



# Rocky Flats Environmental Technology Site

## TYPE 1 RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

**Buildings 557 and 869 Closure Project**

**REVISION 0**

**May 6, 2003**

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

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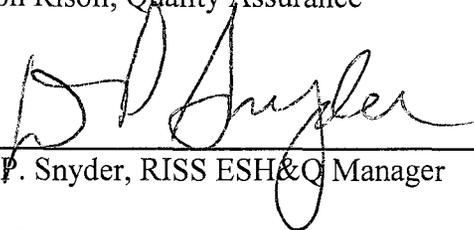
**TYPE 1  
RECONNAISSANCE LEVEL CHARACTERIZATION  
REPORT (RLCR)**

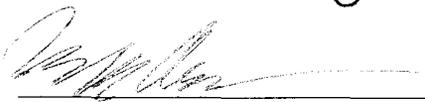
**Building 557 and 869 Closure Project**

**REVISION 0**

**May 6, 2003**

**Reviewed by:**  Date: 5-7-03  
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- A Facility Location Map
- B Historical Site Assessment Report
- C Radiological Data Summaries and Survey Maps
- D Chemical Data Summaries and Sample Maps
- E Data Quality Assessment (DQA) Detail

## 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 <sub>EMC</sub>	Derived Concentration Guideline Level – elevated measurement comparison
DCGL <sub>W</sub>	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 Buildings 557 and 869. Because these facilities were anticipated Type 1 facilities, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) requirements. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces (i.e., equipment, floor, walls, ceiling and roof). Environmental media beneath and surrounding the facilities were 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. Category 2 non-friable asbestos containing Transite panels were identified in Building 557. No friable asbestos containing building materials were identified in Buildings 557 and 869. All beryllium sample results were less than  $0.1 \mu\text{g}/100\text{cm}^2$ . Fluorescent light ballasts may contain PCBs. PCB ballasts 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. 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. Concrete associated with these facilities meets the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete.

Based upon this RLCR, Buildings 557 and 869 are considered Type 1 facilities and can be demolished or sold to offsite commerce. To ensure these facilities remain free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and the facilities posted accordingly.

## 1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Buildings 557 and 869. Because these facilities were anticipated Type 1 facilities, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facilities (i.e., equipment, floor, walls, ceiling and roof). Environmental media beneath and surrounding the facilities were 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 are Buildings 557 and 869. The location of these facilities is shown in Attachment A, *Facility Location Map*. These facilities no longer support the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before these facilities 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 (HSAR).

### 1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC effort. An RLC is performed before Type 1 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. RLC 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 for Buildings 557 and 869. Environmental media beneath and surrounding the facilities were 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.

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## 2 HISTORICAL SITE ASSESSMENT

A Facility-specific Historical Site Assessment (HSA) was conducted to understand the facility histories 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). Results were used to identify data gaps and needs, and to develop radiological and chemical characterization plans. Results of the facility-specific HSA were documented in a facility-specific *Historical Site Assessment Report (HSAR) for Area 4 Group 1 facilities*, dated July 2002, Revision 0 (refer to Attachment B, *Historical Site Assessment Report*). In summary, the HSAR identified minimal potential for radiological or chemical hazards; however, asbestos containing materials and PCBs in paint and light ballasts were possible.

## 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Buildings 557 and 869 were 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 radiological survey packages were developed for the interior of Buildings 557 and 869, including fixed equipment: 557-A-001 (building 557 interior and exterior) and 869-A-003 (building 869 interior). 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), 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, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit packages are maintained in the RISS Characterization Project files.

Fifty-four (54) TSA measurements (30 random, 10 biased, 10 equipment and 4 QC) and fifty (50) RSA measurements (30 random, 10 biased, and 10 equipment) were performed; and a minimum 5% of the facility interior and exterior surfaces were scanned. The RLC data confirmed that the facilities do 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 packages are maintained in the RISS Characterization Project files. Level 2 isolation control postings are displayed on the buildings to ensure no radioactive materials are inadvertently introduced.

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The exterior radiological surveys for Building 869 were performed as part of the RISS West Side Exterior PDS strategy effort (authorized by Department of Energy letter, 02-DOE-01598, dated December 13<sup>th</sup>, 2002 and approved by CDPHE letter, *RE: Proposed Deviations From The Pre-Demolition Survey Plan (PDSP)*, dated January 27, 2003; refer to the RISS Characterization Project Files for letter copies). The RISS West Side exterior building radiological surveys and locations can be found in survey unit package EXT-B-001, *RISS West Side Building Exteriors*. Three (3) biased TSA measurements, three (3) biased RSA measurements, and a one (1) square meter scan at each of the two TSA/RSA locations were performed at biased locations on the exterior surfaces of 869. In addition, one (1) biased TSA measurement, one (1) biased RSA measurement, and 10 percent scan surveys were performed on the concrete surfaces associated with 869. The RLC data collected in exterior survey unit package EXT-B-001 confirmed that the exterior surfaces of 869 do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey map locations for the West-Side Exterior survey unit package EXT-B-001 are maintained in the RISS Characterization Project files.

#### 4 CHEMICAL CHARACTERIZATION AND HAZARDS

Buildings 557 and 869 were 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 these facilities. 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 sampling requirements, the justification for the sample locations and estimated number of samples. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, lead and PCBs. Refer to Attachment D, *Chemical Data Summaries and Sample Maps*, for details on sample results and sample locations.

##### 4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted in the aforementioned buildings in accordance with the RLCP. A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1*. Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector.

A comprehensive, invasive asbestos inspection was conducted in Buildings 557 and 869 to determine the presence of friable and non-friable asbestos containing building materials. Only Category 2, non-friable asbestos containing Transite panels beneath the windows of Building 557 were identified during the visual inspection and building walk-down. RLC sampling of building materials suspected of containing asbestos was also conducted in Building 557 and all results were "none detected." During the Building 869 visual inspection and walk-down, no suspect asbestos containing materials were identified. On this basis, asbestos sampling was not performed in B869 as part of this RLC.

Asbestos laboratory analysis data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

#### **4.2 Beryllium (Be)**

Based on the HSAR and personnel interviews, Buildings 557 and 869 were anticipated Type 1 facilities. There was not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in these buildings. 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 for Buildings 557 and 869 were less than 0.1  $\mu\text{g}/100\text{cm}^2$ . 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 the HSAR, interviews and facility walk-downs of Buildings 557 and 869, there is no record of operations using materials that could lead to RCRA/CERCLA concerns. None of the buildings has a history of spills or releases of RCRA/CERCLA regulated materials, and there were no observations to suggest contamination. Therefore, RCRA/CERCLA constituent sampling was not performed in these facilities as part of this RLC.

Sampling for lead in paint in these facilities 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.

These facilities may contain RCRA regulated materials such as mercury switches and fluorescent lamps. 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 a review of the HSAR facility walk-downs, there is no evidence of PCB contamination in these facilities. However, Building 869 is a natural gas facility and the potential for PCBs exists in the system. This potential will be further investigated after the system has been taken out of service, and all contaminated components will be removed prior to demolition.

Based on the age of the buildings (constructed prior to 1980), paints used may contain PCBs, and painted surfaces will need to be disposed of 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 these facilities 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. All ballasts that do not indicate non PCB-containing are assumed to be PCB-containing. Leaking PCB ballasts, and those that weigh more than 9 pounds, will be removed prior to demolition and managed in accordance with Colorado hazardous waste regulations.

## 5 PHYSICAL HAZARDS

Physical hazards associated with Buildings 557 and 869 are those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. The building has been relatively well maintained and is in good physical condition, therefore, does not present hazards associated with building deterioration. Active or abandoned natural gas lines may be present near Building 869 and special care should be taken during the demolition of Building 869 to prevent inadvertent contact with these lines. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practice.

## 6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Buildings 557 and 869 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 Buildings 557 and 869 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 and PCB Bulk Product Waste. There is no radioactive or hazardous waste. Asbestos and PCB ballasts will be managed pursuant to Site asbestos and PCB abatement and waste management procedures. All concrete associated with these facilities meet the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete.

Waste Volume Estimates and Material Types							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste
557	600	0	50	0	0	5	None
869	1,000	0	50	100	0	0	None

## 8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Buildings 557 and 869 are classified as RFCA Type 1 facilities pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and can be demolished or sold to offsite commerce. The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data.

The RLC of Buildings 557 and 869 was performed in accordance with the DDCP and PDSP. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. This facility does not contain radiological or hazardous wastes. Asbestos containing materials and PCB ballasts will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. 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 facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA. All concrete associated with these facilities meet the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete.

To ensure these Type 1 facilities remains free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and the facilities 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 (HSAR) for Area 4 Group 1 facilities*, dated July 2002, Revision 0.

# ATTACHMENT A

## Facility Location Map

# Building Location for Buildings 557 & 869

## Standard Map Features

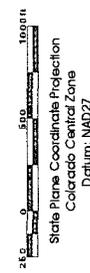
-  Buildings and other structures
-  Demolished buildings and other structures
-  Lakes and ponds
-  Streams, ditches, or other drainage features
-  Fences and other barriers
-  Paved roads
-  Dirt roads

### DATA SOURCE BASE FEATURES:

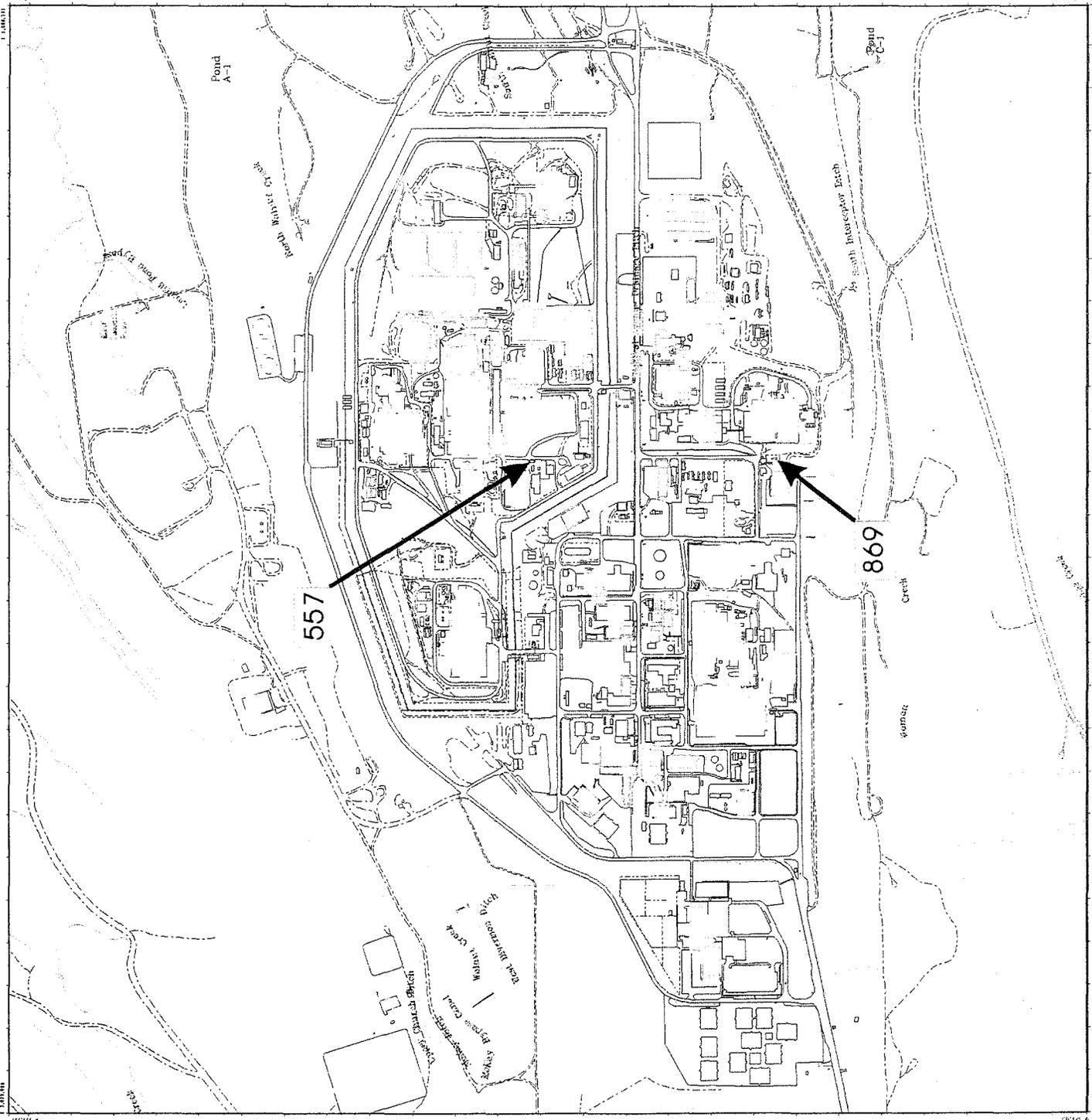
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs. 1/95



Scale = 1:12450  
1 inch represents approximately 1038 feet



State Plane, Coordinate Projection  
Colorado Central Zone  
Datum: NAD27



U.S. Department of Energy  
Rocky Flats Environmental Technology Site

GS Dept. 303-96-7707

Prepared by:  
GREGORY HILL  
GREGORY HILL  
GREGORY HILL



MAP ID: FY 2003

April 30, 2003

# ATTACHMENT B

## Historical Site Assessment Report

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

**Facility ID: (Area 4 – Group 1) - Buildings 519, 557, 566B, 710, 760B, and 869.**

Anticipated Facility Type (1, 2, or 3): Buildings 519, 557, 566B, 710, 760B, and 869 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 519**

Building 519 is a 1020 sq. ft. Alarm Maintenance Storage Building constructed in the mid 1970s. This facility is a steel frame structure with fiberboard (possibly asbestos) walls and roof. The floor is constructed with plywood. The facility has a large panel of windows on the south side of the structure.

Building 519 has no utilities, however the building did have a temporary power connection in the early 1990s.

**Building 557**

Building 557 is a 310 sq. ft. Guard Post located east of Building 559. Building 557 was constructed in 1968 and is a reinforced concrete structure with concrete walls and an insulated lightweight concrete roof. Building 557 has viewing windows on the east side of the structure and the main entrance is on the east side of the building.

Building 557 has the following utilities; electric, plant water and fire protection is provided by wall-mounted fire extinguishers.

**Building 566B**

Building 566B is a 540 sq. ft carpentry shed located east of Building 566. Building 566 was constructed in 1977 and consists of two cargo containers spaced approximately 20 feet apart with a roof constructed over the two cargo containers. The space between the cargo containers is enclosed to form the shed. The east and west walls of the building are the sides of the cargo containers and the north and south walls are constructed of wood. The roof is constructed with wooden trusses and is covered with asphalt shingles. The floor is a concrete pad.

Building 566B has no utilities. When power is needed, a temporary connection (extension cord) is made to Building 556

**Building 710**

Building 710 is a 200 sq. ft. Steam Valve House located north of Building 776. Building 710 was constructed in 1965 and has insulated sheet metal walls and roof mounted to a metal frame. The building was constructed on a concrete pad.

Building 710 has the following utilities; electric, plant steam, and fire protection is provided by wall-mounted fire extinguishers.

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**Building 869**

B869, also known as the Gas Meter House, was constructed in 1953. This building is approximately 420 square feet and consists of a concrete main structure and a metal addition attached to the north side of the building, which was constructed in 1971. This addition was installed to house the new odorizer (adds odor to the natural gas). The odorizer has been inactive since the early 1980s. There is an underground gas line heater located west of the main building. The gas-fired underground heater has been inactive since the 1980s. The main building is constructed of concrete walls and roof. The structure is built on a 3 foot thick concrete pad. Both entries have metal stairs leading to the doors.

Tank 030 is a condensate tank for the gas pipeline and is located in a vault approximately 10 feet south of B869. The vault extends approximately 3 ft below grade. The vault is constructed of concrete wall, a dirt floor and two steel lids to control access.

Building 869 has the following utilities; electric and fire protection is provided by wall mounted fire extinguishers.

**Historical Operations**

**Building 519**

Building 519 is used as an Alarm Maintenance Storage Building that supports the Alarm Maintenance Group. Since the late 1970s, Building 519 has been used to store spare parts and equipment for the Alarm Maintenance Group. During the mid 1970s the building was used as a storage building by the Building 771 Maintenance Department. This building has no history of radiological or hazardous operation. However, small quantities of cutting oil and hydraulic fluids may have been stored here in the past. Some of the instruments stored in Building 519 had lead shielding, but this equipment has been removed. Building 519 has been partially cleaned out.

**Building 557**

Building 557 is a Guard Post that was used to monitor vehicles and personnel entering the Building 559 and Building 707 restricted area. This guard post was operational during the 1969 776 fire and the area around the Guard Post was used to as a Fire response staging area. This building is located within IHSS 500-150.2 "Radioactive site west of Building 771 and 776", which documents the 1969 fire. Building 557 never housed any radiological or hazardous operations.

**Building 566B**

Building 566B is the Carpenter Shop that supported Building 776 operations. This building housed general carpentry supplies, as well as saws, sanders and drills. This shop made things such as shipping crate, custom pallets for shipping equipment and other miscellaneous carpentry work. Building 566B never housed any radiological or hazardous operations.

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**Building 710**

Building 710 is a valve house for the controlling the steam for Buildings 776 and 771. Recently the steam line to Building 776 has been isolated. During the 1969 fire, the steam pipe chase between Building 710 and 776 was contaminated. Low levels of contamination may have entered Building 710. Currently there are no radiological posting or fixed contamination labels in Building 710. Building 710 never housed any radiological or hazardous operations.

**Building 869**

Building 869 (Gas Meter House) is the reducing station for the main gas line entering the plant. Building 869 houses miscellaneous piping and valves used to reduce the pressure and distribute the gas throughout the site. Building 869 has always been used as a gas reducing station and had never housed any radiological or hazardous operations.

**Current Operational Status**

Building 519, 557, 556B, 710, and 869 are all currently active.

**Contaminants of Concern**

**Asbestos**

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

None of the building in this HSA have asbestos postings. None of the facilities in this HSA have had a comprehensive asbestos survey.

**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 resent 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 these facilities due to the age of construction. Some of the alarm equipment stored in Building 519 may have had lead shielding. This equipment has been removed during building clean-out activities.

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

**RCRA/CERCLA Constituents**

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

None of the facilities in this HSA were used as a RCRA/CERCLA storage facility. The only chemicals used in these facilities were general cleaning supplies and small quantities of oils and lubricants. On occasion Building 556B stored small quantities of paint.

See the "Environmental Concerns" section below for IHSSs and PACs associated with these buildings.

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

No known spills.

*Describe methods in which spills were mitigated, if any:*

No known spills.

**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. No PCBs operation when housed in any of these facilities.

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

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

*Describe methods in which spills were mitigated, if any:*

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

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

**Radiological Contaminants**

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

None of the buildings in this HSA are radiologically posted. None of the Building in this HSA housed any radiological operations. Building 519 stored used alarm equipment (SAMs, CAMs, etc.) for the Site Alarm Maintenance Group. Some of these alarms had a potential to be internally contaminated, however there is no evidence of any building contamination related to this activity.

Building 557 did not house any radiological operations. However, interviews indicate that the area around Building 557 was used as a fire response area during the 1969 Building 776 fire. Low levels of contamination may have been tracked into the building during response activities. Any contamination in Building 557 would be very low levels, which were not detected by the survey instruments used in 1969. Building 710 did not house any radiological operation, however the steam line pipe chase between Building 776 and 710 was contaminated during the 1969 fire. Low levels of contamination may be found on the floor of Building 710, which were not detectable by the survey instruments, used in 1969.

See the "Environmental Concerns" section below for IHSSs and PACs associated with these buildings.

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

No known Spills (except as noted above).

*Describe methods in which spills were mitigated, If any:*

No known Spills.

*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 plutonium. There were no 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  
July, 2002 Rev. 0**

<p><b>Environmental Restoration Concerns</b> Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):</p> <p>Building 566B is associated with or located near the following active IHSSs, PACs, and UBCs;</p> <p>1) IHSS 700-150.2 "Radioactive site west of Building 771 and 776", Active.</p> <p>Building 557 is associated with or located near the following active IHSSs, PACs, and UBCs;</p> <p>1) PAC 000-162 "Radioactive Site – 700 Area #2", Active.</p> <p>Building 710 is associated with or located near the following active IHSSs, PACs, and UBCs;</p> <p>1) PAC 700-131 "Radioactive Site – 700 Area #1", Active.</p> <p>Buildings 519 and 869 are not associated with or located near any IHSSs, PACs, and UBCs</p>							
<p><b>Additional Information</b> Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.):</p> <p>None</p>							
<p><b>References</b> Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews):</p> <p>Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. None of the Buildings in this HSA have a WSRIC. In addition, a facility walkdown and interviews were performed.</p>							
Waste Volume Estimates and Material Types							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
<b>Building 519</b>	0	50	50	0	0	TBD	Fiberboard (possibly asbestos) 700
<b>Building 557</b>	600	0	50	0	100	TBD	N/A
<b>Building 566B</b>	200	350	0	0	0	TBD	N/A
<b>Building 710</b>	200	0	300	300	0	TBD	N/A
<b>Building 869</b>	1000	0	50	100	0	TBD	N/A
<p><b>Further Actions</b> Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):</p> <p>Begin the RLC/PDS process.</p>							

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## ATTACHMENT C

# Radiological Data Summaries and Survey Maps

**SURVEY UNIT 557-A-001**  
**RADIOLOGICAL DATA SUMMARY - PDS**

Survey Unit Description: B557 (Interior & Exterior)

557-A-001  
PDS Data Summary

<u>Total Surface Activity Measurements</u>			<u>Removable Activity Measurements</u>		
	25	25		25	
	Number Required	Number Obtained		Number Required	Number Obtained
MIN	-7.9	dpm/100 cm <sup>2</sup>	MIN	-0.9	dpm/100 cm <sup>2</sup>
MAX	57.5	dpm/100 cm <sup>2</sup>	MAX	7.3	dpm/100 cm <sup>2</sup>
MEAN	10.8	dpm/100 cm <sup>2</sup>	MEAN	0.5	dpm/100 cm <sup>2</sup>
STD DEV	16.0	dpm/100 cm <sup>2</sup>	STD DEV	1.8	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	100	dpm/100 cm <sup>2</sup>	TRANSURANIC DCGL <sub>w</sub>	20	dpm/100 cm <sup>2</sup>

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**SURVEY UNIT 557-A-001  
TSA - DATA SUMMARY**

Manufacturer:	NE Tech	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6	DP-6
Instrument ID#:	1	2	3	8
Serial #:	1256	1261	2391	1261
Cal Due Date:	6/30/03	6/19/03	7/10/03	6/19/03
Analysis Date:	3/3/03	3/3/03	3/3/03	3/7/03
Alpha Eff. (c/d):	0.234	0.207	0.221	0.207
Alpha Bkgd (cpm)	2.0	2.7	1.3	0.0
Sample Time (min)	1.5	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5	1.5
MDC (dpm/100cm <sup>2</sup> )	48.0	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm <sup>2</sup> )	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm <sup>2</sup> )	Sample Net Activity (dpm/100cm <sup>2</sup> ) <sup>1,2</sup>
1	8	15.3	73.9	0.0	0.0	57.5
2	1	4.4	18.8	4.9	20.9	2.4
3	1	2.0	8.5	2.0	8.5	-7.9
4	1	10.0	42.7	3.3	14.1	26.3
5	3	8.7	39.4	5.3	24.0	23.0
6	3	2.7	12.2	4.7	21.3	-4.2
7	8	12.7	61.4	2.7	13.0	45.0
8	1	8.0	34.2	4.7	20.1	17.8
9	2	2.0	9.7	2.7	13.0	-6.7
10	1	4.7	20.1	3.3	14.1	3.7
11	3	4.0	18.1	3.3	14.9	1.7
12	3	8.7	39.4	6.3	28.5	23.0
13	3	6.7	30.3	4.7	21.3	13.9
14	1	4.0	17.1	2.0	8.5	0.7
15	3	6.0	27.1	3.3	14.9	10.7
16	2	3.3	15.9	0.7	3.4	-0.5
17	1	4.0	17.1	2.7	11.5	0.7
18	1	4.0	17.1	0.7	3.0	0.7
19	1	3.2	13.7	6.0	25.6	-2.7
20	1	4.7	20.1	4.0	17.1	3.7
21	2	4.7	22.7	6.7	32.4	6.3
22	3	7.8	35.3	3.3	14.9	18.9
23	1	6.0	25.6	3.3	14.1	9.2
24	1	4.0	17.1	5.3	22.6	0.7
25	3	9.3	42.1	6.2	28.1	25.7

1 - Average LAB used to subtract from Gross Sample Activity

16.4	Sample LAB Average
MIN	-7.9
MAX	57.5
MEAN	10.8
SD	16.0
Transuranic DCGL <sub>w</sub>	100

**QC Measurements**

8 QC	2.0	3.3	15.9	2.0	9.7	4.1
22 QC	1.0	5.3	22.6	3.3	14.1	10.8

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

11.9	QC LAB Average
MIN	4.1
MAX	10.8
MEAN	7.4
Transuranic DCGL <sub>w</sub>	100

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**SURVEY UNIT 557-A-001  
RSC - DATA SUMMARY**

<b>Manufacturer:</b>	Eberline	Eberline	Eberline
<b>Model:</b>	SAC-4	SAC-4	SAC-4
<b>Instrument ID#:</b>	4	5	6
<b>Serial #:</b>	767	1164	830
<b>Cal Due Date:</b>	5/13/03	6/17/03	8/25/03
<b>Analysis Date:</b>	3/3/03	3/3/03	3/3/03
<b>Alpha Eff. (c/d):</b>	0.33	0.33	0.33
<b>Alpha Bkgd (cpm)</b>	0.3	0.2	0.1
<b>Sample Time (min)</b>	2	2	2
<b>Bkgd Time (min)</b>	10	10	10
<b>MDC (dpm/100cm<sup>2</sup>)</b>	9.0	9.0	9.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm <sup>2</sup> )
1	9	1	1.5
2	4	1	0.6
3	5	3	3.9
4	6	0	-0.3
5	7	5	7.3
6	4	1	0.6
7	9	0	0.0
8	5	0	-0.6
9	6	0	-0.3
10	7	0	-0.3
11	4	0	-0.9
12	5	0	-0.6
13	6	0	-0.3
14	7	1	1.2
15	4	0	-0.9
16	5	1	0.9
17	6	1	1.2
18	7	0	-0.3
19	4	1	0.6
20	5	0	-0.6
21	6	0	-0.3
22	7	0	-0.3
23	4	1	0.6
24	5	1	0.9
25	6	0	-0.3
		<b>MIN</b>	-0.9
		<b>MAX</b>	7.3
		<b>MEAN</b>	0.5
		<b>SD</b>	1.8
		<b>Transuranic DCGL<sub>w</sub></b>	<b>20</b>

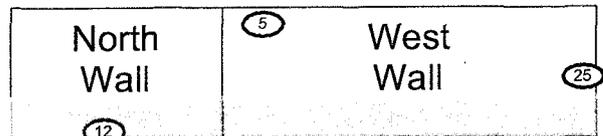
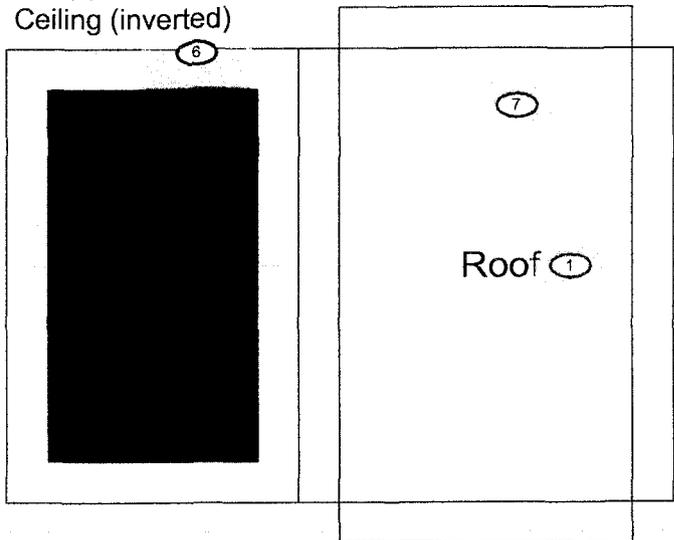
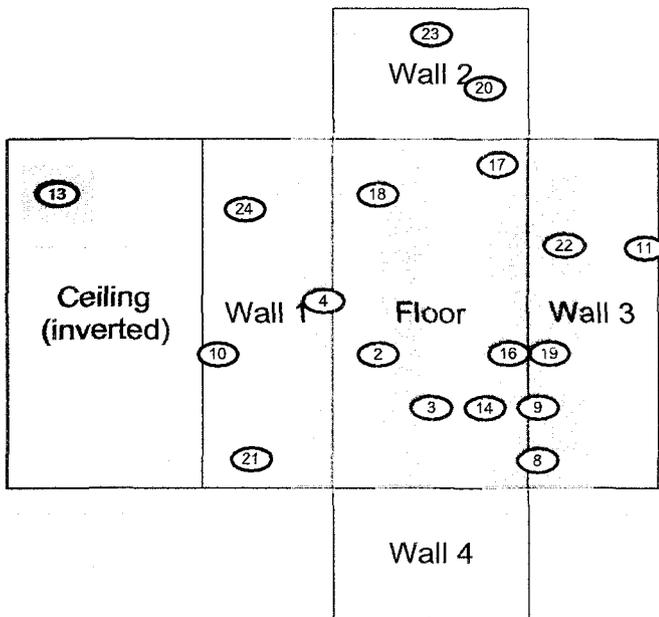
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**PRE-DEMOLITION SURVEY FOR 557**

Survey Area: 4      Survey Unit: 557-A-001      Classification: 3  
 Building: 557  
 Survey Unit Description: Interior and Exterior of 557  
 Total Area: 239 sq. m.      Total Floor Area: 24 sq. m.

# 557 Interior

# 557 Exterior



Scan Area

<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li> Smear &amp; TSA Location</li> <li> Smear, TSA &amp; Sample Location</li> <li> Open/Inaccessible Area</li> <li> Area in Another Survey Unit</li> </ul>	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;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><b>N</b></p>	<p>0      FEET      15</p>	<p>U.S. Department of Energy                  Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707      Prepared for:</p>
			<p>0      METERS      5</p> <p>1 inch = 12 feet    1 grid sq. = 1 sq. m.</p>	

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**SURVEY UNIT 869-A-003**  
**RADIOLOGICAL DATA SUMMARY - PDS**

Survey Unit Description: B869 (Interior)

869-A-003  
PDS Data Summary

<u>Total Surface Activity Measurements</u>			<u>Removable Activity Measurements</u>		
	25	25		25	
	Number Required	Number Obtained		Number Required	Number Obtained
MIN	-2.5	dpm/100 cm <sup>2</sup>	MIN	-0.9	dpm/100 cm <sup>2</sup>
MAX	60.5	dpm/100 cm <sup>2</sup>	MAX	3.6	dpm/100 cm <sup>2</sup>
MEAN	20.1	dpm/100 cm <sup>2</sup>	MEAN	0.1	dpm/100 cm <sup>2</sup>
STD DEV	14.1	dpm/100 cm <sup>2</sup>	STD DEV	1.2	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	100	dpm/100 cm <sup>2</sup>	TRANSURANIC DCGL <sub>w</sub>	20	dpm/100 cm <sup>2</sup>

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**SURVEY UNIT 869-A-003  
TSA - DATA SUMMARY**

<b>Manufacturer:</b>	NE Tech	NE Tech
<b>Model:</b>	DP-6	DP-6
<b>Instrument ID#:</b>	1	2
<b>Serial #:</b>	1366	2391
<b>Cal Due Date:</b>	6/26/03	7/10/03
<b>Analysis Date:</b>	4/10/03	4/10/03
<b>Alpha Eff. (c/d):</b>	0.209	0.220
<b>Alpha Bkgd (cpm)</b>	2.0	0.7
<b>Sample Time (min)</b>	1.5	1.5
<b>LAB Time (min)</b>	1.5	1.5
<b>MDC (dpm/100cm<sup>2</sup>)</b>	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm <sup>2</sup> )	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm <sup>2</sup> )	Sample Net Activity (dpm/100cm <sup>2</sup> ) <sup>1,2</sup>
1	1	6.7	32.1	1.3	6.2	16.7
2	1	5.3	25.4	1.3	6.2	10.0
3	2	8.7	39.5	2.7	12.3	24.2
4	1	8.7	41.6	4.0	19.1	26.2
5	1	4.7	22.5	3.3	15.8	7.1
6	2	6.7	30.5	6.0	27.3	15.1
7	1	8.7	41.6	4.0	19.1	26.2
8	1	2.7	12.9	5.3	25.4	-2.5
9	1	7.3	34.9	2.7	12.9	19.5
10	1	10.0	47.8	2.0	9.6	32.5
11	1	4.7	22.5	4.7	22.5	7.1
12	1	11.3	54.1	2.0	9.6	38.7
13	2	8.7	39.5	4.0	18.2	24.2
14	2	13.3	60.5	3.3	15.0	45.1
15	1	8.7	41.6	4.7	22.5	26.2
16	1	3.3	15.8	1.3	6.2	0.4
17	2	7.3	33.2	2.0	9.1	17.8
18	2	4.7	21.4	2.7	12.3	6.0
19	2	6.0	27.3	5.3	24.1	11.9
20	2	7.3	33.2	1.3	5.9	17.8
21	2	16.7	75.9	3.3	15.0	60.5
22	2	8.0	36.4	4.7	21.4	21.0
23	2	7.3	33.2	5.4	24.5	17.8
24	2	9.3	42.3	3.3	15.0	26.9
25	1	4.7	22.5	2.0	9.6	7.1

1 - Average LAB used to subtract from Gross Sample Activity

15.4	Sample LAB Average
MIN	-2.5
MAX	60.5
MEAN	20.1
SD	14.1
Transuranic DCGL <sub>lv</sub>	100

**QC Measurements**

21 QC	1.0	19.3	92.3	6.0	28.7	71.9
10 QC	2.0	9.3	42.3	2.7	12.3	21.8

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

20.5	QC LAB Average
MIN	21.8
MAX	71.9
MEAN	46.8
Transuranic DCGL <sub>lv</sub>	100

**SURVEY UNIT 869-A-003  
RSC - DATA SUMMARY**

<b>Manufacturer:</b>	Eberline	Eberline
<b>Model:</b>	SAC-4	SAC-4
<b>Instrument ID#:</b>	3	4
<b>Serial #:</b>	1164	952
<b>Cal Due Date:</b>	6/17/03	7/9/03
<b>Analysis Date:</b>	4/15/03	4/15/03
<b>Alpha Eff. (c/d):</b>	0.33	0.33
<b>Alpha Bkgd (cpm)</b>	0.3	0.3
<b>Sample Time (min)</b>	2	2
<b>Bkgd Time (min)</b>	10	10
<b>MDC (dpm/100cm<sup>2</sup>)</b>	9.0	9.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm <sup>2</sup> )
1	3	0	-0.9
2	4	0	-0.9
3	3	0	-0.9
4	4	2	2.1
5	3	0	-0.9
6	4	0	-0.9
7	3	0	-0.9
8	4	0	-0.9
9	3	1	0.6
10	4	1	0.6
11	3	3	3.6
12	4	1	0.6
13	3	1	0.6
14	4	1	0.6
15	3	1	0.6
16	4	0	-0.9
17	3	1	0.6
18	4	0	-0.9
19	3	0	-0.9
20	4	0	-0.9
21	3	1	0.6
22	4	1	0.6
23	3	0	-0.9
24	4	1	0.6
25	3	1	0.6
		<b>MIN</b>	-0.9
		<b>MAX</b>	3.6
		<b>MEAN</b>	0.1
		<b>SD</b>	1.2
		<b>Transuranic DCGL<sub>w</sub></b>	<b>20</b>

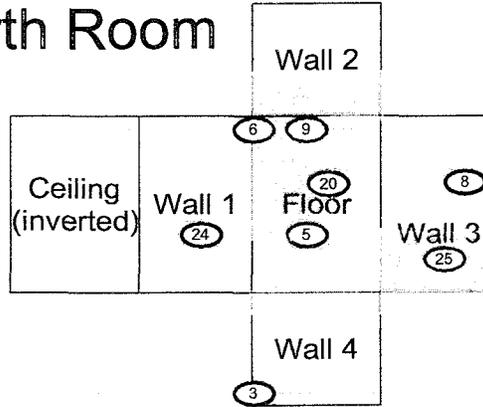
32

**PRE-DEMOLITION SURVEY FOR 869**

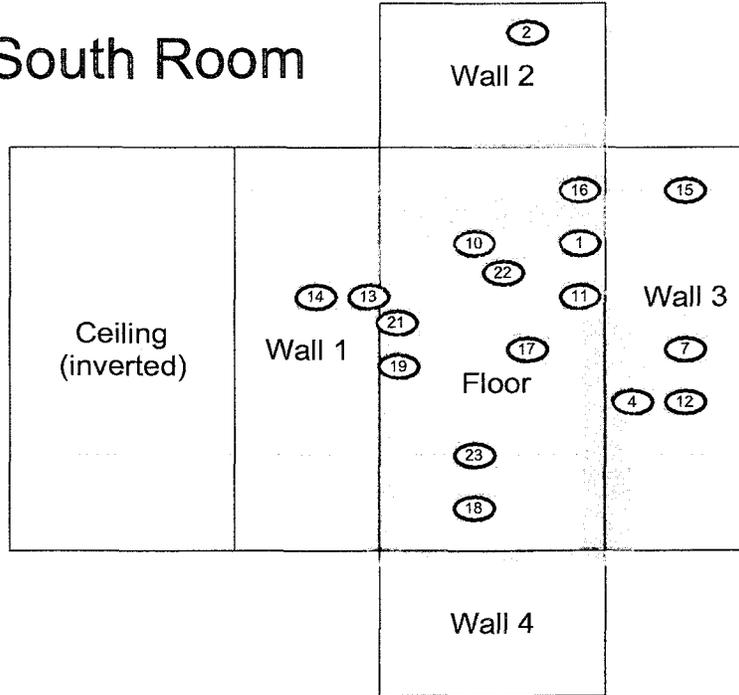
Survey Area: 4      Survey Unit: 869-A-003      Classification: 3  
 Building: 869  
 Survey Unit Description: Interior of 869  
 Total Area: 171 sq. m.      Total Floor Area: 41 sq. m.

# 869 Interior

## North Room



## South Room



Scan Area

<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li> Smear &amp; TSA Location</li> <li> Smear, TSA &amp; Sample Location</li> <li> Open/Inaccessible Area</li> <li> Area in Another Survey Unit</li> </ul>	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;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><b>N</b></p>	<p>0      FEET      15</p> <p>0      METERS      5</p>	<p>U.S. Department of Energy                  Rocky Flats Environmental Technology Site</p>
				<p>Prepared by: GIS Dept. 303-866-7707      Prepared for:</p>
<p><b>Scan Survey Information</b>                  Survey Instrument ID #(s) &amp; RCT ID #(s):                  1, 2, 5, 6</p>			<p>1 inch = 12 feet    1 grid sq. = 1 sq. m.</p>	<p> <b>CH2MHILL</b>                  Communications Group</p> <p> <b>KAISER HILL</b></p>
			<p>MAP ID: 03-0189/B869-IN</p>	<p>April 28, 2003</p>

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# ATTACHMENT D

## Chemical Data Summaries and Sample Maps

**Asbestos Data Summary**

Sample Number	Map Survey Location	Room	Material Sampled and Location	Analytical Results
<b>Building 557</b>				
557-04092003-315-201	1	Main	White paint on CMU, west wall	None Detected
557-04092003-315-202	2	Main	White paint on CMU, east wall	None Detected
557-04092003-315-203	3	Main	White paint on CMU, north wall	None Detected
557-04092003-315-204	4	Main	2' x 4' white acoustical drop ceiling tile	None Detected
557-04092003-315-205	5	Main	2' x 4' white acoustical drop ceiling tile	None Detected

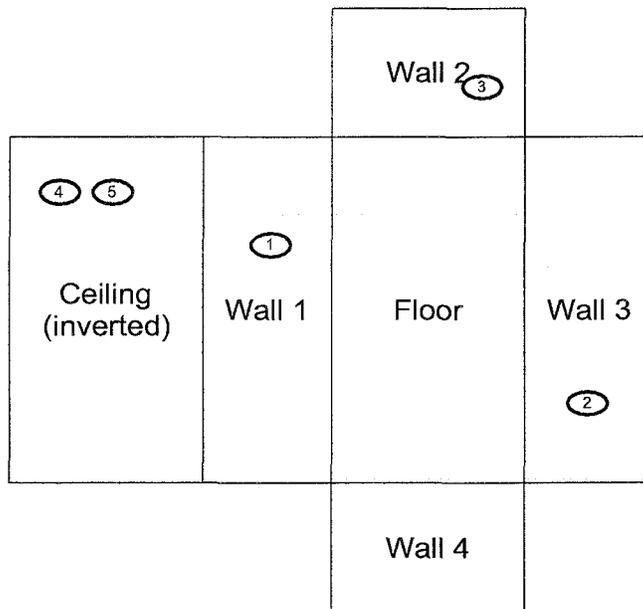
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# CHEMICAL SAMPLE MAP

Building 557 Interior  
Asbestos

PAGE 1 OF 1

## 557 Interior



<b>SURVEY MAP LEGEND</b> Asbestos Sample Location Beryllium Sample Location Lead Sample Location RCRA/CERCLA Sample Location PCB Sample Location	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.	N ↑	0 FEET 15 0 METERS 5	U.S. Department of Energy Rocky Flats Environmental Technology Site
	Open/Inaccessible Area Area in Another Survey Unit		1 inch = 12 feet 1 grid sq. = 1 sq. m.	Prepared by: GIS Dept. 303-966-7707 Prepared for: CH2MHILL Communications Group KAISER HILL MAP ID: 03-0189/B557-IN-ASB April 18, 2003

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### Beryllium Data Summary

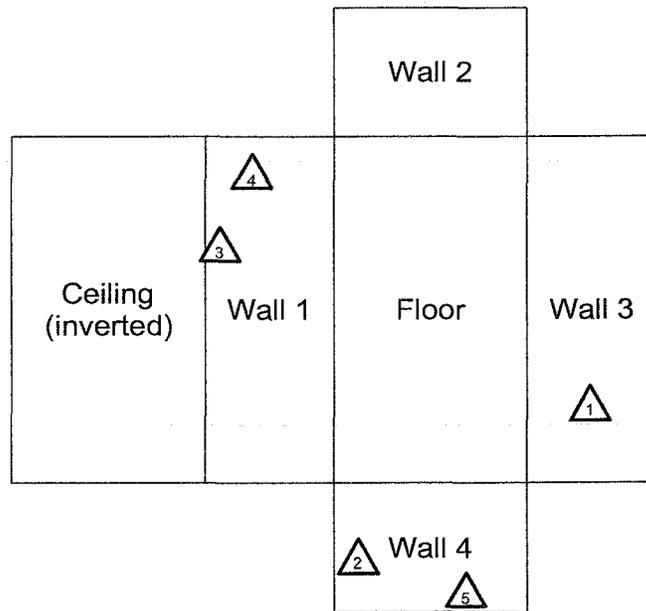
Sample Number	Map Survey Point Location	Room	Sample Location	Result ( $\mu\text{g}/100 \text{ cm}^2$ )
<b>Building 869</b>				
869-040903-315-101	1	South	On gas pipe	< 0.1
869-040903-315-102	2	South	On gas flange	< 0.1
869-040903-315-103	3	South	On gas pipe	< 0.1
869-040903-315-104	4	South	On concrete floor	< 0.1
869-040903-315-105	5	South	On gas pipe	< 0.1
<b>Building 557</b>				
557-040903-315-101	1	Main	Top of JB 557 electrical box	< 0.1
557-040903-315-102	2	Main	Top of locker, NE corner	< 0.1
557-040903-315-103	3	Main	Top of electrical conduit, east wall	< 0.1
557-040903-315-104	4	Main	Top of door-return arm, front door	< 0.1
557-040903-315-105	5	Main	Top of metal brace to space heater, north wall	< 0.1

# CHEMICAL SAMPLE MAP

Building 557 Interior  
Beryllium

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## 557 Interior



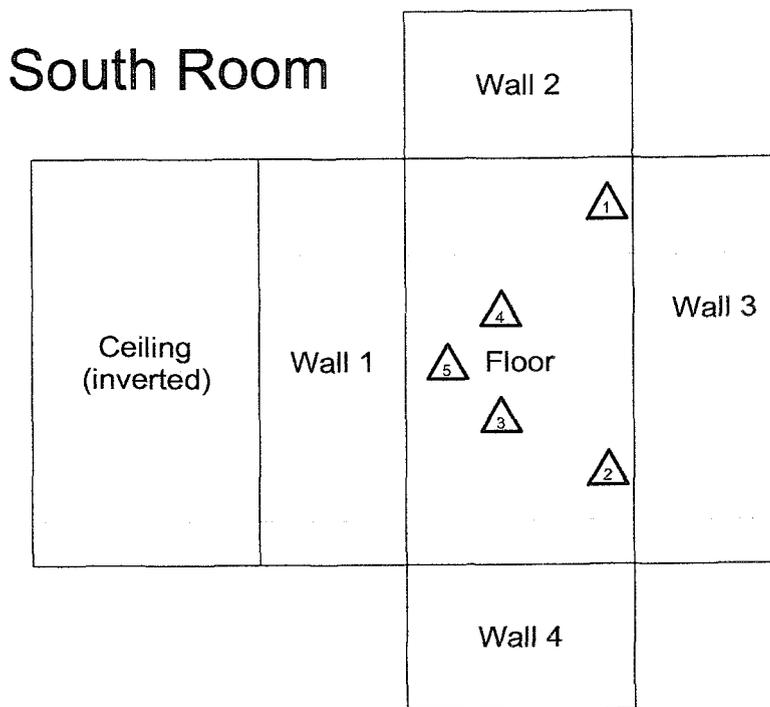
<b>SURVEY MAP LEGEND</b> Asbestos Sample Location Beryllium Sample Location Lead Sample Location RCRA/CERCLA Sample Location PCB Sample Location	Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express 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.	<b>N</b> ↑	0 FEET 15 0 METERS 5	U.S. Department of Energy Rocky Flats Environmental Technology Site
			1 inch = 12 feet 1 grid sq. = 1 sq. m.	Prepared by: GIS Dept. 303-966-7707 Prepared for: CH2M HILL Communications Group KAISER HILL MAP ID: 03-0189/B557-IN-BE April 18, 2003

# CHEMICAL SAMPLE MAP

Building 869 Interior  
Beryllium

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## 869 Interior



<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li> Asbestos Sample Location</li> <li> Beryllium Sample Location</li> <li> Lead Sample Location</li> <li> RCRA/CERCLA Sample Location</li> <li> PCB Sample Location</li> </ul>	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;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><b>N</b></p>	<p>0      FEET      15</p> <p>0      METERS      5</p> <p>1 inch = 12 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: 03-0189/B869-IN-BE      April 18, 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 asbestos and 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, asbestos in E-2, and beryllium in E-3. A data completeness summary for all results is given in Table E-4.

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 Buildings 557 and 869 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<sub>w</sub> (100 dpm/100cm<sup>2</sup>) and the Uranium DCGL<sub>w</sub> (5,000 dpm/100cm<sup>2</sup>) 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 certainties.

All beryllium results were less than associated action levels (0.1 µg/100cm<sup>2</sup>) also confirming a Type 1 facility classification.

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 was within acceptable limits. All radiological results meet the PDS unrestricted release criteria.

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, Buildings 557 and 869 meets the unrestricted release criteria with the confidences stated herein.

**Table E-1 V&V of Radiological Surveys – Buildings 557 and 869**

V&V CRITERIA, RADIOLOGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)	
QUALITY REQUIREMENTS			
Parameters	Measure	frequency	COMMENTS
<b>ACCURACY</b>	initial calibrations	90% < x < 110%	Multi-point calibration through the measurement range encountered in the field; programmatic records.
	daily source checks	80% < x < 120%	Performed daily/within range.
<b>PRECISION</b>	local area background: Field	typically < 10 dpm	All local area backgrounds were within expected ranges (i.e., no elevated anomalies.)
	field duplicate measurements for TSA	≥ 5% of real survey points	N/A
<b>REPRESENTATIVENESS</b>	MARSSIM methodology: Survey Units 557-A-001 (interior and exterior), 869-A-003 (interior) and EXT-B-001 (exterior).	statistical and biased	Random w/ statistical confidence.
	Survey Maps	NA	Random and biased measurement locations controlled/mapped to ± 1m.
<b>COMPARABILITY</b>	Controlling Documents (Characterization Pkg; RSPs)	qualitative	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 <sup>2</sup>	Use of standardized engineering units in the reporting of measurement results.
<b>COMPLETENESS</b>	Plan vs. Actual surveys	> 95%	See Table E-4 for details.
	usable results vs. unusable	> 95%	
<b>SENSITIVITY</b>	detection limits	TSA: ≤ 50 dpm/100cm <sup>2</sup> RA: ≤ 10 dpm/100cm <sup>2</sup>	MDAs ≤ 50% DCGL <sub>w</sub> per MARSSIM guidelines.

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**Table E-2 V&V of Asbestos Results – Buildings 557 and 869**

V&V CRITERIA, CHEMICAL ANALYSES ASBESTOS	DATA PACKAGE		COMMENTS
	METHOD: EPA 600/R-93/116	LAB ----> Reservoirs Environmental, Inc	
		RIN ----> RIN03Z1394 (Building 557)	
<b>QUALITY REQUIREMENT</b>	<b>Measure</b>	<b>Frequency</b>	
<b>ACCURACY</b>	Calibrations: Initial/continuing	≥ 1	Semi-quantitative, per (microscopic) visual estimation.
<b>PRECISION</b>	Actual Number Sampled LCSD Lab duplicates	≥ 5 samples	Semi-quantitative, per (microscopic) visual estimation.
<b>REPRESENTATIVENESS</b>	COC	NA	Chain-of-Custody intact: completed paperwork, containers w/ custody seals.
	Hold times/preservation	NA	N/A
	Controlling Documents (Plans, Procedures, maps, etc.)	NA	See original Chemical Characterization Package (planning document); for field/sampling procedures (located in project file); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
<b>COMPARABILITY</b>	Measurement Units	NA	Use of standardized engineering units in the reporting of measurement results.
<b>COMPLETENESS</b>	Plan vs. Actual samples Usable results vs. unusable	NA	See Table E-4; final number of samples at Certified Inspector's discretion.
<b>SENSITIVITY</b>	Detection limits	all measures	N/A

**Table E-3 V&V of Beryllium Results – Buildings 557 and 869**

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE	
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB -----> Johns Manville, Littleton, Co.	
QUALITY REQUIREMENTS		RIN -----> RIN03Z1395	
ACCURACY	QUALITY REQUIREMENTS	Measure	Frequency
BERYLLIUM	Calibrations	Linear	≥1
	Initial	calibration	≥1
	Continuing	80% < %R < 120 %	≥1
	LCS/MS	80% < %R < 120 %	≥1
	Blanks - lab & field	<MDL	≥1
PRECISION	interference check std (ICP)	NA	NA
	LCSD	80% < %R < 120 %	≥1
	field duplicate	(RPD < 20%) 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 <sup>2</sup>	NA
COMPLETENESS	Plan vs. Actual samples	>95%	NA
	usable results vs. unusable	>95%	NA
SENSITIVITY	detection limits	MDL of 0.012 ug/100cm <sup>2</sup>	all measures
		COMMENTS	
		No qualifications significant enough to change project decisions i.e., classification of Type I facilities is confirmed. All results were below associated action levels.	

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**Table E-4 Data Completeness Summary – Buildings 557 and 869**

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Asbestos	Building 557 - (interior)	6 biased	5 biased	No ACM present, all results < 1% by volume	40 CFR 763.86; 5 CCR 1001-10; EPA 600/R-93/116  RIN03Z1394  Non-friable asbestos containing materials (transite panels) were identified in building 557 during the building walk-down and visual inspection. These will be managed in accordance with Regulation 8 requirements.
Beryllium	Building 557 - (interior)	5 biased	5 biased	No beryllium contamination found, all results less than associated action levels	OSHA ID-125G  RIN03Z1395  No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1 ug/100cm <sup>2</sup> ).
Beryllium	Building 869 - (interior)	5 biased	5 biased	No beryllium contamination found, all results less than associated action levels	OSHA ID-125G  RIN03Z1395  No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1 ug/100cm <sup>2</sup> ).

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**Table E-4 Data Completeness Summary – Buildings 557 and 869**

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiochemical	Survey Area 4 Survey Unit: 557-A-001 Building 557 – (interior and exterior)	20 α TSA (15 random/5 biased) and 20 α Smears (15 random/5 biased)	20 α TSA (15 random/5 biased) and 20 α Smears (15 random/5 biased)	No elevated contamination found at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.
Radiochemical	Survey Area 4 Survey Unit: 869-A-003 Building 869 (interior)	5 α TSA and 5 α Smears Equipment 2 QC TSA 5% scan	5 α TSA and 5 α Smears Equipment 2 QC TSA 5% scan	No elevated contamination found at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.

A - Asbestos Sample Number Planned is only an estimate, actual sample numbers are determined during the inspection.