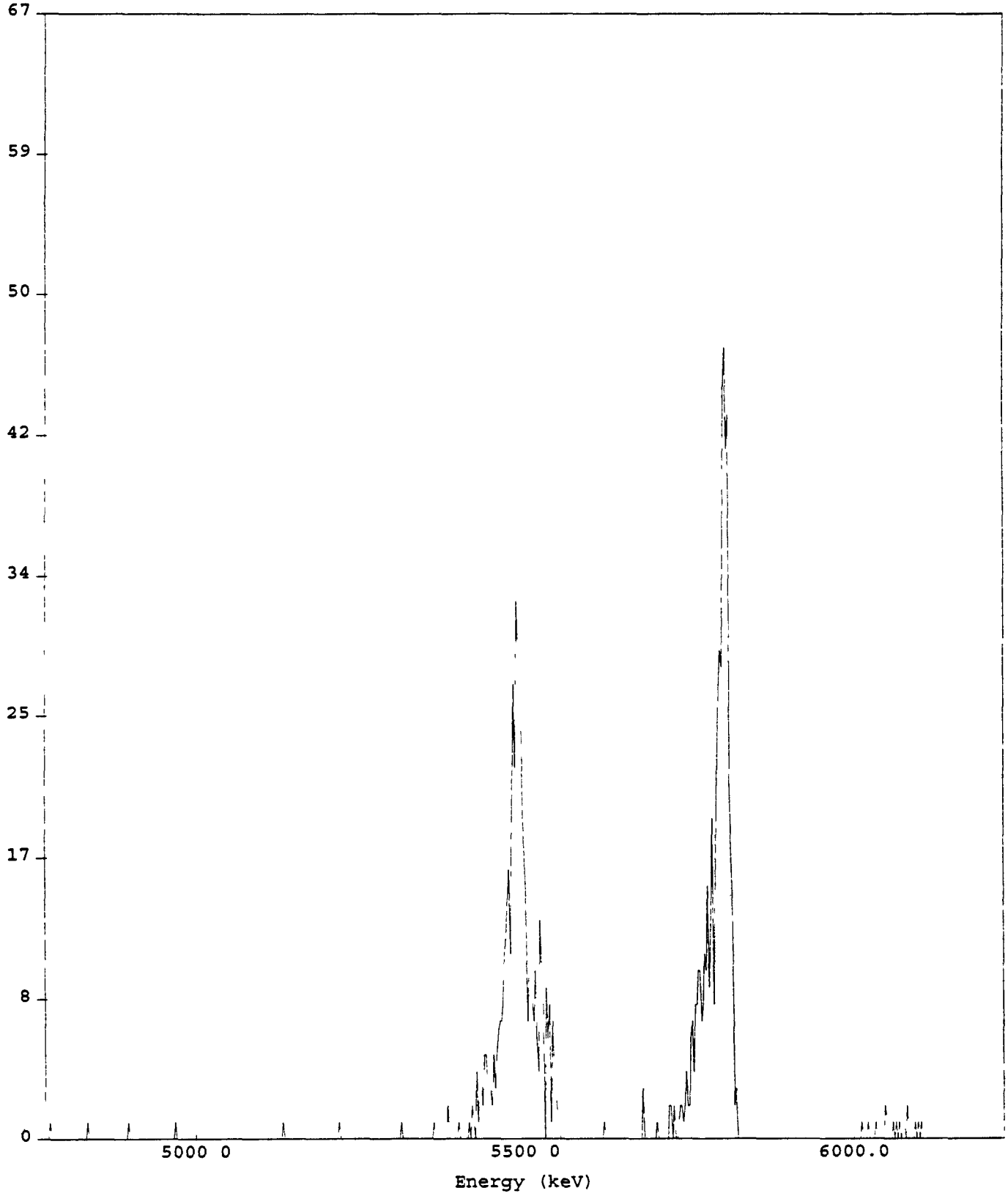
00082

413

Isotopic Analysis by Alpha Spectrometry

Rocky Flats Technologies Site, Analytical Labs Bldg. 881
Monday, August 12, 1996

File(6) 78359737 OXS Date 06-Aug-96 15 04 30 LT 43,200 00 RT 43,200 95
ID(6) AM96-526-067 CONTROL #1452



00083

4/4

CALIBRATIONS, EFFICIENCIES and BACKGROUNDS

415

ENERGY CALIBRATIONS
EFFICIENCIES
BACKGROUNDS

ALPHA SPEC
881

7/96

SEE ED BROVSKY

00095

4/16

CHEMISTRY STANDARDS CERTIFICATES

DynCorp of Colorado, Inc.
Chemistry Standard Laboratory
Rocky Flats Environmental Technology Site

USE . CERTIFICATE

To T H Elmont
Anal Labs
Building 881

From Brian O'Connor
Chemistry Standards Laboratory
Building 881 X 5815

Standard Identification CSL #604510

Standard Description Pu-242 Reference Solution Std

Standard Matrix: 1N HNO

Calibration Date February 19, 1996 Expiration Date February 1997

Element	Standard Value	Error	Units
Pu-242	2 01	0 1	D/M/G

Additional Information

This standard was made using a 0 9249 gram aliquot of parent transfer CSL 604337 and brought up to volume in a 500ml Erlenmeyer flask A 5% error value was administratively assigned Please call 881 Chem Standards Lab with any questions.

Signature _____ Date February 20, 1996

418

00037

DynCorp Colorado, Inc.

Chemistry Standard Laboratory

Rocky Flats Environmental Technology Site

USER CERTIFICATE

To Kip Harward
Anal Labs
Bldg 881

From C M Blanchard
Chemistry Standards Laboratory
Building 881 X 2341

Standard Identification CSL # 604570

Standard Description U-232 Reference Solution

Standard Matrix 1N HNO_3

Calibration Date June 13, 1996 Expiration Date Sept 1996

Element	Standard Value	Error	Units
U-232	10 07	0 5	d/min

Additional Information

Please Contact CSL if the standard exceeds the expiration date or if the standard is lost or damaged.

Signature C M Blanchard Date April 1, 1996

00038

419

U

CHEMISTRY STANDARDS LABORATORY

USER CERTIFICATE

TO: Tim Elmont
General Laboratories
Bldg. 881

FROM: A. DiGiallonardo, Jr.
Chemistry Standards
Bldg. 881
x2741

STANDARD IDENTIFICATION: CSL# [illegible]

STANDARD DESCRIPTION: Am-241 Reference Std.

EXPIRATION DATE: [illegible]/96

ELEMENT	STANDARD VALUE	ERROR (95%)	UNITS
^{241}Am	[illegible]	[illegible]	[illegible]

SIGNATURE: [signature]

DATE: [illegible] 5 1995

00089

920

CHEMISTRY STANDARDS LABORATORY

USER CERTIFICATE

TO: Kip Harward
General Laboratories
Bldg. 881

FROM: Sherrie N. Hill
Chemistry Standards
Bldg 881
[illegible]7667

STANDARD IDENTIFICATION: CSL# [illegible]

STANDARD DESCRIPTION: Pu-[illegible] Reference Standard

EXPIRATION DATE: 10 [illegible]

ELEMENT	STANDARD VALUE	ERROR 95%	[illegible]
[illegible]	2.04	0.[illegible]	[illegible]

SIGNATURE: [signature]

DATE: [illegible]-1997

00090

421

DynCorp of Colorado, Inc.
Chemistry Standard Laboratory
Rocky Flats Environmental Technology Site

USER CERTIFICATE

To T H Elmont
Anal Labs
Building 881

From Brian O'Connor
Chemistry Standards Laboratory
Building 881 X 5815

Standard Identification: CSL #604511

Standard Description Cm-244 Reference Solution Std

Standard Matrix: 1N HNO

Calibration Date February 16, 1996 Expiration Date February 1997

Element	Standard Value	Error	Units
Cm-244	2 01	0 1	D/M/G

Additional Information

This standard was made using a 0 5055 gram aliquot of parent transfer CSL 604310 and brought up to volume in a 500ml Erlenmeyer flask A 5% error value was administratively assigned. Please call 881 Chem Standards Lab with any questions

Signature [signature] Date February 20, 1996

422

DynCorp of Colorado, Inc.
Chemistry Standard Laboratory
Rocky Flats Environmental Technology Site

USER CERTIFICATE

To Kip Harward
Analytical Laboratory
Building 881

From James F Teagarden
Chemistry Standards Laboratory
Building 881 X 2341

Standard Identification: CSL # 610796

Standard Description Uranium, Natural Reference Solution

Standard Matrix 1 N Nitric Acid

Calibration Date January 22, 1996 Expiration Date January 1997

Element	Standard Value	Error	Units
U-234	10 09	0 50	D/M/ml
U-238	9 83	0 49	D/M/ml
U-235	0.4526		

Additional Information

This solution was prepared by taking an aliquot of a NIST traceable solution and diluting to volume with 1 N Nitric acid

Signature: J.F. Teagarden Date January 23, 1996

00032

~~00091~~

423

BENCH SHEETS
and
INTERNAL PROCEDURES

424

GENERAL LABORATORIES - BUILDING 881
ISOTOPIC ANALYSIS
SAMPLE PREPARATION BENCHSHEET - DISSOLVED SOLIDS, (SOILS, SLUDGES, SEDIMENTS)

Date 7-25-96
Batch # 067
Procedure L-6290-B/6235-H
Analyst KDC

Balance ID RF84888 / RF80633
Balance Calibration
Verification By KDC Date 7-25-96
Batch Key

Controls Used #1452
Pu 239 CSL# 650165 Wt. 0.9842 g
Am 241 CSL# 610720 Wt. 0.9878 g
U 238/234 CSL# 610796 Wt. 1.0036 g
RC-56

LAB REPORT #(J/P/L)	SAMPLE ID	DRY/WET RATIO (g)	Vessel #	(1g) SAMPLE WT (g)	PU 242 CSL#	PU 242 Vol	CM 244 CSL#	CM 244 Vol	U 232 CSL#	U 232 Vol	COMMENTS
96L2181	Bkg Smpl #1	1	1	1.0148	604512	1ml	604511	1ml	604570	1ml	Paint/Concrete - Bldg 889
	Bkg Smpl #2	2	2	1.0205							
	B-5	3	3	* 1.0135							
	B-4	4	4	* 1.0179							
	B-35	5	5	* 1.0256							
	B-28	6	7	* 1.0186							
	B-29	7	8	* 1.0126							
	B-30	8	9	* 1.0158							
	B-32	9	10	* 1.0260							
	B-32D	10	11	* 1.0162 ~~1.0217~~ KDC							Lab Dup
n/a	Blank	B		1.0							Reagent Blank
	Control	C		1ml						0.9961g	Control # 1452

COMMENTS * Samples ground with mortar & pestal prior to weighing.
Vessel #5 blew at ~25 min. Rupture disks were not damaged. L-6290-B

SAMPLE CONTROL RECORD
Removed from 266-2R on 7/25/96
at 08:05 by KDC
Returned to 266-2R on 7/25/96
at 13:00 by KDC

Comments

REVIEW
Reviewed by NKH Date 8/7/96
Comments

2/29/96
REVISION 3

00094

425

KAISER-HILL TECHNOLOGIES SITE
GENERAL LABORATORIES - BUILDING 881
ISOTOPIC ANALYSIS
PREPARATION BENCHSHEET SOLIDS, (SOILS, SLUDGES, SEDIMENTS)

Batch 047
7-25-96

00095

SAMPLE ID	TARE WEIGHT(g)	GROSS WET WEIGHT(g)	NET WET WEIGHT	GROSS DRY WEIGHT(g)	NET DRY WEIGHT(g)	SAMPLE ANALYZED	WET/DRY RATIO
96L3181 Blg 1	211.3			341.2	129.9	See Bench sheet	
Blg 2	211.3			375.5	164.2		
B-5	218.6			242.6	24.0		
B-4	219.0			265.1	46.1		
B-35	216.4			244.6	28.2		
B-28	216.6			254.4	37.8		
B-29	219.2			280.0	60.8		
B-30	217.1			282.2	65.1		
B-32	216.2			333.6	117.4		

7-25-96

COMMENTS RF 78405 7/25/96 KDC
2/26-28, 08:05 KDC, removed from frig and allowed samples to reach room temp. before weighing KDC.

PROCEDURE L-

WASTE SAMPLERS (Signature/Emp. No.) Richard J Sexton / / /

LAB ID NUMBER 9612181

A.P.O. NUMBER

Lab Location: 371 | 559 | 771 | (881) | Contractor

ANALYTICAL LABORATORIES

CHAIN OF CUSTODY

Date	Time	Sample Location / ID	Cooled to 4°C	NaOH	HNO_3	H_2SO_4	None	Total VOA	Total SVOA	Total Metals - ICP Hg	Total Metals - ICP	Ignitability	Corrosivity	α/β Screen	Gross α/β	TCLP VOA	TCLP SVOA	TCLP Metals - ICP, Hg	TCLP Metals - ICP	Infrared	X-Ray	Fingerprint	Pu, Am, U					
7/8/96	10:30	Background Sample #1 - Exterior Wall Room 106																										
7/8/96	10:30	Background Sample #2 - Exterior Wall Room 106																										
7/24/96	2:30	Building 889 - B-5																					X					
7/24/96	2:30	Building 889 - B-4																					X					
7/24/96	2:30	Building 889 - B-35																					X					
7/24/96	2:30	Building 889 - B-28																					X					
7/24/96	2:30	Building 889 B-29																					X					
7/24/96	2:30	Building 889 B-30																					X					
7/24/96	2:30	Building 889 B-32																					X					

Relinquished by	/ ORG.	Date	Time	Received by	/ ORG.	Date	Time
[signature]	/	7/24/96	2:55	[signature]	/	7/24/96	1455
[signature]	/	7/24/96	1455	[signature]	/	7/24/96	1455
	/				/		
	/				/		

LABORATORY USE ONLY	Y / N
Pckg received / custody seals intact	N/A
Sample Labels / COCs agree	Y
Temp at Time of Receipt ____ °C	N/A
Corrected copy attached	N/A

Other problems or discrepancies

Cost Center R0483

Charge 951728CH

2

427

ANALYTICAL PROJECTS OFFICE
SAMPLING AND ANALYSIS REQUEST FORM

Tracking No 2181 Waste Stream I D No _____

Waste Stream I _____

Date _____ Sample Location Bldg 889 Rm 106, 107 & 108 Glovebox N/A

Tank# N/A _____ Line # N/A Tent # N/A

Located in MAA _____ RCA _____ RMMA _____ CA _____ RBA _____

Requestor Richard J Sexton Ext/Pager 2863/0151 Bldg T-130-F

Secondary Contact Mark Hickman Ext/Pager 7145 Bldg _____

Cost Center R0483 Sampling Charge No 951728CH Analysis Chg No _____

Estimated Quantity Available for Sampling _____

Sample Description and Sample Identifiers Paint/Concrete samples from walls and floors, ceiling of Building 889 - Room 106, 107, 108

Matrix Type. Aqueous _____ Org Liquid _____ Solid X Sludge _____ Multi Phase _____

Is this stream expected to be radioactive. (Y/N) Pu Y Am Y U Y Compatibility Code _____

EPA Codes None MSDS (Y/N) ATTACHED? (Y/N)

When will material be available for sampling? ___/___/___ 90 DAY AREA? (Y/N) START _____

When must data be received by requestor? ___/___/___ WFC/IDC _____ END: _____

Reason for Analysis

LDR Determination _____ RCRA Characterization _____ Environmental Compliance _____

Other Closeout Survey Legally Defensible/Validated Data Required? (Y/N) _____

Analytes Requested.

____	Alpha Beta Screen	____	Fingerprint	____	pH
____	Gross Alpha/Beta	____	g/l	____	Conductivity
____	CLP VOA	____	VOA SW846	____	VOA Sweep
____	Total Metals (ICP)	____	TCLP Metals	____	Metals Sweep
____	IR	____	X-ray	____	Total SVOAS
____	TCLP SVOAS	____	Isotopics	____	TOTAL PCB'S

Special Instructions Isotopic separation / chromatographic extraction / Alpha spectrometry. Results need to be reported in units of pCi/gram along with net weight of sample.

Entry Requirements/Safety Concerns (Y/N)

Plan of theDay	____	Radiological Work Permit	____
IWCP	____	RCT Support	____
Industrial Hygiene Assistance	____	Operator's Assistance	____
Maintenance Assistance	____	RMMA/RCA Access	____
Confined Space	____	Lock Out/Tag Out	____
Carcinogen Control Area	____	Electrical	____
Mechanical	____	Waste Contain Fluorides	____

Generator Notified to Receive Excess Sample? (Y/N) Yes

Requestor Signature [signature] Date 7/24/96

00097

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ISOTOPIC PROCEDURE CONCRETE SCABBLE

I am not sure was [illegible] bers will be, the samples are not in yet Please start these was [illegible] e in There are suppose to be a total of 35 samples, maybe [illegible] d be a least 9 today to get started

Thanks

Sample Description

We have quit a few large samples of concrete It appears that it has been pulverized just from being scrabbled off the wall I would like you to get a tare weight off the whole sample so we can report the results in pCi/sample You will need to take one aliquot of 1 0 gram apiece with a duplicate, blank and control

I would like you to run these in the microwave, however **do not** use any HF We are more interested in getting the paint in solution and the surface contamination from the concrete Use the same ratio of HCl and HNO3 as described in the procedure and continue to run the samples the same as described in the procedure for microwaving **Use two rupture discs**

When taking the one gram aliquot I would like you to take 0 5 grams then cap the sample and shake it well and then take another 0 5 gram aliquot from a different area of the sample jar Do this for each sample

These sample are not suppose to contain a large amount of activity, however we should take some precautions in prepping these samples The following precautions must be taken to prevent contamination of the area and personnel when preparing these samples for analysis

1) Wear gloves and Yellow smocks with company clothing when handling the samples

2) Use the high level hoods when possible Line the floor of all hoods used with contamination paper which will be discarded in the low level combustibles drum when preparation is completed

3) All glassware used for the isotopic separation must be segregated, labeled and stored separately

4) Use disposable columns for isotopic separations You may use the vacuum system but be careful to avoid cross contamination

5) Discard aqueous waste in the cup sink process drain in Radiochem hood and all trash in appropriate low level drum

96L2146

Sample Batch Preparation

The samples have already been prepped by the process of scraping the walls of the building

1/5 - (Sample jars) Beakers had tare wt. tlc

1) ~~Grab a large beaker and tare. Dump out the entire sample and record the weight of the sample You will probably have to use the big red balance~~

2) Weigh out 1 0 gram (as described above) of sample in a microwave vessel for analysis Weigh out a duplicate sample as described above

3) A blank and control will need to be run You can run these on the hot

00098

429

plate with the same reage - that were used for the analysis

4) Spike the blank, contro' -c concrete samples with the following

1 0 ml U232 CSL 604570 ^0 ·7 d/m/ml
1 0 ml Pu242 CSL 604512 2 06 d/m/ml
1 0 ml Cm244 CSL 604511 ^ 01 d/m/ml

To the control add

1 ml U234/238 CSL 610796 9 8/10 1 d/m/ml
1 ml Pu239 CSL 650165 2 04 d/m/ml
1 ml Am241 CSL 610720 2 02 d/m/ml

6) Follow the microwave procedure Again, remember do not add any HF

7) After the samples are removed from the microwave oven Transfer the concrete samples to 150 ml beakers and heat the samples down Do Not bake the samples Add 5 ml conc HNO3 and 20 drops of saturated sodium nitrite to the beakers and dry them down

8) Transfer the samples to a cent tube with about 1 to 3 ml of 6M HNO3, spin the samples down Take ~30 mls to get samples transferred. Samples spun down, transferred to beakers; centrifuge tubes rinsed, 5 drops NaNO2 added then spun down and poured

9) When the samples are ready to be added to the columns, add 20 drops of saturated sodium nitrite to each sample.

10) Follow the water procedure to run these samples

11) **When you calculate these samples get with me I think we will have to do a ratio of total to aliquot I'm not to sure how to go about this until it is time to load these**

Wants these in pCi/g but wants total sample weight.

430

CONTROL
SPIKE and SAMPLE
LOGBOOK

00100

431

ISOTOPIC ANALYSIS

Sample Preparation Log Book

RECORD

Rocky Flats Plant

432

433

Log #	Batch #	Date	Sample I D	Sample Wt/Vol	Units	Phenol Spike CSL#	Phenol Spike cfm/ml	Cresol Spike CSL#	Cresol Spike cfm/ml	1,2,3,3 Spike CSL#	1,2,3,3 Spike cfm/ml	Analyst #	Hrs Spent	Tech	Comments
96-515	067	7-25-96	96L-3181 Point Creek Blog 889 Big Smp #1 ①	1.0148	g	604512	2.06	604511	2.01	604570	10.07	RSL	3	KLC	
516			Big Smp #2 ②	1.0206											
517			B-5 ③	1.0135											
518			B-4 ④	1.0179											
519			B-35 ⑤	1.0256											
520			B-28 ⑥	1.0186											
521			B-29 ⑦	1.0216											
522			B-30 ⑧	1.0158											
523			B-32 ⑨	1.0260											
524			B-32 Lab Dup ⑩	1.0162											
525			Reagent Blank	1.0											
526			Control # 1452	1	ml										See Table for Results
96-527	068	7-25-96	96L2329 -0050	2000	ml	604512	2.06	604511	2.01	604570	10.07	RSL	3	RJK	
528			-0051	2000											
529			-0051 Dup	1650											
530			96L2160 EPA KCKECK1 2	1000											
531			3												
532			4												
533															
534			Reagent Blank	2000											
535			Control # 1453	1											
96-536	069	7-29-96	96L2568 C4747003 50.12	50.29	g	604510	2.01	604511	2.01	604570	10.07	RSL	3	RJK	
537			C4748004	.5050											
538			C4749005	.5045											
539			C4750006	.4994											
540			C4751007	.5056											
541			C4752008	.5058											
542			C4754010	.5045											
543			C4747003 Dup	.5041											
544			Reagent Blank	.5000											
545			Control # 1454	1	ml										See Table for Results
96L-546	070	8-7-96	96L2859 SWANHATRH #1 Wastewater Waters	150	ml	604512	2.06	604511	2.01	604570	10.07	RSL	3	KLC	
547			#2												

20100

Date	Tech	Apple	Control #	Iso	CSL #	Wt (g)	Iso	CSL #	Wt (g)	Iso	CSL #	[illegible]
7-1-96	PC	RC56	1447	Pu239	650165	1.0060	Am241	610720	1.0209	U238/234	610796	1.0[illegible]
7-10-96	RK	RC56	1448	Pu239	650165	.9945	Am241	610720	1.0089	U238/234	610796	1.0[illegible]
7-15-96	PC	RC56	1449	Pu239	650165	.9737	Am241	610720	1.0139	U234/238	610796	1.013
7-19-96	PC	RC56	1450	Pu239	650165	.9992	Am241	610720	1.0206	U234/238	610796	1.0123
7-22-96	RT	RC56	1451	Pu239	650165	1.0002	Am241	610720	1.0233	U234/238	610796	1.04[illegible]
7-25-96	LDC	RC56	1452	Pu239	650165	0.9840	Am241	610720	0.9878	U234/238	610796	1.0234
7-25-96	PC	RC56	1453	Pu239	650165	0.9826	Am241	610720	1.0139	U234/238	610796	1.0127
7-29-96	RT	RC56	1454	Pu239	650165	0.9974	Am241	610720	1.0114	U234/238	610796	1.0125
8-7-96	LDC	RC56	1455	Pu239	650165	0.9895	Am241	610720	1.0024	U234/238	610796	1.0190

00104

435

ELECTROPLATE LOG BOOK

ROCKY FLATS PLANT

RC024

936

00105

#24	Tech	Power Supply	#1	#2	#3	#4	Comments
[illegible]-96	JL	D	Pu96-539-069	Pu96-540-069	Pu96-541-069	Pu96-545-069	1 Hr
	JL/RT	A	U96-536-069	U96-537-069	U96-538-069	U96-539-069	1½ Hr.
		B	U96-540-069	U96-541-069	U96-542-069	U96-543-069	
		C	U96-544-069	U96-545-069	Pu96-538-069	Pu96-54-069	
		D	Pu96-543-069	Pu96-544-069	—	—	
8-2-96	PC	A	PU96-515-067	PU96-516-067	PU96-517-067	PU96-518-067	1 HR
		B	PU96-519-067	PU96-520-067	PU96-521-067	PU96-522-067	
		C	PU96-523-067	PU96-524-067	PU96-525-067	PU96-526-067	
		A	PU96-527-068	PU96-528-068	PU96-529-068	PU96-534-068	1 HR
		B	PU96-535-068	AM96-527-068	AM96-528-068	AM96-529-068	
		C	AM96-534-068	AM96-535-068	—	—	
8-2-96	PC	A	U96-527-068	U96-528-068	U96-529-068	U96-530-068	1½ HRS
		B	U96-531-068	U96-532-068	U96-533-068	U96-534-068	
		C	U96-535-068	—	—	—	
8-6-96	KLC	A	U96-515-067	U96-516-067	U96-517-067	U96-518-067	1½ Hrs
		B	U96-519-067	U96-520-067	U96-521-067	U96-522-067	
		C	U96-523-067	U96-524-067	U96-525-067	U96-526-067	
8-6-96	KLC	A	Am96-515-067	Am96-516-067	Am96-517-067	Am96-518-067	
		B	Am96-519-067	Am96-520-067	Am96-521-067	Am96-522-067	
		C	Am96-523-067	Am96-524-067	Am96-525-067	Am96-526-067	
8-6-96	PC	A	U96-530-068	U96-531-068	U96-532-068	U96-533-068	1½ HRS
		B	U96-534-068	U96-535-068	—	—	
[illegible]-12-96	RT/KC	A	PU96-546-070	PU96-547-070	PU96-548-070	PU96-549-070	1 hour
		B	PU96-550-070	PU96-551-070	Pu96-water-070 KLC ~~[illegible]~~	—	
8-12-96	RT/KLC	A	U96-546-070	U96-547-070	U96-548-070	U96-549-070	1½ Hrs
		B	U96-550-070	U96-551-070	U96-water-070	~~Am96-546-070~~ KLC 8-12-96	B-4 out of service
		C	Am96-547-070	Am96-548-070	Am96-549-070	Am96-550-070	
		D	Am96-551-070	Am96-water-070	Am96-~~546-070~~ 8-12-96 KLC	—	

PHA

INSTRUMENT LOG

RACK 0

AFETS

RG03

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Date	B	Device #	D1 - U1 D2 - U1 D3 - U1	D1 - U2 D2 - U2 D3 - U2	D1 - U3 D2 - U3 D3 - U3	D1 - U4 D2 - U4 D3 - U4	D1 - U5 D2 - U5 D3 - U5	D1 - U6 D2 - U6 D3 - U6	D1 - U7 D2 - U7 D3 - U7	D1 - U8 D2 - U8 D3 - U8	Initials	Comments (1)
6-27-96	74368449	1	AM96-437-060	AM96-438-060	AM96 439-060	AM96 440-060	AM96-441-060	AM96-442-060	AM96-443-060	AM96 444-060	RK/RC	
↓	↓	2	AM96-445-060	AM96-446-060	AM96-447 060	AM96-448-060					↓	
7-2-96	74887238	1	PU96-449-061	PU96 450 061	PU96 451 061	PU96 452 061	PU96 453 061	PU96 454 061	PU96 455 061	PU96 456 061	RK	
		2	PU96 457-061	PU96 458 061	PU96 459 061	PU96 425 059	PU96 426 059	PU96 427 059	PU96 428 059	PU96 429 059		
↓	↓	3	PU96 430 059	PU96 431 059	PU96 432 059	PU96 433 059	PU96 434 059	PU96 435 059	PU96 436 059		↓	
7-8-96	75436272	1	AM96-451-061	AM96-452-061	AM96-453-061	AM96-454 061	AM96-455-061	AM96-456-061	AM96-457-061	AM96-458-061	AC/LL	
↓	↓	2	AM96-459 061								↓	
7-8-96	75480623	2		AM96-425-059	AM96-426 059	AM96 427 059	AM96 428 059	AM96-429 059	AM96 430 059	AM96 431 059	RK/RC	
↓	↓	3	AM96 432 059	AM96 433 059	AM96-434 059	AM96 435 059	AM96 436 059				↓	
7-10-96	20845978	1,2,3	Engineering Calibration								OK/AC	
7-10-96	21017469	1,2,3	BKG								RC/RK	
7-11-96	23727534	1,2,3	EFF Calibration								OK/RC	
7-15-96	76139515	1	AM96-461-061	AM96-458-061	AM96-459-061	AM96 460-062	AM96-461-062	AM96-462-062	AM96-463-062	AM96-464-062	RC	Back Not Replaced
↓	↓	2	AM96-465-062	AM96-466-062	AM96-467-062						↓	
7-17-96	76383148	1	AM96 468 063	AM96 469 063	AM96 470 063	AM96 471 063	AM96 472 063	AM96 473 063	AM96 474 063	AM96 475 063	RK	
	↓	2	AM96 476 063	AM96 477 063	AM96 478 063	AM96 477 063	R96 968 063	PU96 469 063	PU96 470 063		↓	
	76387998	3	PU96 471 063	PU96 472 063	PU96 473 063	PU96 474 063	PU96 475 063	PU96 476 063	PU96 477 063	PU96 478 063		
		4	PU96 479 063	PU96 480 064	PU96 481 064		PU96 482 064	PU96 483 064	PU96 484 064	PU96 485 064		
	76359486	5	PU96 486 064	PU96 487 064	PU96 488 064	PU96 489 064	PU96 490 064					
7-18-96	76438488	1	AM96 480 064	AM96 481 064	AM96 482 064	AM96 483 064	AM96 484 064	AM96 485 064	AM96 486 064	AM96 487 064	RK	
↓	↓	2	AM96 488 064	AM96 489 064	AM96 490 064						↓	
7-19-96	77169367	1	AM96-491-065	AM96-492-065	AM96-493-065	AM96-494-065	AM96-495-065	AM96-496-065	AM96-497-065	AM96-498-065	RT/JL	
	77169367/77171	2	AM96-499-065	AM96 500-065	AM96 501-065	AM96-502 065	PU96-491-065	PU96-492-065	PU96-493-065	PU96-494 065		
↓	77171795	3	PU96-495-065	PU96-496-065	PU96-497-065	PU96-498-065	PU96-499-065	PU96-500-065	PU96-501-065	PU96-502-065	↓	
7-30-96	77171795	1	PU96-498 065	PU96-499 065	PU96-500-065	PU96 501 065	PU96-502-065				OK/JL	Remove
8-2-96	77755605	1	PU96-515-067	PU96 516-067	PU96-517-067	PU96-518-067	PU96 519-067	PU96-520 067	PU96-521 067	PU96-522-067	RC	
↓	77957284	2	PU96-523-067	PU96-524-067	PU96 525-067	PU96-526-067	AM96-536-069	AM96-537-069	AM96 538-069	AM96 539-069	↓	
	77960529	3	AM96-540-069	AM96 541-069	AM96-542-069	AM96 543-069	AM96 544-069	AM96-545-069	PU96-536-069	PU96 537-069		
8-5-96	78202594	1	PU96-527 068	PU96-528-068	PU96-529-068	PU96-530-068	PU96-535 068	AM96-527-068	AM96-528-068	AM96-529-068	OK/RT	
↓	↓	2	AM96-534-068	AM96-535-068							↓	
8-6-96	78358396	1	PAM96-515-067	PAM96-516-067	PAM96-517-067	PAM96-518-067	PAM96-519-067	PAM96-520-067	PAM96-521-067	PAM96-522-067	RC	
↓	↓	2	PAM96-523-067	PAM96-524-067	PAM96-525-067	PAM96-526-067					↓	
8-8-96	78442714	1	PU96-546-070	PU96-547-070	PU96-548-070	PU96-549-070	PU96-550-070	PU96-551-070	PU96-552-070	PAM96-546-070	RC	
↓	78442818	2	PAM96-547-070	PAM96-548-070	PAM96-549-070	PAM96-550-070	PAM96-551-070	PAM96-552-070			↓	

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Date	Barcode	Run	D1-U1 D2-U1 D3-U1	D1-U2 D2-U2 D3-U2	D1-U3 D2-U3 D3-U3	D1-U4 D2-U4 D3-U4	D1-U5 D2-U5 D3-U5	D1-U6 D2-U6 D3-U6	D1-U7 D2-U7 D3-U7	D1-U8 D2-U8 D3-U8	Initial	4/11/96 Comments
6-6-96	21609966	1,2,3	EFF Calibrations								JL	
6-6-96	72188073	3			U96-378-052	U96 379-052	U96 380 052	U96 381-052	U96-382-052		PC	
		2							U96 383-052	U96 384-052		
6-10-96	72671274	1	U96-385-053	U96-386-053			U96-387-053	U96-388 053	U96 389-053		PC	
		2	U96-390-053	U96-391-053	U96 392-053	U96-393-053	U96 394-053	U96-395-053	U96-396-053			
6-12-96	72863718	1	U96-397-054	U96-398-054	~~U96-399-054~~	~~U96-400-054~~	U96-399-054	U96-400-054	U96-401-054		KC	
	72863742	2	U96-402-054	U96-403-054	U96-404-055	U96-405-055	U96-406-055	U96-407-055				
6-17-96	73372560	1	U96-413-057	U96-414-057			U96-415 057	U96-416 057	U96-417 057		PC	
		2	U96-418-057									
6-19-96	69788537	2	U96 408-056	U96-409 056	U96-410-056	U96-411-056	U96-412 056				RK	
6-25-96	74016980	2	U96-419-058	U96-420-058	U96-421-058	U96-422-058	U96-423-058	U96-424-058			KRS	
6-26-96	74069080	1	U96-419 058	U96-420-058			U96 421-058	U96 422-058	U96-423-058		RL	
		2	U96-424-058									
6-27-96		1										
		2										
7-2-96	74369966	1	U96-437-060	U96-438-060			U96-439-060	U96-440-060	U96-441-060		JL	
		2,3	U96-442-060	U96-443-060	U96-444-060	U96-445-060	U96-446-060	U96-447-060	U96-448-060			
7-8-96	75433769	1					U96-449-061	U96-450-061	U96-451-061		JL/KC	
		2	U96-452-061	U96-453-061	U96-454-061	U96-455-061	U96-456-061	U96-457-061	U96-458-061	U96-459-061		
7-8-96	75433769	1	U96-449-061	U96-450-061			U96-451-061	U96-452-061	U92 453-061		PC	
		2	U96-454-061	U96-455-061	U96-456-061	U96 457-061	U96 458-061	U96 459-061				
7-9-96	75561595	1	U96 425-057	U96 426 057	U96 427 057	U96 428 057	U96 429 057	U96 430 057	U96 431 057	U96 432 057	KK	
		2	U96 433 057	U96 434 057	U96 435 057	U96 436 057						
7-9-96	75582115	2					U96-460-062	U96 461-062	U96-462-062	U96-463-062	PC	
		3			U96-464-062	U96-465-062	U96-466-062	U96 467-062				
7-10-96	20546093	1,2,3	Energy Calibrations								JL	
7-10-96	32341565	1,2,3	Bkgd								PC/RK	
7-11-96	21609966	1,2,3	EFF Calibrations								KC/JL	
7-15-96	75582115	1	U96-460-062	U96-461-062	U96-462-062		U96-463-062	U96-464-062	U96-465-062	U96-466-062	KC	Repeat
		2	U96 467-062									
7-16-96	76383666	1	U96 468 063	U96 469 063	U96 470 063		U96 471 063	U96 472 063	U96 473 063	U96 474 063	RK	
		2	U96 475 063	U96 476 063	U96 477 063	U96 478 063	U96 479 063					
7-18-96	76533576	1	U96 480 064	U96 481 064	U96 482 064		U96 483 064	U96 484 064	U96 485 064	U96 486 064	RK	
		2	U96 487 064	U96 488 064	U96 489 064	U96 490 064						
7-29-96	77183587	1	U96-503-066	U96-504-066	U96-505-066	U96-506-066	U96-507-066	U96-508-066	U96-509-066	U96-510-066	RT/JL	
	77183587/77533414	2	U96-511-066	U96-512-066	U96-513-066	U96-514-066	U96-501-065	U96-502-065	U96-491-065	U96-492-065		
	77533414	3	U96-493-065	U96-494-065	U96-495-065	U96-496-065	U96-497-065	U96-498-065	U96-499-065	U96-500-065		
8-1-96	77171042/77183002	3	Au96-512-066	Au96-512-066	Au96-513-066						JL	Recounts
8-2-96	77933035	1	U96-536-069	U96-537-069	U96 538-069		U96-539-069	U96-540-069	U96-541-069	U96 542-069	RC	
		2	U96-543-069	U96 544-069	U96-545-069							
8-5-96	78261958	1					U96-527-068	U96-528-068	U96-529-068	U96-530-068	JL/RT	
		2	U96-531-068	U96-532-068	U96-533-068	U96-534-068	U96-535-068					
8-6-96	78356535	1	U96-515-067	U96-516-067	U96-517-067		U96 518-067	U96-519-067	U96-520-067	U96-521-067	KC	
		2	U96-523-067	U96-524-067	U96-525-067	U96-526-067	U96-526-067	U96-530-068	U96-531-068	U96-532-068	PC	
8-6-96	78261958	3			U96-533-068	U96 534-068	U96 535 068					

Quanterra Environmental Services

Quanterra Incorporated
2800 George Washington Way
Richland, Washington 99352

509 375-3131 Telephone
509 375 5590 Fax

August 9, 1996

Scientific Ecology Group
Rocky Flats Environmental Technical Site
P O Box 464, T-130F
Golden, CO 80402

Attention Dick Sexton

Date Received In Lab	July 26, 1996
Sample Type	Concrete
SDG Number	7075

I. Introduction

On July 26, 1996, 13 concrete samples were received by the Quanterra Environmental Services Richland (QTESRL) laboratory for radiochemical analysis Upon receipt, these samples were assigned QTESRL identification numbers as described on the cover page of the Analytical Data Package report forms These samples were assigned to work order 607265

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID Each set of data includes sample identification information, analytical results and the appropriate associated statistical uncertainties

The analyses requested were

Alpha Spectroscopy

Plutonium-238, 239/240 (PU-ISO) by method QUANTERRA RICHRC5010
Americium-241 (AM-241) by method QUANTERRA RICHRC5003
Uranium-234, -235, -238 (U-ISO) by method QUANTERRA RICHRC5030

III. Quality Control

The analytical results for each analysis performed include a minimum of one Laboratory Control Sample (LCS) and one method (reagent) blank and duplicate sample analysis Any exceptions have been noted in the "Comments" section

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Analytical Data Package Prepared For

SCIENTIFIC ECOLOGY GROUP

Radiochemical Analysis By

Quanterra Environmental Services

Richland Laboratory

Report Nbr: 1899

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	QUANTERRA ID NUMBER
7075		889-B-17	60726501
		889-B-18	60726502
		889-B-20	60726503
		889-B-22	60726504
		889-B-23	60726505
		889-B-27	60726506
		889-B-31	60726507
		889-B-33	60726508
		889-B-34	60726509
		889-B-3QA	60726510
		889-B-2	60726511
		889-B-3	60726512
		889-B-6	60726513
7076		889-B-9	60726601
		889-B-10	60726602
		889-B-12	60726603

Comments:

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Report Nbr: 1899

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	QUANTERRA ID NUMBER
7076		889-B-13	60726604
		889-B-14	60726605
		889-B-15	60726606
		889-B-16	60726607
		889-B-33QA	60726608
		889-B-41	60726609
		889-B-42	60726610
		889-B-43	60726611
		889-B-44	60726612

0002

Comments:

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Lab ID QTESRL
WO# 607265, 607266
SDG # 7075,7076

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CHAIN OF CUSTODY	0039-0080
SAMPLE RECEIPT DOCUMENTATION	
Chain of Custody	
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AMERICIUM	
SAMPLE AND QC DATA	0082-0347
STANDARDS TRACEABILITY	0348-0450
CONTINUING CALIBRATIONS	0451-0592
PLUTONIUM	
SAMPLE AND QC DATA	0594-0912
STANDARDS TRACEABILITY	0913-0977
CONTINUING CALIBRATIONS	0978-1152
URANIUM ISOTOPIC	
SAMPLE AND QC DATA	1154-1460
STANDARDS TRACEABILITY	1461-1521
CONTINUING CALIBRATIONS	1522-1588

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IV. Comments

Alpha Spectroscopy

Plutonium-238, -239/240

*The LCS, batch blank, duplicate sample and sample results are within contractual requirements In order to reduce the analysis of these samples we decreased the drying time from six hours to three and four hours

Americium-241

*The LCS, batch blank, duplicate sample and sample results are within contractual requirements In order to reduce the analysis of these samples we decreased the drying time from six hours to three and four hours

Uranium -234, -235, -238

*The LCS, batch blank, duplicate sample and sample results are within contractual requirements In order to reduce the analysis of these samples we decreased the drying time from six hours to three and four hours

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature

Reviewed and approved

Andy Kopriva
Project Manager

Quanterra Environmental Services

Quanterra Incorporated
2800 George Washington Way
Richland, Washington 99352

509 375 3131 Telephone
509 375 5590 Fax

August 9, 1996

Scientific Ecology Group
Rocky Flats Environmental Technical Site
P O Box 464, T-130F
Golden, CO 80402

Attention Dick Sexton

Date Received In Lab	July 26, 1996
Sample Type	Concrete
SDG Number	7075

I. Introduction

On July 26, 1996, 12 concrete samples were received by the Quanterra Environmental Services Richland (QTESRL) laboratory for radiochemical analysis Upon receipt, these samples were assigned QTESRL identification numbers as described on the cover page of the Analytical Data Package report forms These samples were assigned to work order 607266

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID Each set of data includes sample identification information, analytical results and the appropriate associated statistical uncertainties

The analyses requested were

Alpha Spectroscopy

Plutonium-238, 239/240 (PU-ISO) by method QUANTERRA RICHRC5010
Americium-241 (AM-241) by method QUANTERRA RICHRC5003
Uranium-234, -235, -238 (U-ISO) by method QUANTERRA RICHRC5030

III. Quality Control

The analytical results for each analysis performed include a minimum of one Laboratory Control Sample (LCS) and one method (reagent) blank and duplicate sample analysis Any exceptions have been noted in the "Comments" section

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IV. Comments

Alpha Spectroscopy

Plutonium-238, -239/240

*The LCS and batch blank had chemical yields less than 20% at 13 2% and 7 8% respectively The blank did not meet the contractual MDA value of 0 1 pCi/gram at 0 248 pCi/gram due to the low chemical yield The LCS radiochemical recovery was acceptable at 106 8% We issued a nonconfromance memo documenting he low chemical yields The duplicate sample and sample results are within contractual requirements In order to reduce the analysis time of these samples we decreased the drying time from six hours to three and four hours

Americium-241

*The LCS, batch blank, duplicate sample and sample results are within contractual requirements In order to reduce the analysis time of these samples we decreased the drying time from six hours to three and four hours

Uranium -234, -235, -238

*The LCS, batch blank, duplicate sample and sample results are within contractual requirements In order to reduce the analysis time of these samples we decreased the drying time from six hours to three and four hours

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature

Reviewed and approved

Andy Kopriva
Project Manager

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FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG:	7075	COLLECTION DATE.	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726501	REPORT NBR	1899	RECEIVED DATE	7/26/96 10 30 00 AM
CLIENT ID:	889-B-17	ORDER NBR.		MATRIX·	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	2 15E-02	N/A	2.3E-02	2 55E-02	pCi/g	72 60%	0 84	0 96	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	5 43E-01	1 0E-01	1 3E-01	3 28E-02	pCi/g	92 20%	(16 6)	(5 2)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	3 74E-03	9 9E-03	1 0E-02	2 46E-02	pCi/g	92 20%	0 15	0 38	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	5 79E-01	1 1E-01	1 4E-01	2 78E-02	pCi/g	92 20%	(20 8)	(5 4)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	0 00E+00	0 0E+00	1 7E-02	1 57E-02	pCi/g	53 20%	0	N/A	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	3 29E-02	2 8E-02	2 9E-02	3 09E-02	pCi/g	53 20%	(1 1)	(1 2)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0008

Comments: TOTAL SAMPLE SIZE 46 8 G

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG.	7075	COLLECTION DATE:	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726502	REPORT NBR	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID:	889-B-18	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	4 28E-03	N/A	1 0E-02	2 33E-02	pCi/g	76 50%	0 18	0 42	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	4 86E-01	9 7E-02	1 2E-01	3 00E-02	pCi/g	83 30%	(16 2)	(5)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	8 14E-03	1 4E-02	1 4E-02	2 59E-02	pCi/g	83 30%	0 31	0 59	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	5 17E-01	1 0E-01	1 3E-01	2 21E-02	pCi/g	83 30%	(23 4)	(5 2)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-9 80E-04	1 4E-03	1 4E-03	2 80E-02	pCi/g	66 00%	-0 04	-0 71	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	5 63E-03	1 2E-02	1 2E-02	2 46E-02	pCi/g	66 00%	0 23	0 46	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results. 6

6000

Comments TOTAL SAMPLE SIZE 48 6 G

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG:	7075	COLLECTION DATE:	7/25/96 2 30 00 PM
LAB SAMPLE ID·	60726503	REPORT NBR.	1899	RECEIVED DATE.	7/26/96 10 30 00 AM
CLIENT ID:	889-B-20	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	-4 37E-04	N/A	8 8E-04	2 20E-02	pCi/g	73 20%	-0 02	-0 5	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	2 73E-01	9 5E-02	1 1E-01	4 33E-02	pCi/g	52 10%	(6 3)	(2 9)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 30E-02	2 8E-02	2 8E-02	3 70E-02	pCi/g	52 10%	0 62	0 82	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	4 01E-01	1 1E-01	1 4E-01	4 81E-02	pCi/g	52 10%	(8 4)	(3 5)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	3 68E-03	1 1E-02	1 1E-02	2 89E-02	pCi/g	78 90%	0 13	0 34	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	4 55E-03	1 1E-02	1 1E-02	2 47E-02	pCi/g	78 90%	0 18	0 42	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0010

Comments. TOTAL SAMPLE SIZE 35 1 G

254

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG.	7075	COLLECTION DATE.	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726504	REPORT NBR:	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID:	889-B-22	ORDER NBR.		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	7.24E-03	N/A	1 3E-02	2 56E-02	pCi/g	89 40%	0 28	0 56	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	3 31E-01	7 5E-02	8 9E-02	2 38E-02	pCi/g	98 20%	(13 9)	(4 4)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	1 16E-02	1 5E-02	1 5E-02	2 10E-02	pCi/g	98 20%	0 55	0 79	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	4 79E-01	9 0E-02	1 1E-01	2 10E-02	pCi/g	98 20%	(22 8)	(5 3)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-1 22E-03	1 7E-03	1 7E-03	3 47E-02	pCi/g	52 80%	-0 04	-0 71	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 28E-02	2 2E-02	2 2E-02	4 06E-02	pCi/g	52 80%	0 31	0 59	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0011

Comments: TOTAL SAMPLE SIZE 52.6 G

53

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG:	7075	COLLECTION DATE·	7/25/96 2 30 00 PM
LAB SAMPLE ID.	60726505	REPORT NBR.	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID	889-B-23	ORDER NBR:		MATRIX·	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	3 77E-03	N/A	9 0E-03	2 05E-02	pCi/g	88 00%	0 18	0 42	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	4 17E-01	8 9E-02	1 1E-01	2 17E-02	pCi/g	85 90%	(19 2)	(4 7)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	1 39E-02	1 6E-02	1 7E-02	1 91E-02	pCi/g	85 90%	0 73	0 84	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 16E+00	1 5E-01	2 3E-01	2 68E-02	pCi/g	85 90%	(43 3)	(7 8)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-1 63E-03	1 9E-03	1 9E-03	3 39E-02	pCi/g	62 70%	-0 05	-0 87	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 20E-02	1 9E-02	1 9E-02	3 39E-02	pCi/g	62 70%	0 35	0 62	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0012

Comments. TOTAL SAMPLE SIZE 48 2 G

457

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG:	7075	COLLECTION DATE.	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726506	REPORT NBR:	1899	RECEIVED DATE	7/26/96 10 30 00 AM
CLIENT ID.	889-B-27	ORDER NBR.		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	2 55E-03	N/A	1 0E-02	2 90E-02	pCi/g	77 40%	0 09	0 26	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	6 62E-01	1 1E-01	1 5E-01	3 36E-02	pCi/g	92 70%	(19 7)	(5 8)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	1 84E-02	2 0E-02	2 0E-02	2 44E-02	pCi/g	92 70%	0 75	0 94	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 57E+00	1 8E-01	3 0E-01	2 77E-02	pCi/g	92 70%	(56 6)	(8 9)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-6 49E-04	1 3E-03	1 3E-03	3 27E-02	pCi/g	49 90%	-0 02	-0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	8 12E-03	1 6E-02	1 6E-02	2 20E-02	pCi/g	49 90%	0 37	0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

00013

Comments: TOTAL SAMPLE SIZE 119 5 G

455

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG	7075	COLLECTION DATE:	7/25/96 2 30 00 PM
LAB SAMPLE ID.	60726507	REPORT NBR	1899	RECEIVED DATE	7/26/96 10 30 00 AM
CLIENT ID.	889-B-31	ORDER NBR:		MATRIX.	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	1 96E-02	N/A	2 0E-02	1 33E-02	pCi/g	78 80%	(1 5)	1	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	1 74E+00	2 1E-01	3 6E-01	3 78E-02	pCi/g	67 70%	(46)	(8 4)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	6 57E-02	4 1E-02	4 2E-02	3 05E-02	pCi/g	67 70%	(2 2)	(1 6)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	2 33E+00	2 4E-01	4 6E-01	3 26E-02	pCi/g	67 70%	(71 3)	(9 8)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	8 75E-03	2 1E-02	2 1E-02	4 76E-02	pCi/g	39 90%	0 18	0 42	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	2 00E-02	3 0E-02	3 0E-02	4 19E-02	pCi/g	39 90%	0 48	0 68	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0014

Comments: TOTAL SAMPLE SIZE 142 9 G

25

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG.	7075	COLLECTION DATE.	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726508	REPORT NBR:	1899	RECEIVED DATE.	7/26/96 10 30 00 AM
CLIENT ID.	889-B-33	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	-1 49E-03	N/A	1 5E-03	2 49E-02	pCi/g	86 20%	-0 06	-1	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	6 93E-01	1 2E-01	1 6E-01	3 46E-02	pCi/g	77 60%	(20)	(5 8)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	3 48E-02	2 8E-02	2 8E-02	2 78E-02	pCi/g	77 60%	(1 3)	(1 3)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 56E+00	1 8E-01	3 1E-01	2 38E-02	pCi/g	77 60%	(65 7)	(8 7)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-6 72E-04	1 3E-03	1 3E-03	3 38E-02	pCi/g	50 00%	-0 02	-0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	2 38E-02	2 9E-02	2 9E-02	3 83E-02	pCi/g	50 00%	0 62	0 82	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0015

Comments. TOTAL SAMPLE SIZE 107 77 G

57

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG:	7075	COLLECTION DATE:	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726509	REPORT NBR	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID:	889-B-34	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	2 77E-03	N/A	8 3E-03	2 17E-02	pCi/g	95 90%	0 13	0 34	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	1 16E+00	1 7E-01	2 6E-01	3 42E-02	pCi/g	69 70%	(33 9)	(6 9)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	4 09E-02	3 2E-02	3 3E-02	3 02E-02	pCi/g	69 70%	(1 4)	(1 3)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 60E+00	2 0E-01	3 4E-01	3 59E-02	pCi/g	69 70%	(44 6)	(8 1)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	6 41E-03	1 4E-02	1 4E-02	2 80E-02	pCi/g	63 10%	0 23	0 46	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	4 12E-02	3 4E-02	3 5E-02	2 80E-02	pCi/g	63 10%	(1 5)	(1 2)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0016

Comments. TOTAL SAMPLE SIZE 61 4 G

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG.	7075	COLLECTION DATE	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726510	REPORT NBR.	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID:	889-B-3QA	ORDER NBR·		MATRIX.	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	9 91E-03	N/A	1 5E-02	2 08E-02	pCi/g	77 50%	0 48	0 68	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	4 23E-01	8 5E-02	1 1E-01	2 40E-02	pCi/g	97 40%	(17 6)	(5)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	7 48E-03	1 2E-02	1 2E-02	2 12E-02	pCi/g	97 40%	0 35	0 62	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	4 07E-01	8 3E-02	1 0E-01	2 12E-02	pCi/g	97 40%	(19 2)	(4 9)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-2 06E-03	2 9E-03	2 9E-03	2 91E-02	pCi/g	78 50%	-0 07	-0 71	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	4 12E-03	1 1E-02	1 1E-02	2 47E-02	pCi/g	78 50%	0 17	0 39	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0017

Comments. TOTAL SAMPLE SIZE 131 0 G

457

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG:	7075	COLLECTION DATE:	7/25/96 10 00 00 AM
LAB SAMPLE ID.	60726511	REPORT NBR:	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID:	889-B-2	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	3 82E-03	N/A	9 2E-03	2 08E-02	pCi/g	89 30%	0 18	0 42	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	3 31E+00	2 5E-01	5 7E-01	2 36E-02	pCi/g	86 20%	(140)	(13 2)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	1 04E-01	4 4E-02	4 7E-02	1 91E-02	pCi/g	86 20%	(5 5)	(2 3)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	4 62E-01	9 4E-02	1 2E-01	2 68E-02	pCi/g	86 20%	(17 3)	(4 9)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-1 32E-03	2 6E-03	2 6E-03	3 15E-02	pCi/g	70 00%	-0 04	-0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	4 61E-02	3 5E-02	3 6E-02	1 78E-02	pCi/g	70 00%	(2 6)	(1 3)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0018

Comments: TOTAL SAMPLE SIZE 167 88 G

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG.	7075	COLLECTION DATE.	7/25/96 10 00 00 AM
LAB SAMPLE ID:	60726512	REPORT NBR:	1899	RECEIVED DATE	7/26/96 10 30 00 AM
CLIENT ID.	889-B-3	ORDER NBR:		MATRIX·	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	4 39E-03	N/A	1 1E-02	2 39E-02	pCi/g	78 00%	0 18	0 42	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	3 85E-01	9 9E-02	1 2E-01	4 32E-02	pCi/g	72 20%	(8 9)	(3 9)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	3 27E-03	1 3E-02	1 3E-02	3 73E-02	pCi/g	72 20%	0 09	0 26	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	7 84E-01	1 4E-01	2 0E-01	3 36E-02	pCi/g	72 20%	(23 4)	(5 6)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	8 98E-03	1 3E-02	1 3E-02	1 88E-02	pCi/g	66 80%	0 48	0 68	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	3 71E-02	2 6E-02	2 7E-02	1 88E-02	pCi/g	66 80%	(2)	(1 4)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

Comments TOTAL SAMPLE SIZE 84 0 G

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG.	7075	COLLECTION DATE	7/25/96 10 00 00 AM
LAB SAMPLE ID:	60726513	REPORT NBR	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID·	889-B-6	ORDER NBR.		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	-8 23E-04	N/A	1 2E-03	2 35E-02	pCi/g	75 70%	-0 04	-0 71	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	6 46E-01	1 1E-01	1 5E-01	2 27E-02	pCi/g	83 20%	(28 4)	(5 7)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 82E-02	2 4E-02	2 5E-02	2 65E-02	pCi/g	83 20%	(1 1)	(1 2)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	8 44E-01	1 3E-01	1 9E-01	2 48E-02	pCi/g	83 20%	(34 1)	(6 5)	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	4 07E-03	8 1E-03	8 2E-03	1 10E-02	pCi/g	76 30%	0 37	0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 56E-02	1 6E-02	1 6E-02	1 86E-02	pCi/g	76 30%	0 84	0 96	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0020

Comments TOTAL SAMPLE SIZE 98 2 G

96.2

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG	7076	COLLECTION DATE	7/25/96 10 00 00 AM
LAB SAMPLE ID:	60726601	REPORT NBR.	1899	RECEIVED DATE	7/26/96 10 30 00 AM
CLIENT ID:	889-B-9	ORDER NBR:		MATRIX.	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	2 49E-02	N/A	3 1E-02	4 25E-02	pCi/g	61 90%	0 58	0 8	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	9 59E-01	1 4E-01	2 1E-01	3 43E-02	pCi/g	88 20%	(28)	(6 8)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	-8 24E-04	1 2E-03	1 2E-03	2 35E-02	pCi/g	88 20%	-0 04	-0 71	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	5 95E-01	1 1E-01	1 5E-01	2 91E-02	pCi/g	88 20%	(20 5)	(5 4)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	0 00E+00	0 0E+00	1 1E-02	1 02E-02	pCi/g	81 90%	0	N/A	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	8 54E-02	3 6E-02	3 8E-02	2 01E-02	pCi/g	81 90%	(4 2)	(2 4)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0021

Comments. TOTAL SAMPLE SIZE 189 5 G

46.3

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME.	QUANTERRA, Richland	SDG:	7076	COLLECTION DATE:	7/25/96 10 00 00 AM
LAB SAMPLE ID.	60726602	REPORT NBR:	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID:	889-B-10	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	6 43E-03	N/A	1 6E-02	3 85E-02	pCi/g	68 40%	0 17	0 39	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	5 10E-01	9 4E-02	1 2E-01	3 05E-02	pCi/g	93 50%	(16 7)	(5 4)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 02E-02	1 9E-02	2 0E-02	2 30E-02	pCi/g	93 50%	0 88	(1)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	4 39E-01	8 7E-02	1 1E-01	2 44E-02	pCi/g	93 50%	(18)	(5)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-1 14E-03	1 6E-03	1 6E-03	3 26E-02	pCi/g	56 70%	-0 04	-0 71	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	6 56E-03	1 4E-02	1 4E-02	2 87E-02	pCi/g	56 70%	0 23	0 46	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0022

Comments. TOTAL SAMPLE SIZE 149.4 G

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME.	QUANTERRA, Richland	SDG·	7076	COLLECTION DATE	7/25/96 10 00 00 AM
LAB SAMPLE ID:	60726603	REPORT NBR	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID:	889-B-12	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	1 96E-02	N/A	2 1E-02	2 33E-02	pCi/g	79 70%	0 84	0 96	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	1 88E+00	1 9E-01	3 5E-01	2 83E-02	pCi/g	88 60%	(66 4)	(9 9)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	3 70E-02	2 7E-02	2 8E-02	2 38E-02	pCi/g	88 60%	(1 6)	(1 4)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	6 17E-01	1 1E-01	1 4E-01	2 83E-02	pCi/g	88 60%	(21 8)	(5 7)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	3 48E-03	1 0E-02	1 0E-02	2 73E-02	pCi/g	83 40%	0 13	0 34	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 06E-01	4 7E-02	5 0E-02	2 55E-02	pCi/g	83 40%	(4 2)	(2 3)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results· 6

0023

Comments· TOTAL SAMPLE SIZE 131 4 G

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG·	7076	COLLECTION DATE	7/25/96 10 00 00 AM
LAB SAMPLE ID·	60726604	REPORT NBR	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID.	889-B-13	ORDER NBR.		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	3 74E-03	N/A	9 0E-03	2 04E-02	pCi/g	91 60%	0 18	0 42	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	4 84E-01	9 7E-02	1 2E-01	2 85E-02	pCi/g	86 00%	(17)	(5)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 77E-02	2 4E-02	2 4E-02	2 40E-02	pCi/g	86 00%	(1 2)	(1 2)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	5 52E-01	1 0E-01	1 3E-01	2 40E-02	pCi/g	86 00%	(23)	(5 3)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-9 22E-04	1 3E-03	1 3E-03	2 63E-02	pCi/g	69 80%	-0 04	-0 71	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	6 73E-02	4 0E-02	4 1E-02	3 07E-02	pCi/g	69 80%	(2 2)	(1 7)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

00024

Comments TOTAL SAMPLE SIZE 123 5 G

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG.	7076	COLLECTION DATE:	7/25/96 10 00 00 AM
LAB SAMPLE ID.	60726605	REPORT NBR:	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID.	889-B-14	ORDER NBR:		MATRIX.	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	3 69E-03	N/A	8 9E-03	2 01E-02	pCi/g	88 60%	0 18	0 42	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	9 93E-01	1 4E-01	2 1E-01	2 48E-02	pCi/g	82 20%	(40 1)	(7 1)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 94E-02	2 4E-02	2 5E-02	2 00E-02	pCi/g	82 20%	(1 5)	(1 2)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 33E+00	1 6E-01	2 6E-01	3 31E-02	pCi/g	82 20%	(40 2)	(8 2)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-1 14E-03	1 3E-03	1 3E-03	2 36E-02	pCi/g	90 10%	-0 05	-0 87	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 31E-02	1 6E-02	1 7E-02	2 36E-02	pCi/g	90 10%	0 55	0 79	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0025

Comments. TOTAL SAMPLE SIZE 115 4 G

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME	QUANTERRA, Richland	SDG·	7076	COLLECTION DATE.	7/25/96 10 00 00 AM
LAB SAMPLE ID·	60726606	REPORT NBR:	1899	RECEIVED DATE	7/26/96 10 30 00 AM
CLIENT ID:	889-B-15	ORDER NBR·		MATRIX.	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	1 19E-02	N/A	1 4E-02	1 64E-02	pCi/g	98 30%	0 73	0 84	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	1 25E+00	1 6E-01	2 5E-01	3 32E-02	pCi/g	91 10%	(37 6)	(7 9)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 37E-02	2 2E-02	2 3E-02	2 48E-02	pCi/g	91 10%	0 95	(1 1)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 30E+00	1 6E-01	2 6E-01	2 82E-02	pCi/g	91 10%	(46 1)	(8 1)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	4 86E-03	1 1E-02	1 1E-02	2 12E-02	pCi/g	76 70%	0 23	0 46	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	2 11E-02	2 1E-02	2 1E-02	1 43E-02	pCi/g	76 70%	(1 5)	1	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0026

Comments TOTAL SAMPLE SIZE 96 1 G

968

FORM I

Date. 8/12/96

SAMPLE RESULTS

LAB NAME.	QUANTERRA, Richland	SDG:	7076	COLLECTION DATE.	7/25/96 10 00 00 AM
LAB SAMPLE ID·	60726607	REPORT NBR·	1899	RECEIVED DATE·	7/26/96 10 30 00 AM
CLIENT ID	889-B-16	ORDER NBR:		MATRIX.	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	3 51E-03	N/A	1 2E-02	3 30E-02	pCi/g	84 30%	0 11	0 29	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	1 33E+00	1 7E-01	2 7E-01	2 83E-02	pCi/g	78 20%	(47)	(7 9)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	1 95E-02	2 1E-02	2 1E-02	2 83E-02	pCi/g	78 20%	0 69	0 92	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 59E+00	1 8E-01	3 1E-01	2 83E-02	pCi/g	78 20%	(56 3)	(8 7)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-8 07E-04	1 1E-03	1 1E-03	2 30E-02	pCi/g	82 50%	-0 04	-0 71	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 47E-02	1 7E-02	1 8E-02	2 03E-02	pCi/g	82 50%	0 73	0 84	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0027

Comments. TOTAL SAMPLE SIZE 69 53 G

FORM I

Date 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG	7076	COLLECTION DATE	7/25/96 10 00 00 AM
LAB SAMPLE ID:	60726608	REPORT NBR	1899	RECEIVED DATE.	7/26/96 10 30 00 AM
CLIENT ID:	889-B-33QA	ORDER NBR.		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	1 08E-02	N/A	1 7E-02	2 87E-02	pCi/g	91 60%	0 38	0 63	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	7 25E-01	1 2E-01	1 6E-01	3 28E-02	pCi/g	86 90%	(22 1)	(6 2)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	7 78E-02	3 8E-02	4 0E-02	2 32E-02	pCi/g	86 90%	(3 4)	(2)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	1 47E+00	1 7E-01	2 8E-01	2 62E-02	pCi/g	86 90%	(56 2)	(8 9)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-5 87E-04	1 2E-03	1 2E-03	2 95E-02	pCi/g	57 20%	-0 02	-0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	6 16E-03	1 5E-02	1 5E-02	3 35E-02	pCi/g	57 20%	0 18	0 42	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0028

Comments TOTAL SAMPLE SIZE 122 5 G

976

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME.	QUANTERRA, Richland	SDG	7076	COLLECTION DATE:	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726609	REPORT NBR	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID·	889-B-41	ORDER NBR		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	-6 54E-04	N/A	9 3E-04	1 87E-02	pCi/g	99 30%	-0 04	-0 71	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	4 01E+00	2 6E-01	6 5E-01	2 42E-02	pCi/g	98 40%	(165 3)	(15 3)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	1 02E-01	4 2E-02	4 5E-02	2 14E-02	pCi/g	98 40%	(4 8)	(2 4)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	3 54E-01	7 8E-02	9 4E-02	2 55E-02	pCi/g	98 40%	(13 9)	(4 5)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-7 47E-04	1 5E-03	1 5E-03	3 76E-02	pCi/g	47 10%	-0 02	-0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	2 73E-02	3 2E-02	3 3E-02	3 76E-02	pCi/g	47 10%	0 73	0 84	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0029

Comments TOTAL SAMPLE SIZE 84 5 G

FORM I

SAMPLE RESULTS

Date 8/12/96

LAB NAME.	QUANTERRA, Richland	SDG.	7076	COLLECTION DATE·	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726610	REPORT NBR	1899	RECEIVED DATE.	7/26/96 10 30 00 AM
CLIENT ID·	889-B-42	ORDER NBR:		MATRIX	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	-6 92E-04	N/A	9 8E-04	1 98E-02	pCi/g	94 30%	-0 04	-0 71	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	5 46E-01	9 6E-02	1 3E-01	2 50E-02	pCi/g	98 20%	(21 8)	(5 7)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 01E-02	1 9E-02	1 9E-02	2 10E-02	pCi/g	98 20%	0 95	(1 1)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	8 04E-01	1 2E-01	1 7E-01	2 10E-02	pCi/g	98 20%	(38 3)	(6 9)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	4 29E-03	1 5E-02	1 5E-02	4 04E-02	pCi/g	56 60%	0 11	0 29	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 29E-02	2 0E-02	2 1E-02	3 42E-02	pCi/g	56 60%	0 38	0 63	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0030

Comments TOTAL SAMPLE SIZE 98 2 G

FORM I

Date: 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG	7076	COLLECTION DATE:	7/25/96 2 30 00 PM
LAB SAMPLE ID:	60726611	REPORT NBR:	1899	RECEIVED DATE	7/26/96 10 30 00 AM
CLIENT ID.	889-B-43	ORDER NBR:		MATRIX	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	7 83E-03	N/A	1 2E-02	1 94E-02	pCi/g	91 60%	0 4	0 65	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	1 64E+00	1 7E-01	3 0E-01	2 52E-02	pCi/g	96 20%	(65 2)	(9 8)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	5 06E-02	2 9E-02	3 0E-02	1 71E-02	pCi/g	96 20%	(3)	(1 7)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	2 98E+00	2 3E-01	5 0E-01	2 40E-02	pCi/g	96 20%	(124 4)	(13 2)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	-1 13E-03	2 3E-03	2 3E-03	2 69E-02	pCi/g	82 00%	-0 04	-0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	4 50E-02	3 2E-02	3 3E-02	1 52E-02	pCi/g	82 00%	(3)	(1 4)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

Comments TOTAL SAMPLE SIZE 66 8 G

FORM I

Date 8/12/96

SAMPLE RESULTS

LAB NAME:	QUANTERRA, Richland	SDG	7076	COLLECTION DATE.	7/25/96 2 30 00 PM
LAB SAMPLE ID	60726612	REPORT NBR:	1899	RECEIVED DATE.	7/26/96 10 30 00 AM
CLIENT ID.	889-B-44	ORDER NBR:		MATRIX	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	8 59E-03	N/A	1 3E-02	1 80E-02	pCi/g	89 30%	0 48	0 68	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	5 96E-01	1 1E-01	1 5E-01	3 62E-02	pCi/g	86 20%	(16 5)	(5 3)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	1 98E-02	2 1E-02	2 1E-02	2 63E-02	pCi/g	86 20%	0 75	0 94	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	9 03E-01	1 4E-01	2 0E-01	2 97E-02	pCi/g	86 20%	(30 4)	(6 5)	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	3 94E-03	8 6E-03	8 6E-03	1 72E-02	pCi/g	72 90%	0 23	0 46	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	-3 43E-04	6 9E-04	6 9E-04	1 72E-02	pCi/g	72 90%	-0 02	-0 5	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0032

Comments TOTAL SAMPLE SIZE 87 7 G

FORM II

DUPLICATE RESULTS

Date. 8/12/96

LAB NAME	QUANTERRA, Richland	SDG.	7075	COLLECTION DATE	7/25/96 2 30 00 PM
LAB SA ID/ORIG ID:	C0726501 / 60726501	REPORT NBR:	1899	RECEIVED DATE·	7/26/96 10 30 00 AM
CLIENT ID	889-B-17	ORDER NBR:		MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	ORIG RESULT	RPD	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	1 54E-02	N/A	1 9E-02	2 48E-02	pCi/g	75 10%	2 15E-02	32 67%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	6 45E-01	1 4E-01	1 8E-01	3 28E-02	pCi/g	57 60%	5 43E-01	17 19%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 70E-02	2 9E-02	2 9E-02	3 58E-02	pCi/g	57 60%	3 74E-03	151 31%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	8 89E-01	1 6E-01	2 3E-01	3 58E-02	pCi/g	57 60%	5 79E-01	42 20%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	3 92E-03	8 6E-03	8 6E-03	1 72E-02	pCi/g	74 30%	0 00E+00	200 00%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	3 77E-02	2 6E-02	2 6E-02	1 95E-02	pCi/g	74 30%	3 29E-02	13 58%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

00033

Comments TOTAL SAMPLE SIZE 46 8 G

FORM II

DUPLICATE RESULTS

Date 8/12/96

LAB NAME	QUANTERRA, Richland	SDG	7076	COLLECTION DATE.	7/25/96 10 00 00 AM
LAB SA ID/ORIG ID:	C0726601 / 60726601	REPORT NBR:	1899	RECEIVED DATE:	7/26/96 10 30 00 AM
CLIENT ID	889-B-9	ORDER NBR.		MATRIX	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	ORIG RESULT	RPD	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	9 31E-03	N/A	1 7E-02	3 29E-02	pCi/g	84 70%	2 49E-02	91 10%	8/3/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	7 68E-01	1 2E-01	1 7E-01	2 46E-02	pCi/g	89 80%	9 59E-01	22 20%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	2 65E-02	2 3E-02	2 3E-02	2 30E-02	pCi/g	89 80%	-8 24E-04	212 82%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	6 34E-01	1 1E-01	1 5E-01	2 60E-02	pCi/g	89 80%	5 95E-01	6 24%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	3 70E-03	8 1E-03	8 1E-03	1 62E-02	pCi/g	78 70%	0 00E+00	200 00%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	1 16E-01	4 3E-02	4 6E-02	1 84E-02	pCi/g	78 70%	8 54E-02	30 39%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results: 6

00034

Comments TOTAL SAMPLE SIZE 189 5 G

77

FORM II

BLANK RESULTS

Date. 8/12/96

LAB NAME QUANTERRA, Richland

SDG 7075

ORDER NBR

LAB SAMPLE ID: P072651B

REPORT NBR· 1899

MATRIX SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	4 63E-03	N/A	1 6E-02	4 36E-02	pCi/g	63 90%	0 11	0 29	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	1 37E-02	2 0E-02	2 0E-02	3 47E-02	pCi/g	73 90%	0 39	0 7	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	-1 34E-03	1 6E-03	1 6E-03	2 79E-02	pCi/g	73 90%	-0 05	-0 87	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	-1 34E-03	1 6E-03	1 6E-03	2 79E-02	pCi/g	73 90%	-0 05	-0 87	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	0 00E+00	0 0E+00	2 8E-02	2 56E-02	pCi/g	32 70%	0	N/A	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	-7 56E-04	1 5E-03	1 5E-03	3 80E-02	pCi/g	32 70%	-0 02	-0 5	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0035

Comments

478

FORM II

Date 8/12/96

BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG 7076 ORDER NBR·

LAB SAMPLE ID: P072661B REPORT NBR 1899 MATRIX: SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	RST/MDA	RST/CNTERR	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	-4 69E-04	N/A	9 4E-04	2 36E-02	pCi/g	68 10%	-0 02	-0 5	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	-1 97E-03	1 8E-03	1 8E-03	2 79E-02	pCi/g	83 80%	-0 07	-(1 1)	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	3 75E-03	1 0E-02	1 0E-02	2 46E-02	pCi/g	83 80%	0 15	0 38	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	-1 18E-03	1 4E-03	1 4E-03	2 46E-02	pCi/g	83 80%	-0 05	-0 87	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU-238	0 00E+00	0 0E+00	1 6E-01	1 40E-01	pCi/g	7 80%	0	N/A	8/5/96	2 0	G	ALPHA-SPEC	RICHRC5010
PU239/40	-1 04E-02	2 1E-02	2 1E-02	2 48E-01	pCi/g	7 80%	-0 04	-0 5	8/5/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 6

0036

Comments

775

FORM II

Date· 8/12/96

LABORATORY CONTROL SAMPLE

LAB NAME QUANTERRA, Richland SDG 7075 ORDER NBR

LAB SAMPLE ID P072651S REPORT NBR. 1899 MATRIX SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	Expected	Expected Uncert	Recovery	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	4 80E-01	N/A	1 4E-01	3 34E-02	pCi/g	78 80%	4 59E-01	0 0E+00	104 54%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	2 45E-01	6 6E-02	7 5E-02	2 19E-02	pCi/g	93 00%	2 18E-01	0 0E+00	112 25%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-235	4 04E-03	8 8E-03	8 8E-03	1 77E-02	pCi/g	93 00%	1 00E-02	0 0E+00	40 41%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	2 44E-01	6 6E-02	7 5E-02	2 48E-02	pCi/g	93 00%	2 29E-01	0 0E+00	106 88%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU239/40	4 95E-01	1 5E-01	1 7E-01	5 16E-02	pCi/g	28 00%	4 51E-01	0 0E+00	109 82%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 5

0037

Comments

980

FORM II

Date 8/12/96

LABORATORY CONTROL SAMPLE

LAB NAME: QUANTERRA, Richland SDG 7076 ORDER NBR

LAB SAMPLE ID P072661S REPORT NBR 1899 MATRIX SOIL

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	Expected	Expected Uncert	Recovery	ANALYSIS DATE	ALIQUOT SIZE	ALQ UNIT	DETECTOR ID	METHOD NUMBER
AM-241	5 21E-01	N/A	1 6E-01	4 23E-02	pCi/g	65 80%	4 59E-01	0 0E+00	113 63%	8/2/96	2 0	G	ALPHA-SPEC	RICHRC5003
U-234	2 02E-01	6 3E-02	7 0E-02	2 21E-02	pCi/g	84 60%	2 19E-01	0 0E+00	92 38%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
U-238	2 49E-01	7 0E-02	8 0E-02	2 73E-02	pCi/g	84 60%	2 29E-01	0 0E+00	108 80%	8/1/96	2 0	G	ALPHA-SPEC	RICHRC5030
PU239/40	4 89E-01	2 6E-01	2 9E-01	9 46E-02	pCi/g	13 20%	4 58E-01	0 0E+00	106 78%	8/5/96	2 0	G	ALPHA-SPEC	RICHRC5010

Number of Results 4

00038

Comments

CHAIN OF

CUSTODY FORMS

48

482

SEG

Page 2

WASTE SAMPLERS (Signature/Emp No) [signature] 332-48-2072

LAB ID NUMBER _____

A.P.O. NUMBER _____

Lab Location: 371 | 559 | 771 | 881 | Contractor

ANALYTICAL LABORATORIES

607265

CHAIN OF CUSTODY

	Date	Time	Sample Location / ID	Preservation: Cooled to 4°C	NaOH	HNO_3	H_2SO_4	None	Analytes: Total VOA	Total SVOA	Total Metals ICP Hg	Total Metals ICP	Ignitability	Corrosivity	α/β Screen	Gross α/β	TCLP VOA	TCLP SVOA	TCLP Metals - ICP Hg	TCLP Metals ICP	Infrared	X-Ray	Fingerprint	Alpha Spec U, Pu, Am
1	7/25/96	2:30	Building 889-B-17 (Tare 216.1g)																					X
2	7/25/96	2:30	Building 889-B-18 (Tare 218.7g)																					X
3	7/25/96	2:30	Building 889-B-20 (Tare 216.5g)																					X
4	7/25/96	2:30	Building 889-B-22 (Tare 216.1g)																					X
5	7/25/96	2:30	Building 889-B-23 (Tare 219.3g)																					X
6	7/25/96	2:30	Building 889-B-27 (Tare 218.7g)																					X
7	7/25/96	2:30	Building 889-B-31 (Tare 216.6g)																					X
8	7/25/96	2:30	Building 889-B-33 (Tare 210.1g)																					X
9	7/25/96	2:30	Building 889-B-34 (Tare 222.3g)																					X
10	7/25/96	2:30	Building 889-B-3QA (Tare 216.5)																					X

Relinquished by	/ ORG	Date	Time	Received by	/ ORG.	Date	Time
[signature]	/	7-25-96	2:35	[signature]	ASI	7-25	15:00
[signature]	/	7-25		Karen Schlumberger	Quantum	7-26-96	10:30
	/				/ Lewis Thomas		
	/				/		

LABORATORY USE ONLY	Y / N
Pckg received / custody seals intact	
Sample Labels / COCs agree	
Temp at Time of Receipt ____ °C	N/A
Corrected copy attached	

Other problems or discrepancies

Cost Center R0483

Charge 951728CH

Remarks

0040

483

SEG

Page 1 of 3

WASTE

SAMPLERS (Signature/Emp No) [signature] 1332-48-2072

LAB ID NUMBER

A.P.O. NUMBER

Lab Location 371 559 771 881 Contractor

ANALYTICAL LABORATORIES

CHAIN OF CUSTODY

6076265

Date	Time	Sample Location / ID	Cooled to 4°C	NaOH	HNO_3	H_2SO_4	None	Total VOA	Total SVOA	Total Metals ICP Hg	Total Metals ICP	Ignitability	Corrosivity	α/β Screen	Gross α/β	TCLP VOA	TCLP SVOA	TCLP Metals - ICP Hg	TCLP Metals ICP	Infrared	X-Ray	Fingerprint	Alpha Spec U, Am, Pu
7/25/96 11	10:00	Building 889 - B-2 (Tare 211.2g)																					X
7/25/96 12	10:00	Building 889 - B-3 (Tare 208.6g)																					X
7/25/96 13	10:00	Building 889 - B-6 (Tare 216.7g)																					X
7/25/96 14	10:00	Building 889 - B-9 (Tare 217.0g)																					X
7/25/96	10:00	Building 889 - B-10 (Tare 210.2g)																					X
7/25/96	10:00	Building 889 - B-12 (Tare 209.9g)																					X
7/25/96	10:00	Building 889 - B-13 (Tare 216.7g)																					X
7/25/96	10:00	Building 889 - B-14 (Tare 218.7g)																					X
7/25/96	10:00	Building 889 - B-15 (Tare 216.5g)																					X
7/25/96	10:00	Building 889 - B-16 (Tare 211.2g)																					X

Relinquished by	/ ORG	Date	Time	Received by	/ ORG	Date	Time
[signature]	/	7/25/96	2:35	[signature]	/ AS	7-25	15:10 ~~14:35~~
[signature]	/	7-25		Kevin Schlending	Guarantee	7-26-96	1630
	/				/ [illegible]		
	/						

LABORATORY USE ONLY	Y / N
Pckg received / custody seals intact	
Sample Labels / COCs agree	
Temp at Time of Receipt ____ °C	N/A
Corrected copy attached	

Other problems or discrepancies

Cost Center R0483

Charge 951728CH

Remarks

0041

607265-Rad.

(B) 7/29/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BLDG889 B-16		7/26/1996 11 15 00 AM	QUAD24D	7 26 1996 2 53 05 PM	BLDG889 B-16	30	9	0 24125	113	2 7491667
	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	47	0 05875	814	1 0175
Anl Date 7 26 1996	Tot Sa, Alq	6 46E+01	, 8 77E+01	Alp, (Dpm/	1 36E+00 (uCi/	4 51E 04	(pCi/	6 99E+00 ± 5 6E+00	CAT I	7 2E+00 Lab
Ppt mg 87 7	Units	g	, mg	Bet, Alq)	5 91E+00 Sa)	1 96E 03	L|g)	3 04E+01 ± 4 0E+00		3 3E+00 Alq L|g
SLG BLDG889 B 17		7 26 1996 11 15 00 AM	QUAD21A	7 26 1996 3 33 44 PM	BLDG889 B 17	30	7	0 19083333	93	2 0925
01	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	34	0 0425	806	1 0075
Anl Date 7 26 1996	Tot Sa, Alq	4 69E+01	, 9 82E+01	Alp, (Dpm/	1 17E+00 (uCi/	2 52E 04	(pCi/	5 37E+00 ± 5 3E+00	CAT I	9 3E+00 Lab
Ppt mg 98 2	Units	g	, mg	Bet, Alq)	4 73E+00 Sa)	1 02E-03	L|g)	2 17E+01 ± 3 4E+00		4 6E+00 Alq L|g
SLG BLDG889 B 18		7 26 1996 11 15 00 AM	QUAD21B	7 26 1996 3 33 44 PM	BLDG889 B 18	30	6	0 1725	57	1 00625
02	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	22	0 0275	715	0 89375
Anl Date 7 26 1996	Tot Sa, Alq	4 86E+01	9 44E+01	Alp, (Dpm/	1 12E+00 (uCi/	2 59E 04	(pCi/	5 34E+00 ± 5 1E+00	CAT I	9 4E+00 Lab
Ppt mg 94 4	Units	g	, mg	Bet, Alq)	2 15E+00 Sa)	4 98E-04	L|g)	1 02E+01 ± 2 7E+00		9 8E+00 Alq L|g
SLG BLDG889 B 2		7 26 1996 11 15 00 AM	QUAD22B	7 26 1996 2 53 17 PM	BLDG889 B 2	30	17	0 52541667	121	3 1245833
11	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	33	0 04125	727	0 90875
Anl Date 7 26 1996	Tot Sa, Alq	1 68E+02	9 39E+01	Alp, (Dpm/	3 26E+00 (uCi/	2 62E 03	(pCi/	1 56E+01 ± 5 7E+00	CAT I	3 2E+00 Lab
Ppt mg 93 9	Units	g	mg	Bet, Alq)	6 48E+00 Sa)	5 22E-03	L|g)	3 11E+01 ± 3 8E+00		3 2E+00 Alq L|g
SLG BLDG889 B 20		7 26 1996 11 15 00 AM	QUAD21C	7 26 1996 3 33 44 PM	BLDG889 B 20	30	8	0 21166667	57	0 96125
03	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	44	0 055	751	0 93875
Anl Date 7 26 1996	Tot Sa, Alq	3 52E+01	7 87E+01	Alp, (Dpm/	1 27E+00 (uCi/	2 56E 04	(pCi/	7 27E+00 ± 5 9E+00	CAT I	6 9E+00 Lab
Ppt mg 78 7	Units	g	, mg	Bet, Alq)	1 99E+00 Sa)	4 00E 04	L|g)	1 14E+01 ± 3 2E+00		8 8E+00 Alq L|g
SLG BLDG889 B 22		7 26 1996 11 15 00 AM	QUAD21D	7 26 1996 3 33 44 PM	BLDG889 B 22	30	9	0 2625	68	1 3441667
04	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	30	0 0375	738	0 9225
Anl Date 7 26 1996	Tot Sa, Alq	5 27E+01	, 9 18E+01	Alp, (Dpm/	1 66E+00 (uCi/	4 30E 04	(pCi/	8 16E+00 ± 5 4E+00	CAT I	6 1E 00 Lab
Ppt mg 91 8	Units	g	, mg	Bet, Alq)	2 86E+00 Sa)	7 39E-04	L|g)	1 40E+01 ± 3 0E+00		7 1E+00 Alq L|g

0042

485

(R) 1/29/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BLDG889 B-23		7/26/1996 11 15 00 AM	QUAD22A	7/26 1996 3 33 48 PM	BLDG889 B 23	30	5	0 12916667	89	1 9941667
05	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	30	0 0375	778	0 9725
Anl Date 7 26 1996	Tot Sa, Alq 4 83E+01	, 1 00E+02	Alp, (Dpm/	7 40E-01 (uCi/	1 61E-04 (pCi/	3 33E+00	± 4 6E+00	CAT I	1 5E+01	Lab Alq
Ppt mg 100	Units g	, mg	Bet, Alq)	4 23E+00 Sa)	9 20E-04 L/g)	1 91E+01	± 3 1E+00		5 2E+00	L/g
SEG BLDG889 B 27		7 26 1996 11 15 00 AM	QUAD22B	7 26 1996 3 33 48 PM	BLDG889 B 27	30	5	0 12541667	78	1 69125
06	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	33	0 04125	727	0 90875
Anl Date 7 26 1996	Tot Sa, Alq 1 20E+02	, 9 16E+01	Alp, (Dpm/	7 10E-01 (uCi/	4 18E-04 (pCi/	3 49E+00	± 4 8E+00	CAT I	1 4E+01	Lab Alq
Ppt mg 91 6	Units g	, mg	Bet, Alq)	3 60E+00 Sa)	2 12E-03 L/g)	1 77E+01	± 3 1E+00		5 7E+00	L/g
SEG BLDG889 B 3		7 26 1996 11 15 00 AM	QUAD22C	7 26 1996 2 53 17 PM	BLDG889 B 3	30	5	0 11416667	60	1 0925
12	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	42	0 0525	726	0 9075
Anl Date 7 26 1996	Tot Sa, Alq 8 39E+01	, 7 48E+01	Alp, (Dpm/	6 03E-01 (uCi/	3 04E-04 (pCi/	3 63E+00	± 5 4E+00	CAT I	1 4E+01	Lab Alq
Ppt mg 74 8	Units g	, mg	Bet, Alq)	2 28E+00 Sa)	1 15E-03 L/g)	1 37E+01	± 3 3E+00		7 3E+00	L/g
SEG BLDG889 B 31		7/26 1996 11 15 00 AM	QUAD22C	7 26 1996 3 33 48 PM	BLDG889 B 31	30	5	0 11416667	73	1 5258333
07	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	42	0 0525	726	0 9075
Anl Date 7 26 1996	Tot Sa, Alq 3 60E 02	, 8 39E+01	Alp, (Dpm/	6 05E 01 (uCi/	1 17E-03 (pCi/	3 25E+00	± 5 0E+00	CAT I	1 5E+01	Lab Alq
Ppt mg 83 9	Units g	, mg	Bet, Alq)	3 23E+00 Sa)	6 24E 03 L/g)	1 74E+01	± 3 3E+00		5 8E+00	L/g
SEG BLDG889 B 33		7 26 1996 11 15 00 AM	QUAD22D	7 26 1996 3 33 48 PM	BLDG889 B 33	30	51	1 665	231	6 825
08	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	28	0 035	700	0 875
Anl Date 7 26 1996	Tot Sa, Alq 1 08E+02	, 8 05E+01	Alp, (Dpm/	9 81E+00 (uCi/	5 91E-03 (pCi/	5 49E+01	± 8 5E+00	CAT I	9 1E 01	Lab Alq
Ppt mg 80 5	Units g	, mg	Bet, Alq)	1 38E+01 Sa)	8 29E 03 L/g)	7 69E+01	± 5 9E+00		1 3E+00	L/g
SEG BLDG889 B 33Q A		7 26 1996 11 15 00 AM	QUAD23C	7 26 1996 3 33 52 PM	BLDG889 B 33Q A	30	7	0 18708333	70	1 4645833
	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	37	0 04625	695	0 86875
Anl Date 7 26 1996	Tot Sa, Alq 1 22E 02	, 8 75E+01	Alp, (Dpm/	1 12E+00 (uCi/	7 05E 04 (pCi/	5 76E+00	± 5 1E+00	CAT I	8 7E+00	Lab Alq
Ppt mg 87 5	Units g	, mg	Bet, Alq)	3 05E+00 Sa)	1 92E-03 L/g)	1 57E+01	± 3 1E+00		6 4E+00	L/g

0043

(B) 7/29/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BI DG889 B 34		7/26/1996 11 15 00 AM	QUAD23A	7 26/1996 3 33 52 PM	BI DG889 B-34	30	8	0 23791667	84	1 86625
09	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	23	0 02875	747	0 93375
Anl Date 7 26 1996	Tot Sa, Alq 6 14E+01	, 8 85E+01	Alp, (Dpm/ 1 43E+00	(uCi/ 4 46E-04	(pCi/ 7 26E+00	± 5 2E+00	CAT I	6 9E+00	Lab Alq	
Ppt mg 88 5	Units g	, mg	Bet, Alq) 3 89E+00	Sa) 1 22E-03	L/g) 1 98E+01	± 3 3E+00		5 0E+00	L/g	
SEG BI DG889 B 3QA		7 26 1996 11 15 00 AM	QUAD23B	7 26 1996 3 33 52 PM	BI DG889 B 3QA	30	7	0 19208333	77	1 6729167
10	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	33	0 04125	715	0 89375
Anl Date 7 26 1996	Tot Sa, Alq 1 23E+02	, 8 07E+01	Alp, (Dpm/ 1 10E+00	(uCi/ 7 54E 04	(pCi/ 6 15E+00	± 5 3E+00	CAT I	8 1E+00	Lab Alq	
Ppt mg 80 7	Units g	, mg	Bet, Alq) 3 52E+00	Sa) 2 41E-03	L/g) 1 97E+01	± 3 5E+00		5 1E+00	L/g	
SEG BI DG889 B 41		7 26 1996 11 15 00 AM	QUAD23D	7 26 1996 3 33 52 PM	BI DG889 B 41	30	9	0 22375	83	1 7466667
	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	61	0 07625	816	1 02
Anl Date 7 26 1996	Tot Sa, Alq 8 44E+01	, 9 48E+01	Alp, (Dpm/ 1 36E 00	(uCi/ 5 47E-04	(pCi/ 6 48E+00	± 5 2E+00	CAT I	7 71 +00	Lab Alq	
Ppt mg 94 8	Units g	, mg	Bet, Alq) 3 63E+00	Sa) 1 46E 03	L/g) 1 73E+01	± 3 1E+00		5 8E 00	L/g	
SEG BI DG889 B 42		7 26 1996 11 15 00 AM	QUAD24A	7 26 1996 3 33 40 PM	BI DG889 B 42	30	15	0 44	113	2 8291667
	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	48	0 06	750	0 9375
Anl Date 7 26 1996	Tot Sa, Alq 9 82E+01	, 9 53E+01	Alp, (Dpm/ 2 91E 00	(uCi/ 1 35E 03	(pCi/ 1 38E+01	± 5 9E+00	CAT I	3 6E 00	Lab Alq	
Ppt mg 95 3	Units g	, mg	Bet, Alq) 6 14E+00	Sa) 2 85E 03	L/g) 2 90E+01	± 3 8E+00		3 4E+00	L/g	
SEG BI DG889 B 43		7 26 1996 11 15 00 AM	QUAD24B	7 26 1996 3 33 40 PM	BI DG889 B-43	30	16	0 48583333	109	2 7433333
	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	38	0 0475	712	0 89
Anl Date 7 26 1996	Tot Sa, Alq 6 68E+01	9 57E+01	Alp, (Dpm/ 3 17E+00	(uCi/ 9 96E 04	(pCi/ 1 49E+01	± 5 7E+00	CAT I	3 4E 00	Lab Alq	
Ppt mg 95 7	Units g	, mg	Bet, Alq) 5 81E+00	Sa) 1 83E-03	L/g) 2 74E+01	± 3 6E+00		3 7E 00	L/g	
SEG BI DG889 B-44		7 26 1996 11 15 00 AM	QUAD24D	7 26 1996 3 33 40 PM	BI DG889-B 44	30	10	0 27458333	91	2 0158333
	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	47	0 05875	814	1 0175
Anl Date 7 26 1996	Tot Sa, Alq 8 78E+01	9 60E+01	Alp, (Dpm/ 1 69E+00	(uCi/ 6 95E 04	(pCi/ 7 92E+00	± 5 4E+00	CAT I	6 3E 00	Lab Alq	
Ppt mg 96	Units g	, mg	Bet, Alq) 4 31E+00	Sa) 1 78E 03	L/g) 2 02E+01	± 3 3E+00		4 9E+00	L/g	

7/29/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BLDG889 B 6		7 29/1996 11 15 00 AM	QUAD22D	7 26 1996 2 53 17 PM	BLDG889 B-6	30	16	0 49833333	89	2 0916667
13	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	28	0 035	700	0 875
Anl Date 7 26 1996	Tot Sa, Alq	9 83E+01	, 8 13E+01	Alp, (Dpm/	2 95E+00	(uCi/ 1 60E-03	(pCi/ 1 63E+01	± 6 1E+00	CAT I	3 1E+00 Lab Alq
Ppt mg 81 3	Units	g	, mg	Bet, Alq)	4 22E+00	Sa) 2 30E-03	L/g) 2 34E+01	± 3 7E+00		4 3E+00 L/g
SEG BLDG889 B 9		7 26 1996 11 15 00 AM	QUAD23 A	7 26 1996 2 53 13 PM	BLDG889 B 9	30	11	0 33791667	69	1 36625
	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	23	0 02875	747	0 93375
Anl Date 7 26 1996	Tot Sa, Alq	1 90E+02	, 8 34E+01	Alp, (Dpm/	2 04E+00	(uCi/ 2 08E 03	(pCi/ 1 10E+01	± 5 7E+00	CAT I	4 5E+00 Lab Alq
Ppt mg 83 4	Units	g	, mg	Bet Alq)	2 74E+00	Sa) 2 80E 03	L/g) 1 48E+01	± 3 2E+00		6 8E+00 L/g

0045

28.

SEG

Page 1 of 3

WASTE

SAMPLERS (Signature/Emp No) [illegible] 1332-48-3072

LAB ID NUMBER

A.P.O. NUMBER

Lab Location: 371 | 559 | 771 | 881 | Contractor

ANALYTICAL LABORATORIES

CHAIN OF CUSTODY

687266

Date	Time	Sample Location / ID	Cooled to 4°C	NaOH	HNO_3	H_2SO_4	None		Total VOA	Total SVOA	Total Metals ICP Hg	Total Metals ICP	Ignitability	Corrosivity	α/β Screen	Gross α/β	TCLP VOA	TCLP SVOA	TCLP Metals - ICP Hg	TCLP Metals - ICP	Infrared	X ray	Fingerprint	Alpha Spec U, Am, Pu				
7/25/96	10:00	Building 881 - B-2 (Tare 211.2g)																						X				
7/25/96	10:00	Building 881 - B-3 (Tare 208.6g)																						X				
7/25/96	10:00	Building 881 - B-6 (Tare 216.7g)																						X				
7/25/96	10:00	Building 881 - B-9 (Tare 217.0g)																						X				
7/25/96	10:00	Building 881 - B-10 (Tare 210.2g)																						X				
7/25/96	10:00	Building 881 - B-12 (Tare 209.9g)																						X				
7/25/96	10:00	Building 881 - B-13 (Tare 216.7g)																						X				
7/25/96	10:00	Building 881 - B-14 (Tare 218.7g)																						X				
7/25/96	10:00	Building 881 - B-15 (Tare 216.5g)																						X				
7/25/96	10:00	Building 881 - B-16 (Tare 211.2g)																						X				

Relinquished by	/ ORG	Date	Time	Received by	/ ORG.	Date	Time
[illegible]	1	7/25/96	2:35	[illegible]	IAS	7-25	15:10 14:35
[illegible]	1	7-29		[illegible]		7-26-96	1630
	1						
	1						

Remarks

LABORATORY USE ONLY	Y / N
Pckg received / custody seals intact	
Sample Labels / COCs agree	
Temp at Time of Receipt ____ °C	N/A
Corrected copy attached	

Other problems or discrepancies

Cost Center R0483

Charge 951728CH

0046

485

SEG

Page 3 of 3

WASTE

SAMPLERS (Signature/Emp No) [signature] 1332-48-2072

LAB ID NUMBER

A.P.O. NUMBER

Lab Location 371 559 771 881 Contractor

ANALYTICAL LABORATORIES

607266

CHAIN OF CUSTODY

Date	Time	Sample Location / ID	Preservation: Cooled to 4°C	NaOH	HNO_3	H_2SO_4	None	Analytes: Total VOA	Total SVOA	Total Metals ICP Hg	Total Metals ICP	Ignitability	Corrosivity	α/β Screen	Gross α/β	TCLP VOA	TCLP SVOA	TCLP Metals - ICP Hg	TCLP Metals ICP	Infrared	X-Ray	Fingerprint	Alpha Spec U, Ag, Pb
7/25/96	8 10:00	Building 889 - B-33QA (Tare 216.7g)																					X
7/25/96	9 2:30	Building 889 - B-41 (Tare 219.0g)																					X
7/25/96	10 2:30	Building 889 - B-42 (Tare 216.5g)																					X
7/25/96	11 2:30	Building 889 - B-43 (Tare 219.0g)																					X
7/25/96	12 2:30	Building 889 - B-44 (Tare 218.8g)																					X

Relinquished by	/ ORG	Date	Time	Received by	/ ORG	Date	Time
[signature]	/	7/25/96	2:35	[signature]	T ASI	7-25	15:10
[signature]	/	7-25		Karen Dettenberg	quanter 7-26-96		1030
	/				/	[signature]	10:00
	/				/		

LABORATORY USE ONLY	Y / N
Pckg received / custody seals intact	
Sample Labels / COCs agree	
Temp at Time of Receipt ____ °C	N/A
Corrected copy attached	

Other problems or discrepancies

Cost Center R0483

Charge 951728CH

Remarks

0047

607266- Rad.

Client Sample Screening Results

29-Jul-96

(B) 1/21/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BLDG889-B 10		7/26/1996 11 15 00 AM	QUAD23B	7 26 1996 2 53 13 PM	BLDG889-B-10	30	8	0 22541667	49	0 7395833
02	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	33	0 04125	715	0 89375
Anl Date 7 26 1996	Tot Sa, Alq	1 50E+02	, 7 92E+01	Alp, (Dpm/	1 34E+00	(uCi/ 1 14E-03	(pCi/ 7 64E+00	± 5 5E+00	CAT I	6 5E+00 Lab
Ppt mg 79 2	Units	g	, mg	Bet, Alq)	1 47E+00	Sa) 1 25E-03	L/g) 8 34E+00	± 2 9E+00		1 2E+01 Alq L/g
SEG BLDG889 B 12		7 26 1996 11 15 00 AM	QUAD23C	7 26 1996 2 53 13 PM	BLDG889-B-12	30	9	0 25375	82	1 8645833
03	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	37	0 04625	695	0 86875
Anl Date 7 26 1996	Tot Sa, Alq	1 32E+02	, 8 83E+01	Alp, (Dpm/	1 53E+00	(uCi/ 1 03E-03	(pCi/ 7 81E+00	± 5 2E+00	CAT I	6 4E+00 Lab
Ppt mg 88 3	Units	g	, mg	Bet, Alq)	3 88E+00	Sa) 2 60E-03	L/g) 1 98E+01	± 3 3E+00		5 1E+00 Alq L/g
SEG BLDG889 B 13		7 29 1996 11 15 00 AM	QUAD23D	7 26 1996 2 53 13 PM	BLDG889 B-13	30	90	2 92375	355	10 813333
04	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	61	0 07625	816	1 02
Anl Date 7 26 1996	Tot Sa, Alq	1 24E+02	, 8 84E+01	Alp, (Dpm/	1 79E+01	(uCi/ 1 13E-02	(pCi/ 9 14E+01	± 1 0E+01	CAT II	5 5E-01 Lab
Ppt mg 88 4	Units	g	, mg	Bet, Alq)	2 14E-01	Sa) 1 35E-02	L/g) 1 09E+02	± 6 6E+00		9 2E-01 Alq L/g
SEG BLDG889 B 14		7 26 1996 11 15 00 AM	QUAD24A	7 26 1996 2 53 05 PM	BLDG889 B 14	30	26	0 80666667	134	3 5291667
05	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	48	0 06	750	0 9375
Anl Date 7 26 1996	Tot Sa Alq	1 16E+02	, 9 00E+01	Alp, (Dpm/	5 28E+00	(uCi/ 3 05E-03	(pCi/ 2 64E+01	± 6 9E+00	CAT I	1 9E+00 Lab
Ppt mg 90	Units	g	, mg	Bet, Alq)	7 46E+00	Sa) 4 31E-03	L/g) 3 73E+01	± 4 3E+00		2 7E+00 Alq L/g
SEG BLDG889 B 15		7 26 1996 11 15 00 AM	QUAD24B	7 26 1996 2 53 05 PM	BLDG889 B 15	30	22	0 68583333	149	4 0766667
06	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	38	0 0475	712	0 89
Anl Date 7 26 1996	Tot Sa Alq	9 62E+01	, 9 18E+01	Alp, (Dpm/	4 37E+00	(uCi/ 2 06E-03	(pCi/ 2 14E+01	± 6 3E+00	CAT I	2 3E+00 Lab
Ppt mg 91 8	Units	g	, mg	Bet, Alq)	8 62E+00	Sa) 4 07E-03	L/g) 4 23E+01	± 4 4E+00		2 4E+00 Alq L/g

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BLDG889 B-16		7 26/1996 11 15 00 AM	QUAD24D	7/26/1996 2 53 05 PM	BLDG889 B-16	30	9	0 24125	113	2 7491667
07	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	47	0 05875	814	1 0175

Anl Date	7 26 1996	Tot Sa, Alq	6 46E+01	, 8 77E+01	Alp,	(Dpm/	1 36E+00	(uCi/	4 51E-04	(pCi/	6 99E+00	± 5 6E+00	CAT I	7 2E+00 Lab
Ppt mg	87 7	Units	g	, mg	Bet,	Alq)	5 91E+00	Sa)	1 96E-03	L/g)	3 04E+01	± 4 0E+00		3 3E+00 Alq L/g

SEG BLDG889 B-17		7 26 1996 11 15 00 AM	QUAD21A	7 26 1996 3 33 44 PM	BLDG889 B-17	30	7	0 19083333	93	2 0925
	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	34	0 0425	806	1 0075

Anl Date	7 26 1996	Tot Sa, Alq	4 69E+01	, 9 82E+01	Alp,	(Dpm/	1 17E+00	(uCi/	2 52E-04	(pCi/	5 37E+00	± 5 3E+00	CAT I	9 3E+00 Lab
Ppt mg	98 2	Units	g	, mg	Bet,	Alq)	4 73E+00	Sa)	1 02E-03	L/g)	2 17E+01	± 3 4E+00		4 6E+00 Alq L/g

SEG BLDG889 B-18		7 26 1996 11 15 00 AM	QUAD21B	7 26 1996 3 33 44 PM	BLDG889 B-18	30	6	0 1725	57	1 00625
	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	22	0 0275	715	0 89375

Anl Date	7 26 1996	Tot Sa, Alq	4 86E+01	, 9 44E+01	Alp,	(Dpm/	1 12E+00	(uCi/	2 59E-04	(pCi/	5 34E+00	± 5 1E+00	CAT I	9 4E+00 Lab
Ppt mg	94 4	Units	g	, mg	Bet,	Alq)	2 15E+00	Sa)	4 98E-04	L/g)	1 02E+01	± 2 7E+00		9 8E+00 Alq L/g

SEG BLDG889 B-2		7 26 1996 11 15 00 AM	QUAD22B	7 26 1996 2 53 17 PM	BLDG889 B 2	30	17	0 52541667	121	3 1245833
	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	33	0 04125	727	0 90875

Anl Date	7 26 1996	Tot Sa, Alq	1 68E+02	, 9 391+01	Alp,	(Dpm/	3 26E+00	(uCi/	2 62E-03	(pCi/	1 56E+01	± 5 7E+00	CAT I	3 2E+00 Lab
Ppt mg	93 9	Units	g	, mg	Bet,	Alq)	6 48E+00	Sa)	5 22E-03	L/g)	3 11E+01	± 3 8E+00		3 2E+00 Alq L/g

SEG BLDG889 B-20		7 26 1996 11 15 00 AM	QUAD21C	7 26 1996 3 33 44 PM	BLDG889 B 20	30	8	0 21166667	57	0 96125
	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	44	0 055	751	0 93875

Anl Date	7 26 1996	Tot Sa, Alq	3 52E+01	7 87E+01	Alp,	(Dpm/	1 27E+00	(uCi/	2 56E-04	(pCi/	7 27E+00	± 5 9E+00	CAT I	6 9E+00 Lab
Ppt mg	78 7	Units	g	, mg	Bet,	Alq)	1 99E+00	Sa)	4 00E-04	L/g)	1 14E+01	± 3 2E+00		8 8E+00 Alq L/g

SEG BLDG889 B-22		7 26 1996 11 15 00 AM	QUAD21D	7 26 1996 3 33 44 PM	BLDG889 B-22	30	9	0 2625	68	1 3441667
	SOLID		Bkg	7 26 1996 4 38 19 AM	BKG	800	30	0 0375	738	0 9225

Anl Date	7 26 1996	Tot Sa, Alq	5 27E+01	, 9 18E+01	Alp,	(Dpm/	1 66E+00	(uCi/	4 30E-04	(pCi/	8 16E+00	± 5 4E+00	CAT I	6 1E+00 Lab
Ppt mg	91 8	Units	g	, mg	Bet,	Alq)	2 86E+00	Sa)	7 39E-04	L/g)	1 40E+01	± 3 0E+00		7 1E+00 Alq L/g

992

(B) 1/29/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BLDG889-B-23		7/26/1996 11 15 00 AM	QUAD22A	7/26/1996 3 33 48 PM	BLDG889-B-23	30	5	0 12916667	89	1 9941667
	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	30	0 0375	778	0 9725
Anl Date 7 26 1996	Tot Sa, Alq	4 83E+01	, 1 00E+02	Alp, (Dpm/	7 40E-01	(uCi/ 1 61E-04	(pCi/ 3 33E+00	± 4 6E+00	CAT I	1 5E+01 Lab
Ppt mg 100	Units	g	, mg	Bet, Alq)	4 23E+00	Sa) 9 20E-04	Lig) 1 91E+01	± 3 1E+00		5 2E+00 Alq Lig
SEG BLDG889 B 27		7 26 1996 11 15 00 AM	QUAD22B	7 26 1996 3 33 48 PM	BLDG889-B-27	30	5	0 12541667	78	1 69125
	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	33	0 04125	727	0 90875
Anl Date 7 26 1996	Tot Sa, Alq	1 20E+02	, 9 16E+01	Alp, (Dpm/	7 10E-01	(uCi/ 4 18E-04	(pCi/ 3 49E+00	± 4 8E+00	CAT I	1 4E+01 Lab
Ppt mg 91 6	Units	g	, mg	Bet, Alq)	3 60E+00	Sa) 2 12E-03	Lig) 1 77E+01	± 3 1E+00		5 7E+00 Alq Lig
SEG BLDG889 B-3		7 26 1996 11 15 00 AM	QUAD22C	7 26 1996 2 53 17 PM	BLDG889-B 3	30	5	0 11416667	60	1 0925
	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	42	0 0525	726	0 9075
Anl Date 7 26 1996	Tot Sa, Alq	8 39E+01	, 7 48E+01	Alp, (Dpm/	6 03E-01	(uCi/ 3 04E-04	(pCi/ 3 63E+00	± 5 4E+00	CAT I	1 4E+01 Lab
Ppt mg 74 8	Units	g	, mg	Bet, Alq)	2 28E+00	Sa) 1 15E-03	Lig) 1 37E+01	± 3 3E+00		7 3E+00 Alq Lig
SEG BLDG889 B 31		7 26 1996 11 15 00 AM	QUAD22C	7 26 1996 3 33 48 PM	BLDG889 B 31	30	5	0 11416667	73	1 5258333
	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	42	0 0525	726	0 9075
Anl Date 7 26 1996	Tot Sa, Alq	3 60E+02	, 8 39E+01	Alp, (Dpm/	6 05E-01	(uCi/ 1 17E-03	(pCi/ 3 25E+00	± 5 0E+00	CAT I	1 5E+01 Lab
Ppt mg 83 9	Units	g	, mg	Bet, Alq)	3 23E+00	Sa) 6 24E-03	Lig) 1 74E+01	± 3 3E+00		5 8E+00 Alq Lig
SEG BLDG889 B 33		7 26 1996 11 15 00 AM	QUAD22D	7 26 1996 3 33 48 PM	BLDG889 B 33	30	51	1 665	231	6 825
	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	28	0 035	700	0 875
Anl Date 7 26 1996	Tot Sa, Alq	1 08E+02	, 8 05E+01	Alp, (Dpm/	9 81E+00	(uCi/ 5 91E-03	(pCi/ 5 49E+01	± 8 5E+00	CAT I	9 1E 01 Lab
Ppt mg 80 5	Units	g	, mg	Bet, Alq)	1 38E+01	Sa) 8 29E-03	Lig) 7 69E+01	± 5 9E+00		1 3E+00 Alq Lig
SEG BLDG889 B-33Q A		7 26 1996 11 15 00 AM	QUAD23C	7 26 1996 3 33 52 PM	BLDG889 B-33Q A	30	7	0 18708333	70	1 4645833
08	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	37	0 04625	695	0 86875
Anl Date 7 26 1996	Tot Sa, Alq	1 22E+02	, 8 75E+01	Alp, (Dpm/	1 12E+00	(uCi/ 7 05E-04	(pCi/ 5 76E+00	± 5 1E+00	CAT I	8 7E+00 Lab
Ppt mg 87 5	Units	g	, mg	Bet, Alq)	3 05E+00	Sa) 1 92E-03	Lig) 1 57E+01	± 3 1E+00		6 4E+00 Alq Lig

0050

(B) 2/29/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SEG BLDG889 B-34		7/26/1996 11 15 00 AM	QUAD23A	7 26 1996 3 33 52 PM	BLDG889 B-34	30	8	0 23791667	84	1 86625
	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	23	0 02875	747	0 93375
Anl Date 7 26 1996	Tot Sa, Alq 6 14E+01	, 8 85E+01	Alp, (Dpm/ 1 43E+00	(uCi/ 4 46E-04	(pCi/ 7 26E+00	± 5 2E+00	CAT	6 9E+00	Lab	
Ppt mg 88 5	Units g	, mg	Bet, Alq) 3 89E+00	Sa) 1 22E-03	L/g) 1 98E+01	± 3 3E+00	I	5 0E+00	Alq L/g	
SEG BLDG889 B 3Q A		7 26 1996 11 15 00 AM	QUAD23B	7 26 1996 3 33 52 PM	BLDG889 B-3QA	30	7	0 19208333	77	1 6729167
	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	33	0 04125	715	0 89375
Anl Date 7 26 1996	Tot Sa, Alq 1 23E+02	, 8 07E+01	Alp, (Dpm/ 1 10E+00	(uCi/ 7 54E-04	(pCi/ 6 15E+00	± 5 3E+00	CAT	8 1E+00	Lab	
Ppt mg 80 7	Units g	, mg	Bet, Alq) 3 52E+00	Sa) 2 41E-03	L/g) 1 97E+01	± 3 5E+00	I	5 1E+00	Alq L/g	
SEG BLDG889-B 41		7 26 1996 11 15 00 AM	QUAD23D	7 26 1996 3 33 52 PM	BLDG889-B 41	30	9	0 22375	83	1 7466667
09	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	61	0 07625	816	1 02
Anl Date 7 26 1996	Tot Sa, Alq 8 44E+01	, 9 48E+01	Alp, (Dpm/ 1 36E 00	(uCi/ 5 47E 04	(pCi/ 6 48E+00	± 5 2E+00	CAT	7 7E 00	Lab	
Ppt mg 94 8	Units g	, mg	Bet, Alq) 3 63E+00	Sa) 1 46E-03	L/g) 1 73E+01	± 3 1E+00	I	5 8E+00	Alq L/g	
SEG BLDG889 B 42		7 26 1996 11 15 00 AM	QUAD24A	7 26 1996 3 33 40 PM	BLDG889 B 42	30	15	0 44	113	2 8291667
10	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	48	0 06	750	0 9375
Anl Date 7 26 1996	Tot Sa, Alq 9 82E+01	, 9 53E+01	Alp, (Dpm/ 2 91E+00	(uCi/ 1 35E-03	(pCi/ 1 38E+01	± 5 9E+00	CAT	3 6E 00	Lab	
Ppt mg 95 3	Units g	, mg	Bet, Alq) 6 14E+00	Sa) 2 85E 03	L/g) 2 90E+01	± 3 8E+00	I	3 4E 00	Alq L/g	
SEG BLDG889 B 43		7 26 1996 11 15 00 AM	QUAD24B	7 26 1996 3 33 40 PM	BLDG889 B 43	30	16	0 48583333	109	2 7433333
11	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	38	0 0475	712	0 89
Anl Date 7 26 1996	Tot Sa, Alq 6 68E+01	, 9 57E+01	Alp, (Dpm/ 3 17E+00	(uCi/ 9 96E 04	(pCi/ 1 49E+01	± 5 7E+00	CAT	3 4E 00	Lab	
Ppt mg 95 7	Units g	, mg	Bet, Alq) 5 81E+00	Sa) 1 83E-03	L/g) 2 74E+01	± 3 6E+00	I	3 7E+00	Alq L/g	
SEG BLDG889-B-44		7 26 1996 11 15 00 AM	QUAD24D	7 26 1996 3 33 40 PM	BLDG889 B-44	30	10	0 27458333	91	2 0158333
12	SOLID		Bkg	7 26 1996 4 38 15 AM	BKG	800	47	0 05875	814	1 0175
Anl Date 7 26 1996	Tot Sa, Alq 8 78E+01	, 9 60E+01	Alp, (Dpm/ 1 69E+00	(uCi/ 6 95E-04	(pCi/ 7 92E+00	± 5 4E+00	CAT	6 3E+00	Lab	
Ppt mg 96	Units g	, mg	Bet, Alq) 4 31E+00	Sa) 1 78E-03	L/g) 2 02E+01	± 3 3E+00	I	4 9E+00	Alq L/g	

7/29/96

CLIENT CODE ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
SLG BLDG889 B 6		7 29/1996 11 15 00 AM	QUAD22D	7 26 1996 2 53 17 PM	BLDG889 B 6	30	16	0 49833333	89	2 0916667
	SOLID		Bkg	7 26 1996 4 38 28 AM	BKG	800	28	0 035	700	0 875
Anl Date 7 26 1996	Tot Sa, Alq	9 83E+01	, 8 13E+01	Alp, (Dpm/	2 95E+00	(uCi/ 1 60E-03	(pCi/	1 63E+01	± 6 1E+00	CAT I 3 1E+00 Lab
Ppt mg 81 3	Units	g	, mg	Bet, Alq)	4 22E+00	Sa) 2 30E-03	L|g)	2 34E+01	± 3 7E+00	4 3E+00 Alq L|g
SLG BLDG889 B 9		7 26 1996 11 15 00 AM	QUAD23A	7 26 1996 2 53 13 PM	BLDG889 B 9	30	11	0 33791667	69	1 36625
01	SOLID		Bkg	7 26 1996 4 38 36 AM	BKG	800	23	0 02875	747	0 93375
Anl Date 7 26 1996	Tot Sa, Alq	1 90E+02	, 8 34E+01	Alp, (Dpm/	2 04E+00	(uCi/ 2 08E 03	(pCi/	1 10E+01	± 5 7E 00	CAT I 4 5E+00 Lab
Ppt mg 83 4	Units	g	, mg	Bet, Alq)	2 74E+00	Sa) 2 80E 03	L|g)	1 48E+01	± 3 2E+00	6 81 +00 Alq L|g

0052

7-30-96

* Upon Completion of step 11.4.4 of procedure RICHRC5057 please note that samples in W.O.'s 607265 and 607266 contain large amounts of undisolved matter. The actual amount does vary from sample to sample and appears milky white and extremely fine. Given time the materials precipitate out and gather at the bottom of the beaker.

7-30-96 LM

* Assisted by another technician continued with supervisoral concent and completed step(s) 11.5.8 of RICHRC5057. At this time it appears most of the undisolved matter has been carried along thru the procedure and is present in the bottom of the Sample beakers.

* Samples remained heavy with undisolved matter thru steps ~~11.6.8~~ 11.6.10 7-31-96 LM noting that not all of the undisolved matter was captured in the filter paper. A significant amount appears to be clouding up the Eluate being collected for the Americium in 8M HNO_3.

* Pu Elute was cooked down after completing RICHRC5010 and sent for Ed. Samples had a slightly higher amount of residue than normal but not excessive

7-31-96 LM

495

0053

8-1-96

* Continuing thru step(s) 11.7.3 of procedure RICHRC5052 noting that the undisolved material has remained in the beaker containing americium fraction.

* Completed thru steps 11.7.6 the undisolved material has gathered on top of the resin bed. Each samples has a different amount and the amount is colored from gray to light orange.

* During steps 11.7.7 thru 11.7.9 there were many different colors in the unknown material and it seemed to inhibit flow rates. During 11.7.9 I used extra rinses to remove the color ~~for~~ from the resin bed.

8-1-96 cm

* Step(s) 11.7.10 was completed overnight and the following morning 8-1-96 preformed steps 11.7.11 thru 11.7.13 and 11.7.15. Sample 60726610 had ~~th~~ some hazyness to its solution before cooking down when dry all the samples appeared in good condition including 60726610 wich did have an almost unmeasurable amount of addional material in the beaker. When Eluting the column with H_2O to clean them a large amount of white material passed ~~into~~ thru and ~~wors~~ was collected in the waste containers 8-2-96 cm

496

0054

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG # RD-96- 208

Project ID: SEG
NCM Initiated by: JOHN
Sample Numbers: 607 265 01-13
Tests: U140 Pu140 AM
Matrix: SOIL (CONCRETE)

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☐ Data review
- ☑ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I Laboratory Independent

- ☐ 1 Holding time expired in transit
- ☐ 2 Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3 Test added by client after expiration

Category II Laboratory Dependent

- ☐ 4 Instrument failure
- ☐ 5 Analyst error
- ☐ 6 Login error
- ☐ 7 Miscommunication
- ☐ 8 Other (complete description required)

Category III Analysis Reruns (QA/QC)

- ☐ 9 Surrogates
- ☐ 10 Internal Standards
- ☐ 11. Spike Recoveries
- ☐ 12. Blank Contamination

Category IV Analysis Reruns (Confirmation)

- ☐ 13 Second column
- ☐ 14 Contamination check
- ☐ 15 Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17 QC data reported outside of controls
- ☐ 18 Incorrect procedure used
- ☒ 19 SOP intentionally modified with QA and Tech. approval
- ☐ 20 Invalid instrument calibration
- ☐ 21 Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23 Electronic deliverable error

Reported detection limits elevated due to:

- ☐ 24. Sample matrix
- ☐ 25. Insufficient sample volume
- ☐ 26 Other (complete description required)
- ☐ 27 *Other (specify):* TIME SPENT MUFFLING WAS REDUCED

Comments/Explanation: 265 01-13 Pu/Am – 3 hrs
265 01-13 U140 – 4 hrs

Notification (check appropriate area):

Client notified by (name and date): _____

- ☑ in writing Case Narrative
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date): [signature] 8/6/96

497

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG# RD-96- 208

Corrective Action

Root Cause Initial and date: [illegible] 8/6/96

Muffle time was reduced from 6 hrs (per procedure RISMRC5013) to 4 hrs for lead & 3 hrs for Pu/Am because of the quick turnaround time on these samples. ~~This was~~ [illegible] 8/6/96

Corrective Action Initial and Date: [illegible] 8/6/96

Data accepted. All parameters acceptable

Responsibility for performing CA assigned to

Actions to prevent recurrence Initial and Date:

NA See above [illegible] 8/9/96

First Level Supervisor: [illegible] Date: 8/6/96

Responsible Manager: [illegible] Date: 8/9/96

Quality Assurance Review

☐ Anomaly ☑ Deficiency ☐ Rerun

☐ Further action required.

Assigned to.

QA signature: [illegible] Date: 8/9/96

Corrective Action Verification

☑ Verified

☐ Cannot Verify (specify reason):

Nonconformance Memo Closure

QA signature/date: [illegible] 8/9/96

498

0056

547

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG # RD-96-_____

Project ID: SEG
NCM Initiated by: A Kendall 8/6/96
Sample Numbers: P0726618, P0726615
Tests: Pu-239
Matrix: Soil (concrete)

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☒ Data review
- ☒ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I Laboratory Independent

- ☐ 1 Holding time expired in transit
- ☐ 2 Sample received > 48 hrs or 1/2 holding time has expired
- ☐ 3 Test added by client after expiration

Category II Laboratory Dependent

- ☐ 4 Instrument failure
- ☐ 5 Analyst error
- ☐ 6 Login error
- ☐ 7 Miscommunication
- ☐ 8 Other (complete description required)

Category III Analysis Reruns (QA/QC)

- ☐ 9 Surrogates
- ☐ 10 Internal Standards
- ☐ 11 Spike Recoveries
- ☐ 12 Blank Contamination

Category IV Analysis Reruns (Confirmation)

- ☐ 13 Second column
- ☐ 14 Contamination check
- ☐ 15 Confirmation of matrix effects
- ☐ 16 Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17 QC data reported outside of controls
- ☐ 18 Incorrect procedure used
- ☐ 19 SOP intentionally modified with QA and Tech. approval
- ☐ 20 Invalid instrument calibration
- ☐ 21 Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22 Hardcopy deliverable error
- ☐ 23 Electronic deliverable error

Reported detection limits elevated due to:

- ☐ 24 Sample matrix
- ☐ 25 Insufficient sample volume
- ☐ 26 Other (complete description required)
- ☒ 27 *Other (specify):* Yields < 20%

Comments/Explanation _____

Notification (check appropriate area):

Client notified by (name and date) _____

- ☑ in writing Case Narrative
- ☐ by telephone
- ☐ by facsimile
- ☐ other (explain)

Client's name and response _____

- ☐ process "as is"
- ☐ on hold until _____
- ☐ re-sample
- ☐ other (explain)

Project Manager (signature and date) [signature] 8/6/96

495

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG# RD-96-

Corrective Action

Root Cause Initial and date 8/6/96

Yields for blank & spike <20%. Cause unknown. CC NOT MET FOR BLANKS DUE TO low yield

Corrective Action Initial and Date 8/6/96

Data accepted after consulting w/ project manager. Blank activity <1/2 CL. Spike recovery within limits. Duplicates agree. Sample yields well within limits.

Blank & spike on batch 607266 was within limits

Also due to client requested quick turnaround time there is insufficient time to rerun entire batch

Responsibility for performing CA assigned to

Actions to prevent recurrence Initial and Date

First Level Supervisor Date 8/6/96

Responsible Manager Doug Swenson Date 8/9/96

Quality Assurance Review

☐ Anomaly ☐ Deficiency ☐ Rerun

☐ Further action required

Assigned to

QA signature Date 8/9/96

Corrective Action Verification

☑ Verified

☐ Cannot Verify (specify reason)

Nonconformance Memo Closure

QA signature/date 8/9/96

500

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG # RD-96- 207

Project ID: SEG
NCM Initiated by: JOHN NORTON
Sample Numbers: 607 266 01-12
Tests: Viso Pviso AM
Matrix: SOIL (CONCRETE)

Analytical Area (check appropriate area):

- ☐ Sample control
- ☐ Organic preparation
- ☐ Inorganic preparation
- ☐ GC
- ☐ HPLC
- ☐ GC/MS
- ☐ Wet chemistry
- ☐ Metals
- ☐ Reporting
- ☑ Data review
- ☑ Radiochemistry
- ☐ Bioassay

Nonconformance (check appropriate area):

Holding Time Violations (exceeded by _____ days)

Category I Laboratory Independent

- ☐ 1 Holding time expired in transit
- ☐ 2 Sample received > 48 hrs. or 1/2 holding time has expired
- ☐ 3 Test added by client after expiration

Category II. Laboratory Dependent

- ☐ 4 Instrument failure
- ☐ 5. Analyst error
- ☐ 6 Login error
- ☐ 7 Miscommunication
- ☐ 8. Other (complete description required)

Category III Analysis Reruns (QA/QC)

- ☐ 9 Surrogates
- ☐ 10. Internal Standards
- ☐ 11 Spike Recoveries
- ☐ 12. Blank Contamination

Category IV Analysis Reruns (Confirmation)

- ☐ 13 Second column
- ☐ 14 Contamination check
- ☐ 15 Confirmation of matrix effects
- ☐ 16. Other (complete description required)

Quality Assurance/Quality Control

- ☐ 17 QC data reported outside of controls
- ☐ 18 Incorrect procedure used
- ☒ 19 SOP intentionally modified with QA and Tech. approval
- ☐ 20 Invalid instrument calibration
- ☐ 21. Insufficient sample received for proper analysis

Incorrect or Incomplete Client Deliverable

- ☐ 22. Hardcopy deliverable error
- ☐ 23 Electronic deliverable error

Reported detection limits elevated due to:

- ☐ 24 Sample matrix
- ☐ 25 Insufficient sample volume
- ☐ 26. Other (complete description required)
- ☑ 27 *Other (specify):* TIME SPENT MUFFLING SAMPLES WAS REDUCED

Comments/Explanation: 266 01-12 Pv/AM – 4 hrs
266 01-12 Viso – 3 hrs
SAMPLES # 607 266 08-09 VENTED FUMES
DURING BOMBING

Notification (check appropriate area):

Client notified by (name and date): _____

- ☑ in writing Care Nanah
- ☐ by facsimile
- ☐ by telephone
- ☐ other (explain)

Client's name and response: _____

- ☐ process "as is"
- ☐ re-sample
- ☐ on hold until _____
- ☐ other (explain)

Project Manager (signature and date): [signature] 8/6/96

0059

501

QUANTERRA LABORATORY NONCONFORMANCE MEMO (NCM)

LOG# RD-96- 207

Corrective Action

Root Cause Initial and date: [illegible] 8/6/96

Muffle time was reduced from 6 hrs (per procedure RICHRC 5013) to 4 hrs for U130 & 3 hrs per Pu/Am because of the quick turnaround time requested on these samples

Corrective Action Initial and Date: [illegible] 8/6/96

Data accepted. All parameters acceptable

Responsibility for performing CA assigned to

Actions to prevent recurrence Initial and Date:

NA See above Quick Turn Sa [illegible] 8/9/96

First Level Supervisor [illegible] Date: 8/6/96

Responsible Manager [illegible] Date: 8/9/96

Quality Assurance Review

☐ Anomaly ☑ Deficiency ☐ Rerun

☐ Further action required:

Assigned to:

QA signature: [illegible] Date: 8/9/96

Corrective Action Verification

☐ Verified

☐ Cannot Verify (specify reason)

Nonconformance Memo Closure

QA signature/date: [illegible] 8/9/96

502

Due 8-9-96

*** AM-241 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 1

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-265

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
*)	P072651B		SEG		
*)	P072651S		SEG		
3)	60726501 (0726501)		SEG	889-B-17	
4)	60726502		SEG	889-B-18	
5)	60726503		SEG	889-B-20	
6)	60726504		SEG	889-B-22	
7)	60726505		SEG	889-B-23	
8)	60726506		SEG	889-B-27	
9)	60726507		SEG	889-B-31	
10)	60726508		SEG	889-B-33	
11)	60726509		SEG	889-B-34	
12)	60726510		SEG	889-B-3QA	

ACTIONS (Initial & Date)

1) INITIATED KAA 7-26-96

SOP(S) # RD2800

2) PREP LAB RECEIVED JM 7-26-96

SOP(S) # RICHRC5012/RICHRC5019

3) SAMPLE REMAINDER STORED JM 7-30-96

SOP(S) # _____

4) EPARATION LAB RECEIVED 7-30-96 LM

SOP(S) # RICHRC5057

5) COUNTING/MEASUREMENT LAB OR 8/2/96

SOP(S) # RICHRD0008 REV 0

6) DATA REVIEWED AND ANALYTICAL PREP STORED [illegible] 8/6/96

SOP(S) # RICHRC0002

503 Cpp+ 8/2/96 RICHRC 5003

*** AM-241 ***

Due 8-9-96

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 2

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-265

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	60726511		SEG	889-B-2	
2)	60726512		SEG	889-B-3	
3)	60726513		SEG	889-B-6	

ACTIONS (Initial & Date)

1) INITIATED KM 7-26-96

SOP(S) # RO 2800

2) PREP LAB RECEIVED JN 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JN 7-30-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB 8/2/96

SOP(S) # RICHRD0008 Rev0

6) DATA REVIEWED AND ANALYTICAL PREP STORED 8/6/96

SOP(S) # RICHRC0002

504

X

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s)	607265
Client ID	SEG
Due Date	8/9/96
Lab Sample Number or SDG	7075
Method Test Parameters	Am241
Matrix	Soil (Concrete)

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1 Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis				
1 Are the sample yields within acceptance criteria?	✓			✓
2. Were all sample holding times met?	✓			✓
3 Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C. QC Samples				
1 Is the blank yield within acceptance criteria	✓			✓
2 Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3 Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4 Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?		8/6/96	✓	✓
5 Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	✓
6 Is the LCS result within acceptance criteria?	✓			✓
7 Is the LCS yield within acceptance criteria	✓			✓
8 Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9 MS/MSD results and yield meet acceptance criteria?			✓	✓
10 Duplicate sample results and yield meet acceptance criteria?	✓			✓
D Other				
1 Are all Nonconformances included and noted?		✓		✓
2. Are all required forms filed out?	✓			✓
3 Correct methodology used?	✓			✓
4 Transcription checked? CB 8/5/96	✓			
5 Were all calculations checked at a minimum frequency?	✓			
6 Units checked?	✓			✓

Comments on any "No" response 1 NCM - original NCM is w/ Uiso data

First Level Review [signature] Date 8/6/96

Second Level Review [signature] Date 8/6/96

Form # LS-038,2 /96, Rev 4

505

Due 8-9-96

*** AM-241 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

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Page 1

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-266

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
*)	P072661B		SEG		
*)	P072661S		SEG		
3)	60726601 C0726601		SEG	889-B-9	
4)	60726602		SEG	889-B-10	
5)	60726603		SEG	889-B-12	
6)	60726604		SEG	889-B-13	
7)	60726605		SEG	889-B-14	
8)	60726606		SEG	889-B-15	
9)	60726607		SEG	889-B-16	
10)	60726608		SEG	889-B-33QA	
11)	60726609		SEG	889-B-41	
12)	60726610		SEG	889-B-42	

ACTIONS (Initial & Date)

1) INITIATED KM 7-26-96

SOP(S) # RO2800

2) PREP LAB RECEIVED JN 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JN 7-30-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED 7-30-96 LM

SOP(S) # RICHRC5057

5) COUNTING/MEASUREMENT LAB DD 8/2/96

SOP(S) # RICHRD0008 Rev

6) DATA REVIEWED AND ANALYTICAL PREP STORED P 8/6/96

SOP(S) # RICHRC0002

CPPT 8/2/96 RICHRC5003

506

Due 8-9-96

*** AM-241 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

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Page 2

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-266

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	60726611		SEG	889-B-43	
2)	60726612		SEG	889-B-44	

ACTIONS (Initial & Date)

1) INITIATED ~~KH~~ 7-26-96

SOP(S) # RD2800

2) PREP LAB RECEIVED JN 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JN 7-30-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB OR 8/2/96

SOP(S) # RICHRD0008 Rev0

6) DATA REVIEWED AND ANALYTICAL PREP STORED 8/6/96

SOP(S) # RICHRC0002

507

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s)	607266
Client ID	SEG
Due Date	8/9/96
Lab Sample Number or SDG	7075
Method Test Parameters	Am 241
Matrix:	Soil (CONCRETE)

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1 Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis				
1 Are the sample yields within acceptance criteria?	✓			✓
2 Were all sample holding times met?	✓			✓
3 Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C QC Samples				
1 Is the blank yield within acceptance criteria	✓			✓
2 Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3 Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4 Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	✓
5 Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	✓
6 Is the LCS result within acceptance criteria?	✓			✓
7 Is the LCS yield within acceptance criteria	✓			✓
8 Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9 MS/MSD results and yield meet acceptance criteria?			✓	✓
10 Duplicate sample results and yield meet acceptance criteria?	✓			✓
D Other				
1 Are all Nonconformances included and noted?		✓		✓
2 Are all required forms filed out?	✓			✓
3 Correct methodology used?	✓			✓
4 Transcription checked? CB 8/5/96	✓			
5 Were all calculations checked at a minimum frequency?	✓			
6 Units checked?	✓			✓

Comments on any "No" response 1 NCM - original NCM is w/ use data - reduced muffling time

First Level Review [signature] Date 8/6/96

Second Level Review [signature] Date 8/6/96

Form # LS-038 2 /96, Rev 4

508

Due 8-9-96

*** PUISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 1

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-265

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
*)	P072651B		SEG		
*)	P072651S		SEG		
3)	60726501 C0726501		SEG	889-B-17	
4)	60726502		SEG	889-B-18	
5)	60726503		SEG	889-B-20	
6)	60726504		SEG	889-B-22	
7)	60726505		SEG	889-B-23	
8)	60726506		SEG	889-B-27	
9)	60726507		SEG	889-B-31	
10)	60726508		SEG	889-B-33	
11)	60726509		SEG	889-B-34	
12)	60726510		SEG	889-B-3QA	

ACTIONS (Initial & Date)

1) INITIATED KSH 7-26-96

SOP(S) # RD2800

2) PREP LAB RECEIVED JN 7-26-96

SOP(S) # RICHRC5013 / RICHRC5019

3) SAMPLE REMAINDER STORED JN 7-30-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED 7-30-96 LM

SOP(S) # RICHRC5057

5) COUNTING/MEASUREMENT LAB [illegible] 8/1/96

SOP(S) # RICHRD0008

6) DATA REVIEWED AND ANALYTICAL PREP STORED [illegible] 8/1/96

SOP(S) # RICHRC0002

Cart # 2

7-31-96 LM RICHRC5010

509 E.D. 8/1/96 M.U. RichRC5039

0067

Due 8-9-96

*** PUISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

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Page 2

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-265

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	60726511		SEG	889-B-2	
2)	60726512		SEG	889-B-3	
3)	60726513		SEG	889-B-6	

ACTIONS (Initial & Date)

1) INITIATED KH 7-26-96

SOP(S) # RD2800

2) PREP LAB RECEIVED JN 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JN 7-30-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED 7-30-96 LR

SOP(S) # RICHRC5057

5) COUNTING/MEASUREMENT LAB p 8/1/96

SOP(S) # RICHRC0008

6) DATA REVIEWED AND ANALYTICAL PREP STORED p 8/6/96

SOP(S) # RICHRC0002

570

Quanterra Environmental Services

DUE DATE 8/9/96

REANALYSIS / RECOUNT
CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS Pu

NAME/DATE p / 8/2/96

CUSTOMER SCG

SAMPLE DELIVERY GROUP

MATRIX Concrete

BATCH NUMBER 607265

ID	CUSTOMER ID	COMMENTS
1) P07265 1B		2.0gr/ 5.0710
2) P07265 1S		2.0gr/10.034/2.0028±0.05962 dpm
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ID - BLANK

ID - SPIKE

CLIENT CODE

ACTIONS (Initial & Date)

PREP LAB RECEIVED

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

SEPARATION LAB

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

511

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT RICHRO0005 8/2/96

DATA REVIEWED 8/5/96 RICHTEC0002

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

Recount for 200min

NOT ON ~~ACP9~~ ACP39 or ALP40 8/2/96

0069

RC-048 12/92 REV 2

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s):	607265
Client ID	SEG
Due Date:	8-9-96
Lab Sample Number or SDG	7075
Method Test Parameters.	Plutonium
Matrix:	Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1 Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis				
1 Are the sample yields within acceptance criteria?	✓			✓
2 Were all sample holding times met?	✓			✓
3 Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C QC Samples				
1 Is the blank yield within acceptance criteria	✓			✓
2 Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3 Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4 Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	✓
5 Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	✓
6 Is the LCS result within acceptance criteria?	✓			✓
7 Is the LCS yield within acceptance criteria	✓			✓
8 Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9 MS/MSD results and yield meet acceptance criteria?			✓	✓
10 Duplicate sample results and yield meet acceptance criteria?	✓			✓
D Other				
1 Are all Nonconformances included and noted?		✓ w/ viso batch		✓
2 Are all required forms filed out?	✓			✓
3 Correct methodology used?	✓			✓
4 Transcription checked? JM 8-2-96	✓			
5 Were all calculations checked at a minimum frequency?	✓			
6 Units checked?	✓			✓

Comments on any "No" response 1 NCM - original NCM is w/ viso batch concerning reduced muffling time

First Level Review [signature] Date 8/6/96

Second Level Review [signature] Date 8/6/96

Form # LS-038.2 /96, Rev 4

0070

512

Due 8-9-96

*** PUISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 1

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-266

	GES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
*)	P072661B		SEG		
*)	P072661S		SEG		
3)	60726601 C0726601		SEG	889-B-9	
4)	60726602		SEG	889-B-10	
5)	60726603		SEG	889-B-12	
6)	60726604		SEG	889-B-13	
7)	60726605		SEG	889-B-14	
8)	60726606		SEG	889-B-15	
9)	60726607		SEG	889-B-16	
10)	60726608		SEG	889-B-33QA	
11)	60726609		SEG	889-B-41	
12)	60726610		SEG	889-B-42	

ACTIONS (Initial & Date)

1) INITIATED KAH 7-26-96

SOP(S) # RD280C

2) PREP LAB RECEIVED JV 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JV 7-30-96

SOP(S) # _____

4 SEPARATION LAB RECEIVED 7-30-96 LM

SOP(S) # RICHRC5057

5) COUNTING/MEASUREMENT LAB P 8/1/96

SOP(S) # RICHRD0008

6) DATA REVIEWED AND ANALYTICAL PREP STORED P 8/2/96

SOP(S) # RICHRC0002

Cart #4 ED, 8/1/96 M.V. RichRc LM 5039 7-31-96 RICHRC5010

513

0071

*** PU(SO ***

Del 8-9-96

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 2

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-266

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	60726611		SEG	889-B-43	
2)	60726612		SEG	889-B-44	

ACTIONS (Initial & Date)

1) INITIATED KEA 7-26-96

SOP(S) # RD2800

2) PREP LAB RECEIVED JV 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JV 7-30-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED _____

SOP(S) # _____

5) COUNTING/MEASUREMENT LAB 8/1/96

SOP(S) # RICHRC002

6) DATA REVIEWED AND ANALYTICAL PREP STORED 8/2/96

SOP(S) # RICHRC002

0072

514

Quanterra Environmental Services

DUE DATE 8/9/96

REANALYSIS / RECOUNT

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

ANALYSIS R

NAME/DATE [illegible] / 8/2/96

CUSTOMER SEG

SAMPLE DELIVERY GROUP

MATRIX CONCRETE

BATCH NUMBER 6072666

ID	CUSTOMER ID	COMMENTS
1) P0726661B		2.0gr / 5.0648
2) P0726661S		2.0gr / 10.399 / 2.0349 ± 0.0609 23 DPM
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		

REANALYSIS

REFERENCED QC

ID - BLANK

ID - SPIKE

CLIENT CODE

ACTIONS (Initial & Date)

PREP LAB RECEIVED

SAMPLE REMAINDER RETURNED TO SCG ☐ (CHECK ONE)

NO SAMPLE REMAINING ☐

8/8/96

SEPARATION LAB

COUNTING/MEASUREMENT

DATA REVIEWED

ANALYTICAL PREP STORED

RECOUNT

ACTIONS (Initial & Date)

COUNTING/MEASUREMENT RICHARDSON 8/2/96

DATA REVIEWED 8/6/96 RICHARDSON

ANALYTICAL PREP STORED

ADDITIONAL COMMENTS:

recount for 200 min

NOT ON ALP 39 or ALP 40

ALP 17 & 18

515

RC-048 12/92 REV 2

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s) 607266

Client ID SEG

Due Date 8-9-96

Lab Sample Number or SDG 7075

Method Test Parameters. Plutonium

Matrix Soil

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1 Is the calibration documentation included where applicable?			—	✓
B. Sample Analysis				
1 Are the sample yields within acceptance criteria?	✓			✓
2 Were all sample holding times met?	✓			✓
3 Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C QC Samples				
1 Is the blank yield within acceptance criteria		✓ NCM		✓
2 Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?		✓ NCM		✓
3 Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4 Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	✓
5 Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	✓
6 Is the LCS result within acceptance criteria?	✓			✓
7 Is the LCS yield within acceptance criteria		✓ NCM		✓
8 Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9 MS/MSD results and yield meet acceptance criteria?	—	—	✓	✓
10 Duplicate sample results and yield meet acceptance criteria?	✓			✓
D Other				
1 Are all Nonconformances included and noted?	✓	✓ w/ wise batch		✓
2 Are all required forms filed out?	✓			✓
3 Correct methodology used?	✓			✓
4 Transcription checked? JM 8-2-96	✓			
5 Were all calculations checked at a minimum frequency?	✓			
6 Units checked?	✓			✓

Comments on any "No' response 1 NCM- Blank/spike low yield
1 NCM- original NCM w/ wise batch pertaining to reduced muffling time

First Level Review [signature] Date 8/6/96

Second Level Review [signature] Date 8/6/96

Form # LS-038.2 /96, Rev 4

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Dell 8-9-96

*** UISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 1

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-265

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
*)	P072651B		SEG		
*)	P072651S		SEG		
3)	60726501 C0726501		SEG	889-B-17	
4)	60726502		SEG	889-B-18	
5)	60726503		SEG	889-B-20	
6)	60726504		SEG	889-B-22	
7)	60726505		SEG	889-B-23	
8)	60726506		SEG	889-B-27	
9)	60726507		SEG	889-B-31	
10)	60726508		SEG	889-B-33	
11)	60726509		SEG	889-B-34	
12)	60726510		SEG	889-B-3QA	

ACTIONS (Initial & Date)

1) INITIATED KH 7-26-96

SOP(S) # R02800

2) PREP LAB RECEIVED JN 7-26-96

SOP(S) # RICHRC5013/RICHRC5017

3) SAMPLE REMAINDER STORED JN 7-29-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED 07-29-65 Fac

SOP(S) # RICHRC 5030

5) COUNTING/MEASUREMENT LAB JA 8-2-96

SOP(S) # RICHRD0008-0

6) DATA REVIEWED AND ANALYTICAL PREP STORED p 8/6/96

SOP(S) # RICHRC0002

Extraction 8/1/96 M.U. RichRc 5030
Cleet #4 8/2/96 M.U ED. RichRc5039
517

0075

Due 8-9-96

*** UISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 2

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-265

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	60726511		SEG	889-B-2	
2)	60726512		SEG	889-B-3	
3)	60726513		SEG	889-B-6	

ACTIONS (Initial & Date)

1) INITIATED 7-26-96

SOP(S) # RD2800

2) PREP LAB RECEIVED 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED 7-29-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED 07-29-96

SOP(S) # RICHRC 5030

Extraction 8/1 fc M.U. Rich Rc5030

5) COUNTING/MEASUREMENT LAB 8-2-96

SOP(S) # RICHRD 0008.0

6) DATA REVIEWED AND ANALYTICAL PREP STORED 8/6/96

SOP(S) # RICHRC002

578

K

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s) 607265

Client ID SEG

Due Date 8/9/96

Lab Sample Number or SDG 7075

Method Test Parameters: 4/50

Matrix: Soil (concrete)

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1 Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis				
1 Are the sample yields within acceptance criteria?	✓			✓
2 Were all sample holding times met?	✓			✓
3 Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C QC Samples				
1 Is the blank yield within acceptance criteria	✓			✓
2 Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3 Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4 Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	✓
5 Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	✓
6 Is the LCS result within acceptance criteria?	✓			✓
7 Is the LCS yield within acceptance criteria	✓			✓
8 Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9 MS/MSD results and yield meet acceptance criteria?			✓	✓
10 Duplicate sample results and yield meet acceptance criteria?	✓		8/6/96	✓
D Other				
1 Are all Nonconformances included and noted?	✓		8/6/96	✓
2 Are all required forms filed out?	✓			✓
3 Correct methodology used?	✓			✓
4 Transcription checked? CB 8/5/96	✓			
5 Were all calculations checked at a minimum frequency?	✓			
6 Units checked?	✓			✓

Comments on any "No" response 1 NCM - Shortened Muffling time.

First Level Review [signature] Date 8/6/96

Second Level Review [signature] Date 8/6/96

Form # LS-038.2 /96, Rev 4

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Due 8-9-96

*** VISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 1

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-266

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
*)	P072661B		SEG		
*)	P072661S		SEG		
3)	60726601 C0726601		SEG	889-B-9	
4)	60726602		SEG	889-B-10	
5)	60726603		SEG	889-B-12	
6)	60726604		SEG	889-B-13	
7)	60726605		SEG	889-B-14	
8)	60726606		SEG	889-B-15	
9)	60726607		SEG	889-B-16	
10)	60726608		SEG	889-B-33QA	
11)	60726609		SEG	889-B-41	
12)	60726610		SEG	889-B-42	

ACTIONS (Initial & Date)

1) INITIATED KH 7-26-96

SOP(S) # JN RD 2800

2) PREP LAB RECEIVED JN 7-26-96

SOP(S) # RICHRC5013/RICHRC5019

3) SAMPLE REMAINDER STORED JN 7-29-96

SOP(S) # _____

SEPARATION LAB RECEIVED 07-29-96 Em

SOP(S) # RICHRC 5030

5) COUNTING/MEASUREMENT LAB P 8/1/96

SOP(S) # RICHRD0008

6) DATA REVIEWED AND ANALYTICAL PREP STORED P 8/6/96

SOP(S) # RICHRC0002

ED. Cart #3

0078

520 Extraction RICHRC5030 (25)

E.D. 8/1/96 M.U. RichRC5039 7/31/96

Due 8-9-96

*** UISO ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

26-Jul-1996
Page 2

CUSTOMER SEG

SAMPLE DELIVERY GROUP 7075

MATRIX SOIL

BATCH NUMBER 7-266

	QES ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
1)	60726611		SEG	889-B-43	
2)	60726612		SEG	889-B-44	

ACTIONS (Initial & Date)

1) INITIATED 7-26-96

SOP(S) # RD250C

2) PREP LAB RECEIVED 7-26-96 JN

SOP(S) # RICHRC5013/RICHRC5019

SAMPLE REMAINDER STORED JN 7-29-96

SOP(S) # _____

4) SEPARATION LAB RECEIVED 07-29-96 EN

SOP(S) # RICHRC 5030

5) COUNTING/MEASUREMENT LAB 8/1/96

SOP(S) # RICHRD0008

6) DATA REVIEWED AND ANALYTICAL PREP STORED 8/2/96

SOP(S) # RICHRC0002

521

Quanterra Data Review Checklist
RADIOCHEMISTRY

Work Order number (s) 607266

Client ID SEG

Due Date 8/9/96

Lab Sample Number or SDG 7075

Method Test Parameters. U150

Matrix: SOIL (CONCRETE)

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Calibration				
1 Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis				
1 Are the sample yields within acceptance criteria?	✓			✓
2. Were all sample holding times met?	✓			✓
3 Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			✓
C. QC Samples				
1 Is the blank yield within acceptance criteria	✓			✓
2 Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			✓
3 Is the blank result < 1/2 the Contract Detection Limit?	✓			✓
4 Is the blank > 1/2 the Contract Detection Limit but < Contract Detection Limit?			✓	✓
5 Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	✓
6 Is the LCS result within acceptance criteria?	✓			✓
7 Is the LCS yield within acceptance criteria	✓			✓
8 Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			✓
9 MS/MSD results and yield meet acceptance criteria?			✓	✓
10 Duplicate sample results and yield meet acceptance criteria?	✓			✓
D Other				
1 Are all Nonconformances included and noted?	✓			✓
2 Are all required forms filed out?	✓			✓
3 Correct methodology used?	✓			✓
4 Transcription checked? CB 8/5/96	✓			
5 Were all calculations checked at a minimum frequency?	✓			
6 Units checked?	✓			✓

Comments on any "No" response 1 NCM - REDUCED MUFFLING TIME

First Level Review [signature] Date 8/6/96

Second Level Review [signature] Date 8/6/96

Form # LS-038,2 /96, Rev 4

522

Building 889 Be Smear Survey Results

SAMPLE NO.	LOCATION		RESULT
			(ug/ft^2
B-1	Room 106	North Wall	0 00
B-2	Room 106	North Wall	0 19
B-3	Room 106	North Wall	0 09
B-4	Room 106	East Wall	0 00
B-5	Room 106	East Wall	0 37
B-6	Room 106	East Wall	0 09
B-7	Room 106	East Wall	0 65
B-8	Room 106	East Wall	0 74
B-9	Room 106	South Wall	0 18
B-10	Room 106	South Wall	0 00
B-11	Room 106	South Wall	0 18
B-12	Room 106	West Wall	0 00
B-13	Room 106	West Wall	1 48
B-14	Room 106	West Wall	0 74
B-15	Room 106	West Wall	0 46
B-16	Room 106	West Wall	0 37
B-17	Room 106	Ceiling	0 00
B-18	Room 106	Ceiling	0 09
B-19	Room 106	Ceiling	4 83
B-20	Room 106	Ceiling	0 00
B-21	Room 106	Ceiling	0 93
B-22	Room 106	Ceiling	0 74
B-23	Room 106	Ceiling	0 28
B-24	Room 106	Floor	0 65
B-25	Room 106	Floor	0 00
B-26	Room 106	Floor	0 18
B-27	Room 108	North Wall	0 09
B-28	Room 108	North Wall	0 46
B-29	Room 108	East Wall	0 37
B-30	Room 108	East Wall	0 00
B-31	Room 108	East Wall	2 23
B-32	Room 108	East Wall	0 18
B-33	Room 108	West Wall	19 69
B-34	Room 108	West Wall	1 60
B-35	Room 108	Ceiling	0 00
B-36	Room 108	Floor	0 46
B-37	Room 108	Floor	0 37
B-38	Room 108	Floor	1 11
B-39	Room 106	West Wall	1 30
B-40	Room 106	Edge of East Wall	1 02

523

Building 889 Be Smear Survey Results

Statistical Summary		
	No of Measurements	40 00
	Upper Confidence Limit	2 03
	Mean	1 05
	Maximum	19 69
	Standard Deviation	3 14

524

309 – 403

TOTAL 40 SAMPLES

Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Rick Taylor Title: Industrial Hygiene Bldg/Ext: T893A Date: 7/24/96 Page 1 of 3

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
889-96-7-23-B-1	Beryllium						Note: Sample Numbers written on wall of 889 as B-1, B-2, etc	
B-2								
B-3								
B-4							Please see attachments regard wall grid numbering system and related map	
B-5								
B-6								
B-7								
B-8								
B-9								
B-10								
B-11								
B-12								
B-13								
B-14								
B-15								
B-16								

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Rick Taylor	[illegible]	950 7/24/96	[illegible]	R. Brown	0800 7-25-96
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill ☐ Verbal To: Dick Sexton 2863
RMRS SEG ☒ Fax To: 8244 & 8482
SSOC ☐ Report To: Dick Sexton
DynCorp ☐ Bill To: RMRS/SEG
WSI ☐ P.O.#/Release: 951728C4
COST RO483 CENTER Lab: B123

Analysis Request

Industrial Hygiene Sample
☒ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #)
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

526

[redacted] Rocky [redacted]ks Plant, Inc.
Golden, CO 80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Rick Taylor Title: Ind Hyg SEG/C Bldg/Ext: T893A Date: 7/24/96 Page 2 of 3

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
889-96-7-23 - B-17	Beryllium							
B-18								
B-19								
B-20								
B-21								
B-22								
B-23								
B-24								
B-25								
B-26								
B-27								
B-28								
B-29								
B-30								
B-31								
B-32								

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Rick Taylor	[signature]	950 7/24/96	[signature]	R. Brown	0800 7-25-96
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Verbal To: 2863 Dick Sexton
Fax To: 8244 & 8482
Report To: Dick Sexton
Bill To: RMRS/SEG
P.O.#/Release: 951728CH1
Lab: B123

Analysis Request

Industrial Hygiene Sample
☒ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #)
Condition of Seal ☐ Broken ☐ Unbroken
Signature.
Comments:

RF-47530 (Rev 9/91) R0483 White - Return to Originator Yellow - Lab Copy Green - Sample Custodian

FAX NO. 303 966 3402 BLDG 123 JUL-29-96 MON 12:29

Golden, CO 80402-0464

309 - 403

TOTAL 40 SAMPLES

Safety and Hygiene Chain of Custody Record and Analysis Request

Page 1 of 3

Name of Originator: Rick Taylor Title: Industrial Hygiene Bldg/Ext: T893A Date: 7/24/96

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
889-96-7-23-B-1	Beryllium						Note: Sample Numbers written on wall of 889 as B-1, B-2, etc	
B-2								
B-3								
B-4							Please see attachments regard wall grid numbering system and related map	
B-5								
B-6								
B-7								
B-8								
B-9								
B-10								
B-11								
B-12								
B-13								
B-14								
B-15								
B-16								

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Rick Taylor	[illegible]	9:50 7/24/96	[illegible]	R. Brown	0800 7-25-96
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

- Kaiser-Hill ☐
- RMRS SEG ☒
- SSOC ☐
- DynCorp ☐
- WSI ☐

Verbal To: Dick Sexton 2863
Fax To: 8244 & 8482
Report To: Dick Sexton
Bill To: RMRS/SEG
P.O.#/Release: 951729CH
Lab: B123
COST RO483 CENTER

Analysis Request

Industrial Hygiene Sample: ☒ Standard Service ☐ Rush ☐ Other

Asbestos Samples: ☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #)

Condition of Seal: ☐ Broken ☐ Unbroken

Signature:

Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

JUL-29-96 MON 12:29 BLDG 123 FAX NO. 303 966 3402

525

[redacted] Rocky [redacted]ts Plant, Inc.

Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Rick Taylor Title: Ind Hyg SEG/C Bldg/Ext: T893A Date: 7/24/96 Page 2 of 3

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
889-96-7-23 - B-17	Beryllium							
B-18								
B-19								
B-20								
B-21								
B-22								
B-23								
B-24								
B-25								
B-26								
B-27								
B-28								
B-29								
B-30								
B-31								
B-32								

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Rick Taylor	[signature]	950 7/24/96	[signature]	R. Brown	0800 7-25-96
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Verbal To: 2863 Dick Sexton
Fax To. 8244 & 8482
Report To: Dick Sexton
Bill To: RMRS / SEG
P.O.#/Release: 951728CH1
Lab: B123

Analysis Request

Industrial Hygiene Sample
☒ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #)
Condition of Seal. ☐ Broken ☐ Unbroken
Signature:
Comments:

RF-47530 (Rev 9/91) R0483 White - Return to Originator Yellow - Lab Copy Green - Sample Custodian

Rocky[redacted]s Plant, Inc.

Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Rick Taylor Title: Ind Hyg SEG C Bldg/Ext. T893A Date: 7/24/96 Page 3 of 3

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
889-96-7-23-B-33	Beryllium							
B-34								
B-35								
B-36								
B-37								
B-38								
B-39								
B-40								

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Rick Taylor	[illegible]	9:30 7/24/96	[illegible]	R. Brown	0800 7-25-96
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Verbal To: 2863 Dick Sexton
Fax To: 8244 & 8482
Report To: Dick Sexton
Bill To: RMRS / SEG
P.O.#/Release: 95 1728441
Lab: B123

Analysis Request

Industrial Hygiene Sample

☒ Standard Service ☐ Rush ☐ Other

Asbestos Samples

☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #)

Condition of Seal: ☐ Broken ☐ Unbroken

Signature:
Comments:

RF-47530 (Rev 9/91) RO 483 Last Copy

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - [illegible]

REPORT For: 07-29-96
ROUTE: 889 SPECIALS. DAY COLLECTED: 07/24/96

SAMPLE NO.	DATE ON	DATE OFF	TIME ON	TIME OFF	VOL M3	AMOUNT (ug/filter)	CONC ug/m3
1					0	0.00	
2					0	0.02	
3					0	0.01	
4					0	0.00	
5					0	0.04	
6					0	0.01	
7					0	0.07	
8					0	0.08	
9					0	0.02	
10					0	0.00	
11					0	0.02	
12					0	0.00	
13					0	0.16	
14					0	0.08	
15					0	0.05	
16					0	0.04	
17					0	0.00	
18					0	0.01	
19					0	0.52	
20					0	0.00	
21						0.10	
22					0	0.08	
23					0	0.07	
24					0	0.07	
25					0	0.00	
26					0	0.02	
27					0	0.01	
28					0	0.05	
29					0	0.34	
30					0	0.00	
31					0	0.24	
32					0	0.02	
33					0	2.12	
34					0	0.12	
35					0	0.30	
36					0	0.04	
37					0	0.04	
38					0	0.17	
39					0	0.4	
40					0	0.11	

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RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number: RES 37445-1
Client: Kaiser-Hill Company, LLC
Client Project: 235986, Rocky Flats- Bldg. T893A
Date Samples Received: August 24, 1996
Analysis Type: TEM AHERA, Air
Turnaround: 6 Hour

Client ID Number	Lab ID Number	Area Analyzed (mm²)	Air Volume Sampled (L)	Number of Asbestos Structures Detected	Analytical Sensitivity (s/cc)	Asbestos Concentration (s/cc)	Asbestos Filter Loading (s/mm²)
889-96-8-24-24-169	EM 249430	0.0696	1127	ND	0 0049	BAS	BAS
889-96-8-24-24-170	EM 249431	0.0580	1353	ND	0.0049	BAS	BAS
889-96-8-24-24-171	EM 249432	0.0812	1101	ND	0 0043	BAS	BAS
889-96-8-24-24-172	EM 249433	0.0696	1200	ND	0.0046	BAS	BAS
889-96-8-24-24-173	EM 249434	0.0812	1095	ND	0 0043	BAS	BAS
889-96-8-24-24-174	EM 249435	NA	0		—	—	—
889-96-8-24-24-175	EM 249436	NA	0		—	—	—

NA = Not Analyzed
ND = None Detected
BAS = Below Analytical Sensitivity
Average Grid Opening = 0.0116 sq mm

Filter Material = Mixed Cellulose Ester
Filter Diameter = 25 mm
Effective Filter Area = 385 sq mm

AVERAGE FILTER LOADING: 0.0
(Inside samples)

DATA QA

NVLAP LAB NO 1896

AIHA LAB I D 10768

ASBESTOS - TEM, PCM, PLM, B
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES JOB 37445

To: Rick Taylor / Brian Henderson

Company: Kaiser Hill

Fax Number: 966-8482 / 966-5630

From: Carrie

Date: August 24, 1996

Number of Pages: 1 (excluding cover sheet)

Message:

TEM results.

Thanks!

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

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QA SURVEY
FLOORS OF ROOM 106 AND 108

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
1	FLOOR SLAB BLDG 889	18	205	60	738
2	FLOOR SLAB BLDG 889	18	205	60	384
3	FLOOR SLAB BLDG 889	18	205	60	960
4	FLOOR SLAB BLDG 889	18	205	60	1086
5	FLOOR SLAB BLDG 889	18	205	60	690
6	FLOOR SLAB BLDG 889	18	205	60	933
7	FLOOR SLAB BLDG 889	18	205	60	906
8	FLOOR SLAB BLDG 889	18	205	66	825
9	FLOOR SLAB BLDG 889	18	205	84	690
10	FLOOR SLAB BLDG 889	18	205	60	1257
11	FLOOR SLAB BLDG 889	18	205	60	924
12	FLOOR SLAB BLDG 889	18	205	66	1122
13	FLOOR SLAB BLDG 889	18	205	60	852
14	FLOOR SLAB BLDG 889	18	205	60	1185
15	FLOOR SLAB BLDG 889	18	205	60	1248
16	FLOOR SLAB BLDG 889	18	205	66	1032
17	FLOOR SLAB BLDG 889	18	205	60	726
18	FLOOR SLAB BLDG 889	18	205	60	744
19	FLOOR SLAB BLDG 889	18	205	60	807
20	FLOOR SLAB BLDG 889	18	205	60	996
21	FLOOR SLAB BLDG 889	18	205	66	645
22	FLOOR SLAB BLDG 889	18	205	60	1545
23	FLOOR SLAB BLDG 889	18	205	66	366
24	FLOOR SLAB BLDG 889	18	205	60	429
25	FLOOR SLAB BLDG 889	18	205	60	380
26	FLOOR SLAB BLDG 889	18	205	60	492
27	FLOOR SLAB BLDG 889	18	205	60	951
28	FLOOR SLAB BLDG 889	18	205	60	483
29	FLOOR SLAB BLDG 889	18	205	60	1347
30	FLOOR SLAB BLDG 889	18	205	60	681
31	FLOOR SLAB BLDG 889	18	205	60	996
32	FLOOR SLAB BLDG 889	18	205	60	1122

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QA SURVEY
FLOORS OF ROOM 106 AND 108

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
33	FLOOR SLAB BLDG 889	18	205	60	1221
34	FLOOR SLAB BLDG 889	18	205	60	1347
35	FLOOR SLAB BLDG 889	18	205	60	1491
36	FLOOR SLAB BLDG 889	18	205	60	609
37	FLOOR SLAB BLDG 889	18	205	66	1428
38	FLOOR SLAB BLDG 889	18	205	60	2049
39	FLOOR SLAB BLDG 889	18	205	66	1743
40	FLOOR SLAB BLDG 889	18	205	60	888
41	FLOOR SLAB BLDG 889	18	205	60	386
42	FLOOR SLAB BLDG 889	18	205	60	380
43	FLOOR SLAB BLDG 889	18	205	60	789
44	FLOOR SLAB BLDG 889	18	205	66	1023
45	FLOOR SLAB BLDG 889	18	205	60	537
46	FLOOR SLAB BLDG 889	18	205	60	888
47	FLOOR SLAB BLDG 889	18	205	60	1167
48	FLOOR SLAB BLDG 889	18	205	60	1176
49	FLOOR SLAB BLDG 889	18	205	66	942
50	FLOOR SLAB BLDG 889	18	205	60	1014
51	FLOOR SLAB BLDG 889	18	205	72	380
52	FLOOR SLAB BLDG 889	18	205	60	380
53	FLOOR SLAB BLDG 889	18	205	60	1395
54	FLOOR SLAB BLDG 889	18	205	60	549
55	FLOOR SLAB BLDG 889	18	205	72	747
56	FLOOR SLAB BLDG 889	18	205	66	380
57	FLOOR SLAB BLDG 889	18	205	60	380
58	FLOOR SLAB BLDG 889	18	205	60	380
59	FLOOR SLAB BLDG 889	18	205	90	380
60	FLOOR SLAB BLDG 889	18	205	60	1035
61	FLOOR SLAB BLDG 889	18	205	60	729
62	FLOOR SLAB BLDG 889	18	205	60	380
63	FLOOR SLAB BLDG 889	18	205	90	380
64	FLOOR SLAB BLDG 889	18	205	60	380

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QA SURVEY
FLOORS OF ROOM 106 AND 108

SWIPE NO	LOCATION	REM ALPHA	REM BETA	TOTAL ALPHA	TOTAL BETA
65	FLOOR SLAB BLDG 889	18	205	60	380
	mean=	18 000	205 000	62 585	844 231
	t(α= 05, df=64)=	1 669			
	standard deviation=	0 000	0 000	6 361	388 283
	upper conf limit=	18 000	205 000	63 376	892 534

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RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER

FOR. ____ P/WRE ____ PRL

____ RWP ✓ OTHER Post Demo-Survey

BUILDING/LOCATION 889 Floor Slab | ROOM.

DATE: 09-11-96 | TIME. 0900

ITEM DESCRIPTION

Floor Slab Bldg 889

COMMENTS

STATUS

✓ RELEASABLE ____ NOT RELEASABLE

____ POSTED ____ NOT POSTED

PERFORMED BY (PRINT NAME) Munoz / McLean

[redacted] 9-11-96

RCT SIGNATURE DATE

REVIEWED BY [signature] 9/11/96

RO SUPERVISION (PRINT & SIGN) DATE

REMOVABLE CONTAMINATION SURVEY INSTRUMENT DATA

MFR	EBER	EBER	EBER	
MODEL	S.A.C.-4	S.A.C.-4	S.A.C.-4	
SERIAL #	1188	767	795	
CAL DATE	05-23-96	05-31-96	03-15-96	
CAL DUE DATE	11-23-96	12-01-96	09-15-96	

MFR	EBER	EBER	EBER	
MODEL	B.C.-4	B.C.-4	B.C.-4	
SERIAL #	770	389	393	
CAL DATE	08-06-96	07-03-96	07-03-96	
CAL DUE DATE	01-06-97	01-03-97	01-03-97	

TOTAL CONTAMINATION SURVEY INSTRUMENT DATA

MFR	BICRON	NE Technology	LUDLUM	
MODEL	A-100	Electra	31	
SERIAL #		1100		
CAL DATE		09-03-96		
CAL DUE DATE		03-03-97		
BACKGROUND		1.0a/514B		

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LOG NUMBER _____

RADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
1	Floor Slab Bldg 889	<18	<205	<60	738
2	Floor Slab	<18	<205	<60	384
3	Floor Slab	<18	<205	<60	960
4	Floor Slab	<18	<205	<60	1086
5	Floor Slab	<18	<205	<60	690
6	Floor Slab	<18	<205	<60	933
7	Floor Slab	<18	<205	<60	906
8	Floor Slab	<18	<205	66	825
9	Floor Slab	<18	<205	84	690
10	Floor Slab	<18	<205	<60	1257
11	Floor Slab	<18	<205	<60	924
12	Floor Slab	<18	<205	66	1122
13	Floor Slab	<18	<205	<60	852
14	Floor Slab	<18	<205	<60	1185
15	Floor Slab	<18	<205	<60	1248
16	Floor Slab	<18	<205	66	1032
17	Floor Slab	<18	<205	<60	726
18	Floor Slab	<18	<205	<60	744
19	Floor Slab	<18	<205	<60	807
20	Floor Slab	<18	<205	<60	996
21	Floor Slab	<18	<205	66	645
22	Floor Slab	<18	<205	<60	1545

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FRISK/60 SEC COUNT)	TOTAL BETA/GAMMA
23	Floor Slab Bldg 889	<18	<205	66	366
24	Floor Slab	<18	<205	<60	429
25	Floor Slab	<18	<205	<60	<380
26	Floor Slab	<18	<205	<60	492
27	Floor Slab	<18	<205	<60	951
28	Floor Slab	<18	<205	<60	483
29	Floor Slab	<18	<205	<60	1347
30	Floor Slab	<18	<205	<60	681
31	Floor Slab	<18	<205	<60	996
32	Floor Slab	<18	<205	<60	1122
33	Floor Slab	<18	<205	<60	1221
34	Floor Slab	<18	<205	<60	1347
35	Floor Slab	<18	<205	<60	1491
36	Floor Slab	<18	<205	<60	609
37	Floor Slab	<18	<205	66	1428
38	Floor Slab	<18	<205	<60	2049
39	Floor Slab	<18	<205	66	1743
40	Floor Slab	<18	<205	<60	888
41	Floor Slab	<18	<205	<60	<380
42	Floor Slab	<18	<205	<60	<380
43	Floor Slab	<18	<205	<60	709
44	Floor Slab	<18	<205	66	1023

Printed with s[illegible] recycled paper

LOG NUMBER

ADIOLOGICAL CONTAMINATION SURVEY FORM

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/50 SEC COUNT)	TOTAL BETA/GAMMA
45	Floor Slab Bldg 889	<18	<205	<60	537
46	Floor Slab	<18	<205	<60	888
47	Floor Slab	<18	<205	<60	1167
48	Floor Slab	<18	<205	<60	1176
49	Floor Slab	<18	<205	66	942
50	Floor Slab	<18	<205	<60	1014
51	Floor Slab	<18	<205	72	<380
52	Floor Slab	<18	<205	<60	<380
53	Floor Slab	<18	<205	<60	1395
54	Floor Slab	<18	<205	<60	549
55	Floor Slab	<18	<205	72	747
56	Floor Slab	<18	<205	66	<380
57	Floor Slab	<18	<205	60	<380
58	Floor Slab	<18	<205	<60	<380
59	Floor Slab	<18	<205	90	<380
60	Floor Slab	<18	<205	<60	1035
61	Floor Slab	<18	<205	<60	729
62	Floor Slab	<18	<205	<60	<380
63	Floor Slab	<18	<205	90	<380
64	Floor Slab	<18	<205	<60 <380	<380
65	Floor Slab	<18	<205	<60	<380

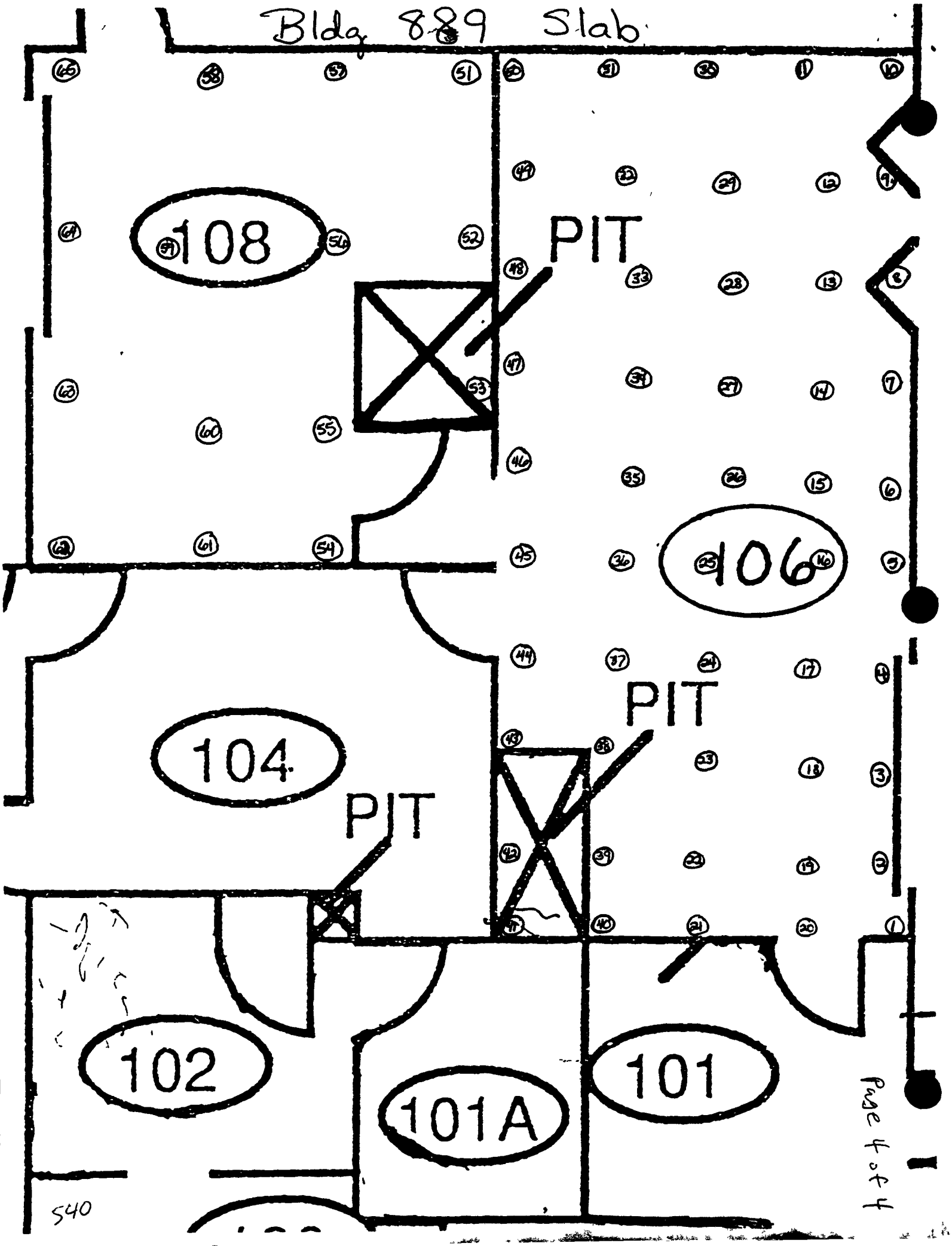
[illegible] 9-11-96

SURVEY RESULTS (DPM/100 CM²)

SWIP E #	LOCATION/DESCRIPTION	REMOVABLE ALPHA	REMOVABLE BETA/GAMMA	TOTAL ALPHA (FROM/50 SEC COUNT)	TOTAL BETA/GAMMA

[illegible] 9-11-96

Bldg 889 Slab



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