Rocky Flats Environmental Technology Site

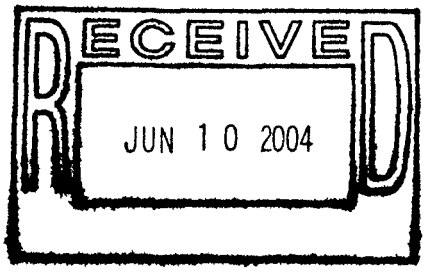
PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDING 777 Annex

REVISION 0

March 2, 2004

FINAL



Classification Review not required per
Exemption number CEX-005-02

ADMIN RECORD

B776-A-000188

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PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDING 777 Annex

REVISION 0

March 2, 2004

Prepared by: _____ **Date:** 3/2/04
Michael Grube, Radiological Engineer

Reviewed by _____ **Date:** 3/2/04
Terry Vaughn, Radiological Safety Manager

Reviewed by: _____ **Date:** 3/3/04
Robert Kury, 707/776 ESH&Q Manager

Approved by: _____ **Date:** 3/3/04
Victor Pizzuto, 707/776 Project Manager

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ATTACHMENTS

ABBREVIATIONS/ACRONYMS

ACM	Asbestos Containing Material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U S Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U S Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
HEUN	Highly Enriched Uranyl Nitrate
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
PDSR	Pre-demolition survey report
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSA	Removable Surface Activity
RSOP	RFCA Standard Operating Protocol
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds
WSRIC	Waste Stream and Residue Identification and Characterization

EXECUTIVE SUMMARY

A Pre-Demolition Survey was performed to enable compliant disposition and waste management of the Building 777 Annex Because this Type 3 area will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) Building surfaces characterized as part of this PDS included the interior of the 1st floor - floor, walls, ceiling, interior of the 2nd floor – floor, walls and ceiling, and building exterior surfaces Environmental media beneath and surrounding this area was not within the scope of this PDS and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA

The PDS encompassed both chemical and radiological characterization The characterization was built upon physical, chemical and radiological hazards identified in the facility-specific *Building 776/777 Closure Project Decommissioning Operations Plan and the associated Reconnaissance Level Characterization Report*

Based upon the results of this PDSR, the 777 Annex meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan With oversight concurrence, Building 777 Annex may be demolished and the waste managed as sanitary waste, and the concrete may be used for backfill on-site per the RFCA RSOP for Recycling Concrete All under-slab utilities and piping systems shall be managed as radioactive waste during slab demolition, unless additional data collected during demolition proves otherwise The common wall between the 777 Annex and the southeast wall of B777 proper shall not be demolished until the Building 776/777 PDS is completed verifying the common wall is acceptable for demolition To ensure that the facility remains free of contamination and PDS data remain valid, Level 2 isolation controls have been established, and the area posted accordingly

1 INTRODUCTION

A Pre-Demolition Survey was performed to enable compliant disposition and waste management of the Building 777 Annex Because this Type 3 building will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) The results of this survey shall demonstrate that the 777 Annex meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan prior to demolition Building surfaces characterized as part of this PDS included the B777 Annex interior floors, walls, ceilings, and all exterior surfaces Environmental media beneath and surrounding this area was not within the scope of this PDS and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed Among these is the Building 777 Annex This facility no longer supports the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs

Before this Type 3 facility can be demolished, the Data Quality Objectives (DQOs) for a Pre-Demolition Survey (PDS) must be satisfied, this document presents the PDS results for the Building 777 Annex The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP)

1 1 Purpose

The purpose of this report is to communicate and document the results of the Building 777 Annex PDS effort A PDS is performed prior to building demolition to define the pre-demolition radiological and chemical conditions of a facility The pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types

1 2 Scope

This report presents the pre-demolition radiological and chemical conditions of the Building 777 Annex Environmental media beneath and surrounding the facilities are not within the scope of this PDSR and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA

1 3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this PDS were the same DQOs identified in the Section 2 0 of the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP) Refer to section 2 0 of MAN-127-PDSP for these DQOs

2 HISTORICAL SITE ASSESSMENT

A facility-specific Hazards Characterization Report was conducted to understand the facility history and related hazards This report, *The Building 776/777 Closure Project Decommissioning Operations Plan and the associated Reconnaissance Level Characterization Report*, Revision 0) focused on the more highly contaminated sections of the B776/777 cluster The B777 Annex was isolated from the main building, and was used as office areas and locker rooms In addition, room 408 was used for Non-Destructive testing R&D in the 1970s Beryllium was present The B777 Annex was identified as a Type 3 facility (primarily because it is physically connected to B777) Therefore, a PDS is required before demolition of the facility This report documents the results of that PDS

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

The Building 777 Annex was characterized for radiological hazards per the PDSP Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces Measurements were performed to evaluate the contaminants of concern (weapons-grade plutonium isotopes) Based upon historical and process knowledge, in-process survey data, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan in the form of three (3) survey packages was developed during the planning phase that describes the minimum survey requirements (refer to survey packages 777001, 777002 and 777003) A Survey Unit Overview Map is presented in Attachment A Based on hazards characterization data and historical and process knowledge, as documented in Technical Basis Document 00159 *"Building 776/777 Technical Justification For Type of Surveys Performed"* transuranic isotopes are the primary contaminants of concern in the Building 777 Annex Therefore, the PDS was performed to the transuranic PDS unrestricted release criteria Individual radiological survey unit packages are maintained in the Building 776/777 Characterization Project files

The Building 777 Annex survey unit packages were developed in accordance with Radiological Safety Practices (RSP) 16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure* Total surface activity (TSA), removable surface activity (RSA), media samples, and scan measurements were collected in accordance with RSP 16 02 *Radiological Surveys of Surfaces and Structures* Radiological survey data were verified, validated and evaluated in accordance with RSP 16 04, *Radiological Survey/Sample Data Analysis* Quality control measures were implemented relative to the survey process in accordance with RSP 16 05, *Radiological Survey/Sample Quality Control* Radiological survey data, statistical analysis results, survey locations, and radiological scan maps are presented in Attachments B, C and D, *Radiological Data Summary and Survey Maps*

777 Annex – 1st Floor Interior (Survey Unit 777001)

The interior surfaces of the 1st floor of the Building 777 Annex were classified as a Class 2 survey unit The classification was based on the potential for contamination due to process history, although no contamination in excess of the unrestricted release limits was anticipated A total of 15 random TSA and RSA measurements, and 11 media samples were collected (Measurement locations 1-4 were on tile surfaces and no media was obtained) Surface scan surveys of 87% of the floor (231 m^2), 73% of the lower wall surfaces (286 m^2), and 19% of the upper walls/ceiling (137 m^2) were also performed

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The media samples were analyzed as batches via gamma spectroscopy For conservatism, it is assumed that the total activity for each batch could be contained in one sample (e g , the total activity of each batch was attributed to the surface area of only one sample, which was compared to the $DCGL_W$)

All TSA and RSA surveys, and media sample results in survey unit 777001 were less than the applicable PDS transuranic DCGL values Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 777001 are presented in Attachment B, *Survey Unit 777001 Radiological Data Summary and Survey Map*

The Scan surveys revealed 4 locations that exceeded the transuranic $DCGL_{EMC}$ that required investigation The highest location was 441 43 dpm/100 cm^2 as indicated by the Bartlett floor monitor (405 9 dpm/100 cm^2 as measured with an N E Electra) These locations were on the tile floor surfaces where approximately 100% of the floor surfaces were scanned The locations were remediated, and square meter averages were performed at each location

777 Annex – 2nd Floor Interior (Survey Unit 777002)

The interior surfaces of the 2nd floor of the Building 777 Annex were classified as a Class 3 survey unit The classification was based on the minimal potential for contamination due to process history No contamination in excess of the unrestricted release limits was anticipated A total of 15 random TSA and RSA measurements were collected Surface scan surveys of 57% of the floor (149 m^2), 8% of the lower wall surfaces (19 m^2), and 7% of the upper walls/ceiling (35 m^2) were also performed

All TSA and RSA surveys results in survey unit 777002 were less than the applicable PDS transuranic DCGL values Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 777002 are presented in Attachment C, *Survey Unit 777002 Radiological Data Summary and Survey Map*

777 Annex – Exterior (Survey Unit 777003)

The exterior surfaces of the Building 777 Annex were classified as a Class 2 survey unit The classification was based on the low potential for contamination from effluent releases A total of 15 random TSA and RSA measurements were collected Surface scan surveys of 51% of the lower walls below 2 meters (~ 66 m^2), and 9% of the upper walls above 2 meters (~ 19 m^2) were also performed In addition, fifteen (15) media samples were collected

All TSA, RSA, and scan surveys, as well as media sample results in survey unit 777003 were less than the applicable PDS transuranic DCGL values

Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 777003 are presented in Attachment D, *Survey Unit 777003 Radiological Data Summary and Survey Map*

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Based on a thorough review of historical and process knowledge, visual inspections, and personnel interviews, no additional chemical hazard sampling requirements were identified

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4 1 Asbestos

Asbestos abatement has been completed in these areas No asbestos-containing materials are now present

4 2 Beryllium (Be)

The Building 777 Annex is not and has never been a beryllium-controlled area However, beryllium was handled in room 408 as part of the R&D NDT activities Therefore, per the Beryllium Sampling Decision Tree in the PDSP, random beryllium smear samples were collected in accordance with the PDSP and the *Beryllium Characterization Procedure,* PRO-536-BCPR, Revision 0, September 9, 1999

All beryllium smear sample results were less than the investigative limit of 0 1 µg/100cm^2 PDS beryllium laboratory sample data and location maps are contained in Attachment E, *Chemical Data Summaries and Sample Maps*

4 3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based upon personnel interviews, facility walk-downs, and historical process knowledge (WSRIC/WEMS), the Building 777 Annex did not contain hazardous waste storage units A visual inspection of the building by 776/777 Industrial Hygiene personnel verified the absence of hazardous waste residuals and/or stains on the floor/concrete slab, walls, or ceiling As a result of these observances, it has been determined that no sampling for RCRA/CERCLA constituents is required Analysis of paint throughout the 776/777 complex has revealed lead and other RCRA metal levels below regulatory limits in all 6 out of 6 samples taken

The concrete generated from the demolition of the Building 777 annex may be used for onsite recycling in accordance with the Concrete Recycling RSOP

4 4 Polychlorinated Biphenyls (PCBs)

Based on historical knowledge, personnel interviews, and 776/777 Environmental Compliance Personnel walk-downs, the Building 777 Annex has never used/transferred free flowing/exposed PCB's At one time the facility may have used PCB ballasts in its fluorescent light fixtures, however, all of these have been removed, and compliantly disposed of, resulting in no impact on demolition activities in the Building 777 annex

5 PHYSICAL HAZARDS

Physical hazards associated with the Building 777 Annex consist of those hazards common to standard industrial environments, and include hazards associated with energized systems, utilities, and trips and falls There are no other unique hazards associated with the facility The facility has been relatively well maintained and is in good physical condition, therefore, does not present hazards associated with building deterioration

The common wall between the Building 777 Annex and B777 proper will not be demolished until the PDS is completed at a later date, verifying the common wall is acceptable for demolition

Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE Orders, and standard industry practices

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6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Building 777 Annex, and consequent waste management, is of adequate quality to support the decisions documented in this report The data presented in this report (Attachments B, C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original project DQOs

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate

- the *number* of samples and surveys,
- the *types* of samples and surveys,
- the sampling/survey process as implemented "in the field", and
- the laboratory analytical process, relative to accuracy and precision considerations

Details of the DQA are presented in Attachment F The DQA Checklists are provided in the individual survey unit packages (located in the Building 776/777 Characterization Files)

The Minimum Detectable Activity (MDA) for each PDS instrument was determined *a priori* based on typical parameters (background, efficiency, and count time) A list of radiological field instrumentation and associated sensitivities is presented in Table 1

Table 1

PDS Radiological Field Instrumentation & Minimum Detectable Activities

Model	Measurement Type	MDA (dpm/100 cm^2)
NE Electra DP6	TSA	48
Eberline SAC-4	Removable (Smears)	10
Bartlett FSM	Scan	300

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Building 777 Annex will generate a variety of wastes All wastes can be disposed of as sanitary waste Concrete can be used as backfill onsite in accordance with the RFCA RSOP for Recycling Concrete

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, the Building 777 annex is classified as an RFCA Type 3 facility pursuant to the RFETS Decommissioning Program Plan (DPP, K-H, 1999) Based upon the results of this PDSR, the Building 777 Annex meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan and is ready for demolition The PDS for the Building 777 Annex was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria Environmental media beneath and surrounding the facilities will be addressed at a future date in accordance with the Soil Disturbance Permit process and in compliance with RFCA

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A facility walkdown and historical review indicates that no RCRA/CERCLA constituents exist on the Building 777 Annex structural surfaces All beryllium results obtained during the PDS were below the investigative level of 0 1 µg/100cm^2 Any potentially PCB-containing fluorescent light ballast and hazardous waste items (e g , mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) were previously removed from the building, therefore, do not impact demolition activities

Radiological contamination in excess of the PDSP Table 7-1 limits was not detected in the Building 777 Annex

Based upon this PDSR, the Building 777 Annex can be demolished and the waste managed as sanitary waste, and the concrete can be used for backfill on-site per the RFCA RSOP for Recycling Concrete All under-slab utilities and piping systems shall be managed as radioactive waste, unless additional data collected prior to waste disposition proves otherwise To ensure that the facility remains free of contamination and that PDS data remain valid, Level 2 isolation controls have been established, and the area posted accordingly

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9 REFERENCES

Building 776/777 Closure Project Decommissioning Operations Plan

DOE/RFFO, CDPHE, EPA, 1996 *Rocky Flats Cleanup Agreement (RFCA)*, July 19, 1996

DOE Order 5400 5, *Radiation Protection of the Public and the Environment*

DOE Order 414 1A, *Quality Assurance*

K-H, 1999 *Decommissioning Program Plan*, June 21, 1999

MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev 1, November 1, 2001

MAN-076-FDPM, *Facility Disposition Program Manual*, Rev 3, January 1, 2002

MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev 4, July 15, 2002

MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev 1, July 15, 2002

MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual* (NUREG-1575, EPA 402-R-97-016)

PRO-475-RSP-16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure,* Rev 1, May 22, 2001

PRO-476-RSP-16 02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev 2, March 10, 2003

PRO-477-RSP-16 03, *Radiological Samples of Building Media*, Rev 1, May 22, 2001

PRO-478-RSP-16 04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev 1, May 22, 2001

PRO-479-RSP-16 05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev 1, May 22, 2001

PRO-563-ACPR, *Asbestos Characterization Procedure,* Revision 0, August 24, 1999

PRO-536-BCPR, *Beryllium Characterization Procedure*, Revision 0, August 24, 1999

RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition

RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal

RFETS, RFCA RSOP for Recycling Concrete, September 28, 1999

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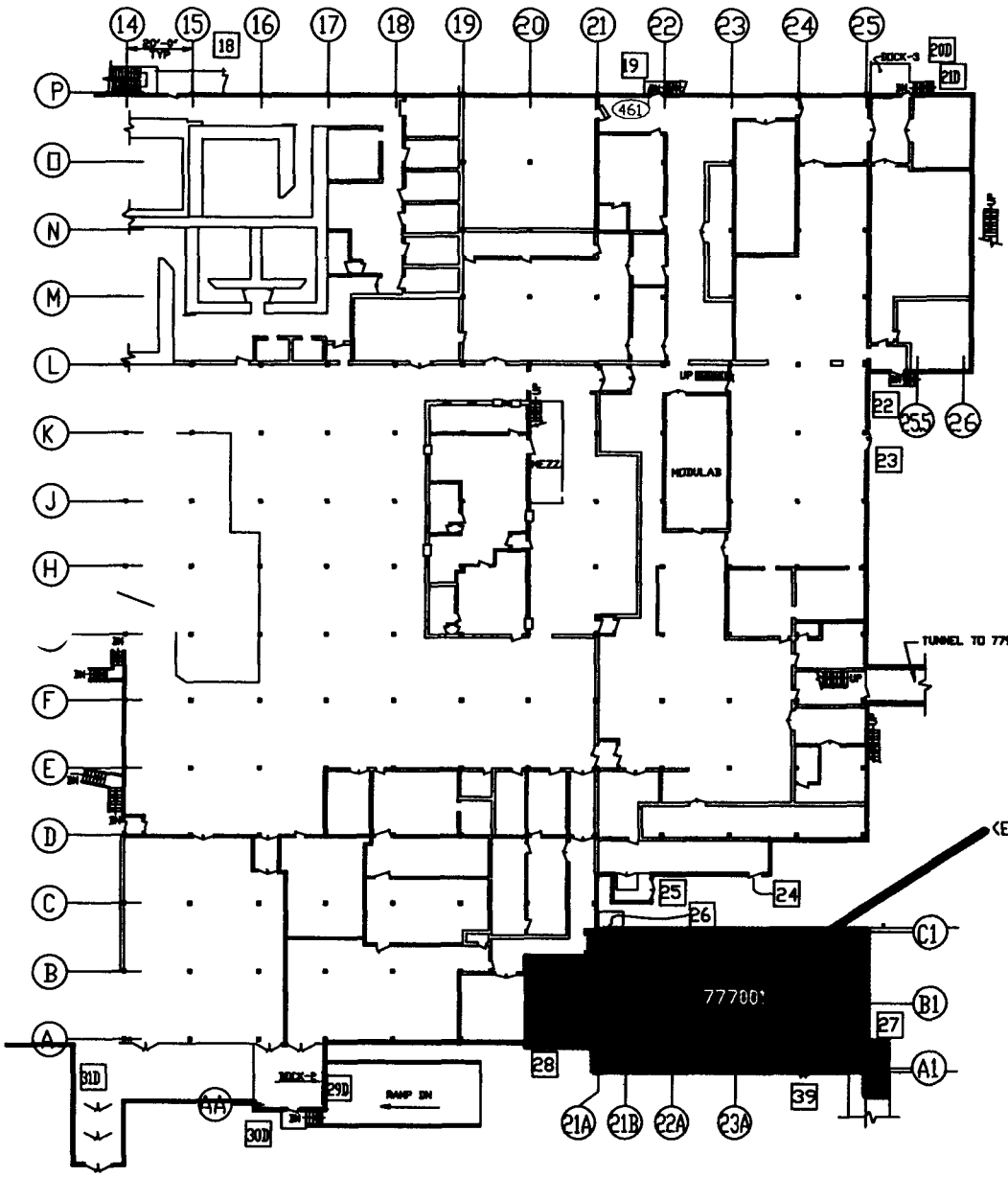
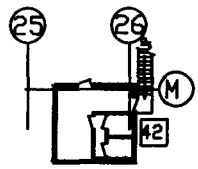
ATTACHMENT A

Survey Unit Overview Map

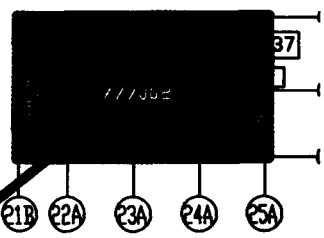


BLDG 777-1ST FLOOR PLAN

BRAIN IDENTIFICATION STUDY



PARTIAL SECOND FLOOR PLAN



PARTIAL SECOND FLOOR PLAN

ATTACHMENT B

Survey Unit 777001
Radiological Data Summary and Survey Map

Survey Area: A Survey Unit: 77/01 Building: 77/77

Description: 77 annex - 1st floor

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required 15 Number Performed 15 Number QC Performed 2

Alpha		
Maximum	87 5	dpm/100cm²
Minimum	<12 5>	dpm/100cm²
Mean	16 6	dpm/100cm²
Standard Deviation	28 0	
Transuranic DCGLw	100 0	dpm/100cm²
Transuranic DCGLemc	300 0	dpm/100cm²
Uranium DCGLw	5,000 0	dpm/100cm²
Uranium DCGLemc	15,000 0	dpm/100cm²

Removable Surface Activity Measurements

Number Required 15 Number Performed 15

Alpha		
Maximum	6 9	dpm/100cm²
Minimum	<0 6>	dpm/100cm²
Mean	1 5	dpm/100cm²
Standard Deviation	2 1	
Transuranic DCGLw	20 0	dpm/100cm²
Uranium DCGLw	1,000 0	dpm/100cm²

Media Sample Results

Number Required 11 Number Samples 11

Uranium		
Maximum	NA	dpm/100cm²
Minimum	NA	dpm/100cm²
Mean	NA	dpm/100cm²
Standard Deviation	NA	
Uranium DCGLw	5,000 0	dpm/100cm²
Uranium DCGLemc	15,000 0	dpm/100cm²

Transuranic		
Maximum	23 0	dpm/100cm²
Minimum	0 0	dpm/100cm²
Mean	11 0	dpm/100cm²
Standard Deviation	9 7	
Transuranic DCGLw	100 0	dpm/100cm²
Transuranic DCGLemc	300 0	dpm/100cm²

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Survey Area: A Survey Unit: 77701 Building: 77-77

Description: Survey - 1st floor

Instrument Data Sheet

st/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)	
							Alpha	Beta	Alpha	Beta
1	514979	12/02/03	Electra	2380		02/26/04	0 220	0 333	48 00	NA
2	516635	12/02/03	Electra	394		03/02/04	0 213	NA	48 00	NA
3	514979	12/02/03	SAC-4	1185		04/20/04	0 333	0 333	NA	NA
4	514979	12/02/03	SAC-4	1410		04/07/04	0 333	0 333	NA	NA

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Removable Surface Activity Data Sheet

Random Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			
777001PRP-N001	3	3 9	N/A			
777001PRP-N002	3	9	N/A			
777001PRP-N003	3	9	N/A			
777001PRP-N004	3	6 9	N/A			
777001PRP-N005	3	9	N/A			
777001PRP-N006	3	9	N/A			
777001PRP-N007	3	- 6	N/A			
777001PRP-N008	3	9	N/A			
777001PRP-N009	3	2 4	N/A			
777001PRP-N010	3	3 9	N/A			
777001PRP-N011	3	- 6	N/A			
777001PRP-N012	3	2 4	N/A			
777001PRP-N013	3	- 6	N/A			
777001PRP-N014	3	- 6	N/A			
777001PRP-N015	3	9	N/A			

Biased Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			

Comments

Total Surface Activity Data Sheet

Random Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			
777001PRP-N001	1	54 3	N/A			
777001PRP-N002	1	87 5	N/A			
777001PRP-N003	1	18 0	N/A			
777001PRP-N004	1	27 1	N/A			
777001PRP-N005	1	11 6	N/A			
777001PRP-N006	1	33 0	N/A			
777001PRP-N007	1	33 0	N/A			
777001PRP-N008	1	-3 4	N/A			
777001PRP-N009	1	-12 5	N/A			
777001PRP-N010	1	14 8	N/A			
777001PRP-N011	1	-9 3	N/A			
777001PRP-N012	1	-9 3	N/A			
777001QRP-N012	2	9 4	N/A			
777001PRP-N013	1	-6 6	N/A			
777001PRP-N014	1	-9 3	N/A			
777001QRP-N014	2	6 1	N/A			
777001PRP-N015	1	20 7	N/A			

Biased Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			

Comments

Media Samples Data Sheet

Site Sample ID / Nbr / Description	Nuclide	Sample (dpm)	Sample MDA (dpm)		Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
N/A 5 Ceiling	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0 0	50 4			0	30	Transuranic
	Am241	0 0	7 1			0	4	0
N/A 6 Ceiling	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0 0	50 4			0	30	Transuranic
	Am241	0 0	7 1			0	4	0
N/A 7 Ceiling	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0 0	50 4			0	30	Transuranic
	Am241	0 0	7 1			0	4	0
N/A 8 Ceiling	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0 0	50 4			0	30	Transuranic
	Am241	0 0	7 1			0	4	0
N/A 9 Ceiling	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	19 2	61 1			11	36	Transuranic
	Am241	2 7	8 6			2	5	13
N/A 10 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	19 2	61 1			11	36	Transuranic
	Am241	2 7	8 6			2	5	13
N/A 11 I Beam	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	19 2	61 1			11	36	Transuranic
	Am241	2 7	8 6			2	5	13
N/A 12 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	19 2	61 1			11	36	Transuranic
	Am241	2 7	8 6			2	5	13

Comments

Media Samples Data Sheet

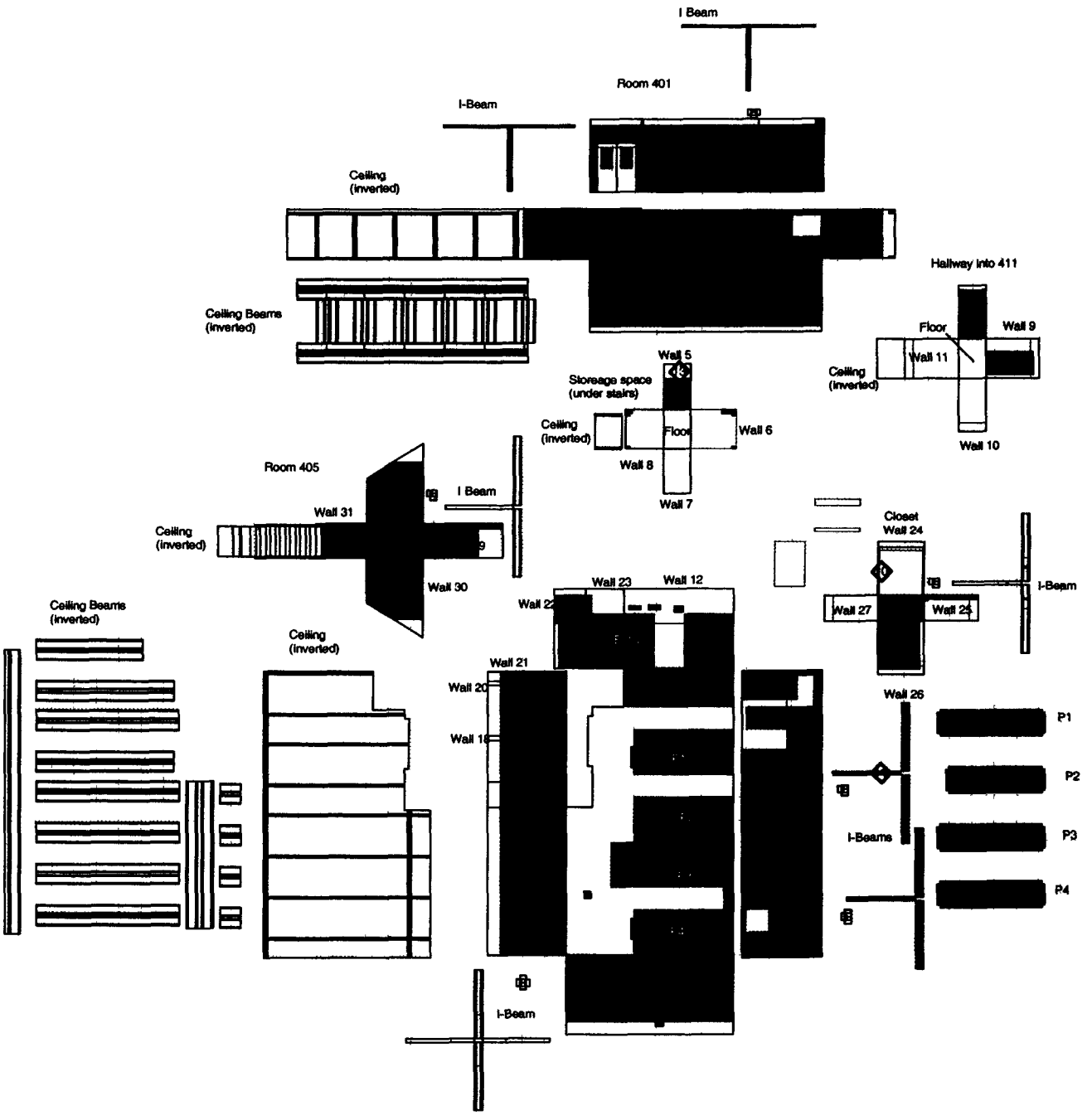
Site Sample ID / Nbr Description	Nuclide	Sample (dpm)	Sample MDA (dpm)		Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
N/A 13 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	33 4	57 5			20	34	**Transuranic**
	Am241	4 7	8 1			3	5	23
N/A 14 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	33 4	57 5			20	34	**Transuranic**
	Am241	4 7	8 1			3	5	23
N/A 15 Ceiling	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	33 4	57 5			20	34	**Transuranic**
	Am241	4 7	8 1			3	5	23

RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area A **Survey Unit 777001** **Classification 2**
Building 777 Annex
Survey Unit Description First floor interior

Total Floor Area 267 sq m **Total Area 1361 sq m** **Grid Size 9m x 9m**

SURVEY UNIT 777001 - MAP 1 OF 3



0 FEET 30

0 METERS 10

N

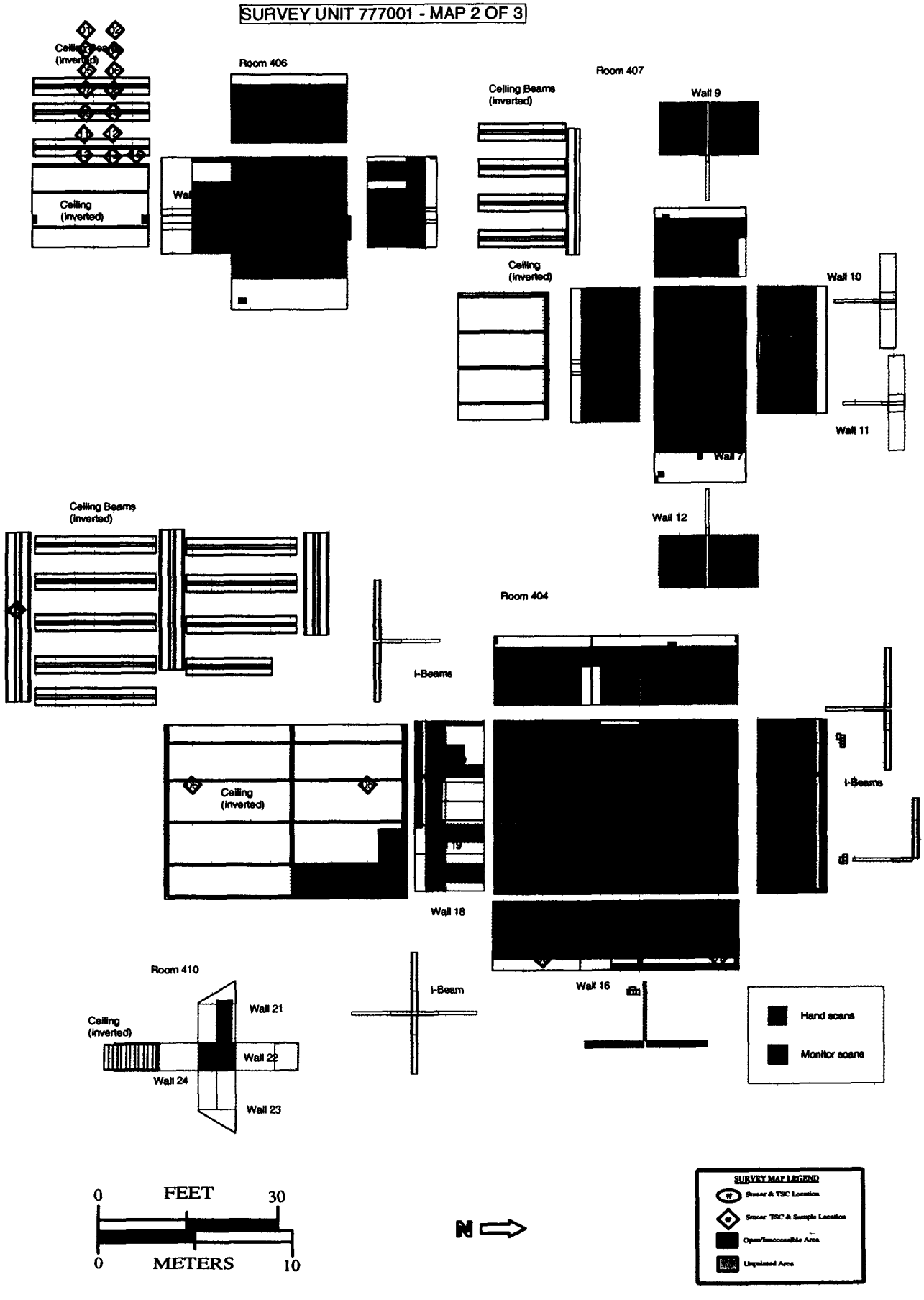
SURVEY MAP LEGEND
Smear & TSC Location
Smear TSC & Sample Location
Open/Inaccessible Area
Unpainted Area

RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area A **Survey Unit 777001** **Classification 2**
Building 777 Annex
Survey Unit Description First floor interior

Total Floor Area 267 sq m **Total Area 1361 sq. m** **Grid Size 9m x 9m**

SURVEY UNIT 777001 - MAP 2 OF 3

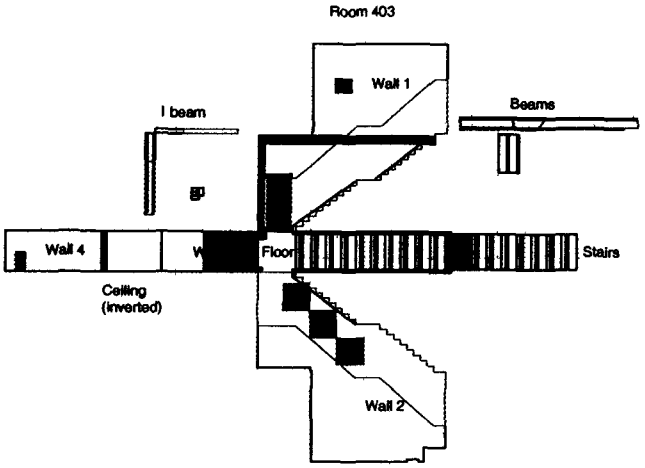


RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area A **Survey Unit 777001** **Classification 2**
Building 777 Annex
Survey Unit Description First floor interior

Total Floor Area 267 sq m **Total Area 1361sq m** **Grid Size 9m x 9m**

SURVEY UNIT 777001 - MAP 3 OF 3



Hand scans
Monitor scans

0 FEET 30
0 METERS 10

N

SURVEY MAP LEGEND
Sensor & TSC Location
Sensor TSC & Sample Location
Open/Inaccessible Area
Unpainted Area

ATTACHMENT C

Survey Unit 777002
Radiological Data Summary and Survey Map

Survey Area: A Survey Unit: 77602 Building: 776/777

Description: B 776 Annex - 2nd floor

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required 15 Number Performed 15 Number QC Performed 2

Alpha

Maximum	26 7	dpm/100cm²
Minimum	<19 4>	dpm/100cm²
Mean	7 4	dpm/100cm²
Standard Deviation	14 0	
Transuranic DCGLw	100 0	dpm/100cm²
Transuranic DCGLemc	300 0	dpm/100cm²
Uranium DCGLw	5,000 0	dpm/100cm²
Uranium DCGLemc	15,000 0	dpm/100cm²

Removable Surface Activity Measurements

Number Required 15 Number Performed 15

Alpha

Maximum	6 9	dpm/100cm²
Minimum	<0 6>	dpm/100cm²
Mean	1 1	dpm/100cm²
Standard Deviation	2 2	
Transuranic DCGLw	20 0	dpm/100cm²
Uranium DCGLw	1,000 0	dpm/100cm²

Media Sample Results

Number Required 0 Number Samples 0

26

Survey Area: A Survey Unit: 7[illegible] Building: 7[illegible]

Description: B[illegible]

Instrument Data Sheet

st/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)	
							Alpha	Beta	Alpha	Beta
1	513699	12/02/03	Electra	391		02/26/04	0 230	NA	48 00	NA
2	711798	12/02/03	Electra	295		04/06/04	0 223	NA	48 00	NA
3	514510	12/02/03	Electra	391		02/26/04	0 230	NA	48 00	NA
4	513699	12/02/03	SAC-4	1185		04/20/04	0 333	0 333	NA	NA
5	514510	12/02/03	SAC-4	1351		03/03/04	0 333	0 333	NA	NA

Removable Surface Activity Data Sheet

Random Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			
777002PRP-N031	4	6 9	N/A			
777002PRP-N032	4	- 6	N/A			
777002PRP-N033	4	- 6	N/A			
777002PRP-N034	4	3 9	N/A			
777002PRP-N035	4	2 4	N/A			
777002PRP-N036	5	2 7	N/A			
777002PRP-N037	4	- 6	N/A			
777002PRP-N038	4	9	N/A			
777002PRP-N039	4	2 4	N/A			
777002PRP-N040	4	- 6	N/A			
777002PRP-N041	4	- 6	N/A			
777002PRP-N042	4	9	N/A			
777002PRP-N043	4	- 6	N/A			
777002PRP-N044	4	- 6	N/A			
777002PRP-N045	4	9	N/A			

Biased Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			

Comments

Total Surface Activity Data Sheet

Random Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			
777002PRP-N031	1	26 7	N/A			
777002PRP-N032	1	6 7	N/A			
777002PRP-N033	1	15 4	N/A			
777002PRP-N034	1	24 1	N/A			
777002PRP-N035	1	6	N/A			
777002PRP-N036	3	6 7	N/A			
777002PRP-N037	1	-8 1	N/A			
777002PRP-N038	1	24 1	N/A			
777002PRP-N039	1	-19 4	N/A			
777002PRP-N040	1	12 4	N/A			
777002PRP-N041	1	18 0	N/A			
777002QRP-N041	2	5 8	N/A			
777002PRP-N042	1	-13 7	N/A			
777002QRP-N042	2	0	N/A			
777002PRP-N043	1	3 7	N/A			
777002PRP-N044	1	15 4	N/A			
777002PRP-N045	1	-2 0	N/A			

Biased Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			

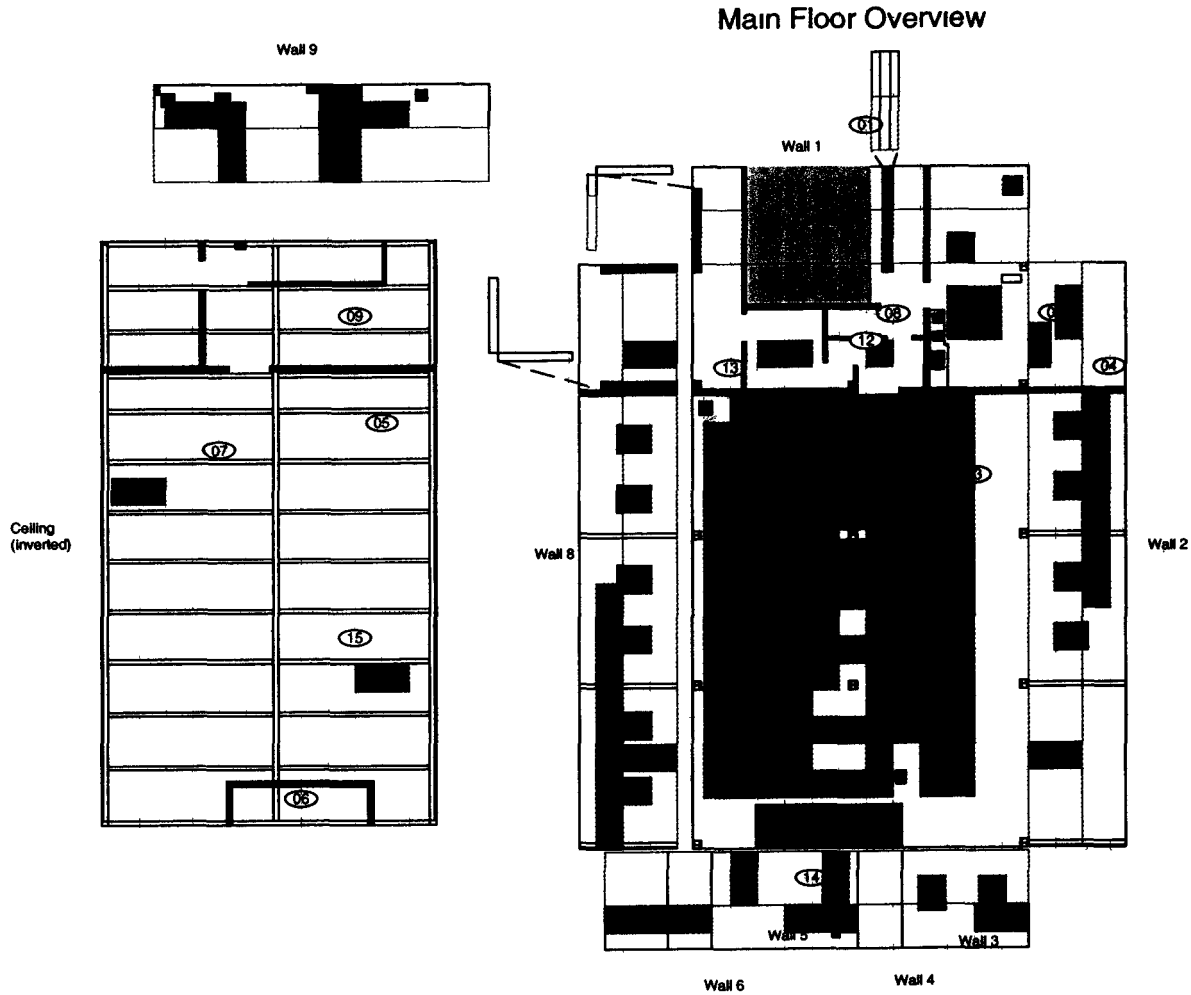
Comments

RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area B **Survey Unit** 777002 **Classification** 3
Building 777 Annex
Survey Unit Description Second floor interior

Total Floor Area 263 sq m **Total Area** 1001 sq m **Grid Size** N/A

SURVEY UNIT 777002 - MAP 1 OF 2

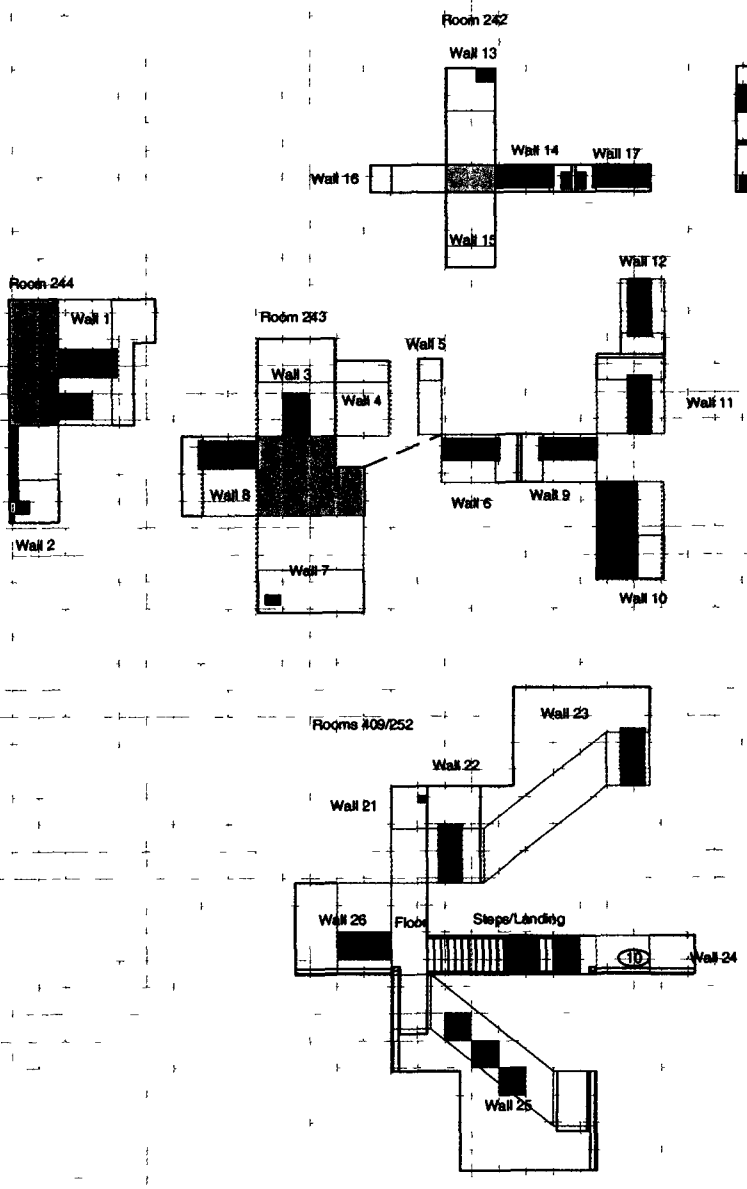


RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

Survey Area B **Survey Unit** 777002 **Classification** 3
Building 777 Annex
Survey Unit Description Second floor interior

Total Floor Area 263 sq m **Total Area** 1001 sq. m **Grid Size** N/A

SURVEY UNIT 777002 - MAP 2 OF 2



Hand scans

Monitor scans

0 FEET 30

0 METERS 10

N

SURVEY MAP LEGEND
Smear & TSC Location
Smear TSC & Sample Location
Open/Inaccessible Area
Surveyed in another area

ATTACHMENT D

Survey Unit 777003
Radiological Data Summary and Survey Map

ATTACHMENT E

Chemical Data Summaries and Sample Maps

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question A Data Quality Checklist was completed as required in PRO-478-RSP-16 *04 Radiological Survey/Sample Data Quality Analysis For Final Status Survey* The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium)

DQA criteria and results are provided in a tabular format for each set of surveys or chemical analyses performed, the radiological survey assessment is provided in Table F-1, and the beryllium assessment in F-2 A data completeness summary for all results is given in Table F-3

All relevant Quality records supporting this report are maintained in the B776/777 Characterization Project Files This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location

Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process All survey results were evaluated against, and were less than the Transuranic $DCGL_w$ (100 dpm/100cm^2)

SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs All data are useable based on qualifications stated herein and are considered satisfactory without qualification All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied MARSSIM guidance All facility contamination levels were below applicable unrestricted release levels, except as noted above Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits

Table F-1 V&V of Radiological Surveys – B777 Annex

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16 00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
Parameters		**Measure**	**Frequency**	**COMMENTS**
ACCURACY	Initial calibrations	80%<x<120%	≥1	Calibration using Alpha Group procedure and approved technicians
	Daily source checks	80%<x<120%	≥1/day	Performed daily/within range
	Local area background Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected ranges
PRECISION	Field duplicate measurements for TSA	≥13% of real survey points	≥100% packages	N/A
REPRESENTATIVENESS	MARSSIM methodology Survey Units 777001, 777002 & 777003	statistical	NA	Random w/ statistical confidence
	Survey Maps	NA	NA	Random measurement locations controlled/mapped to ±1m
	Controlling Documents (Characterization Pkg, RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files), thorough documentation of the planning sampling/analysis process, and data reduction into formats
COMPARABILITY	Units of measure	dpm/100cm^2	NA	Use of standardized engineering units in the reporting of measurement results
COMPLETENESS	Plan vs Actual surveys Usable results vs unusable	>95% >95%	NA	See Table E-4 for details
SENSITIVITY	Detection limits	TSA ≤50 dpm/100cm^2 RA ≤10 dpm/100cm^2	all measures	MDAs ≤ ½ DCGL$_w$ per MARSSIM guidelines

Table F-2 V&V of Beryllium Results – B777 Annex

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	**Prep NMAM 7300** **METHOD OSHA ID-125G**	**LAB ⟶**	Johns Manville Corp Denver Co	
QUALITY REQUIREMENTS		**RIN ⟶**	RIN04Z0170	
		Measure	**Frequency**	**COMMENTS**
ACCURACY	**Calibrations** Initial	linear calibration	≥1	No qualifications significant enough to change project decisions, i e , classification of Type 3 facilities confirmed All results were below associated action levels
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks – lab & field	<MDL	≥1	
	Interference check std (ICP)	NA	NA	
PRECISION	Laboratory Control Sample Duplicate	80%<%R<120% (RPD<20%)	≥1	
	field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans Procedures maps, etc)	Qualitative	NA	
COMPARABILITY	Measurement units	ug/100cm^2	NA	
COMPLETENESS	Plan vs Actual samples usable results vs unusable	>95% >95%	NA	
SENSITIVITY	Detection limits	MDL of 0 10ug/100cm^2	all measures	

Table F-3 Data Completeness Summary – B777 Annex

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc)
Beryllium	Survey Area Survey Unit 777001 B777 Annex – 1st floor interior	10 Random wipe samples, 5 floor, 5 overhead	10 Random wipe samples 5 floor 5 overhead	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 04C0170 No results above action level (0 2ug/100cm^2) or investigative level (0 1 ug/100cm^2) See attached map for sample locations
Beryllium	Survey Area Survey Unit 777002 B777 Annex – 2nd floor interior	10 Random wipe samples, 5 floor, 5 overhead	10 Random wipe samples, 5 floor, 5 overhead	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 04C0170 No results above action level (0 2ug/100cm^2) or investigative level (0 1 ug/100cm^2) See attached map for sample locations
Radiological	Survey Area A Survey Unit 777001 B777 Annex – 1st floor interior	15 α TSA(15 – Random/Systematic) and 15 α Smears (15 -Random/Systematic) 2 QC TSA 11 Media (Paint) 50% Scan of floor and lower walls, 10% of the walls above 2 meters and ceiling	15 α TSA (15 – Random/Systematic) and 15 α Smears (15 -Random/Systematic) 2 QC TSA 11 Media (Paint) 87% Scan of floor 73% scan of the lower walls and 19% of the walls above 2 meters and ceiling	No elevated contamination at any location, all values below PDS unrestricted release levels No results above action level No elevated contamination at any location after minor remediation, all values below PDS unrestricted release levels	Transuranic DCGLs 4 elevated locations > $DCGL_{EMC}$ were detected and remediated Square meter average was performed after remediation to ensure $DCGL_W$ was not exceeded
Radiological	Survey Area A Survey Unit 777002 B777 Annex – 1st floor exterior	15 α TSA (15 – Random) and 15 α Smears (15 –Random) 2 QC TSA 10% scan of all accessible surfaces	15 α RSA(15 – Random) and 15 α Smears (15-Random) 2 QC TSA 57% scan of floor, 8% scan of lower walls, and 7% scan of walls above 2 meters and the ceiling	No elevated contamination at any location from DOE added nuclides all values below PDS unrestricted release levels	Transuranic DCGLs No results above action level
Radiological	Survey Area A Survey Unit 777003 B777 Annex – exterior	15 α TSA (15 – Random/Systematic) and 15α Smears (15 – Random/Systematic) 2 QC TSA 50% scan lower walls and 5% scan above 2 meters	15 α RSA(15 – Random/Systematic) and 15 α Smears (15 - Random/Systematic) 2 QC TSA 51% scan lower walls and 9% scan above 2 meters	No elevated contamination at any location from DOE added nuclides, all values below PDS unrestricted release levels	Transuranic DCGLs No results above action level

Survey Area 3 Survey Unit 7708 Building 778

Description Building 778 Annex - Exterior

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Number Required 15 Number Performed 15 Number QC Performed 2

Alpha

Maximum	83 2	dpm/100cm²
Minimum	15 4	dpm/100cm²
Mean	46 7	dpm/100cm²
Standard Deviation	20 4	
Transuranic DCGLw	100 0	dpm/100cm²
Transuranic DCGLemc	300 0	dpm/100cm²
Uranium DCGLw	5,000 0	dpm/100cm²
Uranium DCGLemc	15,000 0	dpm/100cm²

Removable Surface Activity Measurements

Number Required 15 Number Performed 15

Alpha

Maximum	3 6	dpm/100cm²
Minimum	<0 9>	dpm/100cm²
Mean	1 0	dpm/100cm²
Standard Deviation	1 8	
Transuranic DCGLw	20 0	dpm/100cm²
Uranium DCGLw	1,000 0	dpm/100cm²

Media Sample Results

Number Required 15 Number Samples 15

Uranium

Maximum	NA	dpm/100cm²
Minimum	NA	dpm/100cm²
Mean	NA	dpm/100cm²
Standard Deviation	NA	
Uranium DCGLw	5,000 0	dpm/100cm²
Uranium DCGLemc	15,000 0	dpm/100cm²

Transuranic

Maximum	40 0	dpm/100cm²
Minimum	8 0	dpm/100cm²
Mean	27 4	dpm/100cm²
Standard Deviation	10 8	
Transuranic DCGLw	100 0	dpm/100cm²
Transuranic DCGLemc	300 0	dpm/100cm²

Instrument Data Sheet

st/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)	
							Alpha	Beta	Alpha	Beta
1	512953	12/03/03	Electra	2372		02/21/04	0 217	0 333	48 00	NA
2	514979	12/03/03	Electra	1552		02/21/04	0 223	0 333	48 00	NA
3	512953	12/03/03	SAC-4	1185		04/20/04	0 333	0 333	NA	NA

Removable Surface Activity Data Sheet

Random Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			
777003PRP-N001	3	- 9	N/A			
777003PRP-N002	3	3 6	N/A			
777003PRP-N003	3	2 1	N/A			
777003PRP-N004	3	6	N/A			
777003PRP-N005	3	3 6	N/A			
777003PRP-N006	3	2 1	N/A			
777003PRP-N007	3	6	N/A			
777003PRP-N008	3	- 9	N/A			
777003PRP-N009	3	6	N/A			
777003PRP-N010	3	3 6	N/A			
777003PRP-N011	3	- 9	N/A			
777003PRP-N012	3	- 9	N/A			
777003PRP-N013	3	6	N/A			
777003PRP-N014	3	- 9	N/A			
777003PRP-N015	3	2 1	N/A			

Biased Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			

Comments

Total Surface Activity Data Sheet

Random Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			
777003PRP-N001	1	79 9	N/A			
777003PRP-N002	1	83 2	N/A			
777003PRP-N003	1	52 3	N/A			
777003PRP-N004	1	43 1	N/A			
777003PRP-N005	1	58 7	N/A			
777003PRP-N006	1	58 7	N/A			
777003PRP-N007	1	46 3	N/A			
777003PRP-N008	1	33 9	N/A			
777003PRP-N009	1	15 4	N/A			
777003PRP-N010	1	37 1	N/A			
777003QRP-N010	2	43 5	N/A			
777003PRP-N011	1	46 3	N/A			
777003PRP-N012	1	64 7	N/A			
777003PRP-N013	1	15 4	N/A			
777003PRP-N014	1	24 6	N/A			
777003PRP-N015	1	40 3	N/A			
777003QRP-N015	2	13 5	N/A			

Biased Sample Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			

Comments

Media Samples Data Sheet

Site Sample ID / Nbr / Description	Nuclide	Sample (dpm)	Sample MDA (dpm)		Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
N/A 1	U234	NA	NA		26 3	NA	NA	
Tar roof	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	30 5	117 9			18	70	**Transuranic**
	Am241	4 3	16 6			3	10	21
N/A 2	U234	NA	NA		26 3	NA	NA	
Tar roof	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	56 1	122 8			33	72	**Transuranic**
	Am241	7 9	17 3			5	10	38
N/A 3	U234	NA	NA		26 3	NA	NA	
Tar roof	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	58 9	98 7			35	58	**Transuranic**
	Am241	8 3	13 9			5	8	40
N/A 4	U234	NA	NA		26 3	NA	NA	
Tar roof	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	12 1	55 4			7	33	**Transuranic**
	Am241	1 7	7 8			1	5	8
N/A 5	U234	NA	NA		26 3	NA	NA	
Tar roof	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	12 1	55 4			7	33	**Transuranic**
	Am241	1 7	7 8			1	5	8
N/A 6	U234	NA	NA		26 3	NA	NA	
Tar roof	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	12 1	55 4			7	33	**Transuranic**
	Am241	1 7	7 8			1	5	8
N/A 7	U234	NA	NA		26 3	NA	NA	
Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32
N/A 8	U234	NA	NA		26 3	NA	NA	
Wall	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32

Comments

Media Samples Data Sheet

Site Sample ID / Nbr Description	Nuclide	Sample (dpm)	Sample MDA (dpm)		Surface Area (in^2)	Sample Nuclide ($dpm/100cm^2$)	Sample Nuclide MDA ($dpm/100cm^2$)	Sample Total ($dpm/100cm^2$)
N/A 9 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32
N/A 10 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32
N/A 11 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32
N/A 12 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32
N/A 13 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32
N/A 14 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32
N/A 15 Wall	U234	NA	NA		26 3	NA	NA	
	U235	NA	NA			NA	NA	**Uranium**
	U238	NA	NA			NA	NA	NA
	Pu239/240	47 6	31 2			28	18	**Transuranic**
	Am241	6 7	4 4			4	3	32

ATTACHMENT F

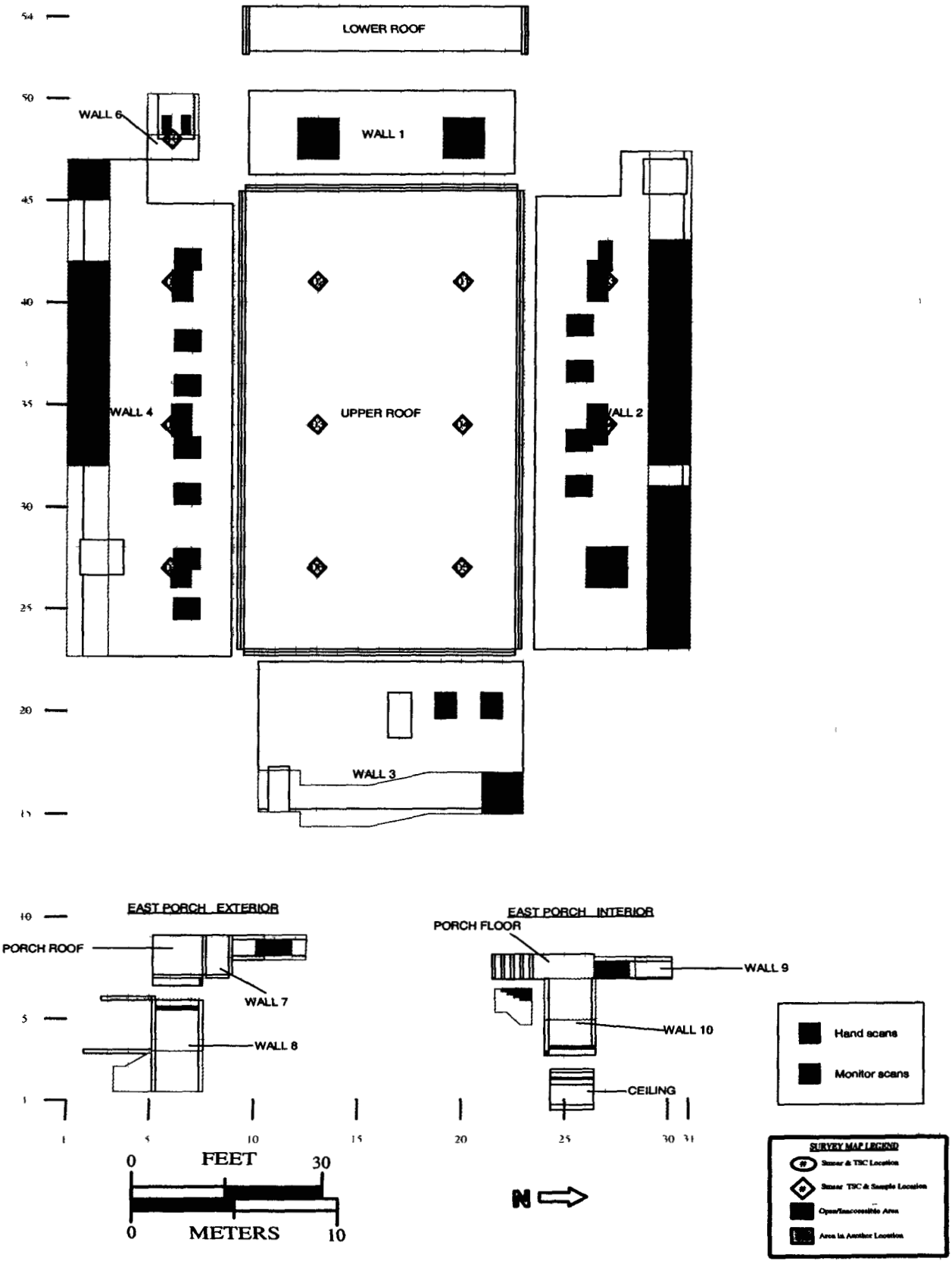
Data Quality Assessment

RADIOLOGICAL CLOSEOUT SURVEY FOR THE 776 CLUSTER

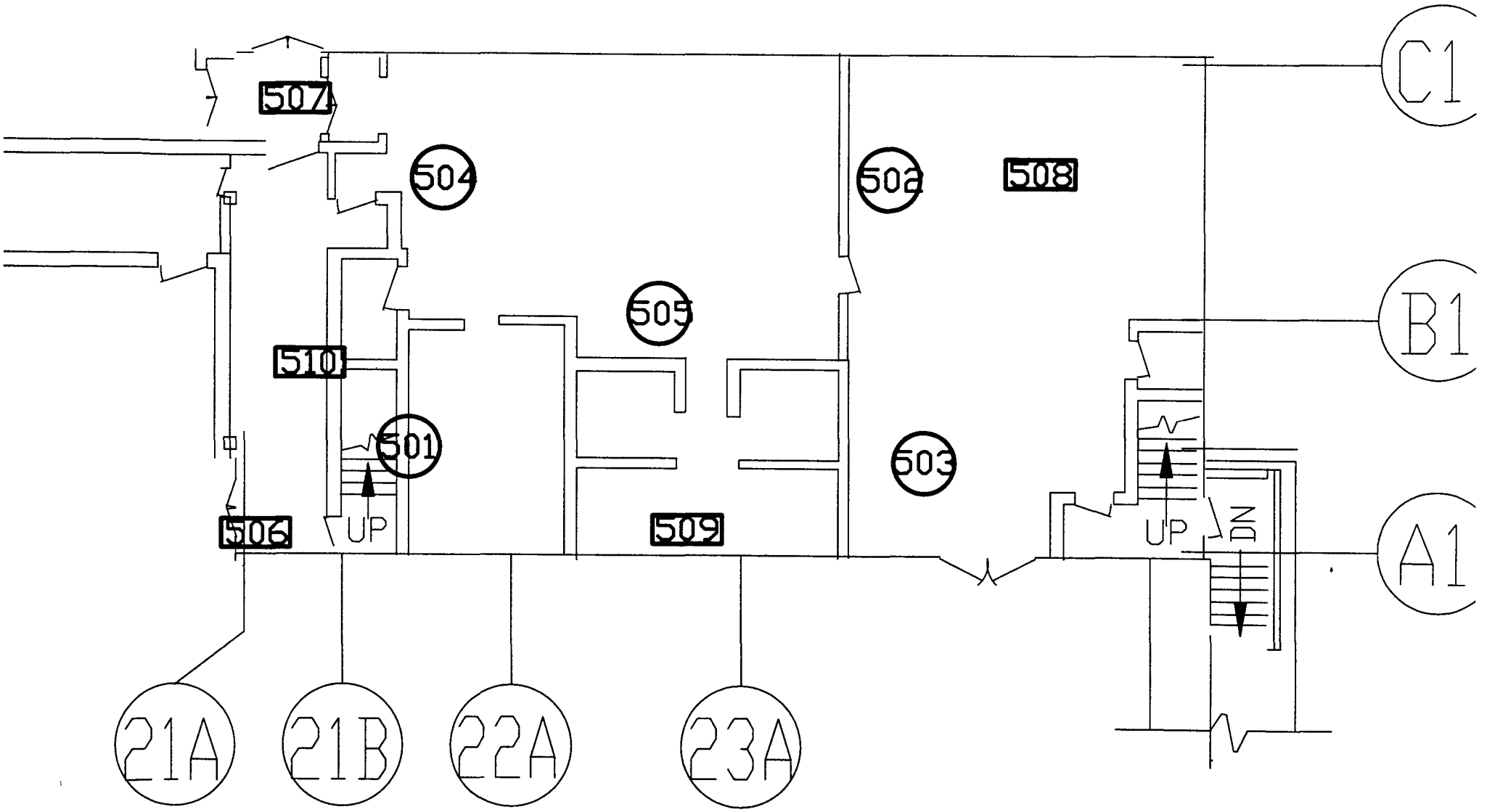
Survey Area B **Survey Unit 777003** **Classification 2**
Building 777
Survey Unit Description exterior surfaces, interior/exterior east porch

Total Floor Area NA **Total Area 894 sq m** **Grid Size NA**

SURVEY UNIT 777003 - MAP 1 OF 1



Building 777 Be Survey Unit 777-01

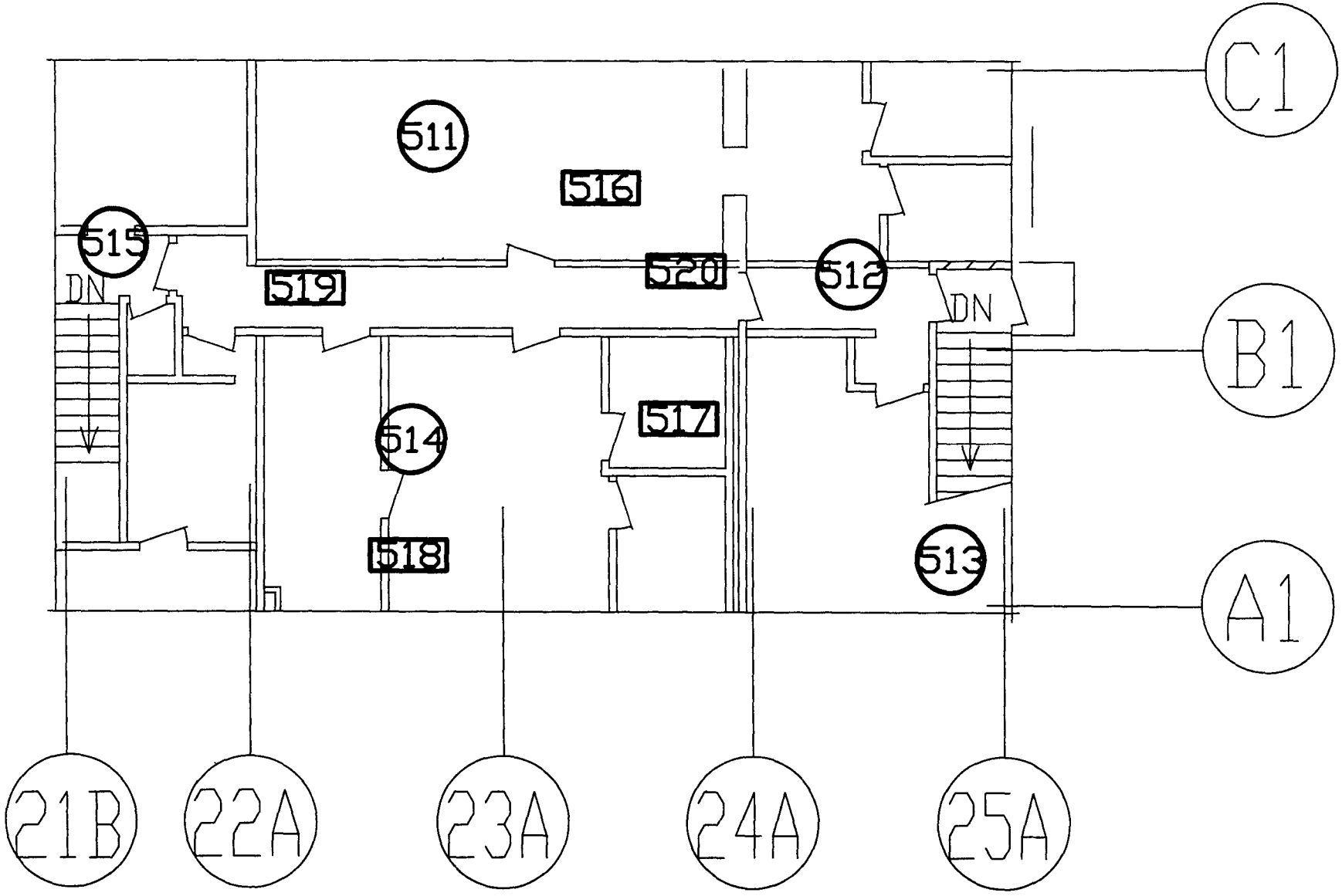


(xxx) Floor Be Sample (777-12162003-31-xxx)

[xxx] Elevated Be Sample (777-12162003-31-xxx)

4/6/16

Building 777 Be Survey Unit 777-02



xxx Floor Be Sample (777-12162003-31-xxx)

xxx Elevated Be Sample (777-12162003-31-xxx)