NOTICE

All drawings located at the end of the document.

Rocky Flats Environmental Technology Site

PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDING 865 LOW BAY

REVISION 0

April 15, 2003

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

1/55

PRE-DEMOLITION SURVEY REPORT (PDSR)

BUILDING 865 LOW BAY

REVISION 0

April 15, 2003

Reviewed by: _____ Date: 4-14-03
Don Risoli, Quality Assurance

Reviewed by: _____ Date: 4/15/03
D.P. Snyder, RISS ESH&Q Manager

Approved by: _____ Date: _____
Karen Wiemelt, K-H D&D Project Manager

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ATTACHMENTS

ABBREVIATIONS/ACRONYMS

ACM	Asbestos Containing Material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
HEUN	Highly Enriched Uranyl Nitrate
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSA	Removable Surface Activity
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 Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 865 Low Bay. Because this Type 2 building will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). Building surfaces characterized as part of this PDS included Building 865 Low Bay interior floor, walls and ceiling. Building 865 exterior was characterized in accordance with Pre-Demolition Survey Plan (MAN-127-PDSP) requirements as part of the Building 865 Cluster RLCR completed on September 17, 2001. The PDS of Building 865 interior High Bay will be performed in the future and documented in a stand-alone PDSR. Environmental media beneath and surrounding Building 865 Low Bay was not within the scope of this PDS and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

The PDS encompassed both 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 and Reconnaissance Level Characterization Report for the Building 865 Cluster.

PDS results indicated that no beryllium or RCRA/CERCLA constituents exist in excess of the PDSP unrestricted release limits. All beryllium results obtained during the PDS were below the investigative level of 0.1 $\mu g/100cm^2$. Any potentially PCB-containing fluorescent light ballast and hazardous waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) were previously removed from the building and do not impact demolition activities. Asbestos containing roof flashing still remains on the 865 Low Bay and will be removed before demolition activities commence.

Radiological contamination was found in two locations during the PDS (i.e., inside an embedded pipe between the Low Bay and High Bay common wall and in a crack in the floor slab). The embedded pipe was physically removed and PDS follow up surveys verified the contamination was removed. The crack in the floor slab will be managed as radioactive and beryllium waste during demolition of the slab. Elevated radiological contamination was identified in the utility trench in the 865 Low Bay floor slab. Further investigation surveys indicated all elevated areas in the trench were less that the uranium PDS unrestricted release limits.

Based upon this PDSR, the Building 865 Low Bay can be demolished and the waste managed as PCB Bulk Product waste or as sanitary waste, and the concrete can be used for backfill on-site per the RFCA RSOP for Recycling Concrete. The portion of the slab where elevated radioactivity was detected shall be managed as radioactive and beryllium waste and cannot be used for backfill on-site per the RFCA RSOP for Recycling Concrete. All under-slab utilities and piping systems shall be managed as radioactive and beryllium waste during demolition. The common wall between the Low Bay and the High Bay shall not be demolished until the High Bay PDS is completed verifying the common wall is acceptable for demolition. To ensure that the facility remains free of contamination and PDS data remain valid, Level 1-isolation controls have been established, and the area posted accordingly.

1 INTRODUCTION

A Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of Building 865 Low Bay. Because this Type 2 building will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). Building surfaces characterized as part of this PDS included Building 865 Low Bay interior floor, walls and ceiling. Building 865 exterior was characterized in accordance with Pre-Demolition Survey Plan (MAN-127-PDSP) requirements as part of the Building 865 Cluster RLCR completed on September 17, 2001. The PDS of the 865 interior High Bay will be performed in the future and documented in a stand-alone PDSR. Environmental media beneath and surrounding the 865 Low Bay was not within the scope of this PDS and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. Among these is Building 865 Low Bay. 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 Type 2 facility can be demolished, the Data Quality Objectives (DQOs) for a Pre-Demolition Survey (PDS) must be satisfied; this document presents the PDS results for Building 865 Low Bay. 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 is built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report and Reconnaissance Level Characterization Report for the Building 865 Cluster, dated July 2001, Revision 0.

1.1 Purpose

The purpose of this report is to communicate and document the results of the Building 865 Low Bay PDS effort. A PDS is performed prior to building demolition to define the pre-demolition radiological and chemical conditions of a facility. The pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants. PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

1.2 Scope

This report presents the pre-demolition radiological and chemical conditions of Building 865 Low Bay. Environmental media beneath and surrounding the facilities are not within the scope of this PDSR and will be addressed in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

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1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this PDS 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) and Reconnaissance Level Characterization (RLC) was conducted to understand the facility history and related hazards. The HSA consisted of facility walkdowns, interviews, and document review, including review of the Historical Release Report, and were used to design the RLC. The Building 865 RLC was performed in September 2001, as part of the Building 865 Cluster RLCR (Refer to *Reconnaissance Level Characterization Report for the Building 865 Cluster,* dated September 17, 2001, Revision 0). Based on the RLC results, beryllium and radiological contamination were identified, and Building 865 was classified as a Type 2 facility. Therefore, a PDS characterization was required before demolition of the facility. This report documents the results of that PDS. The HSA and RLC results were used to identify PDS data gaps and needs, and to develop radiological and chemical PDS characterization packages. HSA and RLC documentation are located in the RISS Characterization Project files.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

The Building 865 Low Bay 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 the RLC, historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to the RISS Characterization Project files for the 865 Low Bay Radiological Characterization Plan). Based on RLC data, and historical and process knowledge, transuranic activity is not a concern inside the 865 building, therefore, the 865 Low Bay PDS was performed to the uranium PDS unrestricted release criteria. Two radiological survey unit packages were developed: 865-LB-001 and 865-LB-002 for the 865 Low Bay interior. Individual radiological survey unit packages are maintained in the RISS Characterization Project files.

The Building 865 Low Bay survey unit packages were developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control*. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps are presented in Attachment B, *Radiological Data Summary and Survey Maps*.

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B865 Low Bay Interior – Floor and Walls Below 2 Meters (Survey Unit 865-LB-001)

The 865 Low Bay floor and walls below 2 meters were classified as a MARSSIM Class 1 Survey Unit. A total of 179 TSA measurements (170 systematically grid, 9 QC), 170 RSA measurements (170 systematically grid), and 277 TSA investigative measurements in the utility trench were collected. Surface scan surveys of 100% of the floor and wall surfaces below 2 meters (1,404 m^2) were also performed. Additionally, twenty-five (25) media samples collected throughout the Low Bay as part of the in-process characterization surveys are included in this report.

Fixed radiological contamination up to 29,977 dpm/100cm^2 was found in survey unit 865-LB-001 in a crack in the floor slab. The crack in the floor slab and surrounding concrete will be managed as radioactive and beryllium waste during demolition of the slab. Refer to the survey map in Attachment B-1 for the location of the elevated crack in the floor slab.

Elevated radiological contamination was identified in the utility trench in the 865 Low Bay floor slab. Further investigation surveys indicated all elevated areas in the trench were less that the uranium PDS unrestricted release limits (i.e., < 1,000 dpm/100cm^2 removable surface activity, < 5,000 dpm/100cm^2 average total surface activity, and no hot spots within 1 m^2 over 15,000 dpm/100cm^2), therefore, no further investigations were warranted. All other locations and surveys in survey unit 865-LB-001 were less than the applicable PDS uranium DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 865-LB-001 are presented in Attachment B-1, *Radiological Data Summary and Survey Maps*.

B865 Low Bay Interior – Ceiling and Walls Above 2 Meters (Survey Unit 865-LB-002)

The 865 Low Bay ceiling and walls above 2 meters were classified as a MARSSIM Class 2 Survey Unit. A total of 20 TSA measurements (18 systematically grid, and 2 QC) and 18 RSA measurements (18 systematically grid) were taken and scan surveys performed. Surface scan surveys of a minimum of 25% of the ceiling and wall surfaces above 2 meters (560 m^2) were performed.

Fixed radiological contamination up to 26,469 dpm/100cm^2 was found in survey unit 865-LB-002 inside an embedded pipe between the Low Bay and High Bay common wall. The contaminated embedded pipe was physically removed and PDS follow up scan surveys verified the contamination was removed. All other locations and surveys in survey unit 865-LB-002 were less than the applicable PDS uranium DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 865-LB-002 are presented in Attachment B-2, *Radiological Data Summary and Survey Maps*.

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Building 865 exterior was characterized in accordance with Pre-Demolition Survey Plan (MAN-127-PDSP) requirements as part of the Building 865 Cluster RLCR completed September 17, 2001. All of the exterior surveys performed during the Building 865 Cluster RLCR were less than the applicable PDS uranium DCGL values. An additional confirmatory survey of the 865 Low Bay exterior was performed during the 865 Low Bay interior PDS survey, all results were less than the applicable PDS transuranic and uranium DCGL values and are presented in Attachment B-3, *Radiological Data Summary and Survey Maps*. To ensure that the facility remains free of contamination and PDS data remain valid, Level 1-isolation controls have been established, and the area posted accordingly.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Building 865 Low Bay 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 865 Low Bay. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan was developed during the planning phase that describes sampling requirements and the justification for the sample locations and estimated sample numbers. The contaminants of concern were asbestos, beryllium, metals, RCRA/CERCLA constituents and polychlorinated biphenyls (PCBs). Refer to Attachment C, *Chemical Summary Data and Sample Maps*, for details on sample results and sample locations. Isolation control postings are displayed on affected structures to ensure no hazardous materials are introduced.

4.1 Asbestos

Prior to the PDS, asbestos abatement was conducted in the Low Bay of Building 865. During abatement, friable and non-friable asbestos containing building materials were removed per CDPHE, Regulation No. 8, Part B, "Emission Standards for Asbestos." Asbestos containing roof flashing still remains on the 865 Low Bay and will be removed before demolition activities commence. No additional asbestos bulk sampling was required as part of this PDS.

4.2 Beryllium (Be)

Random and biased beryllium smear samples were collected in accordance with the PDSP and the *Beryllium Characterization Procedure,* PRO-536-BCPR, Revision 0, September 9, 1999.

All beryllium smear sample results from the 865 Low Bay during the PDS were less than the investigative limit of 0.1 $\mu g/100cm^2$. PDS beryllium laboratory sample data and location maps are contained in Attachment C, *Chemical Data Summaries and Sample Maps*.

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

Based on the *Reconnaissance Level Characterization Report for the Building 865 Cluster*, Revision 0, dated September 17, 2001, personnel interviews, facility walk-downs and a review of historical WEMS/WSRIC processes, Building 865 Low Bay did not contain waste storage units. There is no evidence that any activities have led to contamination of the building structure or slab. A visual inspection of the building by RISS Environmental Compliance personnel verified the absence of hazardous waste stains and/or residuals on the interior walls, ceiling, and concrete floor slab. On this basis, RCRA/CERCLA sampling was not performed as part of this PDS. The concrete from the low bay demolition may be used for onsite recycling in accordance with the Concrete Recycling RSOP (except for the previously discussed area of the floor slab where radiological contamination was identified and will be managed as radioactive and beryllium waste).

The building may have contained some RCRA regulated items, such as mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury containing gauges, circuit boards, and lead-acid batteries. However, these items have been removed and are being managed in accordance with the Colorado Hazardous Waste Act.

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSAR for the Building 865 Cluster, personnel interviews, facility walk-downs and a review of historical WSRIC processes, Building 865 Low Bay does not have a history of PCB use or storage. During equipment removal, three small areas of oil stains were noted and in-process sampling was conducted to ensure no PCB contamination was present. All sample results were negative for PCB contamination. The facility may have contained PCB fluorescent light ballasts, however, all PCB ballasts have been removed from the facility and will not impact decontamination and decommissioning activities. On this basis, PCB sampling was not performed as part of the PDS.

Based on the age of Building 865, paints used on the facility may contain PCBs, therefore, painted surfaces will be managed 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).

5 PHYSICAL HAZARDS

Physical hazards associated with Building 865 Low Bay consists of those common to standard industrial environments, and include hazards associated with energized systems, utilities, and trips and falls. There are no other unique hazards associated with the facility. The facility has been relatively well maintained and is in good physical condition, therefore, does not present hazards associated with building deterioration.

During demolition, the common wall between the Low Bay and the High Bay shall not be demolished until the High Bay PDS is completed verifying the common wall is acceptable for demolition. This common wall must remain intact during demolition of the 865 Low Bay, in order to maintain the structural integrity of the High Bay, as well as, maintain the containment of the beryllium and radiological hazards within the High Bay. 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 865 Low Bay, and consequent waste management, is of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments B and C) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original project DQOs.

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

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

Details of the DQA are provided in Attachment D.

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Building 865 Low Bay will generate a variety of wastes. Estimated waste types and waste volumes are presented below. All wastes can be disposed of as sanitary waste, except PCB Bulk Product Waste, asbestos containing roof flashing, and the previously discussed area of the floor slab where radiological contamination was identified and will be managed as radioactive and beryllium waste. Refer to the survey map in Attachment B-1 for the location of the elevated crack in the floor slab. PCB ballast and hazardous waste items have been removed and managed pursuant to Site PCB and waste management procedures. Concrete surfaces can be used as backfill onsite in accordance with the RFCA RSOP for Recycling Concrete, with the exception of the previously discussed area of the floor slab where radiological contamination was identified and will be managed as radioactive and beryllium waste.

WASTE TYPES AND VOLUME ESTIMATES

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)
865 Low Bay	15,000	0	100	10	0	73 Roof Flashing	Floor Slab LLW/Be Waste – 12

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building 865 Low Bay is classified as an RFCA Type 2 facility pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and is ready for demolition. The PDS for Building 865 Low Bay was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Environmental media beneath and surrounding the facilities will be addressed at a future date in accordance with the Soil Disturbance Permit process and in compliance with RFCA.

PDS results indicated that no beryllium or RCRA/CERCLA constituents exist in excess of the PDSP unrestricted release limits. All beryllium results obtained during the PDS were below the investigative level of 0.1 $\mu g/100cm^2$. Any potentially PCB-containing fluorescent light ballast and hazardous waste items (e.g., mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury-containing gauges, circuit boards, leaded glass, and lead-acid batteries) were previously removed from the building, therefore, do not impact demolition activities. Asbestos containing roof flashing still remains on the 865 Low Bay and will be removed before demolition activities commence.

Radiological contamination was found in two locations during the PDS (i.e., inside an embedded pipe between the Low Bay and High Bay common wall and in a crack in the floor slab). The doorframe and embedded pipe were physically removed and PDS follow up surveys verified the contamination was removed. The crack in the floor slab will be managed as radioactive and beryllium waste during demolition of the slab. Elevated radiological contamination was identified in the utility trench in the Building 865 Low Bay floor slab. Further investigation surveys indicated all elevated areas in the trench were less that the uranium PDS unrestricted release limits.

Based upon this PDSR, the Building 865 Low Bay can be demolished and the waste managed as PCB Bulk Product waste or as sanitary waste, and the concrete can be used for backfill on-site per the RFCA RSOP for Recycling Concrete. The portion of the floor slab where elevated radioactivity was detected shall be managed as radioactive and beryllium waste and cannot be used for backfill on-site per the RFCA RSOP for Recycling Concrete. All under-slab utilities and piping systems shall be managed as radioactive and beryllium waste during demolition. The common wall between the Low Bay and the High Bay shall not be demolished until the High Bay PDS is completed verifying the common wall is acceptable for demolition. To ensure that the facility remains free of contamination and that PDS data remain valid, Level 1-isolation controls have been established, and the area 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*

DOE Order 414.1A, *Quality Assurance*

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. 4, July 15, 2002.

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

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

PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure,* Rev. 1, May 22, 2001.

PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 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.

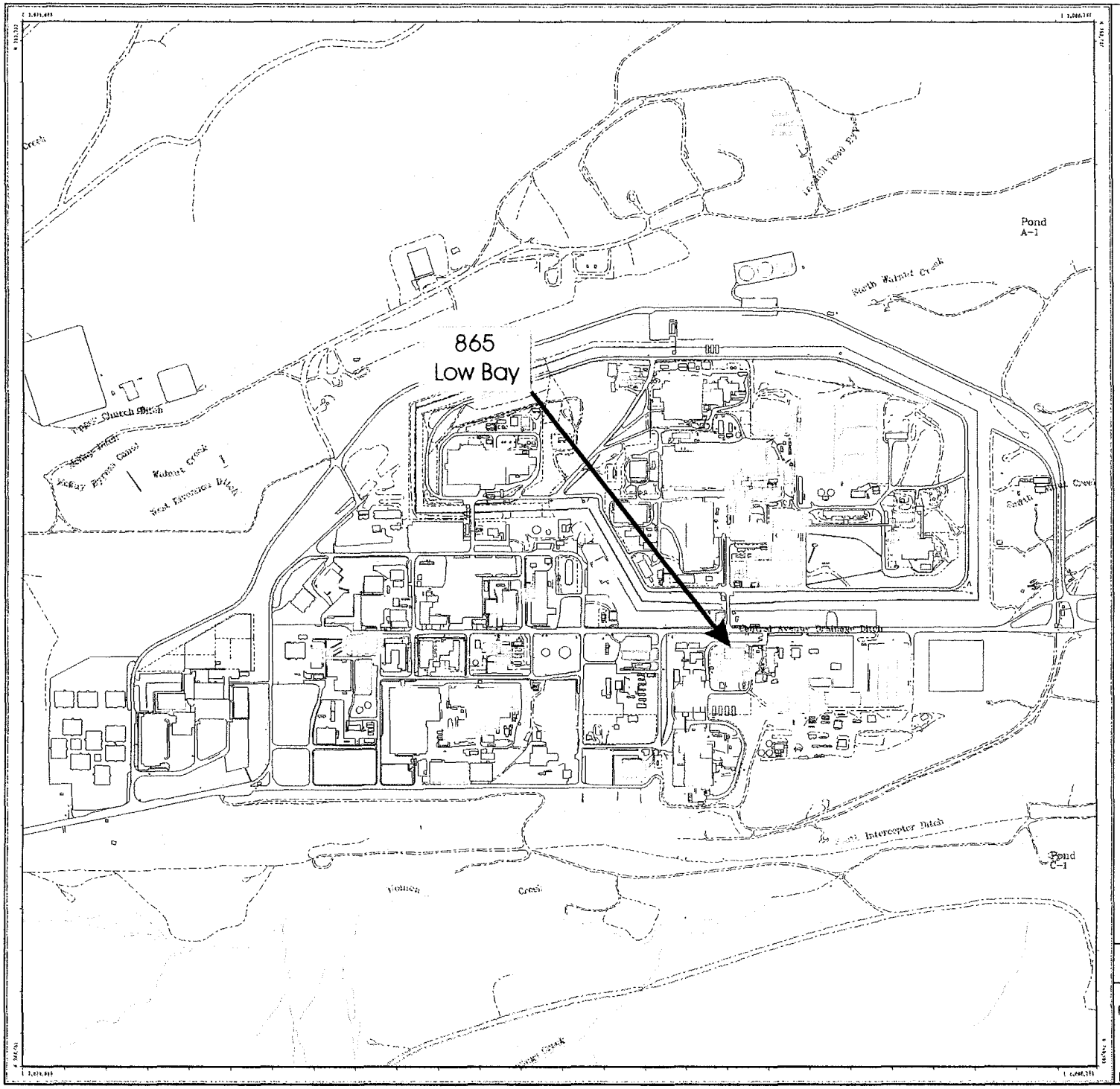
RFETS, RFCA RSOP for Recycling Concrete, September 28, 1999

Reconnaissance Level Characterization Report for the Building 865 Cluster, dated September 17, 2001, Revision 0.

Building 865 Historical Site Assessment, incorporated as part of the Building 865 Cluster RLCR, dated July 2001.

ATTACHMENT A

Facility Location Map



Area 1
Group 865 Low Bay

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

250 0 500 1000 ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

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

GIS Dept 303-966-7707

Prepared by: CH2MHILL

Prepared for: KAISER-HILL COMPANY

MAP ID: FY 2003

March 21, 2003

NT_Svr w:/projects/03-0096/865-Low-Bay.cdr

ATTACHMENT B

Radiological Data Summaries and Survey Maps

ATTACHMENT B-1
Survey Unit 865-LB-001

Radiological Data Summary and Survey Map

SURVEY UNIT 865-LB-001
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B865 Low Bay, floors and lower walls <2 meters high

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Total Surface Activity Measurements

	170 Number Required	170 Number Obtained	
MIN	-629.7		dpm/100 cm^2
MAX	1657.4		dpm/100 cm^2
MEAN	574.9		dpm/100 cm^2
STD DEV	382.2		dpm/100 cm^2
Uranium $DCGL_W$	5000		dpm/100 cm^2

Removable Activity Measurements

	170 Number Required	170 Number Obtained	
MIN	-163.5		dpm/100 cm^2
MAX	179.6		dpm/100 cm^2
MEAN	5.4		dpm/100 cm^2
STD DEV	33.1		dpm/100 cm^2
Uranium $DCGL_W$	1000		dpm/100 cm^2

SURVEY UNIT 865-LB-001
TSA - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6	DP-6	DP-6	DP-6
Instrument ID#:	3	4	5	10	12	13
Serial #:	1249	1261	1261	1249	1261	3104
Cal Due Date:	4/5/03	6/19/03	6/19/03	4/5/03	6/19/03	5/11/03
Analysis Date:	3/5/03	3/5/03	3/5/03	3/6/03	3/6/03	3/6/03
Beta Eff. (c/d):	0.310	0.285	0.285	0.310	0.285	0.308
Beta Bkgd (cpm)	452.0	399.0	399.0	383.0	483.0	355.0
Sample Time (min)	1	1	1	1	1	1
LAB Time (min)	1	1	1	1	1	1
MDC (dpm/100cm^2)	599.0	599.0	599.0	599.0	599.0	599.0

Manufacturer:	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6	DP-6	DP-6
Instrument ID#:	14	15	16	24	51
Serial #:	1261	3104	1249	1249	1256
Cal Due Date:	6/19/03	5/11/03	4/5/03	4/5/03	6/30/03
Analysis Date:	3/6/03	3/6/03	3/6/03	3/10/03	3/13/03
Beta Eff. (c/d):	0.285	0.308	0.310	0.310	0.307
Beta Bkgd (cpm)	355.0	483.0	383.0	385.0	439.0
Sample Time (min)	1	1	1	1	1
LAB Time (min)	1	1	1	1	1
MDC (dpm/100cm^2)	599.0	599.0	599.0	599.0	599.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
1	12	722	2533.3	553	1940.4	190.7
2	5	731	2564.9	632	2217.5	222.3
3	13	742	2409.1	536	1740.3	66.5
4	12	714	2505.3	523	1835.1	162.7
5	12	609	2136.8	530	1859.6	-205.7
6	12	700	2456.1	531	1863.2	113.6
7	12	617	2164.9	562	1971.9	30.2
8	12	662	2322.8	545	1912.3	-19.8
9	12	650	2280.7	642	2252.6	-61.9
10	12	666	2336.8	542	1901.8	-5.7
11	12	681	2389.5	526	1845.6	46.9
12	12	669	2347.4	556	1950.9	4.8
13	12	647	2270.2	541	1898.2	51.4
14	12	678	2378.9	533	1870.2	36.4
15	12	649	2277.2	507	1778.9	-65.4
16	5	776	2722.8	623	2186.0	380.2
17	12	822	2884.2	640	2245.6	541.6
18	12	768	2694.7	593	2080.7	352.1
19	12	830	2912.3	620	2175.4	569.7
20	5	849	2978.9	677	2375.4	636.4
21	12	829	2908.8	660	2315.8	566.2
22	12	827	2901.8	661	2319.3	559.2
23	5	803	2817.5	655	2298.2	475.0
24	5	813	2852.6	681	2389.5	510.0
25	12	855	3000.0	698	2449.1	657.4
26	12	848	2975.4	645	2263.2	632.8
27	5	911	3196.5	651	2284.2	853.9
28	5	871	3056.1	674	2364.9	713.6
29	12	824	2891.2	693	2431.6	548.6

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SURVEY UNIT 865-LB-001
TSA - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
30	5	802	2814.0	615	2157.9	471.4
31	12	778	2729.8	654	2294.7	387.2
32	12	591	2073.7	555	1947.4	-268.9
33	12	739	2593.0	554	1943.9	250.4
34	3	919	2964.5	781	2519.4	621.9
35	12	779	2733.3	589	2066.7	390.7
36	3	952	3071.0	796	2567.7	728.4
37	12	777	2726.3	626	2196.5	383.7
38	12	809	2838.6	650	2280.7	496.0
39	3	1004	3238.7	808	2606.5	896.1
40	12	845	2964.9	647	2270.2	622.3
41	3	963	3106.5	856	2761.3	763.9
42	12	861	3021.1	654	2294.7	678.5
43	3	968	3122.6	783	2525.8	780.0
44	12	836	2933.3	667	2340.4	590.7
45	3	1021	3293.5	759	2448.4	951.0
46	12	861	3021.1	699	2452.6	678.5
47	3	943	3041.9	768	2477.4	699.3
48	12	813	2852.6	658	2308.8	510.0
49	3	731	2358.1	644	2077.4	15.5
50	4	689	2417.5	524	1838.6	75.0
51	4	810	2842.1	659	2312.3	499.5
52	4	782	2743.9	633	2221.1	401.3
53	4	866	3038.6	667	2340.4	696.0
54	3	944	3045.2	808	2606.5	702.6
55	4	863	3028.1	705	2473.7	685.5
56	3	970	3129.0	758	2445.2	786.4
57	4	895	3140.4	656	2301.8	797.8
58	3	970	3129.0	781	2519.4	786.4
59	4	872	3059.6	675	2368.4	717.1
60	3	988	3187.1	805	2596.8	844.5
61	4	890	3122.8	704	2470.2	780.2
62	3	1005	3241.9	755	2435.5	899.3
63	3	979	3158.1	759	2448.4	815.5
64	3	956	3083.9	753	2429.0	741.3
65	12	823	2887.7	628	2203.5	545.1
66	3	531	1712.9	577	1861.3	-629.7
67	24	795	2564.5	674	2174.2	221.9
68	3	971	3132.3	753	2429.0	789.7
69	4	835	2929.8	684	2400.0	587.2
70	4	861	3021.1	674	2364.9	678.5
71	4	849	2978.9	663	2326.3	636.4
72	4	827	2901.8	627	2200.0	559.2
73	4	894	3136.8	668	2343.9	794.3
74	4	892	3129.8	640	2245.6	787.2
75	14	865	3035.1	653	2291.2	692.5
76	16	988	3187.1	747	2409.7	844.5
77	14	825	2894.7	641	2249.1	552.1
78	16	947	3054.8	781	2519.4	712.2
79	14	889	3119.3	651	2284.2	776.7
80	16	985	3177.4	827	2667.7	834.8
81	16	916	2954.8	783	2525.8	612.2
82	15	1001	3250.0	791	2568.2	907.4
83	10	708	2283.9	648	2090.3	-58.7
84	13	925	3003.2	714	2318.2	660.7

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SURVEY UNIT 865-LB-001
TSA - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
85	15	979	3178.6	826	2681.8	836.0
86	16	925	2983.9	777	2506.5	641.3
87	15	1046	3396.1	819	2659.1	1053.5
88	16	1025	3306.5	789	2545.2	963.9
89	15	1066	3461.0	805	2613.6	1118.4
90	16	1083	3493.5	781	2519.4	1151.0
91	15	1010	3279.2	861	2795.5	936.6
92	16	956	3083.9	742	2393.5	741.3
93	15	1029	3340.9	803	2607.1	998.3
94	16	1013	3267.7	742	2393.5	925.2
95	15	993	3224.0	833	2704.5	881.4
96	16	994	3206.5	845	2725.8	863.9
97	15	966	3136.4	804	2610.4	793.8
98	16	1045	3371.0	774	2496.8	1028.4
99	15	992	3220.8	728	2363.6	878.2
100	16	708	2283.9	588	1896.8	-58.7
101	16	731	2358.1	633	2041.9	15.5
102	15	973	3159.1	824	2675.3	816.5
103	16	924	2980.6	789	2545.2	638.1
104	15	1024	3324.7	838	2720.8	982.1
105	16	997	3216.1	819	2641.9	873.5
106	16	1085	3500.0	746	2406.5	1157.4
107	15	1097	3561.7	870	2824.7	1219.1
108	15	1184	3844.2	840	2727.3	1501.6
109	16	1024	3303.2	819	2641.9	960.6
110	15	1232	4000.0	878	2850.6	1657.4
111	16	906	2922.6	789	2545.2	580.0
112	15	946	3071.4	773	2509.7	728.8
113	16	966	3116.1	748	2412.9	773.5
114	15	994	3227.3	799	2594.2	884.7
115	16	906	2922.6	729	2351.6	580.0
116	15	983	3191.6	836	2714.3	849.0
117	16	723	2332.3	506	1632.3	-10.3
118	15	780	2532.5	667	2165.6	189.9
119	16	896	2890.3	730	2354.8	547.7
120	15	964	3129.9	810	2629.9	787.3
121	16	1025	3306.5	797	2571.0	963.9
122	15	1019	3308.4	855	2776.0	965.9
123	16	973	3138.7	745	2403.2	796.1
124	15	942	3058.4	829	2691.6	715.9
125	16	1022	3296.8	747	2409.7	954.2
126	15	960	3116.9	816	2649.4	774.3
127	16	938	3025.8	727	2345.2	683.2
128	15	988	3207.8	750	2435.1	865.2
129	16	794	2561.3	782	2522.6	218.7
130	15	1036	3363.6	821	2665.6	1021.0
131	16	971	3132.3	746	2406.5	789.7
132	15	996	3233.8	860	2792.2	891.2
133	16	947	3054.8	726	2341.9	712.2
134	15	771	2503.2	662	2149.4	160.7
135	16	697	2248.4	577	1861.3	-94.2
136	15	944	3064.9	736	2389.6	722.3
137	10	919	2964.5	748	2412.9	621.9
138	13	1076	3493.5	777	2522.7	1150.9
139	10	927	2990.3	742	2393.5	647.7

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SURVEY UNIT 865-LB-001
TSA - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
140	13	1009	3276.0	777	2522.7	933.4
141	10	936	3019.4	690	2225.8	676.8
142	13	988	3207.8	781	2535.7	865.2
143	10	831	2680.6	724	2335.5	338.1
144	13	1188	3857.1	793	2574.7	1514.6
145	10	954	3077.4	746	2406.5	734.8
146	13	1016	3298.7	805	2613.6	956.1
147	10	910	2935.5	742	2393.5	592.9
148	13	1028	3337.7	775	2516.2	995.1
149	10	955	3080.6	760	2451.6	738.1
150	13	1024	3324.7	777	2522.7	982.1
151	13	755	2451.3	646	2097.4	108.7
152	13	760	2467.5	716	2324.7	124.9
153	10	773	2493.5	631	2035.5	151.0
154	13	730	2370.1	668	2168.8	27.5
155	10	687	2216.1	581	1874.2	-126.5
156	13	752	2441.6	641	2081.2	99.0
157	10	715	2306.5	636	2051.6	-36.1
158	13	703	2282.5	674	2188.3	-60.1
159	10	691	2229.0	569	1835.5	-113.6
160	13	800	2597.4	669	2172.1	254.8
161	10	900	2903.2	608	1961.3	560.6
162	10	674	2174.2	555	1790.3	-168.4
163	13	745	2418.8	722	2344.2	76.2
164	51	745	2426.7	730	2377.9	84.1
165	13	908	2948.1	769	2496.8	605.5
166	13	748	2428.6	746	2422.1	86.0
167	13	1026	3331.2	787	2555.2	988.6
168	10	900	2903.2	653	2106.5	560.6
169	13	939	3048.7	787	2555.2	706.1
170	24	878.0	2832.3	815.0	2629.0	489.7

1 - Average LAB used to subtract from Gross Sample Activity

2342.6	Sample LAB Average
MIN	-629.7
MAX	1657.4
MEAN	574.9
SD	382.2
Uranium $DCGL_W$	**5000**

QC Measurements

82 QC	24	967.0	3119.4	769.0	2480.6	776.8
87 QC	24	957.0	3087.1	839.0	2706.5	744.5
89 QC	24	903.0	2912.9	821.0	2648.4	570.3
91 QC	24	957.0	3087.1	768.0	2477.4	744.5
93 QC	24	949.0	3061.3	791.0	2551.6	718.7
104 QC	24	942.0	3038.7	838.0	2703.2	696.1
122 QC	24	1125.0	3629.0	852.0	2748.4	1286.4
130 QC	24	951.0	3067.7	834.0	2690.3	725.2
136 QC	24	846.0	2729.0	809.0	2609.7	386.4

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

2624.0	QC LAB Average
MIN	386.4
MAX	1286.4
MEAN	738.8
Uranium $DCGL_W$	**5000**

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SURVEY UNIT 865-LB-001
TSA - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]

Comments:

1 - A crack in the floor near locations 90 and 91 had elevated activity up to 29,977 dpm/100cm^2 fixed near a floor drain (NE Electra #1249, Calibration Due Date 4/5/03, Beta Efficiency 0.310). The crack and surrounding concrete floor will be managed as radioactive and beryllium waste during demolition of the slab. No further investigation is required.

2 - Initial scan surveys indicated that the trench located on the floor near locations 90 through 95 had elevated activty up to 7,200 dpm/100cm^2. Investigation scans and 277 additional TSA measurements were collected from the trench surface. The individual data points are reported on separate sheets of this data summary and a detailed map is included. The table below summarizes the average contamination values for each linear meter of the trench. The investigation survey of the trench showed that all elevated areas were less than the uranium PDS unrestricted release limits (i.e., 1,000 dpm/100cm^2 removable surface activity, <5,000 dpm/100cm^2 average total surface activity, and no hot spots over 15,000 dpm/100cm^2). No further investigation is required.

Trench segment (1m length)	Trench survey locations	Average dpm/100cm^2 of trench segment
1	1-12 & S1-S8	1120.5
2	13-27 & S9-S13	868.6
3	28-39 & S14-S18	753.3
4	40-54 & S19-S24	1189.4
5	55-69 & S25-S29	678.2
6	70-81 & S30-S34	759.8
7	82-90 & S35-S39	860.5
8	91-105 & S40-S45	771.9
9	106-123 & S46-S52	1158.8
10	124-135 & S53-S56	633.2
11	136-147 & S57-S60	806.7
12	148-159	1283.2
13	160-174	1585.8
14	175-189	1396.9
15	190-200	2617.3
16	201-217	1362.0

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SURVEY UNIT 865-LB-001
TRENCH - DATA SUMMARY

Manufacturer:	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6	DP-6	DP-6	DP-6
Instrument ID#:	53	54	55	56	57	58
Serial #:	1366	1249	3104	1249	1249	1256
Cal Due Date:	6/26/03	4/5/03	5/11/03	4/5/03	4/5/03	6/30/03
Analysis Date:	3/13/03	3/13/03	3/13/03	3/13/03	3/13/03	3/13/03
Beta Eff. (c/d):	0.311	0.310	0.308	0.310	0.310	0.307
Beta Bkgd (cpm)	831.0	827.0	763.0	826.0	827.0	831.0
Sample Time (min)	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
MDC (dpm/100cm^2)	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/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
1	58	1187.0	3866.4	831.0	2706.8	1206.8
2	58	1073.0	3495.1	831.0	2706.8	835.5
3	58	1052.0	3426.7	831.0	2706.8	767.1
4	58	996.0	3244.3	831.0	2706.8	584.7
5	58	1002.0	3263.8	831.0	2706.8	604.2
6	58	1029.0	3351.8	831.0	2706.8	692.2
7	58	1057.0	3443.0	831.0	2706.8	783.4
8	58	1067.0	3475.6	831.0	2706.8	815.9
9	58	1035.0	3371.3	831.0	2706.8	711.7
10	58	1162.0	3785.0	831.0	2706.8	1125.4
11	58	1049.0	3416.9	831.0	2706.8	757.3
12	58	1050.0	3420.2	831.0	2706.8	760.6
13	58	1123.0	3658.0	831.0	2706.8	998.4
14	58	1045.0	3403.9	831.0	2706.8	744.3
15	58	1072.0	3491.9	831.0	2706.8	832.2
16	58	1108.0	3609.1	831.0	2706.8	949.5
17	58	1028.0	3348.5	831.0	2706.8	688.9
18	58	1159.0	3775.2	831.0	2706.8	1115.6
19	58	971.0	3162.9	831.0	2706.8	503.2
20	58	1035.0	3371.3	831.0	2706.8	711.7
21	58	1040.0	3387.6	831.0	2706.8	728.0
22	58	988.0	3218.2	831.0	2706.8	558.6
23	58	1018.0	3316.0	831.0	2706.8	656.3
24	58	1104.0	3596.1	831.0	2706.8	936.5
25	58	1024.0	3335.5	831.0	2706.8	675.9
26	58	1048.0	3413.7	831.0	2706.8	754.1
27	58	1148.0	3739.4	831.0	2706.8	1079.8
28	58	1003.0	3267.1	831.0	2706.8	607.5
29	58	976.0	3179.2	831.0	2706.8	519.5
30	58	1120.0	3648.2	831.0	2706.8	988.6
31	58	1248.0	4065.1	831.0	2706.8	1405.5
32	58	1124.0	3661.2	831.0	2706.8	1001.6
33	58	1035.0	3371.3	831.0	2706.8	711.7
34	58	1086.0	3537.5	831.0	2706.8	877.8
35	58	1130.0	3680.8	831.0	2706.8	1021.2
36	58	1037.0	3377.9	831.0	2706.8	718.2
37	58	1086.0	3537.5	831.0	2706.8	877.8
38	58	995.0	3241.0	831.0	2706.8	581.4
39	58	1061.0	3456.0	831.0	2706.8	796.4
40	58	1018.0	3316.0	831.0	2706.8	656.3
41	58	1061.0	3456.0	831.0	2706.8	796.4
42	58	1213.0	3951.1	831.0	2706.8	1291.5
43	58	1018.0	3316.0	831.0	2706.8	656.3
44	58	984.0	3205.2	831.0	2706.8	545.6
45	58	1070.0	3485.3	831.0	2706.8	825.7
46	58	1125.0	3664.5	831.0	2706.8	1004.9
47	58	1066.0	3472.3	831.0	2706.8	812.7

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SURVEY UNIT 865-LB-001
TRENCH - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
48	58	1118.0	3641.7	831.0	2706.8	982.1
49	58	1189.0	3873.0	831.0	2706.8	1213.3
50	58	1095.0	3566.8	831.0	2706.8	907.1
51	58	955.0	3110.7	831.0	2706.8	451.1
52	58	1095.0	3566.8	831.0	2706.8	907.1
53	58	1152.0	3752.4	831.0	2706.8	1092.8
54	58	1153.0	3755.7	831.0	2706.8	1096.1
55	57	1084.0	3496.8	827.0	2667.7	837.1
56	57	1050.0	3387.1	827.0	2667.7	727.5
57	57	1214.0	3916.1	827.0	2667.7	1256.5
58	57	1015.0	3274.2	827.0	2667.7	614.6
59	57	1008.0	3251.6	827.0	2667.7	592.0
60	57	1033.0	3332.3	827.0	2667.7	672.6
61	57	1065.0	3435.5	827.0	2667.7	775.9
62	57	1028.0	3316.1	827.0	2667.7	656.5
63	57	1024.0	3303.2	827.0	2667.7	643.6
64	57	1065.0	3435.5	827.0	2667.7	775.9
65	57	1001.0	3229.0	827.0	2667.7	569.4
66	57	999.0	3222.6	827.0	2667.7	563.0
67	57	1046.0	3374.2	827.0	2667.7	714.6
68	57	954.0	3077.4	827.0	2667.7	417.8
69	57	954.0	3077.4	827.0	2667.7	417.8
70	57	1031.0	3325.8	827.0	2667.7	666.2
71	57	1072.0	3458.1	827.0	2667.7	798.4
72	57	983.0	3171.0	827.0	2667.7	511.3
73	57	1086.0	3503.2	827.0	2667.7	843.6
74	57	1053.0	3396.8	827.0	2667.7	737.1
75	57	1113.0	3590.3	827.0	2667.7	930.7
76	57	995.0	3209.7	827.0	2667.7	550.0
77	57	960.0	3096.8	827.0	2667.7	437.1
78	57	1029.0	3319.4	827.0	2667.7	659.7
79	57	1063.0	3429.0	827.0	2667.7	769.4
80	57	1008.0	3251.6	827.0	2667.7	592.0
81	57	1095.0	3532.3	827.0	2667.7	872.6
82	57	1150.0	3709.7	827.0	2667.7	1050.0
83	57	1096.0	3535.5	827.0	2667.7	875.9
84	57	1064.0	3432.3	827.0	2667.7	772.6
85	57	1064.0	3432.3	827.0	2667.7	772.6
86	57	1078.0	3477.4	827.0	2667.7	817.8
87	57	1106.0	3567.7	827.0	2667.7	908.1
88	57	1058.0	3412.9	827.0	2667.7	753.3
89	57	1021.0	3293.5	827.0	2667.7	633.9
90	57	1029.0	3319.4	827.0	2667.7	659.7
91	57	1187.0	3829.0	827.0	2667.7	1169.4
92	57	1067.0	3441.9	827.0	2667.7	782.3
93	57	1006.0	3245.2	827.0	2667.7	585.5
94	57	1072.0	3458.1	827.0	2667.7	798.4
95	57	1021.0	3293.5	827.0	2667.7	633.9
96	57	923.0	2977.4	827.0	2667.7	317.8
97	57	1332.0	4296.8	827.0	2667.7	1637.1
98	57	1085.0	3500.0	827.0	2667.7	840.4
99	57	970.0	3129.0	827.0	2667.7	469.4
100	57	1164.0	3754.8	827.0	2667.7	1095.2
101	57	974.0	3141.9	827.0	2667.7	482.3
102	57	1044.0	3367.7	827.0	2667.7	708.1
103	57	1254.0	4045.2	827.0	2667.7	1385.5
104	57	1037.0	3345.2	827.0	2667.7	685.5
105	57	1076.0	3471.0	827.0	2667.7	811.3
106	57	1153.0	3719.4	827.0	2667.7	1059.7
107	57	1017.0	3280.6	827.0	2667.7	621.0

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SURVEY UNIT 865-LB-001
TRENCH - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
108	57	1066.0	3438.7	827.0	2667.7	779.1
109	57	1145.0	3693.5	827.0	2667.7	1033.9
110	57	1113.0	3590.3	827.0	2667.7	930.7
111	57	1021.0	3293.5	827.0	2667.7	633.9
112	56	1186.0	3825.8	826.0	2664.5	1166.2
113	56	1124.0	3625.8	826.0	2664.5	966.2
114	56	1033.0	3332.3	826.0	2664.5	672.6
115	56	1169.0	3771.0	826.0	2664.5	1111.3
116	56	983.0	3171.0	826.0	2664.5	511.3
117	56	1099.0	3545.2	826.0	2664.5	885.5
118	56	1174.0	3787.1	826.0	2664.5	1127.5
119	56	1031.0	3325.8	826.0	2664.5	666.2
120	56	1026.0	3309.7	826.0	2664.5	650.0
121	56	1167.0	3764.5	826.0	2664.5	1104.9
122	56	994.0	3206.5	826.0	2664.5	546.8
123	56	1001.0	3229.0	826.0	2664.5	569.4
124	56	1090.0	3516.1	826.0	2664.5	856.5
125	56	1018.0	3283.9	826.0	2664.5	624.2
126	56	1117.0	3603.2	826.0	2664.5	943.6
127	56	1144.0	3690.3	826.0	2664.5	1030.7
128	56	1034.0	3335.5	826.0	2664.5	675.9
129	56	970.0	3129.0	826.0	2664.5	469.4
130	56	1014.0	3271.0	826.0	2664.5	611.3
131	56	1005.0	3241.9	826.0	2664.5	582.3
132	56	948.0	3058.1	826.0	2664.5	398.4
133	56	1003.0	3235.5	826.0	2664.5	575.9
134	56	994.0	3206.5	826.0	2664.5	546.8
135	56	970.0	3129.0	826.0	2664.5	469.4
136	56	1111.0	3583.9	826.0	2664.5	924.2
137	56	995.0	3209.7	826.0	2664.5	550.0
138	56	1012.0	3264.5	826.0	2664.5	604.9
139	56	1168.0	3767.7	826.0	2664.5	1108.1
140	56	1042.0	3361.3	826.0	2664.5	701.7
141	56	1032.0	3329.0	826.0	2664.5	669.4
142	56	1169.0	3771.0	826.0	2664.5	1111.3
143	56	1047.0	3377.4	826.0	2664.5	717.8
144	56	1050.0	3387.1	826.0	2664.5	727.5
145	56	1177.0	3796.8	826.0	2664.5	1137.1
146	56	1102.0	3554.8	826.0	2664.5	895.2
147	56	1069.0	3448.4	826.0	2664.5	788.8
148	56	1264.0	4077.4	826.0	2664.5	1417.8
149	56	1004.0	3238.7	826.0	2664.5	579.1
150	56	1257.0	4054.8	826.0	2664.5	1395.2
151	56	1255.0	4048.4	826.0	2664.5	1388.8
152	56	1013.0	3267.7	826.0	2664.5	608.1
153	56	1257.0	4054.8	826.0	2664.5	1395.2
154	56	1422.0	4587.1	826.0	2664.5	1927.5
155	56	1342.0	4329.0	826.0	2664.5	1669.4
156	56	1184.0	3819.4	826.0	2664.5	1159.7
157	56	1314.0	4238.7	826.0	2664.5	1579.1
158	56	1216.0	3922.6	826.0	2664.5	1263.0
159	56	1139.0	3674.2	826.0	2664.5	1014.6
160	56	1162.0	3748.4	826.0	2664.5	1088.8
161	56	1300.0	4193.5	826.0	2664.5	1533.9
162	56	1529.0	4932.3	826.0	2664.5	2272.6
163	56	1181.0	3809.7	826.0	2664.5	1150.0
164	56	1200.0	3871.0	826.0	2664.5	1211.3
165	56	1241.0	4003.2	826.0	2664.5	1343.6
166	56	1400.0	4516.1	826.0	2664.5	1856.5
167	56	1415.0	4564.5	826.0	2664.5	1904.9

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SURVEY UNIT 865-LB-001
TRENCH - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
168	56	1021.0	3293.5	826.0	2664.5	633.9
169	56	1267.0	4087.1	826.0	2664.5	1427.5
170	56	1480.0	4774.2	826.0	2664.5	2114.6
171	56	1545.0	4983.9	826.0	2664.5	2324.2
172	56	1159.0	3738.7	826.0	2664.5	1079.1
173	56	1304.0	4206.5	826.0	2664.5	1546.8
174	56	1537.0	4958.1	826.0	2664.5	2298.4
175	56	1213.0	3912.9	826.0	2664.5	1253.3
176	56	1274.0	4109.7	826.0	2664.5	1450.0
177	56	1371.0	4422.6	826.0	2664.5	1763.0
178	56	1278.0	4122.6	826.0	2664.5	1463.0
179	56	1302.0	4200.0	826.0	2664.5	1540.4
180	56	1198.0	3864.5	826.0	2664.5	1204.9
181	56	1227.0	3958.1	826.0	2664.5	1298.4
182	56	1355.0	4371.0	826.0	2664.5	1711.3
183	56	1402.0	4522.6	826.0	2664.5	1863.0
184	56	1177.0	3796.8	826.0	2664.5	1137.1
185	56	1191.0	3841.9	826.0	2664.5	1182.3
186	56	1258.0	4058.1	826.0	2664.5	1398.4
187	56	1092.0	3522.6	826.0	2664.5	863.0
188	56	1230.0	3967.7	826.0	2664.5	1308.1
189	56	1295.0	4177.4	826.0	2664.5	1517.8
190	56	1171.0	3777.4	826.0	2664.5	1117.8
191	56	1401.0	4519.4	826.0	2664.5	1859.7
192	56	1157.0	3732.3	826.0	2664.5	1072.6
193	56	971.0	3132.3	826.0	2664.5	472.6
194	56	1039.0	3351.6	826.0	2664.5	692.0
195	56	1076.0	3471.0	826.0	2664.5	811.3
196	55	3035.0	9853.9	763.0	2477.3	**7194.3**
197	55	1755.0	5698.1	763.0	2477.3	3038.4
198	55	1769.0	5743.5	763.0	2477.3	3083.9
199	55	2514.0	8162.3	763.0	2477.3	**5502.7**
200	55	2034.0	6603.9	763.0	2477.3	3944.3
201	55	1773.0	5756.5	763.0	2477.3	3096.9
202	55	1743.0	5659.1	763.0	2477.3	2999.5
203	55	1766.0	5733.8	763.0	2477.3	3074.1
204	55	1108.0	3597.4	763.0	2477.3	937.8
205	55	1167.0	3789.0	763.0	2477.3	1129.3
206	55	1189.0	3860.4	763.0	2477.3	1200.8
207	55	1145.0	3717.5	763.0	2477.3	1057.9
208	55	1150.0	3733.8	763.0	2477.3	1074.1
209	55	1311.0	4256.5	763.0	2477.3	1596.9
210	55	1043.0	3386.4	763.0	2477.3	726.7
211	55	1066.0	3461.0	763.0	2477.3	801.4
212	55	1075.0	3490.3	763.0	2477.3	830.6
213	55	1209.0	3925.3	763.0	2477.3	1265.7
214	55	1081.0	3509.7	763.0	2477.3	850.1
215	55	1019.0	3308.4	763.0	2477.3	648.8
216	55	1019.0	3308.4	763.0	2477.3	648.8
217	55	1193.0	3873.4	763.0	2477.3	1213.7
S1	53	1085.0	3488.7	831.0	2672.0	829.1
S2	53	1139.0	3662.4	831.0	2672.0	1002.7
S3	53	997.0	3205.8	831.0	2672.0	546.2
S4	53	1213.0	3900.3	831.0	2672.0	1240.7
S5	53	1128.0	3627.0	831.0	2672.0	967.4
S6	53	1395.0	4485.5	831.0	2672.0	1825.9
S7	53	1867.0	6003.2	831.0	2672.0	3343.6
S8	53	1763.0	5668.8	831.0	2672.0	3009.2
S9	53	1373.0	4414.8	831.0	2672.0	1755.2
S10	53	1151.0	3701.0	831.0	2672.0	1041.3

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SURVEY UNIT 865-LB-001
TRENCH - DATA SUMMARY

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
S11	53	1085.0	3488.7	831.0	2672.0	829.1
S12	53	1190.0	3826.4	831.0	2672.0	1166.7
S13	53	1028.0	3305.5	831.0	2672.0	645.8
S14	53	970.0	3119.0	831.0	2672.0	459.3
S15	53	938.0	3016.1	831.0	2672.0	356.4
S16	53	925.0	2974.3	831.0	2672.0	314.6
S17	53	1035.0	3328.0	831.0	2672.0	668.3
S18	53	1107.0	3559.5	831.0	2672.0	899.9
S19	53	1065.0	3424.4	831.0	2672.0	764.8
S20	53	1065.0	3424.4	831.0	2672.0	764.8
S21	53	1083.0	3482.3	831.0	2672.0	822.7
S22	53	1739.0	5591.6	831.0	2672.0	2932.0
S23	53	2604.0	8373.0	831.0	2672.0	**5713.4**
S24	53	1057.0	3398.7	831.0	2672.0	739.1
S25	54	1022.0	3296.8	827.0	2667.7	637.1
S26	54	1001.0	3229.0	827.0	2667.7	569.4
S27	54	1021.0	3293.5	827.0	2667.7	633.9
S28	54	1029.0	3319.4	827.0	2667.7	659.7
S29	54	1081.0	3487.1	827.0	2667.7	827.5
S30	54	1068.0	3445.2	827.0	2667.7	785.5
S31	54	1031.0	3325.8	827.0	2667.7	666.2
S32	54	1086.0	3503.2	827.0	2667.7	843.6
S33	54	1392.0	4490.3	827.0	2667.7	1830.7
S34	54	955.0	3080.6	827.0	2667.7	421.0
S35	54	1338.0	4316.1	827.0	2667.7	1656.5
S36	54	1115.0	3596.8	827.0	2667.7	937.1
S37	54	1110.0	3580.6	827.0	2667.7	921.0
S38	54	997.0	3216.1	827.0	2667.7	556.5
S39	54	1051.0	3390.3	827.0	2667.7	730.7
S40	54	1035.0	3338.7	827.0	2667.7	679.1
S41	54	1005.0	3241.9	827.0	2667.7	582.3
S42	54	1090.0	3516.1	827.0	2667.7	856.5
S43	54	963.0	3106.5	827.0	2667.7	446.8
S44	54	1028.0	3316.1	827.0	2667.7	656.5
S45	54	1006.0	3245.2	827.0	2667.7	585.5
S46	54	995.0	3209.7	827.0	2667.7	550.0
S47	54	971.0	3132.3	827.0	2667.7	472.6
S48	54	1742.0	5619.4	827.0	2667.7	2959.7
S49	54	1708.0	5509.7	827.0	2667.7	2850.0
S50	54	1535.0	4951.6	827.0	2667.7	2292.0
S51	54	1683.0	5429.0	827.0	2667.7	2769.4
S52	54	1457.0	4700.0	827.0	2667.7	2040.4
S53	54	995.0	3209.7	827.0	2667.7	550.0
S54	54	1009.0	3254.8	827.0	2667.7	595.2
S55	54	997.0	3216.1	827.0	2667.7	556.5
S56	54	1024.0	3303.2	827.0	2667.7	643.6
S57	54	1032.0	3329.0	827.0	2667.7	669.4
S58	54	1018.0	3283.9	827.0	2667.7	624.2
S59	54	1035.0	3338.7	827.0	2667.7	679.1
S60	54	1134.0	3658.1	827.0	2667.7	998.4
					2659.6	Sample LAB Average
					MIN	314.6
					MAX	7194.3
					MEAN	1070.0
					SD	796.8
					Uranium $DCGL_W$	**5000**

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865-LB-001
Media Data Summary

LOCATION DESCRIPTION	SAMPLE LOCATION NUMBER	SITE SAMPLE ID	NUCLIDE	pCi/g (2)	MDA (pCi/g)	WEIGHT (g)	SURFACE AREA (in^2)	INDIVIDUAL NUCLIDE ($dpm/100cm^2$) (3)	ESTIMATED MDA ($dpm/100cm^2$) (4)	URANIUM TOTAL ($dpm/100cm^2$)	TRANSURANIC TOTAL ($dpm/100cm^2$)
B865 Low bay	1,2,3 4,5,6 7,8,9	02S0229-022.001	U-234	8.370	8.550	75.6	24.5	889	973		
			U-235	0.118	0.029			13	3		
			U-238	1.310	0.169			149	19	**1051.2**	
			Pu-239 Pu-240	0.000	0.230			0	26		
			Am-241	0.000	0.032			0	4		**0.0**
B865 Low bay	10,11,12 13,14,15 16,17,18 19,20,21	02S0229-023.001	U-234	7.240	6.330	80.1	24.5	769	672		
			U-235	0.031	0.018			3	2		
			U-238	0.273	0.115			29	12	**801.0**	
			Pu-239 Pu-240	0.000	0.140			0	15		
			Am-241	0.000	0.020			0	2		**0.0**
B865 Low bay	24,25	02Z0871-001.001 Crane and west end of south wall	U-234	6.370	9.570	81.0	24.5	725	1089		
			U-235	0.172	0.024			20	3		
			U-238	2.300	0.318			262	36	**1005.9**	
			Pu-239 Pu-240	0.000	0.343			0	39		
			Am-241	0.000	0.048			0	5		**0.0**
									MIN	**801.0**	**0.0**
									MAX	**1051.2**	**0.0**
									MEAN	**952.7**	**0.0**
									SD	**133.3**	**0.0**
									$DCGL_W$ =	**5000**	**100**

(1) Paint samples collected in B865, Low Bay, were analyzed as grouped composites using the Canberra ISOCS Gamma Spectroscopy system.

(2) Critical Level test criterion were utilized in this analysis. If the net peak area was less than the LC (critcal level), then a "not detected" or "zero" decision was made. The LC value is always less than the applicable MDA, but greater than zero.

3) Individual nuclide dpm/100 cm^2 conversion is conservatively based on the composite sample weight. This assumption presumes that the total sample activity from composited samples is located at one, single sample location. This methodology ensures that no single sample location exceeds the applicable $DCGL_W$.

(4) Estimated MDA dpm/100 cm^2 conversion is conservatively based on the composite sample weight.

SURVEY UNIT 865-LB-001
RSC - DATA SUMMARY

Manufacturer:	Ludlum	Ludlum	Eberline	Eberline
Model:	2929	2929	BC-4	BC-4
Instrument ID#:	1	2	7	8
Serial #:	176082	176102	835	700
Cal Due Date:	6/11/03	6/9/03	9/17/03	12/19/03
Analysis Date:	3/5/03	3/5/03	3/6/03	3/6/03
Beta Eff. (c/d):	0.386	0.408	0.25	0.25
Beta Bkgd (cpm)	103.1	85.4	34.7	36.0
Sample Time (min)	1	1	1	1
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	205.0	205.0	200.0	200.0

Manufacturer:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Instrument ID#:	9	20	21	22
Serial #:	911	835	700	911
Cal Due Date:	10/30/03	9/17/03	12/19/03	10/30/03
Analysis Date:	3/6/03	3/7/03	3/7/03	3/7/03
Beta Eff. (c/d):	0.25	0.25	0.25	0.25
Beta Bkgd (cpm)	30.3	40.3	37.1	32.5
Sample Time (min)	1	1	1	1
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	205.0	205.0	200.0	200.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	1	104	2.3
2	2	90	11.3
3	1	102	-2.8
4	2	88	6.4
5	1	93	-26.2
6	2	94	21.1
7	1	112	23.1
8	2	99	33.3
9	1	96	-18.4
10	2	98	30.9
11	1	78	-65.0
12	2	106	50.5
13	1	78	-65.0
14	2	108	55.4
15	1	111	20.5
16	20	34	-25.2
17	1	92	-28.8
18	2	88	6.4
19	1	92	-28.8
20	2	100	35.8
21	1	113	25.6
22	2	100	35.8
23	2	86	1.5
24	2	99	33.3
25	1	85	-46.9
26	2	84	-3.4
27	1	93	-26.2
28	2	101	38.2
29	7	21	-54.8
30	1	93	-26.2
31	2	85	-1.0
32	8	35	-4.0
33	9	38	30.8
34	1	93	-26.2
35	2	87	3.9
36	7	36	5.2
37	8	40	-163.5

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SURVEY UNIT 865-LB-001
RSC - DATA SUMMARY

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
38	2	97	28.4
39	2	83	-5.9
40	1	91	-31.3
41	1	106	7.5
42	1	106	7.5
43	2	87	3.9
44	2	91	13.7
45	7	36	5.2
46	8	39	12.0
47	9	40	38.8
48	7	34	-2.8
49	8	36	0.0
50	9	27	-13.2
51	21	82	179.6
52	2	106	50.5
53	2	98	30.9
54	2	96	26.0
55	2	92	16.2
56	2	83	-5.9
57	1	96	-18.4
58	2	78	-18.1
59	1	97	-15.8
60	2	84	-3.4
61	1	95	-21.0
62	2	94	21.1
63	2	103	43.1
64	7	36	5.2
65	8	29	-28.0
66	9	38	30.8
67	7	34	-2.8
68	8	43	28.0
69	9	46	62.8
70	7	44	37.2
71	8	38	8.0
72	9	34	14.8
73	7	27	-30.8
74	8	30	-24.0
75	9	40	38.8
76	7	42	29.2
77	8	27	-36.0
78	9	35	18.8
79	7	37	9.2
80	8	35	-4.0
81	9	35	18.8
82	7	24	-42.8
83	8	33	-12.0
84	22	30	-10.0
85	8	45	36.0
86	9	35	18.8
87	7	38	13.2
88	8	41	20.0
89	9	33	10.8
90	7	44	37.2
91	8	41	20.0
92	9	46	62.8
93	7	25	-38.8
94	8	42	24.0
95	9	42	46.8
96	7	32	-10.8
97	8	37	4.0
98	9	31	2.8
99	7	30	-18.8
100	8	32	-16.0
101	9	34	14.8

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SURVEY UNIT 865-LB-001
RSC - DATA SUMMARY

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
102	7	36	5.2
103	8	34	-8.0
104	9	44	54.8
105	7	36	5.2
106	20	30	-41.2
107	8	40	16.0
108	9	35	18.8
109	7	34	-2.8
110	8	37	4.0
111	9	27	-13.2
112	7	40	21.2
113	8	29	-28.0
114	9	41	42.8
115	7	33	-6.8
116	8	22	-56.0
117	9	34	14.8
118	7	42	29.2
119	8	33	-12.0
120	9	40	38.8
121	7	34	-2.8
122	8	34	-8.0
123	9	37	26.8
124	7	32	-10.8
125	8	41	20.0
126	9	40	38.8
127	7	50	61.2
128	8	43	28.0
129	9	39	34.8
130	7	32	-10.8
131	8	39	12.0
132	9	31	2.8
133	7	36	5.2
134	8	41	20.0
135	9	42	46.8
136	7	40	21.2
137	8	26	-40.0
138	9	30	-1.2
139	7	37	9.2
140	8	33	-12.0
141	9	43	50.8
142	7	48	53.2
143	8	34	-8.0
144	9	40	38.8
145	7	21	-54.8
146	8	39	12.0
147	9	42	46.8
148	7	37	9.2
149	8	30	-24.0
150	9	29	-5.2
151	7	38	13.2
152	8	24	-48.0
153	9	31	2.8
154	7	31	-14.8
155	8	31	-20.0
156	9	40	38.8
157	7	28	-26.8
158	8	27	-36.0
159	9	26	-17.2
160	7	33	-6.8
161	8	26	-40.0
162	9	34	14.8
163	7	31	-14.8
164	8	31	-20.0
165	21	40	11.6

SURVEY UNIT 865-LB-001
RSC - DATA SUMMARY

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
166	9	38	30.8
167	7	34	-2.8
168	8	37	4.0
169	9	34	14.8
170	7	45	41.2
		MIN	-163.5
		MAX	179.6
		MEAN	5.4
		SD	33.1
		Uranium $DCGL_W$	**1000**

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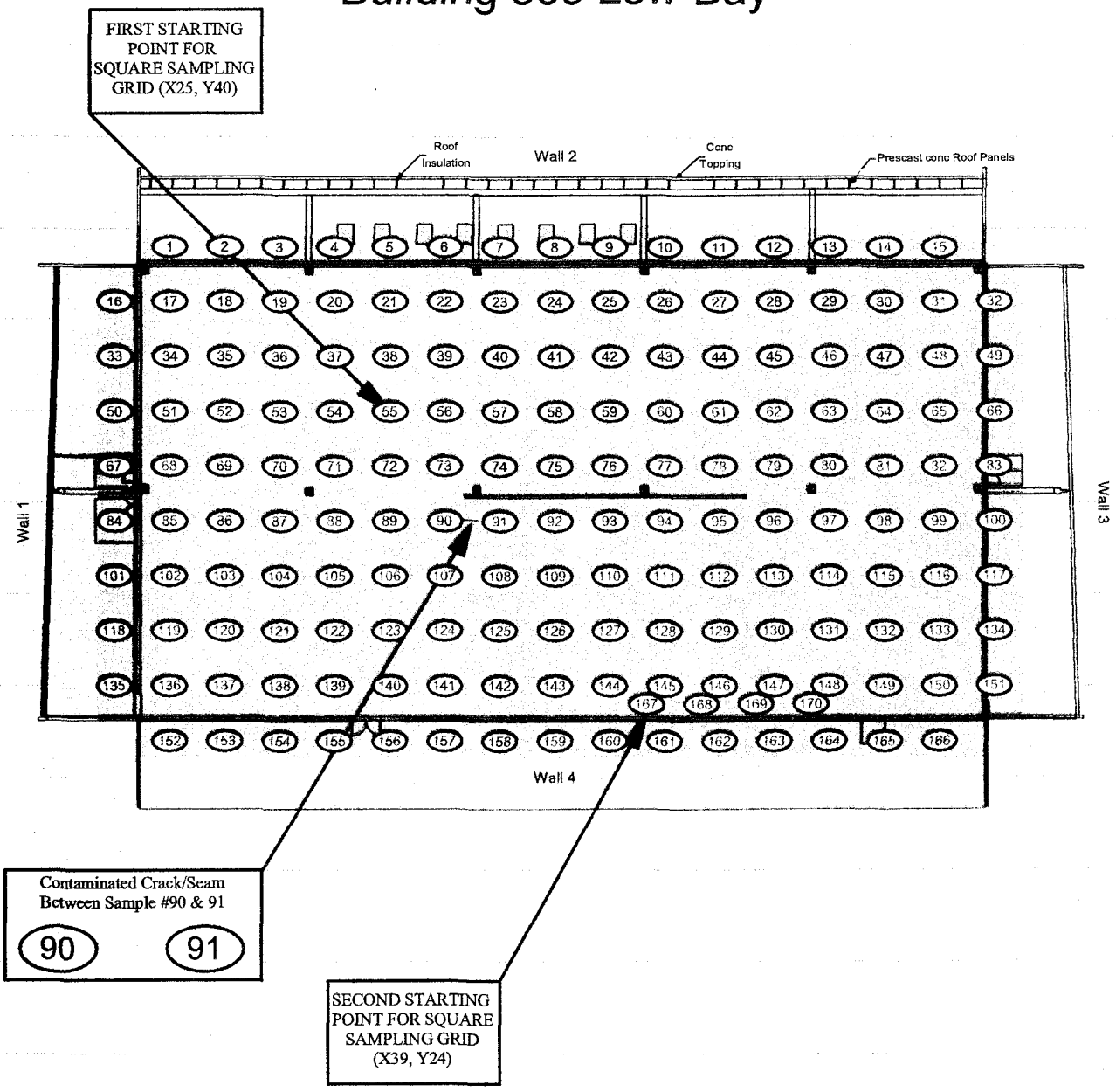
PRE-DEMOLITION SURVEY FOR BUILDING 865

Survey Area: LB **Survey Unit: 865-LB-001** **Classification: 1**
Building: 865 Low Bay
Survey Unit Description: Floor & Walls <2m & Below
Total Area: 1,403.65 sq. m. **Total Floor Area: 1,128.68 sq. m.**
Grid Spacing for Survey Points: 3 m. X 3 m.

Building 865 Low-Bay



Scan Area

SURVEY MAP LEGEND

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

N

0 FEET 40
0 METERS 10

1 inch = 30 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
3,6,11,12,17,18,19,23,24,26,27,28,29,30,31,32,33,34,35, 36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51 & 52

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

Prepared by: GIS Dept. 303-966-7707

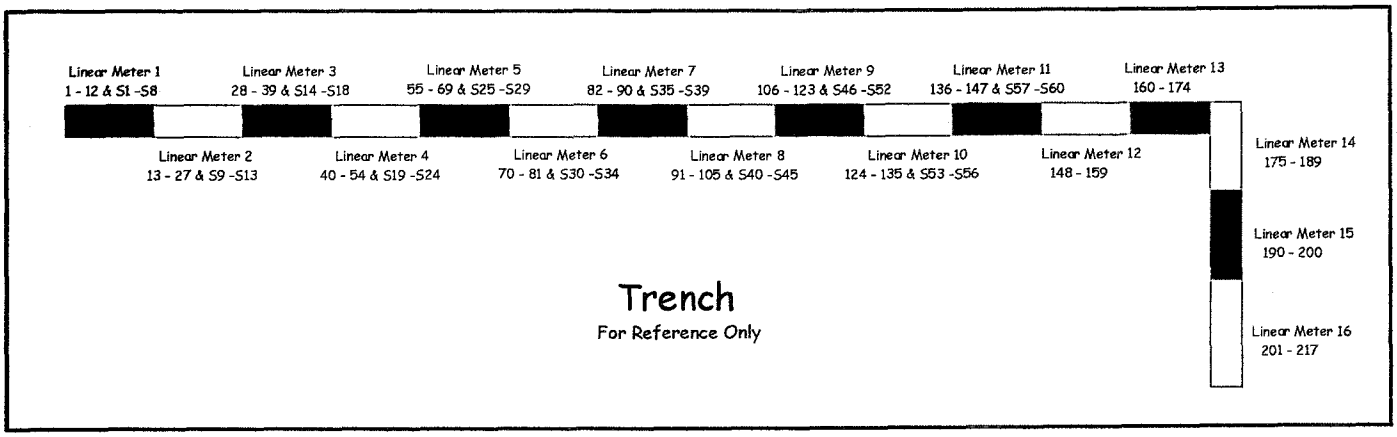
CH2MHILL Communications Group

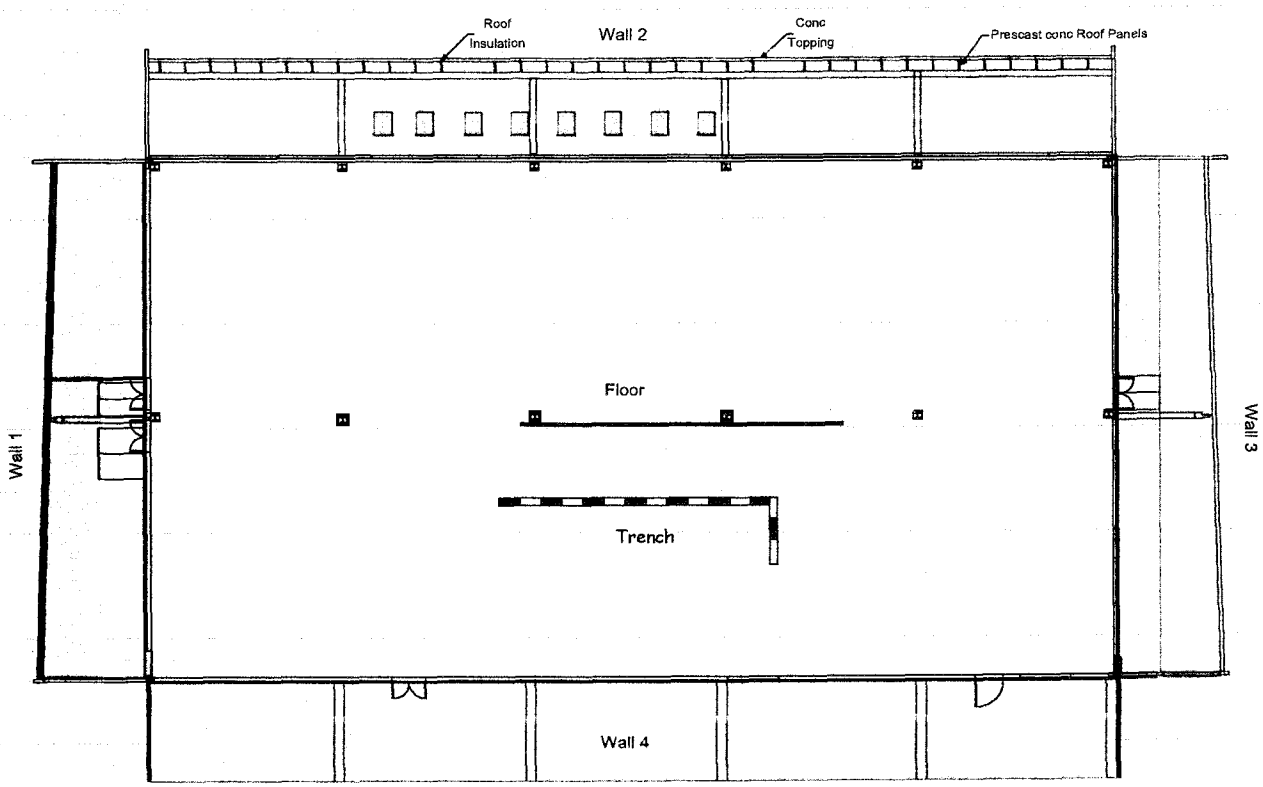
Prepared for: KAISER HILL

MAP ID: 03-0096\865-LB2 **March 25, 2003**

PRE-DEMOLITION SURVEY FOR BUILDING 865

Survey Area: LB **Survey Unit: 865-LB-001** **Classification: 1**
Building: 865 Low Bay
Survey Unit Description: Floor & Walls <2m & Below
Total Area: 1,403.65 sq. m. **Total Floor Area: 1,128.68 sq. m.**





SURVEY MAP LEGEND

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

N

0 FEET 40
0 METERS 10

1 inch = 30 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s): N/A

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

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

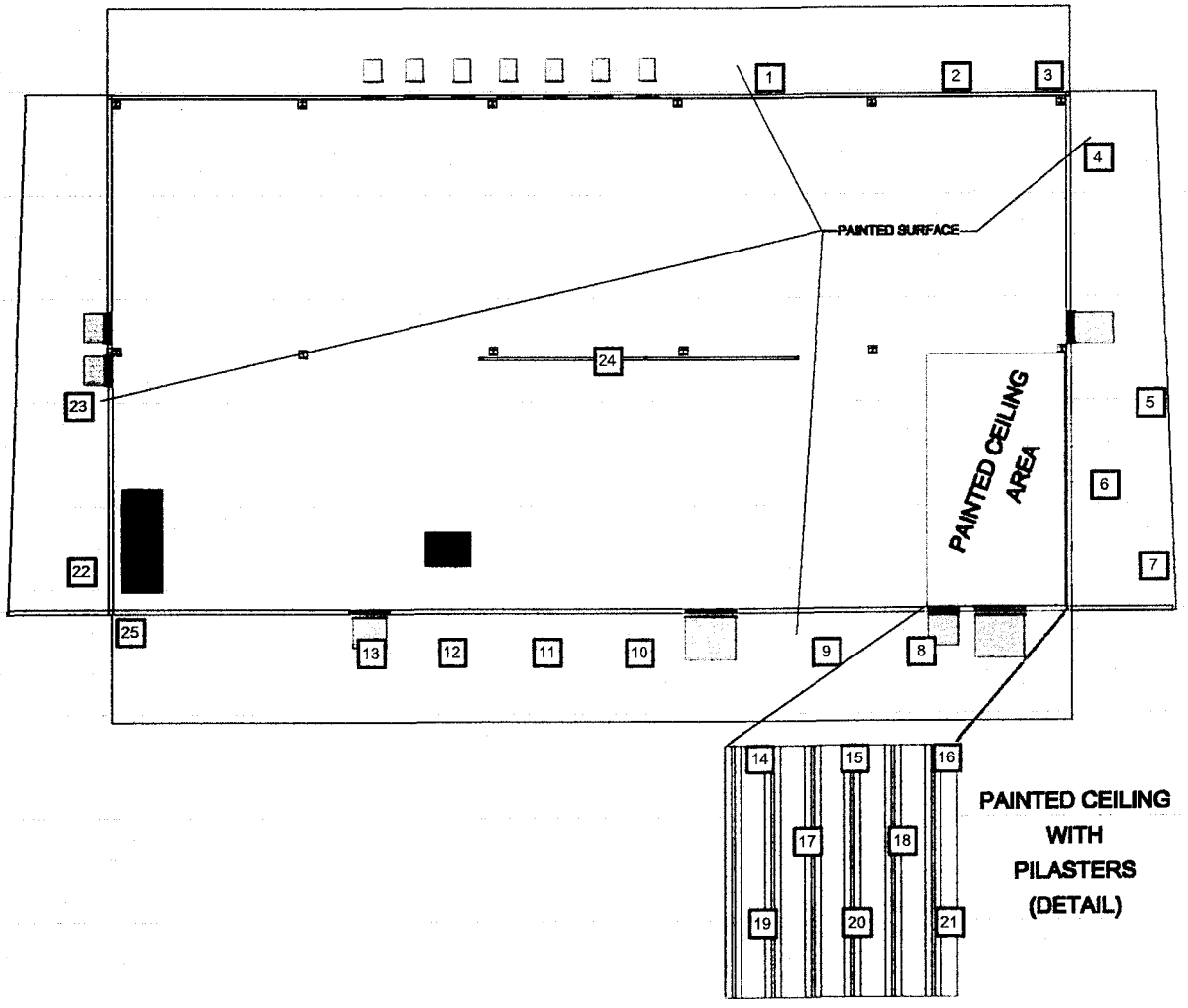
CH2MHILL Communications Group

KAISER HILL

MAP ID: 03-0096\TRENCH **March 24, 2003**

PRE-DEMOLITION SURVEY FOR BUILDING 865

Survey Area: LB **Survey Unit: 865-LB-001** **Classification: 1**
Building: 865
Survey Unit Description: Low Bay < 2m
Total Area: 1403 sq. m. **Total Floor Area: 1128 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Media Sample Location
- Open/Inaccessible Area
- Painted Ceilings

N

0 FEET 40
0 METERS 10

1 inch = 30 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s): N/A

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

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER HILL

MAP ID: 03-0096\Media December 10, 2002

ATTACHMENT B-2
Survey Unit 865-LB-002

Radiological Data Summary and Survey Map

SURVEY UNIT 865-LB-002
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: B865 Low Bay, ceiling and walls above >2 meters high

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Total Surface Activity Measurements

	18	18	
	Number Required	Number Obtained	
MIN	96.8		dpm/100 cm^2
MAX	793.9		dpm/100 cm^2
MEAN	488.8		dpm/100 cm^2
STD DEV	199.4		dpm/100 cm^2
Uranium $DCGL_W$	5000		dpm/100 cm^2

Removable Activity Measurements

	18	18	
	Number Required	Number Obtained	
MIN	-52.4		dpm/100 cm^2
MAX	42.0		dpm/100 cm^2
MEAN	-2.1		dpm/100 cm^2
STD DEV	24.7		dpm/100 cm^2
Uranium $DCGL_W$	1000		dpm/100 cm^2

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SURVEY UNIT 865-LB-002
TSA - DATA SUMMARY

Manufacturer:	NE Electra	NE Electra
Model:	DP-6	DP-6
Instrument ID#:	1	5
Serial #:	1256	3126
Cal Due Date:	6/30/03	6/4/03
Analysis Date:	3/6/03	3/11/03
Beta Eff. (c/d):	0.307	0.307
Beta Bkgd (cpm)	390.0	409.0
Sample Time (min)	1	1
LAB Time (min)	1	1
MDC (dpm/100cm^2)	599.0	599.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1]
1	1	827.0	2693.8	623.0	2029.3	481.2
2	1	798.0	2599.3	620.0	2019.5	386.7
3	1	714.0	2325.7	606.0	1973.9	113.1
4	1	745.0	2426.7	595.0	1938.1	214.1
5	1	797.0	2596.1	624.0	2032.6	383.5
6	1	709.0	2309.4	620.0	2019.5	96.8
7	1	864.0	2814.3	761.0	2478.8	601.7
8	1	833.0	2713.4	719.0	2342.0	500.7
9	1	908.0	2957.7	734.0	2390.9	745.0
10	1	815.0	2654.7	654.0	2130.3	442.1
11	1	852.0	2775.2	704.0	2293.2	562.6
12	1	819.0	2667.8	705.0	2296.4	455.1
13	1	923.0	3006.5	713.0	2322.5	793.9
14	1	828.0	2697.1	747.0	2433.2	484.4
15	1	841.0	2739.4	710.0	2312.7	526.8
16	1	885.0	2882.7	704.0	2293.2	670.1
17	1	898.0	2925.1	686.0	2234.5	712.5
18	1	872.0	2840.4	702.0	2286.6	627.8

1 - Average LAB used to subtract from Gross Sample Activity

2212.6	Sample LAB Average
MIN	96.8
MAX	793.9
MEAN	488.8
SD	199.4
Uranium $DCGL_W$	5000

QC Measurements

3 QC	5	685.0	2231.3	556.0	1811.1	353.4
11 QC	5	823.0	2680.8	597.0	1944.6	802.9

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

1877.9	QC LAB Average
Uranium $DCGL_W$	5000

Comments:

Scan surveys indicated that the inside of an embedded pipe between the Low Bay and High Bay common wall had elevated activity up to 26,469 dpm/100cm2 fixed (NE Electra #1833, Calibration Due Date 9/3/03, Beta efficiency 0.315). The contaminated embedded pipe was removed and PDS follow-up surveys verified the contamination was removed. No further investigation is required.

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SURVEY UNIT 865-LB-002
RSC - DATA SUMMARY

Manufacturer:	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4
Instrument ID#:	2	3	4
Serial #:	835	700	911
Cal Due Date:	9/17/03	12/19/03	10/30/03
Analysis Date:	3/7/03	3/7/03	3/7/03
Beta Eff. (c/d):	0.25	0.25	0.25
Beta Bkgd (cpm)	40.5	37.1	32.5
Sample Time (min)	1	1	1
Bkgd Time (min)	1	1	1
MDC (dpm/100cm^2)	200.0	200.0	200.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	2	40.0	-2.0
2	3	24.0	-52.4
3	4	41.0	34.0
4	2	39.0	-6.0
5	3	32.0	-20.4
6	4	43.0	42.0
7	2	44.0	14.0
8	3	26.0	-44.4
9	4	32.0	-2.0
10	2	35.0	-22.0
11	3	35.0	-8.4
12	4	32.0	-2.0
13	2	48.0	30.0
14	3	37.0	-0.4
15	4	35.0	10.0
16	2	44.0	14.0
17	3	32.0	-20.4
18	4	32.0	-2.0
		MIN	-52.4
		MAX	42.0
		MEAN	-2.1
		SD	24.7
		Uranium DCGL$_w$	**1000**

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ATTACHMENT B-3
865 Low Bay Exterior Confirmatory Survey

Radiological Data and Survey Map

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg.	Eberline	Mfg.	Eberline	Mfg.	NE Electra
Model	SAC-4	Model	SAC-4	Model	DP-6
Serial #	767	Serial #	1164	Serial #	1379
Cal Due	5/13/03	Cal Due	6/17/03	Cal Due	6/30/03
Bkg	0.1 cpmα	Bkg	0.4 cpmα	Bkg	0.7 cpmα
Efficiency	33.00 %	Efficiency	33.00 %	Efficiency	21.90 %
MDA	20 dpmα	MDA	20 dpmα	MDA	30 dpmα

Mfg.	Eberline	Mfg.	Eberline	Mfg.	NE Electra
Model	SAC-4	Model	SAC-4	Model	DP-6
Serial #	830	Serial #	952	Serial #	na
Cal Due	8/25/03	Cal Due	7/9/03	Cal Due	na
Bkg	0.2 cpma	Bkg	0.4 cpma	Bkg	na cpmβ
Efficiency	33.00 %	Efficiency	33.00 %	Efficiency	na %
MDA	20 dpma	MDA	200 dpma	MDA	na dpmβ

Survey Type: Contamination
Building: 865
Location: Low Bay Exterior
Purpose: Confirmatory

RWP #: NA

Date: 3/21/03 Time: 1230

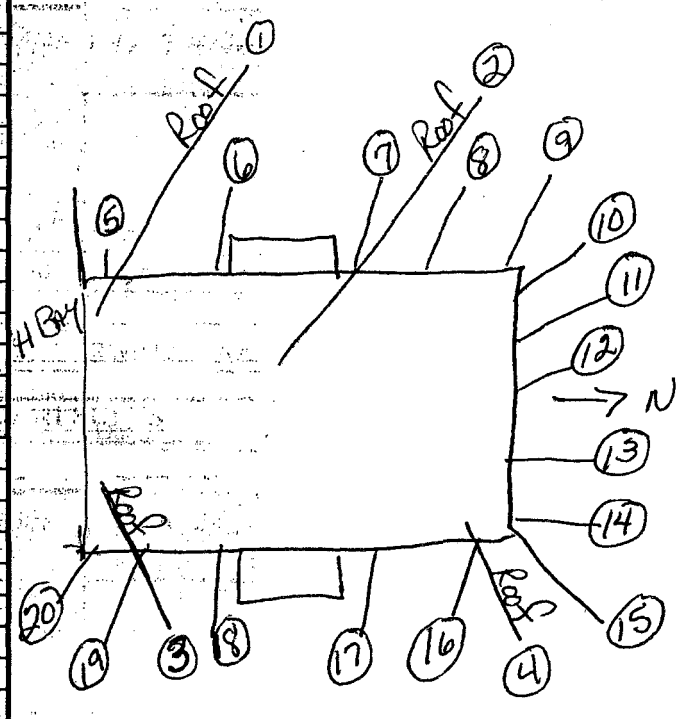
[redacted]
Print name Signature Emp. #

PRN/REN # : NA
Comments: Swipes taken @ locations shown on map

SURVEY RESULTS

Swipe #	Location / Description Results in DPM/100sq.cm	Removable Alpha	Removable Beta	Total Alpha	Total Beta
1	ROOF	<20	NA	<30	NA
2	ROOF	<20	NA	<30	NA
3	ROOF	<20	NA	<30	NA
4	ROOF	<20	NA	<30	NA
5	WEST WALL	<20	NA	<30	NA
6	WEST WALL	<20	NA	<30	NA
7	WEST WALL	<20	NA	<30	NA
8	WEST WALL	<20	NA	<30	NA
9	WEST WALL	<20	NA	<30	NA
10	DOWN SPOUT NORTH WALL	<20	NA	<30	NA
11	EXHAUST VENT NORTH	<20	NA	<30	NA
12	NORTH WALL	<20	NA	<30	NA
13	WINDOWUNDER VENT N	<20	NA	<30	NA
14	DOWN SPOUT NORTH WALL	<20	NA	<30	NA
15	VENT NW	<20	NA	<30	NA
16	JUNCTION BOX EWALL	<20	NA	<30	NA
17	CEMENT PAD EWALL	<20	NA	<30	NA
18	EAST WALL	<20	NA	<30	NA
19	EAST WALL	<20	NA	<30	NA
20	EAST WALL	<20	NA	<30	NA

Map



Date Reviewed: 3-21-03 RS Supervision: [redacted]
Print Name Signature Emp. #

Beryllium Data Summary

Sample Number	Map Survey Point Location	Room	Sample Location	Result (µg/100 cm²)
Building 865 Low Bay -- RIN 03Z0992				
865LB-02172003-315-101	1	Main	On concrete floor	< 0.1
865LB-02172003-315-102	2	Main	On concrete floor	< 0.1
865LB-02172003-315-103	3	Main	On concrete floor	< 0.1
865LB-02172003-315-104	4	Main	On concrete floor	< 0.1
865LB-02172003-315-105	5	Main	On concrete floor	< 0.1
865LB-02172003-315-106	6	Main	On concrete floor	< 0.1
865LB-02172003-315-107	7	Main	On concrete floor	< 0.1
865LB-02172003-315-108	8	Main	On concrete floor	< 0.1
865LB-02172003-315-109	9	Main	On concrete floor	< 0.1
865LB-02172003-315-110	10	Main	On concrete floor	< 0.1
865LB-02172003-315-111	11	Main	On concrete floor	< 0.1
865LB-02172003-315-112	12	Main	On concrete floor	< 0.1
865LB-02172003-315-113	13	Main	On concrete floor	< 0.1
865LB-02172003-315-114	14	Main	On concrete floor	< 0.1
865LB-02172003-315-115	15	Main	On concrete floor	< 0.1
865LB-02172003-315-116	16	Main	On concrete floor	< 0.1
865LB-02172003-315-117	17	Main	On concrete floor	< 0.1
865LB-02172003-315-118	18	Main	On concrete floor	< 0.1
865LB-02172003-315-119	19	Main	On concrete floor	< 0.1
865LB-02172003-315-120	20	Main	On concrete floor	< 0.1
865LB-02172003-315-121	21	Main	On concrete floor	< 0.1
865LB-02172003-315-122	22	Main	On concrete floor	< 0.1
865LB-02172003-315-123	23	Main	On concrete floor	< 0.1
865LB-02172003-315-124	24	Main	On concrete floor	< 0.1
865LB-02172003-315-125	25	Main	On concrete floor	< 0.1
865LB-02172003-315-126	26	Main	On concrete floor	< 0.1
865LB-02172003-315-127	27	Main	On concrete floor	< 0.1
865LB-02172003-315-128	28	Main	On concrete floor	< 0.1
865LB-02172003-315-129	29	Main	On concrete floor	< 0.1
865LB-02172003-315-130	30	Main	On concrete floor	< 0.1
865LB-02172003-315-131	31	Main	On concrete floor	< 0.1
865LB-02172003-315-132	32	Main	On concrete floor	< 0.1
865LB-02172003-315-133	33	Main	On concrete floor	< 0.1
865LB-02172003-315-134	34	Main	On concrete floor	< 0.1
865LB-02172003-315-135	35	Main	On concrete floor	< 0.1
865LB-02172003-315-136	36	Main	On concrete floor	< 0.1
865LB-02172003-315-137	37	Main	On concrete floor	< 0.1
865LB-02172003-315-138	38	Main	On concrete floor	< 0.1
865LB-02172003-315-139	39	Main	On concrete floor	< 0.1
865LB-02172003-315-140	40	Main	On concrete floor	< 0.1

Sample Number	Map Survey Point Location	Room	Sample Location	Result ($\mu g/100\ cm^2$)
865LB-02172003-315-141	41	Main	On concrete floor	< 0.1
865LB-02172003-315-142	42	Main	In concrete trench	< 0.1
865LB-02172003-315-143	43	Main	On metal flange at concrete pillar	< 0.1
865LB-02172003-315-144	44	Main	On 2' high concrete support wall	< 0.1
865LB-02172003-315-145	45	Main	On concrete floor	< 0.1
865LB-02172003-315-146	46	Main	In concrete trench	< 0.1
865LB-02172003-315-147	47	Main	On concrete floor	< 0.1
865LB-02172003-315-148	48	Main	On concrete floor	< 0.1
865LB-02172003-315-149	49	Main	In concrete trench	< 0.1
865LB-02172003-315-150	50	Main	On center concrete bean	< 0.1
865LB-02172003-315-151	51	Main	On steel track for overhead crane	< 0.1
865LB-02172003-315-152	52	Main	On steel track for overhead crane	< 0.1
865LB-02172003-315-153	53	Main	On concrete ledge, south wall	< 0.1
865LB-02172003-315-154	54	Main	On center concrete beam, east end	< 0.1
865LB-02172003-315-155	55	Main	On roof drain pipe	< 0.1
865LB-02172003-315-156	56	Main	On concrete ledge, north wall	< 0.1

ATTACHMENT C

Chemical Data Summaries and Sample Maps

ATTACHMENT D

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION (V&V) 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 D-1 and beryllium in Table D-2. A data completeness summary for all results is given in Table D-3.

All relevant Quality records supporting this report are maintained in the RISS Characterization Project File. The 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 implemented for Building 865 Low Bay based on completed RLCR data and historical and process knowledge of building operations. Survey designs were implemented based on the uranium limits used as DCGLs in the unrestricted release decision process. Survey results for the 865 Low Bay interior were evaluated against, and were less than the uranium DCGLs (i.e., < 1,000 dpm/100cm^2 removable surface activity, < 5,000 dpm/100cm^2 average total surface activity, and no hot spots within 1 m^2 over 15,000 dpm/100cm^2). Survey results for the 865 Low Bay exterior were evaluated against, and were less than the transuranic DCGLs (i.e., < 20 dpm/100cm^2 removable surface activity, < 100 dpm/100cm^2 average total surface activity, and no hot spots within 1 m^2 over 300 dpm/100cm^2). Media samples were taken and analyzed by ISOCS Canberra gamma spectroscopy. Transuranic isotope activity and Uranium and/or other naturally occurring isotope activity were evaluated against, and were less than the Transuranic $DCGL_w$ (100 dpm/100cm^2) and the Uranium $DCGL_w$ (5,000 dpm/100cm^2) unrestricted release limits. Media results were converted to dpm/100cm^2 using the Media Conversion Table, evaluated against the transuranic and uranium DCGL limits, and are the values reported in the Radiological TSA Data Summary in support of the unrestricted release decision process. On this basis, all results were less than the unrestricted release limits, except the contaminated floor slab crack as referenced in Section 3 above.

Consistent with EPA's G-4 DQO process, the radiological survey design for each survey unit performed per PDS requirements was optimized by checking actual measurement results acquired during pre-demolition surveys against the 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.

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DQA 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, except in the following areas:

- Radiological contamination was found in survey unit 865-LB-001 in a crack in the floor slab and in the utility trench. Follow up and/or investigative surveys of the utility trench verified all results were below the Uranium PDS unrestricted release limits. The crack in the floor slab will be managed as radioactive and beryllium waste during demolition of the floor slab. Refer to Section 3 for the discussion on contamination identified in survey unit 865-LB-001 and Attachment B-1 for the radiological survey results.
- Radiological contamination was identified in survey unit 865-LB-002 inside an embedded pipe between the Low Bay and High Bay common wall. The contaminated embedded pipe was physically removed and PDS follow up scan surveys verified the contamination was removed. Refer to Section 3 for the discussion on contamination identified in survey unit 865-LB-001 and Attachment B-2 for the radiological survey results.
- Asbestos containing roof flashing still remains on the 865 Low Bay and will be removed before demolition activities commence.

Based upon an independent review of the radiological data, it was determined that the original project DQOs satisfied MARSSIM guidance. All facility contamination levels were below applicable DCGL unrestricted release levels confirming Type 2 facility classification. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable RSPs, survey units were properly designed and bounded, and instrument performance and calibration was within acceptable limits. All results meet the PDS unrestricted release criteria, except the contaminated floor slab crack as referenced in Section 3 above.

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 1-isolation Controls have been posted to prevent the inadvertent introduction of contamination into the 865 Low Bay. On this basis, Building 865 Low Bay meets the unrestricted release criteria with the confidences stated herein, except the contaminated floor slab crack.

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Table D-1 V&V of Radiological Results - Building 865 Low Bay

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
	Parameters	**Measure**	**Frequency**	**COMMENTS**
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.)
PRECISION	Field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Units 865-LB-001 and 865-LB-002.	statistical and biased	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	Units of measure	dpm/100cm^2	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys Usable results vs. unusable	>95% >95%	NA	See Table D-3 for details.
SENSITIVITY	Detection limits	TSA: ≤50 dpm/100cm^2 RA: ≤10 dpm/100cm^2	all measures	PDS MDAs ≤ 50% $DCGL_w$ per MARSSIM guidelines.

Table D-2 V&V of Beryllium Results - Building 865 Low Bay

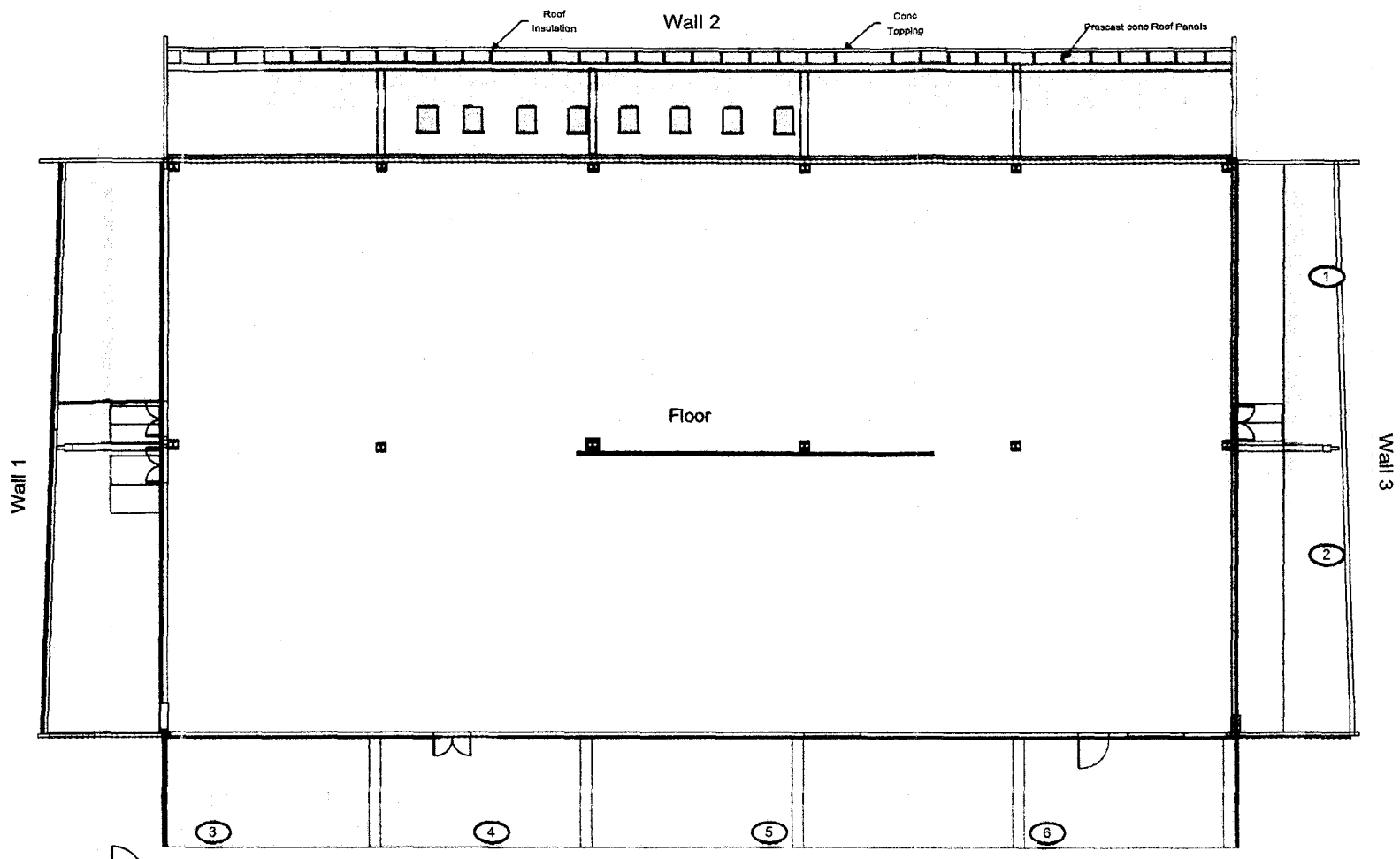
V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Johns Manville, Littleton, Co.	
		RIN ---->	RIN03Z0992	
				COMMENTS
QUALITY REQUIREMENTS		Measure	Frequency	No qualifications significant enough to change project decisions, i.e. classification of a Type 2 Facility confirmed; all results were below associated action levels.
ACCURACY	Calibrations Initial	linear calibration	≥1	
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks – lab & field	<MDL	≥1	
	Interference check std (ICP)	NA	NA	
PRECISION	LCSD	80%<%R<120% (RPD<20%)	≥1	
	Field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	Hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	
COMPARABILITY	Measurement units	ug/100cm^2	NA	
COMPLETENESS	Plan vs. Actual samples Usable results vs. unusable	>95% >95%	NA	
SENSITIVITY	Detection limits	MDL of 0.012 ug/100cm^2	all measures	

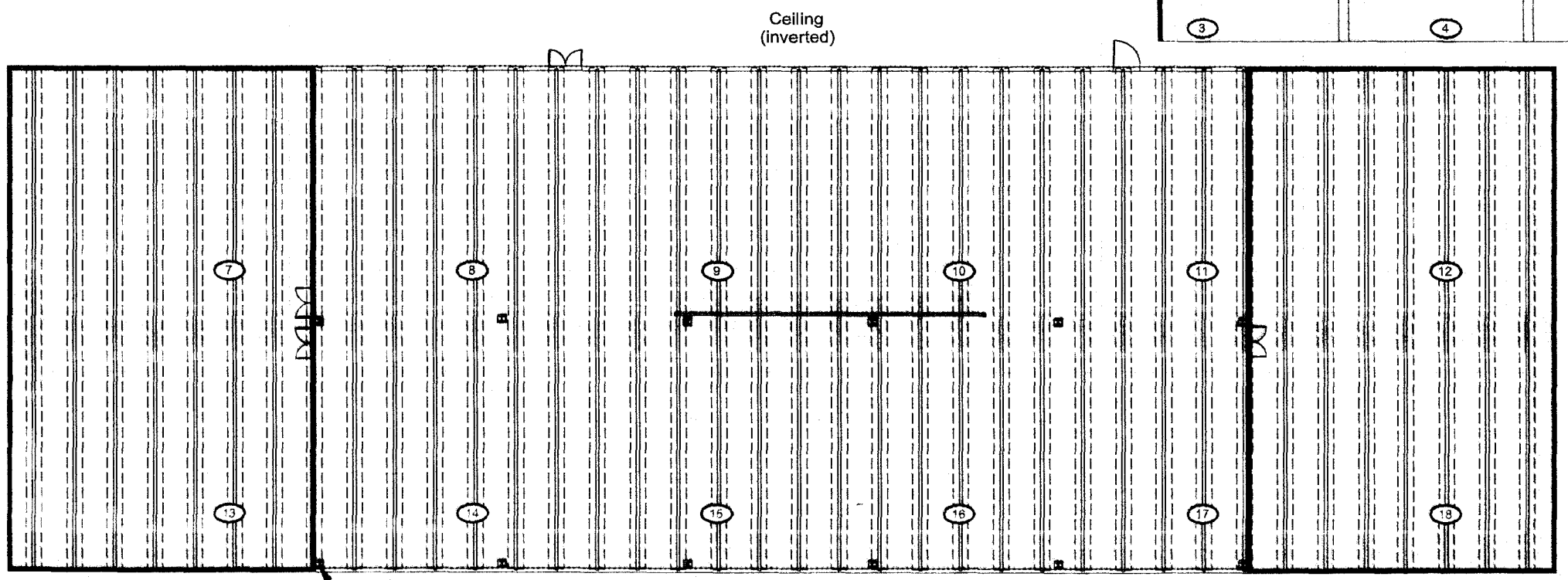
Table D-3 Data Completeness Summary - Building 865 Low Bay

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 865 Low Bay (interior)	56 biased (41 random/15 biased)	56 biased (41 random/15 biased)	No contamination found at any location, all results are below associated action levels	10CFR850; OSHA ID-125G RIN03Z0992 No results above the action level (0.2 ug/100cm^2) or investigative level (0.1 ug/100cm^2.)
Radiological	Survey Area LB Survey Unit: 865-LB-001 B865-Low Bay (Floor and lower walls < 2 m. – interior)	170 β TSA (systematic) and 170 β Smears (systematic) 9 QC TSA 100% scan of floors and walls < 2 m.	170 β TSA (systematic) and 170 β Smears (systematic) 9 QC TSA 100% scan of floors and walls < 2 m.	Elevated contamination on the floor slab; all other locations below PDS unrestricted release levels	Uranium DCGLs (1,000 dpm/100cm^2 removable; 5,000 dpm/100cm^2 average total fixed; 15,000 dpm/100cm^2 maximum total fixed). Refer to Section 3 for a discussion on the elevated contamination identified in Survey Unit 865-LB-001. Refer to Attachment B-1 for the survey results of the elevated contamination that was discovered in Survey Unit 865-LB-001.
Radiological	Survey Area LB Survey Unit: 865-LB-002 B865-Low Bay (Upper walls > 2 m. and ceiling)	17 β TSA (systematic) and 17 β Smears (systematic) 2 QC TSA 25% scan of upper walls and ceiling > 2 m.	18 β TSA (systematic) and 18 β Smears (systematic) 2 QC TSA 25% scan of upper walls and ceiling > 2 m.	No contamination at any location; all locations below PDS unrestricted release levels	Uranium DCGLs (1,000 dpm/100cm^2 removable; 5,000 dpm/100cm^2 average total fixed; 15,000 dpm/100cm^2 maximum total fixed). Refer to Section 3 for a discussion on the elevated contamination that was identified in Survey Unit 865-LB-002. Refer to Attachment B-2 for the survey results of the elevated contamination that was discovered in Survey Unit 865-LB-002.

PRE-DEMOLITION SURVEY FOR BUILDING 865

Survey Area: LB **Survey Unit: 865-LB-002** **Classification: 2**
Building: 865 Low Bay
Survey Unit Description: Ceiling & Walls >2m & Above
Total Area: 2238.47 sq. m. **Total Floor Area: 1128.68 sq. m.**
Grid Spacing for Survey Points: 12 m. X 12 m.





Wall 4

STARTING POINT FOR SQUARE SAMPLING GRID (X84, Y25)

SP

Scan Area

SURVEY MAP LEGEND

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

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 5, 6, 7 & 8

N

0 FEET 30
0 METERS 10

1 inch = 24 feet 1 grid sq. = 1 sq. m.

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

Prepared by: GIS Dept. 303-966-7707
CH2MHILL Communications Group

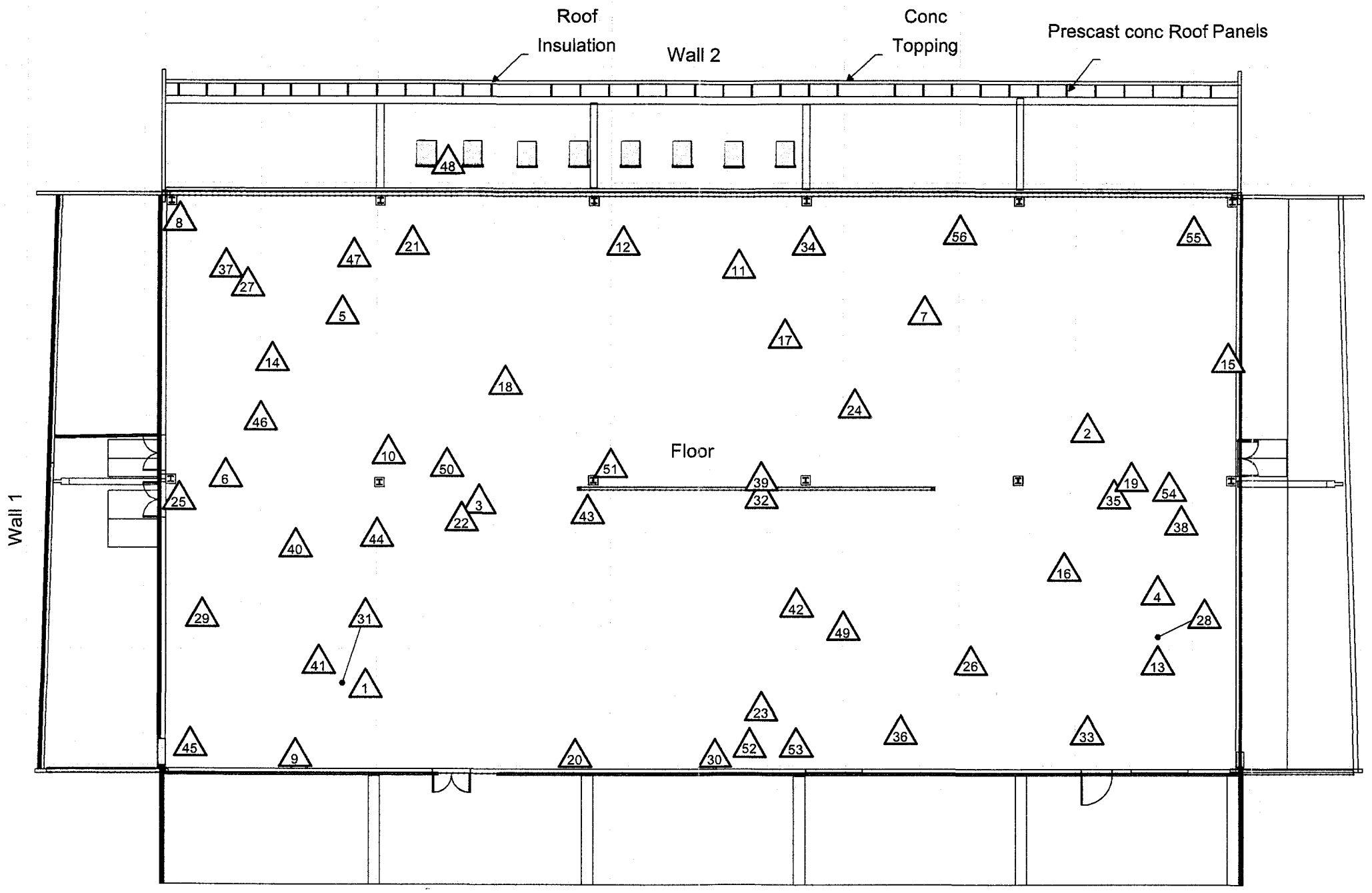
Prepared for:
KAISER HILL

MAP ID: 03-0096\865-T2-SC
March 25, 2003

CHEMICAL SAMPLE MAP

Building: 865 Low Bay
Beryllium

Building 865 Low-Bay



SURVEY MAP LEGEND	
Asbestos Sample Location	
Beryllium Sample Location	
Lead Sample Location	
RCRA/CERCLA Sample Location	Open/Inaccessible Area
PCB Sample Location	Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

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

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

Prepared by: GIS Dept. 303-966-7707

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Prepared for:
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MAP ID: 03-0096\865-LB-BE2 Feb 26, 2003

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