

NOTICE

All drawings located at the end of the document.



Rocky Flats Environmental Technology Site

TYPE 1 RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

CLOSURE PROJECT FOR BUILDING 552

REVISION 0

April 24, 2003

CLASSIFICATION REVIEW NOT REQUIRED PER
EXEMPTION NUMBER CEX-005-02



ADMIN RECORD

IA-A-001450

**TYPE 1
RECONNAISSANCE LEVEL CHARACTERIZATION
REPORT (RLCR)**

CLOSURE PROJECT FOR BUILDING 552

REVISION 0

April 24, 2003

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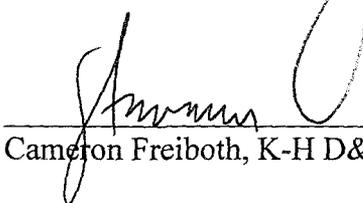
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ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
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
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
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
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of Building 552. Because this facility was an anticipated Type 1 facility, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces (i.e., floor, walls, ceiling and roof). Environmental media beneath and surrounding the facility was not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400.5. All beryllium sample results were less than $0.1 \mu\text{g}/100\text{cm}^2$. The roof and walls of Building 552 are composed of Category 2, non-friable asbestos containing corrugated Transite panels. All asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable.

Based upon data presented in this RLCR, Building 552 is considered a Type 1 facility. To ensure the facility remains free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and the facility posted accordingly.

1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Building 552. Because this facility was an anticipated Type 1 facility, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facility (i.e., floor, walls, ceiling and roof). Environmental media beneath and surrounding the facility was not within the scope of this RLC Report (RLCR) and will be addressed at a future date using 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 Building 552. The location of this facility is shown in Attachment A. *Facility Location Map*. This facility no longer supports the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before this facility can be removed, a Pre-Demolition Survey (PDS) must be conducted; this document presents the PDS results. 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). The PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

1.1 Purpose

The purpose of this report is to communicate and document the results of the PDS effort. A PDS is performed before building demolition to define the pre-demolition radiological and chemical conditions of a facility. Pre-demolition conditions are compared with the unrestricted 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 Building 552. Environmental media beneath and surrounding the facility is not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in 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 Historical Site Assessment (HSA) was conducted to understand the facility history and related hazards. The assessment consisted of facility walk-downs, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). These assessments were used to identify data gaps and needs, and to develop radiological and chemical characterization packages. The facility-specific HSA was documented in *Historical Site Assessment Report (HSAR) for the Area 3 Group 1 Facilities*, Dated May 2002, Revision 0. Refer to Attachment B, *Historical Site Assessment Report*, for a copy of the Building 552 HSAR. In summary, the HSAR identified no potential for radiological and chemical hazards, except the potential for asbestos containing materials and PCBs in paint and light ballast.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Building 552 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. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describe the minimum survey requirements (refer to the RISS Characterization Project files).

Two (2) radiological survey packages were developed for Building 552: 552-A-003 (interior) and 552-B-005 (exterior). The survey 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), 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*.

Fifty-eight (58) TSA measurements (15 systematic, 10 biased, 30 equipment and 3 QC) and fifty-five (55) RSA measurements (15 systematic, 10 biased and 30 equipment) were performed for interior survey unit 552-A-003. A minimum of a 75% scan of the floor, and minimum of a 5% scan of the remaining interior facility surfaces were scanned. Twenty-one (21) TSA measurements (15 random, 4 biased and 2 QC) and nineteen (19) RSA measurements (15 random and 4 biased) were performed for exterior survey unit 552-B-005 including a minimum of a 5% scan at exterior biased locations. The RLC data confirmed that the facility does not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit package is maintained in the RISS Characterization Project files. Isolation control postings are displayed on the building to ensure no radioactive materials are introduced.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building 552 was characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on, or in the facility. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files) was developed during the planning phase that describes the sampling requirements, justification for sample locations and estimated number of samples. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs. Refer to Attachment D, *Chemical Data Summaries and Sample Maps*, for details on sample results and sample locations.

4.1 Asbestos

Building 552 is a steel and wood frame facility with Category 2 non-friable asbestos-containing corrugated Transite panels attached to the frame with bolts and C-clamps to form the walls and roof. A visual and tactile inspection of other building materials suspected of containing asbestos was conducted in accordance with the PDSP. No other building materials suspected of containing asbestos were identified. A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1*.

The corrugated Transite panels were not sampled for asbestos content, but are assumed asbestos-containing material based upon known product composition. On this basis, additional asbestos sampling was not performed as part of the RLC process.

4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, Building 552 was an anticipated Type 1 facility. There was not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in this building. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium smear sample results were less than $0.1 \mu\text{g}/100\text{cm}^2$ and meet the unrestricted release limits. Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

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

Based on a review of the HSAR and a facility walk-down, Building 552 has always been used to store gas cylinders, and has never contained operations that would contribute to RCRA/CERCLA concerns. Therefore, sampling was not performed as part of this RLC.

Sampling for lead in paint in Building 552 was not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal. High contamination areas were never present in Building 552.

Building 552 may contain RCRA regulated materials such as fluorescent lights and mercury switches. A thorough inspection of the facility will be made, and all regulated materials will be removed prior to demolition.

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSARs, interviews and facility walk-downs of Building 552, no PCB-containing equipment was ever present in the building making the potential for PCB contamination resulting from spills highly unlikely. On this basis, PCB sampling was not performed in Building 552 as part of this RLC.

Based on the age of Building 552 (constructed prior to 1980), paints used may contain PCBs, and painted surfaces will need to be disposed of as PCB Bulk Product Waste. Painted concrete surfaces can be used as backfill on site in accordance with approval received from EPA in November 2001 (letter from K. Clough, US EPA Region 8, to J. Legare, DOE RFFO, 8EPR-F, Approval of the Risk-Based Approach for Polychlorinated Biphenyls (PCB)-Based Painted Concrete), provided the concrete meets the unrestricted-release criteria outlined in the Concrete Recycling RSOP.

Because Building 552 may contain fluorescent light ballasts containing PCBs, fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations. PCB ballasts will be identified based on factors such as labeling (e.g., PCB-containing and non PCB-containing), manufacturer, and date of manufacturing. Ballasts that do not indicate non PCB-containing are assumed to be PCB-containing. Ballasts that are identified as PCB containing and are leaking will be removed prior to demolition. Non-leaking PCB ballasts can remain in the building and be disposed of as PCB Bulk Product Waste.

5 PHYSICAL HAZARDS

Physical hazards associated with Building 552 consist of those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. The facility has been relatively well maintained and is in good physical condition, and therefore, does not present hazards associated with building deterioration. 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.

6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Building 552, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

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 provided in Attachment E.

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Building 552 will generate a variety of wastes. Estimated waste types and waste volumes are presented below. All waste can be disposed of as sanitary waste, except asbestos containing material and PCB Bulk Product Waste. There is no radioactive or hazardous waste. Asbestos and PCB ballast will be managed pursuant to Site asbestos and PCB abatement and waste management procedures.

Waste Volume Estimates and Material Types, Building 552							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste
Building 552	8,000	10	1,500	0	100	820	None

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building 552 is classified as a RFCA Type 1 facility pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999). The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data.

The RLC of Building 552 was performed in accordance with the DDCP and PDSP requirements. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Building 552 does not contain radiological or hazardous wastes. Any PCB ballast and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable. Environmental media beneath and surrounding the facility will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

To ensure Building 552 remains free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and posted accordingly.

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9 REFERENCES

- 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.*"
- EPA, 1994. "*The Data Quality Objective Process,*" EPA QA/G-4.
- 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. 3, 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*, December 1997 (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. 1, May 22, 2001.
- 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.*
- RFCA Standard Operation Protocol for Recycling Concrete*, September 28, 1999.
- Historical Site Assessment Report for the Area 3 Group 1 Facilities*, dated May 2002, Revision 0.

ATTACHMENT A

Facility Location Map

ATTACHMENT B

Historical Site Assessment Report

**D&D RISS Facility Characterization
Historical Site Assessment Report
May, 2002 Rev. 0**

Facility ID: Area 3, Group 1 - Buildings 223, 223A, 549, 551 Pad, 552, 553, 554, 556, 679, 680, 681, and the 750 HAZ Pad.

Anticipated Facility Type (1, 2, or 3): Buildings 223, 223A, 549, 551 Pad, 552, 553, 554, 556, 679, 680, 681, and the 750 HAZ Pad are anticipated Type 1 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:
D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and
Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Physical Description

Building 223

Building 223 is a 3500 sq. ft. Nitrogen Plant constructed in 1991. This facility is a steel frame building built on a concrete foundation. The walls and the roof are corrugated metal sheets mounted to a steel frame. The facility has two large purification tanks (Tanks 233 and 234) on the north side of the building used to remove moisture from the ambient air prior to the separation process. The facility also has a cooling tower on the west side of the building.

Building 223 has the following utilities; water, sanitary, electric, gas, steam heat, and an overhead sprinkler system and wall-mounted fire extinguishers provide fire protection.

Building 223A

Building 223A is currently the Environmental Restoration Storage Building constructed in 1975. The building is a 1980 sq. ft. metal frame building constructed on a concrete pad poured on grade. The walls and ceiling are corrugated sheet metal mounted on a steel frame.

Building 223A has the following utilities; electric, and fire protection is provided by wall-mounted fire extinguishers.

Building 549

Building 549 is currently a 1920 sq. ft. Fitness Center and was constructed in 1957. This building is a metal frame building constructed on a concrete slab. The walls and ceiling are insulated metal sheets attached to a steel frame. The walls have a sprayed-on insulation. The building has restrooms inside.

Building 549 has the following utilities; water, sanitary, electric, and fire protection is provided by wall-mounted fire extinguishers.

551 Pad

The 551 Pad is an approximately 20,000 sq. ft. fenced outdoor Permitted RCRA storage area (RCRA Unit 18.03) located east of Building 551. The 551 Pad is an asphalt pad that houses several cargo containers used to store RCRA/Low-level Mixed Waste. The storage yard is also used to store miscellaneous equipment, which are internally contaminated.

The 551 Pad has no utilities.

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**D&D RISS Facility Characterization
Historical Site Assessment Report
May, 2002 Rev. 0**

Building 552

Building 552 is a 4170 sq. ft single-story compressed gas storage building constructed in 1953. The building is a non-insulated metal frame structure with possible asbestos siding and roof. The building is constructed on an elevated concrete slab, which is approximately 3-4 ft. thick.

Building 552 has the following utilities; electric and fire protection is provided by wall mounted fire extinguishers.

Building 553

Building 553 is a 1280 sq. ft. single-story welding shop constructed in 1953. The building is a non-insulated metal frame structure with asbestos siding and roof. The building is constructed on an elevated concrete slab, which is approximately 3-4 ft. thick.

Building 553 has the following utilities; electric, water and fire protection is provided by wall mounted fire extinguishers.

Building 554

Building 554 is a 1190 sq. ft. single-story warehouse storage and receiving building constructed in 1953. The building is a non-insulated a metal frame structure with asbestos siding and roof. Building 554 had the floor raised about 4 feet in the east half of the original structure in 1956.

Building 554 has the following utilities; electric, plant steam, and fire protection is provided by wall mounted fire extinguishers.

Building 556

Building 556 is a 640 sq. ft. single-story site maintenance building constructed in 1963. This building is a steel frame building with metal walls and a metal roof. Building 556 is built on a concrete slab. The building has two large roll-up garage doors on the east side of the building and an out-of-service air compressor located on the north side of the building.

Building 556 has the following utilities; electric, steam heat, pressurized air system. Fire protection is provided by wall-mounted fire extinguishers.

Building 679, and 680

Buildings 679 and 680 are both high voltage electrical transformers mounted on a 500 sq. ft. concrete pad. The transformers where installed in 1996 and are located approximately 15 ft. west of Building 681 (The Switchgear Building).

Building 679 and 680 have the following utilities: electric.

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Building 681

Building 681 is a 2302 sq. ft. switchgear building, constructed in 1996. Building 681 is a metal frame building constructed on a concrete pad. The walls and ceiling are non-insulated corrugated metal panels mount to the steel frame.

The following utilities: electric and fire protection is provided by wall mounted fire extinguishers.

750 HAZ Pad (a.k.a. RCRA Unit 1)

The 750 Pad is an approximately 17,000-sq. ft. fenced outdoor RCRA storage area (RCRA Unit 1). The 750 HAZ Pad located on an asphalt pad and contains several heated cargo containers to store RCRA/Low-level Mixed Waste.

The 750 HAZ Pad has the following utilities; electric, and fire protection is provided by wall-mounted fire extinguishers.

Historical Operations

Building 223

Building 223 houses the equipment for separating nitrogen from ambient air. Filtered air is compressed and purified in a heat exchanger. It is then passed through a distillation chamber where nitrogen is separated from the oxygen based on the differences in their liquefaction temperatures. The nitrogen is then piped throughout the plant. Excess nitrogen is liquefied and stored for future use. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

Building 223A

Building 223A was originally built and owned by Air Products Corporation in 1975 to supply nitrogen to Buildings 776, 777, 707 and 371. In 1991 Air Products built a larger facility to the west of Building 223A and removed all of their equipment and tanks from this building. This building was not operated by RFETS personnel but by Air Products. From 1991 to 1995 the building sat empty at which time it became storage facility for CERCLA contaminated soils. See the "Environmental Concerns" section below for any IHSSs and PACs associated with this building.

Building 549

Building 549 was originally an electrical support building operated by J. E. Jones. From 1994 to 2001 the building was used as a Radcon support facility to house Southside Radcon support personnel. The building was used to count smears, store air samples, and support Southside Radcon operations. The building had a RMA in the northwest portion of the building, which was used to store radiological sources. None of these sources where known to have leaked. In 2001 the facility was closed and left vacant for about 6 months. In 2001 the building was converted to a fitness center. The building has no history of building contamination. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

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551 Pad

The 551 pad is a fenced in RCRA storage area (RCRA unit 18.03). The 551 Pad storage yard houses several storage containers used to store RCRA/Low-Level Mixed Waste. The 551 Pad also is used to store internally contaminated equipment prior to final disposal. Originally the area was used to storage scrap metal which on occasion was found to contain low levels of contamination. A detailed history of the area currently called the 551 Pad is documented in PAC 500-117.2 "Middle Site Chemical Site Storage". There have been no known release to the environment since RCRA Unit 18.03 was established. See the "Environmental Concerns" section below for IHSSs and PACs associated with the 551 Pad.

Building 552

Building 552 is a storage building for cylinders of pressurized gas. Cylinders are received, stored and transferred from Building 552 to various onsite users. Empty cylinders are received from the various on-site users and stored pending pick-up by vendors. On occasion, contaminated cylinders are received from on-site users and must be decontaminated or packaged as LLW. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

Building 553

Building 553 was originally the site chemical receiving and storage building. This activity ended in the late 1970's when the building became the metal fabrication building and was later used as a glovebox training building in the early 1990's. Chemicals stored here included, but were not limited to acids, bases, solvents and sulfates. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

Building 554

Building 554 was the original Radiological Shipping and Receiving Building until Building 440 was constructed in early 1970s. This building had a criticality alarm system and health physics air-sampling system installed in the building. In the 1980s and 1990s the building was used as a general warehouse. In 1990 a drum crusher was installed. The drum crusher was removed in 2000. The facility has been a RCRA 90-Day pad used primarily for the storage of used light bulb for the last 8 years. During this time the building also housed several Material Stewardship support personnel in the office/break room on the north side of the building. Building 554 had the floor raised about 4 feet in the east half of the original structure in 1956. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

Building 556

Building 556 was originally constructed as a welding shop and continued to operate as a welding shop until the late 1980s when the welding equipment was removed. Then the building was used as a general maintenance building. From approximately 1996 to 2000 the building was used as a Radcon support building. The Radcon support group did store sealed sources in a RMA in the building. None of the sources were known to have leaked and there was no building contamination associated with this activity. In 2002 the building began being used for welding training of D&D workers. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

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Building 679, and 680

Building 679 and 680 are electrical transformers installed in 1996. These are non-PCB transforms and have no history of leaking. The transformers are located on a 500 sq. ft. concrete pad, which also acts as a secondary containment pad. These transformers where installed to re-place transformers 555 and 558. Building 679 and 680 were constructed on the site of the old transformers 555 and 558. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

Building 681

Building 681 is a high voltage electrical switchgear building constructed in 1996. The equipment in this building has never contained PCBs or lead. The northeast corner of the building contains lead-acid batteries used for system back up. The batteries have no history of leaking. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

750 HAZ Pad (a.k.a. RCRA Unit 1)

The 750 HAZ Pad is a fenced in RCRA storage area (RCRA Unit 1). The 750 HAZ Pad storage yard houses several heated storage containers used to store RCRA/Low-Level Mixed Waste. Originally the area was used to storage scrap metal which on occasion was found to contain low levels of contamination. A detailed history of the area currently called the 750 HAZ Pad is documented in PAS 500-903 and IHSS 500-197 "Scrap Metal Site 551". Although there have been release inside the storage containers in RCRA Unit 1, there have been no known release to the environment since RCRA Unit 1 was established. See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building.

Current Operational Status

Building 223 is still operational. Building 223A is currently used to store CERCLA investigative derived waste. Building 549 is currently being used as a fitness center. The 551 Pad is currently being used as a permitted RCRA Storage Unit. Building 552 is currently being used as a gas cylinder storage and receiving building. Building 553 is currently empty. Building 554 is currently being used as a RCRA 90-Day storage area for collecting used light bulbs. Building 556 is currently being used for welding training. Building 679 is currently an operational transformer. Building 680 is currently an operational transformer. Building 681 is currently an operational switchgear building. The 750 HAZ Pad is currently an operational permitted RCRA Storage Unit.

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos:

Buildings 223A, 549, 552, 553, and 554 are posted as potentially containing asbestos. None of the facilities in this HSA have had a comprehensive asbestos survey.

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Historical Site Assessment Report
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Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations:

None of the building addressed in this HSA are on the List of known Be Areas.

Summarize any recent Be sampling results:

No recent Be samples collected on any of these facilities.

Lead

Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.):

Lead in paint and lead in electrical equipment may be a concern for some of the facilities in this HSA due to the age of construction. Lead shielding was temporarily used in Building 549 and 556 when these building were used to support southside Radcon operations. The lead shielding was removed when the Radcon operations ended.

See the section below for RCRA/CERCLA constituents for lead in waste stream references related to these buildings.

RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes):

Building 553 was originally constructed as the site Chemical Receiving and Storage Facility and operated as the chemical receiving building until the late 1970s. Building 554 was the original Radiological Shipping and Receiving Facility until Building 440 was built in the early 1970s.

The 551 Pad and the 750 HAZ Pad are permitted RCRA units and will be closed in accordance with the Site RCRA Closure Plan.

See the "Historical Operations" section above for a detailed description of the operation which occurred in each facility addressed in this HSA. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

Describe any potential, likely, or known spill locations (and sources, if any):

Additional RCRA/CERCLA release information is documented in the IHSS, PAC, and UBC section below.

Describe methods in which spills were mitigated, if any:

Spills were cleaned up to the standards of the day.

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PCBs

Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.):

Due to the age of some of these facilities, there may be a concern with PCBs in paint, light ballasts, and electrical equipment. PCBs were not known to have been regularly handled in any of these facilities.

Describe any potential, likely, or known spill locations (and sources, if any):

No known PCB spills occurred in any of the facilities addressed in this HSA. However, Building 549 is located approximately 20 feet south of PAC 500-904 "Transformer leak 223-1/223-2". In addition, Building 679 and 680 were constructed on the old 555 and 558 transformer site which are currently PAC 500-901 and 500-903.

Describe methods in which spills were mitigated, if any:

No known PCB spills occurred in any of the facilities addressed in this HSA.

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Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations:

None of the buildings in this HSA are radiologically posted. Building 554 was the original Radiological Shipping and Receiving Building. Interviews indicate, that on occasion, contamination from the exterior of the drums where detected on the floor of Building 554. Today there is no indication of contamination remaining in Building 554.

Building 552, on occasion, received contaminated cylinders from the process buildings. Interviews indicate that in the past there was occasionally contamination found on the floor of Building 552 (in storage bays 3 and 4) from the exterior of the contaminated cylinders. Today there is no indication of contamination remaining in the building.

See the "Historical Operations" section above for a detailed description of the operation which occurred in each facility addressed in this HSA. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.):

Additional RCRA/CERCLA release information is documented in the IHSS, PAC, and UBC section below. The 551 Pad and the 750 HAZ Pad are located on IHSSs. See section below for information on IHSSs PACs, and UBCs.

Describe methods in which spills were mitigated, if any:

Spills were cleaned up to the standards of the day.

Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.):

The primary Isotope of concern includes, but is not limited to uranium and plutonium. Other than sealed sources, there were no known mixed fission products or pure beta emitters used in any of the facilities addressed in this HSA.

Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.):

See section below for information on IHSSs PACs, and UBCs.

**D&D RISS Facility Characterization
Historical Site Assessment Report
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Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):

Building 223 is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) PAC 300-156.1 "Building 371 Parking lot", NFA approved in 2001.

Building 223A is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) PAC 500-117.1 "North Chemical Site Storage", Active.

Building 549 is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) PAC 300-186 "Valve Vault 12", Active.
- 2) PAC 500-117.1 "North Chemical Site Storage", Active.
- 3) PAC 500-904 "Transformer Leak -223-1/223-2", Active.

The 551 Pad is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) PAC 500-117.2 "Middle Site Chemical Site Storage", Active.
- 2) PAC 500-169 "Waste Drum Peroxide Burial", Proposed NFA in 1998 HRR Annual Update.

Building 552 is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) PAC 300-186 "Valve Vault 12", Active.

Building 553 associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) IHSS 300-158 "Radioactive site - Building 551", Active.

Building 554 associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) IHSS 300-158 "Radioactive site - Building 551", Active.

Building 556 associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) IHSS 300-158 "Radioactive site - Building 551", Active.

Building 679, 680 and 681 associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) IHSS 500-901 "Transformer Leak - 555", Proposed NFA 1996 Annual Update.

The 750 HAZ Pad is associated with or located near the following active IHSSs, PACs, and UBCs;

- 1) IHSS 500-197 "Scrap Metal Site", Active.
- 2) PAC 500- 903 "RCRA Storage Unit 1, NFA approved 1992

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ATTACHMENT C

Radiological Data Summaries and Survey Maps

SURVEY UNIT 552-A-003
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B552(Interior)

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552-A-003
PDS Data Summary

<u>Total Surface Activity Measurements</u>			<u>Removable Activity Measurements</u>		
	55	55		55	
	Number Required	Number Obtained		Number Required	Number Obtained
MIN	-15.3	dpm/100 cm ²	MIN	-1.2	dpm/100 cm ²
MAX	60.4	dpm/100 cm ²	MAX	4.2	dpm/100 cm ²
MEAN	11.5	dpm/100 cm ²	MEAN	-0.2	dpm/100 cm ²
STD DEV	13.6	dpm/100 cm ²	STD DEV	1.0	dpm/100 cm ²
TRANSURANIC DCGL _w	100	dpm/100 cm ²	TRANSURANIC DCGL _w	20	dpm/100 cm ²

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**SURVEY UNIT 552-A-003
TSA - DATA SUMMARY**

Manufacturer:	NE Tech						
Model:	DP-6						
Instrument ID#:	1	2	3	4	5	6	7
Serial #:	3115	3125	3250	2404	1261	1366	1366
Cal Due Date:	6/4/03	4/21/03	7/13/03	3/25/03	6/19/03	6/26/03	6/26/03
Analysis Date:	2/11/03	2/11/03	2/11/03	2/11/03	2/11/03	2/11/03	2/11/03
Alpha Eff. (c/d):	0.228	0.211	0.219	0.213	0.207	0.219	0.219
Alpha Bkgd (cpm)	1.0	0.0	2.7	2.7	0.7	1.3	1.3
Sample Time (min)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5	1.5	1.5	1.5	1.5
MDC (dpm/100cm²)	48.0	48.0	48.0	48.0	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm ²)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm ²)	Sample Net Activity (dpm/100cm ²) ^{1,2}
1	6	6.7	30.6	3.3	15.1	12.0
2	2	4.7	22.3	2.0	9.5	3.7
3	3	13.3	60.7	6.7	30.6	42.2
4	6	5.3	24.2	3.3	15.1	5.6
5	2	6.0	28.4	1.3	6.2	9.9
6	6	10.0	45.7	4.0	18.3	27.1
7	6	8.0	36.5	5.3	24.2	18.0
8	3	11.3	51.6	4.7	21.5	33.0
9	6	3.3	15.1	6.0	27.4	-3.5
10	3	17.3	79.0	2.7	12.3	60.4
11	3	4.7	21.5	6.7	30.6	2.9
12	2	2.7	12.8	2.7	12.8	-5.8
13	6	4.7	21.5	6.7	30.6	2.9
14	2	8.7	41.2	2.0	9.5	22.7
15	6	6.7	30.6	8.0	36.5	12.0
16	4	10.0	46.9	2.7	12.7	28.4
17	1	11.3	49.6	4.7	20.6	31.0
18	4	4.8	22.5	4.7	22.1	4.0
19	4	6.7	31.5	1.3	6.1	12.9
20	3	7.3	33.3	4.7	21.5	14.8
21	1	5.3	23.2	5.3	23.2	4.7
22	2	5.3	25.1	0.7	3.3	6.5
23	3	6.7	30.6	7.9	36.1	12.0
24	5	6.0	29.0	1.3	6.3	10.4
25	5	9.0	43.5	1.3	6.3	24.9
26*	4	6.0	28.2	1.3	6.1	9.6
27	4	6.7	31.5	4.0	18.8	12.9
28	4	5.3	24.9	2.7	12.7	6.3
29	4	4.7	22.1	3.3	15.5	3.5
30	1	6.7	29.4	2.0	8.8	10.8
31	1	6.1	26.8	4.7	20.6	8.2
32	4	4.0	18.8	4.0	18.8	0.2
33	1	4.0	17.5	2.0	8.8	-1.0
34	4	5.0	23.5	2.0	9.4	4.9
35	4	4.7	22.1	4.1	19.2	3.5
36	4	5.3	24.9	3.3	15.5	6.3
37	1	7.3	32.0	6.7	29.4	13.4
38	1	7.3	32.0	6.0	26.3	13.4
39	1	3.3	14.5	2.9	12.7	-4.1
40	4	4.7	22.1	2.0	9.4	3.5

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**SURVEY UNIT 552-A-003
TSA - DATA SUMMARY**

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm ²)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm ²)	Sample Net Activity (dpm/100cm ²) ^{1,2}
41	4	8.7	40.8	6.7	31.5	22.3
42	4	6.7	31.5	4.2	19.7	12.9
43	4	8.7	40.8	8.0	37.6	22.3
44	4	4.0	18.8	6.7	31.5	0.2
45	1	9.3	40.8	4.7	20.6	22.2
46	1	8.0	35.1	5.3	23.2	16.5
47	2	1.3	6.2	1.3	6.2	-12.4
48	5	2.7	13.0	2.7	13.0	-5.5
49	3	11.3	51.6	5.3	24.2	33.0
50	2	0.7	3.3	2.0	9.5	-15.3
51	2	3.3	15.6	4.0	19.0	-2.9
52	3	8.0	36.5	7.3	33.3	18.0
53	5	3.3	15.9	0.7	3.4	-2.6
54	1	9.3	40.8	6.7	29.4	22.2
55	1	8.0	35.1	6.7	29.4	16.5

1 - Average LAB used to subtract from Gross Sample Activity

18.6	Sample LAB Average
MIN	-15.3
MAX	60.4
MEAN	11.5
SD	13.6
Transuranic DCGL_w	100

QC Measurements

3 QC	1	8.7	38.2	7.3	32.0	18.3
10 QC	7	12.0	54.8	4.7	21.5	34.9
49 QC	2	4.0	19.0	1.3	6.2	-0.9

1 - Average QC LAB used to subtract from Gross Sample Activity

19.9	QC LAB Average
MIN	-0.9
MAX	34.9
MEAN	17.4
Transuranic DCGL_w	100

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**SURVEY UNIT 552-A-003
RSC - DATA SUMMARY**

Manufacturer:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#:	9	10	11	12
Serial #:	767	1164	833	952
Cal Due Date:	5/13/03	6/17/03	2/28/03	7/9/03
Analysis Date:	2/11/03	2/11/03	2/11/03	2/11/03
Alpha Eff. (c/d):	0.33	0.33	0.33	0.33
Alpha Bkgd (cpm)	0.2	0.2	0.4	0.1
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm²)	9.0	9.0	9.0	9.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm²)
1	9	0	-0.6
2	10	1	0.9
3	11	0	-1.2
4	12	1	1.2
5	9	0	-0.6
6	10	0	-0.6
7	11	1	0.3
8	12	0	-0.3
9	9	0	-0.6
10	10	0	-0.6
11	11	0	-1.2
12	12	1	1.2
13	9	1	0.9
14	10	0	-0.6
15	11	0	-1.2
16	12	0	-0.3
17	9	0	-0.6
18	10	0	-0.6
19	11	0	-1.2
20	12	0	-0.3
21	9	0	-0.6
22	10	0	-0.6
23	11	0	-1.2
24	12	0	-0.3
25	9	0	-0.6
26	10	1	0.9
27	11	0	-1.2
28	12	1	1.2
29	9	0	-0.6
30	10	0	-0.6
31	11	1	0.3

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**SURVEY UNIT 552-A-003
RSC - DATA SUMMARY**

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm ²)
32	12	0	-0.3
33	9	0	-0.6
34	10	0	-0.6
35	11	0	-1.2
36	12	0	-0.3
37	9	0	-0.6
38	10	0	-0.6
39	11	2	1.8
40	12	1	1.2
41	9	0	-0.6
42	10	0	-0.6
43	11	0	-1.2
44	12	3	4.2
45	9	0	-0.6
46	10	0	-0.6
47	11	0	-1.2
48	12	1	1.2
49	9	0	-0.6
50	10	0	-0.6
51	11	1	0.3
52	12	0	-0.3
53	9	0	-0.6
54	10	0	-0.6
55	11	0	-1.2
		MIN	-1.2
		MAX	4.2
		MEAN	-0.2
		SD	1.0
		Transuranic DCGL_w	20

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SURVEY UNIT 552-B-005
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B552(Exterior)

552-B-005
PDS Data Summary

Total Surface Activity Measurements

19	19
Number Required	Number Obtained

MIN	4.4	dpm/100 cm ²
MAX	74.1	dpm/100 cm ²
MEAN	30.6	dpm/100 cm ²
STD DEV	20.2	dpm/100 cm ²

TRANSURANIC DCGL _w	100	dpm/100 cm ²
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Removable Activity Measurements

19	19
Number Required	Number Obtained

MIN	-1.5	dpm/100 cm ²
MAX	3.6	dpm/100 cm ²
MEAN	0.5	dpm/100 cm ²
STD DEV	1.3	dpm/100 cm ²

TRANSURANIC DCGL _w	20	dpm/100 cm ²
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**SURVEY UNIT 552-B-005
TSA - DATA SUMMARY**

Manufacturer:	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6
Instrument ID#:	1	2	8
Serial #:	3104	3250	3107
Cal Due Date:	5/11/03	7/13/03	8/6/03
Analysis Date:	2/20/03	2/20/03	4/22/03
Alpha Eff. (c/d):	0.222	0.219	0.218
Alpha Bkgd (cpm)	4.7	1.3	0.7
Sample Time (min)	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5
MDC (dpm/100cm ²)	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm ²)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm ²)	Sample Net Activity (dpm/100cm ²) ^{1,2}
1	1	11.3	50.9	4.0	18.0	27.8
2	8	6.7	30.7	4.7	21.6	7.6
3	1	8.0	36.0	7.8	35.1	12.9
4	2	16.7	76.3	7.3	33.3	53.1
5	2	12.7	58.0	3.3	15.1	34.9
6	2	16.0	73.1	7.3	33.3	49.9
7	1	9.3	41.9	6.7	30.2	18.8
8	8	6.0	27.5	1.3	6.0	4.4
9	2	12.0	54.8	2.7	12.3	31.7
10	2	15.3	69.9	4.7	21.5	46.7
11	8	7.3	33.5	2.7	12.4	10.4
12	2	14.7	67.1	8.0	36.5	44.0
13	8	8.0	36.7	3.3	15.1	13.6
14	2	21.3	97.3	4.7	21.5	74.1
15	2	18.7	85.4	8.0	36.5	62.3
16	2	13.3	60.7	4.0	18.3	37.6
17	1	7.3	32.9	6.0	27.0	9.8
18	2	10.7	48.9	2.0	9.1	25.7
19	2	8.7	39.7	8.0	36.5	16.6

1 - Average LAB used to subtract from Gross Sample Activity

23.1	Sample LAB Average
MIN	4.4
MAX	74.1
MEAN	30.6
SD	20.2
Transuranic DCGL_{lv}	100

QC Measurements

10 QC	2	7.3	33.3	7.8	35.6	1.8
16 QC	2	9.4	42.9	6.0	27.4	11.4

1 - Average QC LAB used to subtract from Gross Sample Activity

31.5	QC LAB Average
MIN	1.8
MAX	11.4
MEAN	6.6
Transuranic DCGL_{lv}	100

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**SURVEY UNIT 552-B-005
RSC - DATA SUMMARY**

Manufacturer:	Eberline	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#:	3	4	5	6	9	10
Serial #:	767	1164	833	952	1164	952
Cal Due Date:	5/13/03	6/17/03	2/28/03	7/9/03	6/17/03	7/9/03
Analysis Date:	2/20/03	2/20/03	2/20/03	2/20/03	4/22/03	4/22/03
Alpha Eff. (c/d):	0.33	0.33	0.33	0.33	0.33	0.33
Alpha Bkgd (cpm)	0.1	0.1	0.3	0.0	0.3	0.5
Sample Time (min)	2	2	2	2	2	2
Bkgd Time (min)	10	10	10	10	10	10
MDC (dpm/100cm²)	9.0	9.0	9.0	9.0	9.0	9.0

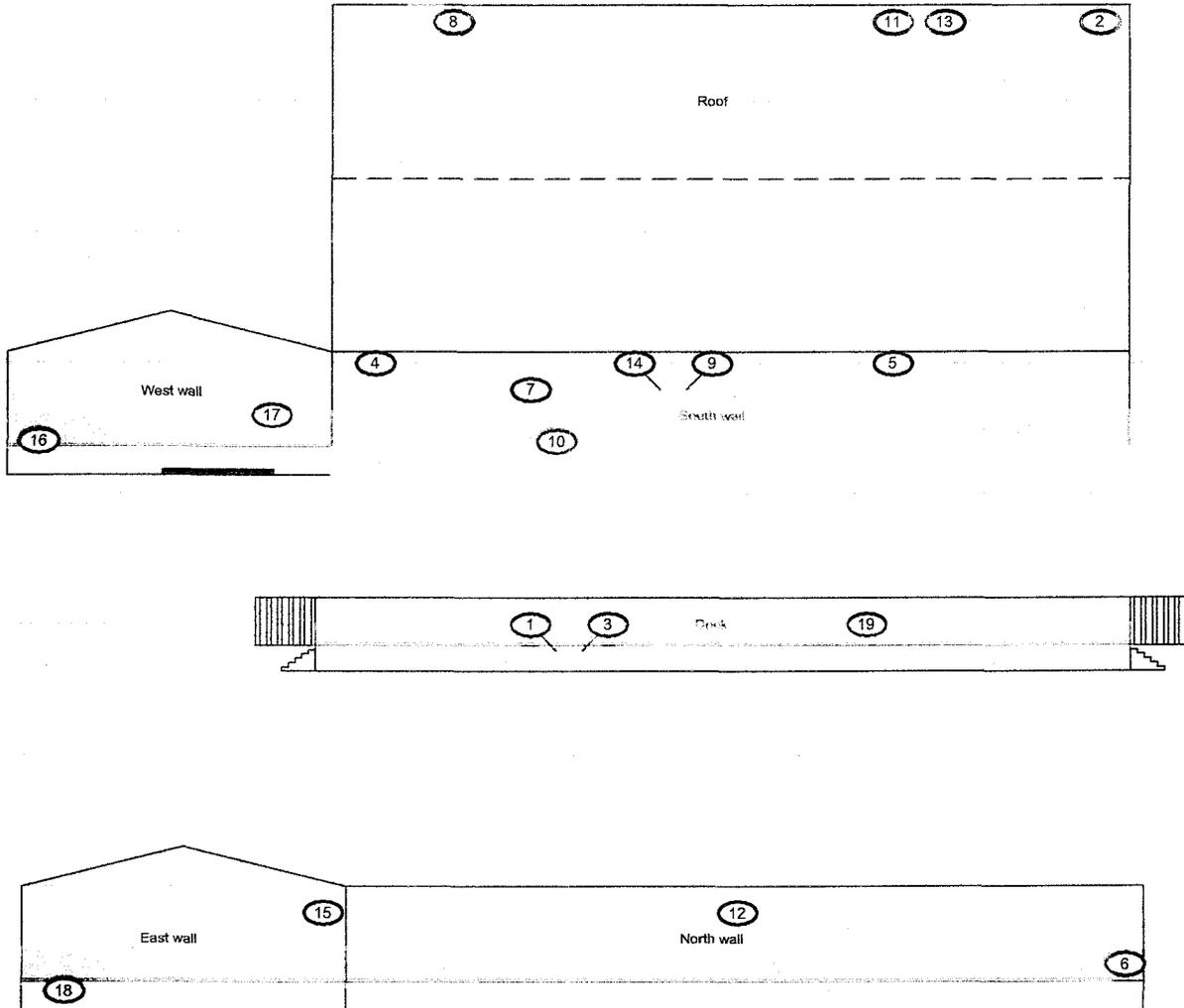
Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm ²)
1	3	1	1.2
2	4	0	-0.3
3	9	0	-0.9
4	5	0	-0.9
5	6	0	0.0
6	3	1	1.2
7	4	1	1.2
8	10	3	3.0
9	5	0	-0.9
10	6	0	0.0
11	9	3	3.6
12	3	0	-0.3
13	10	0	-1.5
14	4	1	1.2
15	5	1	0.6
16	6	0	0.0
17	3	1	1.2
18	4	0	-0.3
19	5	1	0.6
		MIN	-1.5
		MAX	3.6
		MEAN	0.5
		SD	1.3
		Transuranic DCGL_w	20

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PRE-DEMOLITION SURVEY FOR AREA 3/GROUP 1

Survey Area: 3 Survey Unit: 552-B-005 Classification: 3
 Building: 552
 Survey Unit Description: Exterior of Building
 Total Area: 903 sq. m. Total Roof Area: 408 sq. m.

552 Exterior



<p>SURVEY MAP LEGEND</p> <ul style="list-style-type: none"> Smear & TSA Location Smear, TSA & Sample Location Open/Inaccessible Area Area in Another Survey Unit 		<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>		<p style="text-align: center;">N</p> <p style="text-align: center;">↑</p>		<p style="text-align: center;">0 FEET 30</p> <p style="text-align: center;">0 METERS 10</p>		<p style="text-align: center;">U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707 Prepared for:</p>	
		<p>Scan Survey Information Survey Instrument ID #(s) & RCT ID #(s): 1, 2 & 7</p>		<p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>		<p style="text-align: center;">CH2MHILL Communications Group</p>		<p>MAP ID: 02-0589/552-EX May 2, 2002</p>	

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ATTACHMENT D

Chemical Data Summaries and Sample Maps

Beryllium Data Summary

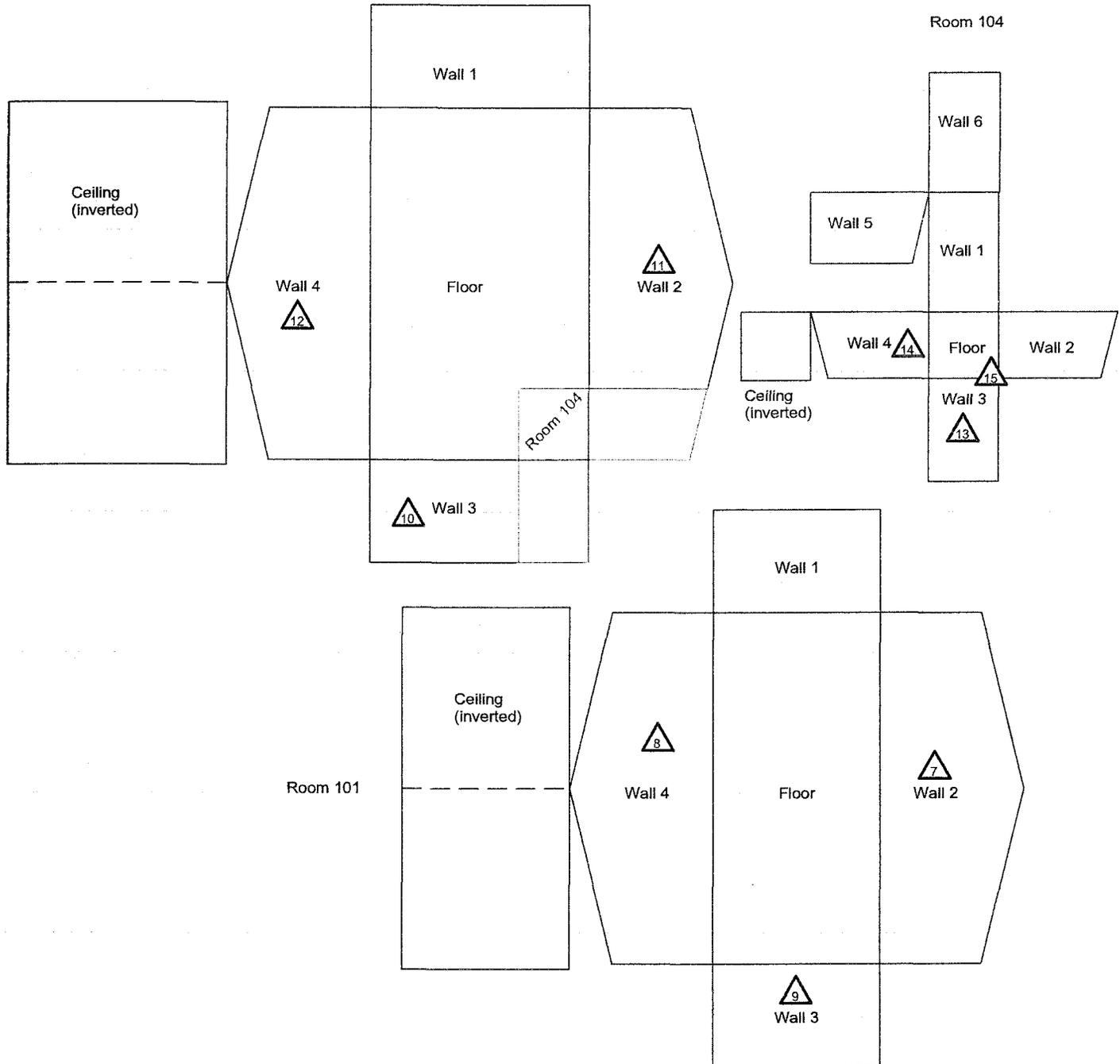
Sample Number	Map Survey Point Location	Room	Sample Location	Result ($\mu\text{g}/100\text{ cm}^2$)
Building 552 -- RIN 03Z0903				
552-02032003-315-101	1	5D	East wall, horizontal metal I-beam	< 0.1
552-02032003-315-102	2	5D	North wall, horizontal metal I-beam	< 0.1
552-02032003-315-103	3	5D	West wall, horizontal metal I-beam	< 0.1
552-02032003-315-104	4	4D	NE room -- north wall, horizontal I-beam	< 0.1
552-02032003-315-105	5	4D	West wall, 4" x 6" horizontal wooden beam	< 0.1
552-02032003-315-106	6	4D	SE room -- south wall, 4" x 6" horizontal wooden beam	< 0.1
552-02032003-315-107	7	3D	East wall, 4" x 6" horizontal wooden beam	< 0.1
552-02032003-315-108	8	3D	West wall, horizontal metal I-beam	< 0.1
552-02032003-315-109	9	3D	South wall, horizontal metal I-beam	< 0.1
552-02032003-315-110	10	2D	South wall, horizontal metal I-beam	< 0.1
552-02032003-315-111	11	2D	East wall, 4" x 6" horizontal wooden beam	< 0.1
552-02032003-315-112	12	2D	West wall, horizontal metal I-beam	< 0.1
552-02032003-315-113	13	1D	South wall, horizontal metal I-beam	< 0.1
552-02032003-315-114	14	1D	West bottle rack	< 0.1
552-02032003-315-115	15	1D	East side, top of propane bottle	< 0.1

CHEMICAL SAMPLE MAP

Building: 552
Room 100,101,104
Beryllium

PAGE 1 OF 2

Room 100 B552 Interior



<p>SURVEY MAP LEGEND</p> <ul style="list-style-type: none"> Asbestos Sample Location Beryllium Sample Location Lead Sample Location RCRA/CERCLA Sample Location PCB Sample Location 	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>	<p>N</p>	<p>0 FEET 25</p> <p>0 METERS 8</p> <p>1 inch = 18 feet 1 grid sq. = 1 sq. m.</p>	<p>U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707 Prepared for:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> </div> <p>MAP ID: 02-0589/552-IN1-Be April 15, 2003</p>
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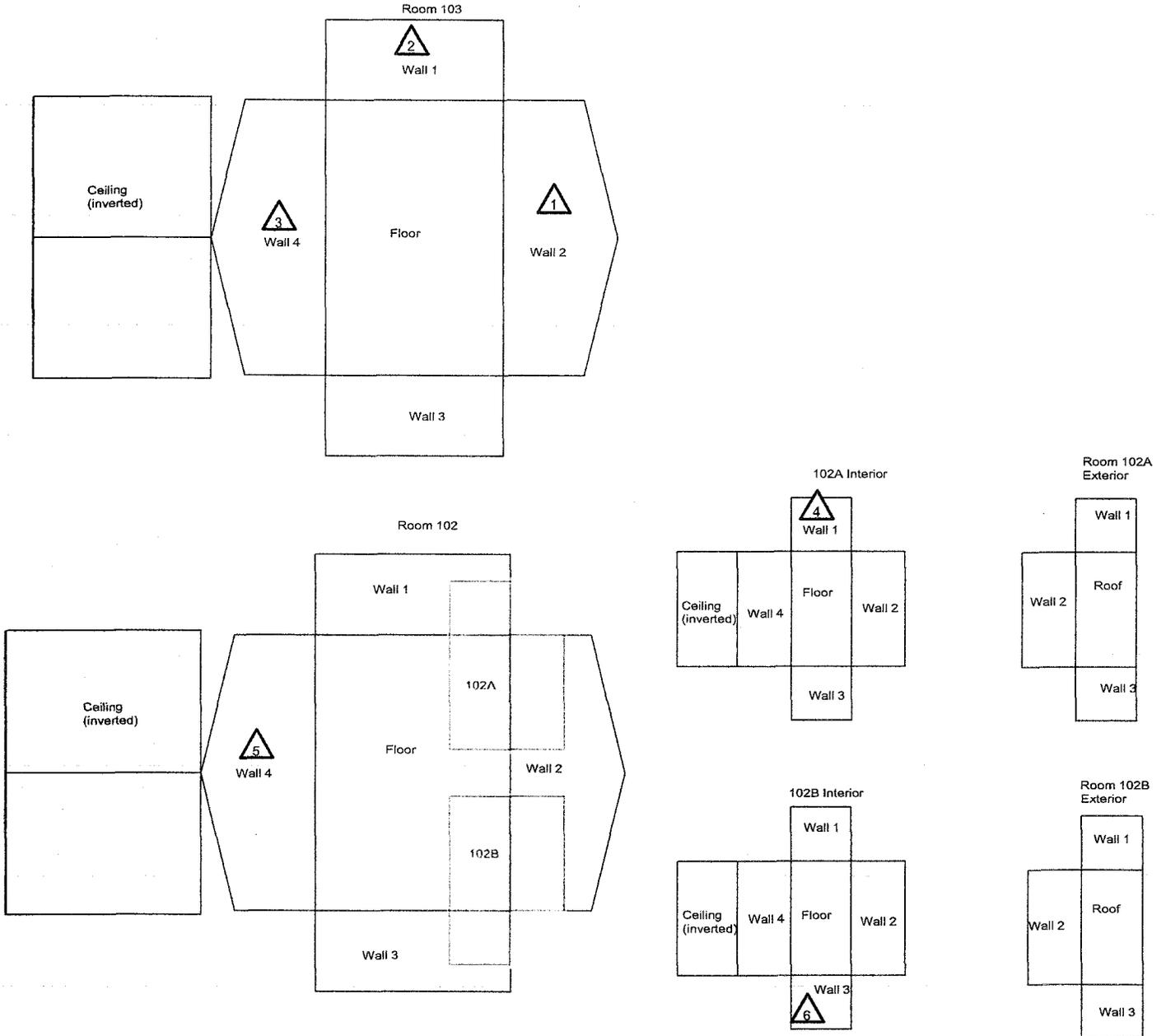
41

CHEMICAL SAMPLE MAP

Building: 552
Room 102, 102A, 102B, 103
Beryllium

PAGE 2 OF 2

B552 Interior



<p>SURVEY MAP LEGEND</p> <ul style="list-style-type: none"> Asbestos Sample Location Beryllium Sample Location Lead Sample Location RCRA/CERCLA Sample Location PCB Sample Location 	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>	<p>N</p>	<p>0 FEET 30</p> <p>0 METERS 10</p> <p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>	<p>U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707 Prepared for:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> </div> <p>MAP ID: 02-0589/552-IN2-Be April 15, 2003</p>
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ATTACHMENT E

Data Quality Assessment (DQA) Detail

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. 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 suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1 and beryllium in E-2. A data completeness summary for all results is given in Table E-3.

All relevant Quality records supporting this report are maintained in the RISS 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.

Beta/gamma survey designs were not implemented for Building 552 based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. 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/100cm²) and the Uranium DCGL_w (5,000 dpm/100cm²) unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design (for those survey units performed per PDS requirements) was optimized by checking actual measurement results (acquired during pre-demolition surveys) against model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

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. 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. All results meet the PDS unrestricted release criteria.

Any PCB ballast and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into the facility. On this basis, Building 552 meets the unrestricted release criteria with the confidences stated herein.

Table E-1 V&V of Radiological Surveys For Building 552

V&V CRITERIA, RADIOLOGICAL SURVEYS	K-H RSP 16.00 Series MARSSIM (NUREG-1575)			COMMENTS
	Parameters	Measure	Frequency	
ACCURACY	initial calibrations	90% < x < 110%	≥ 1	Multi-point calibration through the measurement range encountered in the field; programmatic records.
	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 (i.e., no elevated anomalies.)
	field duplicate measurements for TSA	≥ 5% of real survey points	≥ 10% of reals	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Unit 552-A-003 (interior) and 552-B-005 (exterior).	statistical and biased	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ± 1m.
COMPARABILITY	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.
	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-3 for details.
SENSITIVITY	detection limits	TSA: ≤ 50 dpm/100cm ² RA: ≤ 10 dpm/100cm ²	all measures	MDAs ≤ 50% DCGL _w per MARSSIM guidelines.

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Table E-2 V & V of Beryllium Results - Building 552

V&V CRITERIA, CHEMICAL ANALYSES	DATA PACKAGE	COMMENTS
BERYLLIUM	LAB ----> RIN ---->	Johns Manville, Littleton, Co. RIN 03Z0903
QUALITY REQUIREMENTS	Measure	Frequency
ACCURACY	Calibrations Initial	linear calibration
	Continuing	80%<%R<120%
	LCS/MS	80%<%R<120%
	Blanks - lab & field	<MDL
	interference check std (ICP)	NA
PRECISION	LCS/D	80%<%R<120% (RPD<20%)
	field duplicate	all results < RL
REPRESENTATIVENESS	COC	Qualitative
	hold times/preservation	Qualitative
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative
COMPARABILITY	measurement units	ug/100cm ²
COMPLETENESS	Plan vs. Actual samples usable results vs. unusable	>95% >95%
SENSITIVITY	detection limits	MDL of 0.012 ug/100cm ²
		all measures
		No qualifications significant enough to change project decisions, i.e., classification of a Type 1 facility confirmed. All results were below associated action levels.

Table E-3 Data Completeness Summary For Building 552

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	Building 552 (interior)	15 biased	15 biased	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN03Z0903 No results above action level (0.2ug/100cm ²) or investigative level (0.1 ug/100cm ²). Transuranic and/or Uranium DCGLs as applicable.
	Survey Area 3 Survey Unit: 552-A-003 Building 552 (interior)	25 α TSA (15 systematic/10 biased) and 25 α Smears (15 systematic/10 biased) 30 α TSA and 10 α Smears (equipment) 3 QC TSA 75% scan of floor; 5% of remaining interior surfaces	25 α TSA (15 systematic/10 biased) and 25 α Smears (15 systematic/10 biased) 30 α TSA and 10 α Smears (equipment) 3 QC TSA 75% scan of floor; 5% of remaining interior surfaces	No elevated contamination at any location; all values below PDS unrestricted release levels	

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Table E-3 Data Completeness Summary For Building 552

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.)
Radiological	Survey Area 3 Survey Unit: 552-B-005 Building 552 (exterior)	19 α TSA (15 random/4 biased) and 19 α Smears (15 random/4 biased) 2 QC TSA 5% scan	19 α TSA (15 random/4 biased) and 19 α Smears (15 random/4 biased) 2 QC TSA 5% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.

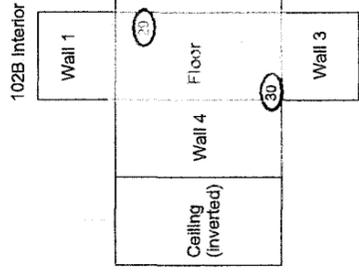
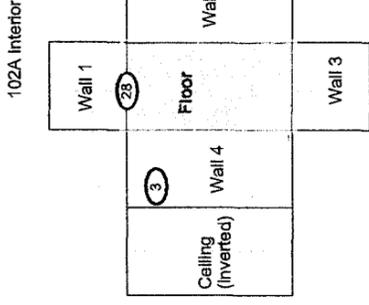
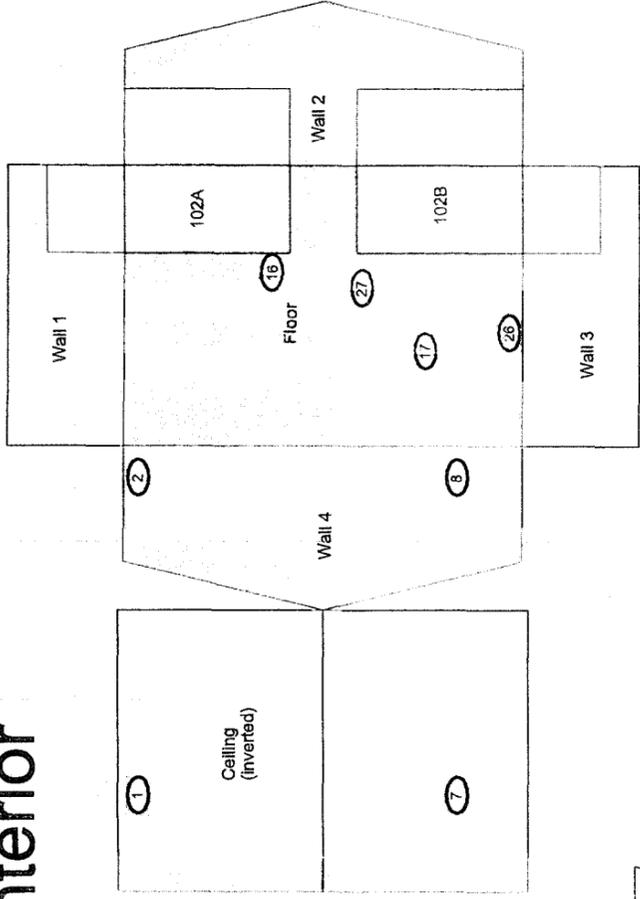
49/49

PRE-DEMOLITION SURVEY FOR AREA 3/GROUP 1
 Survey Area: 3 Survey Unit: 552-A-003 Classification: 3
 Building: 552
 Survey Unit Description: Interior of Building Total Floor Area: 385 sq. m.
 Total Area: 1645 sq. m.
 Grid Spacing for Survey Points: 10 m. X 10 m.

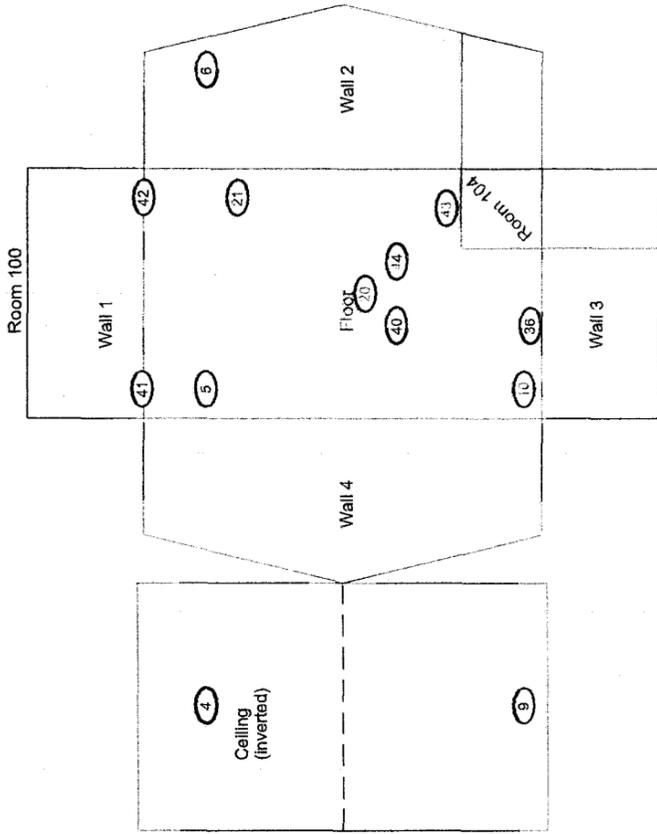
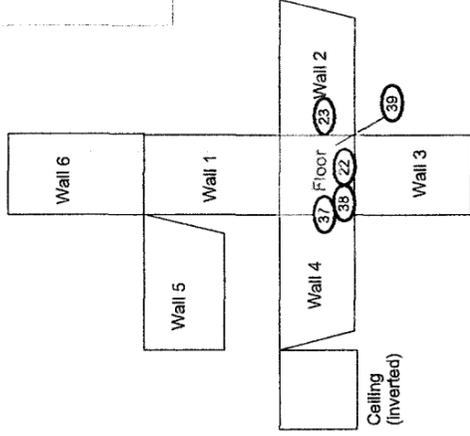
PAGE 1 OF 1

B552 Interior

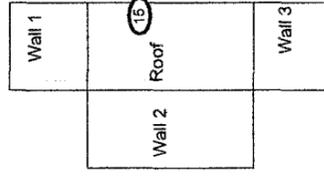
Room 102



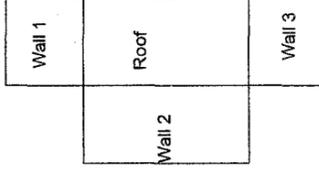
Room 104



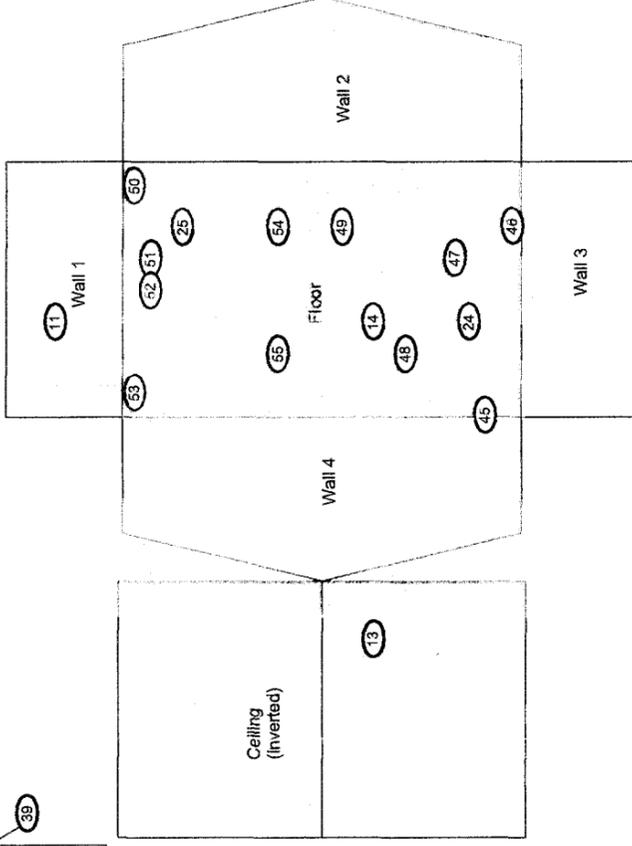
Room 102A Exterior



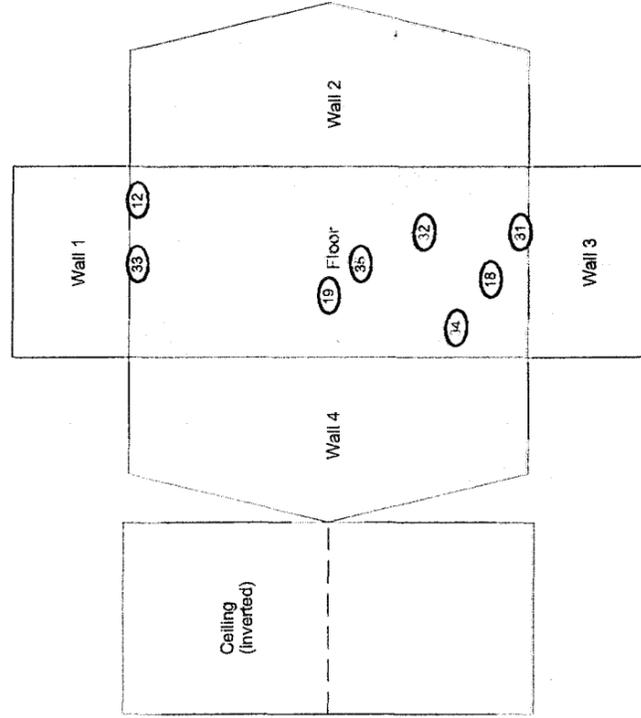
Room 102B Exterior



Room 103



Room 101

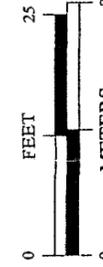


STARTING POINT FOR SQUARE SAMPLING GRID (X47, Y8)

SURVEY MAP LEGEND

- Snear & TSA Location
- ◇ Snear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
 Survey Instrument ID #(s) & RCT ID #(s):
 1, 2, 3, 4, 5, 6, 7, 8, 13, 14, 15 & 16

U.S. Department of Energy
 Rocky Flats Environmental Technology Site
 Prepared by: GIS Dept. 303-966-7707

CH2VHILL
 Communications Group

MAP ID: 02-05880552-SYS-SC April 23, 2003