OUTGOING LTR. NO.
DOE/ORDE 4700.1

97-RF-06591

DIST.	LTR	ENC
BENSUSSEN, STAN		
BRAILSFORD, M		
BUHL, TONY		
BURDGE, LARRY		
CARD, BOB		
CHAPIN, JOHN		
COLES, GARY		
CROWE, STEVE	X	
ERBACHER, BA		
ERVIN, PAT	X	
EVANS, BEN L.	X	
HARDING, WYN		
HARROUN, BILL		
HEDAHL, T.	X	
LEONARDI, KEN		
MARTINEZ, LEN		
MCGOVERN, LE		
OGG, BOB		
PARKER, ALAN	X	
SAM GIANTI	X	
SPROLES, NOR		
TILLER, BOB		
TUOR, NANCY		
VOORHEIS, GARY		
WHITING, JOHN	X	
WHELTON, D.	X	
WROUSSARD,M	X	
RUSEGAARD	X	
HUTCHINS,	X	
CORRES.CONT	X	X
ADMIN RECRD/080		
TRAFFIC		
DATS/T130G		

CLASSIFICATION:
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CONFIDENTIAL
SECRET

AUTHORIZED CLASSIFIER SIGNATURE:
Date: 12/15/97

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ACTION ITEM STATUS:
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CLOSED

LTR APPROVALS:

ORIG. & TYPIST INITIALS:
sak

KAISER•HILL COMPANY

December 15, 1997

97-RF-06591

Henry F. Dalton
Asst. Manager Material Stabilization & Disposition
DOE, RFFO

VERIFICATION OF MILESTONE COMPLETION - BLE-137-97

PURPOSE
This memo verifies completion of FY98 Work Proposal Document (WPD) Milestone.

DISCUSSION
Under the Kaiser-Hill Company, L.L.C. 800 CLUSTER PROJECT (WPD 29), a Proposed FY98 Milestone is as follows:

WBS Element	Milestone	Milestone Date
1.1.06.19.04	Submit Reconnaissance Characterization Report	December 15, 1997

The attached Reconnaissance Characterization Report for the 800 Cluster Project is submitted to satisfy the above Proposed WPD FY98 Milestone. This document has been prepared to the Rocky Flats Cleanup Agreement (RFCA) requirement for preparation of Reconnaissance Level Characterization Reports. Upon concurrence by RFFO, the document should be submitted to Colorado Department of Public Health and Environment and Environmental Protection Agency.

RESPONSE REQUIREMENTS
No response is required. This information is informative in nature and documents milestone completion on December 15, 1997.

B. L. Evans
Division Manager
D&D/Projects

JWW:sak

Orig. and 1 cc - Henry Dalton

Kaiser-Hill Company, L.L.C.
Courier Address: Rocky Flats Environmental Technology Site, State Hwy. 93 and Cactus, Rocky Flats, CO 80007 • 303.966.7000
Mailing Address: P.O. Box 464, Golden, Colorado 80402-0464

Attachment:
As stated

cc:
Paul M. Golan w/o attach
Dave J. Nickless w/o attach

RMRS Rocky Mountain Remediation Services, L.L.C.
. . . protecting the environment

RF/RMRS-97-124.UN

RECONNAISSANCE LEVEL CHARACTERIZATION REPORT

FOR THE 886 CLUSTER DECOMMISSIONING PROJECT

December 15, 1997
Revision 0

RECONNAISSANCE LEVEL CHARACTERIZATION REPORT FOR THE 886 CLUSTER DECOMMISSIONING PROJECT

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ACRONYMS

ACM	Asbestos Containing Materials
AHERA	Asbestos Hazard Emergency Response Act
ALARA	As Low As Reasonably Achievable
BIO	Basis for Interim Operation
CA	Contamination Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CML	Critical Mass Laboratory
COCs	Contaminants of Concern
DOE	Department of Energy
EDDs	Electronic Data Deliverables
dpm	Disintegrations Per Minute
DQO	Data Quality Objectives
HCA	High Contamination Area
HEPA	High Efficiency Particulate Air filter
HEUN	Highly Enriched Uranyl Nitrate
HVAC	Heating Ventilation and Air Conditioning
IM/IRA	Interim Measure/Interim Remedial Action
LLMW	Low Level Mixed Waste
LLW	Low Level Waste
MAA	Material Access Area
MSDs	Matrix Spike Duplicates
PARCC	Precision, Accuracy, Representativeness, Completeness, and Comparability
PCBs	Polychlorinated biphenyls
PLM	Polarized Light Microscopy
ppm	Parts Per Million
RCA	Radiation Control Area
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RLCP	Reconnaissance Level Characterization Plan
RLCR	Reconnaissance Level Characterization Report
RPD	Relative Percent Difference
SNM	Special Nuclear Material
SOE	Stationary Operating Engineer
TCLP	Toxic Characteristic Leachate Procedure
TRU	Transuranic
TSI	Thermal System Insulation
UCL	Upper Confidence Level

RECONNAISSANCE LEVEL CHARACTERIZATION REPORT FOR THE 886 CLUSTER DECOMMISSIONING PROJECT

1.0 EXECUTIVE SUMMARY

Building 886 housed the Critical Mass Laboratory and was operated from 1965 until 1987. Since then, operations within the building have been limited to maintaining the safety envelope and compliance with the Basis of Interim Operation. Since Building 886 and its associated facilities have no mission, the cluster is being decommissioned to reduce operating costs and to eliminate hazards within the cluster's buildings. Deactivation activities are not yet complete, but had progressed to the point where a meaningful characterization could be conducted. The purpose of this Reconnaissance Level Characterization Report is to present the historical data and process information pertaining to the 886 Cluster to provide a baseline of information for hazards within the building cluster. The reconnaissance level characterization of the Building 886 Cluster included a review of historical records and the collection of process knowledge and samples to determine the extent of contamination within the cluster.

The characterization of the 886 Cluster has revealed that the cluster has been maintained within the safety envelope required by the Basis for Interim Operation. The hazards which will need to be considered in developing plans for and executing decommission activities can be summarized in the following list.

- Physical Hazards (i.e., trip and fall hazards, noise hazards, sharp edges, etc.) - Hazards are found in Buildings 886, 875, 888A, 828, and 880.
- Radiological Hazards - Contamination areas are found in Buildings 886, 875, and 880. High contamination areas are found in Buildings 886 and 875.
- Chemical Hazards - Primarily lead and other metals in building paints, and some limited polychlorinated biphenyls (PCB) sources. No beryllium has been identified associated with the cluster either through process knowledge or analytical results.
- Asbestos Hazards - Asbestos containing materials are found throughout the cluster with the exception of T886A. An asbestos abatement plan will be required as part of the decommissioning activities.
- Pressurized Gas Cylinders Hazards - Only one nitrogen gas container remains in the 886 Cluster.
- Electrical Hazards - Electrical systems are currently in a safe and compliant condition. However, when decommissioning activities begin, significant electrical hazards in Buildings 886, 875, and 888A will need to be addresses.

2.0 INTRODUCTION

The Building 886 Cluster (Figure 1-1) is comprised of Buildings 886, 888A, 880, 875, 828, T886A, and an underground tunnel with ventilation ducts that connects Building 886 to Building 875 (Figure 1-2). Because Building 886 and its associated facilities have no mission, the cluster is being decommissioned to reduce operating costs and to eliminate hazards within the cluster's buildings. Consistent with the Rocky Flats Cleanup Agreement (RFCA), the 886 Cluster Decommissioning Project is being conducted as a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal action. The 886 Cluster Decommissioning Project is one of the decommissioning activities at the Rocky Flats Environmental Technology Site (RFETS) selected to meet the site's goals.

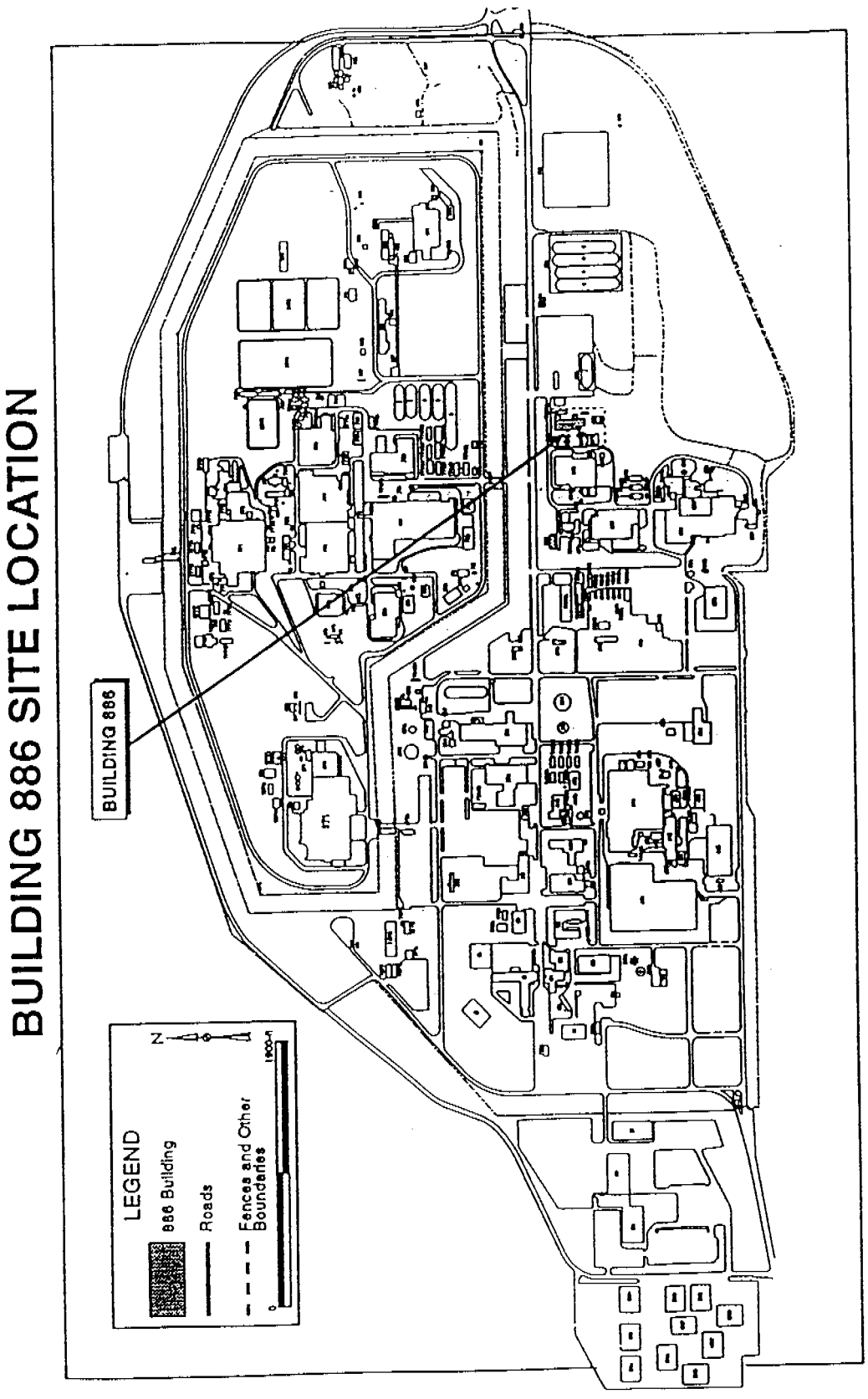

Figure 1-1. 886 Cluster Location at RFETS

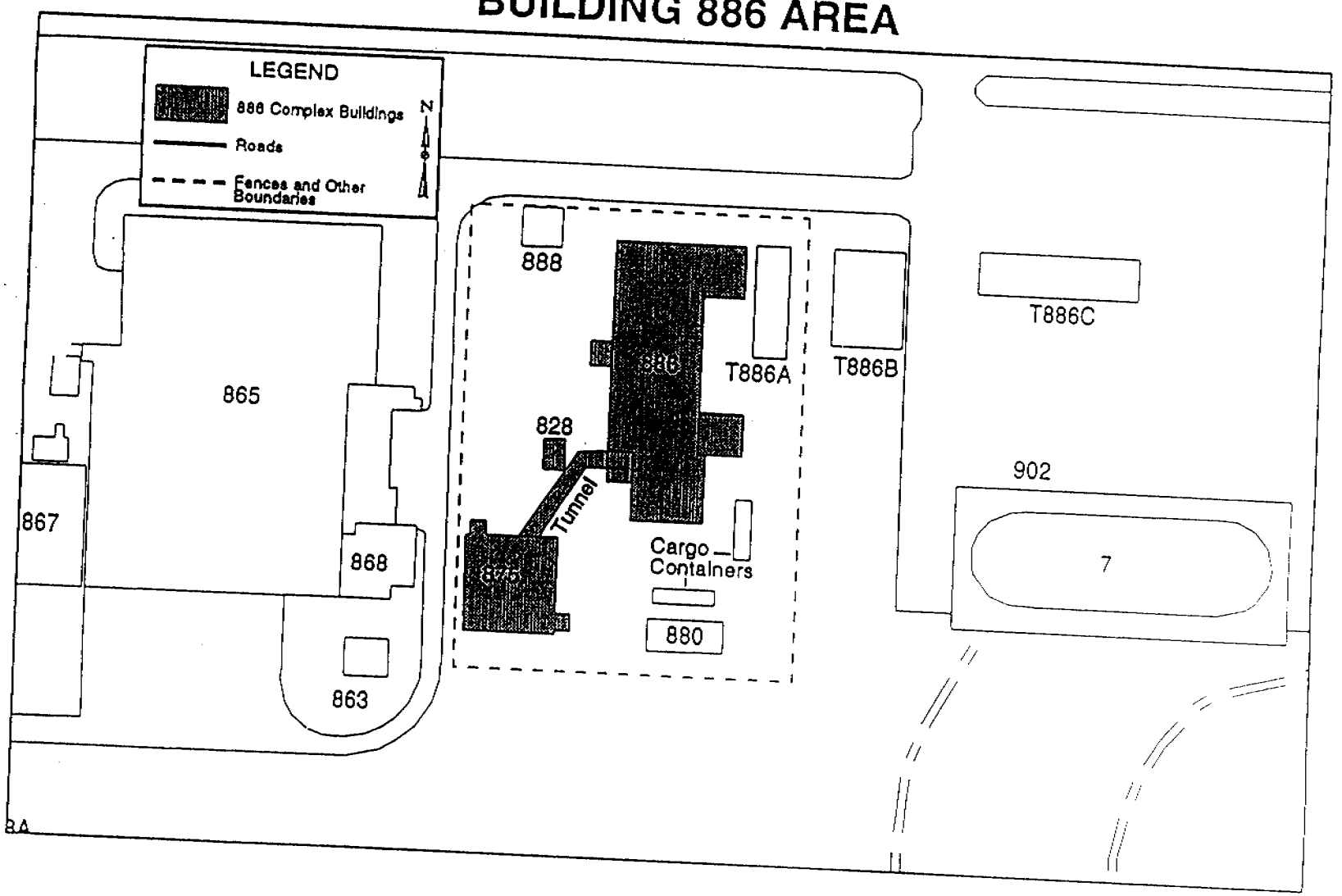

Figure 1-2. 886 Cluster

2.1 Report Purpose

The purpose of this Reconnaissance Level Characterization Report (RLCR) is to present the historical data and process information pertaining to the 886 Cluster to provide a baseline of information for hazards within the building cluster. Characterization includes identification of the type, quantity, condition, and location of radioactive and hazardous materials which are, or which may be present as residual contamination in the subject facilities. Information from the report will be incorporated into an Interim Measure/Interim Remedial Action (IM/IRA) plan for the 886 Cluster Decommissioning Project.

2.2 Characterization Scope

The reconnaissance level characterization of the Building 886 Cluster included a review of historical records and the collection of process knowledge information covering the operational time period for the facility from original construction to present. This information was evaluated to identify data needs for the characterization effort. Samples were then collected from throughout the cluster and analyzed to complete the information needed to represent the current condition of the buildings and associated contamination.

2.3 Report Content

Information and data presented in this report specifically pertain to the Building 886 Cluster. The report includes a summary of the characterization activities, a brief physical description of the facilities, identifies the hazards within the cluster, estimates the types and volumes of wastes which will be generated during decommissioning activities, presents a data quality assessment, and lists the information source and references used in compiling the characterization of the Building 886 Cluster.

3.0 SUMMARY OF CHARACTERIZATION ACTIVITIES

The characterization effort for the 886 cluster included a review of historical records pertaining to the cluster and collecting process knowledge regarding conditions within the buildings. As part of this investigation, comprehensive physical inspections of all accessible areas of the 886 Cluster were conducted during November and December, 1997. The primary purpose of these inspections were:

- confirm the accuracy of file documentation of as-built or modified facility construction, equipment installations, and general facility conditions;
- obtain volume estimates for wastes that will be generated during removal activities;
- identify equipment, structures, process lines, and associated items that will require hazardous and/or radioactive surveys and analytical sampling to further characterize the cluster;
- identify potential sources of lead and asbestos;
- identify potential chemical contamination;
- identify physical hazards;
- locate, identify, and document any facility condition or problem situation which had not been previously identified or otherwise documented in appropriate building records or files; and
- identify equipment, structures, process lines, and associated items which require field surveys and/or analytical sampling for the purpose of characterizing the cluster for radioactive and hazardous contaminants.

The final portion of the characterization effort involved the development and execution of a Reconnaissance Level Characterization Plan (RLCP). This document stated the sampling effort to be conducted in the cluster buildings. It included plans for sampling areas potentially containing or contaminated with asbestos, polychlorinated biphenyls

(PCBs), and lead and metals. The plan was reviewed and approved and the execution was directly supervised by a State of Colorado certified asbestos inspector. Radiological contamination was sufficiently characterized by process knowledge and existing surveys.

3.1 Data Quality Objectives Used

Data Quality Objectives (DQOs) were established and defined in Section 3.0 of the RLCP. Definition of DQOs is a quality requirement as well as a proven tool for optimizing sampling and analysis costs relative to attaining adequate confidence in technical project decisions. The DQO process was designed after EPA (EPA, 1994, G-4) and DOE guidelines. All DQOs were consistent with applicable state and federal regulations governing the contaminants of concern (COCs). A concise summary of the DQOs as presented in the RLCP is given below.

THE PROBLEM

Several contaminants were suspected within the 886 Cluster, but the quantities and concentrations of contaminated media were unknown relative to the requirements associated with D&D activities. Determination of the types and quantities of contamination, and the associated consequent waste streams, are required for successful implementation of D&D. Based on historical process knowledge of the 886 Cluster, the potential COCs are asbestos, PCBs, lead/metals, and radionuclides.

THE DECISIONS

The critical technical decisions for the project were as follows:

- What materials (e.g., paint, concrete, pipe insulation, etc), media (e.g., water, oil, solid, sludge, etc), or equipment within the facility are contaminated or, conversely, not contaminated?
- What are the generic classification categories by which the materials, equipment, and/or media will be managed, relative to an eventual assignment as contaminated (hazardous, radiological, or mixed) or not contaminated (nonhazardous)? In other words, what are the categories of waste streams that will result from the D&D of the 886 Cluster?
- What are the ultimate dispositions (i.e., waste classifications) of the waste streams, including quantities (e.g., a completed summary table)?

INPUTS to the DECISIONS

Inputs to the decisions were designed to be both qualitative and quantitative. Qualitative information consisted of nominal data (e.g., paint color or equipment type) derived from visual observation of buildings' equipment and materials. Quantitative data was produced from analytical and petrographic analyses of samples (for characteristic metals, PCBs, and asbestos). Radiation activities were estimated based on historical surveys.

PROJECT BOUNDARIES

The 886 Building cluster (i.e., the buildings themselves) and all equipment/materials contained within, was relegated as within the project boundaries, whereas environmental media outside the buildings were not.

DECISION RULES and ERROR LIMITS

All decision rules were based on objective, reproducible, and verifiable quantitative criteria as stated in Section 3.5 of the RLCP. Decision error tolerance was established at 5% (i.e., a 95% upper confidence limit) for data sets representing homogeneous media.

OPTIMIZATION OF DESIGN

Any modifications to the DQOs hinged on visual observations and new information revealing data gaps as the project progressed, and are discussed in the Data Quality Analysis.

3.2 Sampling and Field Measurement Methods, Equipment, and Procedures

Acquisition of a sample directly depends on the sampling team's observations of the material, equipment, equipment components, or media of interest. Because of excess equipment noted in some of the rooms and/or buildings, access to all potential survey points is not possible. In addition, the cluster is not through deactivation. These deactivation activities (such as size reduction and removal of radiologically contaminated materials and equipment) may jeopardize the characterization surveys. Therefore, if data gaps are identified subsequent to the characterization sampling and decisions described herein (i.e., the decision cannot be made with confidence), additional sampling of source materials and/or waste streams will be conducted.

As stated earlier in this report, the radiological contamination within the 886 Cluster was able to be characterized using process knowledge and existing surveys. Similarly, process knowledge was conclusive concerning the absence of beryllium contamination with the 886 Cluster. Thus, the characterization effort focused on the following hazardous constituents: asbestos, PCBs, and lead and metals. The sampling and field measurements, equipment, and procedures used to perform the characterization for these contaminants are described below.

Asbestos

Asbestos containing materials (ACM) were inspected and sampled by a State of Colorado certified inspector in accordance with the Colorado Code of Regulations 8 and the Asbestos Hazard Emergency Response Act (AHERA), 40 Code of Federal Regulation (CFR) 763. The materials evaluated include thermal systems (e.g., pipe insulation), surfacing materials (e.g., fireproofing, ceiling texture), and miscellaneous materials (floor tiles, ceiling panels, concrete foundations and walls). Bulk samples were taken using coring bits or hammer and chisel in accordance with the RLCP.

Polychlorinated Biphenyls (PCBs)

Potential PCB contamination was evaluated in accordance with 40 CFR 761.125. To assess material against the regulatory threshold of 50 parts per million (ppm), a practical quantitation limit of 5 ppm (one order of magnitude less than the regulatory action level) was used. Material sampled included transformers, capacitors, fluorescent light ballasts, gaskets in potential PCB-containing systems, and paints in accordance with the RLCP.

Lead and Metals

All materials suspected of containing or being coated with lead or other Resource Conservation and Recovery Act (RCRA) regulated metals were representatively sampled. This included paint, gloveboxes, shielding, piping, plates, lead fills in walls, skirting, and additives (e.g., plaster). The bulk samples were collected as described in American Standard for Testing Materials (ASTM) Method E 1729-95 using chisels, scrapers, and cutting tools in accordance with the RLCP. The analysis routinely includes evaluation for beryllium.

3.3 Laboratory Analysis

Table 3-1 summarizes the analytical methods performed on the various samples taken during the characterization effort.

Table 3-1. Laboratory Analysis Methods

Suspected Contaminant	Laboratory Analysis Method
Asbestos	Polarized Light Microscopy
PCBs	SW8081
Lead and Metals	SW6010A

4.0 CLUSTER OPERATING HISTORY

The purpose of the 886 Cluster was to conduct criticality experiments on liquid, powder, and solid forms of fissionable materials. The date of the last criticality experiment was October 1987. These experiments were essential to validate computer models used to establish nuclear criticality safety limits, now called Criticality Safety Operating Limits.

4.1 History of Buildings

The construction of Buildings 886, 875, and 888A was completed in 1964 and commissioned in 1965. The trailer T886A was located east of Building in approximately 1980; a breeze-way connected the two at a later date. The construction date of Building 880 is unknown. The last criticality experiment was conducted in October 1987. Since then the buildings have been maintained within the safety envelope, but the facility is not operational.

4.2 Significant Releases and Events

There reportedly have been five incidents where uranyl nitrate was spilled onto the floor of the Critical Mass Laboratory (CML). The largest spill involved between 50 and 60 gallons of solution. The laboratory floors are sealed and bermed to contain such spills, and in no case did solution escape the building. The solution was recovered for further use. In another case in the late 1960's, an accumulation of uranyl nitrate salt was found inside the base of the ventilation system filter plenum outside of Building 886. This accumulation, about one foot square and one-quarter inch thick, is thought to have most likely resulted from an incident in which some solution overflowed into a vent line and dried, with subsequent air flow over the vent carrying the salt to the filter plenum.

There are no recorded instances where contamination was released to the environment.

4.3 Current Operations

Building 886 is not currently operational. The buildings have been vacated except for three individuals who are planning moves and T886A, which is being utilized as a project support trailer. Deactivation activities were suspended in late FY97 to because resources were diverted to other efforts. The only ongoing operations are those necessary to maintain the safety envelope and comply with the basis for operation (BIO) building authorization.

4.4 RCRA and CERCLA Designated Areas

There are no RCRA or CERCLA designated areas within the 886 cluster. However, the 886 Cluster Decommissioning Project is being conducted as a CERCLA removal action.

5.0 PHYSICAL DESCRIPTION

The 886 Cluster is located in the RFETS industrial area at the east central portion of the site. It is located just south of Central Avenue and just east of the pedestrian traffic signal. The buildings were used in support of criticality experimentation from 1965 through 1987. Primary construction materials used in the buildings include concrete masonry, steel, and wood with siding.

5.1 Summary Description

The buildings associated with the cluster are 886, 888A, 880, 875, and T886A. The cluster also includes an outside concrete pit containing two raschig ring tanks also referred to as building 828, and an underground tunnel linking the Air Filter Plenum Building (875) with Building 886. All the structures are single story buildings, with the exception of the criticality laboratory portion of Building 886 which is two stories high. The individual buildings are described in more detail in the following sections.

5.2 Specific Description

Building 886

Building 886 contains the Critical Mass Laboratory (CML) where criticality experiments were performed. It is approximately 10,785 square feet, of which approximately 4,000 square feet constitutes the radiological control area (RCA). The remaining area is comprised of office space. The facility has no basement. The RCA is comprised of rooms 101, 102, and 103; and a hallway, referred to as room 108; all with slightly different construction from each other.

Room 101 is the assembly room where all criticality experiments were performed. It is approximately 2,000 square feet. It has four to five feet three thick concrete walls and the north wall is reinforced concrete. The ceiling is 30 feet above the floor and is also thick concrete. The floor is concrete and is a floating floor with respect to the walls.

Room 102 was a storage vault for special nuclear material (SNM). It is approximately 600 square feet. The walls are double reinforced concrete with a cast integral concrete roof.

Room 103 is the mixing room which serves as a fissile solution mixing and storage area. It is approximately 900 square feet. It has three walls that are reinforced concrete with the west wall constructed of back filled cinder blocks with rebar. The roof is sheet metal with a tar overlay. Approximately half of the room is two to four feet below the building's floor level.

Room 108 is the hallway within the CML connecting Rooms 101, 102, and 103. It is approximately 500 square feet.

Outside of the RCA, Room 111 is the Utility Room and Room 112 is the Control Room. Room 141 is the Stationary Operating Engineer (SOE) Control Room. The remaining rooms within the building are considered office space. The floor of these rooms is a slab on grade and the walls are back filled cinder block with a built up roof.

Recent removal of containers of low enriched uranium oxides and two check sources of Cobalt-60 and one check source of Californium-252 was completed as a risk reduction activity. Highly enriched uranyl nitrate (HEUN) was drained from the tanks in Building 886 and the raschig rings were removed from the tanks in Room 103 as part of a risk reduction activity.

The equipment located in Building 886 is listed in Table 5-1.

Table 5-1. Building 886 Equipment

Equipment	Quantity	Equipment	Quantity
Horizontal Split Table (RCA)	1	Concrete Reflector Panels (RCA)	8
Vertical Split Table (RCA)	1	Solution Transfer Pump (RCA)	6
Solution Base (RCA)	1	Reactor Control Console	1
Water Reflector Apparatus (RCA)	1	Air Compressors	2
Elevated Platform (RCA)	1	Bridgeport Mill	1
Walk-in Hood (RCA)	1	Logan Lathe	1
Stainless Steel Tanks (RCA)	11	Lektriever	1
Glovebox Type Enclosures (RCA)	2		

Building 875

Building 875 is approximately 3,900 square feet and houses the filter plenums that filter air which has been circulated through the Building 886 Exhaust System. The building is cinder block construction with a concrete floor. The roof is tar impregnated felt.

The facility has a concrete pit on the north end which accesses the tunnel. The tunnel connecting 875 and 886 is considered part of this facility. Plenum 501 is a two-stage high efficiency particulate air (HEPA) filter servicing the office area. Plenum 502 is a four-stage HEPA filter plenum servicing the material access area

(MAA) exhaust air. Tank D-501 is the plenum deluge tank. The building also contains a 1,200-gallon critically safe tank filled with raschig rings. A metal cabinet containing sources is also in the facility. Groundwater seepage into the raschig ring tank area is routinely pumped out. Drummed waste located in Building 875 has been packaged and radiologically surveyed and is presently awaiting shipment.

Building 888A

Building 888A is an approximately 400 square feet enclosure, and is an electrical substation for the cluster's buildings. It consists of two cinder block walls on the north and west, with the remaining sides consisting of chain link fence with razor wire top. There is no roof and the floor is natural ground. The structure encloses one feeder transformer that operates at 13,800 volts which supplies power to Buildings 886 and 875. The transformer has been previously tagged indicating that polychlorinated biphenyls (PCBs) are not present.

Building 880

Building 880 is an unpainted, metal building of approximately 800 square feet currently being used for excess storage. It is a metal "Butler" type building 100 feet south of Building 886. It has several items of used experimental equipment waiting anticipated re-use. Some of these items were, at one time, contaminated with enriched uranium and packaged in the then-acceptable contained configuration. While contaminated materials and equipment are included in the current inventory, no materials are being moved in or out of the building. The majority of waste streams are considered, and will be packaged and handled as, low-level waste.

Building T886A

Building T886A is approximately 1,900 square feet and is an officer trailer attached to the northeast corner of Building 886. It serves as office space for the 886 Cluster Decommissioning Project and is of standard trailer construction.

Building 828

Building 828 is an outside concrete pit containing two 1,000 liter tanks filled with unused raschig rings. Groundwater has historically seeped into the pit and was pumped out to a tanker, sampled, and transported for appropriate disposal.

6.0 IDENTIFIED HAZARDS

The hazards identified during the reconnaissance level characterization for the 886 Cluster are summarized in Table 6-0 and described in the following sections by hazard category and by area.

Table 6-0. Hazard Summary

Bldg./ Room	Description	Square Feet	Hazard	Matrix	Max. Concentration
B886	General Building (specific rooms detailed below)	10,785	Asbestos	Piping insulation, skim coat on cinder block, floor and ceiling tiles, filler, wiring insulation, roof	
			Press. Gas	one cylinder of nitrogen gas	N/A
101	Critical Mass Laboratory	2,000	Physical	Elevated platform, overhead equipment, falls	N/A
			Radiological	Tanks, process lines, ventilation ducts, assembly hood, floor, and equipment	HCA Limits
			Hold up	2 tanks with raschig rings, SCRAM tank, annular tank	Classified
			Lead	Paint (by color)	
102	Storage Vault	600	PCBs		
			Radiological	Potential fixed contamination in floor	HCA Limits
103	Mixing Room	900	Lead	Paint	
			Physical	Un-secured ladder, protruding piping and valves	N/A
			Radiological	Tanks, process lines, ventilation ducts, glovebox, floor	HCA Limits
			Hold up	Pumps	Classified
			Lead	Paint (by color)	
108	Hallway	500	PCBs		
			Radiological	Potential loose surface contamination	HCA Limit

Bldg./ Room	Description	Square Feet	Hazard	Matrix	Max. Concentration
			Lead	Paint	N/A
111	Utility Room	1,000	Physical	Sharp edges, corners, protruding piping and valves	
			Lead	Paint (by color)	
			PCBs		480 V
			Electrical	Equipment, electrical panels	N/A
			Physical	Control boxes and sheet metal with sharp edges	
112	Control Room	480	Lead	Paint	480 V
			Electrical	Control boxes, electrical panels	N/A
			Physical	Sheet metal with sharp edges	
All others	Offices	5,300	Lead	Paint	N/A
			Physical	Noise, sharp edges	HCA Limits
B875	Filter Plenum Facility	3,900	Radiological	Filter Plenum	
			Lead	Paint	
			PCBs		
			Asbestos	Piping insulation, roof	480 V
			Electrical	Equipment, electrical panels	N/A
			Physical	Trip and fall, protruding edges	
B880	Storage	800			

Bldg./ Room	Description	Square Feet	Hazard	Matrix	Max. Concentration
			Radiological	Stored waste	HCA Limits
			Lead	Paint (by color)	
			PCBs		
B828	Tank Pit	170	Physical	Confined space, falls, protruding pipes and valves, slips, spiders	N/A
			Lead	Paint	
B888A	Electrical Substation	400	Physical	Razor wire	N/A
			Asbestos	Wiring insulation, arc chutes, arc protection, insulators, conduit trays	
			Electrical	Substation	13.8 kV
T886A	Project Trailer	1,900	Lead	Paint	

6.1 Physical Hazards

The buildings within the 886 Cluster have been maintained within the safety envelope required by the BIO. As a result, there are no physical hazards from damaged or dilapidated infrastructure. However, some physical hazards are intrinsic with portions of the cluster and are described below.

Building 886

Room 101 has an elevated platform with equipment located on it as well as an overhead crane. These may represent an overhead hazard when D&D activities begin. Work on the platform has fall hazards associated with it.

Room 103 has a ladder going to an elevated platform which is not secure and has been barricaded. The room also has protruding piping and valves which represent a hazard to workers when they are working closely around the equipment.

Room 111 has numerous sharp edges, corners, and protruding pieces of equipment, pipes, and valves. Although safe for current operations in that they do not impinge on the walk ways, when workers begin D&D operations in this room, they will need to be cognizant of these hazards.

Room 112 has numerous control boxes and sheet metal with sharp edges.

Throughout the building, and the rest of the cluster, there is sheet metal with sharp edges. Although not normally accessible, as D&D activities begin around the sheet metal, attention to cutting edges will be required.

Building 875

The operation of the air filtration system in Building 875 creates a noise hazard which requires the use of hearing protection within the building when the filter plenum system is in operation.

Building 888A

This enclosure around the electrical substation has razor wire around the top. This represents a hazard to the workers when they proceed with D&D activities.

Building 828

Building 828 is a below grade confined space. Any work within the pit will require a confined space permit. Furthermore, the pit represents a falling hazard if left open and consideration will need to be given during the D&D process to maintaining fall protection or barricades around it.

The pit also contains numerous protruding pipes and valves which will be a hazard for workers in the pit.

Historically, there have been numerous occasions when ground water has enter 828. This water was pumped out, but the pit is wet, muddy, and slick.

The pit is also a natural breeding ground for spiders. Measures have been taken in the past to eliminate the spiders before beginning work in the pit. Similar precautions will be needed for the D&D activities.

Building 880

Building 880 has been used for storage. The material stored in the building creates numerous trip and fall hazardous, and protruding edges if moving among the containers.

6.2 Radiological Hazards

Past Activities

Deactivation activities had previously begun in Building 886 prior to the initiation of this project. Those activities involved the draining and offsite shipment of the highly enriched uranyl nitrate (HEUN) as well as deactivation of most the HEUN storage tanks. There are several tanks in the cluster that still require the raschig rings to be removed which could potentially contain solution hold up. Deactivation will be completed prior to strip-out of the tanks for waste packaging. Extensive decontamination efforts were also completed to bring all areas of the cluster into current Site radiological requirements. Although the HEUN solutions were removed to the maximum extent possible, there is known to be dry residues contained within the storage tanks and the associated piping. This residue will result in higher levels of contamination during deactivation activities than those currently shown in the cluster routine surveys.

Current Conditions

The Building 886 Cluster radiological areas are posted and controlled in accordance with 10 CFR 835. Contamination control criteria for this project include postings that are currently applicable to the radiological conditions in the 886 Cluster. Those postings are Contamination Area (CA) and High Contamination Area (HCA). There are presently CAs in Building 886, 875, and 880. HCAs are located in Buildings 886 and 875. All control levels for these areas are based on the transuranic limits due to possible uncertainty concerning quantity and locating plutonium handling in Building 886 (transuranic limits are the most conservative). This control process is consistent with DOE radiological policy for other activities at the Site.

Contamination Areas are controlled to a limit of 2000 disintegrations per minute (dpm) per 100 square centimeters. See Table 6-1 for the summary of contamination values used to establish radiological control areas. Radiological surveys are being performed for in-process work and on a regular basis for all areas of the cluster, usually weekly, to ensure that contamination is maintained below requisite levels. As deactivation is completed in each of the remaining areas, decontamination surveys will be the used as the baseline for future decommissioning activities.

The cluster safety envelope has been maintained throughout its life cycle. There is good continuity of personnel from the deactivation and HEUN removal projects. Based on these factors, process and historical knowledge as well as the radiological conditions documented on the survey logs are believed to be very reliable.

As Low As Reasonably Achievable (ALARA)

As Low As Reasonably Achievable (ALARA) principles will be used in the planning and execution of D&D activities to minimize exposures to workers and public. The DOE RadCon Manual and 10 CFR 835 give general guidance on field implementation (e.g., ALARA Committee, Pre-Job Planning, Post-Job Review) of ALARA principles. Project specific work procedures will include ALARA considerations to minimize worker exposure during D&D activities. ALARA principles will also be reflected in the final release criteria to minimize public exposure following D&D.

Table 6-1. Summary of contamination values for Unrestricted Release

Radionuclide	Average Total (Fixed + Removable) Contamination (dpm/100cm^2)	Maximum Total (Fixed + Removable) Contamination (dpm/100cm^2)	Removable Contamination (dpm/100cm^2)
Transuranic: Ra^{-226}, Ra^{-228}, Th^{-228}, Pa^{-231}, Ac^{-227}, I^{-125}, I^{-129}	100	300	20
Th-Natural: Th^{-232}, Sr^{-90}, Ra^{-223}, Ra^{-224}, U^{-232}, I^{-131}, I^{-133}	1,000	3,000	200
U-Natural: U^{-235}, U^{-238}, and associated decay products, alpha emitters	5,000	15,000	1,000
Beta-gamma emitters (radionuclides with decay modes other than the alpha emission or spontaneous fission) except Sr^{-90} and others noted above.	5,000	15,000	1,000

Isotopes of Concern

The principal DOE isotopes of concern include:

- Uranium-235,
- Uranium-234,
- Uranium-238,
- Plutonium-239, and
- Americium-241.

The specific isotopes were identified based on survey results, personnel interviews, and historical records. Trace amounts of some decay products may be present and will be evaluated during waste characterization.

Surveys Performed/Evaluated

Radiological surveys have been performed in representative areas of the 886 Cluster. The level of detail for specific surveys was based on the radioactive contamination potential for the area. Extensive radiological survey information was used for this characterization effort in lieu of new surveys.

Additional routine surveys were performed in accordance with procedures. In addition to removable alpha surveys, removable beta was also determined. Buildings 875 and 880 were also surveyed in accordance with routine survey procedures. Appendix A contains copies of the surveys that are the basis for this radiological characterization.

As stated previously, the downdraft unit and associated glovebox in Room 103, the assembly hood in Room 101, process piping in Rooms 101 and 103, and the ventilation plenum in Building 875 were not characterized as part of this effort but will be characterized as deactivation activities are completed. These

areas are associated with high levels of contamination (HCAs) and will require deactivation and decontamination prior to decommissioning of the 886 Cluster.

6.3 Chemical Hazards

ANALYTICAL RESULTS PENDING

Appendix B will contain the analytical results used to characterize the chemical hazards.

A discussion of each of the following applicable contaminants will be included.

- Lead
- Beryllium
- Other Metals
- PCBs
- Others

6.4 Asbestos

During the inspection process, historical records were accessed and evaluated, along with physical inspection of the cluster. The investigation reviewed original specifications and blueprints, asbestos and lead in paint bulk samples, and interviews with facility occupants, including the Facility Manager. The findings of the characterization are discussed by building in the following sections and Appendix C contains the Certified Asbestos Inspector's Report.

Building 886

Building 886 is the main structure of the cluster. The inspection process discovered asbestos containing thermal systems insulation (TSI) on piping and tanks associated with the domestic water, chiller system, steam system in the interior and exterior of the building, and on a small heating ventilation and air conditioning (HVAC) system located outside on the west side of Building 886. This TSI is generally in good condition and appears to have regular maintenance.

Asbestos containing surface materials discovered during the inspection were limited to a light skim coat on the interior cinder block associated with the oldest section of the structure. This material is covered with a minimum of one coat of paint and is in good condition. Due to the thinness of the application and the relatively low percentage of asbestos (trace to five percent), point counting analysis was utilized to more accurately evaluate asbestos content with results indicating levels consistently above one percent. This material must remain as part of the asbestos waste stream even though a composite of this skim coat and the cinder block would reduce the asbestos percentage to far less than one percent.

Miscellaneous asbestos containing material (ACM) discovered during the inspection included nine inch and twelve inch floor tiles dispersed throughout the cold side of the facility, including under the sheet vinyl in the hallways. The adhesive associated with the floor tiles tested negative for asbestos except in Room 110, the janitorial closet. The tiles are in generally good condition and appear to receive regular maintenance.

The predominant pattern of ceiling tiles (2 by 4 feet white with wide latitudinal grooves, pits, and pin holes) tested positive for asbestos. Due to the modular nature of a suspended ceiling, the remaining patterns must be

assumed to be contaminated with asbestos. The suspended ceiling system was in good condition at the time of the inspection.

A filler between the HVAC ducts and wall penetrations is 98 percent asbestos. This filler was not observed in all locations, but is predominant throughout the facility. At the time of the inspection, the filler was painted and in good condition where observable.

A previous inspector acquired a sample of the electrical wiring in Room 114 which indicated asbestos in the insulation. Until the building circuits are de-energized and a comprehensive survey can be completed, it must be assumed that all original wiring insulation for the structure, and for the original structures in the cluster, is asbestos containing.

Building 886 has a built up roof system that was specified as containing asbestos in the felt and tar. As such, the roof is assumed to be asbestos containing without the need of sampling. Tar impregnated roofing felts may be disposed of with normal demolition debris under most circumstances.

Building 828

The Building 828 exterior walls are assumed to be asbestos containing based on historical data from other locations on the Site and on the expert judgement of the Certified Asbestos Inspector. The piping associated with the underground storage tanks is not insulated.

Building T886A

T886A is a modular trailer (S.N. 3404) constructed by Elder in 1984. Alan Koenig from G.E. Capital, the parent company of Elder, verified that this particular structure was not constructed with any materials that contained either lead or asbestos.

Building 888

Although not included as part of the 886 Cluster, Building 888 is powered from 886 and will be impacted by the demolition of the 886 Cluster. Because of this, the inspector evaluated the building on the chance that it may be included, or that work may be required on it during the 886 D&D activities. The building is a guard post constructed in the mid 1980's. As such, building materials have a low possibility of containing asbestos. Based on visual inspection, all materials were eliminated as suspect asbestos containing materials except the roofing and the drywall systems. Samples were acquired of the drywall system and the analytical results were non-detects. The built-up roofing can be assumed to be asbestos containing tar impregnated roofing felt, which can be disposed of with the regular construction debris in most cases.

Building 875

Building 875 is the Plenum Facility for Building 886 and includes the service tunnel to 886. Since this structure is of the same construction date as Building 886, suspected ACM are shared. As such, all piping insulation must be considered to be asbestos containing unless it can be eliminated by physical touch as either foam or fiberglass insulation. The asbestos insulation was predominantly confined to the fittings, reductions, hangers, tees, and elbows, while the straight runs were predominantly foam and fiberglass.

The roofing of Building 875 is similar in construction to that of Building 886. As such, the original specification called for the use of tar and felt containing asbestos. Based on this information, the roofing

materials are assumed to be asbestos containing. These materials may be treated as regular demolition debris in most cases.

Building 880

At the time of inspection, no asbestos containing building materials were discovered in Building 880.

Building 888A

Building 888A is the electrical substation for the facility. Due to the inherent safety concerns with sampling live electrical equipment, no samples were acquired. Suspect ACM include wiring insulation, arc chutes, arc protection, insulators, and conduit trays. Once the substation is de-energized, samples can be safely acquired of these materials. In the interim, these materials are assumed to be asbestos containing.

6.5 Pressurized Gas and Liquid Nitrogen

There is only one cylinder of pressurized gas in the 886 Cluster. It is nitrogen gas used for maintenance on the chiller unit. The bottle is located in a bottle rack outside Building 886 on the west side.

6.6 Electrical

The 886 Cluster is currently in a safe condition for electrical hazards. However, when D&D activities begin, significant electrical hazards are located through out the cluster, particularly in the control and utility rooms of Building 886, Building 875, and in and around Building 888A. Additionally, consideration will need to be given as to how to resupply the guard shack located next to 888A with power once the supply from 886 is interrupted.

It should be noted that numerous system changes have been made to the electrical system in the cluster over the years of operation. These changes are not reflected well in the as-built drawings for the facilities. The electrical system will require tracing of questionable lines with a tic tracer or similar device before D&D activities are implemented.

6.7 Wastes

When deactivation activities were suspended in the 886 Cluster in late FY97, some waste remained in the buildings. This waste is all low level (LL) waste. Plans are currently in place to remove this waste from the buildings. There are 80 55-gallon drums which have been assayed, 40 55-gallon drums that are in the process of being assayed, and three full-size waste crates that need to have their contents verified and assayed. In addition to this packaged waste, there is some unpackaged waste in Room 101. The majority of this waste is metal and is mainly excess equipment.

7.0 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

Table 7-1 summarizes the types and quantities of wastes estimated for the deactivation of the 886 Cluster. These estimates were derived from existing documentation regarding equipment and materials in the cluster and from inventories compiled during walk-through of the facilities.

Table 7-1. Estimated Wastes From the 886 Cluster Decommissioning Project

Type of Waste	Primary Matrix	Quantity (cubic meters)	Type of Waste Package	Quantity of Waste Package
Hazardous	Painted materials	3	Standard Crate	1
Asbestos	Insulation, building materials, wiring, etc.	200	Bulk	N/A
Low-level	Paper/Glass/Plastic/Pipe	225	Standard Crate	75
Low-level Mixed	Plastic/Pipe	3	Standard Crate	1
TRU	None	0	N/A	N/A
TRU Mixed	None	0	N/A	N/A
Sanitary	Rubble	1,000	Bulk	N/A

8.0 DATA QUALITY ASSESSMENTS

The purpose of data quality assessment is to determine whether a set of data is adequate for its intended use, especially relative to supporting predefined project decisions with acceptable levels of confidence (after EPA G-9, 1996). EPA's approach to data quality assessment heavily emphasizes the use of statistical methodologies, which incorporate "ratio" data, i.e., data exhibiting a broad range of values relative to action levels. This reconnaissance level characterization, however, hinges primarily on nominal data (e.g., paint colors or equipment /material types), with associated analytical results indicating a nominal outcome from at least one judgmental (i.e., non-statistical) sample: Pass/Fail. Therefore, typical statistical (EPA) methodologies that might be used for comparing a project's data set with a background or baseline to evaluate significance is not well suited for use with most of the contaminants of concern evaluated for the 886 Cluster, with the exception of radionuclides. Based on the availability of previous radiological survey data within the areas of interest, DQOs were not formally presented for this reconnaissance effort, but will be addressed for final decontamination surveys.

Notwithstanding the limited statistical applications to the non-radionuclide contaminants of concern, a data quality analysis is still necessary to determine if the data collected are adequate for their intended use. Table 6-0 exhibits a summary of the samples collected for each contaminant category – by location and by nominal category represented (e.g., paint color).

8.1 Project Decisions

A summary of the project decisions is also given in Table 6-0 based on the original DQOs expressed in §3.1, which are:

- definition of the contaminated equipment and materials, based on sample representativeness and analytical results, and
- definition of the waste classifications and assignment of all contaminated equipment/media to those classifications (for subsequent treatment, storage, transport, and/or disposal). Table 7.1 provides estimated quantities of the waste types.

8.2 Inputs to the Decisions

Inputs to the decisions noted above consisted of the project's data, which is tabulated in Table 8.3. Data quality is addressed in terms of precision, accuracy, representativeness, completeness, and comparability -- the PARCC parameters – in Section 8.4.

8.3 Decision, Rules, and Error Limits

With the exception of asbestos, statistically-based samples, particularly with respect to randomness and quantities, were neither taken nor required. Therefore, calculation of upper confidence limits on the data (e.g., 95% UCLs) are not needed; asbestos sample decisions are based on compliance with the 40 CFR 763.86. However, it should be noted that for the media sampled the contaminants of concern were either not detected (i.e., well below action levels) or were well above action levels (and therefore, of course, much greater than detection limits). These high ranges in the data suggest, semi-quantitatively, that there is little probability of either alpha (false-positives) or beta (false negatives) errors; stated differently, no data resides in the "gray regions", where results are within 5 times or 1/5 the action levels.

Further, in sampling situations where samples were not taken (see Sections 6.3 and 6.4 for example) – typically due to safety precautions – the media of interest is assumed to be contaminated. These assumptions increase the alpha (producer's) error, which translates into more cost for the RFETS, but reduce the beta (consumer's) error, which translates into greater safety for the workers and the public.

8.4 PARCC Parameters

In general, precision and accuracy are determined by analytical lab controls and subsequently qualified based on a data validation process. At least 25% of the results of the data are planned for formal data validation via the K-H APO. The primary components of interest within the validation process are listed within the subsections below.

Accuracy

Accuracies indicate how close the measured values are to "true" values, or conversely, accuracy quantifies the amount of error associated with the measured value as compared to a true value.

Precision

Precision quantifies how repeatable the sample measurements are. Precision is quantified with respect to both the lab and the overall project. Matrix spike duplicates (MSDs) are typically used by the lab whereas field duplicate samples, blind to the laboratory, are used to evaluate overall repeatability in the project. Precision results based on the field duplicate samples are given in Table 8-4 (by method); all duplicate values were within tolerance (40% RPD for solids, 30% RPD for liquids). The formula for RPD is also given.

Table 8-4. Precision Results by Method

	Asbestos	Metals	Metals (TCLP)	PCBs
Sample 1				
Sample 1 dupe				
RPD value (%)				

Table 8-4 will be completed when analytical data is returned.

Representativeness

The samples are representative of all potentially contaminated media visible within the 886 Cluster based on the following criteria:

- professional judgment of the sampling team
- walk-throughs and collaborations by and within the sampling team
- summary of the samples acquired and analyzed (Table 6-0)
- implementation of forensic Chain of Custody protocol
- compliance with sample preservation and holding times
- compliance with the RLCP (RMRS, 1997) – reviewed and approved by management consensus

RMRS quality assurance personnel performed surveillance 97-100 to verify compliance with the 886 Cluster RLCP. This surveillance used a checklist developed directly from the approved and controlled 886 Cluster RLCP. One deficiency was identified concerning the documentation of sampling equipment decontamination. This deficiency was resolved satisfactorily resolved prior to the completion of field sampling activities.

Comparability

Analytical results from this project are comparable with similar samples and media on a state-wide, nation-wide, or DOE-complex basis given the use of documented plans and procedures for sample collection and standardized EPA-approved methods for sample analysis.

Completeness

Completeness is typically defined as a percentage, calculated as the ratio of usable results to either 1) the number of samples planned or 2) the number of samples actually acquired for analysis. Because #1 is not applicable, the ratio with respect to #2 is the appropriate measure. Currently completeness of the data set is not available pending return of sample results. However, known data gaps due to components which have yet to be deactivated are listed below. The characterization will be performed and documented after these elements are deactivated.

Bldg 888A – pending de-energization of the substations
Assembly Hood - Pending deactivation
Raschig Ring Tanks - Pending deactivation
Glovebox - Pending deactivation

Completeness may be corroborated by referencing the associated quality records of analytical results, which include hardcopy data packages and electronic data deliverables (EDDs), managed by the K-H Analytical Projects Office.

9.0 INFORMATION SOURCES

886 Cluster as-built drawings

Site personnel

Task 3 and 4 Final Draft Report, Operations History, August 1992.

10.0 REFERENCES

Basis for Interim Operation Building 886, Revision 5, Kaiser-Hill 1997

Facility/Activity Responsibility Transfer Checklist, Building 886 Cluster Landlord Functions, RMRS 1997.

Guidance for Data Quality Assessment, Practical Methods for Data Analysis, EPA QA/G-9 (QA 96 Version), EPA, 1996

Historical Release Report, DOE 1992.

Reconnaissance Level Characterization Plan for the 886 Cluster Decommissioning Project, Revision 0, RMRS 1997.

11.0 APPENDICES

A Radiological Characterization Surveys

B Chemical Hazards Characterization Results

C Certified Asbestos Inspector's Report

RECONNAISSANCE LEVEL CHARACTERIZATION REPORT FOR THE 886 CLUSTER DECOMMISSIONING PROJECT

APPENDICES A, B&C

RF/RMRS-97-124.UN
Rev. 0

DECEMBER 15, 1997

APPENDIX A

RADIOLOGICAL CHARACTERIZATION SURVEYS

RADIOLOGICAL DOSE SURVEY

Taken by Rick Mullen Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 12-2-97 Building: 886 | Survey Description: 886-5W

Time: 0900 Room#: C. A

Shift: DAY

Diagram/Sketch Attached: X yes ___ no

INSTRUMENTATION USED

Mfg.:	Eberline	Ludlum			
Model:	RO 20	12-4			
Serial#:	183	71534			
Date. Cal.:	7-17-97	9-11-97			
Cal. Due.:	1-17-98	3-11-98			
BKGRD:	<0.5	<1.0			

COMMENTS

Status:

✓ Within Limits
___ Limits Exceeded
___ Posted
___ Deposted

Radiological Operations Foreman:

_____ Date: 12-3-97
Signature

RADIOLOGICAL DOSE SURVEY FORM

LOG NUMBER: 886-5W

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
1	< 0.5	< 1.0	< 1.5	N	N/A
2	< 0.5	< 1.0	< 1.5	N	N/A
3	< 0.5	< 1.0	< 1.5	N	N/A
4	< 0.5	< 1.0	< 1.5	N	N/A
5	< 0.5	< 1.0	< 1.5	N	N/A
6	< 0.5	< 1.0	< 1.5	N	N/A
7	< 0.5	< 1.0	< 1.5	N	N/A
8	< 0.5	< 1.0	< 1.5	N	N/A
9	< 0.5	< 1.0	< 1.5	N	N/A
10	< 0.5	< 1.0	< 1.5	N	N/A
11	< 0.5	< 1.0	< 1.5	N	N/A
12	< 0.5	< 1.0	< 1.5	N	N/A
13	< 0.5	< 1.0	< 1.5	N	N/A
14	< 0.5	< 1.0	< 1.5	N	N/A
15	< 0.5	< 1.0	< 1.5	N	N/A
16					N/A
17					N/A
18					N/A
19					N/A
20					N/A
21					N/A
22					N/A
23					N/A
24					N/A
25					N/A
26					N/A
27					N/A
28					N/A
29					N/A
30					N/A
31					N/A
32					N/A
33					N/A
34					N/A
35					N/A
36					N/A
37					N/A
38					N/A

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
39					N/A
40					N/A
41					N/A
42					N/A
43					N/A
44					N/A
45					N/A
46					N/A
47					N/A
48					N/A
49					N/A
50					N/A
51					N/A
52					N/A
53					N/A
54					N/A
55					N/A
56					N/A
57					N/A
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61					N/A
62					N/A
63					N/A
64					N/A
65					N/A
66					N/A
67					N/A
68					N/A
69					N/A
70					N/A
71					N/A
72					N/A
73					N/A
74					N/A
75					N/A
76					N/A

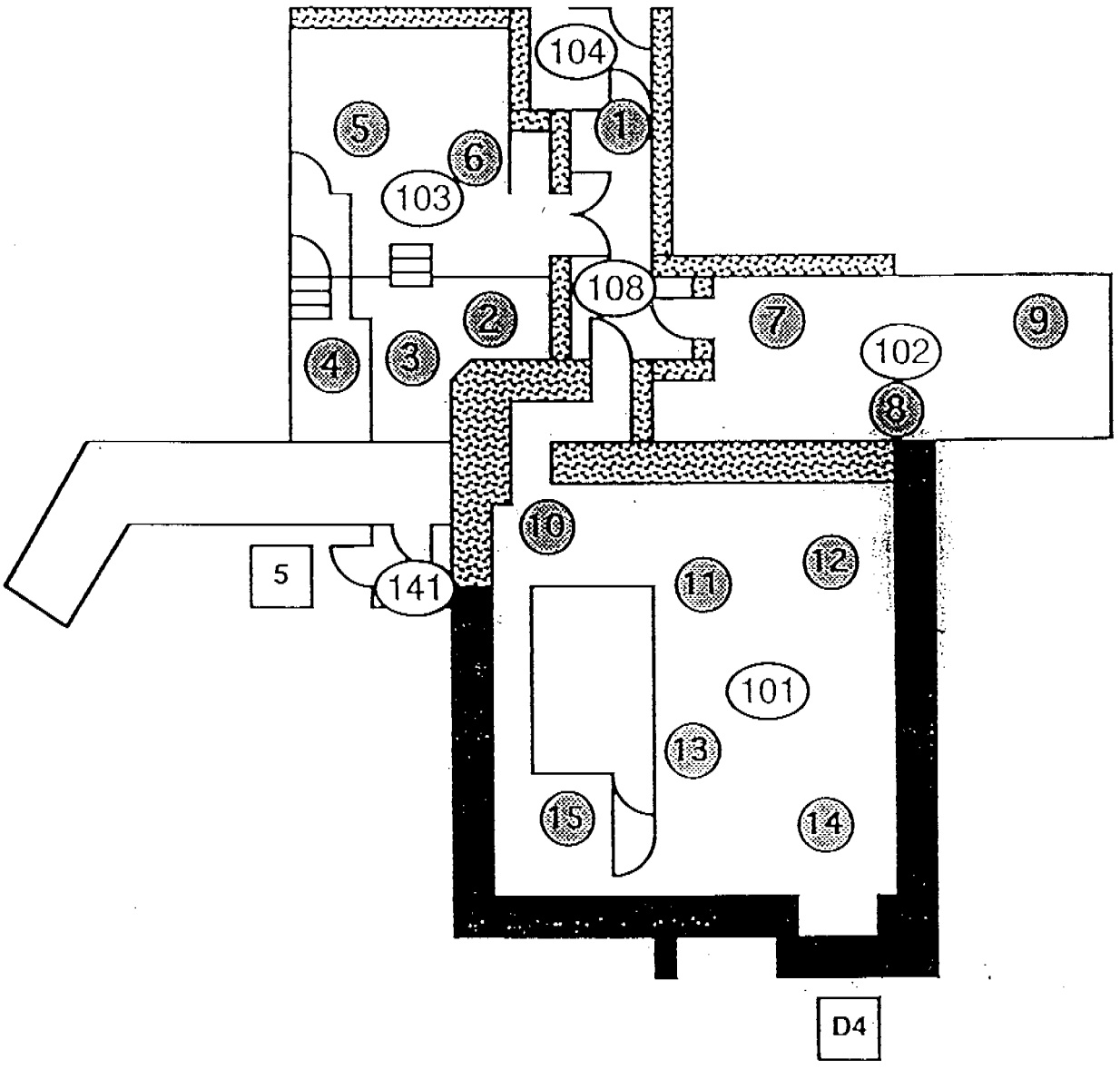
Control No. 886-5W

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 886

RBA & CA

Gamma-Neutron of Room 101,102,103



(#) 15 Total Survey Points

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER:	886-4W
P/WRE / R.W.P	ROUTINE X / OTHER
BUILDING/LOCATION: 886	ROOM#: AS REQ'D
DATE: 12-3-97	TIME: 1106
ITEM DESCRIPTION:	C.A Floor survey
COMMENTS:	

STATUS:

_____ RELEASABLE _____ NOT RELEASABLE

_____ POSTED _____ NOT POSTED

✓ WITHIN LIMITS _____ LIMITS EXCEEDED

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158		
Date Calib'd:	9-18-97	9-12-97		
Cal. due Date:	3-18-98	3-17-98		

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763	BC 869		
Date Calib'd:	10-6-97	9-29-97		
Cal. due Date:	4-6-98	3-29-98		

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:				

Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:	N/A	N/A		

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

LOG# 886-4W

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
1	C.A FLOOR SURVEY	< 18	<205		
2	C.A FLOOR SURVEY	< 18	<205		
3	C.A FLOOR SURVEY	51	<205		
4	C.A FLOOR SURVEY	18	<205		
5	C.A FLOOR SURVEY	<18	<205		
6	C.A FLOOR SURVEY	<18	<205		
7	C.A FLOOR SURVEY	<18	<205		
8	C.A FLOOR SURVEY	21	<205		
9	C.A FLOOR SURVEY	<18	<205		
10	C.A FLOOR SURVEY	<18	<205		
11	C.A FLOOR SURVEY	<18	<205		
12	C.A FLOOR SURVEY	24	<205		
13	C.A FLOOR SURVEY	<18	<205		
14	C.A FLOOR SURVEY	<18	<205		
15	C.A FLOOR SURVEY	<18	<205		
16	C.A FLOOR SURVEY	18	<205		
17	C.A FLOOR SURVEY	<18	<205		
18	C.A FLOOR SURVEY	51	<205		
19	C.A FLOOR SURVEY	24	<205		
20	C.A FLOOR SURVEY	<18	<205		
21	C.A. Floor Survey	18	<205		

RM 12-3-97

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma

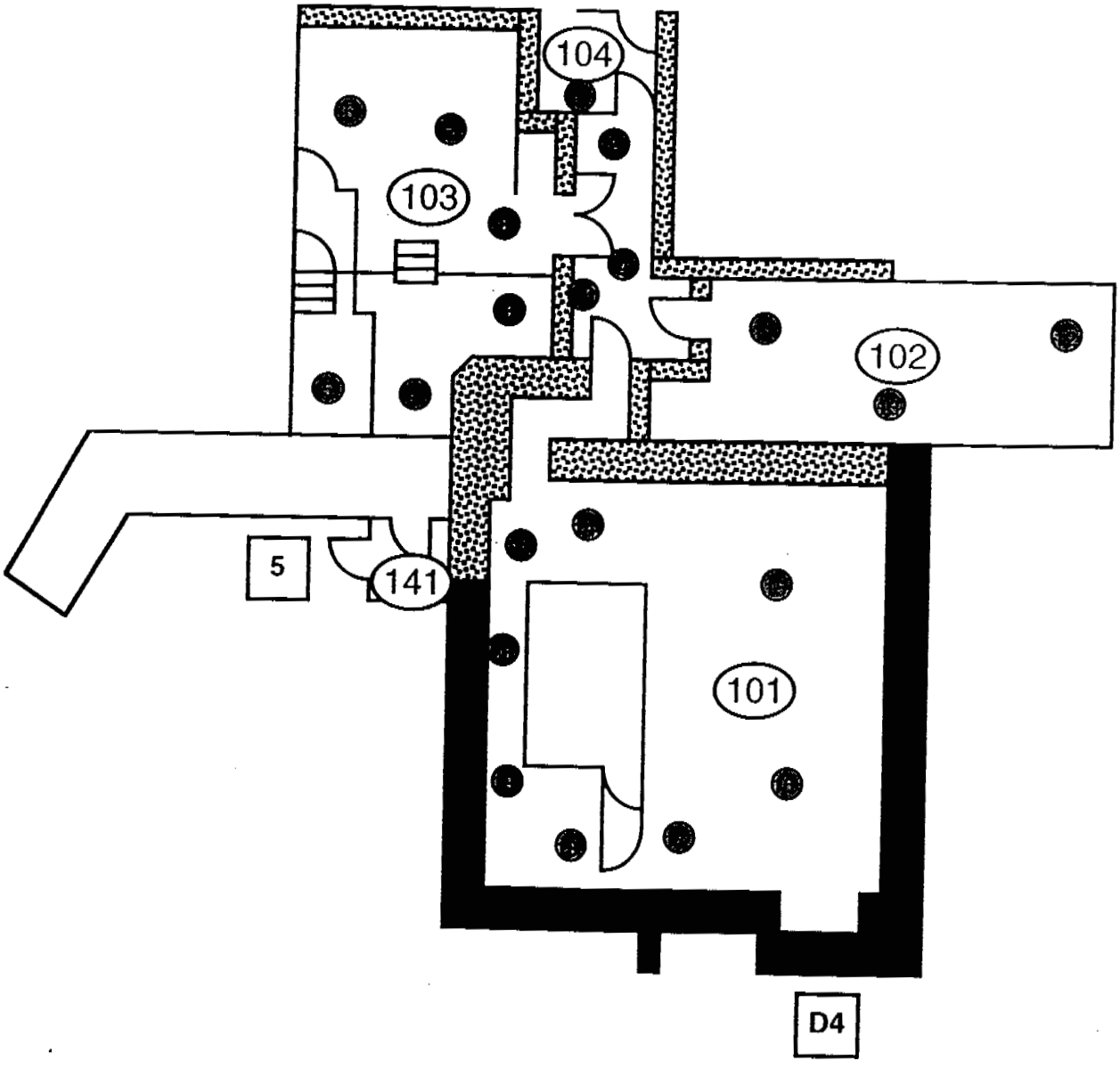
RM 12-3-97

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Radiological Operations
Area or Equipment Drawing Showing Survey Points

Control# 886-4W

Building 886



● TOTAL SURVEY POINTS

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: 886-3W	
P/WRE ____ R.W.P ____	ROUTINE ✓ OTHER ____
BUILDING/LOCATION 886	ROOM#: C.A.
DATE: 12-1-97	TIME: 1030
ITEM DESCRIPTION: Control pt survey	
COMMENTS:	

STATUS:
____RELEASABLE ____NOT RELEASABLE
____POSTED ____NOT POSTED
✓ WITHIN LIMITS ____LIMITS EXCEEDED

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158		
Date Calib'd:	9-18-97	9-17-97		
Cal. due Date:	3-18-98	3-17-98		

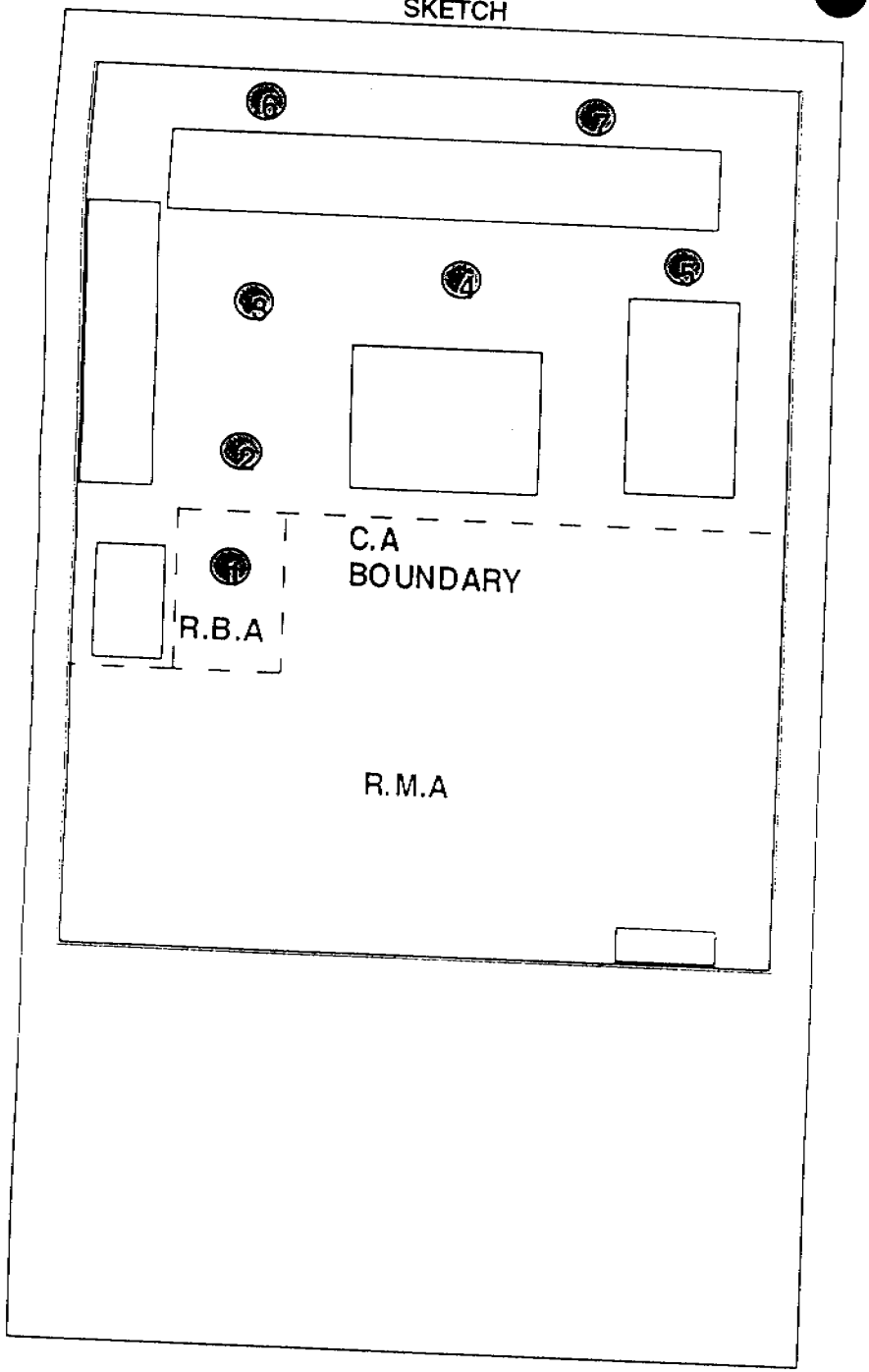
Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763	BC 869		
Date Calib'd:	10-6-97	9-29-97		
Cal. due Date:	4-6-98	3-29-98		

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:				
Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
al Due Date:				
ackground:				
fficiency:	N/A	N/A		

OG# 886-3W RADIOLOGICAL OPERATIONS NTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (dpm/100cm2)

Swipe #	Location/description	Removable		Total Alpha 60 sec count	Total Beta/ Gamma
		Alpha	Beta/ Gamma		
1	C.A. FLOOR SURVEY	< 18	< 205		
2	C.A. FLOOR SURVEY	< 18	< 205		
3	C.A. FLOOR SURVEY	< 18	< 205		
4	C.A. FLOOR SURVEY	< 18	< 205		
5	C.A. FLOOR SURVEY	< 18	< 205		
6	C.A. FLOOR SURVEY	< 18	< 205		
7	C.A. FLOOR SURVEY	< 18	< 205		

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER:	886-2W
P/WRE _____ R.W.P _____	ROUTINE X OTHER _____
BUILDING/LOCATION 880/CARGO CONTAIN.	ROOM#: SEE ATTACHED
DATE: 12-1-97	TIME: 1100
ITEM DESCRIPTION:	FLOOR SURVEY OF BLDG. 880
AND TWO CARGO CONTAINER'S AND THE GRAY TRAILER	
R.M.A AREAS ONLY.	
COMMENTS:	

STATUS:

_____ RELEASABLE _____ NOT RELEASABLE

_____ POSTED _____ NOT POSTED

✓ WITHIN LIMITS _____ LIMITS EXCEEDED

[redacted]

R.O. SUPERVISOR SIGNATURE EMP.# DATE

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158		
Date Calib'd:	9-18-97	9-17-97		
Cal. due Date:	3-18-98	3-17-98		

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763	BC 869		
Date Calib'd:	10-6-97	9-29-97		
Cal. due Date:	4-6-98	3-29-98		

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:				
Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:	N/A	N/A		

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Radiological Operations
Area or Equipment Drawing Showing Survey Points

Control# 886-2W

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

LOG# 886-2W

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
1	See map	< 18	< 205		
2	" "	< 18	< 205		
3	" "	< 18	< 205		
4	" "	< 18	< 205		
5	" "	< 18	< 205		
6	" "	< 18	< 205		
7	" "	< 18	< 205		
8	" "	< 18	< 205		
9	" "	< 18	< 205		
11	" "	< 18	< 205		
12	" "	< 18	< 205		
13	" "	< 18	< 205		
14	" "	< 18	< 205		
15	" "	< 18	< 205		
16	" "	< 18	< 205		
17	" "	< 18	< 205		
18	" "	< 18	< 205		
19	" "	< 18	< 205		
20	" "	< 18	< 205		
21	" "	< 18	< 205		

RMH 12-1-97

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma

RMH 12-1-97

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER:	886-2W
P/WRE / R.W.P	ROUTINE X / OTHER
BUILDING/LOCATION: 880/CARGO CONTAIN.	ROOM#: SEE ATTACHED
DATE: 11-6-97	TIME: 1400

ITEM DESCRIPTION: FLOOR SURVEY OF BLDG. 880 AND TWO CARGO CONTAINER'S AND THE GRAY TRAILER R.M.A AREAS ONLY.

COMMENTS:

STATUS:

_____RELEASABLE _____NOT RELEASABLE

_____POSTED _____NOT POSTED

✓ WITHIN LIMITS _____LIMITS EXCEEDED

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158	961	
Date Calib'd:	9-18-97	9-17-97	6-25-97	
Cal. due Date:	3-18-98	3-17-98	12-25-97	

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:				
Date Calib'd:				
Cal. due Date:				

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:				

Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:	N/A	N/A		

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

LOG# _____

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable		Total	Total
		Alpha	Beta/ Gamma	Alpha 60 sec count	Beta/ Gamma
1	See map	< 18			
2	" "	< 18			
3	" "	< 18			
4	" "	< 18			
5	" "	< 18			
6	" "	< 18			
7	" "	< 18			
8	" "	< 18			
9	" "	< 18			
10	" "	< 18			
11	" "	< 18			
12	" "	< 18			

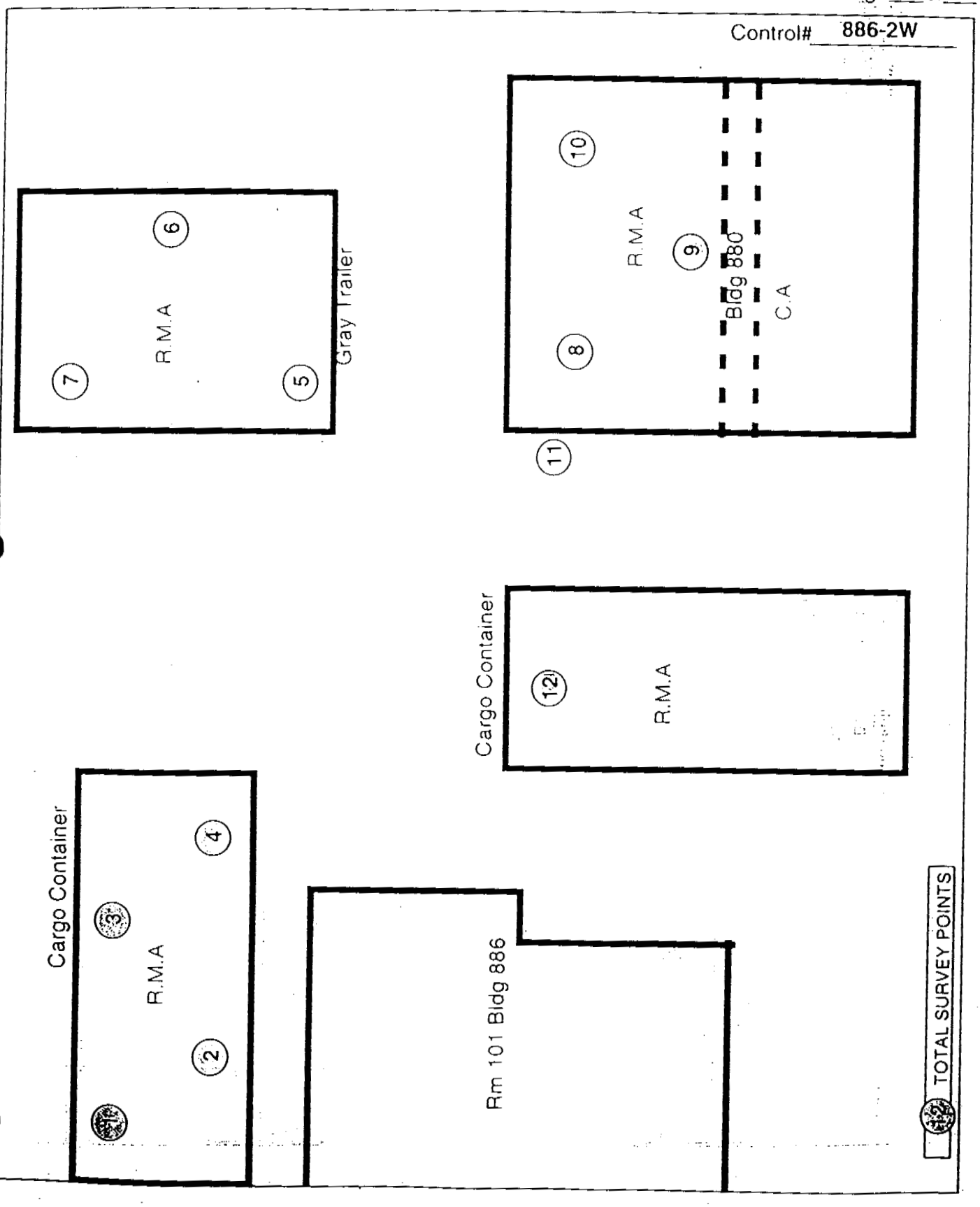
Survey results (DPM/100CM2)

Swipe #	Location/description	Removable		Total	Total
		Alpha	Beta/ Gamma	Alpha 60 sec count	Beta/ Gamma

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Radiological Operations
Area or Equipment Drawing Showing Survey Points

Control# 886-2W



RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: 886-3W

P/WRE ____ ROUTINE ✓

R.W.P ____ OTHER ____

BUILDING/LOCATION: 880 ROOM#: C.A.

DATE: 11-3-97 TIME: 1430

ITEM DESCRIPTION: Floor survey of C.A.

COMMENTS:

STATUS:

____ RELEASABLE ____ NOT RELEASABLE

____ POSTED ____ NOT POSTED

✓ WITHIN LIMITS ____ LIMITS EXCEEDED

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158	961	
Date Calib'd:	9-18-97	9-17-97	6-25-97	
Cal. due Date:	3-18-98	3-17-98 (11-3-97)	12-25-97	

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #				
Date Calib'd				
Cal. due Date				

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:				
Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
al Due Date:				
ackground:				
fficiency:	N/A	N/A		

RADIOLOGICAL DOSE SURVEY

Taken by [signature] Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 11-4-97 Building: 886
Time: 1030 Room#: C A
Shift: DAY

Survey Description: 886-5W

Diagram/Sketch Attached: X yes ___ no

INSTRUMENTATION USED

Mfg.:	Ludlum	Eberline
Model:	12-4	RO 20
Serial#:	91015	191
Date. Cal.:	8-19-97	7-16-97
Cal. Due.:	2-19-98	1-16-98
BKGRD:	<1.0	<0.5

COMMENTS

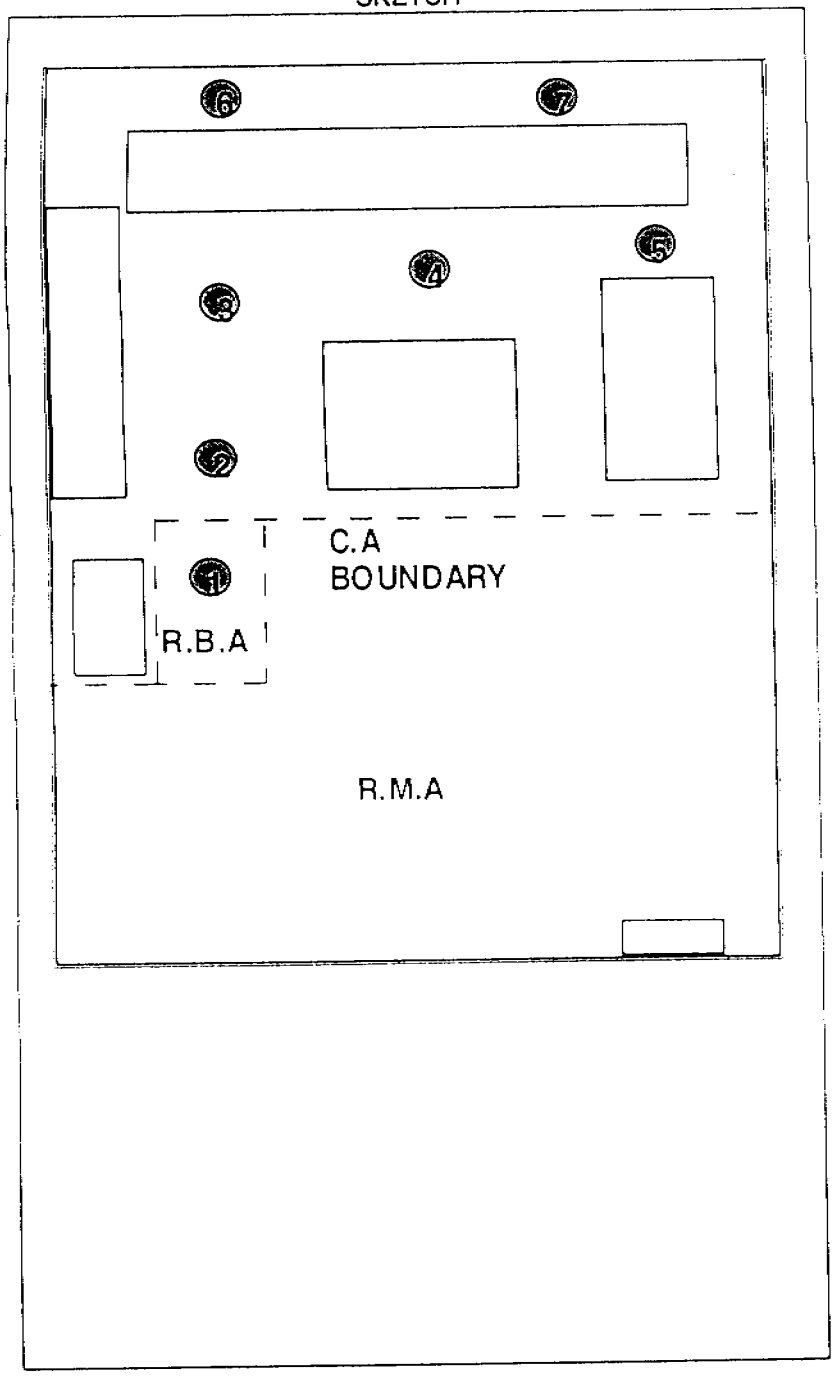
Status:

✓ Within Limits
___ Limits Exceeded
___ Posted
___ Deposted

Radiological Operations Foreman:
[signature] Date: 11/4/97
Signature

LOG# 8862-342 RADIOLOGICAL OPERATIONS CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (dpm/100cm2)

Swipe #	Location/description	Removable		Total Alpha 60 sec count	Total Beta/ Gamma
		Alpha	Beta/ Gamma		
1	C.A. FLOOR SURVEY	< 18			
2	C.A. FLOOR SURVEY	< 18			
3	C.A. FLOOR SURVEY	< 18			
4	C.A. FLOOR SURVEY	< 18			
5	C.A. FLOOR SURVEY	< 18			
6	C.A. FLOOR SURVEY	< 18			
7	C.A. FLOOR SURVEY	< 18			

RADIOLOGICAL DOSE SURVEY FORM

LOG NUMBER 886-5W

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
1	<0.5	<1.0	<1.5	N	N/A
2	<0.5	<1.0	<1.5	N	N/A
3	<0.5	<1.0	<1.5	N	N/A
4	<0.5	<1.0	<1.5	N	N/A
5	<0.5	<1.0	<1.5	N	N/A
6	<0.5	<1.0	<1.5	N	N/A
7	<0.5	<1.0	<1.5	N	N/A
8	<0.5	<1.0	<1.5	N	N/A
9	<0.5	<1.0	<1.5	N	N/A
10	<0.5	<1.0	<1.5	N	N/A
11	<0.5	<1.0	<1.5	N	N/A
12	<0.5	<1.0	<1.5	N	N/A
13	<0.5	<1.0	<1.5	N	N/A
14	<0.5	<1.0	<1.5	N	N/A
15	<0.5	<1.0	<1.5	N	N/A
16					N/A
17					N/A
18					N/A
19					N/A
20					N/A
21					N/A
22					N/A
23					N/A
24					N/A
25					N/A
26					N/A
27					N/A
28					N/A
29					N/A
30					N/A
31					N/A
32					N/A
33					N/A
34					N/A
35					N/A
36					N/A
37					N/A
38					N/A

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
39					N/A
40					N/A
41					N/A
42					N/A
43					N/A
44					N/A
45					N/A
46					N/A
47					N/A
48					N/A
49					N/A
50					N/A
51					N/A
52					N/A
53					N/A
54					N/A
55					N/A
56					N/A
57					N/A
58					N/A
59					N/A
60					N/A
61					N/A
62					N/A
63					N/A
64					N/A
65					N/A
66					N/A
67					N/A
68					N/A
69					N/A
70					N/A
71					N/A
72					N/A
73					N/A
74					N/A
75					N/A
76					N/A

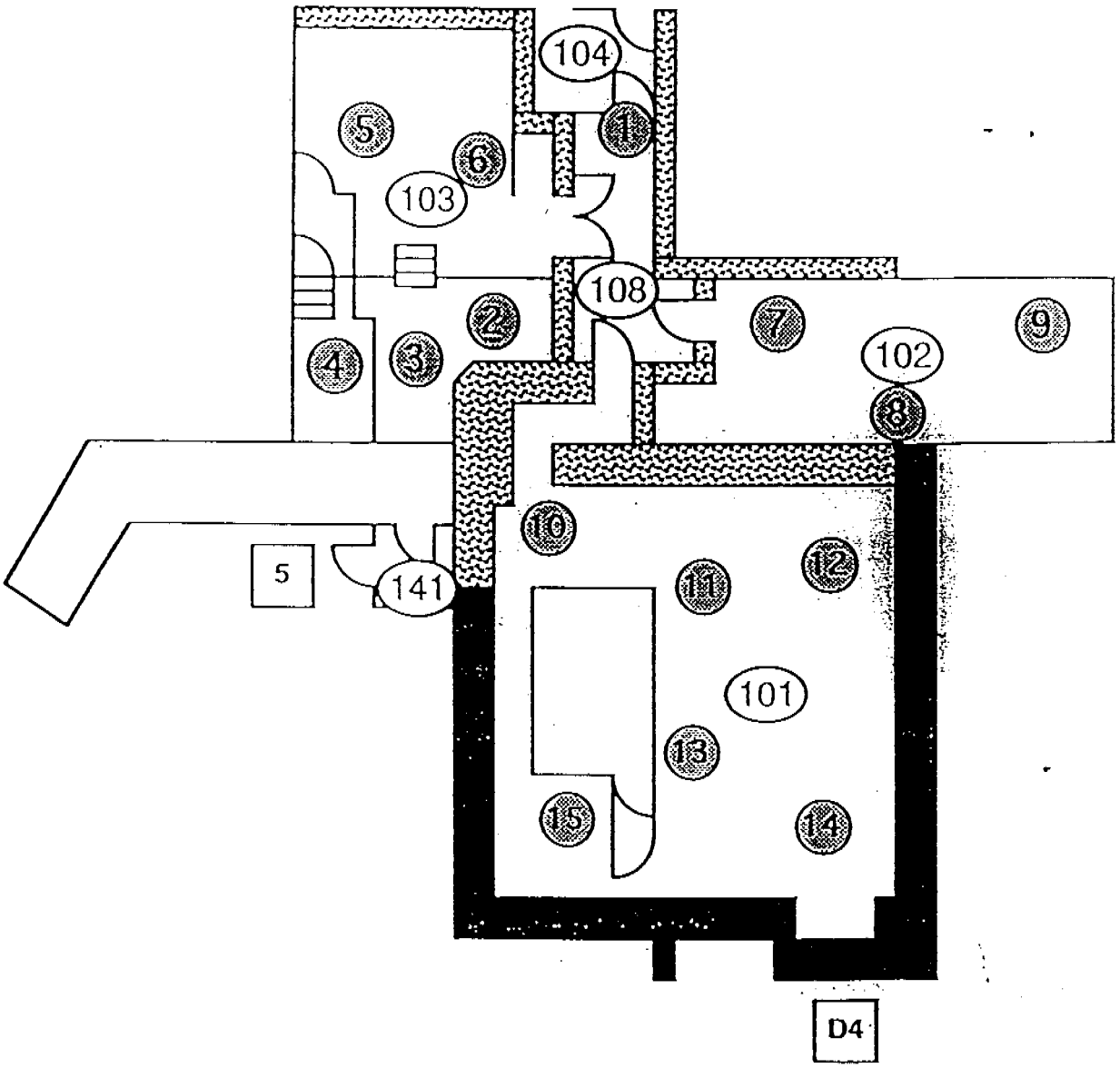
Control No. 886-5W

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 886

RBA & CA

Gamma-Neutron of Room 101,102,103



(#) 15 Total Survey Points

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER:	886-1D
P/WRE ____ R.W.P ____	ROUTINE XX OTHER ____
BUILDING/LOCATION: 886	ROOM#: AS REQ'D
DATE: 11-6-97	TIME: 0900
ITEM DESCRIPTION:	Daily SOP control point survey.
COMMENTS:	

STATUS:

____RELEASABLE ____NOT RELEASABLE

____POSTED ____NOT POSTED

✓ WITHIN LIMITS

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158	961	
Date Calib'd:	9-18-97	9-17-97	6-25-97	
Cal. due Date:	3-18-98	3-17-98	12-25-97	

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:				
Date Calib'd:				
Cal. due Date:				

Total (Fixed + Removable) Survey Instruments

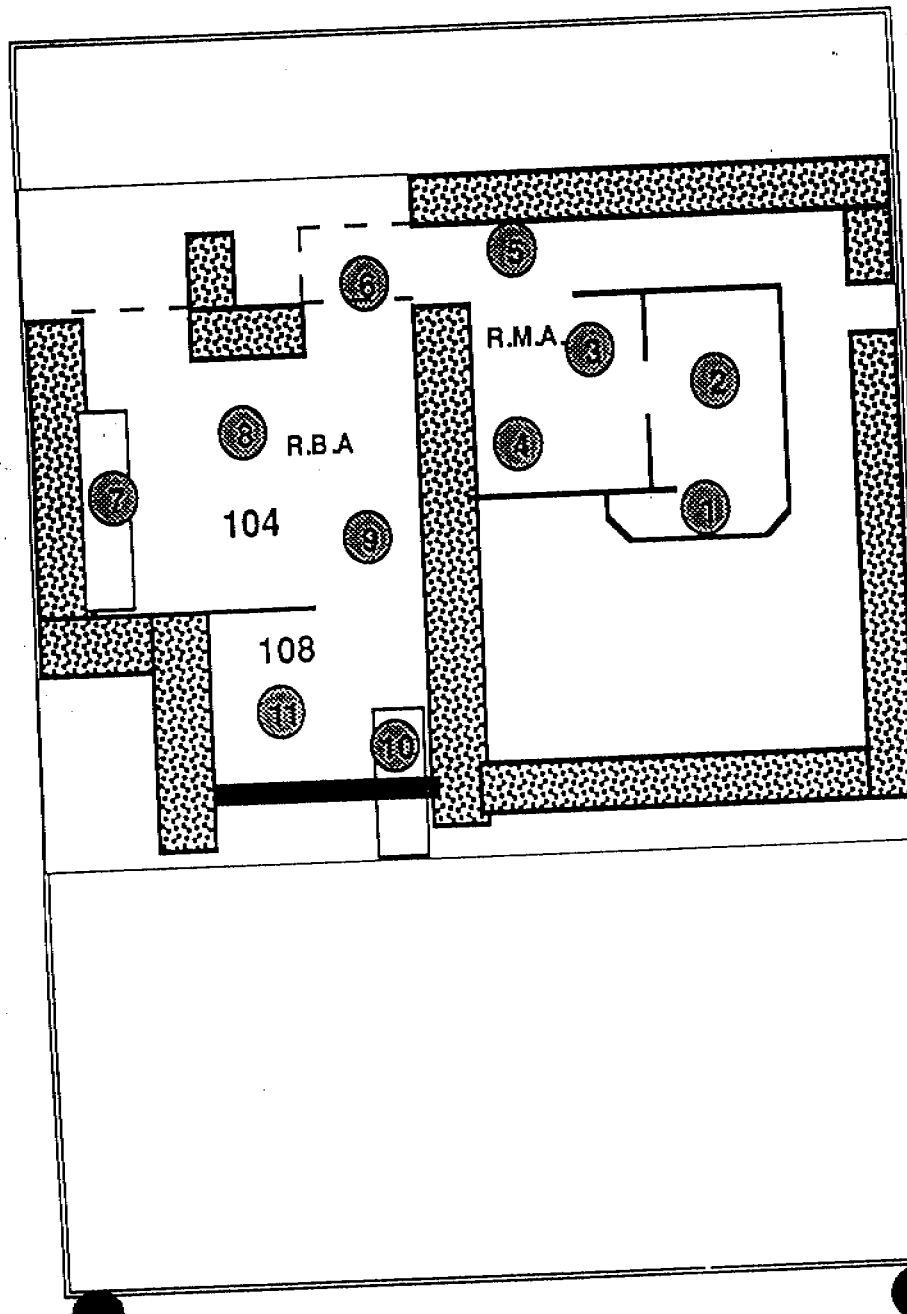
Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:				

Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:	N/A	N/A		

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

LOG# 886-1D

Survey results (DPM/100CM2)



Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
1	R.M.A CLOTHING AREA	< 18			
2	R.M.A CLOTHING AREA	< 18			
3	R.M.A FLOOR SURVEY	< 18			
4	R.M.A FLOOR SURVEY	< 18			
5	R.M.A FLOOR SURVEY	< 18			
6	R.M.A FLOOR SURVEY	< 18			
7	R.B.A INSTRUMENT TABLE	< 18			
8	R.B.A FLOOR SURVEY	< 18			
9	R.B.A FLOOR SURVEY	< 18			
10	R.B.A TABLE AREA	< 18			
11	R.B.A FLOOR SURVEY	< 18			

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER:	886-4W
P/WRE / R.W.P	ROUTINE X / OTHER
BUILDING/LOCATION: 886	ROOM#: AS REQ'D
DATE: 10-29-97	TIME: 1000
ITEM DESCRIPTION:	C.A Floor survey
COMMENTS:	

STATUS:

____RELEASABLE ____NOT RELEASABLE

____POSTED ____NOT POSTED

✓ WITHIN LIMITS

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158	961	
Date Calib'd:	9-18-97	9-17-97	6-25-97	
Cal. due Date:	3-18-98	3-17-98	12-25-97	

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:				
Date Calib'd:				
Cal. due Date:				

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:				

Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:	N/A	N/A		

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

LOG# 886-4W

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
1	C.A FLOOR SURVEY	< 18			
2	C.A FLOOR SURVEY	< 18			
3	C.A FLOOR SURVEY	48			
4	C.A FLOOR SURVEY	30			
5	C.A FLOOR SURVEY	42			
6	C.A FLOOR SURVEY	< 18			
7	C.A FLOOR SURVEY	< 18			
8	C.A FLOOR SURVEY	18			
9	C.A FLOOR SURVEY	< 18			
10	C.A FLOOR SURVEY	< 18			
11	C.A FLOOR SURVEY	< 18			
12	C.A FLOOR SURVEY	18			
13	C.A FLOOR SURVEY	18			
14	C.A FLOOR SURVEY	< 18			
15	C.A FLOOR SURVEY	< 18			
16	C.A FLOOR SURVEY	< 18			
17	C.A FLOOR SURVEY	< 18			
18	C.A FLOOR SURVEY	87			
19	C.A FLOOR SURVEY	36			
20	C.A FLOOR SURVEY	42			
21	C.A. Floor Survey	< 18			

CDM 10-29-97

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma

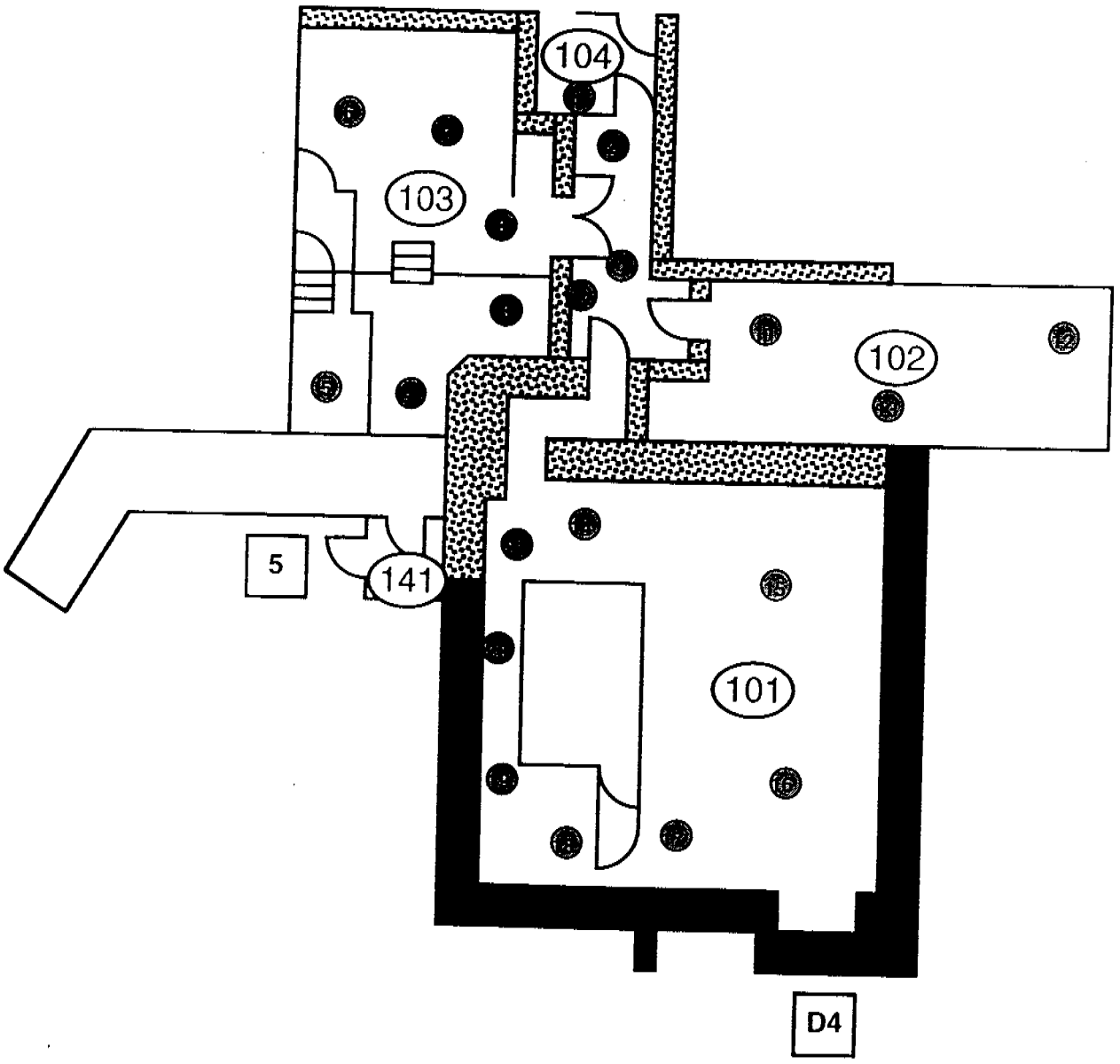
CDM 10-29-97

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Radiological Operations
Area or Equipment Drawing Showing Survey Points

Control# 886-4W

Building 886



TOTAL SURVEY POINTS

RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: -

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 10-19-94 Building: 886

Time: 1300 Room: 103

Shift: Days

Survey Description: Overhead Survey Rm# 103

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:	-	62753			
Date Cal.:		6-94			
Cal. Due:		12-94			
BKGRD:		<250			

COMMENTS:

STATUS:

X Within Limits

__ Limits Exceeded

__ Posted

__ Deposted

Radiological Operations Foreman

_____ Date: 10-26-94
Signature

RADIOLOGICAL OPERATIONS
Alpha Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			RESURVEY		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1	<250					
2	<250					
3	<250					
4	<250					
5	<250					
6	<250					
7	<250					
8	<250					
9	<250					
10	<250					
11	<250					
12	<250					
13	<250					
14	<250					
15	<250					
16	<250					
17	<250					
18	<250					
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28	<250					
29	<250					
30	<250					
31	<250					
32	<250					
33	<250					
34	<250					
35	<250					
36	<250					
37	<250					
38	<250					
39	<250					
40	<250					
41	<250					
42	<250					
43	<250					
44	<250					
45	<250					

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46	<250					
47	<250					
48	<250					
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
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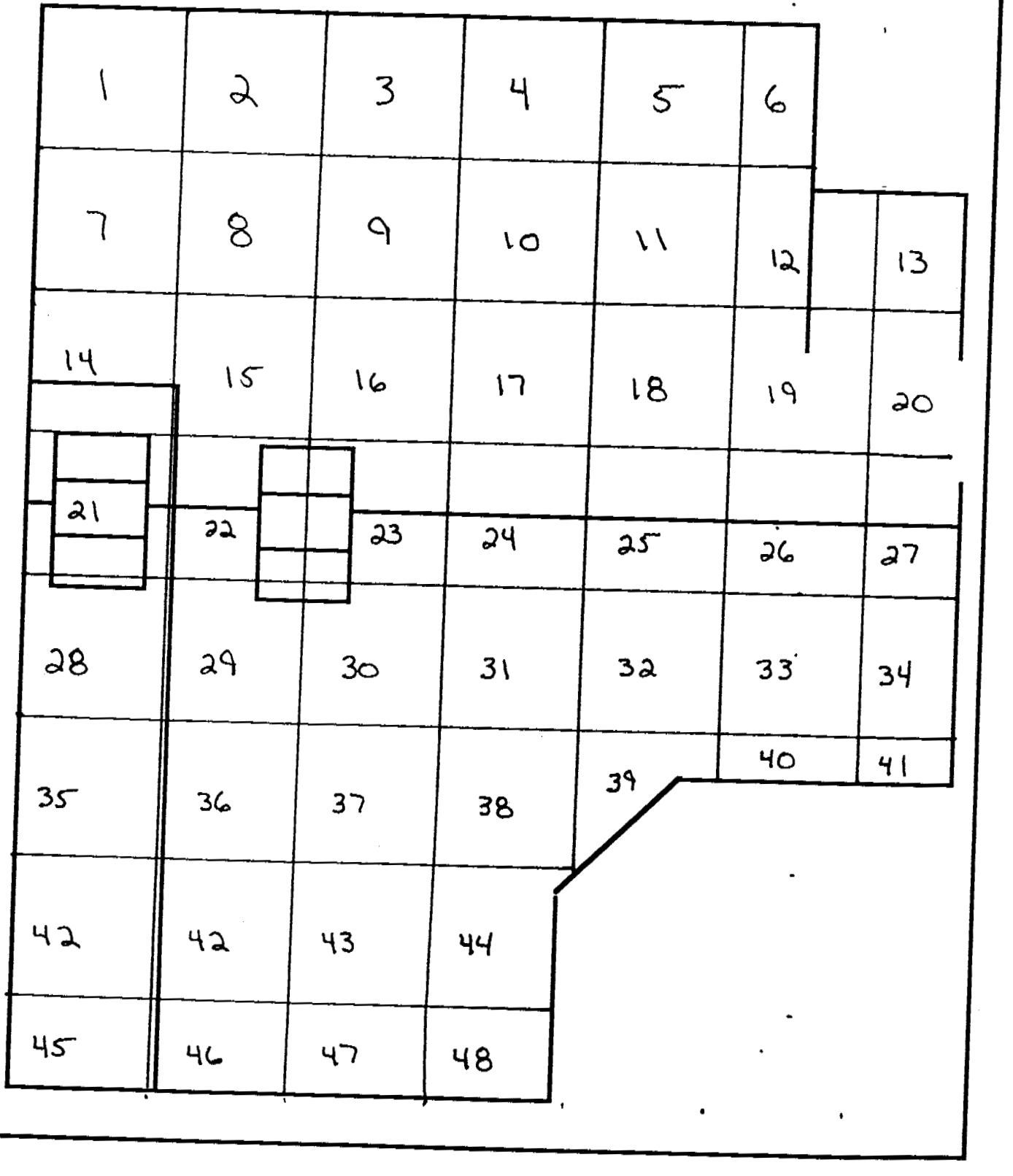
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points

ROOM# 103 BUILDING 886



RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 9-17-94 Building: 886

Time: 1500 Room: 103 P.H

Shift: Day

Survey Description: Baseline Survey of 103 P.H

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864	810			
Date Cal.:	10-5-93	6-1-94			
Cal. Due:	~ 10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:		42744			
Date Cal.:		4-94			
Cal. Due:		10-94			
BKGRD:		<250			

COMMENTS: Survey points #23 & 24 have been deconned
#23 - 93 dpm #24 - 27 dpm

STATUS:

X Within Limits
__ Limits Exceeded
__ Posted
__ Deposted

Radiological Operations Foreman

Signature Date: 9/20/94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1	<250	<250	30			21
2	<250	<250	21			9
3	<250	<250	39			0
4	<250	<250	63			0
5	<250	<250	45			15
6	<250	25,000	24			0
7	<250	<250	36			0
8	<250	<250	93			0
9	<250	50,000	54			0
10	<250	<250	66			6
11	<250	<250	18			9
12	<250	<250	48			0
13	<250	<250	54			3
14	<250	<250	66			6
15	<250	<250	18			9
16	<250	<250	48			0
17	<250	<250	54			3
18	<250	<250	72			12
19	<250	<250	102			9
20	<250	<250	60			12
21	<250	<250	42			0
22	<250	<250	21			0
23	<250	<250	318			0
24	<250	<250	210			0
25	<250	<250	57			9
26	<250	<250	27			12
27	<250	<250	36			0
28	<250	<250	21			0
29	<250	<250	57			0
30	<250	<250	27			0
31	<250	<250	36			0
32	<250	<250	21			18
33	<250	<250	57			3
34	<250	<250	36			9
35	<250	<250	54			36
36	<250	<250	27			12
37	<250	<250	24			0
38	<250	<250	24			0
39	<250	<250	12			0
40	<250	<250	12			27
41	<250	<250	45			0
42	<250	<250	60			0
43	<250	<250	51			15
44	<250	<250	57			12
45	<250	<250	48			9

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46	<250	<250	15			24
47	<250	<250	27			0
48	<250	<250	21			12
49	<250	10^6	27			6
50	<250	<250	42			0
51	<250	<250	99			0
52	<250	<250	45			3
53	<250	<250	15			21
54	<250	<250	36			9
55	<250	<250	3			15
56	<250	<250	6			0
57	<250	<250	45			0
58	<250	<250	9			12
59	<250	<250	42			15
60	<250	<250	36			3
61	<250	<250	15			0
62	<250	<250	6			0
63	<250	<250	12			0
64	<250	<250	15			0
65	<250	<250	105			15
66	<250	<250	90			39
67	<250	<250	12			3
68	<250	<250	45			0
69	<250	<250	150			0
70	<250	<250	33			0
71	<250	<250	57			0
72	<250	<250	27			9
73	<250	<250	36			6
74	<250	<250	21			15
75	<250	<250	57			0
76	<250	<250	36			3
77	<250	<250	54			0
78	<250	<250	27			0
79	<250	<250	24			0
80	<250	<250	24			12
81	<250	<250	12			21
82	<250	<250	12			9
83	<250	<250	45			3
84	<250	<250	60			3
85	<250	10^6	51			0
86	<250	<250	57			0
87	<250	10^6	48			0
88	<250	10^6	15			6
89	<250	<250	27			9
90	<250	<250	21			0

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
91	<250	<250	21			0
92	<250	<250	36			0
93	<250	<250	27			6
94	<250	<250	21			12
95	<250	<250	45			0
96	<250	<250	21			0
97	<250	<250	24			9
98	<250	<250	12			3
99	<250	<250	45			0
100	<250	<250	60			0
101	<250	<250	72			0
102	<250	<250	93			6
103	<250	<250	54			18
104	<250	<250	48			0
105	<250	<250	15			39
106	<250	<250	36			6
107	<250	<250	21			3
108	<250	<250	102			0
109	<250	<250	15			0
110	<250	<250	9			0
111	<250	<250	6			9
112	<250	<250	3			15
113	<250	<250	21			0
114	<250	<250	15			3
115	<250	<250	9			6
116	<250	<250	12			21
117	<250	<250	36			6
118	<250	<250	18			18
119	<250	<250	54			0
120	<250	<250	36			0
121	<250	<250	12			3
122	<250	<250	27			0
123	<250	<250	30			6
124	<250	<250	33			0
125	<250	<250	45			0
126	<250	<250	21			0
127	<250	<250	57			3
128	<250	<250	36			6
129	<250	<250	21			15
130	<250	<250	27			36
131	<250	<250	18			0
132	<250	<250	9			6
133	<250	<250	15			3
134	<250	<250	24			3
135	<250	<250	12			6

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
136	<250	<250	42			3
137	<250	<250	6			6
138	<250	<250	12			0
139	<250	<250	39			0
140	<250	<250	33			3
141	<250	<250	42			3
142	<250	<250	54			0
143	<250	<250	18			9
144	<250	<250	66			12
145	<250	<250	27			0
146	<250	<250	12			0
147	<250	<250	60			15
148	<250	<250	42			0
149	<250	<250	54			0
150	<250	<250	36			0
151	<250	<250	27			15
152	<250	<250	9			12
153	<250	<250	12			3
154	<250	<250	21			0
155						
156						
157						
158						
159						
160						
161						
162						
163						
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170						
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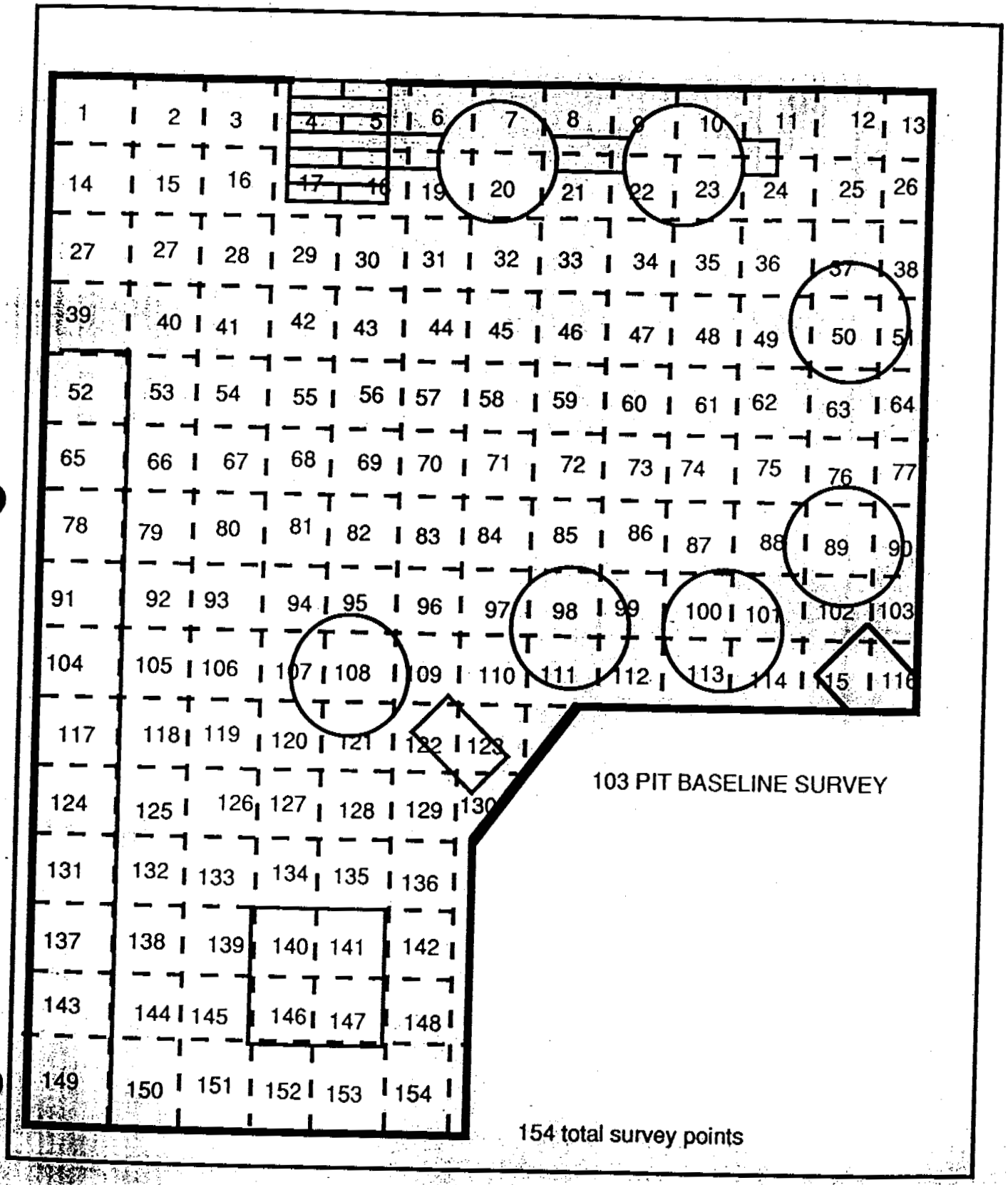
180						

RADIATION PROTECTION
AREA OR EQUIPMENT DRAWING SHOWING SURVEY POINTS



103 PIT BASELINE SURVEY

154 total survey points

RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 10-27-94 Building: 886

Time: 0430 Room: 103

Shift: Day

Survey Description: Overhead Survey of walk-in Glove box

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:		6348			
Date Cal.:		10-94			
Cal. Due:		4-95			
BKGRD:		<250			

COMMENTS:

STATUS:

X Within Limits

__ Limits Exceeded

__ Posted

__ Deposted

Radiological Operations Foreman

Signature Date: 11-2-94

RADIOLOGICAL OPERATIONS
Alpha Survey

RESULTS

Date: 10-27-94 Time: 0930 Building: 886 Room: 103

ALPHA

	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1	<250		
2	<250		
3	<250		
4	<250		
5	<250		
6	<250		
7	<250		
8	<250		
9	<250		
10	<250		
11	<250		
12	<250		
13	<250		
14	<250		
15	<250		
16	<250		
17	<250		
18	<250		
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			

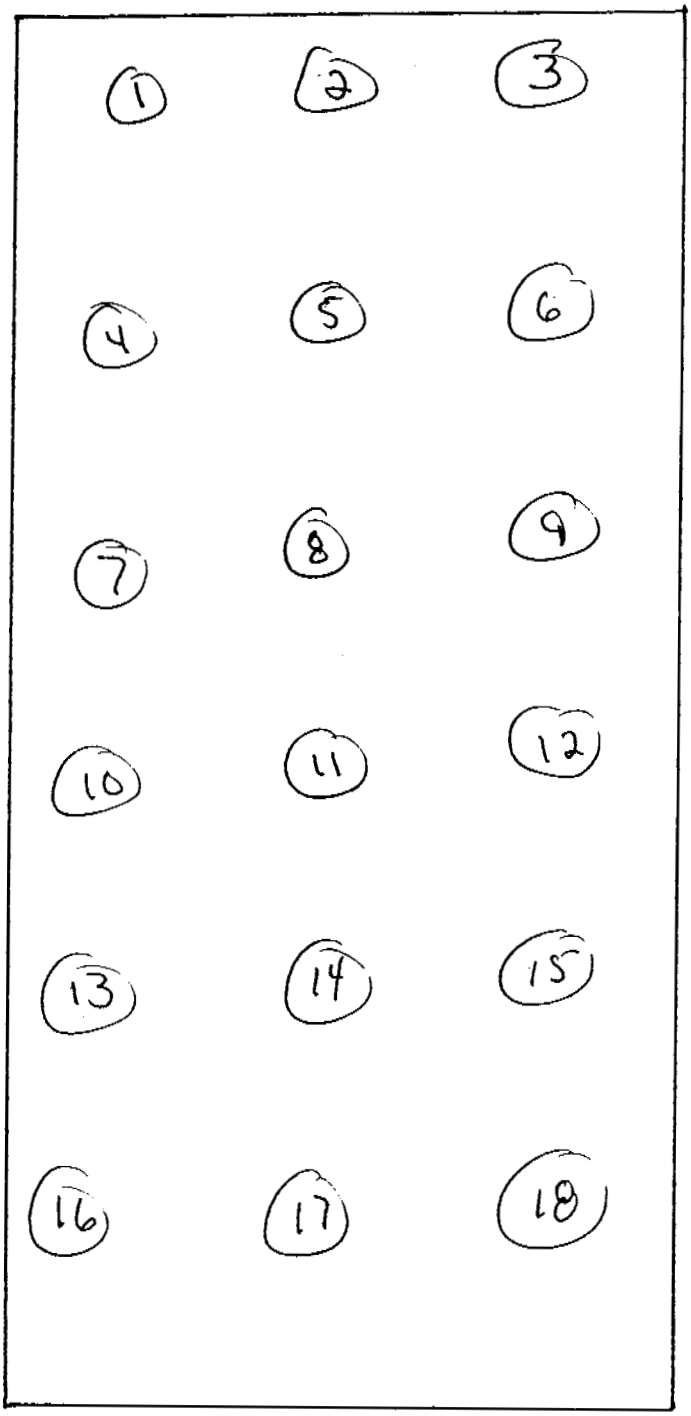
RESURVEY

	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			

EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points

Overhead Survey of walk in Glove box Rm# 103



RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: _____

Taken by [signature] Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 10-27-94 Building: 886

Time: 1000 Room: 103

Shift: Day

Survey Description: Wall Survey of Walk-in Glovebox Rm# 103

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:		6348			
Date Cal.:		10-94			
Cal. Due:		4-95			
BKGRD:		<250			

COMMENTS:

STATUS:

X Within Limits
__ Limits Exceeded
__ Posted
__ Deposted

Radiological Operations Foreman

[signature] Date: 11-2-94
Signature

RADIOLOGICAL OPERATIONS
Alpha Survey

RESULTS

Date: 10-27-94 Time: 1000 Building: 886 Room: 103

	ALPHA			RESURVEY		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1	<250					
2	<250					
3	<250					
4	<250					
5	<250					
6	<250					
7	<250					
8	<250					
9	<250					
10	<250					
11	<250					
12	<250					
13	<250					
14	<250					
15	<250					
16	<250					
17	<250					
18	<250					
19	<250					
20	<250					
21	<250					
22	<250					
23	<250					
24	<250					
25	<250					
26	<250					
27	<250					
28	<250					
29	<250					
30	<250					
31	<250					
32	<250					
33	<250					
34	<250					
35	<250					
36	<250					
37	<250					
38	<250					
39	<250					
40	<250					
41	<250					
42	<250					
43	<250					
44	<250					
45	<250					

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-27-94 Time: 1000 Building: 886 Room: 103

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46	<250					
47	<250					
48	<250					
49	<250					
50	<250					
51	<250					
52	<250					
53	<250					
54	<250					
55	<250					
56	<250					
57	<250					
58	<250					
59	<250					
60	<250					
61	<250					
62	<250					
63	<250					
64						
65						
66						
67						
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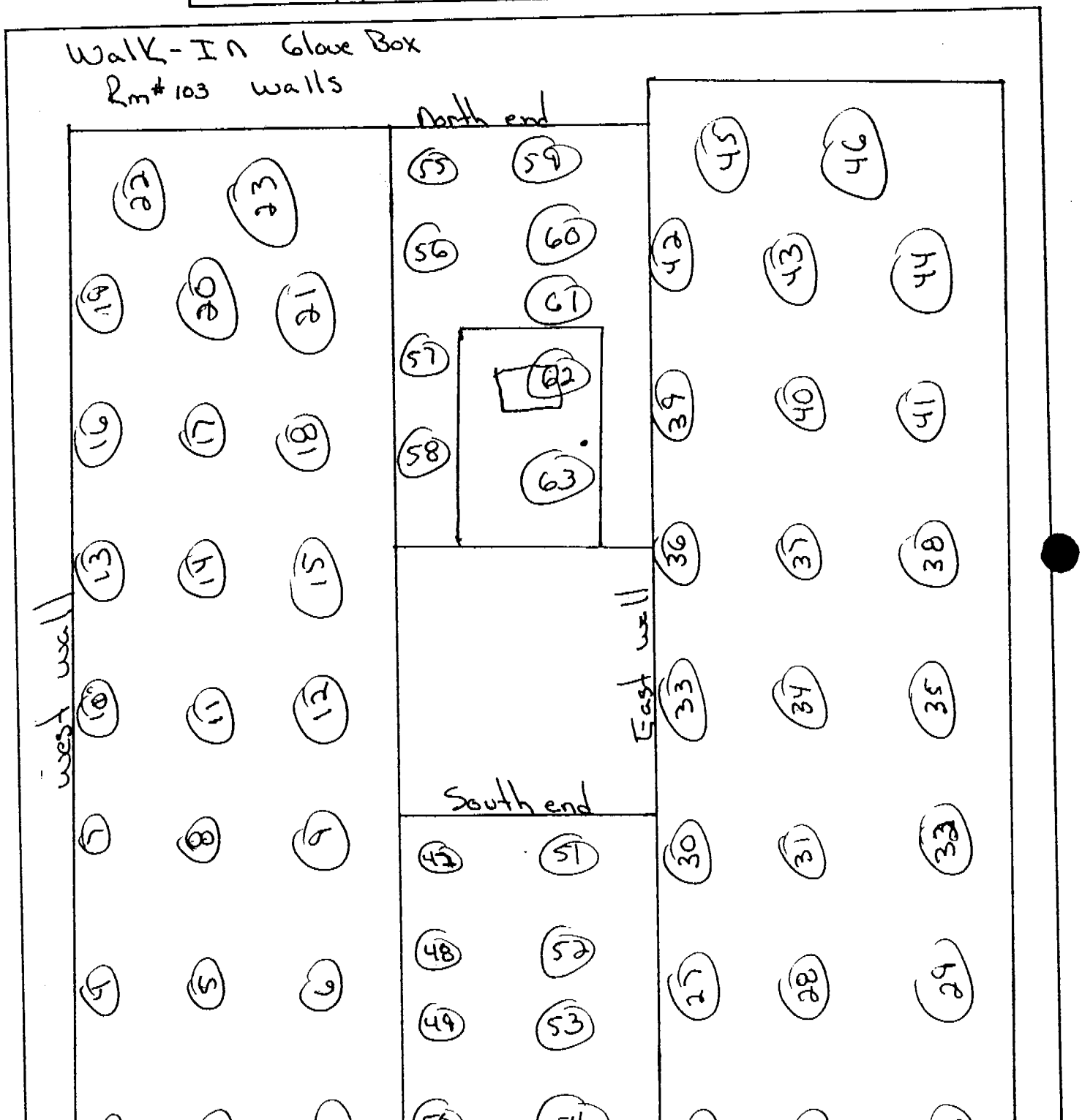
89						
90						

EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by [signature] Employee #: [redacted]
Signature

Date: 8-2-94 Building: 886

Time: 1500 Room: 103

Shift: Days

Survey Description: Base Line Rm 103

Diagram/Sketch Attached: yes___ no___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864				
Date Cal.:	10-5-93				
Cal. Due:	10-94				

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868				
Date Cal.:	10-1-93				
Cal. Due:	10-94				

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:

__ Within Limits

✓ Limits Exceeded

✓ Posted

__ Deposted

Radiological Operations Foreman

[signature] Date: 8-5-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8-2-94 Time: 1500 Building: 886 Room: 103

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1			3			3
2			15			<BKG
3			0			27
4			9			21
5			21			<BKG
6			9			36
7			6			27
8			15			24
9			18			6
10			27			<BKG
11			9			<BKG
12			30			60
13			39			24
14			12			30
15			18			<BKG
16			9			<BKG
17			15			3
18			30			<BKG
19			6			54
20			0			9
21			9			3
22			27			15
23			96			18
24			3			12
25			9			<BKG
26			0			<BKG
27			21			<BKG
28			0			21
29			18			12
30			12			18
31			27			48
32			33			<BKG
33			3			18
34			9			9
35			9			42
36			540			60
37			57			18
38			30			21
39			51			<BKG
40			24			<BKG
41			18			12
42			3			36
43			6			12
44			0			<BKG
45			18			<BKG

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

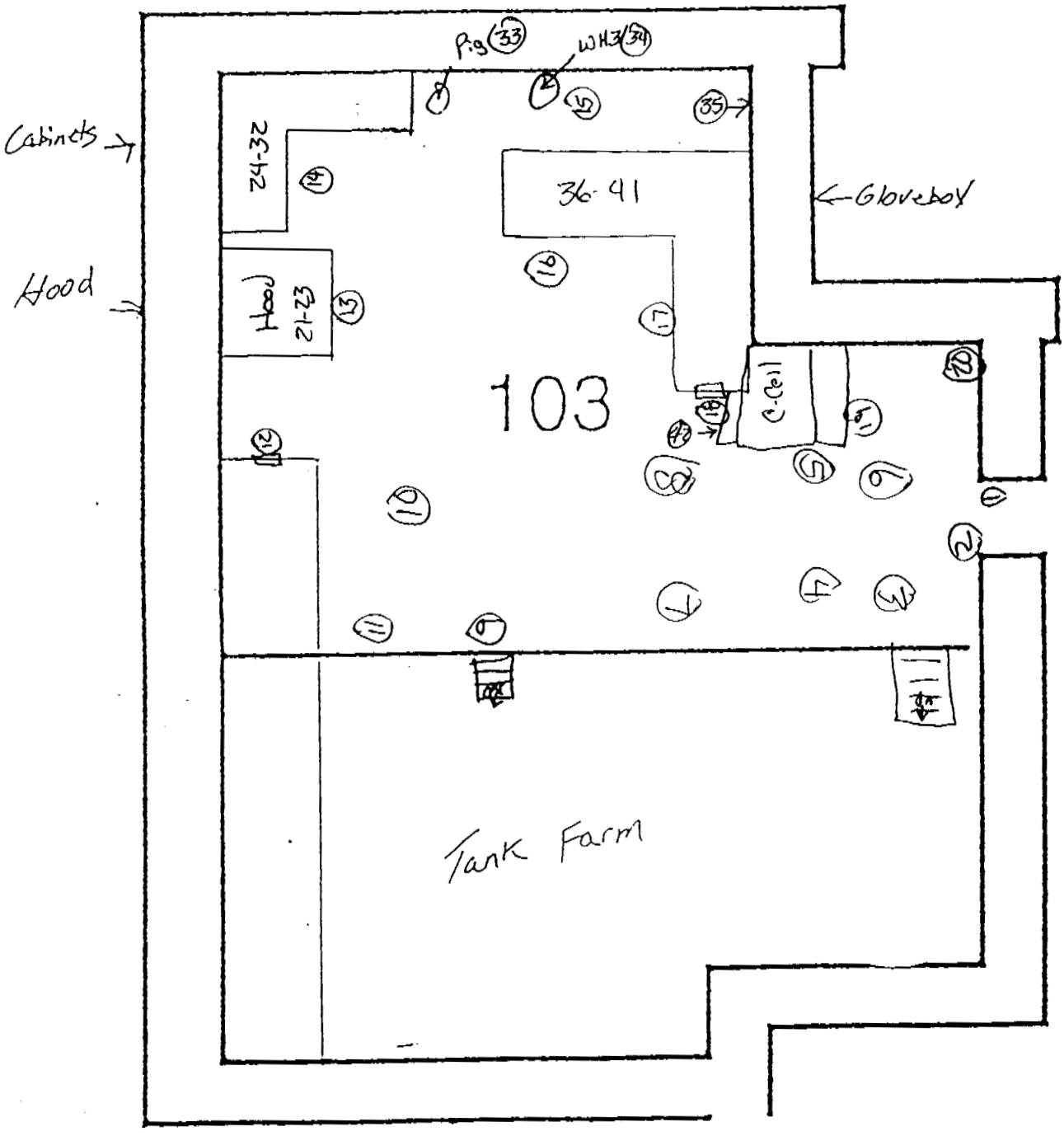
RESULTS

Date: 8-2-94 Time: 1500 Building: 886 Room: 103

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46			12			15
47			6			<BKG
48			0			<BKG
49			9			<BKG
50			3			<BKG
51			0			15
52			0			<BKG
53			3			12
54			9			<BKG
55			3			<BKG
56			39			30
57			3			<BKG
58			15			6
59			18			<BKG
60			24			<BKG
61			30			3
62			3			42 EH
63			6			<BKG
64			3			<BKG
65			24			21
66			105			21
67			96			42
68			15			6
69			21			<BKG
70			15			<BKG
71			3			12
72			15			15
73			123			<BKG
74			3			<BKG
75			9			3
76			15			<BKG
77			102			3
78			6			21
79			6			<BKG
80			0			<BKG
81						
82						
83						
84						
85						
86						
87						
88						
89						
90						

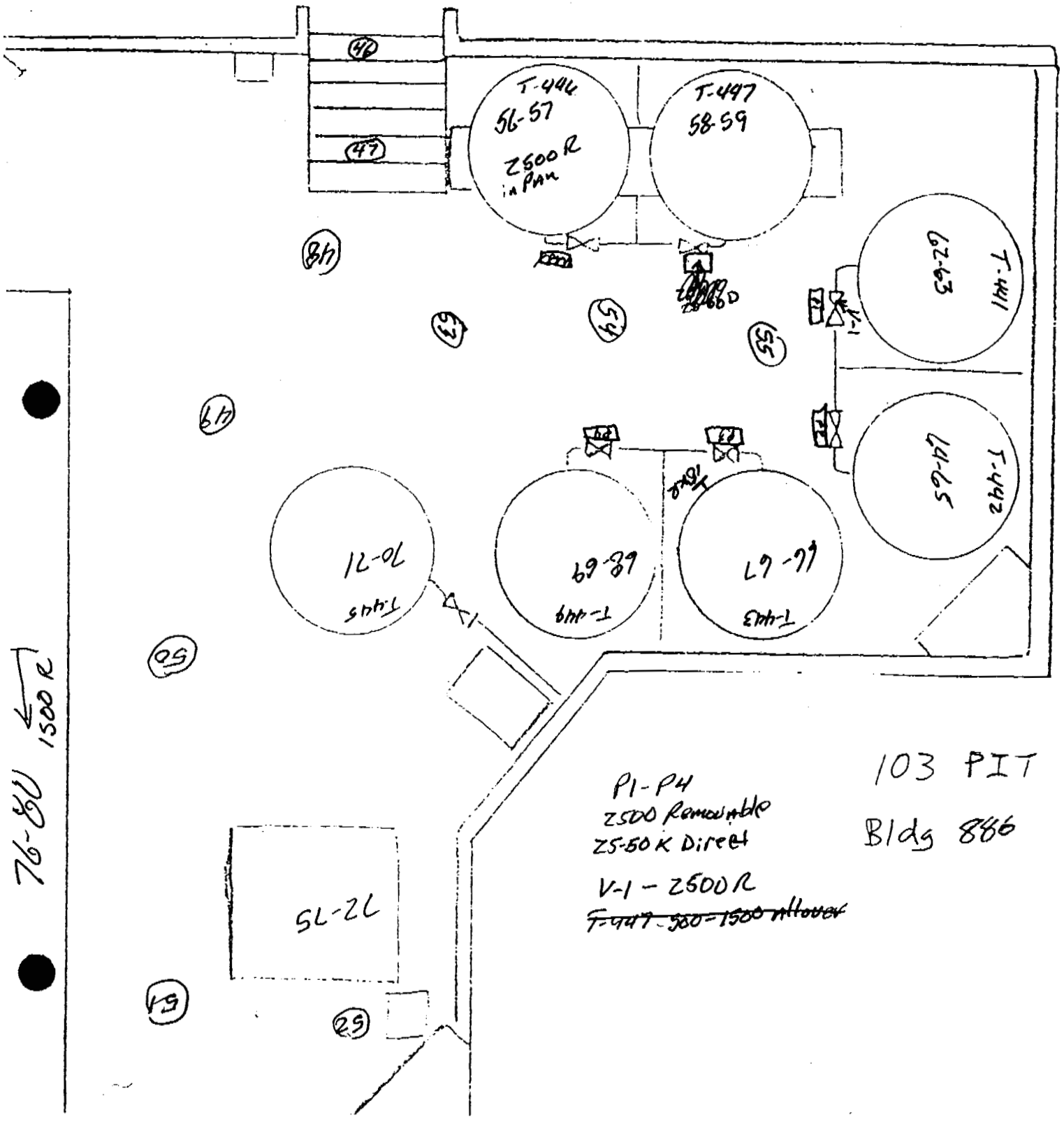
G&G ROCKY FLATS

Radiation Protection
Area or Equipment Drawing Showing Survey Points.



G&G ROCKY FLATS

Radiation Protection
Area or Equipment Drawing Showing Survey Points.



P1-P4
2500 Removable
25-50 K Direct

V-1 – 2500 R
~~T-447 - 500 = 1500 allover~~

103 PIT
Bldg 886

Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by R Saunders Employee #: [redacted]
Signature

Date: 7-28-94 Building: 880

Time: 1340 Room: 103

Shift: Days

Survey Description: Base Line Rm 103

Diagram/Sketch Attached: yes ✓ no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864				
Date Cal.:	10-5-93				
Cal. Due:	10-94				

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868				
Date Cal.:	10-1-93				
Cal. Due:	10-94				

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:	82806	96781			
Date Cal.:	10-93	6-94			
Cal. Due:	10-94	12-94			
BKGRD:	75	<250			

COMMENTS:

STATUS:

✓ Within Limits

___ Limits Exceeded

___ Posted

___ Deposted

Radiological Operations Foreman

Signature

Date: 7/29/94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 7-29-94 Time: 1340 Building: 886 Room: 103

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1			12			<BKG
2			21			<BKG
3			33			<BKG
4			18			<BKG
5			21			<BKG
6			12			<BKG
7			6			6
8			12			<BKG
9			3			<BKG
10			9			<BKG
11			18			<BKG
12			63			<BKG
13			3			21
14			39			<BKG
15			6			<BKG
16			36			<BKG
17			9			<BKG
18			6			<BKG
19			30			36
20			51			9
21			18			6
22			36			<BKG
23			12			<BKG
24			15			<BKG
25			9			<BKG
26			6			6
27			3			<BKG
28			9			33
29			3			<BKG
30			3			18
31			9			3
32			6			27
33			15			<BKG
34			6			<BKG
35			3			3
36			3			12
37			3			<BKG
38			0			<BKG
39			9			<BKG
40			9			<BKG
41			9			<BKG
42			45			<BKG
43			24			93
44			6			45
45			0			21

Floor

Table

✓

Control No._____

RADIOLOGICAL MONITORING
Contamination Survey

RESULTS

	Initial			Resurvey		
				Date Completed: 7-29-94		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46.			18			24
47.			15			6
48.			42			6
49.			9			51
50.			177			<BKG
51.			156			45
52.			15			12
53.			9			<BKG
54.			9			<BKG
55.			15			9
56.			15			<BKG
57.			6			<BKG
58.			12			<BKG
59.			0			3
60.			21			<BKG
61.			15			6
62.			159			15
63.			93			60
64.			9			<BKG
65.			3			<BKG
66.			78			3
67.			3			<BKG
68.			9			<BKG
69.			24			<BKG
70.			15			3
71.			18			<BKG
72.			42			3
73.			21			21
74.			6			<BKG
75.			6			<BKG
76.			9			<BKG
77.			9			<BKG
78.			36			<BKG
79.						
80.						
81.						
82.						
83.						
84.						
85.						
86.						
87.						
88.						
89.						
90.						

Table: 46–52

Pig → 53. Trunk Hood-3: 53–54

Glove Box: 55–71

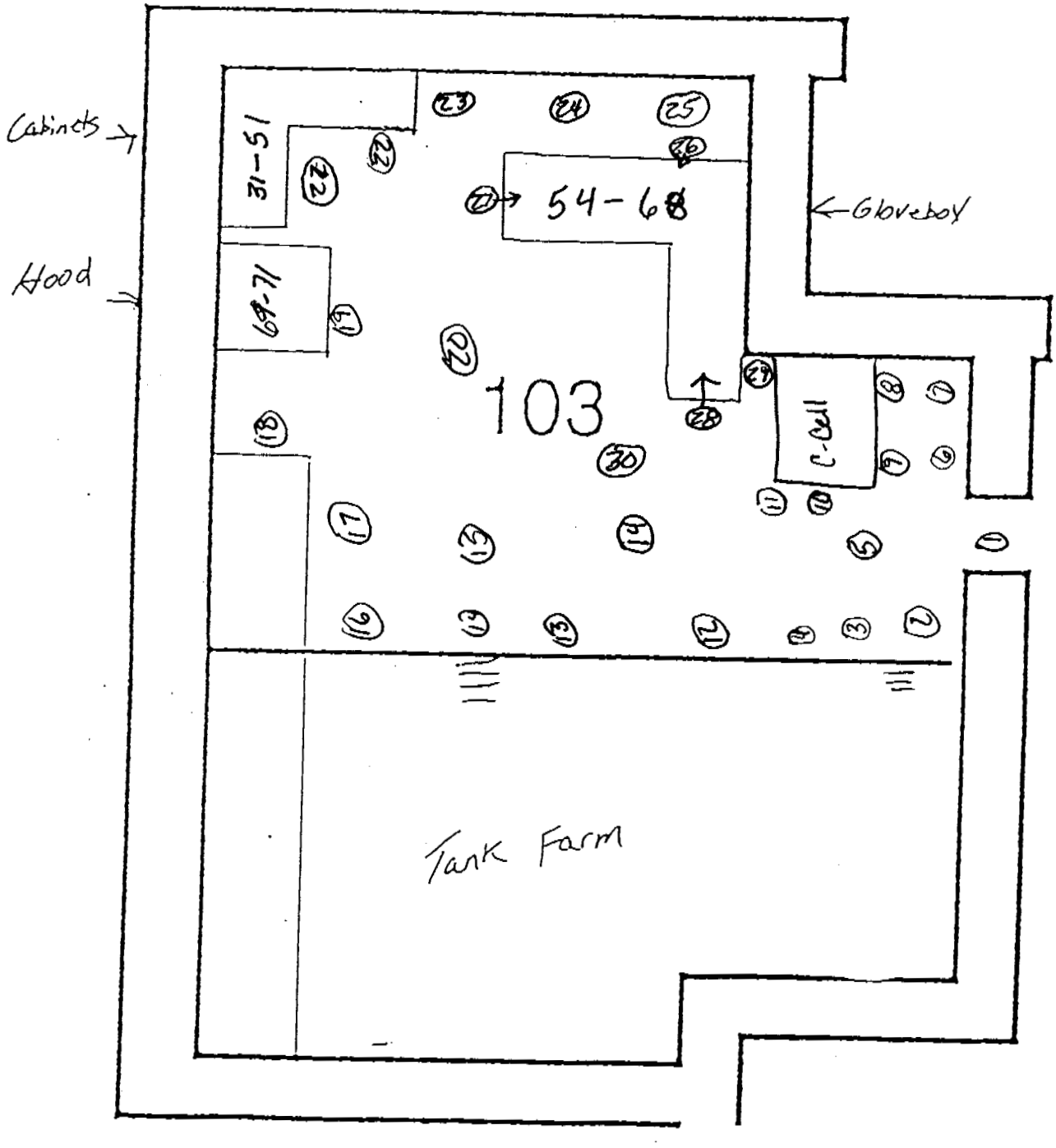
Hood: 72–74

Table & Bench C-Cell: 75–78

2nd

EG&G ROCKY FLATS

Radiation Protection
Area or Equipment Drawing Showing Survey Points.



GAMMA NEUTRON SURVEY

~~Control # 6B~~
Page 1 of 3

Taken by: _____ / _____ Emp. # _____
Signature Printed Name

Taken by: K L Creason / K L Creason Emp.# [redacted]
Signature Printed Name

Taken by: T.A CREASON / T.A. CREASON Emp.# _____
Signature Printed Name

Date: 7-18-94 Building ~~771 CB~~ 886

Time: 1000 Room #: ~~114 CB~~ 103

Shift: Days Area: Whole room

Survey Description: General area room 103

Gamma / Neutron Survey Bldg 886

Diagram/Sketch Attached: X Yes No

INSTRUMENTATION USED

Mfg:	Ludlum	Victoreen	Victoreen			
Model:	12-4	450-6	450-B			
Serial #:	91017	196	553			
Date Perf. Test	7-18-94	7-18-94	7-18-94			
Date Calib'd:	2-28-94	4-5-94	6-29-94			
Cal. Due Date:	8-94	10-94	12-94			
Background:	0.0	0.01	0.01			

COMMENTS

Survey points 1-11 are of the 6Box.

Survey points 12-14 are of the North Cabinets.

Survey point 15 is of the Hood.

Survey points 16+17 are of tank 446

Survey points 18+19 are of tank 447

Survey points 20+21 are tank 441

Survey points 22+23 are tank 442

Survey points 24+25 are tank 443

Survey points 26+27 are tank 444

Survey points 28+29 are tank 445

Survey points 30-33 are isle ways between tanks.

STATUS:

V WITHIN LIMITS

_____ LIMITS EXCEEDED

_____ POSTED

_____ DEPOSTED

Radiological Operations Foreman Review:

Curtis Bevan 7-18-94
Signature Date

RF - 47498 (3/91)

GAMMA AND NEUTRON SURVEY

Control #_____
Page ___ of _____

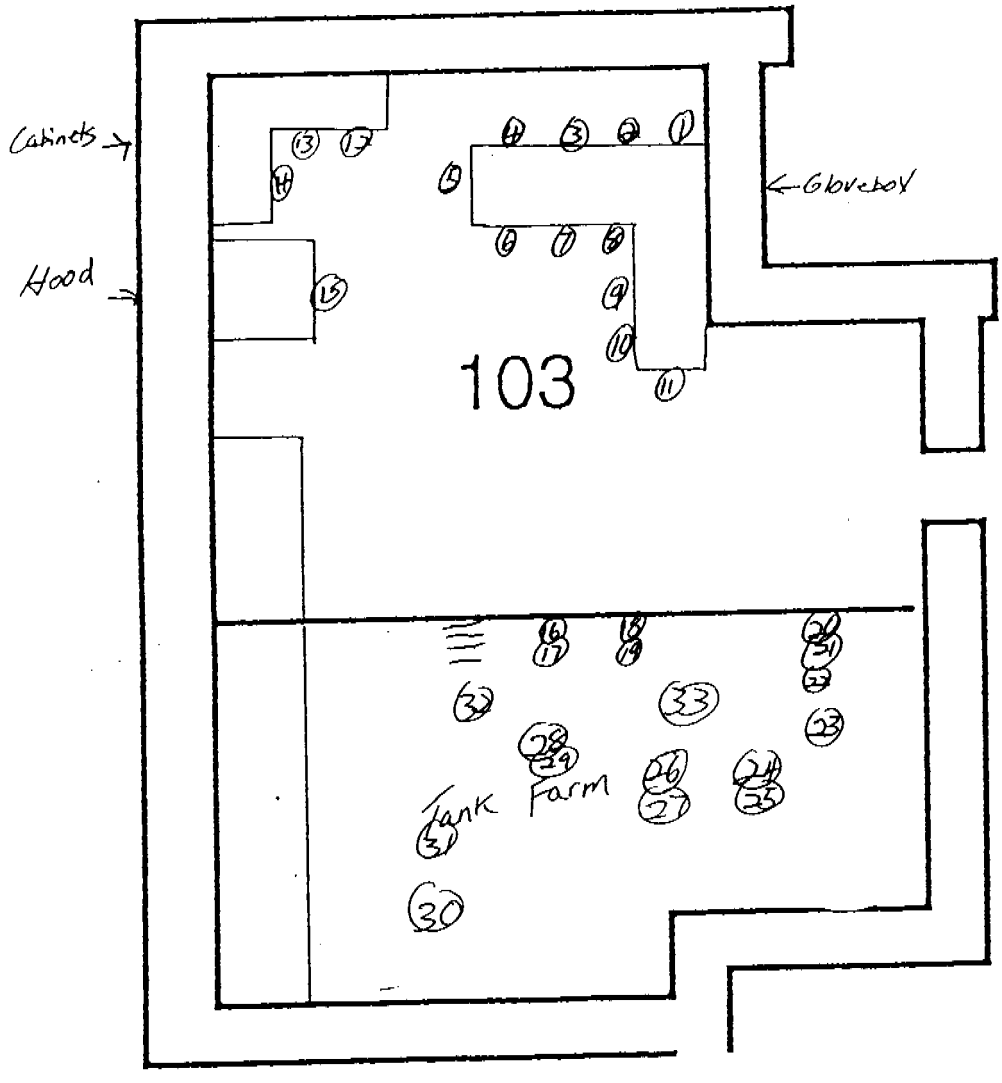
RESULTS

	mrem/h			
	Gamma	Neutron	Total	Area Posted (Y/N)
1.	0.10	0.0	0.10	N
2.	0.20	0.1	0.30	N
3.	0.08	0.0	0.08	N
4.	0.30	0.1	0.40	N
5.	0.10	0.0	0.10	N
6.	0.30	0.0	0.30	N
7.	0.50	0.0	0.50	N
8.	0.40	0.0	0.40	N
9.	0.20	0.0	0.20	N
10.	0.20	0.0	0.20	N
11.	0.10	0.0	0.10	N
12.	0.10	0.0	0.10	N
13	0.05	0.1	0.15	N
14.	0.03	0.0	0.03	N
15.	0.06	0.0	0.06	N
16.	0.25	0.0	0.25	N
17.	0.30	0.0	0.30	N
18.	2.40	0.10	2.50	N
19.	2.60	0.20	~~2.60~~ 2.80	N
20.	2.70	0.00	2.70	N
21.	2.60	0.00	2.60	N
22.	3.40	0.1	3.50	N
23.	3.0	0.1	3.10	N
24.	2.30	0.0	2.30	N
25.	2.50	0.0	2.50	N
26.	2.20	0.0	2.20	N
27.	2.00	0.0	2.00	N
28.	2.30	0.0	2.50	N
29.	2.20	0.1	2.30	N
30.	0.40	0.0	0.40	N
31.	0.60	0.0	0.60	N
32.	1.0	0.0	1.00	N
33.	1.6	00	1.60	N
34.				
35.				
36.				
37.				
38.				
39.				
40.				
41.				
42.				
43.				
44.				

	mrem/h			
	Beta/ Gamma	~~Neutron~~	~~Total~~	Area Posted (Y/N)
1.	0.10			
2.	0.21			
3.	0.10			
4.	0.25			
5.	0.10			
6.	0.20			
7.	0.30			
8.	0.20			
9.	0.10			
10.	0.10			
11.	0.05			
12.	0.10			
13.	0.06			
14.	0.05			
15.	0.05			
16.	0.18			
17.	0.20			
18.	0.18			
19.	0.20			
20.	2.40			
21.	2.20			
22.	2.40			
23.	2.20			
24.	1.60			
25.	1.50			
26.	1.80			
27.	1.60			
28.	1.80			
29.	1.30			
30.	0.30			
31.	0.60			
32.	0.60			
33.	1.43			
78.				
79.				
80.				
81.				
82.				
83.				
84.				
85.				
86.				
87.				
88.				

EG&G ROCKY FLATS

Radiation Protection
Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: [redacted]
Signature

Date: 11-29-94 Building: 886

Time: 1455 Room: 101

Shift: Day

Survey Description: Airlock of Doghouse

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:

X Within Limits
__ Limits Exceeded
__ Posted
__ Deposted

Radiological Operations Foreman

_____ Date: 11-30-94
Signature

RADIOLOGICAL OPERATIONS
Alpha Survey

RESULTS

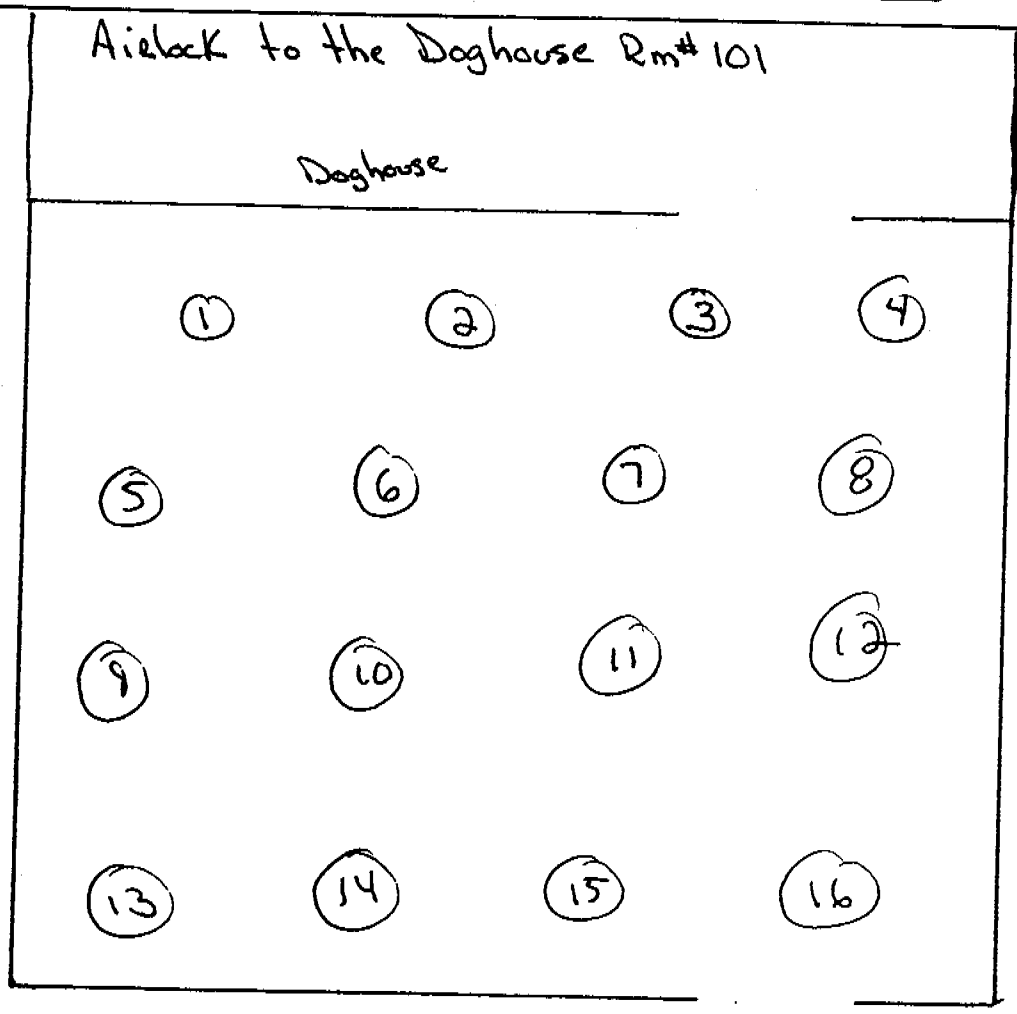
Date: 11-29-94 Time: 1455 Building: 886 Room: Dog House

	ALPHA			RESURVEY		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1	1000			<250		
2	1250			<250		
3	1000			<250		
4	1500			<250		
5	1000			<250		
6	1500			<250		
7	1500			<250		
8	1500			<250		
9	1000			<250		
10	1000			<250		
11	1000			<250		
12	1000			<250		
13	750			<250		
14	750			<250		
15	600			<250		
16	600			<250		
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						

EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points

Airlock to the Doghouse Rm# 101



16 total Survey points

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: 96-881-6337

P/WRE ____ ROUTINE ____

R.W.P ✓ OTHER ~~✓~~ RK 10·7·96

BUILDING/LOCATION	ROOM#:
886 / DOGHOUSE	101

DATE:	TIME:
10·7·96	1530

ITEM DESCRIPTION: REMOVEABLE SURVEY OF AIRLOCK + DOG HOUSE RM 101

COMMENTS: ALL SURVEYS TAKEN WITH 12-1A WIPES

Limits were exceeded on the RWP Suspension Guide limits however the area was already posted as an H.C.A

STATUS:

____ RELEASABLE ____ NOT RELEASABLE

____ POSTED ____ NOT POSTED

✓ WITHIN LIMITS ✓ LIMITS EXCEEDED

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	~~Eberline~~
Model:	SAC-4	SAC-4	SAC-4	~~SAC-4~~
Serial #:		N		
Date Calib'd:			A	
Cal. due Date:				

Mfg:	Eberline	Eberline	Eberline	~~Eberline~~
Model:	BC-4	BC-4	BC-4	~~BC-4~~
Serial #:		N		
Date Calib'd:			A	
Cal. due Date:				

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	~~Bicron~~
Model:	DP6	DP6	A-100	~~A-100~~
Serial #:				
Date Calib'd:		N		
Cal Due Date:			A	
Background:				
Efficiency:				

Mfg:	Ludlum	Ludlum	LUDLUM	
Model:	31	31	12-1A	
Serial #:			63480	
Date Calib'd:	N		1·96	N
Cal Due Date:		A	1·97	A
Background:			<250	
Efficiency:	N/A	N/A	N/A	

RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 10-10-94 Building: 886

Time: 1030 Room: 101

Shift: Day

Survey Description: Split table in Rm# 101

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	842	810			
Date Cal.:	4-94	6-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-93	4-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:	61629	56127			
Date Cal.:	6-94	6-94			
Cal. Due:	6-95	12-94			
BKGRD:	50cpm	<250			

COMMENTS:

STATUS:

✓ Within Limits

___ Limits Exceeded

___ Posted

___ Deposted

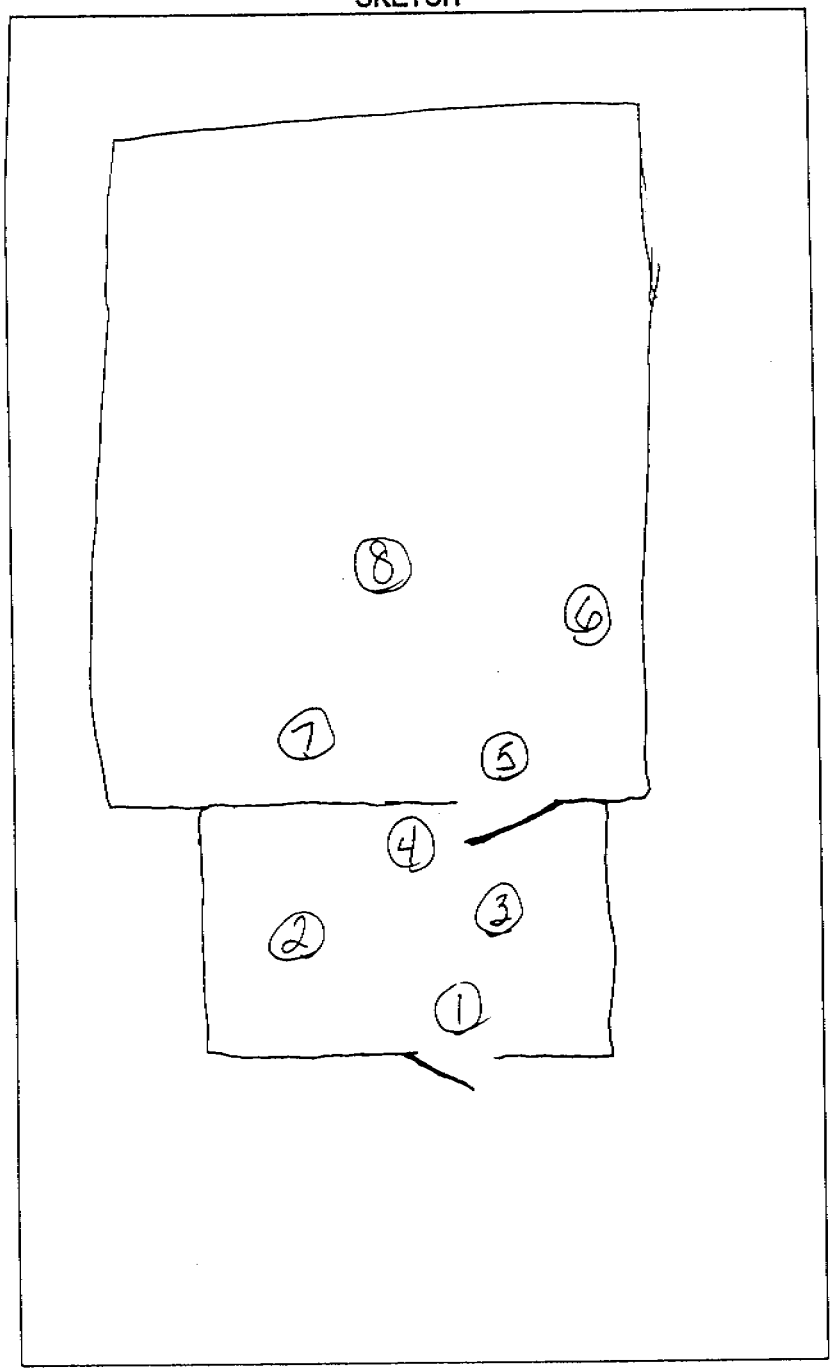
Radiological Operations Foreman

Signature

Date: 10-10-94

LOG# 96-881-6337 **RADIOLOGICAL OPERATIONS CONTAMINATION SURVEY FORM**

SKETCH



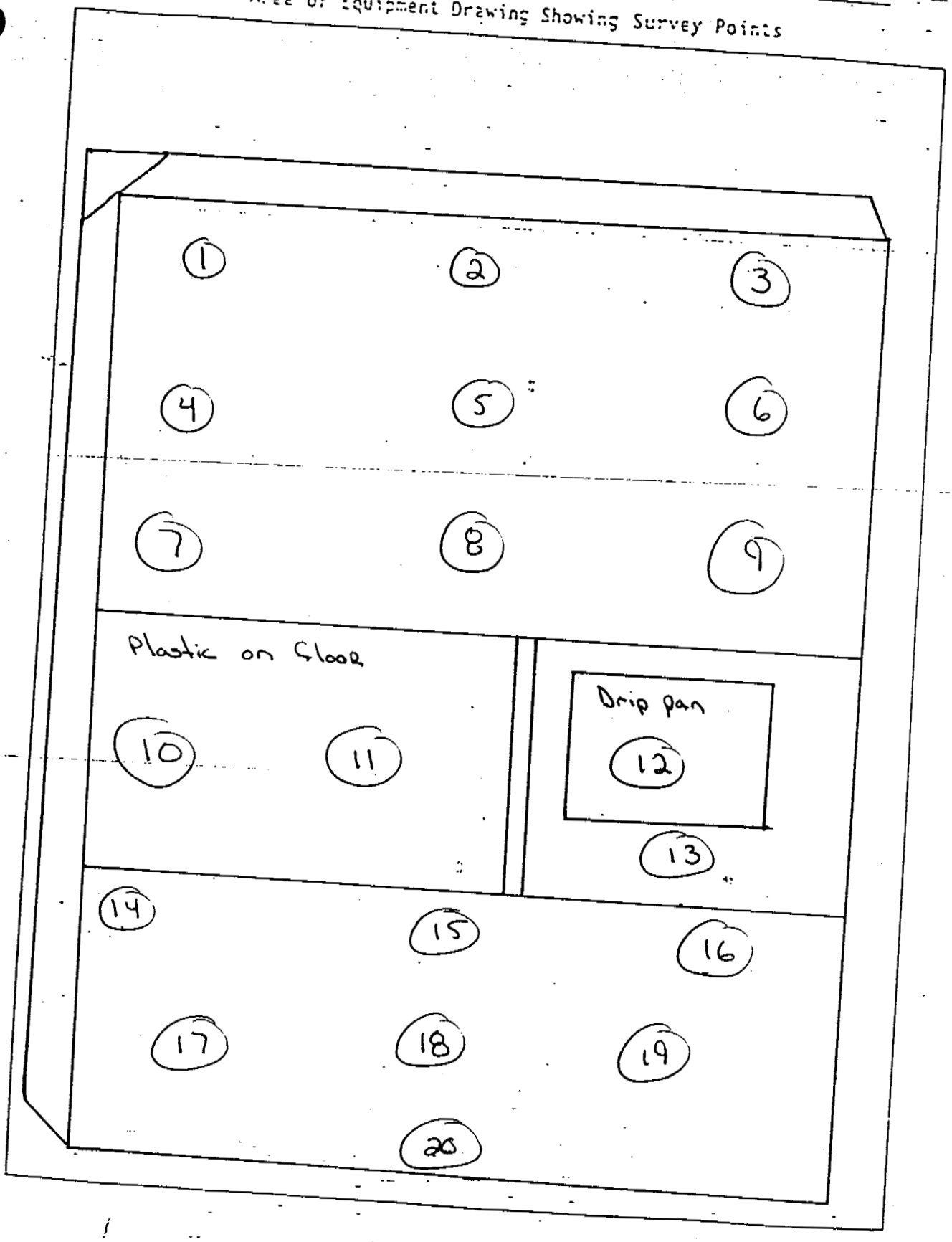
SURVEY RESULTS (dpm/100cm2)

Swipe #	Location/description	Removable		Total	Total
		Alpha	Beta/ Gamma	Alpha 60 sec count	Beta/ Gamma
1	101 / AIRLOCK	2000			
2	101 / AIRLOCK	2000			
3	101 / AIRLOCK	2000			
4	101 / AIRLOCK	2000			
5	101 / DOG HOUSE	20000			
6	101 / DOG HOUSE	24000			
7	101 / DOG HOUSE	28000			
8	101 / DOG HOUSE	4×10^6			

101 OK

RADIOLOGICAL MONITORING Control No. _____

Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-10-94 Time: 1030 Building: 886 Room: 101 / spl. / table

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1	<250	<250	0	<1894		3
2	<250	<250	15	<1894		0
3	<250	<250	45	<1894		63
4	<250	<250	6	<1894		18
5	<250	<250	66	<1894		27
6	<250	<250	3	<1894		0
7	<250	<250	9	<1894		12
8	<250	<250	21	<1894		21
9	<250	<250	15	<1894		9
10	<250	<250	12	<1894		6
11	<250	<250	3	<1894		12
12	<250	<250	15	<1894		0
13	<250	<250	69	<1894		30
14	<250	<250	6	<1894		0
15	<250	<250	30	<1894		0
16	<250	<250	18	<1894		0
17	<250	<250	12	<1894		0
18	<250	<250	21	<1894		6
19	<250	<250	12	<1894		0
20	<250	<250	27	<1894		0
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						

RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by K Vanderhoof Employee #: [redacted]
Signature

Date: 10-10-94 Building: 886

Time: 1315 Room: 101

Shift: Days

Survey Description:
Smear Survey of top of Dog House

Diagram/Sketch Attached: yes ✓ no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	842	810			
Date Cal.:	4-27-94	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:		56191			
Date Cal.:		4-21-94			
Cal. Due:		10-94			
BKGRD:		<250			

COMMENTS:

STATUS:
- ✓ Within Limits
- ___ Limits Exceeded
- ___ Posted
- ___ Deposted

Radiological Operations Foreman

[signature]
Signature

Date: 10-10-94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-10-94 Time: 1315 Building: 886 Room: 101

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1	<250		18			18
2	<250		15			3
3	<250		6			30
4	<250		12			21
5	<250		6			3
6	<250		9			0
7	<250		27			0
8	<250		9			18
9	<250		36			12
10	<250		12			0
11	<250		12			15
12	<250		33			18
13	<250		18			0
14	<250		6			42
15	<250		30			18
16	<250		15			0
17	<250		42			0
18	<250		12			21
19	<250		6			0
20	<250		9			0
21	<250		3			0
22	<250		12			3
23	<250		18			18
24	<250		27			0
25	<250		9			39
26	<250		6			0
27	<250		6			30
28	<250		24			0
29	<250		18			21
30	<250		3			9
31	<250		12			3
32	<250		6			6
33	<250		24			0
34	<250		27			0
35	<250		6			12
36	<250		15			9
37	<250		21			0
38	<250		21			9
39	<250		21			39
40	<250		33			0
41	<250		24			12
42	<250		21			0
43	<250		18			9
44	<250		21			18
45	<250		33			9

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-10-94 Time: 1315 Building: 886 Room: 101

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46	<250		24			0
47	<250		21			9
48	<250		33			24
49	<250		18			18
50	<250		27			0
51	<250		3			0
52	<250		21			15
53	<250		6			0
54	<250		3			21
55	<250		3			0
56	<250		9			15
57						
58						
59						
60						
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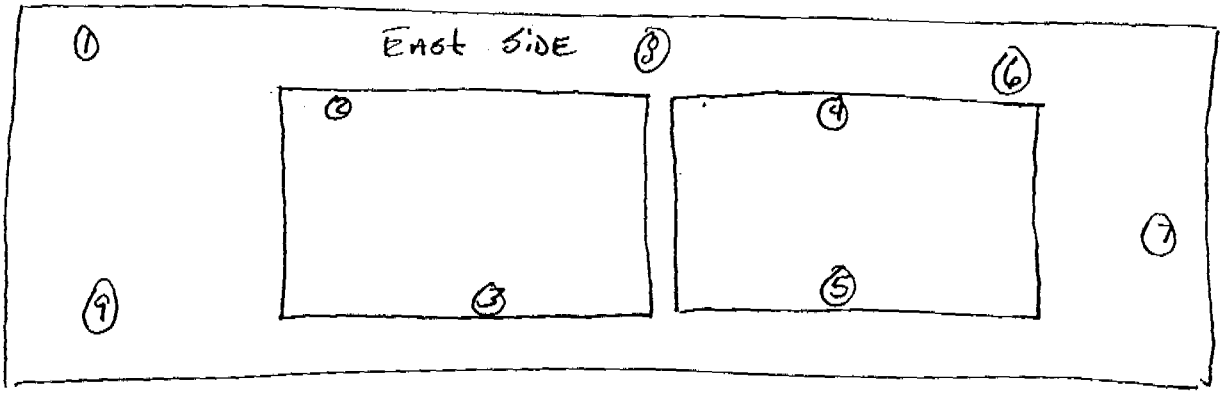
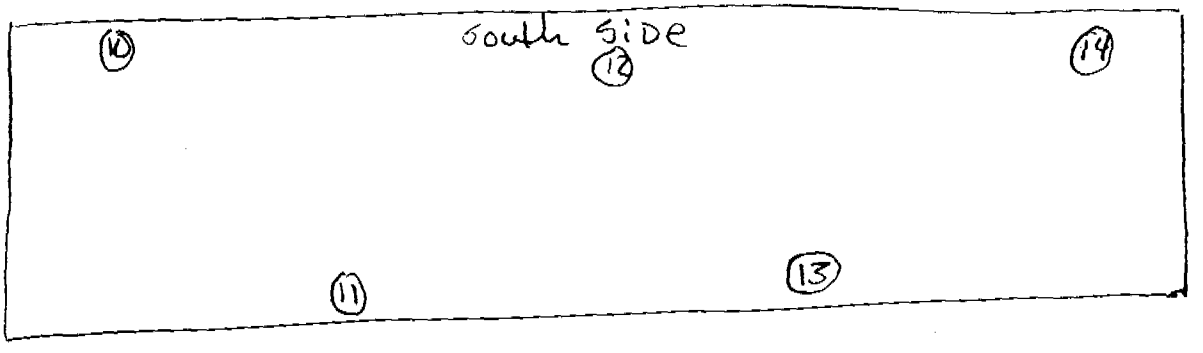
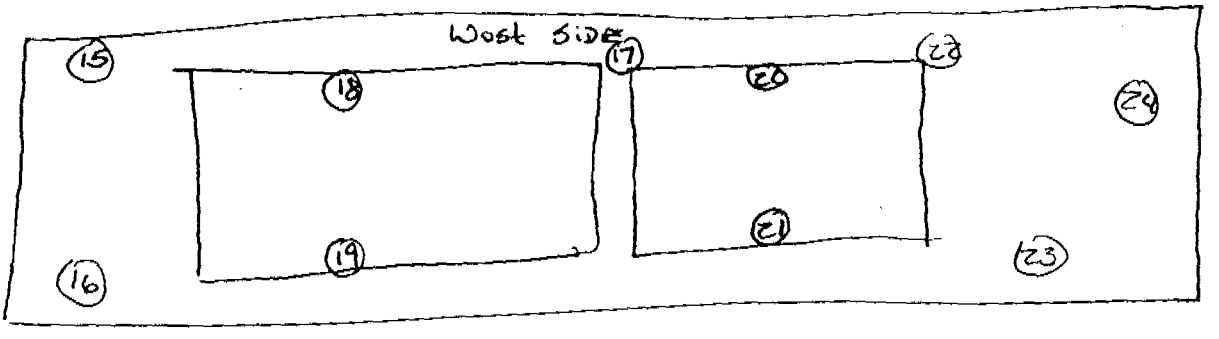
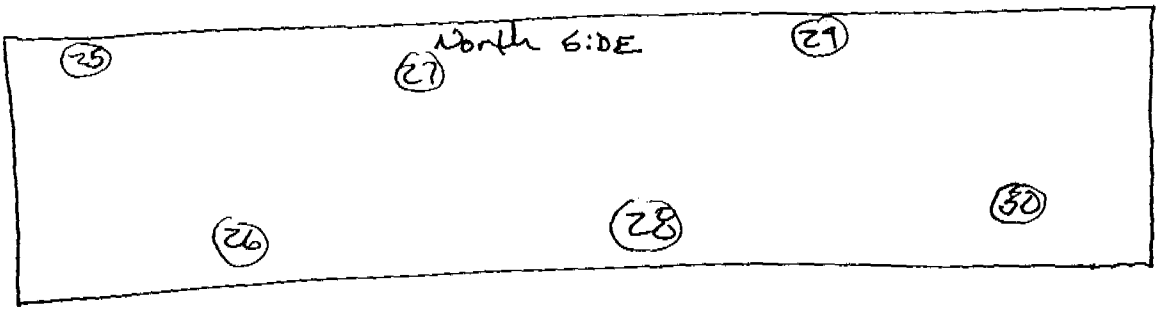
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



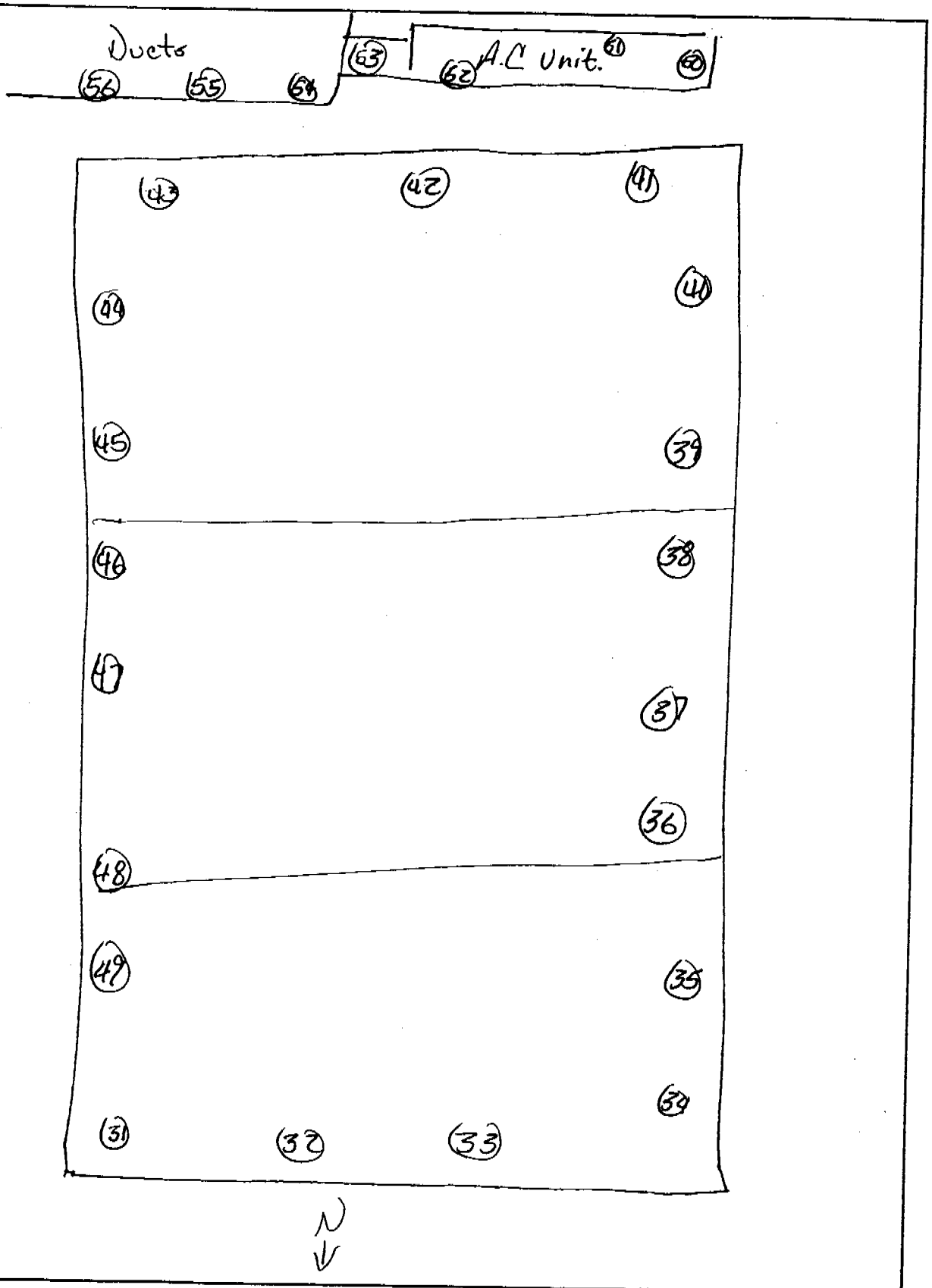






EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



Top of Dog House

RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by [signature] Employee #: [redacted]
Signature

Date: 10-10-94 Building: 886

Time: 1330 Room: 101

Shift: Days

Survey Description:

Smear of ~~Mezzanine~~ Mezzanine after plastic Removed

Diagram/Sketch Attached: yes ✓ no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	842	810			
Date Cal.:	4-27-94	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:		56191			
Date Cal.:		4-12-94			
Cal. Due:		10-94			
BKGRD:		<250			

COMMENTS:

STATUS:

__ Within Limits

✓ Limits Exceeded

__ Posted

__ Deposted

Radiological Operations Foreman

[signature] Date: 10-10-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

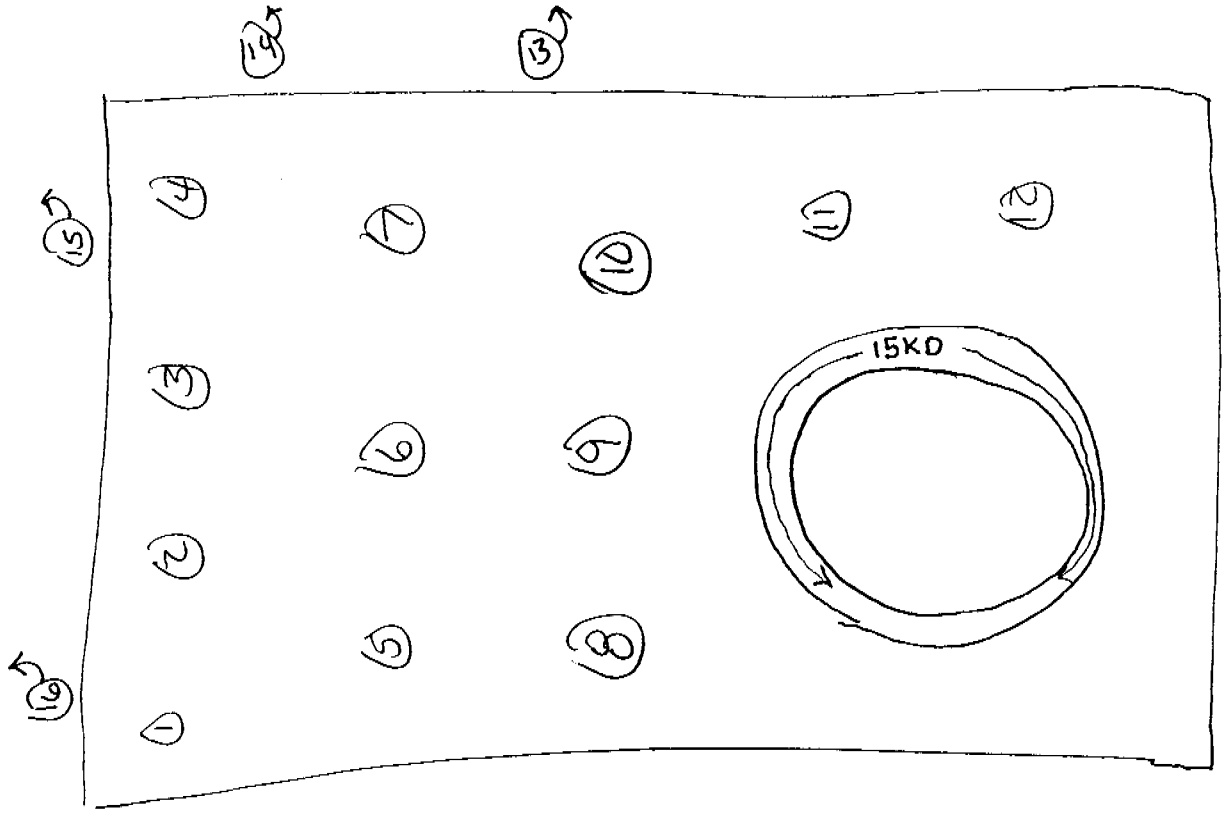
RESULTS

Date: 10-10-94 Time: 1330 Building: 886 Room: 101

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1			18			0
2			3			0
3			9			64
4			12			24
5			3			39
6			9			30
7			12			3
8			9			0
9			15			0
10			9			0
11			6			21
12			9			0
13			3			0
14			9			6
15			3			0
16			9			3
17	1600	15KD				
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						

EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by R Hawkins A Employee #: [redacted]
Signature

Date: 9-26-94 Building: 886

Time: 1430 Room: 101

Shift: Days

Survey Description:
Base Line 101

Diagram/Sketch Attached: yes___ no ✓

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864	810			
Date Cal.:	10-5-93	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:	110264	56071			
Date Cal.:	6-29-94	5-13-94			
Cal. Due:	6-95	11-94			
BKGRD:	75	<250			

COMMENTS:

STATUS:

✓ Within Limits

__ Limits Exceeded

__ Posted

__ Deposted

Radiological Operations Foreman

Signature

Date: 10-13-94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-28-94 Time: 1430 Building: 886 Room: 101

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
Table left side 1			0			<BKG
2			3			<BKG
3			12			18
4			24			6
5			27			<BKG
6			72			<BKG
7			12			<BKG
8			0			12
9			3			21
Table right side 10			15			<BKG
11			21			9
12			21			<BKG
13			108			15
14			24			9
15			9			<BKG
16			21			<BKG
17			12			9
18			24			<BKG
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						

White tank

RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by [signature] Employee #: [redacted]
Signature

Date: 9-12-93 Building: 886

Time: 1425 Room: 101

Shift: DAYS

Survey Description:
Base line 101

Diagram/Sketch Attached: yes___ no ✓

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864	81			
Date Cal.:	10-5-93	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:
- ✓ Within Limits
- __ Limits Exceeded
- __ Posted
- __ Deposted

Radiological Operations Foreman

[signature] Date: 9-14-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

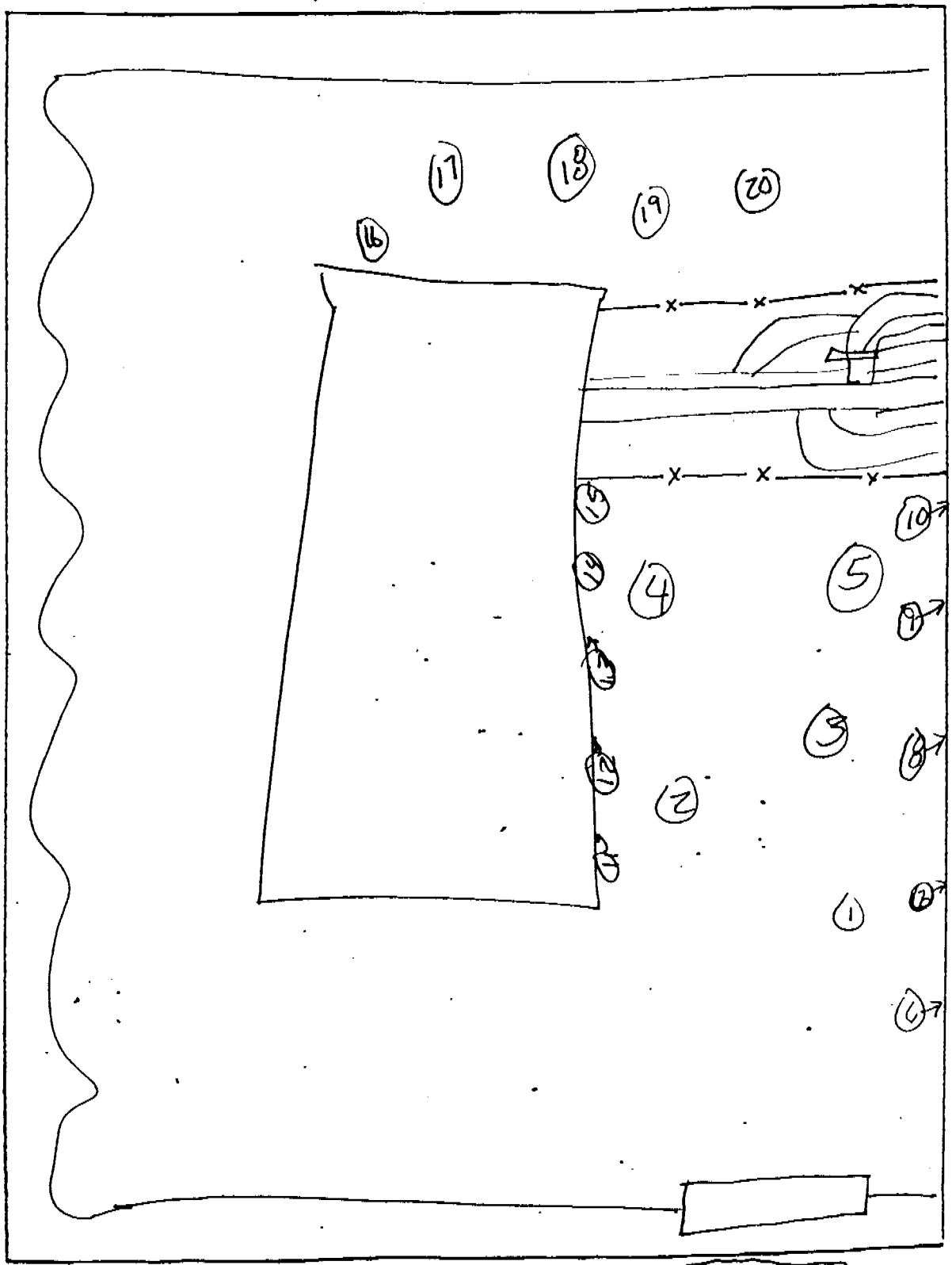
RESULTS

Date: 9-17-94 Time: 1425 Building: 886 Room: 101

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
Floor East						
1			9			<BKG
2			9			15
3			6			<BKG
4			9			<BKG
5			3			<BKG
6			12			<BKG
7			0			6
House Wall						
8			0			<BKG
9			9			<BKG
10			9			<BKG
11			57			<BKG
12			6			<BKG
13			18			15
14			30			<BKG
15			27			<BKG
16			3			<BKG
17			15			<BKG
Floor South						
18			18			3
19			18			<BKG
20			12			<BKG
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						

RADIOLOGICAL MONITORING Control No. _____

Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by [signature] Employee #: [redacted]
Signature

Date: 9-14-94 Building: 886

Time: 1420 Room: 101

Shift: DAY

Survey Description: POST - JOB

Diagram/Sketch Attached: yes___ no___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864	810			
Date Cal.:	10-5-93	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:

X Within Limits

__ Limits Exceeded

__ Posted

__ Deposted

Radiological Operations Foreman

[signature] Date: 9-14-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-14-94 Time: _____ Building: 886 Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1			18			0
2			3			42
3			9			0
4			9			0
5			12			0
6			0			0
7			18			0
8			12			0
9			9			0
10			12			18
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						

RADIOLOGICAL OPERATIONS
Contamination Survey

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 8-19-94 Building: 875
Time: 0800 Room#: BCA
Shift: Day

Survey Description: 875 Baseline Survey Cont (Fixed Contamination) 1 of every 5 smear pos
Diagram/Sketch Attached: X yes ___ no

INSTRUMENTATION USED
SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4	SAC-4
Serial#:					
Date. Cal.:					
Cal. Due.:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4	SAC-4
Serial#:					
Date. Cal.:					
Cal. Due.:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	12-1A	31			
Serial#:	56127	61645			
Date. Cal.:	5-94	8-94			
Cal. Due.:	11-94	2-95			
BKGRD:	<250	50 cpm			

COMMENTS

Status:

X Within Limits
___ Limits Exceeded
___ Posted
___ Deposted

Radiological Operations Foreman:
Curt Bear
Signature
Date: 8-22-94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1						
2						
3						
4						
5		<2680			<1894	
6						
7						
8						
9						
10		<250			<1894	
11						
12						
13						
14						
15		<250			<1894	
16						
17						
18						
19						
20		<250			<1894	
21						
22						
23						
24						
25		<250			<1894	
26						
27						
28						
29						
30		<250			<1894	
31						
32						
33						
34						
35		<250			<1894	
36						
37						
38						
39						
40		<250			<1894	
41						
42						
43						
44						
45		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46						
47						
48						
49						
50		<250			<1894	
51						
52						
53						
54						
55		<250			<1894	
56						
57						
58						
59						
60		<250			<1894	
61						
62						
63						
64						
65		<250			<1894	
66						
67						
68						
69						
70		<250			<1894	
71						
72						
73						
74						
75		<250			<1894	
76						
77						
78						
79						
80		<250			<1894	
81						
82						
83						
84						
85		<250			<1894	
86						
87						
88						
89						
90		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
91						
92						
93						
94						
95		<250			<1894	
96						
97						
98						
99						
100		<250			<1894	
101						
102						
103						
104						
105		<250			<1894	
106						
107						
108						
109						
110		<250			<1894	
111						
112						
113						
114						
115		<250			<1894	
116						
117						
118						
119						
120		<250			<1894	
121						
122						
123						
124						
125		<250			<1894	
126						
127						
128						
129						
130		<250			<1894	
131						
132						
133						
134						
135		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
136						
137						
138						
139						
140		<250			<1894	
141						
142						
143						
144						
145		<250			<1894	
146						
147						
148						
149						
150		<250			<1894	
151						
152						
153						
154						
155		<250			<1894	
156						
157						
158						
159						
160		<250			<1894	
161						
162						
163						
164						
165		<250			<1894	
166						
167						
168						
169						
170		<250			<1894	
171						
172						
173						
174						
175		<250			<1894	
176						
177						
178						
179						
180		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
181						
182						
183						
184						
185		<250			<1894	
186						
187						
188						
189						
190		<250			<1894	
191						
192						
193						
194						
195		<250			<1894	
196						
197						
198						
199						
200		<250			<1894	
201						
202						
203						
204						
205		<250			<1894	
206						
207						
208						
209						
210		<250			<1894	
211						
212						
213						
214						
215		<250			<1894	
216						
217						
218						
219						
220		<250			<1894	
221						
222						
223						
224						
225		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
226						
227						
228						
229						
230		<250			<1894	
231						
232						
233						
234						
235		<250			<1894	
236						
237						
238						
239						
240		<250			<1894	
241						
242						
243						
244						
245		<250			<1894	
246						
247						
248						
249						
250		<250			<1894	
251						
252						
253						
254						
255		<250			<1894	
256						
257						
258						
259						
260		<250			<1894	
261						
262						
263						
264						
265		<250			<1894	
266						
267						
268						
269						
270		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
271						
272						
273						
274						
275		<250			<1894	
276						
277						
278						
279						
280		<250			<1894	
281						
282						
283						
284						
285		<250			<1894	
286						
287						
288						
289						
290		<250			<1894	
291						
292						
293						
294						
295		<250			<1894	
296						
297						
298						
299						
300		<250			<1894	
301						
302						
303						
304						
305		<250			<1894	
306						
307						
308						
309						
310		<250			<1894	
311						
312						
313						
314						
315		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
316						
317						
318						
319						
320		<250			<1894	
321						
322						
323						
324						
325		<250			<1894	
326						
327						
328						
329						
330		<250			<1894	
331						
332						
333						
334						
335		<250			<1894	
336						
337						
338						
339						
340		<250			<1894	
341						
342						
343						
344						
345		<250			<1894	
346						
347						
348						
349						
350		<250			<1894	
351						
352						
353						
354						
355		<250			<1894	
356						
357						
358						
359						
360		<250			<1894	

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

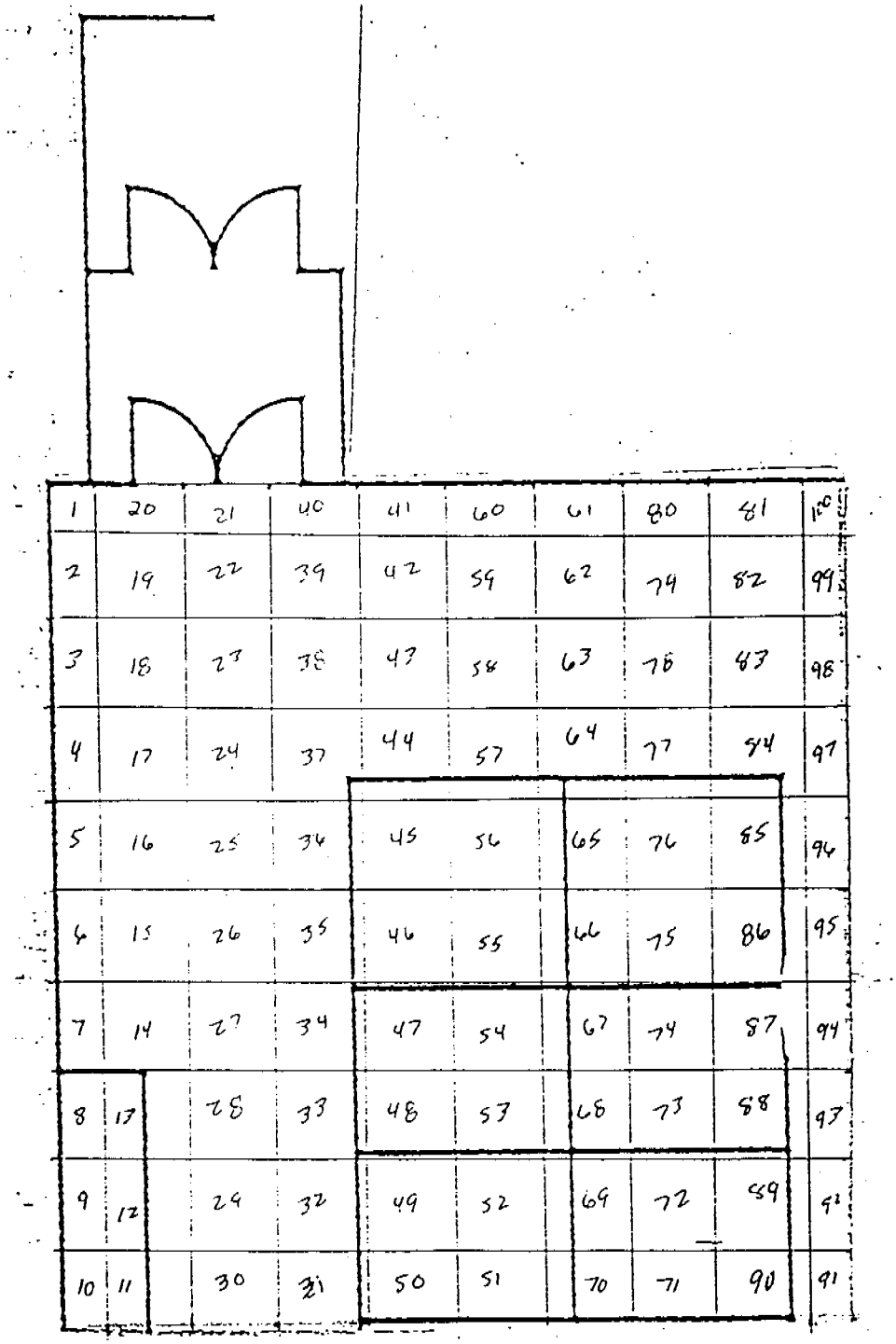
	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
361						
362						
363						
364						
365		<250			<1894	
366					<1894	
367						
368						
369						
370		<250			<1894	
371						
372						
373						
374						
375		<250			<1894	
376						
377						
378						
379						
380		<250			<1894	
381						
382						
383						
384						
385		<250			<1894	
386						
387						
388						
389						
390		<250			<1894	
391						
392						
393						
394						
395		<250			<1894	
396						
397						
398						
399						
400		<250			<1894	
401						
402						
403						
404						
405						

EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875

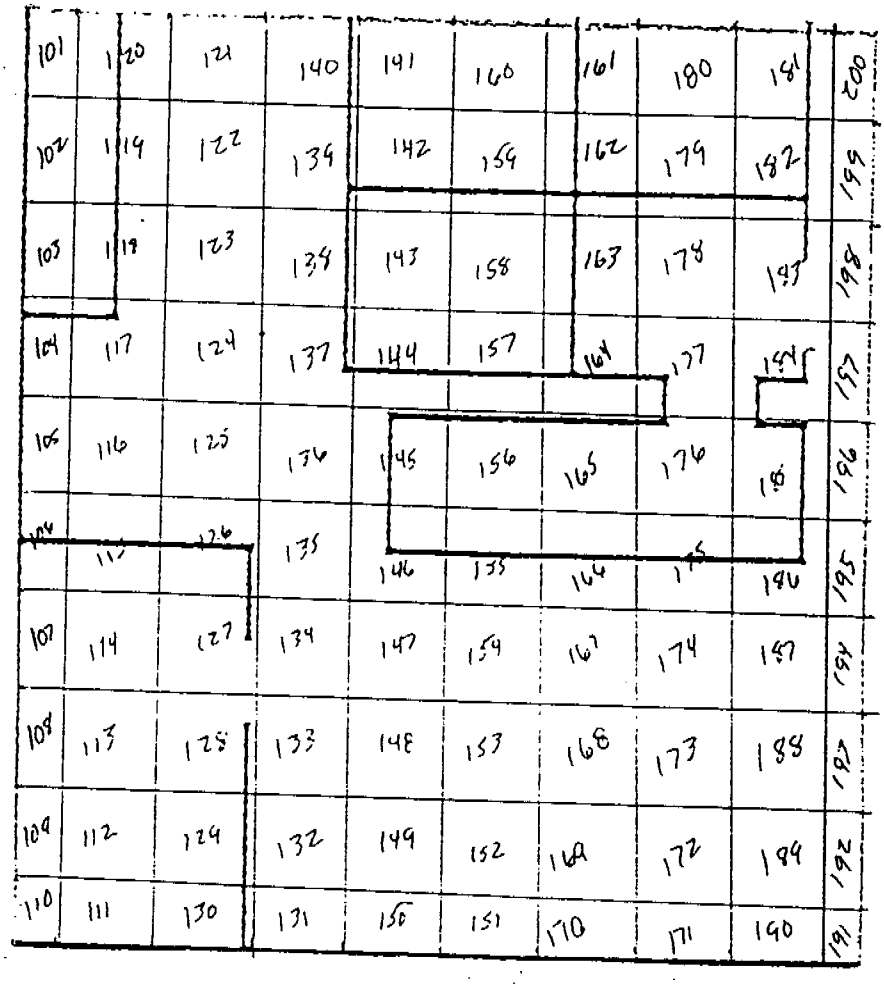


EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



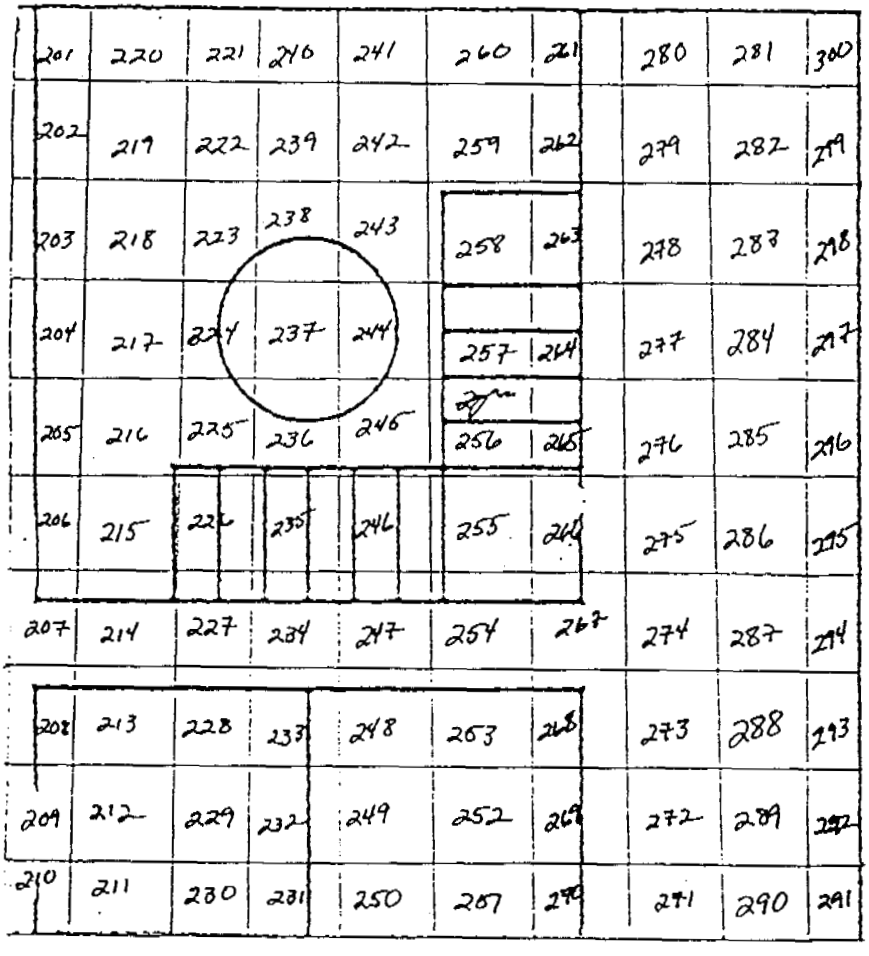
N

EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875

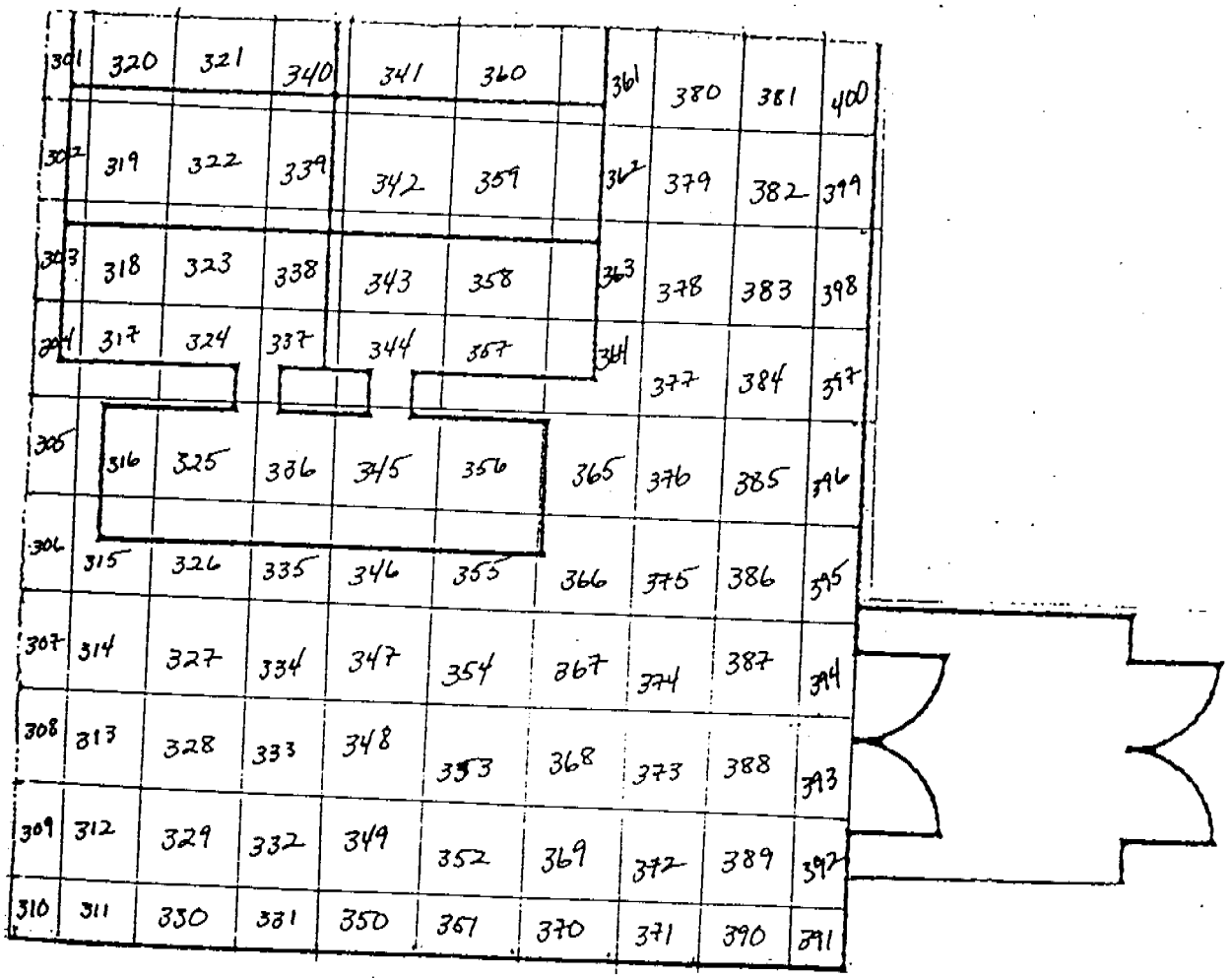


EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875

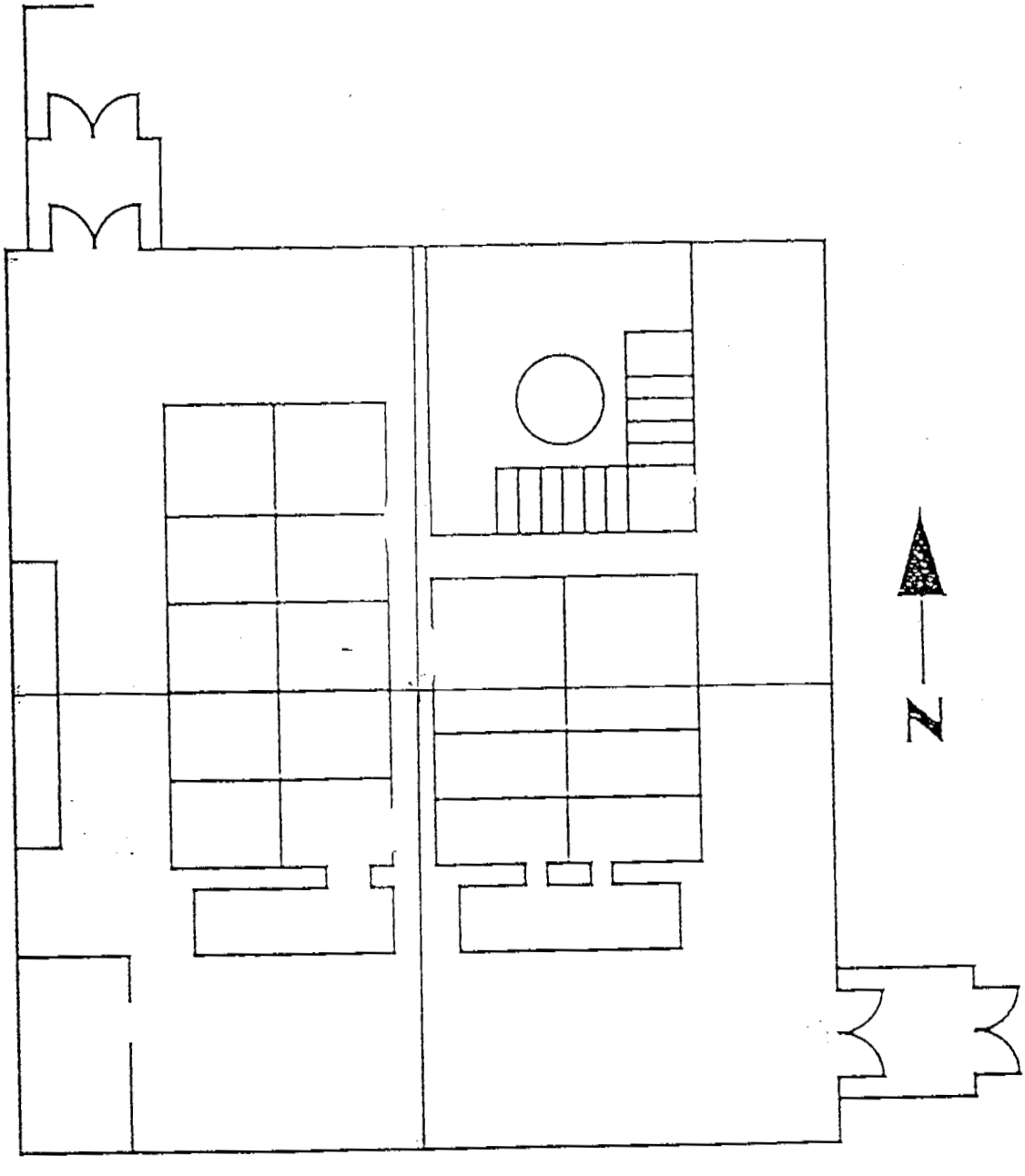


EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



Total Survey P[illegible]s

RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by K Houdashelt Employee #: [redacted]
Signature

Date: 9-27-94 Building: 875

Time: 1315 Room: AS Req

Shift: Days

Survey Description: Base line, Direct

Diagram/Sketch Attached: yes ✓ no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum	Bicron	Bicron	
Model:	31	12-1A	A-100	A-100	
Serial#:	110064		B766A	B385	
Date Cal.:	6-94		8-94	8-94	
Cal. Due:	12-94		2-95	2-95	
BKGRD:	75		0	0	

COMMENTS:

STATUS:

☒ Within Limits

☐ Limits Exceeded

☐ Posted

☐ Deposted

Radiological Operations Foreman

_____ Date: 9-27-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: AS Req

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM ~~Eff~~ Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	~~CPM~~ DPM ~~Eff~~ Direct	DPM/100cm2 Removable (smear)
1		46			<1894	
2						
3						
4						
5						
6						
7						
8		17			<1894	
9						
10						
11						
12						
13						
14						
15						
16		23			<1894	
17						
18						
19						
20						
21						
22						
23						
24		40			<1894	
25						
26						
27						
28						
29						
30						
31						
32		34			<1894	
33						
34						
35						
36						
37						
38						
39						
40		63			<1894	
41						
42						
43						
44						
45						

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: A6 Rear

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)
46						
47						
48		17			<1894	
49						
50						
51						
52						
53						
54						
55						
56		51			<1894	
57						
58						
59						
60						
61						
62						
63						
64		69			<1894	
65						
66						
67						
68						
69						
70						
71						
72		29			<1894	
73						
74						
75						
76						
77						
78						
79						
80		29			<1894	
81						
82						
83						
84						
85						
86						
87						
88		40			<1894	
89						
90						

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)
91						
92						
93						
94						
95						
96		29			<1894	
97						
98						
99						
100						
101						
102						
103						
104		6			<1894	
105						
106						
107						
108						
109						
110						
111						
112		51			<1894	
113						
114						
115						
116						
117						
118						
119						
120		34			<1894	
121						
122						
123						
124						
125						
126						
127						
128		17			<1894	
129						
130						
131						
132						
133						
134						
135						

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)
136		46			<1894	
137						
138						
139						
140						
141						
142						
143						
144		23			<1894	
145						
146						
147						
148						
149						
150						
151						
152		40			<1894	
153						
154						
155						
156						
157						
158						
159						
160		63			<1894	
161						
162						
163						
164						
165						
166						
167						
168		34			<1894	
169						
170						
171						
172						
173						
174						
175						
176		34			<1894	
177						
178						
179						
180						

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)
181						
182						
183						
184		29			<1894	
185						
186						
187						
188						
189						
190						
191						
192		29			<1894	
193						
194						
195						
196						
197						
198						
199						
200		63			<1894	
201						
202						
203						
204						
205						
206						
207						
208		29			<1894	
209						
210						
211						
212						
213						
214						
215						
216		40			<1894	
217						
218						
219						
220						
221						
222						
223						
224		36			<1894	
225						

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)
226						
227						
228						
229						
230						
231						
232		15			<1894	
233						
234						
235						
236						
237						
238						
239						
240		41			<1894	
241						
242						
243						
244						
245						
246						
247						
248		41			<1894	
249						
250						
251						
252						
253						
254						
255						
256		41			<1894	
257						
258						
259						
260						
261						
262						
263						
264		46			<1894	
265						
266						
267						
268						
269						
270						

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: As Req

	ALPHA			BETA	
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
271					
272		56			<1894	
273						
274						
275						
276						
277						
278						
279						
280		41			<1894	
281						
282						
283		46			<1894	
284						
285						
286						
287						
288		36			<1894	
289						
290						
291						
292						
293						
294		56			<1894	
295						
296		41			<1894	
297						
298						
299						
300						
301						
302						
303						
304		56			<1894	
305						
306						
307						
308						
309						
310						
311						
312		26			<1894	
313						
314						
315						

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	DPM ~~CPM~~ Rel Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	DPM ~~CPM~~ Rel Direct	DPM/100cm2 Removable (Smear)
316						
317						
318						
319						
320		26			<1894	
321						
322						
323						
324						
325						
326						
327						
328		31			<1894	
329						
330						
331						
332						
333						
334						
335						
336		26			<1894	
337						
338						
339						
340						
341						
342						
343						
344		31			<1894	
345						
346						
347						
348						
349						
350						
351						
352		61			<1894	
353						
354						
355						
356						
357						
358						
359						
360		15			<1894	

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1315 Building: 875 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	DPM ~~CPM~~ Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	DPM ~~CPM~~ Direct	DPM/100cm2 Removable (Smear)
361						
362						
363						
364						
365						
366						
367						
368		41			<1894	
369						
370						
371						
372						
373						
374						
375						
376		61			<1894	
377						
378						
379						
380						
381						
382						
383						
384		41			<1894	
385						
386						
387						
388						
389						
390						
391						
392		15			<1894	
393						
394						
395						
396						
397						
398						
399						
400		61			<1894	
401						
402						
403						
404						
405						

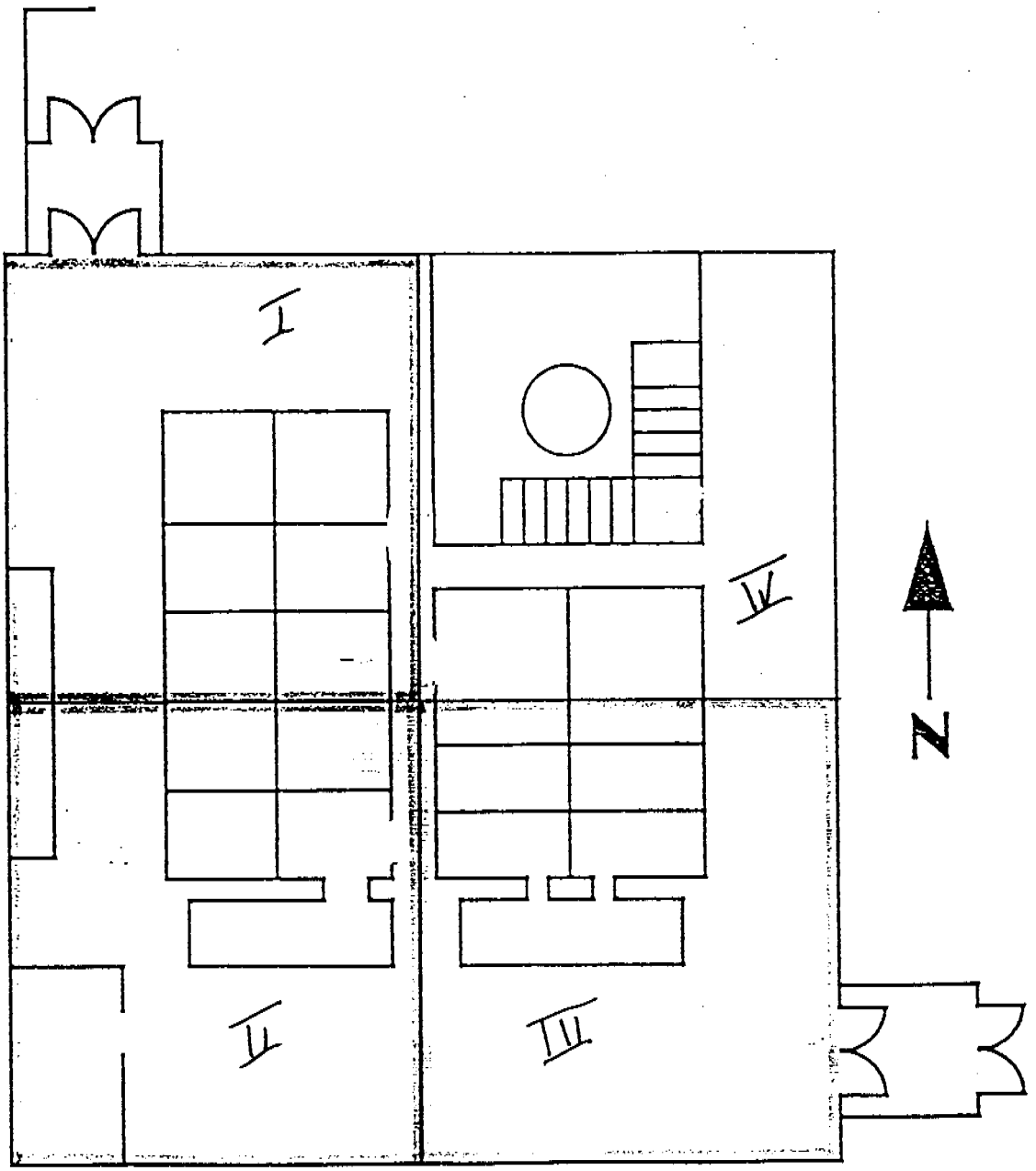
✓

EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



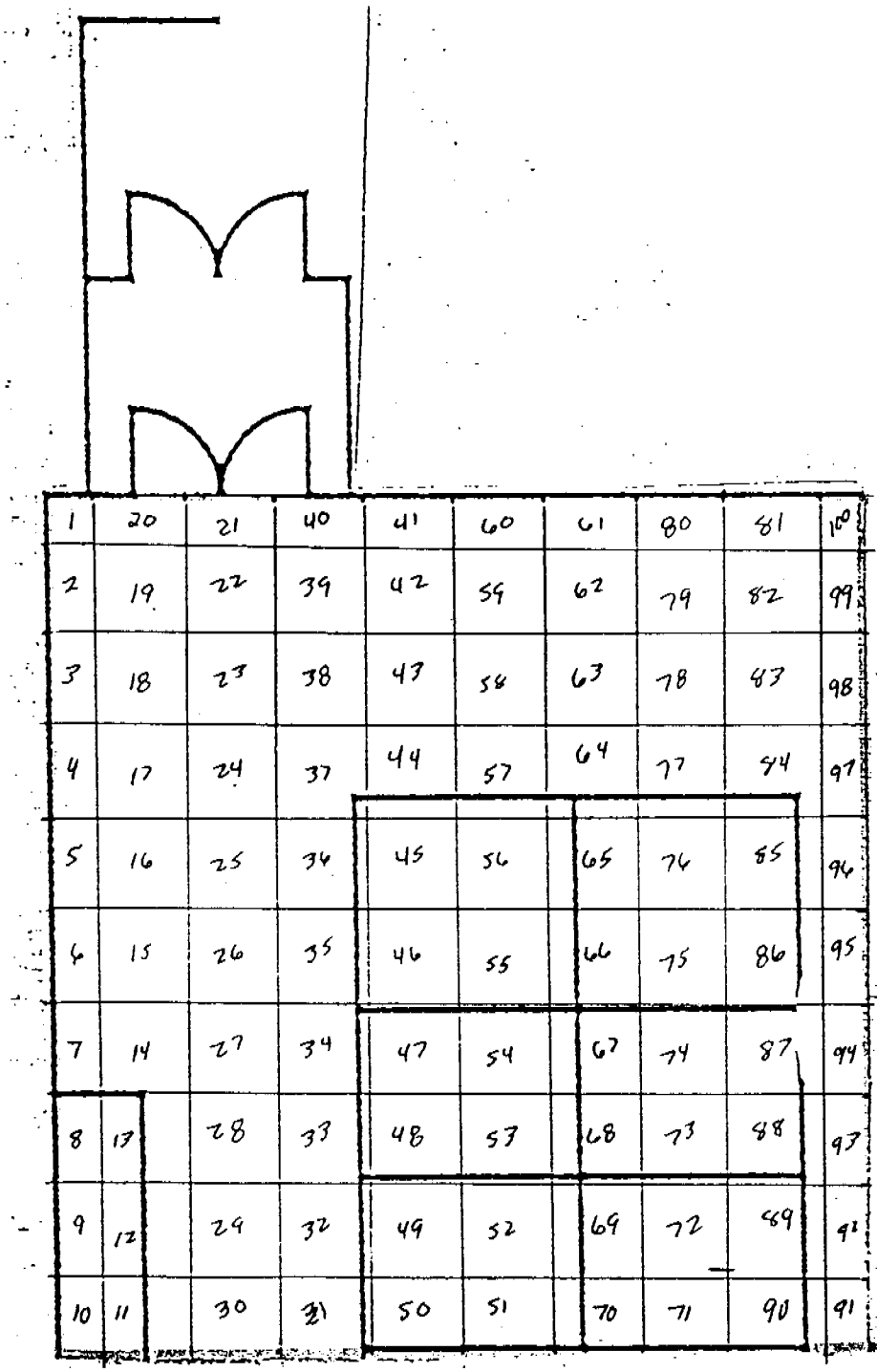
Total Survey Points

EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



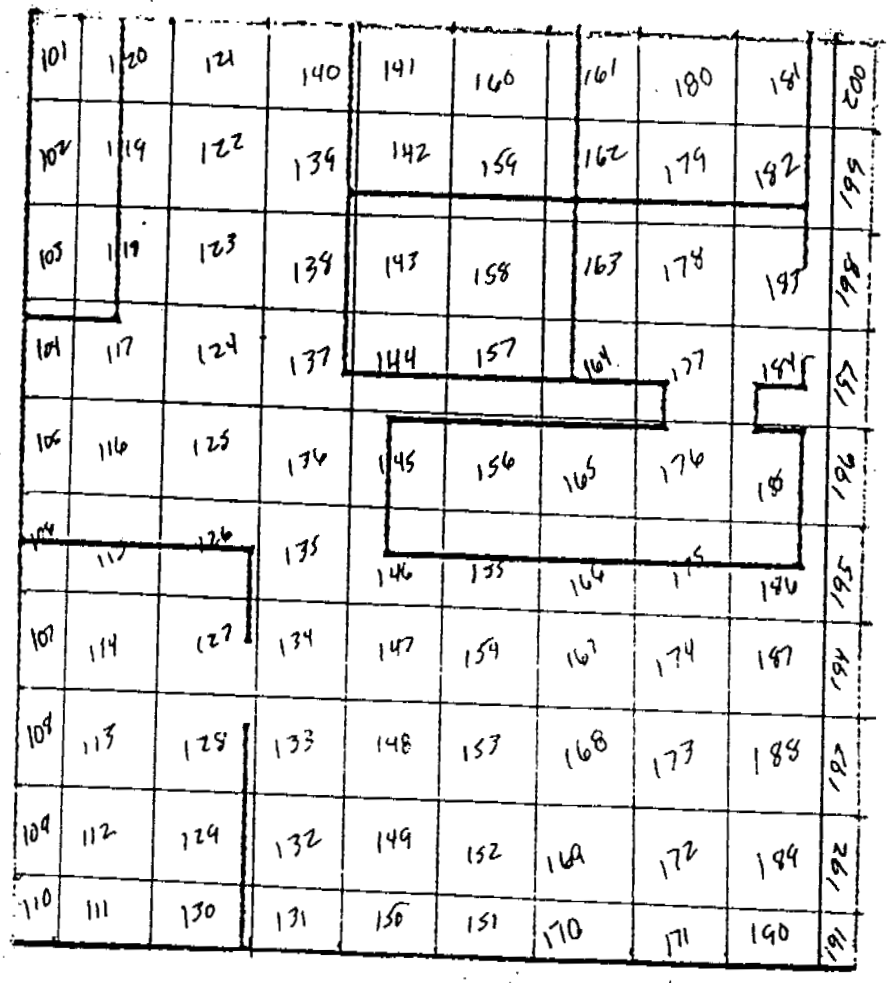
EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875

II



N

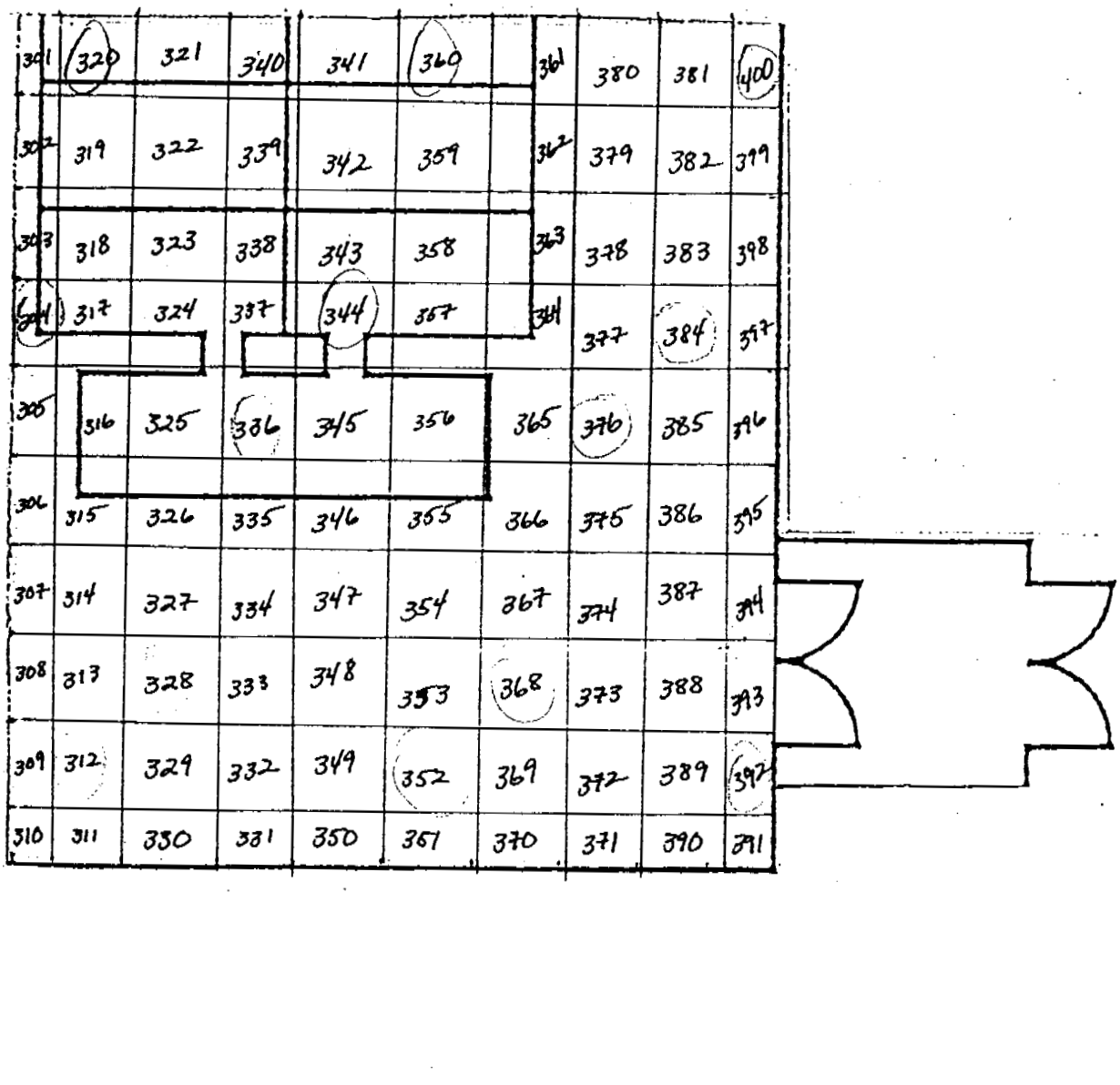
EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875

111

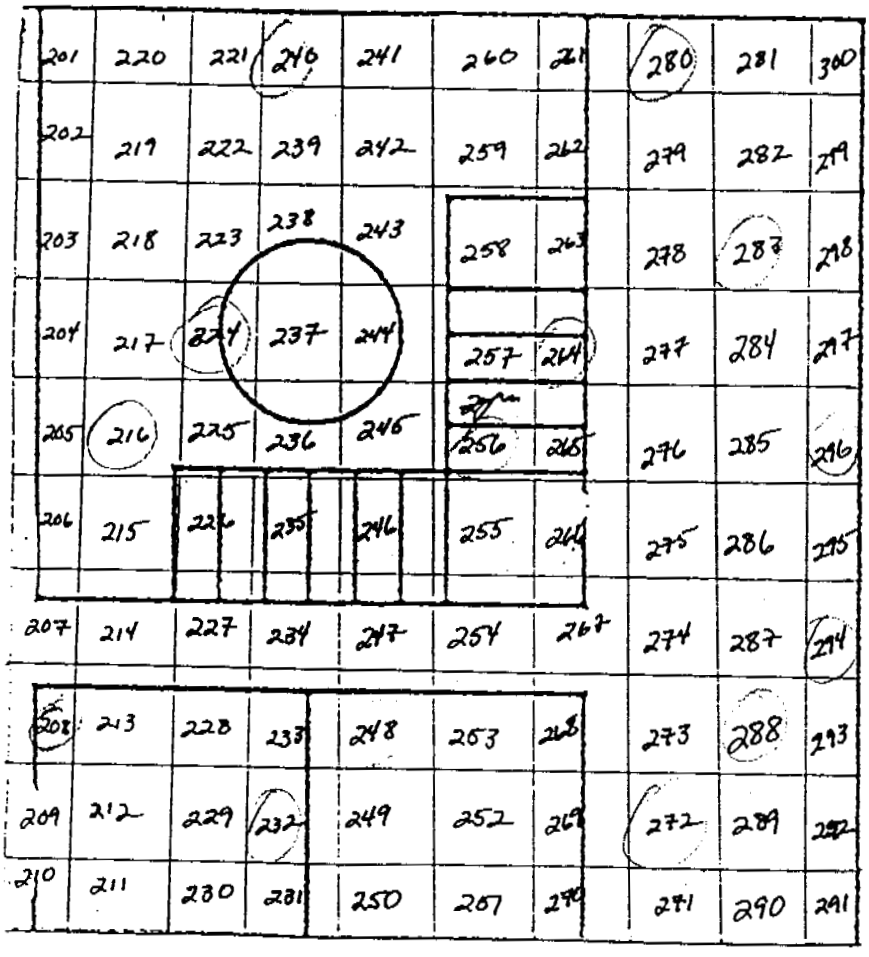


EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



N

RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: [redacted]
Signature

Date: 10-7-94 Building: 875

Time: 1445 Room: Asbestos

Shift: DAYS

Survey Description: Baseline on Walls

Diagram/Sketch Attached: yes ✓ no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	842	810			
Date Cal.:	4-27-94	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum	Bicron		
Model:	31	12-1A	A-100		
Serial#:	110264	56127	3766A		
Date Cal.:	6-29-94	5-23-94	8-2-94		
Cal. Due:	6-95	11-94	2-95		
BKGRD:	50	<250	1		

COMMENTS:

STATUS:

✓ Within Limits

___ Limits Exceeded

___ Posted

___ Deposted

Radiological Operations Foreman

Signature

Date: 10-10-94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-7-94 Time: 0830 Building: 875 Room: as Required

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1		0				
2		0				
3		0				
4		5				
5		0				
6		5				
7		0				
8		5				
9		0				
10		0				
11		0				
12		0				
13		26				
14		5				
15		0				
16		5				
17		0				
18		0				
19		0				
20		5				
21		10				
22		5				
23		0				
24		0				
25		0				
26		5				
27		143				
28		10				
29		21				
30		0				
31		0				
32		5				
33		0				
34		0				
35		0				
36		0				
37		5				
38		10				
39		5				
40		51				
41		0				
42		0				
43		0				
44		0				
45		0				

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-7-94 Time: 0830 Building: 875 Room: as Req'd

Resurvey 12-2-94

	ALPHA			BETA	
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)
46		31				
47		5				
48		0				
49		0				
50		5				
51		0				
52		92				
53		5				
54		0				
55		0				
56		5				
57		5				
58		0				
59		0				
60		0				
61		0				
62		21				
63		0				
64		5				
65		10				
66		256				
67		0				
68		0				
69		0				
70		0				
71		5				
72		5				
73		374			77	
74		0				
75		0				
76		5				
77		5				
78		10				
79		0				
80		0				
81		10				
82		158				
83		0				
84		5				
85		0				
86		0				
87		0				
88		0				
89		0				
90		0				

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-7-94 Time: 0830 Building: 875 Room: as Req'd

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
91		0				
92		5				
93		0				
94		10				
95		31				
96		5				
97		0				
98		0				
99		5				
100		0				
101		0				
102		41				
103		0				
104		0				
105		5				
106		0				
107		0				
108		0				
109		5				
110		0				
111		0				
112		0				
113		5				
114		5				
115		5				
116		0				
117		0 ✓				
118		0				
119		0				
120		5				
121		0				
122		0				
123		0				
124		5				
125		10				
126		0				
127		5				
128		5				
129		5				
130		0				
131		0				
132		0				
133		5				
134		0				
135		5				

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-7-94 Time: 0830 Building: 875 Room: as Req'd

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
136		0				
137		0				
138		5				
139		5				
140		0				
141		10				
142		0				
143		0				
144		5				
145		5				
146		0				
147		0				
148		5				
149		0				
150		0				
151		0				
152		0				
153		5				
154		5				
155		0				
156		0				
157		10				
158		0				
159		5				
160		0				
161		0				
162		5				
163		0				
164		0				
165		5				
166		21				
167		0				
168		5				
169		0				
170		0				
171		5				
172		0				
173		0				
174		0				
175		0				
176		5				
177		0				
178		0				
179		21				
180		10				

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-7-94 Time: 0830 Building: 875 Room: as Req'd

	ALPHA			BETA	
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
181		5				
182		0				
183		0				
184		5				
185		21				
186		56				
187		0				
188		5				
189		0				
190		0				
191		5				
192		5				
193		0				
194		0 ✓				
195		15				
196		0				
197		10				
198		0				
199		0				
200		5				
201		5				
202		0				
203		0				
204		5				
205		10				
206		0				
207		0				
208		5				
209		5				
210		5				
211						
212						
213						
214						
215						
216						
217						
218						
219						
220						
221						
222						
223						
224						
225						

✓

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-7-94 Time: 1445 Building: 825 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	DPM ~~CPM~~ Direct	DPM/100cm2 Removable (smear)
1	<250		0		<1894	12
2	<250		0		<1894	0
3	<250		0		<1894	3
4	<250		0		<1894	0
5	<250		3		<1894	9
6	<250		0		<1894	3
7	<250		3		<1894	0
8	<250		0		<1894	18
9	<250		3		<1894	15
10	<250		0		<1894	9
11	<250		0		<1894	0
12	<250		0		<1894	0
13	<250		3		<1894	0
14	<250		0		<1894	0
15	<250		0		<1894	9
16	<250		3		<1894	0
17	<250		0		<1894	21
18	<250		6		<1894	0
19	<250		0		<1894	15
20	<250		0		<1894	0
21	<250		9		<1894	0
22	<250		0		<1894	0
23	<250		0		<1894	0
24	<250		0		<1894	0
25	<250		0		<1894	0
26	<250		0		<1894	0
27	<250		3		<1894	9
28	<250		9		<1894	15
29	<250		0		<1894	0
30	<250		0		<1894	0
31	<250		6		<1894	21
32	<250		0		<1894	0
33	<250		0		<1894	0
34	<250		0		<1894	15
35	<250		3		<1894	0
36	<250		0		<1894	0
37	<250		3		<1894	0
38	<250		0		<1894	0
39	<250		6		<1894	0
40	<250		0		<1894	0
41	<250		3		<1894	51
42	<250		9		<1894	0
43	<250		0		<1894	0
44	<250		0		<1894	0
45	<250		0		<1894	0

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-7-94 Time: 1445 Building: 875 Room: As Req

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (Smear)
46	<250		6		<1894	0
47	<250		3		<1894	3
48	<250		0		<1894	0
49	<250		0		<1894	0
50	<250		0		<1894	42
51	<250		6		<1894	39
52	<250		3		<1894	0
53	<250		0		<1894	0
54	<250		0		<1894	9
55	<250		3		<1894	21
56	<250		0		<1894	0
57	<250		0		<1894	9
58	<250		0		<1894	0
59	<250		3		<1894	0
Pit → 60	<250		0		<1894	0
61	<250		0		<1894	0
62	<250		0		<1894	0
63	<250		0		<1894	0
64	<250		0		<1894	0
65	<250		3		<1894	12
66	<250		0		<1894	0
67	<250		3		<1894	0
68	<250		0		<1894	0
69	<250		3		<1894	0
70	<250		0		<1894	0
71	<250		0		<1894	0
72	<250		0		<1894	0
73	<250		6		<1894	0
74	<250		0		<1894	15
75	<250		0		<1894	21
76	<250		6		<1894	0
Tunnel → 77	<250		0		<1894	0
78	<250		3		<1894	0
79	<250		0		<1894	0
80	<250		0		<1894	3
81	<250		3		<1894	0
82	<250		0		<1894	12
83	<250		0		<1894	0
84	<250		3		<1894	0
85	<250		3		<1894	9
86	<250		6		<1894	3
87	<250		0		<1894	0
88	<250		0		<1894	0
89	<250		0		<1894	3
90	<250		0		<1894	0

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

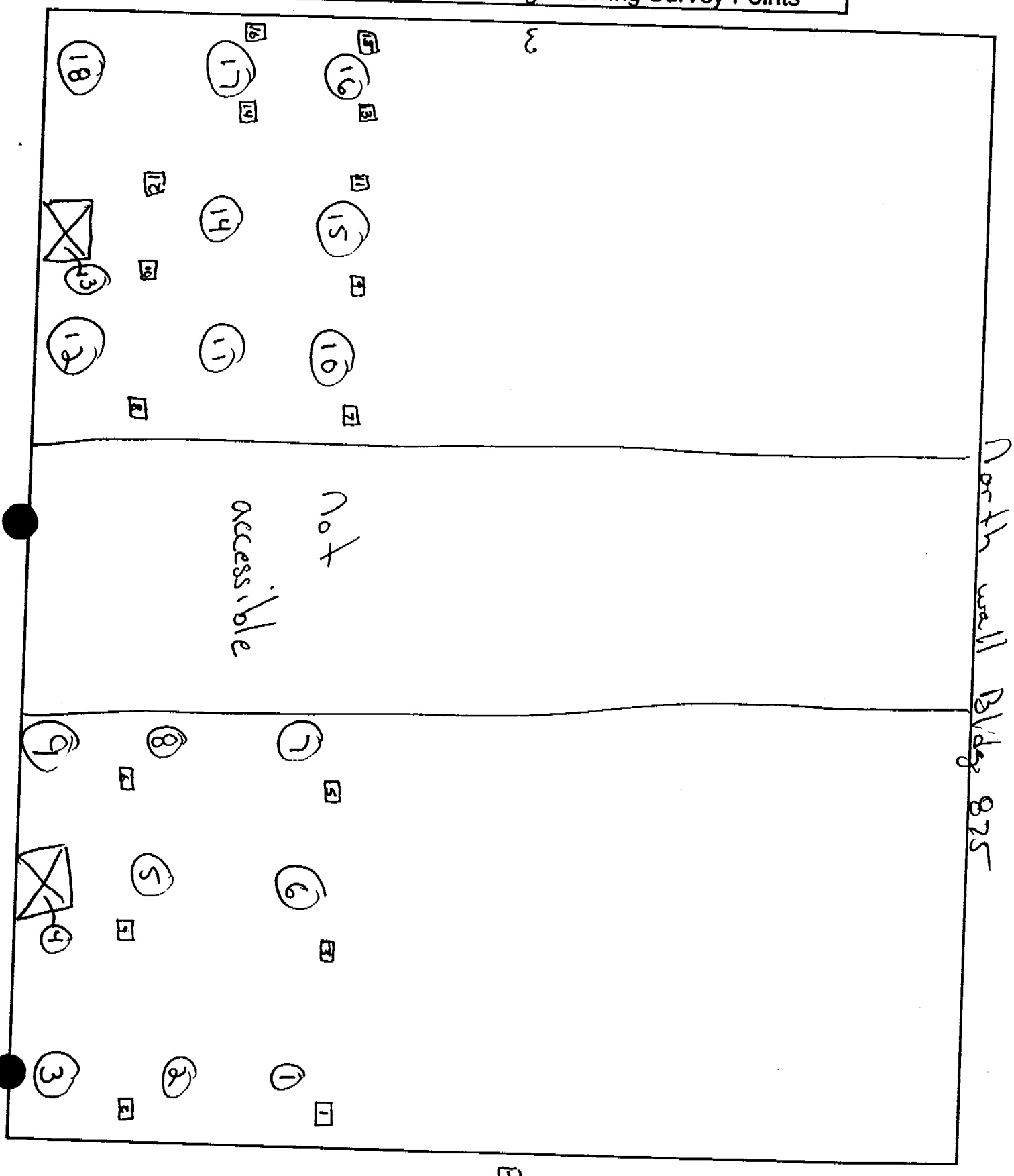
Date: 10-7-94 Time: 1445 Building: 876 Room: Hot Lab

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	DPM ~~CPM~~ Direct	DPM/100cm2 Removable (Smear)
Tunnel 91	<250		0		<1894	0
92	<250		0		<1894	3
93	<250		0		<1894	0
94	<250		6		<1894	0
95	<250		3		<1894	0
96	<250		0		<1894	0
97	<250		0		<1894	42
98	<250		6		<1894	0
99	<250		3		<1894	3
100	<250		6		<1894	24
101	<250		3		<1894	0
102	<250		0		<1894	0
103	<250		3		<1894	33
104	<250		3		<1894	30
105	<250		0		<1894	0
106	<250		3		<1894	0
107	<250		3		<1894	0
108	<250		3		<1894	9
Upper Tunnel 109	<250		6		<1894	0
110	<250		0		<1894	42
111	<250		0		<1894	0
112	<250		0		<1894	21
113	<250		0		<1894	6
114	<250		3		<1894	18
115	<250		3		<1894	0
116	<250		0		<1894	0
117	<250		0		<1894	0
118	<250		0		<1894	21
119	<250		0		<1894	0
120	<250		0		<1894	6
121	<250		0		<1894	0
122	<250		0		<1894	0
123	<250		0		<1894	0
124	<250		3		<1894	0
125	<250		3		<1894	0
126	<250		6		<1894	12
127	<250		3		<1894	6
128	<250		0		<1894	0
129	<250		3		<1894	3
130	<250		0		<1894	9
131	<250		3		<1894	6
132						
133						
134						
135						

✓

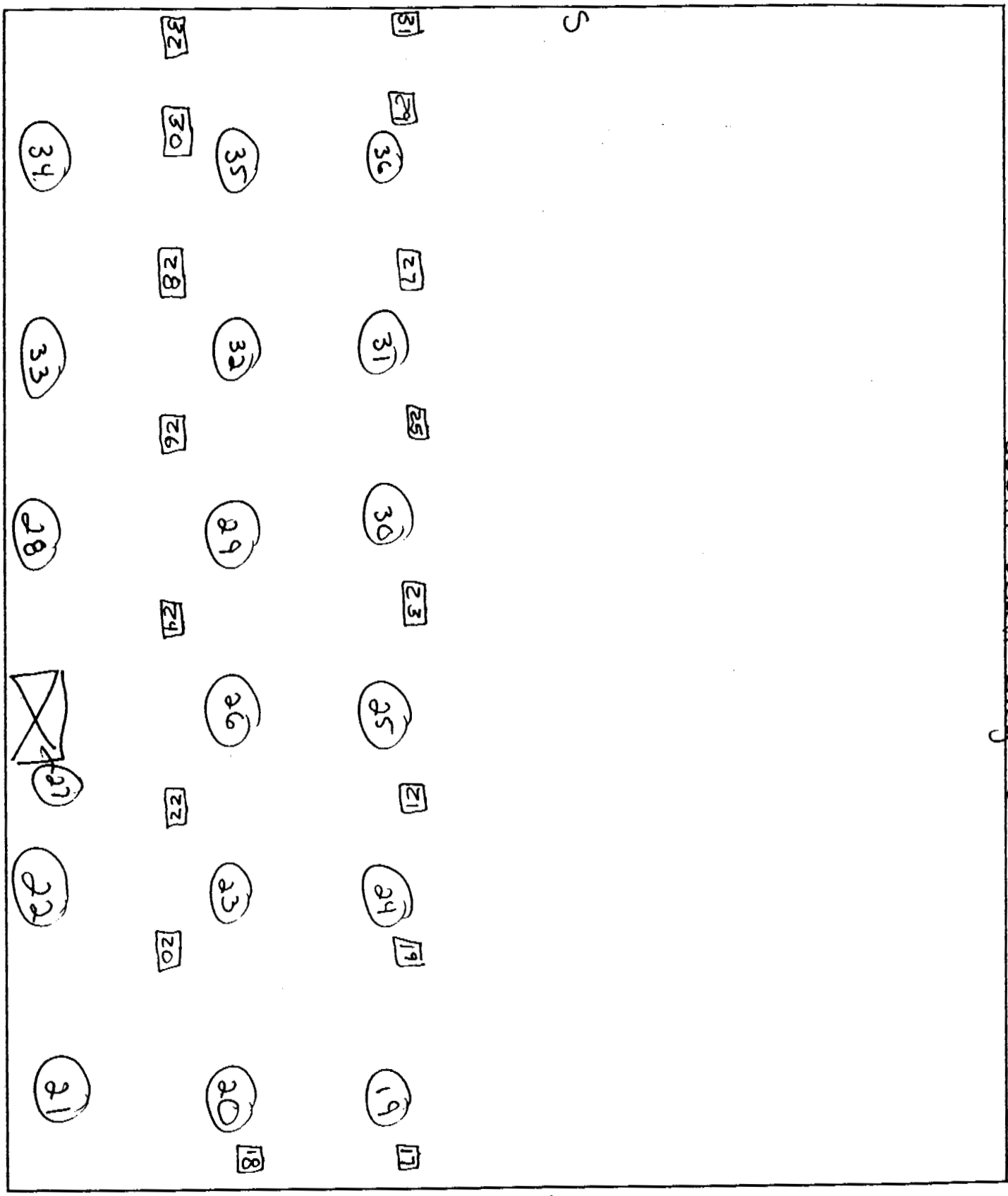
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



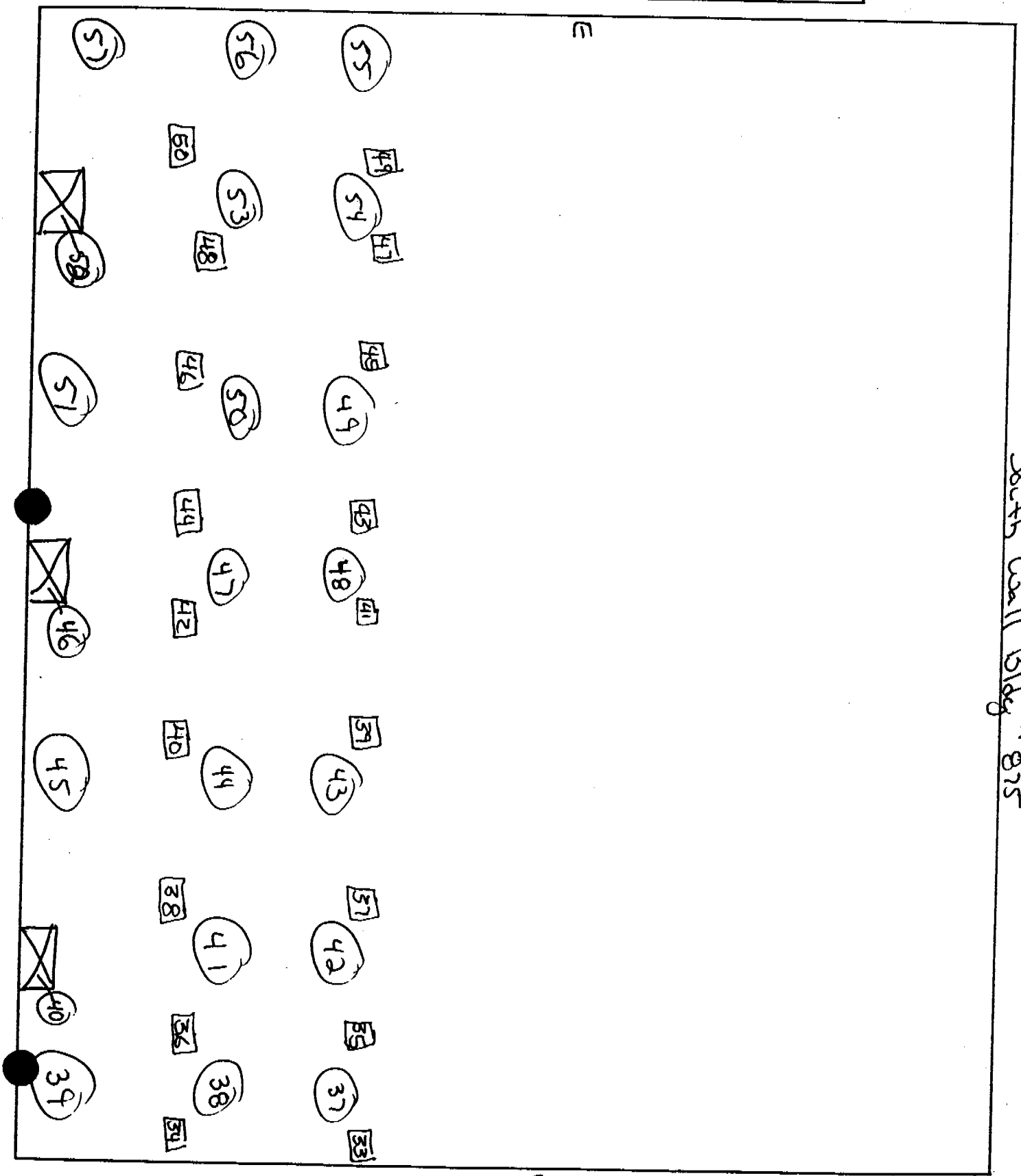
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



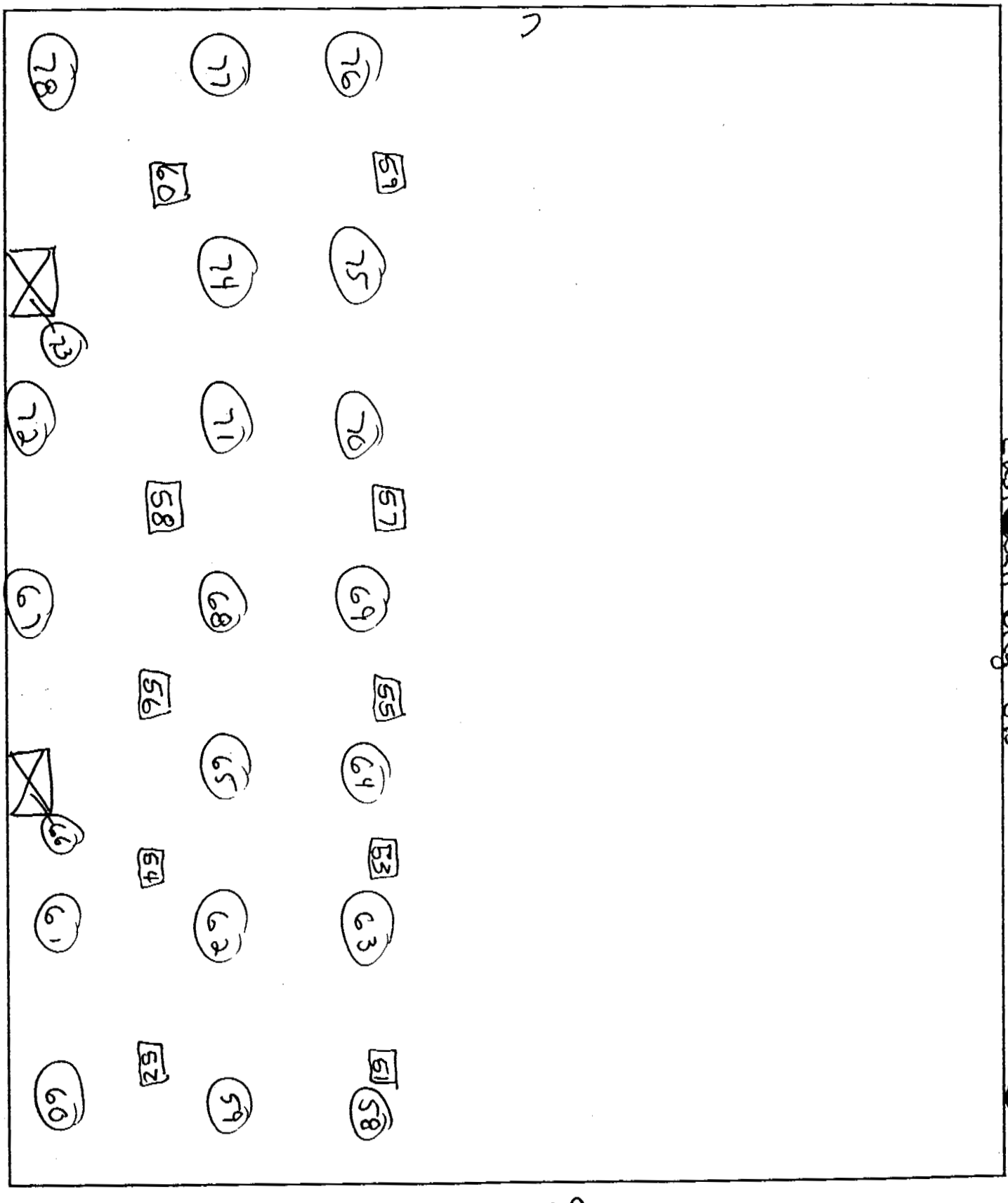
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



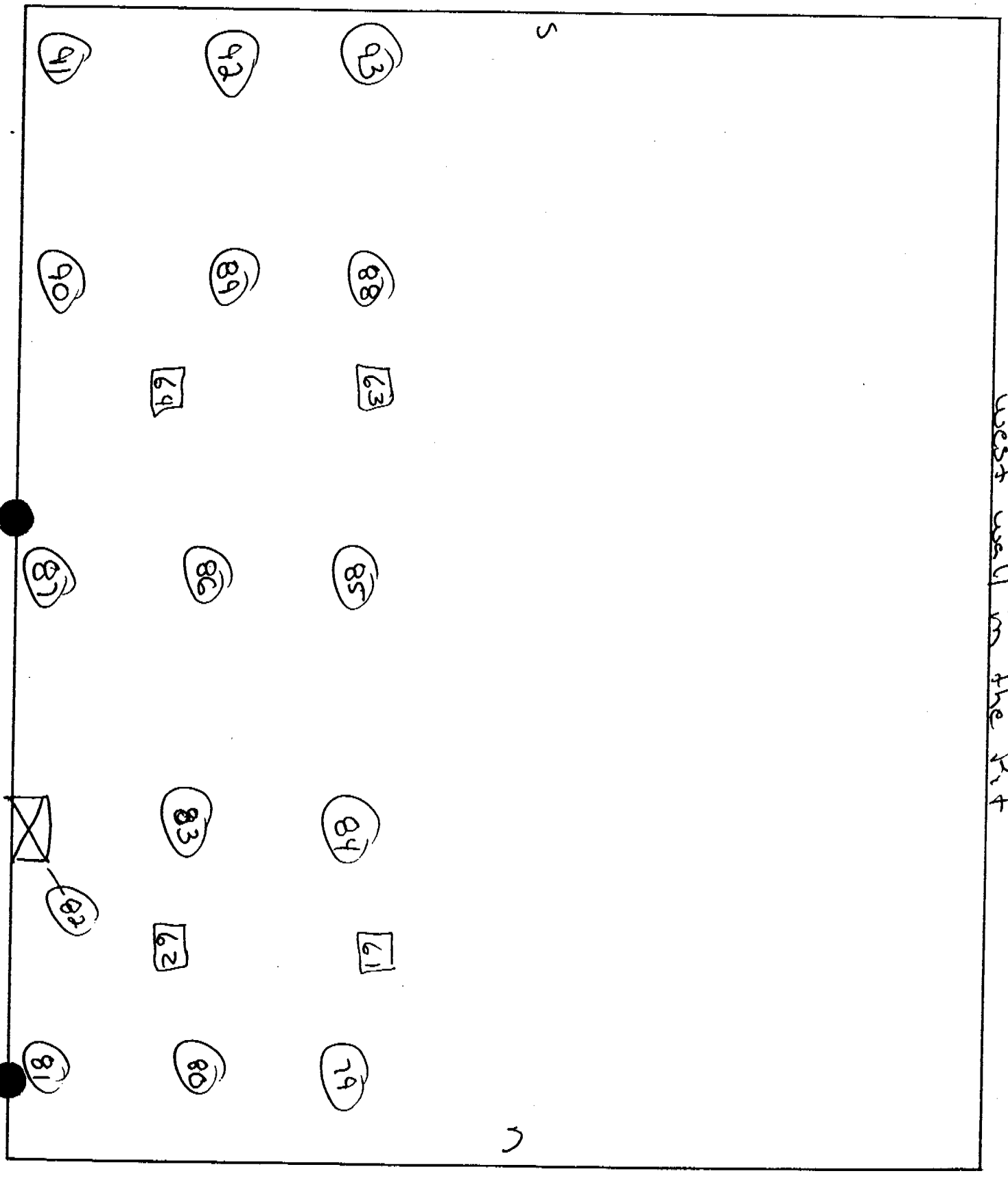
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



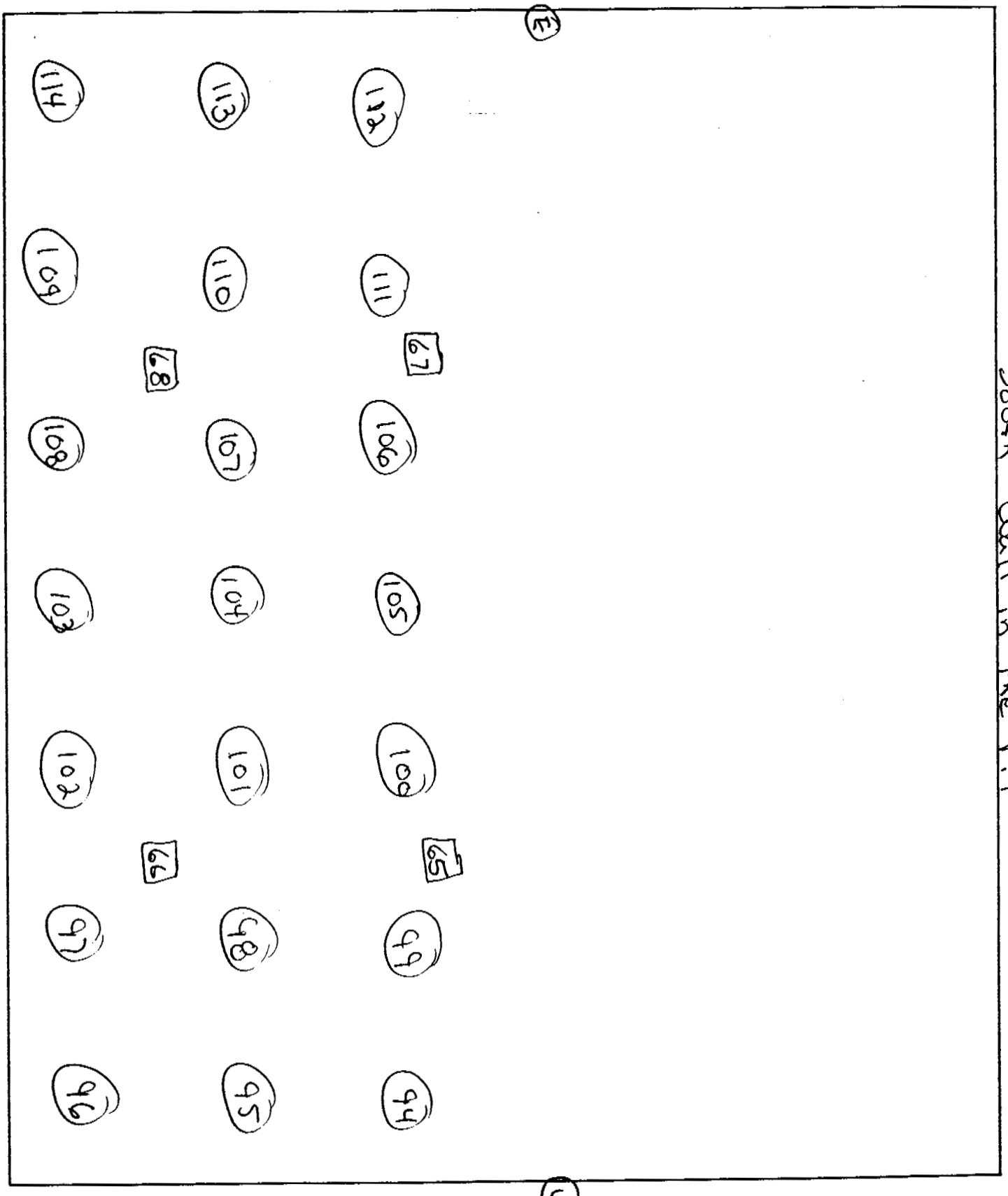
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



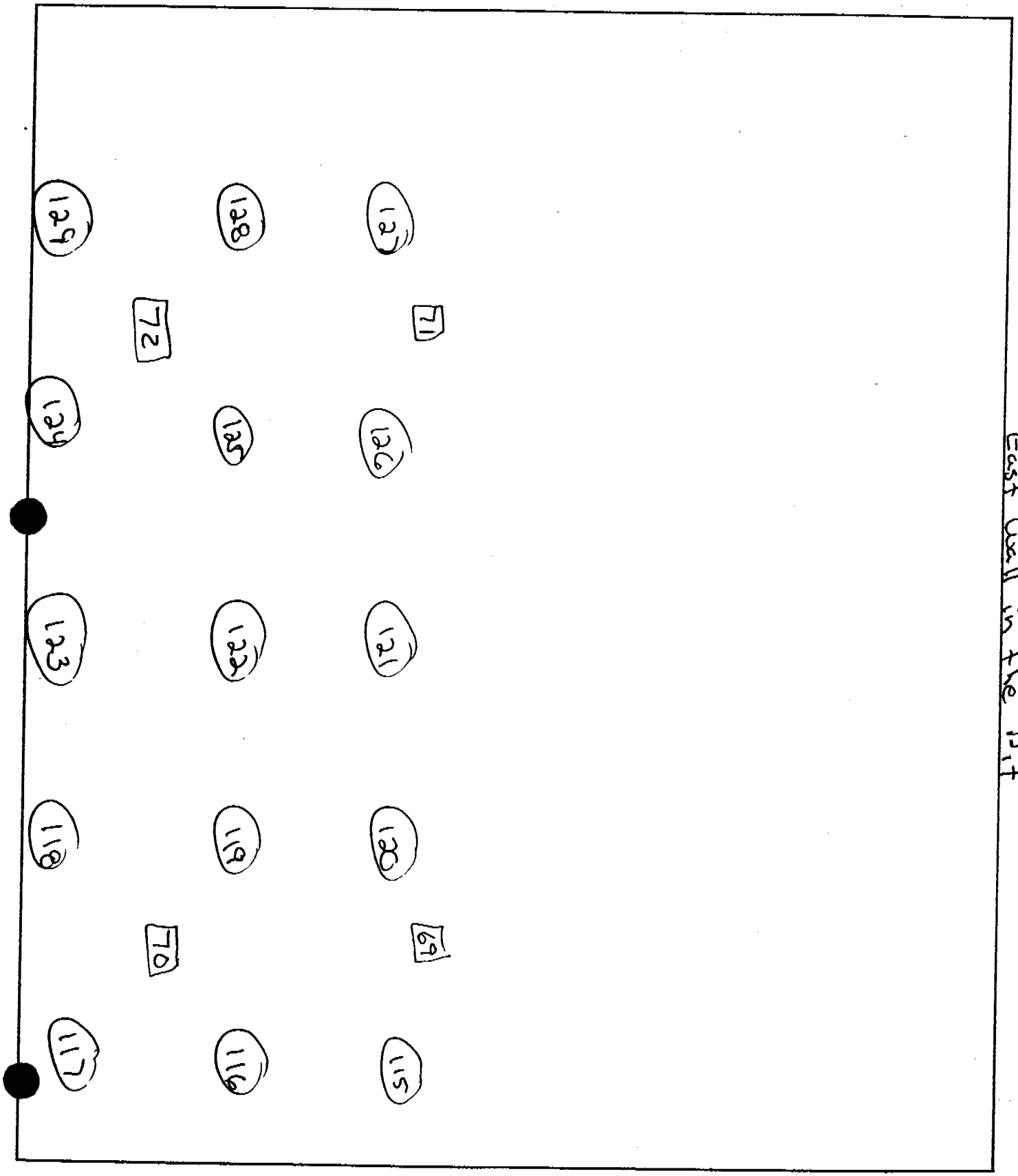
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



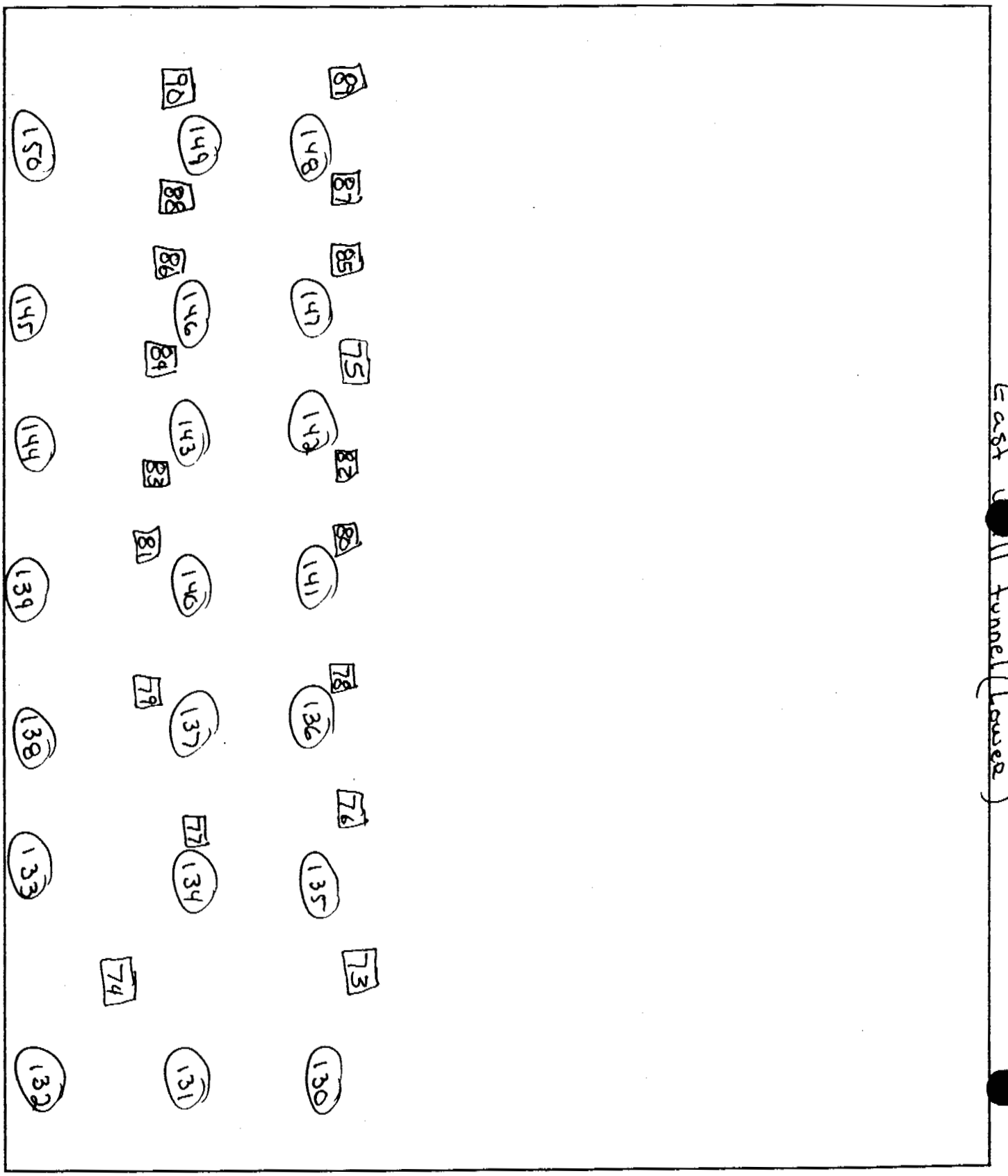
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



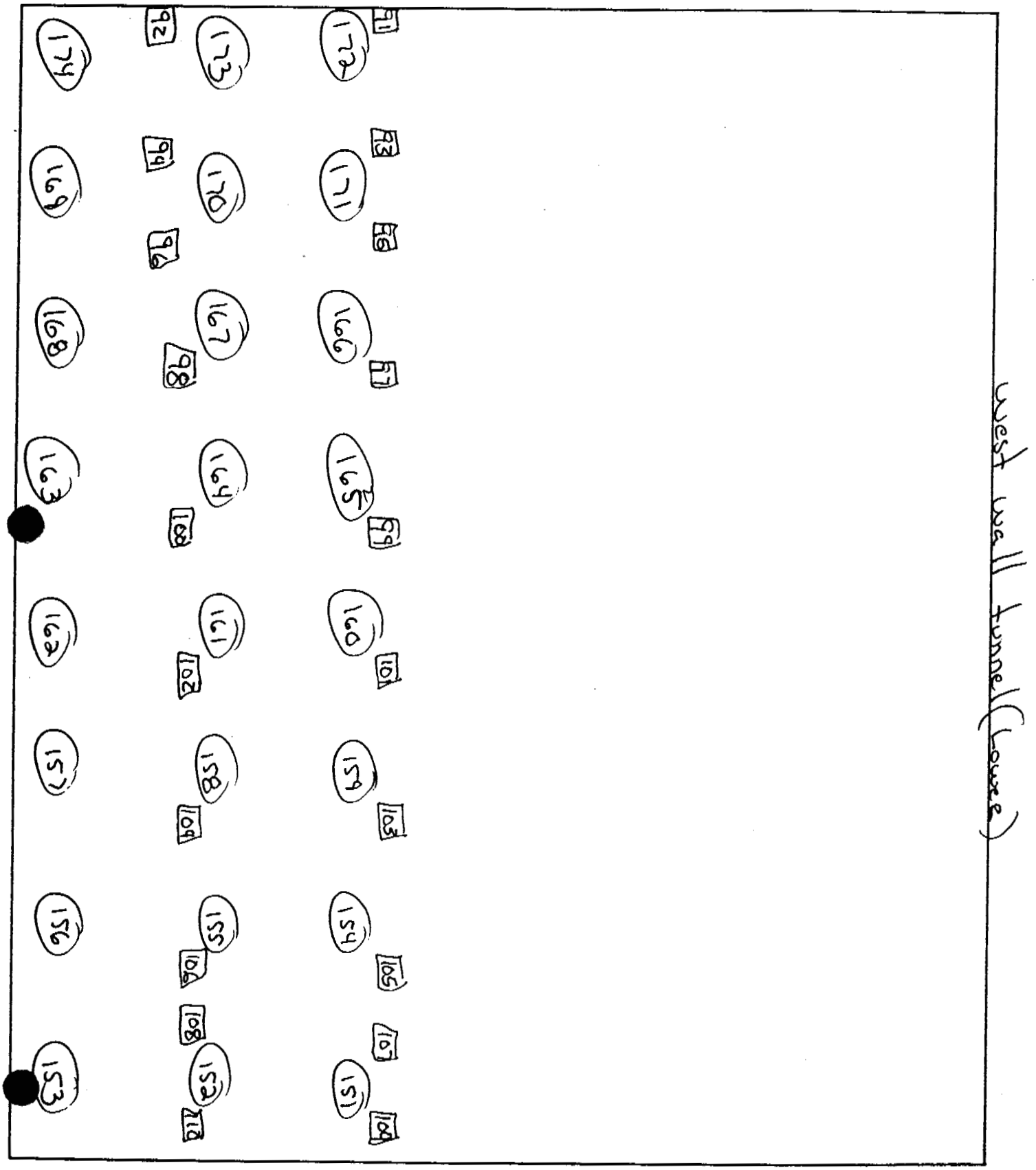
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



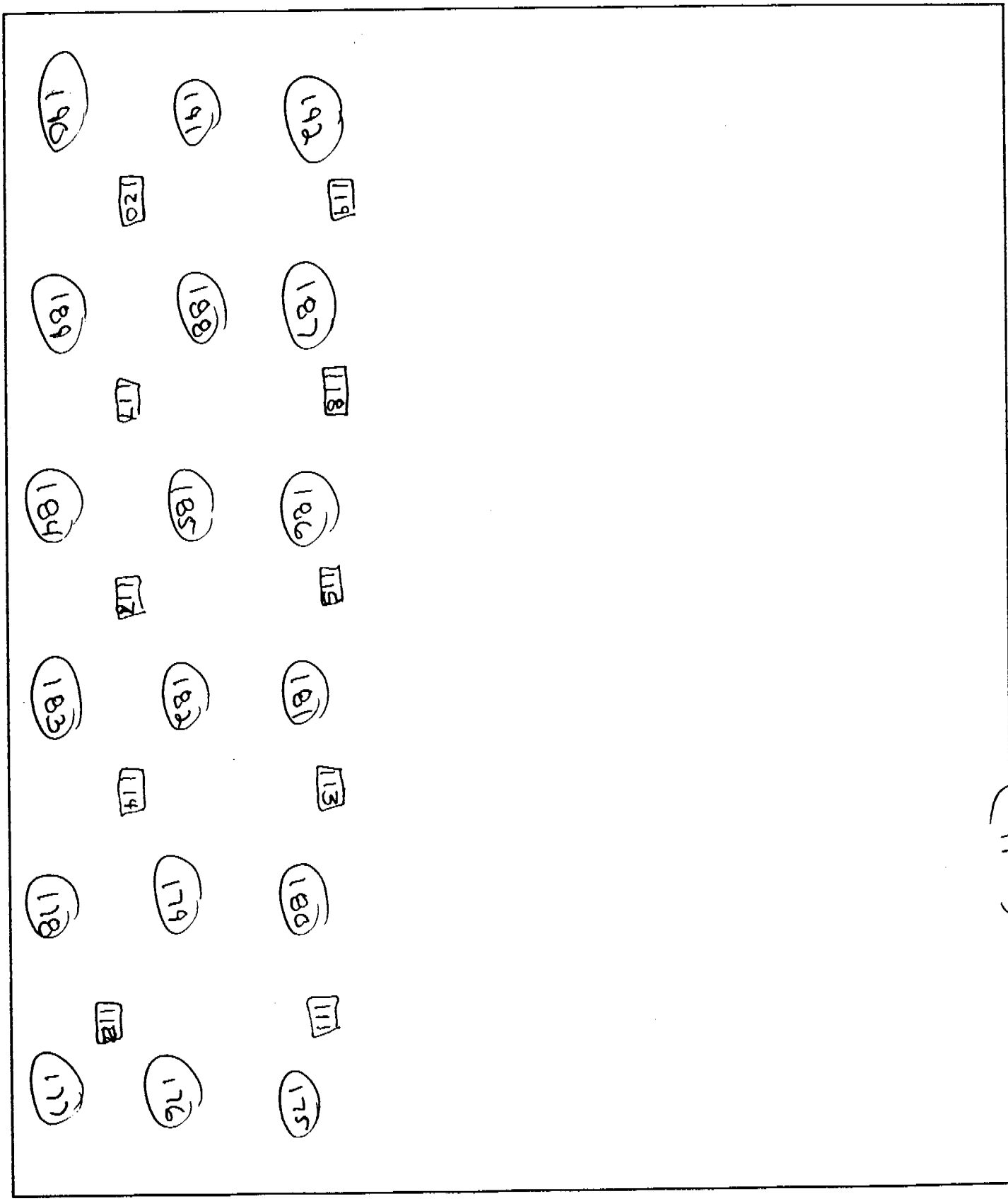
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



EG&G ROCKY FLATS

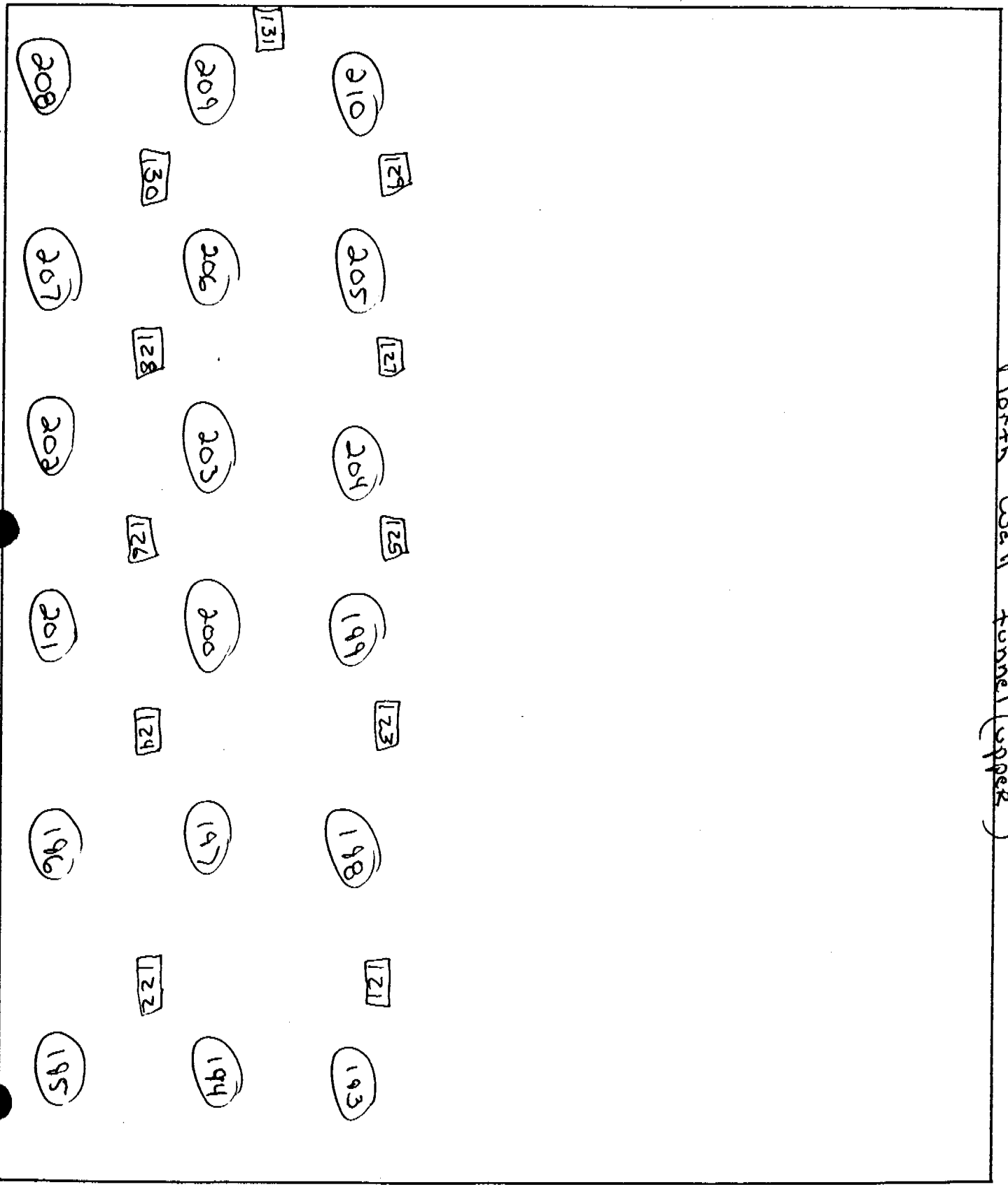
Radiological Operations
Area or Equipment Drawing Showing Survey Points



South wall tunnel (upper)

EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: 865-13M

Taken by James D. Willems Signature — Employee #: [redacted]

Taken by Jordan S McClure Signature — Employee #: [redacted]

Taken by _____ Signature — Employee #: _____

Date: 8-12-94 Building: 875

Time: 1400 Room: AS REQUIRED

Shift: DAY

Survey Description: 875 BASELINE SURVEY

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864	810			
Date Cal.:	10-5-93	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	874	868			
Date Cal.:	4-14-94	10-1-93			
Cal. Due:	4-95	10-94			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:

X Within Limits

__ Limits Exceeded

__ Posted

__ Deposted

Radiological Operations Foreman

Signature

Date: 8-12-94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8-12-94 Time: 1400 Building: 875 Room: As Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1			6			27
2			3			0
3			3			3
4			6			51
5			3			36
6			3			24
7			3			0
8			0			0
9			0			0
10			6			15
11			3			0
12			3			15
13			0			24
14			3			12
15			0			0
16			3			6
17			6			15
18			0			0
19			6			0
20			0			0
21			3			9
22			0			0
23			3			6
24			6			0
25			9			30
26			3			18
27			3			0
28			3			27
29			0			15
30			6			6
31			9			9
32			0			0
33			9			0
34			0			0
35			3			30
36			0			9
37			6			48
38			0			0
39			12			33
40			0			0
41			0			0
42			6			9
43			0			0
44			3			0
45			3			0

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8-12-94 Time: 1400 Building: 875 Room: As Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46			3			6
47			9			18
48			0			0
49			9			30
50			3			0
51			0			0
52			0			30
53			0			39
54			3			0
55			0			0
56			3			0
57			0			3
58			0			0
59			0			0
60			3			24
61			0			10
62			0			0
63			0			6
64			0			0
65			3			3
66			9			9
67			0			0
68			6			0
69			0			30
70			0			15
71			0			0
72			3			6
73			0			0
74			3			0
75			0			12
76			0			0
77			0			6
78			0			0
79			9			0
80			3			0
81			6			9
82			0			15
83			3			0
84			3			21
85			9			0
86			0			6
87			12			0
88			0			0
89			0			3
90			3			0

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8.12.94 Time: 1400 Building: 875 Room: as Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
91			0			0
92			0			0
93			3			3
94			6			0
95			0			9
96			9			15
97			0			0
98			0			6
99			0			0
100			3			0
101			3			0
102			6			0
103			0			24
104			9			0
105			12			0
106			0			0
107			0			3
108			3			6
109			6			0
110			9			21
111			0			0
112			0			0
113			3			33
114			0			0
115			0			18
116			3			0
117			3			3
118			0			0
119			9			0
120			12			0
121			0			0
122			0			30
123			0			0
124			0			3
125			3			0
126			0			6
127			0			0
128			3			0
129			6			9
130			0			9
131			0			15
132			0			0
133			12			0
134			0			24
135			3			0

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8-12-94 Time: 1400 Building: 875 Room: As Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
136			6			30
137			0			0
138			0			3
139			3			6
140			15			0
141			0			12
142			0			21
143			0			0
144			3			6
145			3			3
146			0			15
147			6			0
148			0			0
149			0			0
150			0			3
151			3			0
152			3			0
153			0			27
154			0			0
155			0			36
156			3			0
157			0			39
158			9			0
159			6			0
160			0			3
161			0			12
162			0			0
163			12			0
164			0			0
165			3			0
166			6			6
167			0			0
168			0			3
169			0			0
170			3			42
171			3			0
172			0			21
173			6			0
174			0			9
175			3			12
176			0			0
177			0			6
178			0			9
179			0			0
180			0			6

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8-12-94 Time: 1400 Building: 875 Room: As Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
181			3			12
182			3			0
183			0			0
184			3			0
185			6			51
186			0			27
187			12			0
188			0			0
189			3			3
190			3			6
191			6			0
192			9			0
193			6			0
194			0			3
195			0			0
196			3			6
197			6			3
198			0			21
199			15			36
200			0			0
201			0			12
202			9			0
203			3			0
204			6			18
205			0			12
206			0			0
207			0			0
208			6			21
209			12			24
210			0			0
211			0			0
212			0			3
213			3			6
214			3			0
215			0			27
216			3			0
217			0			30
218			0			12
219			0			0
220			6			9
221			0			6
222			0			24
223			15			0
224			0			6
225			6			15

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8-12-94 Time: 1400 Building: 875 Room: As Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
226			0			30
227			0			36
228			0			0
229			3			18
230			0			24
231			0			0
232			0			0
233			9			0
234			0			3
235			3			6
236			3			0
237			12			0
238			0			0
239			0			18
240			6			0
241			12			6
242			0			0
243			9			0
244			3			9
245			0			3
246			0			21
247			0			0
248			12			6
249			0			6
250			0			0
251			6			15
252			0			0
253			9			6
254			3			0
255			0			0
256			0			3
257			0			3
258			3			42
259			6			0
260			0			39
261			0			0
262			0			27
263			3			6
264			15			0
265			0			0
266			3			3
267			6			0
268			0			9
269			0			12
270			0			33

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8·12·94 Time: 1400 Building: 875 Room: As Required

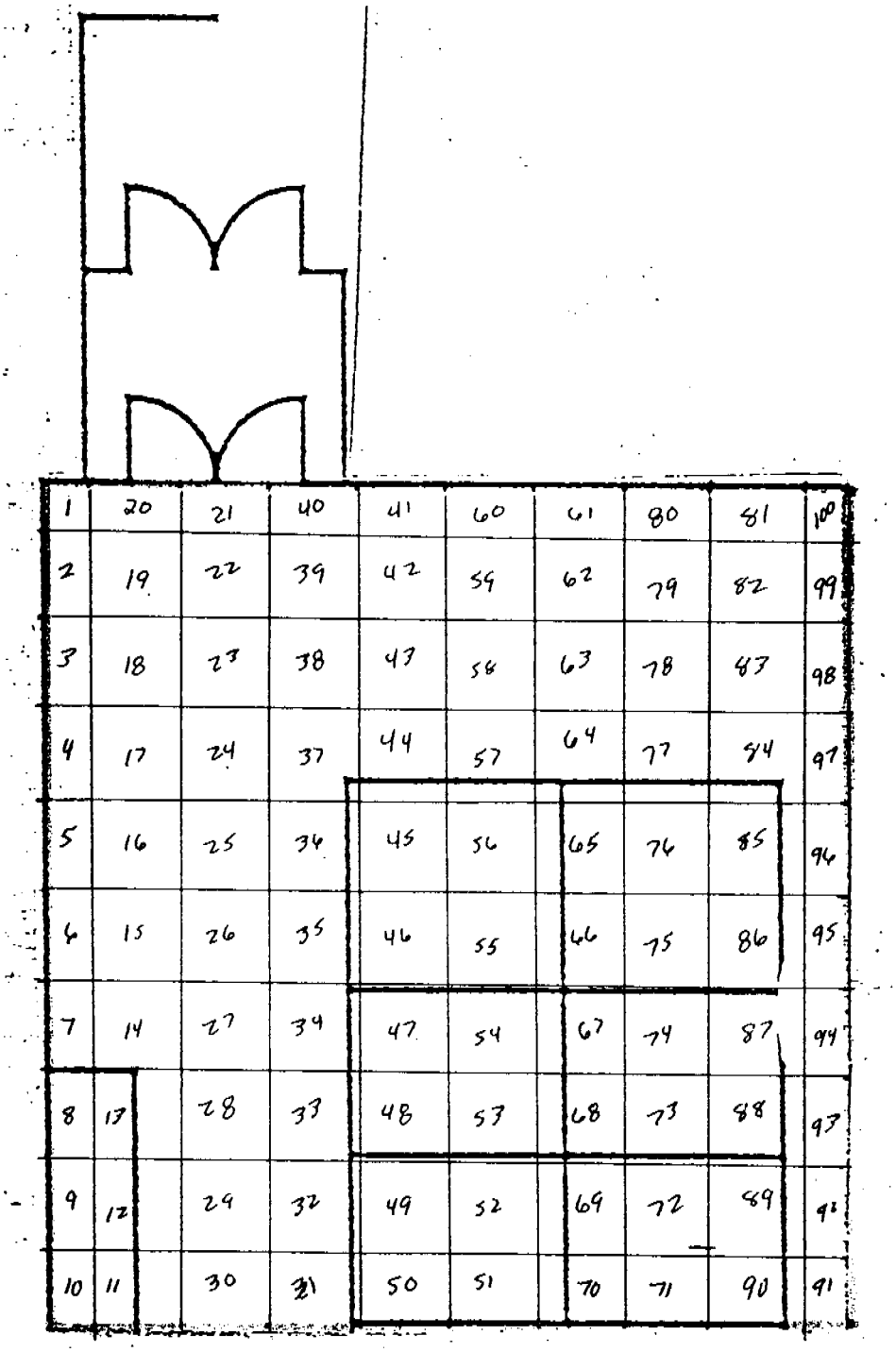
	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
361			0			0
362			3			0
363			3			0
364			3			48
365			6			9
366			0			9
367			9			0
368			3			0
369			3			12
370			6			0
371			9			0
372			9			6
373			3			9
374			6			12
375			0			9
376			3			0
377			9			0
378			3			3
379			3			21
380			0			0
381			0			6
382			0			0
383			0			30
384			0			27
385			6			0
386			0			12
387			3			0
388			3			9
389			12			0
390			9			6
391			0			0
392			6			12
393			0			3
394			3			0
395			3			9
396			3			0
397			3			6
398			0			0
399			0			0
400			3			27
401						
402						
403						
404						
405						

EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8·12·94 Time: 1400 Building: 875 Room: As Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
271			3			27
272			0			0
273			0			0
274			0			15
275			0			6
276			6			0
277			0			9
278			3			12
279			9			6
280			0			0
281			12			0
282			0			0
283			0			3
284			0			12
285			0			27
286			0			0
287			3			9
288			6			21
289			0			6
290			15			0
291			0			0
292			6			30
293			3			0
294			0			3
295			0			0
296			0			3
297			3			21
298			6			0
299			9			24
300			12			42
301			0			39
302			0			0
303			3			12
304			0			0
305			0			0
306			3			0
307			0			24
308			0			0
309			0			18
310			6			9
311			0			0
312			3			6
313			3			6
314			12			3
315			0			27

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 8-12-94 Time: 1400 Building: 875 Room: As Required

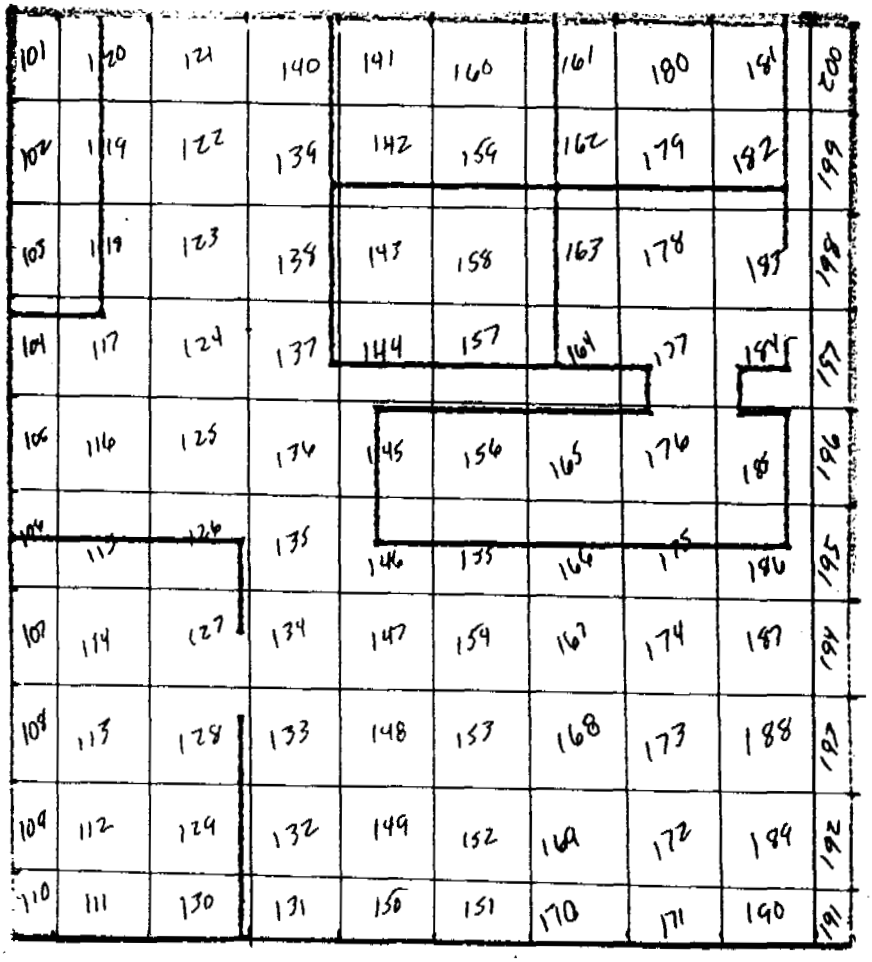
	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
316			6			0
317			6			12
318			3			12
319			0			9
320			3			27
321			0			0
322			9			0
323			0			15
324			0			9
325			3			0
326			6			0
327			3			6
328			0			6
329			3			12
330			0			18
331			0			24
332			0			30
333			3			24
334			6			9
335			12			0
336			0			3
337			3			6
338			6			6
339			0			12
340			0			9
341			3			9
342			3			3
343			0			3
344			6			0
345			6			0
346			3			0
347			0			0
348			0			15
349			3			9
350			6			6
351			0			15
352			0			0
353			9			0
354			3			3
355			0			0
356			3			3
357			0			6
358			0			9
359			6			12
360			9			9

EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



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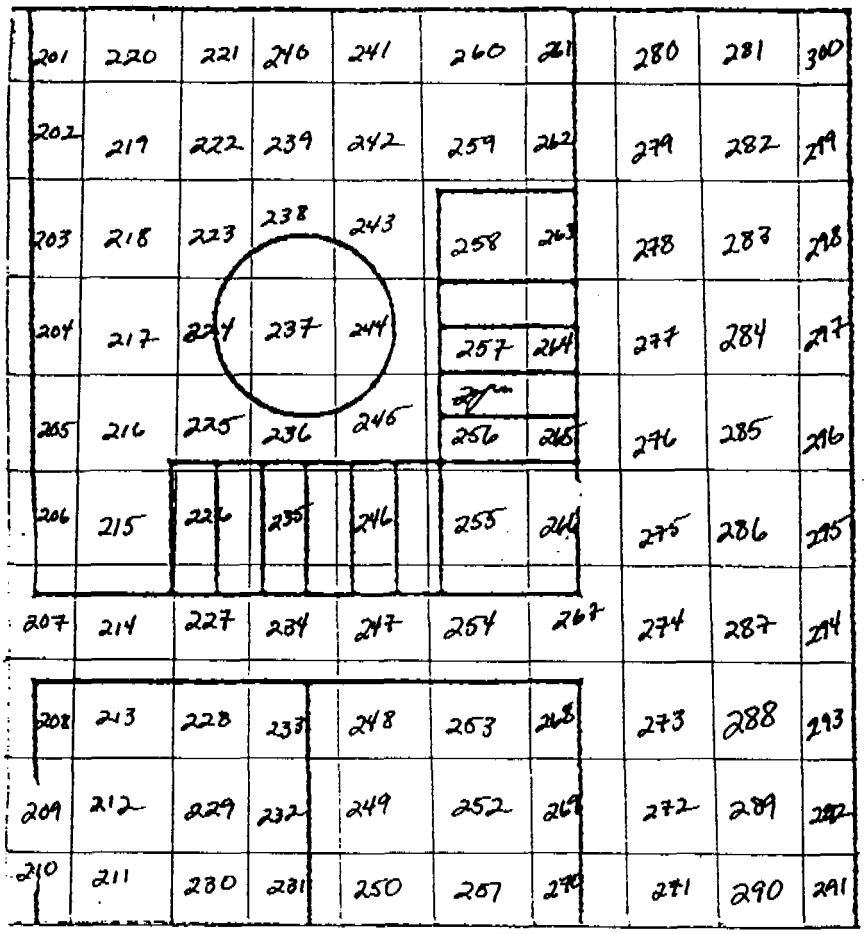
EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875

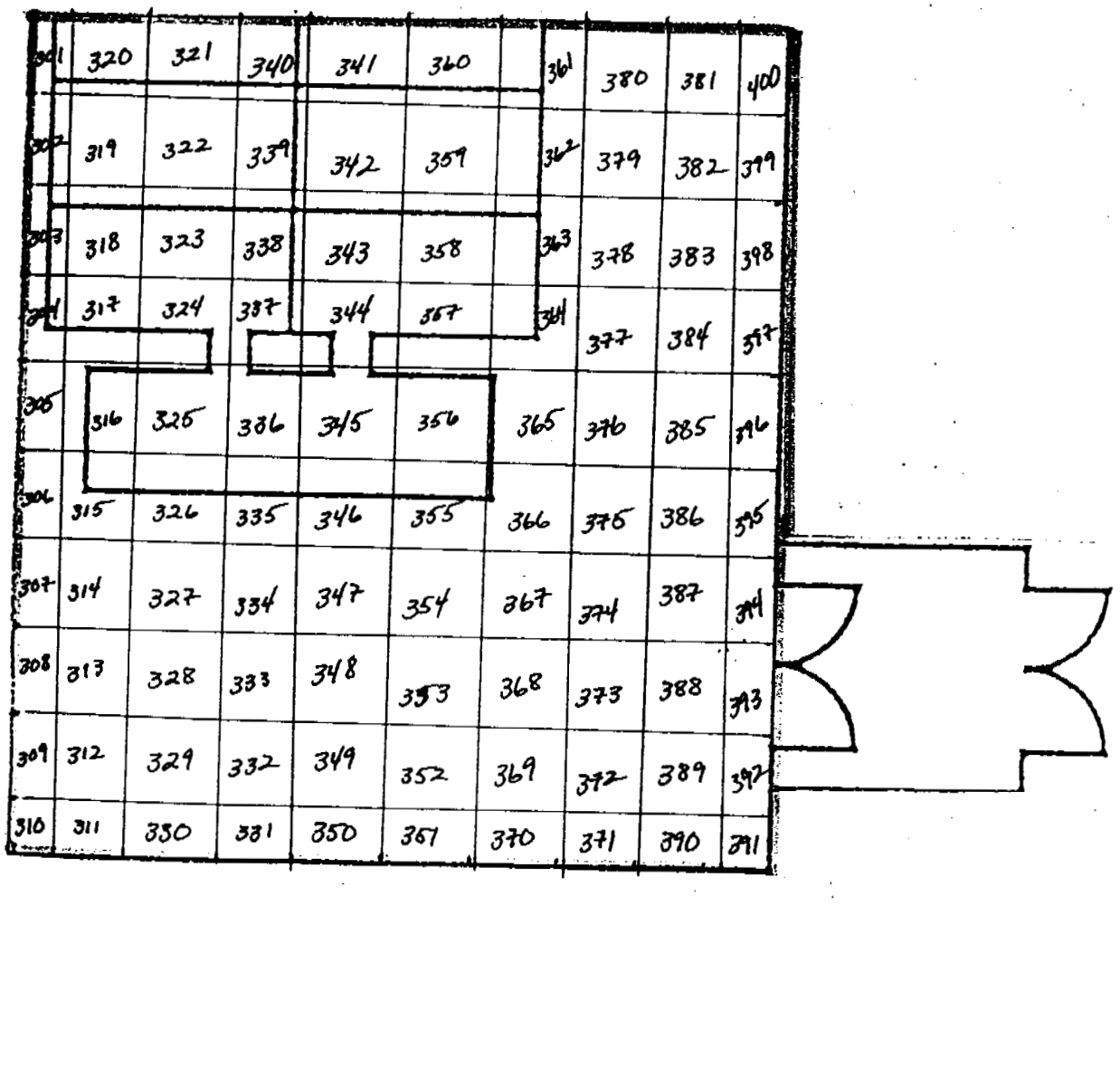


EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875

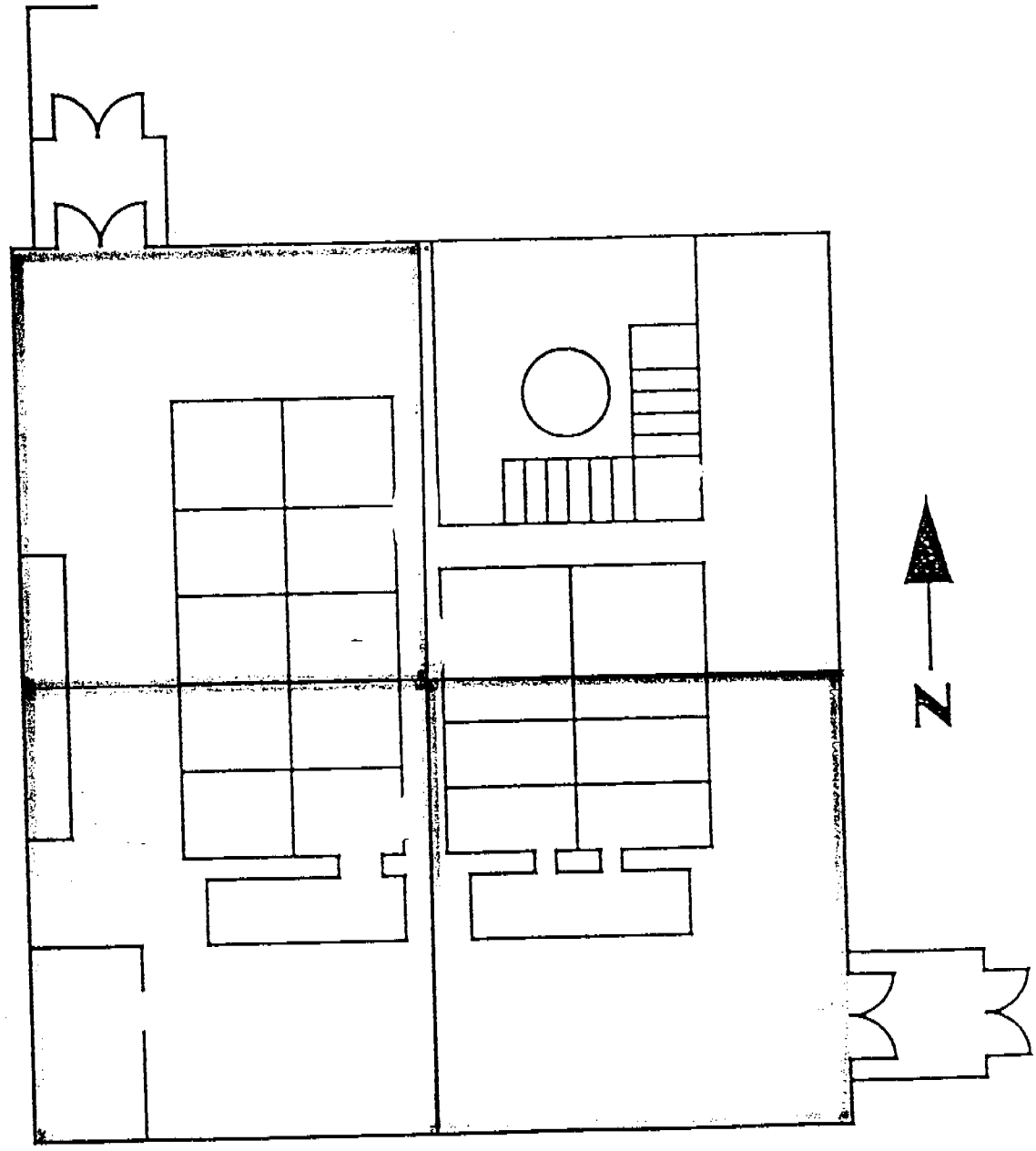


EG&G ROCKY FLATS

Control No. 875-1M

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 875



Total Survey Poin

RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Taken by X Vandaskin Employee #: [redacted]
Signature

Date: 10-28-94 Building: 886

Time: 1410 Room: 108

Shift: DAYS

Survey Description: Baseline of Floor in 108

Diagram/Sketch Attached: yes ✓ no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	842	810			
Date Cal.:	4-94	6-94			
Cal. Due:	10-94	10-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-93	4-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:

✓ Within Limits

___ Limits Exceeded

___ Posted

___ Deposted

Radiological Operations Foreman

_____ Date: 10-31-94
Signature

RADIOLOGICAL OPERATIONS
Alpha Survey

RESULTS

Date: 10-28-94 Time: 1410 Building: 886 Room: 108

	ALPHA			RESURVEY		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1			6			0
2			0			21
3			0			18
4			0			0
5			0			36
6			15			3
7			12			45
8			6			36
9			9			0
10			6			0
11			3			21
12			0			0
13			0			3
14			0			0
15			12			0
16			0			0
17			3			9
18			3			36
19			6			21
20			3			0
21			9			0
22			3			3
23			12			0
24			6			0
25			9			12
26			6			6
27			6			0
28			18			18
29			0			21
30			3			36
31			6			9
32			3			0
33			0			3
34						
35						
36						
37						
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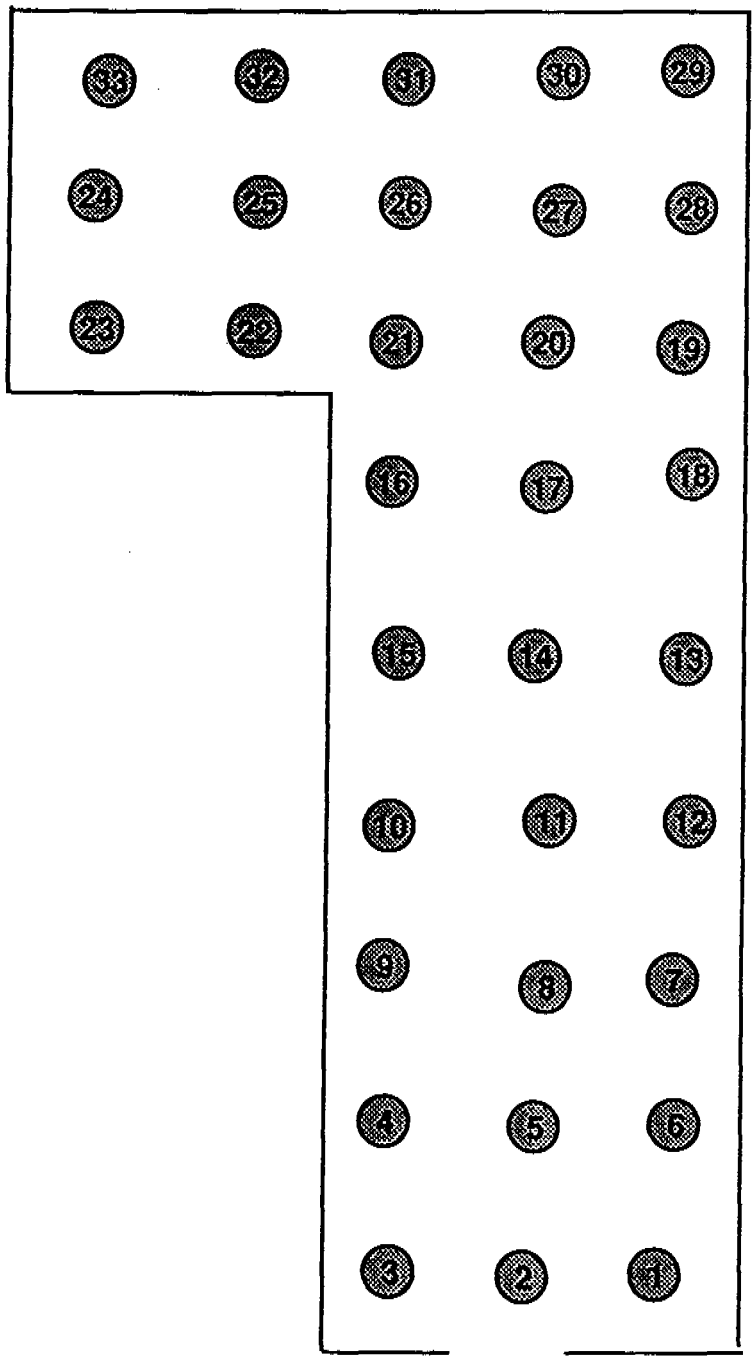
V

EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points

ROOM 108 FLOOR SURVEY
BUILDING 886



RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: _____

Taken by [signature] Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 10-28-94 Building: 886

Time: 0800 Room: 108

Shift: Day

Survey Description: East + west wall Survey Rm #108 Bldg 886

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	842	810			
Date Cal.:	4-94	6-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-93	4-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:

X Within Limits

__ Limits Exceeded

__ Posted

__ Deposted

Radiological Operations Foreman

[signature]
Signature

Date: 10-31-94

RADIOLOGICAL OPERATIONS
Alpha Survey

RESULTS

Date: 10-28-94 Time: 1000 Building: 886 Room: 108

	ALPHA			RESURVEY		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1			0			6
2			3			9
3			0			0
4			3			0
5			3			24
6			9			9
7			0			0
8			3			0
9			3			0
10			0			0
11			0			0
12			6			15
13			0			15
14			0			15
15			3			30
16			3			0
17			0			51
18			3			0
19			0			12
20			6			0
21			0			0
22			3			21
23			0			18
24			3			0
25			3			0
26			3			0
27			9			0
28			0			24
29			6			36
30			6			0
31			0			0
32			6			18
33			0			39
34			3			3
35			12			3
36			0			0
37			0			12
38			0			6
39			3			18
40			3			3
41			0			6
42			6			6
43			0			12
44			6			0
45			0			0

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: _____ Time: _____ Building: _____ Room: _____

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46			6			0
47			3			0
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
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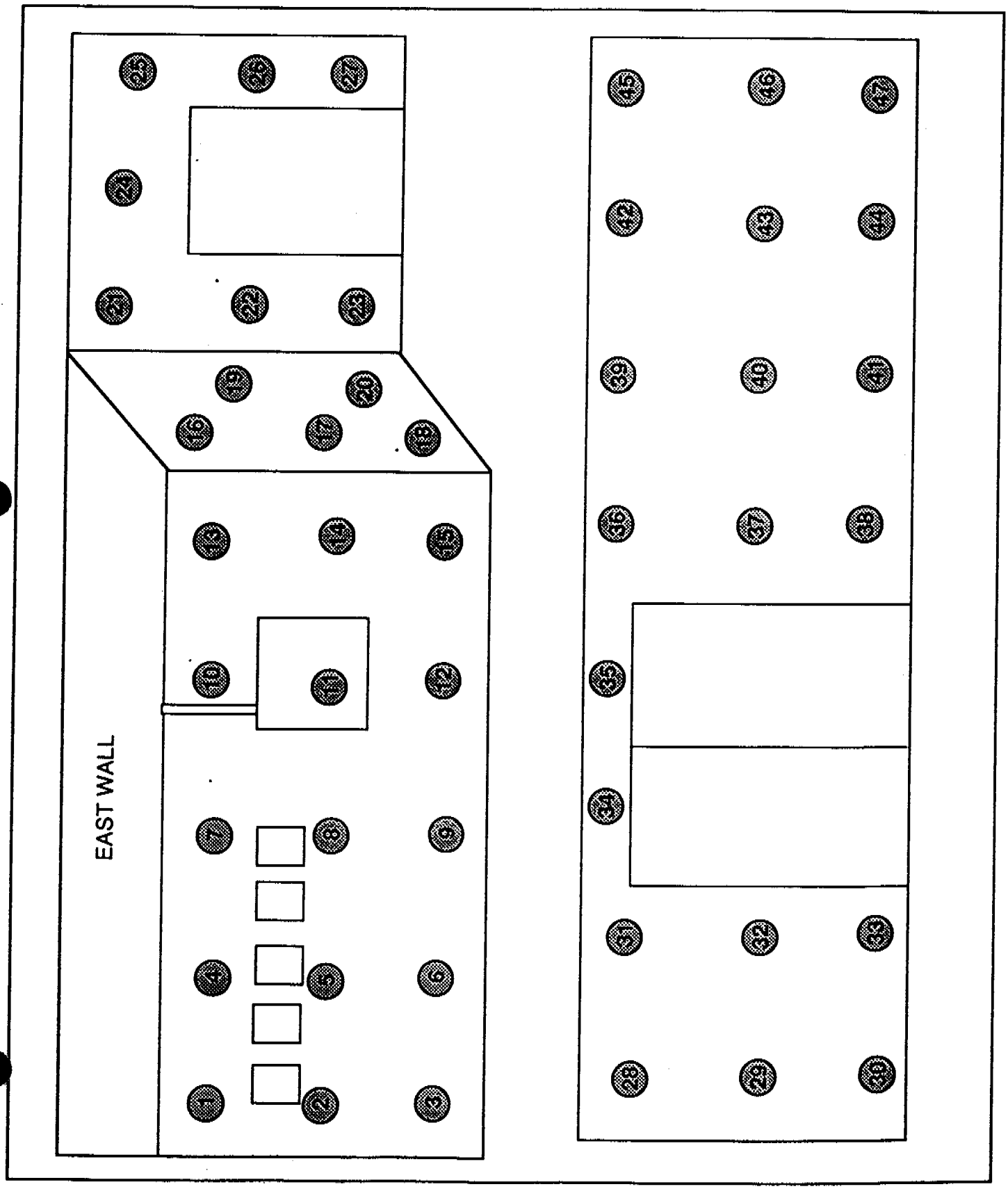
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Date: 10-31-94 Building: 886

Time: 0945 Room: 108

Shift: Days

Survey Description: Overhead Survey Rm 108

Diagram/Sketch Attached: yes ✓ no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	1164	810			
Date Cal.:	10-7-94	6-1-94			
Cal. Due:	4-95	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-1-93	4-14-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:		56141			
Date Cal.:		10-24-94			
Cal. Due:		4-95			
BKGRD:		< 250			

COMMENTS:

STATUS:

✓ Within Limits

___ Limits Exceeded

___ Posted

___ Deposted

Radiological Operations Foreman

Signature

Date: 10-31-94

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-31-94 Time: 0945 Building: 886 Room: 108

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1			3			0
2			3			0
3			0			0
4			12			0
5			0			0
6			0			18
7			0			0
8			6			12
9			0			0
10			6			0
11			0			3
12			0			24
13			3			0
14			0			0
15			0			0
16			9			0
17			9			0
18			0			27
19			3			0
20			0			9
21			0			18
22			0			0
23			0			36
24			0			15
25			0			0
26			12			0
27			0			0
28			0			3
29			3			0
30			3			3
31			0			0
32			3			12
33			6			6
34						
35						
36						
37						
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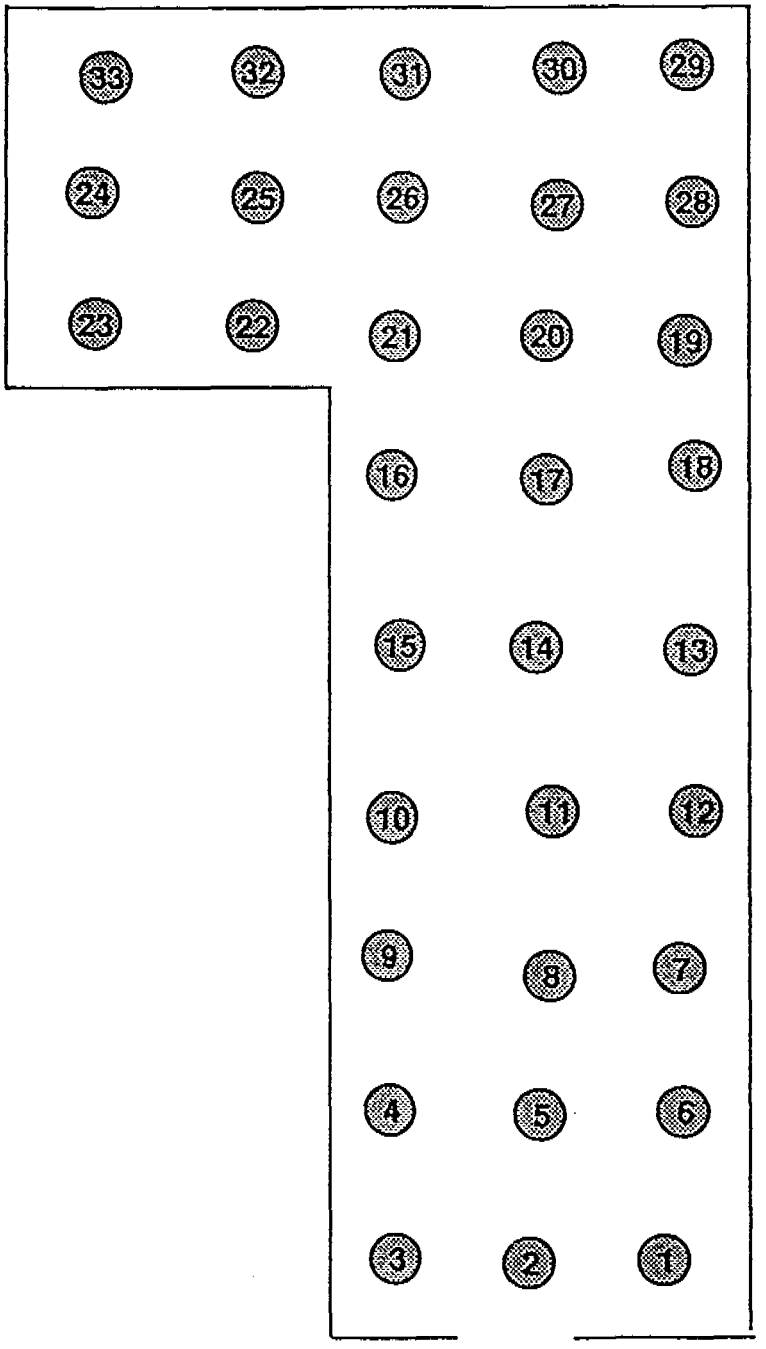
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points

ROOM 108 FLOOR SURVEY
BUILDING 886



RADIOLOGICAL OPERATIONS

Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: [redacted]
Signature

Taken by R Hardwick Employee #:
Signature

Date: 10-28-94 Building: 880

Time: 1510 Room: Outside

Shift: DAYS

Survey Description: Outside of Bldg 880

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	842	810			
Date Cal.:	4-94	6-1-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-93	4-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum	Bicron	Bicron	
Model:	31	12-1A	A-100	A-100	
Serial#:	110064		A6640	B766A	
Date Cal.:	6-94		6-10-94	6-94	
Cal. Due:	12-94		12-94	6-95	
BKGRD:	75		0	0	

COMMENTS:

Within Limits after resurvey of point 3
resurvey point is # 34

STATUS:

- ✓ Within Limits
- ___ Limits Exceeded
- ___ Posted
- ___ Deposted

Radiological Operations Foreman

Curt Becan Date: 10-31-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-21-94 Time: 0930 Building: 880 Room: N/A

	ALPHA			BETA		
	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	~~CPM~~ DPM Direct	DPM/100cm2 Removable (smear)
1		0 <158 ed ed	0		<1894	2+3 UK 10-21-94
2		36	0		<1894	0
3		692	6		<1894	0
4		<15	0		<1894	9
5		<15	0		<1894	0
6		<15	6		<1894	3
7		<15	0		<1894	0
8		<15	3		<1894	0
9		<15	0		<1894	0
10		<15	0		<1894	27
11		31	6		<1894	18
12		<15	3		<1894	15
13		31	0		<1894	30
14		<15	0		<1894	0
15		51	6		<1894	0
16		31	3		<1894	0
17		<15	0		<1894	0
18		<15	3		<1894	9
19		20	3		<1894	9
20		<15	0		<1894	21
21		<15	0		<1894	0
22		<15	6		<1894	15
23		<15	3		<1894	12
24		<15	0		<1894	0
25		<15	3		<1894	27
26		<15	3		<1894	0
27		<15	0		<1894	6
28		<15	0		<1894	6
29		20	3		<1894	21
30		<15	0		<1894	15
31		<15	3		<1894	30
32		<15	0		<1894	0
33		<15	3		<1894	0
34		<15	3		<1894	6
35		<15	3		<1894	24
36		<15	6		<1894	0
37		<15	3		<1894	0
38		<15	0		<1894	12
39		51	3		<1894	0
40		178	6		<1894	0
41		32	0		<1894	9
42		56	6		<1894	0
43		99	3		<1894	0
44		56	0		<1894	6
45		56	6		<1894	12

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 10-21-94 Time: 0930 Building: 880 Room: N/A

	ALPHA			BETA		
	CPM Removable (Swipe)	DPM ~~CPM~~ Direct 10-27-94	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46		89	3		<1894	6
47		80	0		<1894	0
48		70	0		<1894	18
49		112	0		<1894	0
50		108	0		<1894	18
51		80	3		<1894	12
52		133	0		<1894	0
53		80	0		<1894	15
54		61	3		<1894	18
55		23	0		<1894	39
56		80	0		<1894	0
57		117	0		<1894	51
58		No Access	0		<1894	18
59		No Access	0		<1894	30
60		No Access	0		<1894	21
61		28	0		<1894	0
62		42	0		<1894	15
63		56	0		<1894	0
64		80	0		<1894	12
65		70	0		<1894	15
66		47	0		<1894	0
67		<15	0		<1894	0
68		61	0		<1894	12
69		89	0		<1894	12
70		61	3		<1894	0
71		70	0		<1894	0
72		61	3		<1894	0
73		<15	3		<1894	39
74		<15	3		<1894	0
75		<15	9		<1894	0
76		42	3		<1894	0
77		28	0		<1894	3
78		56	0		<1894	12
79		19	0		<1894	0
80		<16	0		<1894	0
81		<15	3		<1894	0
82		<15	0		<1894	33
83						
84		28	0		<1894	0
85						
86						
87						
88						
89						
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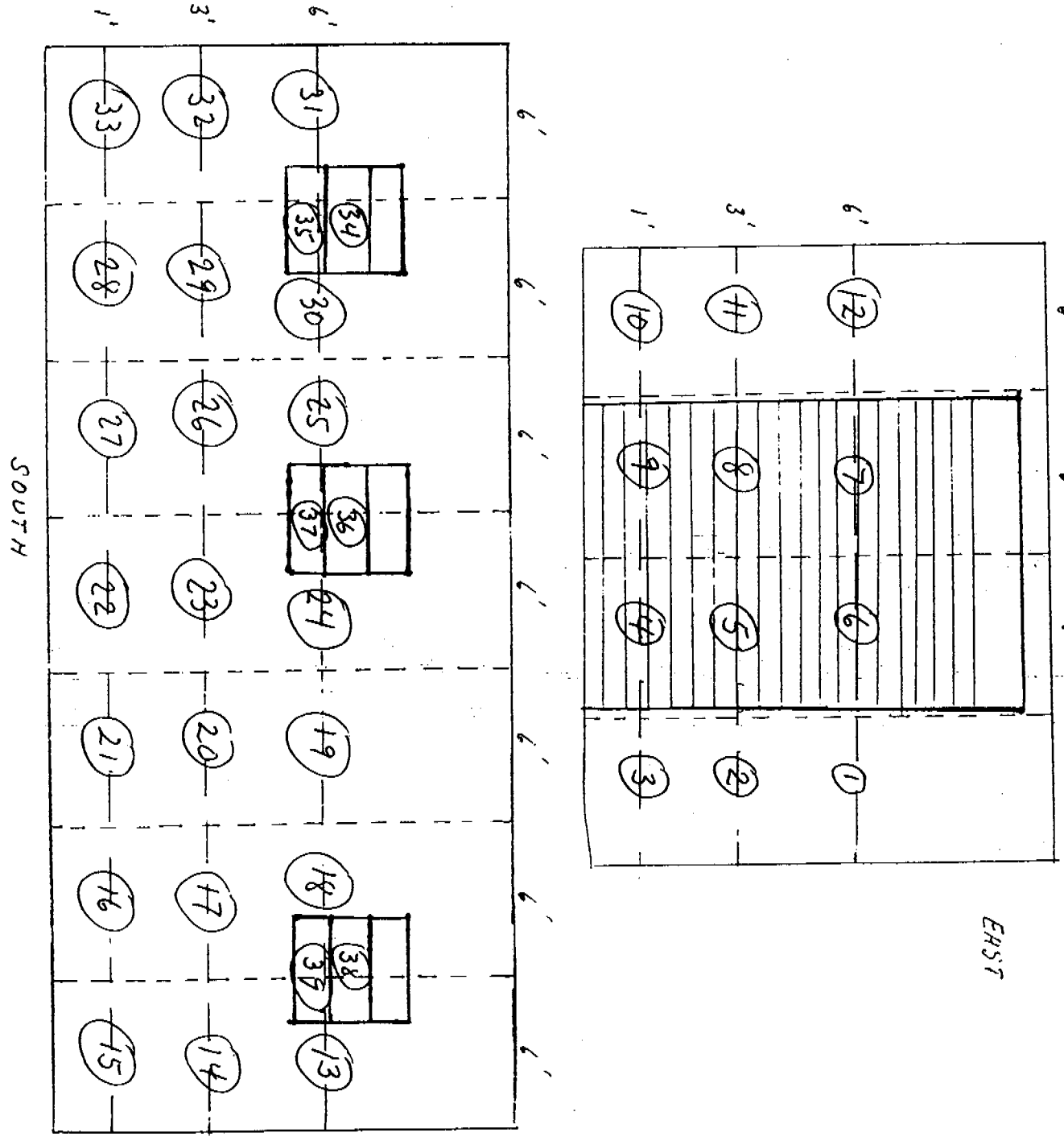
resurvey pt #3 10-28-94

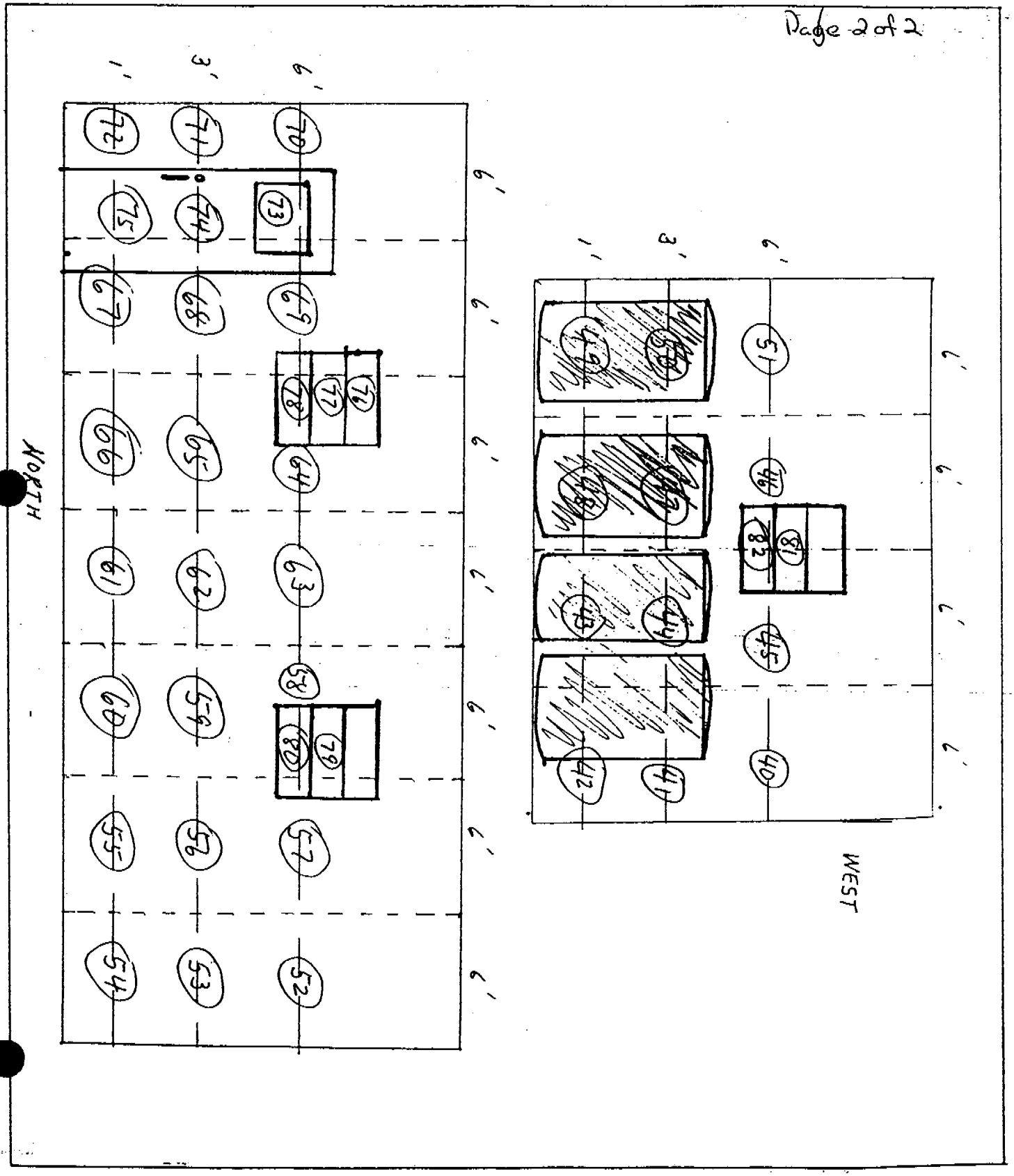
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



Alpha - Beta Survey

EST

Control #: _____

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 9-27-94 Building: 886/875

Time: 1100 Room: Tunnel

Shift: Day

Survey Description: Baseline Soe
886/875 tunnel

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:	864	810			
Date Cal.:	10-93	6-94			
Cal. Due:	10-94	12-94			

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:	868	874			
Date Cal.:	10-93	4-94			
Cal. Due:	10-94	4-95			

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:					
Date Cal.:					
Cal. Due:					
BKGRD:					

COMMENTS:

STATUS:

X Within Limits
__ Limits Exceeded
__ Posted
__ Deposted

Radiological Operations Foreman

_____ Date: 10-03-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1100 Building: 875 Room: tunnel

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1			3			0
2			0			0
3			3			6
4			0			9
5			0			0
6			0			3
7			6			12
8			3			18
9			0			0
10			0			6
11			6			0
12			9			0
13			0			3
14			3			0
15			3			9
16			0			0
17			0			6
18			6			3
19			3			12
20			9			9
21			6			21
22			0			15
23			0			0
24			3			3
25			3			9
26			0			6
27			3			3
28			0			0
29			6			0
30			0			0
31			3			3
32			3			6
33			0			9
34			6			0
35			6			0
36			3			3
37			0			3
38			12			3
39			0			0
40			0			12
41			6			3
42			6			3
43			3			6
44			0			9
45			0			15

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9/22/94 Time: 1100 Building: 875 Room: as required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46			0			0
47			3			0
48			6			0
49			0			3
50			0			6
51			3			9
52			3			0
53			0			12
54			0			0
55			9			0
56			0			3
57			6			9
58			3			21
59			0			3
60			0			0
61			6			0
62			6			12
63			3			0
64			3			3
65			9			3
66			0			0
67			3			51
68			0			30
69			0			21
70			0			0
71			0			12
72			0			36
73			9			27
74			0			12
75			0			6
76			3			0
77			0			21
78			3			48
79			0			0
80			3			45
81			3			6
82			0			15
83			6			0
84			0			0
85			9			30
86			3			12
87			6			9
88			3			0
89			6			0
90			0			3

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-27-94 Time: 1100 Building: 875 Room: as Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
91			9			12
92			3			18
93			12			39
94			12			0
95			6			15
96			3			36
97			12			0
98			9			24
99			6			0
100			3			0
101			0			12
102			0			9
103			6			3
104			3			6
105			9			0
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
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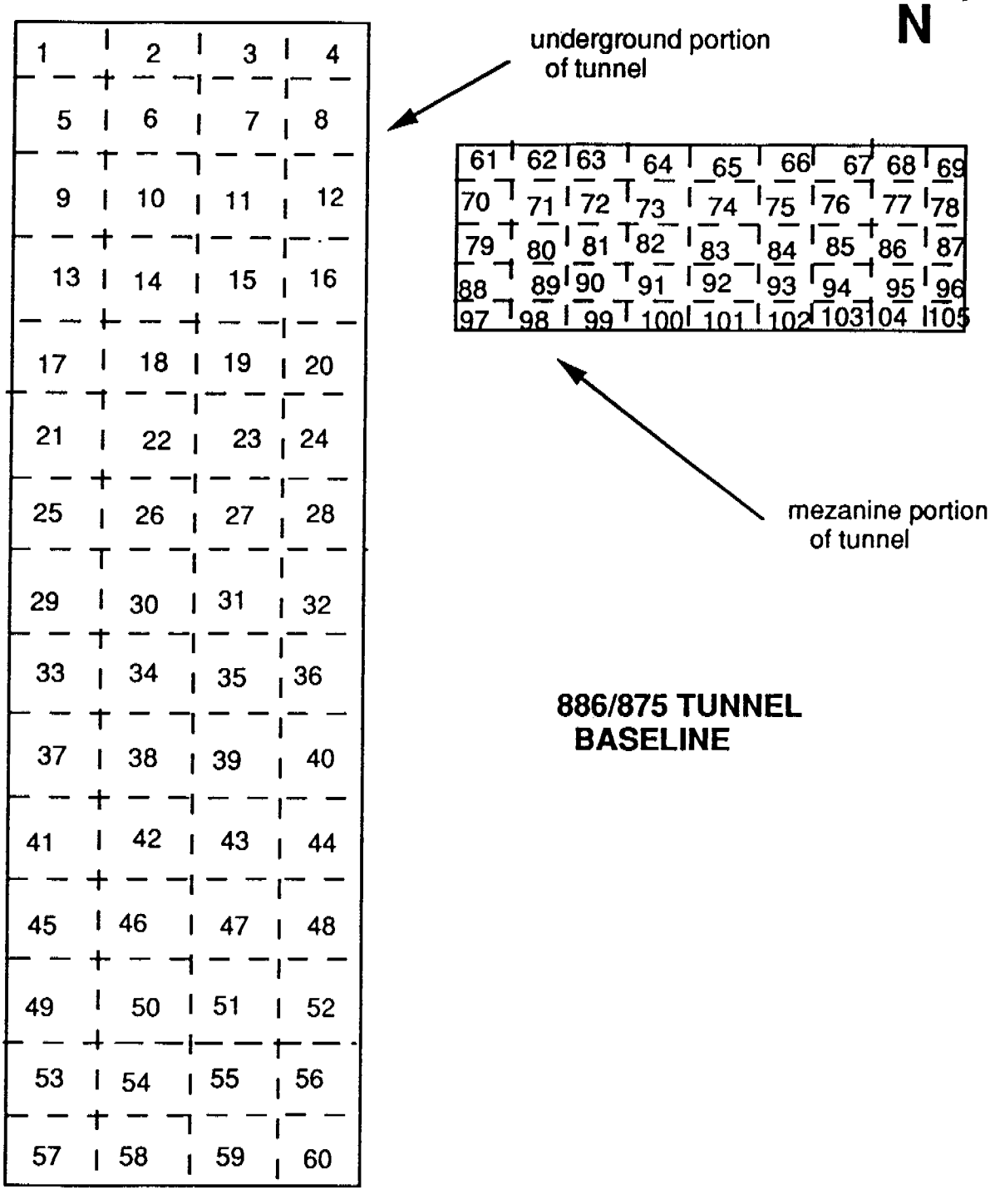
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



Alpha - Beta Survey

Control #: -

Taken by [signature] Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 9-28-94 Building: 886/875

Time: 0900 Room: Tunnel

Shift: Day

Survey Description: Baseline Survey
886/875 Tunnel USOSA-100 Bicron

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum	Bicron		
Model:	31	12-1A	A+100		
Serial#:			B766A		
Date Cal.:			8-94		
Cal. Due:			2-95		
BKGRD:			0		

COMMENTS:

STATUS:

± Within Limits
__ Limits Exceeded
__ Posted
__ Deposted

Radiological Operations Foreman

[signature] Date: 10-03-94
Signature

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-28-94 Time: 0900 Building: 875 Room: as Required

	ALPHA			BETA		
	CPM Removable (Swipe)	DPM ~~CPM~~ Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
1						
2						
3						
4						
5		29				
6						
7						
8						
9						
10		34				
11						
12						
13						
14						
15		10				
16						
17						
18						
19						
20		36				
21						
22						
23						
24						
25		41				
26						
27						
28						
29						
30		21				
31						
32						
33						
34		~~15~~ 9-28-94				
35		15				
36						
37						
38						
39						
40		31				
41						
42						
43						
44						
45		46				

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 9-28-94 Time: 0900 Building: 875 Room: as Required

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46						
47						
48						
49						
50		46				
51						
52						
53						
54						
55		46				
56						
57					--	
58						
59						
60		41				
61						
62						
63						
64						
65		77				
66						
67						
68						
69						
70		31				
71						
72						
73						
74						
75		51				
76						
77						
78						
79						
80		26				
81						
82						
83						
84						
85		31				
86						
87						
88						
89						
90		67				

RADIOLOGICAL OPERATIONS
Alpha-Beta Survey

RESULTS

Date: 4-28-94 Time: 0900 Building: 875 Room: as Dept

	ALPHA			BETA		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
91						
92						
93						
94						
95		31				
96						
97						
98						
99						
100		31				
101						
102						
103						
104						
105		26				
106						
107						
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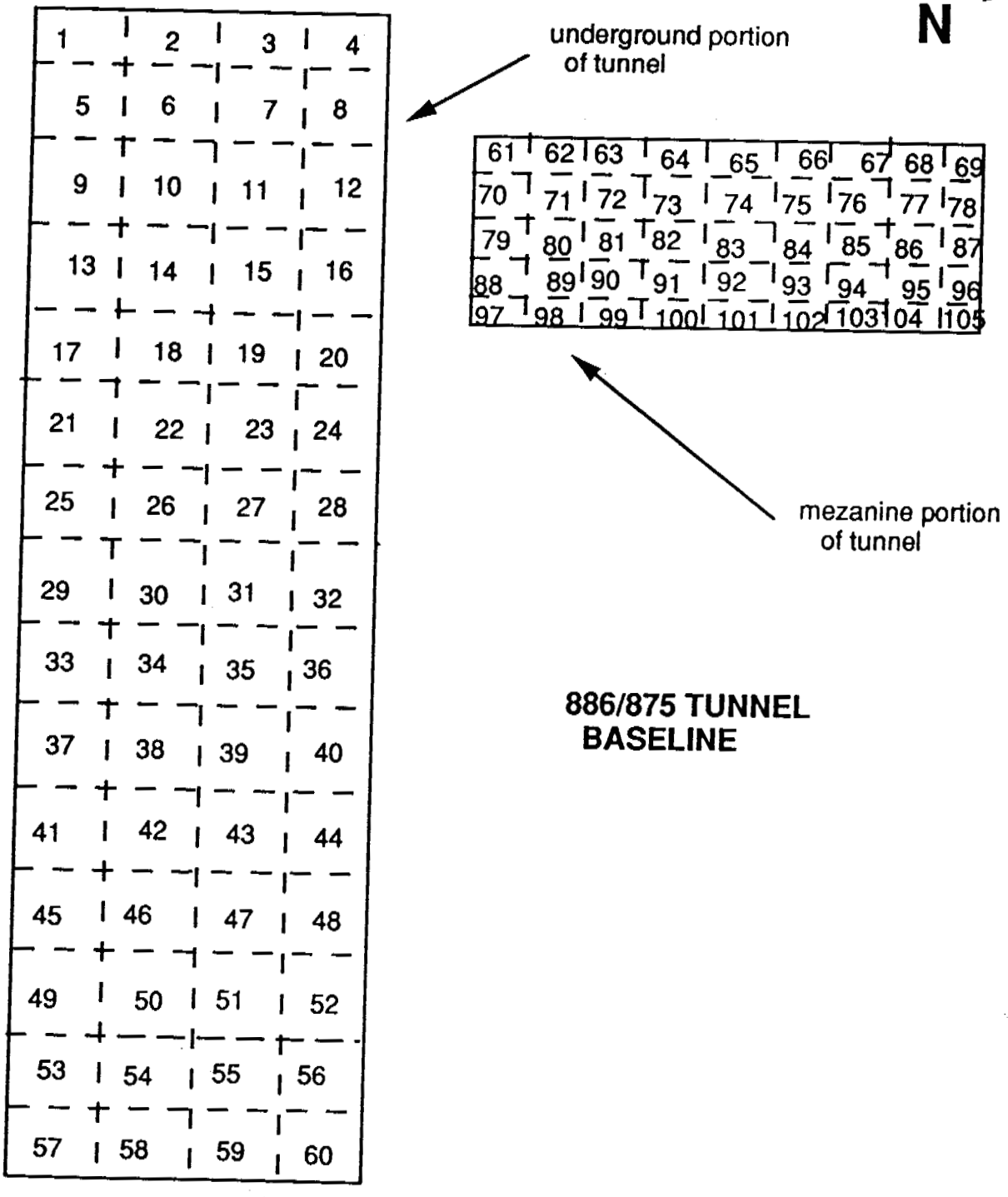
133						
134						
135						

EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points



RADIOLOGICAL OPERATIONS
Alpha - Beta Survey

Control #: _____

Taken by _____ Employee #: [redacted]
Signature

Taken by _____ Employee #: _____
Signature

Taken by _____ Employee #: _____
Signature

Date: 10-26-94 Building: 886

Time: 1400 Room: 102

Shift: Day

Survey Description: Overhead Survey Rm# 102

Diagram/Sketch Attached: yes X no ___

INSTRUMENTATION USED

SMEAR COUNTERS

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	SAC - 4	SAC - 4	SAC - 4	SAC - 4	SAC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

Mfg.:	Eberline	Eberline	Eberline	Eberline	Eberline
Model:	BC - 4	BC - 4	BC - 4	BC - 4	BC - 4
Serial#:					
Date Cal.:					
Cal. Due:					

SURVEY INSTRUMENTS

Mfg.:	Ludlum	Ludlum			
Model:	31	12-1A			
Serial#:		62753			
Date Cal.:		6-94			
Cal. Due:		12-94			
BKGRD:		<250			

COMMENTS:

STATUS:

X Within Limits
__ Limits Exceeded
__ Posted
__ Deposted

Radiological Operations Foreman

Curt Bean Date: 10-27-94
Signature

RADIOLOGICAL OPERATIONS
Alpha Survey

RESULTS

Date: 10-26-94 Time: 1400 Building: 886 Room: 102

	ALPHA			RESURVEY		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
1	<250					
2	<250					
3	<250					
4	<250					
5	<250					
6	<250					
7	<250					
8	<250					
9	<250					
10	<250					
11	<250					
12	<250					
13	<250					
14	<250					
15	<250					
16	<250					
17	<250					
18	<250					
19	<250					
20	<250					
21	<250					
22	<250					
23	<250					
24	<250					
25	<250					
26	<250					
27						
28						
29						
30						
31						
32						
33						
34						
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36						
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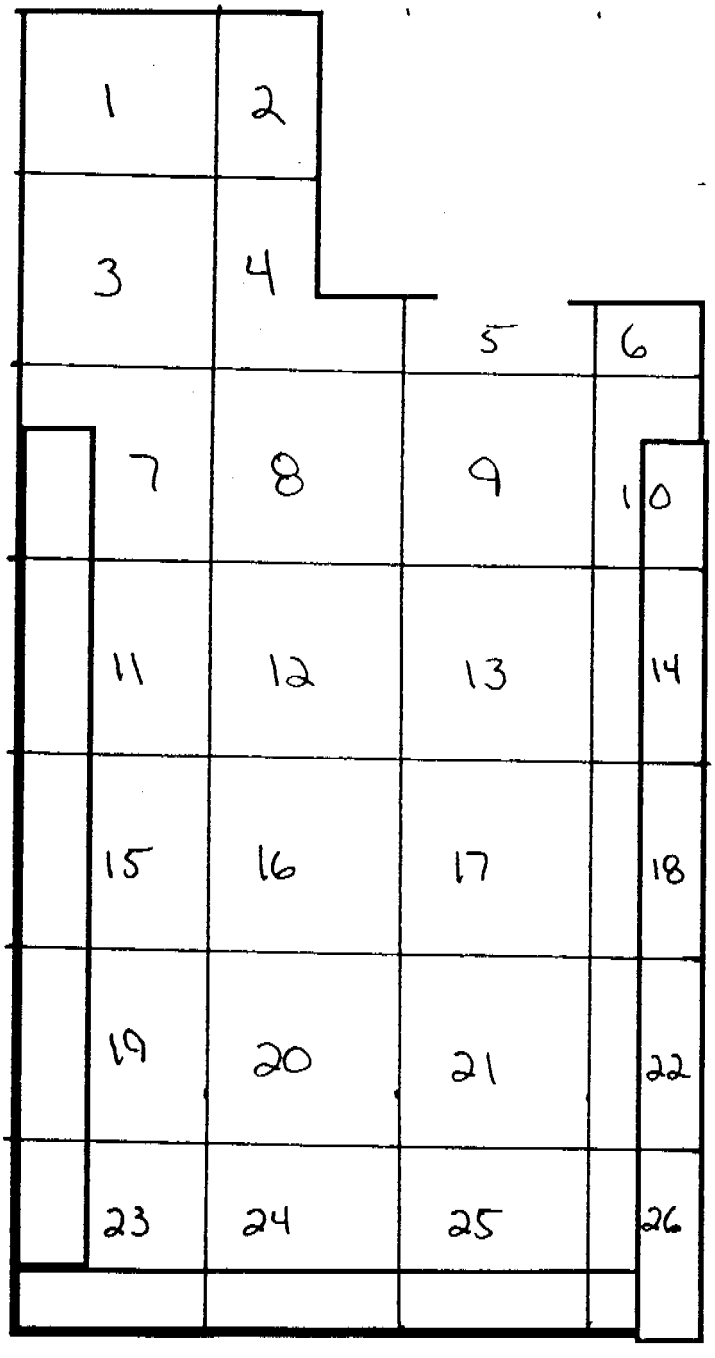
EG&G ROCKY FLATS

Radiological Operations
Area or Equipment Drawing Showing Survey Points

ROOM# 102 BUILDING 886



Control No: _____

RADIATION PROTECTION
Contamination Survey

Taken by: _____ Empl# _____

Taken by: TA [redacted] Empl# [redacted]

Taken by: KL Creason Empl# [redacted]

Date: 7-14-94 Building: 886

Time: 0945 Room #: 102

Shift: Days

Survey Description: Contamination Survey room 102 Building 886 Floor Smears ~~Alpha~~ + Beta (Shelves + Items in room swipe Alpha only)

Instrumentation Used
SMEAR COUNTERS

Mfg:	1. Eberline	2. Eberline	3. Eberline	4. Eberline	5. Eberli
Model:	1. SAC - 4	2. ~~SAC~~ BC 4	3. SAC - 4	4. SAC - 4	5. SAC -
Serial #:	1. 864	2. 868 7-14-94	3. _____	4. _____	5. _____
Date Per. CK:	1. 7-14-94	2. ~~10~~ 7-14-94	3. _____	4. _____	5. _____
Date Calib'd:	1. 10-5-93	2. 10-1-93	3. _____	4. _____	5. _____
Cal. Due Date:	1. 10-94	2. 10-94 Bkg. 49	3. _____	4. _____	5. _____

Mfg:	6. Eberline	7. Eberline	8. Eberline	9. Eberline	10. Eberli
Model:	6. SAC - 4	7. SAC - 4	8. SAC - 4	9. SAC - 4	10. SAC -
Serial #:	6. _____	7. _____	8. _____	9. _____	10. _____
Date Per. CK:	6. _____	7. _____	8. _____	9. _____	10. _____
Date Calib'd:	6. _____	7. _____	8. _____	9. _____	10. _____
Cal. Due Date:	6. _____	7. _____	8. _____	9. _____	10. _____

OTHER INSTRUMENTS

Mfg:	1. Ludlum	2. Ludlum	3. Ludlum	4. Ludlum	5. Ludlum
Model:	1. 12 - 1A	2. 12 - 1A	3. 12 - 1A	4. 12 - 1A	5. 12 - 1
Serial #:	1. _____	2. _____	3. _____	4. _____	5. _____
Date Per. CK:	1. _____	2. _____	3. _____	4. _____	5. _____
Date Calib'd:	1. _____	2. _____	3. _____	4. _____	5. _____
Cal. Due Date:	1. _____	2. _____	3. _____	4. _____	5. _____

COMMENTS

Smears 1-40 of Floor counted for ~~Alpha~~ + Beta Swipes 41-42 of carts, Swipes 43-45 of ladder, Swipes 46-52 of overhead lights, Swipes 53-54 of table, 55 chair, 56 Welder, 57-90 Swipes of Blue Shelves

Status: ✓ Within Limits
___ Limits Exceeded
___ Posted
___ Deposted

Radioloical Operations Foreman

Curtis Bear 7-14-94
Signature Date

RADIOLOGICAL OPERATIONS
Contamination Survey

RESULTS

Date: 7-14-94 Time: 0945 Building: 886 Room: 102

	Alpha ~~Initial~~			BETA ~~Resurvey~~ KJC 7-14-94		
	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)	CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (smear)
Floor 1.			27			<Bkgd.
2.			6			<Bkgd.
3.			0			<Bkgd.
4.			15			<Bkgd.
5.			6			18
6.			15			<Bkgd.
7.			15			<Bkgd.
8.			6			9
9.			3			<Bkgd.
10.			12			3
11.			0			6
12.			9			21
13.			3			<Bkgd.
14.			6			6
15.			6			<Bkgd.
16.			9			<Bkgd.
17.			6			0
18.			12			18
19.			6			<Bkgd.
20.			15			<Bkgd.
21.			6			<Bkgd.
22.			0			<Bkgd.
23.			3			6
24.			6			<Bkgd.
25.			6			<Bkgd.
26.			9			<Bkgd.
27.			27			<Bkgd.
28.			18			<Bkgd.
29.			9			<Bkgd.
30.			9			<Bkgd.
31.			12			6
32.			15			<Bkgd.
33.			3			<Bkgd.
34.			6			<Bkgd.
35.			12			<Bkgd.
36.			12			0
37.			9			3
38.			0			<Bkgd.
39.			3			<Bkgd.
40.			3			<Bkgd.
Carts 41.	<250					
42.	<250					
Ladders 43.	<250					
44.	<250					
45.	<250					

Contamination Survey

RESULTS

Date: 7-14-94 Time: 0945 Building: 556 Room: 102

	Alfa ~~Initial~~ CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)	Beta ~~Resurvey~~ CPM Removable (Swipe)	CPM Direct	DPM/100cm2 Removable (Smear)
46.	<250					
47.	<250					
48.	<250					
49.	<250					
50.	<250					
51.	<250					
52.	<250					
53.	<250					
54.	<250					
55.	<250					
56.	<250					
57.	<250					
58.	<250					
59.	<250					
60.	<250					
61.	<250					
62.	<250					
63.	<250					
64.	<250					
65.	<250					
66.	<250					
67.	<250					
68.	<250					
69.	<250					
70.	<250					
71.	<250					
72.	<250					
73.	<250					
74.	<250					
75.	<250					
76.	<250					
77.	<250					
78.	<250					
79.	<250					
80.	<250					
81.	<250					
82.	<250					
83.	<250					
84.	<250					
85.	<250					
86.	<250					
87.	<250					
88.	<250					
89.	<250					
90.	<250					

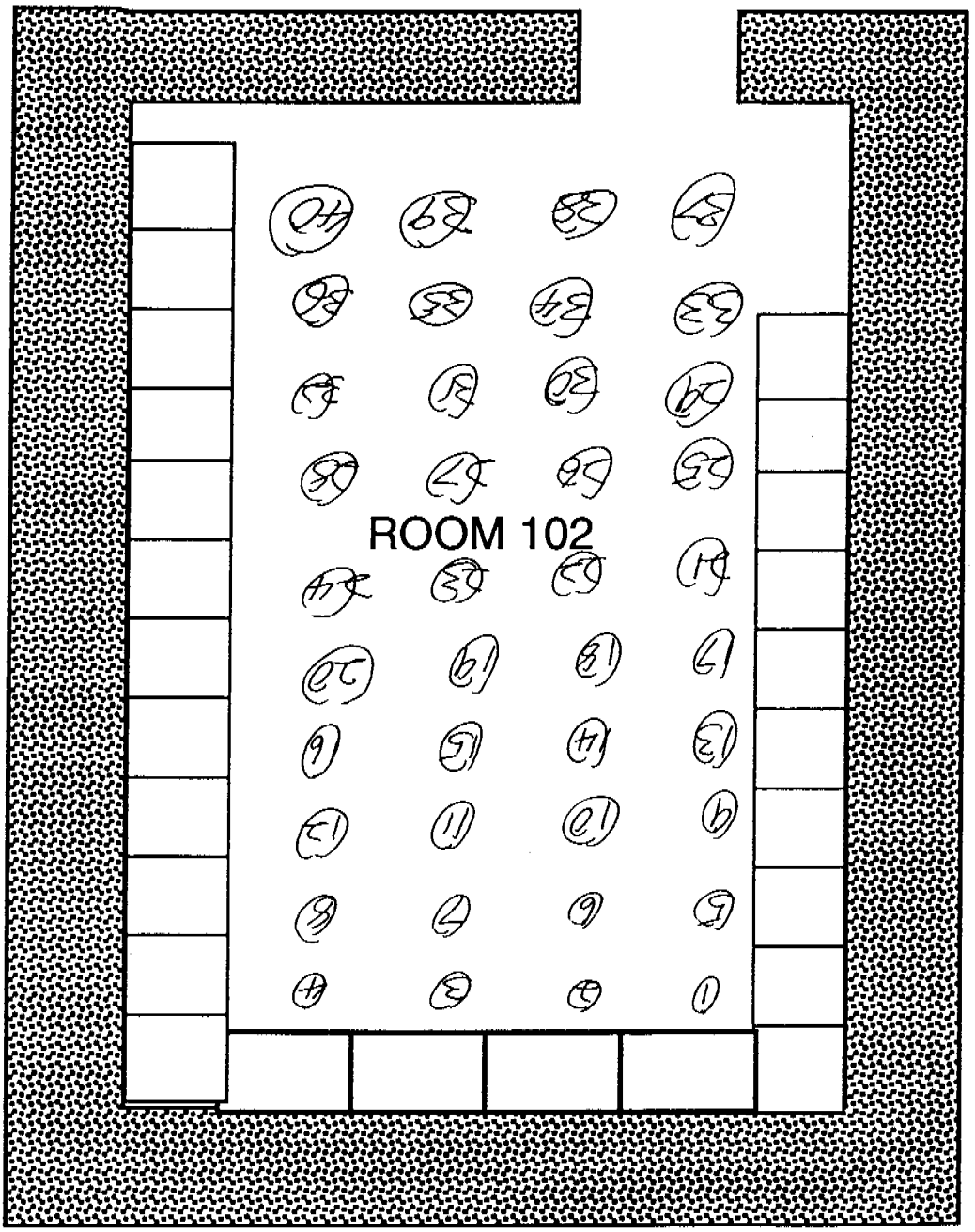
EG&G ROCKY FLATS

Control No. _____

Radiation Protection
Area or Equipment Drawing Showing Survey Points

Building 886

N →



Total Survey Points

APPENDIX B

CHEMICAL HAZARDS CHARACTERIZATION RESULTS

RIN # 98D0452

Sampling Record November, 20, 1997

Project: 886 Cluster RCLP
Building: 886
Room (if applicable):
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe PCB media Lead/Metals

Room	Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
Rm 111	886-971119-MS-001	Condensate tank/mud + Canvas/3'E of W wall, 2'S of W door, 2' above floor	
	886-971119-MS-002	Condensate tank/mud + Canvas/2'E of W wall, 2'S of W door, 3' above floor	
	886-971119-MS-003	Condensate tank/mud + Canvas/3'E of W wall, 4'S of W door, 3' above floor	
	886-971119-MS-004	Block wall/mortar skim/1'E of S door, South wall, 5.5' above floor	
	886-971119-MS-005	Chiller return elbow/mud + Canvas fitt/9'E of W wall, 2.5 N of S wall, 7' above floor	
	886-971119-MS-006	Chiller return valve/mud + Canvas/15'E of W wall, 2.5' N of S wall, 6.5' above floor	
	886-971119-MS-007	Chiller supply elbow/mud + Canvas/2'W of E wall, 3.5' N of S wall, 3' above floor	
	886-971119-MS-008	steam supply straight/block/13.5'E of W wall, 2' N of S wall, 6' above floor	
	886-971119-MS-009	steam supply tee/mud + Canvas/13.5'E of W wall, 7' N of S wall, 4.5' above floor	
	886-971119-MS-010	steam supply straight/block/14'E of W wall, 7' N of S wall, 6' above floor	
	886-971119-MS-011	steam supply straight/block/3'E of W wall, 6' N of S wall, 8.5' above floor	
Rm 106	886-971119-MS-012	Floor tile Room 106/6.5'E of W wall, 5.5' N of S wall, Floor	
Rm 106	886-971119-MS-013	Duct/wall penetration filler 2.5'E of W wall, S wall, 9' above floor	
Rm 107	886-971119-MS-014	Black 4" Cove base/5' W of E wall, 1.5' N of S wall, 2" above floor	
Rm 107	886-971119-MS-015	Ceiling tile, (longitudinal groove, pits + pin holes) 13' W of E wall, 6' N of S wall, Ceiling	
Rm 107	886-971119-MS-016	9" brown floor tile, 10' W of E wall, 6' N of S wall, floor	
Rm 107	886-971119-MS-017	Concrete Wall, 3' W of E wall, 5' above floor, South Wall	
		# 11/20/97	

Evaluated/Sampled by: Jill Solomon
Date: 11/20/97

Reviewed by: CAI
Date: 11/25/97

RIN# 98D0452

Sampling Record Nov 20, 1997

Project: 886 Cluster RCLP
Building: 886
Room (if applicable):
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe PCB media Lead/Metals

Room	Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
Rm 115	886-971119-MS-018	Mortar/wall surfacing material, 2.5' S of N wall, 1' E, W wall, 5' above floor	
	886-971119-MS-019	Linoleum floor (sheet vinyl, 3' S of N wall, 9.5' W of E wall, floor	
	886-971119-MS-020	Grey cove base, 3' S of NW Wall, E wall, 2" above floor	
	886-971119-MS-021	Ceiling tile, light latitudinal grooves, pinholes, 4' S of N wall, 2' W of E wall, Ceiling	
REAL →	886-971119MS-022	Ceiling tile, light longitudinal grooves and latitudinal marks, 9.5' S of N wall, 4.5' W of E wall, Ceiling	
DUPLICATE →	886-971119MS-023	Ceiling tile, light longitudinal grooves and latitudinal marks, 1.5' S of N wall, 4.5' W of E wall, Ceiling	
Rm 110	886-971119MS-024	Domestic Water elbow mud + canvas NW corner of Room 6.5' above floor	
Rm 110	886-971119MS-025	Floor tile 9" TAN/white flecks, 1' N of S wall, 3' E of W wall, on floor	

11/20/97

Evaluated/Sampled by: Abi Salomon
Date: 11/20/97

Reviewed by: CAI
Date: 11/26/97

Sampling Record November 21, 1997

Project: 886 Cluster RCLP
Building: 886
Room (if applicable):
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe PCB media Lead/Metals

	Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
Rm 113	886-971119-MS-026	9" floor tile beige with brown streaks / 4.5' W of E wall, 0.5' N of S wall, floor	
Rm 116	886-971119-MS-027	Rm 116 floor tile / carpet 8' W of E wall, 4' N of S wall, floor	
Rm 116	886-971119-MS-028	WALL PLASTER / 2' N of S wall, W wall, 4.5' above floor	
Rm 116	886-971119-MS-029	Duplicate of 886-971119-MS-028	
Rm 119	886-971119-MS-030	floor tile, 9" green tan checkerboard, 0.5' W of E wall, 0.5' S of N wall, floor	
↓	886-971121-MS-031	Mortar/wall surfacing material / W wall, 4' S of N wall, 5' above floor	
↓	886-971121-MS-032	Wall Plaster 1.5' E of W wall, N wall, 4' above floor	
Rm 123	886-971121-MS-033	9" floor tile Red and Tan checkerboard 6.5' E of W wall, 0.5' N of S wall, floor	
↓	886-971121-MS-034	Ceiling tile Wide shallow lat. grooves / 6' W of E Wall, 2' S of N wall, Ceiling	
↓	886-971121-MS-035	Ceiling tile lat. institutional mottled P.H / 2' W of E wall, 2' S of N. wall, Ceiling	
Rm 129	886-971121-MS-036	Ceiling tile lat. worm holes, dots P.H / 2' N of S wall, 4' W of E wall Ceiling	
Rm 129	886-971121-MS-037	floor tile - unknown style / 0.5' W of E wall, 0.5' N of S wall, floor	
Rm 131	886-971121-MS-038	floor tile - unknown style / 0.5' E of W wall, 0.5' N of S wall, floor	
↓	886-971121-MS-039	~~Ceiling tile mustache pattern~~ Mortar/Wall Surfacing material / 3' N of S wall, W wall, 3' above floor	
↓	~~886-971121-MS-040~~	~~Wall Plaster 6' W of E wall, N wall, 5.5' above floor~~	HS 11/21/97
MAIN Entrance	886-971121-MS-041	Drywall 3' E of W wall, N wall, 6' above floor	
↓	886-971121-MS-042	Dry Wall 1' E of W wall, N wall, 8' above floor	
↓	886-971121-MS-043	Dry Wall 1' W of E wall, N wall, 8' above floor	
130	886-971121-MS-044	~~Wall Plaster~~ HS 11/21/97 Dry Wall, 5' N of S wall, E wall, 5' above floor	

Rm 131 → 886-971121-MS-040 Drywall, tape and Joint Compound, NE corner of room, 3.5' above floor

Evaluated/Sampled by: Hoji Salaam
Date: 11/21/97

Reviewed by: [signature]
Date: 11/25/97

Sampling Record SAMPLES FROM Nov 21, 1997

Project: 886 Cluster RCLP
Building: 886
Room (if applicable):
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe PCB media Lead/Metals

Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
Rm 130 886-971121-MS-045	floor tile - unknown style / 0.5' E of W wall, 0.5' S of N wall, floor	

11/21/97

Evaluated/Sampled by: Abi Salomon
Date: 11/21/97

Reviewed by: M Arthur
Date: 11/25/97

Sampling Record SAMPLES FROM Nov 24, 1997

Project: 886 Cluster RCLP
Building: 886
Room (if applicable):
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe PCB media Lead/Metals

	Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
Rm 128	886-971121-MS-046	Drywall, tape, and Joint compound, SE corner of room, 4' above floor	
Rm 125	886-971121-MS-047	Wall Plaster, 3 feet S of N wall, E wall, 5' above floor	
Rm 127	886-971121-MS-048	Cinderblock/mortar/skim 5' S of N wall, West wall, 5' above floor	
Rm 118	886-971121-MS-049	Cove base, 4" Light brown / 6.5' E of W wall, N wall, 2" above floor	
Rm 120	886-971121-MS-050	Wall Plaster / 4.5' S of N wall / E wall / 6' above floor	
Rm 117	886-971121-MS-051	Cove base, 4" Dark brown / 4.5' E of W wall, S wall, 2" above floor	
Rm 114	886-971121-MS-052	Ceiling tile wide flat grooves, P.H. / 10' W of E wall, 6.5' N of S wall, Ceiling	
	886-971121-MS-053	Cinderblock, mortar, surfacing material / 6' W of E wall, S wall, 6' above floor	
	886-971121-MS-054	Duplicate of 886-971121-MS-053 / 6' W of E wall, S wall, 6' above floor	
	886-971121-MS-055	floor tile 9" gray with black vein / 10' W of E wall, 9' N of S wall, floor	
	886-971121-MS-056	Wall Plaster / 8' N of S wall, E wall, 5' above floor	
Rm 117	886-971121-MS-057	floor tile 9" Light brown tan/beige checkerboard 6' W of E wall, S wall (at door), floor	
Rm 112	886-971121-MS-058	floor tile 9" gray & blue-gray check / 4' S of N wall, 1' W of E wall, floor	
Rm 112	886-971121-MS-059	Wall Plaster / 14' S of N wall, E wall, 5' above floor	
Rm 126	886-971121-MS-060	sheet vinyl w/ floor tile / half way between doors to 110, 113, 0.5' E of wall, floor	
	886-971121-MS-061	Cinderblock, mortar, surfacing material / 3.5' E of Rm 116 door, S wall, 5' above floor	
	886-971121-MS-062	Cinder block, mortar, surfacing material / 2' N of Rm 127 door, E wall, 5' above floor	
	886-971121-MS-063	Cinder block, mortar, surfacing material / 1' S of Rm 118 door, E wall, 6' above floor	
		11/24/97	

Evaluated/Sampled by:
Date: 11/24/97

Reviewed by:
Date: 11/25/97

Sampling Record SAMPLES COLLECTED OUTSIDE OF BUILDING 886 ON Nov 25, 1997

Project: 886 Cluster RCLP
Building: 886
Room (if applicable):
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe PCB media Lead/Metals

Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
886-971124-MS-064	TSI on duct/control rm HVAC / 30'S of Rm 140 S wall, 4.5' W of W	outside wall, 10' above
886-971124-MS-065	TSI on duct/control rm HVAC / 11'S of Rm 140 S wall, 5' W of W	outside wall 11' above
886-971124-MS-066	TSI on duct/control rm HVAC / 4'S of Rm 140 S wall, 4.5 W of W	outside wall, 10' above
886-971124-MS-067	Texture on concrete / 12.5' N of SW corner of building (Rm 101), 1.5'	above ground
886-971124-MS-068	Texture on Concrete / 7'E of SW corner of building (Rm 101), 3.5' a	bove ground
886-971124-MS-069	Texture on Concrete / 19' N of SE corner of building (Rm 101), 5' above ground.	
886-971124-MS-070	Texture on outside Cinder Block / 12' N of Rm 140 N wall, W wall	11, 5' above concrete
886-971124-MS-071	Texture on outside Cinder Block / 27' N of SW corner of building (Rm 101) 5' W of W wall, 5'	above ground
886-971124-MS-072	Texture on Outside Cinder Block / 1' N of BW 886 Door 3 (Rm 112), E	wall, 4' above
886-971124-MS-073	Duplicate of 886-971124-MS-072	
	→ These 4 samples: Beige over green texture HS 11/25/97 on cinder block	
	→ These 3 samples: Beige over white texture over concrete	

OUTSIDE of 886 (OUTSIDE walls)

11/25/97

Evaluated/Sampled by: [signature]
Date: 11/25/97

Reviewed by: [signature]
Date: 11/25/97

Building 886 RLCP
Asbestos Sampling conducted Dec 2, 1997

Sampling Record

Project: 886 Cluster RCLP
Building: 886
Room (if applicable): 101 Entry
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe PCB media Lead/Metals

Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
886-971124-MS-074	Concrete Core, N wall on entry to room 101, collocated w/ sample 98A0485-007	
886-971124-MS-075	Concrete core, Floor on entry to room 101, collocated w/ samples 98A0485-008	

12/2/97

Recorded ~~Evaluated/Sampled~~ by: [signature]
Date: 12/2/97

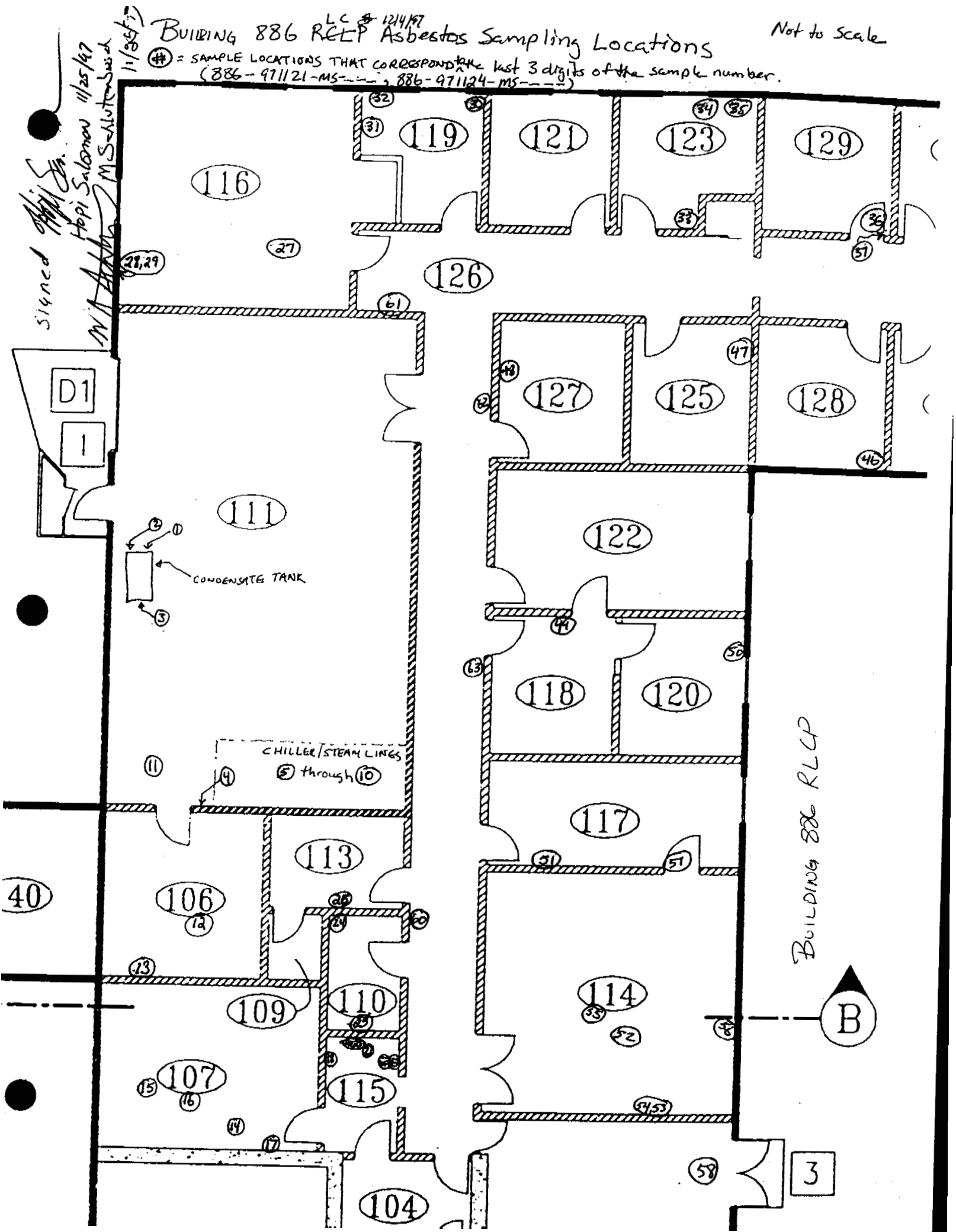
Reviewed by: [signature] 12/3/97
Date:
CAI

Project: 886 Cluster RCLP
Building: 888 Guard Shack
Room (if applicable):
Area is classified as (circle as appropriate): Affected ~~Unaffected~~ MS 12/8/97
Analysis (circle as appropriate): Asbestos PCB Swipe ~~PCB media~~ Lead/Metals

Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
886-971124-MS-076	Drywall tape and joint compound; from SW corner main area (west wall) 5' from floor	
886-971124-MS-077	Drywall tape and joint compound; from N edge of partition wall 5' from floor	
886-971124-MS-078	Drywall tape and joint compound; from SW corner of restroom wall 5' from floor	
	~~MS~~ 12/9/97	

Evaluated/Sampled by: M Schluterbusch
Date: 12/8/97

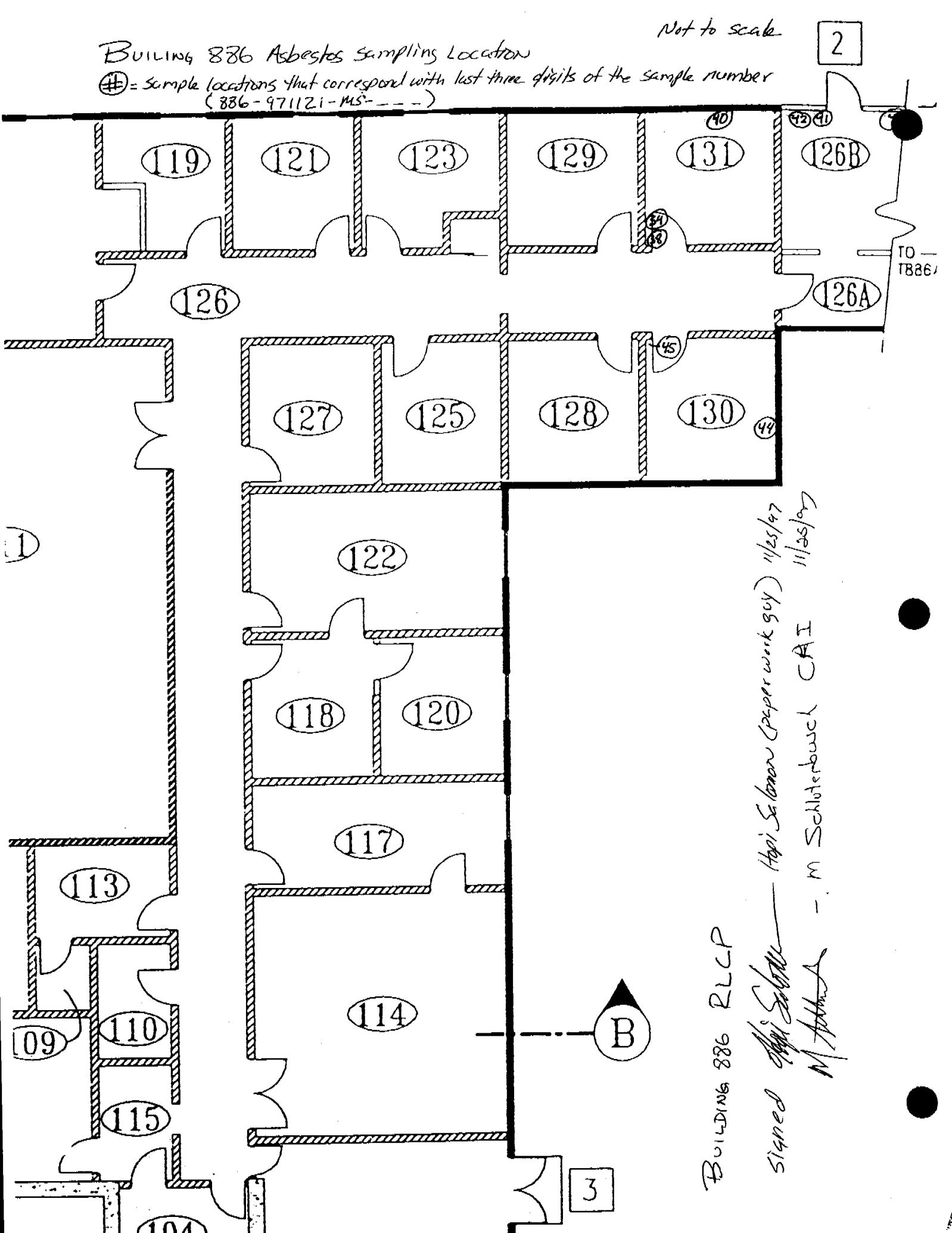
Reviewed by: Kurt Kelly
Date: 12/8/97


BUILDING 886 RLCP Asbestos Sampling Locations
LC # 12/4/97
Not to scale
(#) = SAMPLE LOCATIONS THAT CORRESPOND TO the last 3 digits of the sample number.
(886-971121-MS-___ , 886-971124-MS-___)
Signed Hopi Salomon 11/25/97
M Schluterbusch 11/26/97
116
119
121
123
129
126
127
125
128
122
118
120
117
111
113
106
109
110
114
107
115
104
D1
1
3
B
CONDENSATE TANK
CHILLER/STEAM LINES
5 through 10
BUILDING 886 RLCP
40

Not to scale

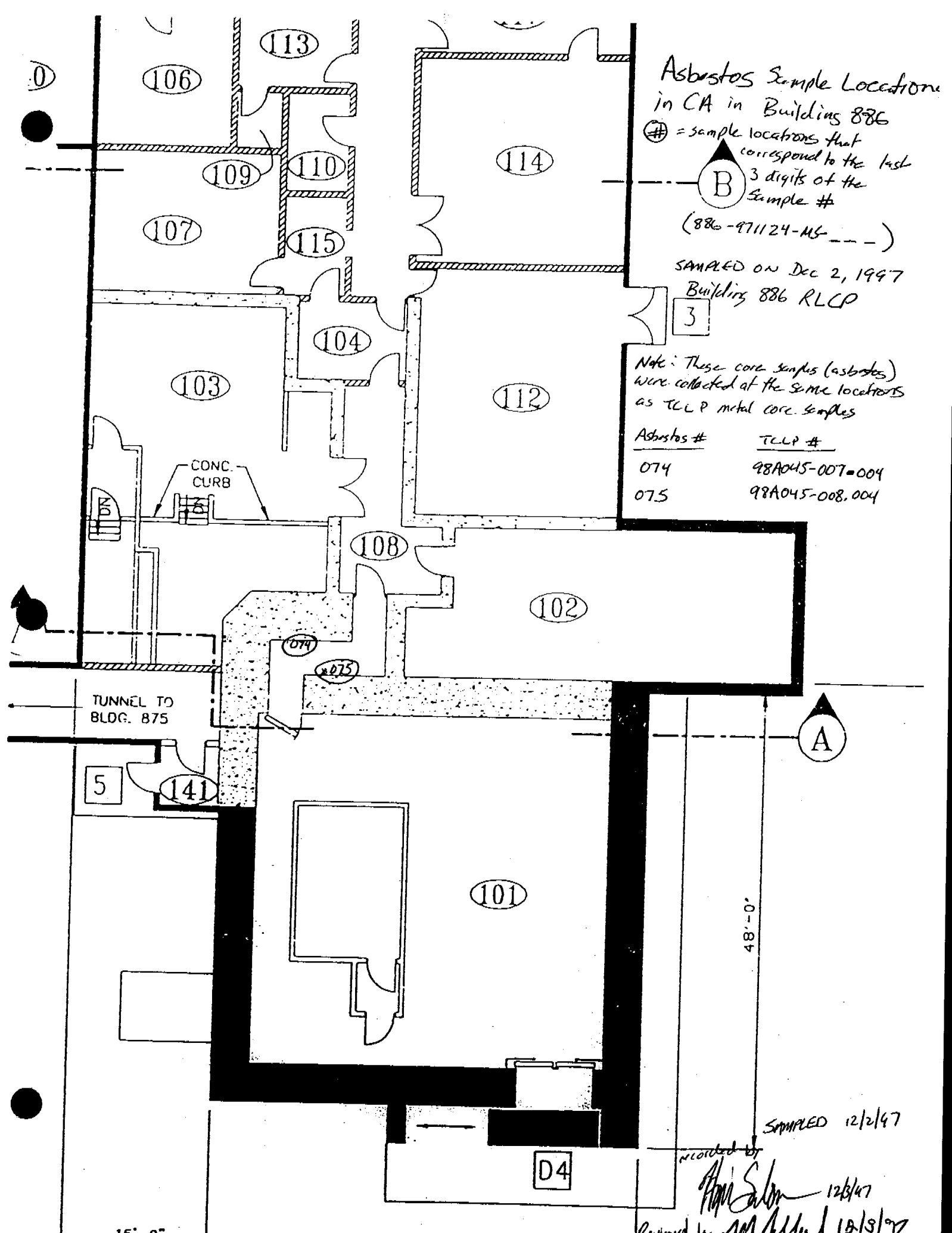
BUILDING 886 Asbestos sampling Location

(#) = sample locations that correspond with last three digits of the sample number
(886-971121-MS-____)

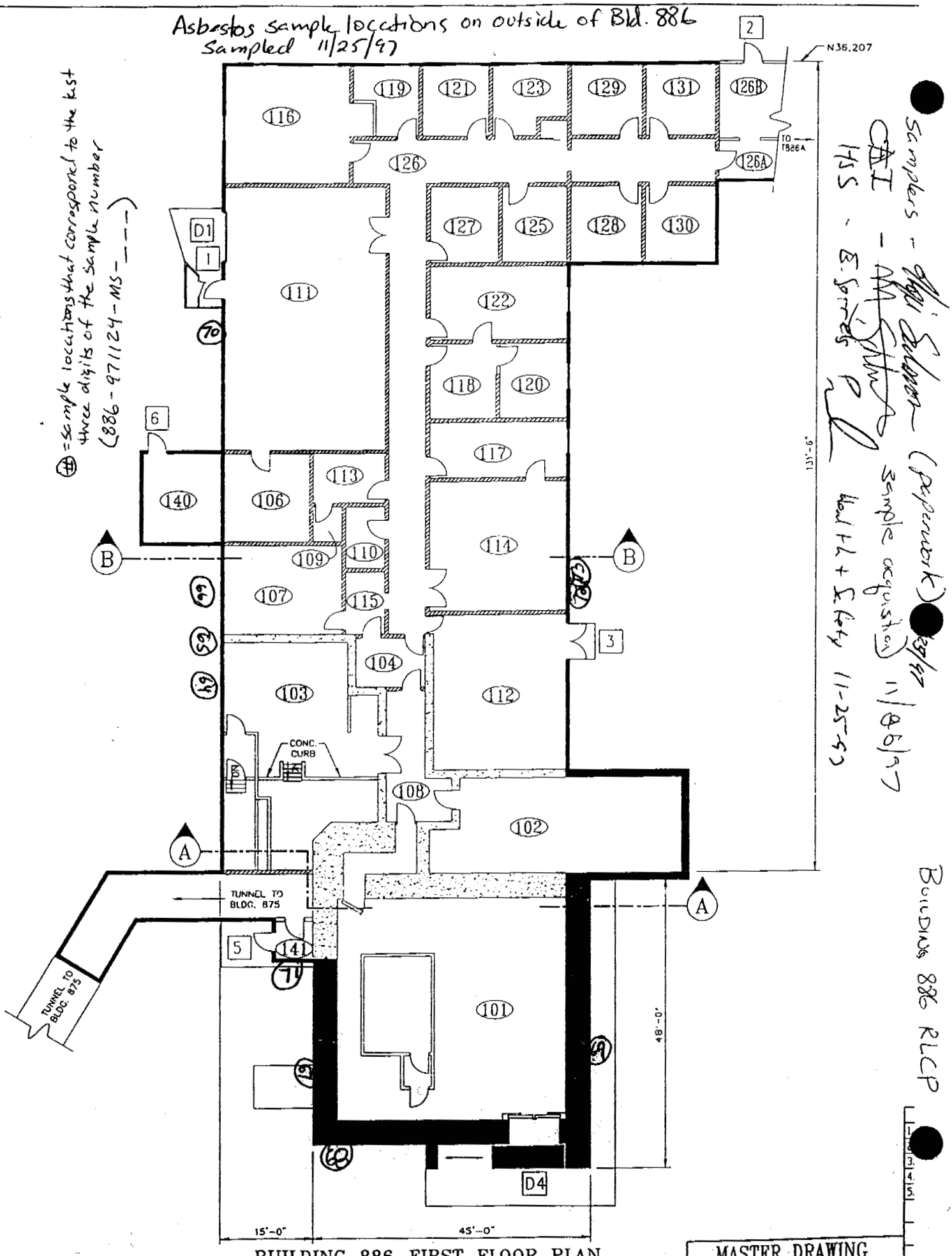


BUILDING 886 RLCP

SIGNED Hopi Schlotterbeck (Hopi Schlotterbeck (paper work guy)) 11/25/97
M Schlotterbeck CAI 11/25/97


Asbestos Sample Locations in CA in Building 886
(#) = sample locations that correspond to the last 3 digits of the Sample #
(886-971124-MS-___)
SAMPLED ON Dec 2, 1997
Building 886 RLCP
Note: These core samples (asbestos) were collected at the same locations as TCLP metal core samples
Asbestos # TCLP #
074 98A045-007-004
075 98A045-008.004
SAMPLED 12/2/97
recorded by
12/3/97
12/3/97
113
106
109
110
114
107
115
104
103
112
108
102
101
141
CONC. CURB
DN
TUNNEL TO BLDG. 875
074
075
48'-0"
A
B
3
5
D4

Asbestos sample locations on outside of Bld. 886
Sampled 11/25/97



⊕ = sample locations that correspond to the last three digits of the sample number (886-971124-MS-___)

Samplers - Matt Eckman (paperwork) 11/25/97
CAI - M. Silva
HLS - B. Spires
Sample acquisition 11/26/97
Wed 11 + Thurs 11-25-97

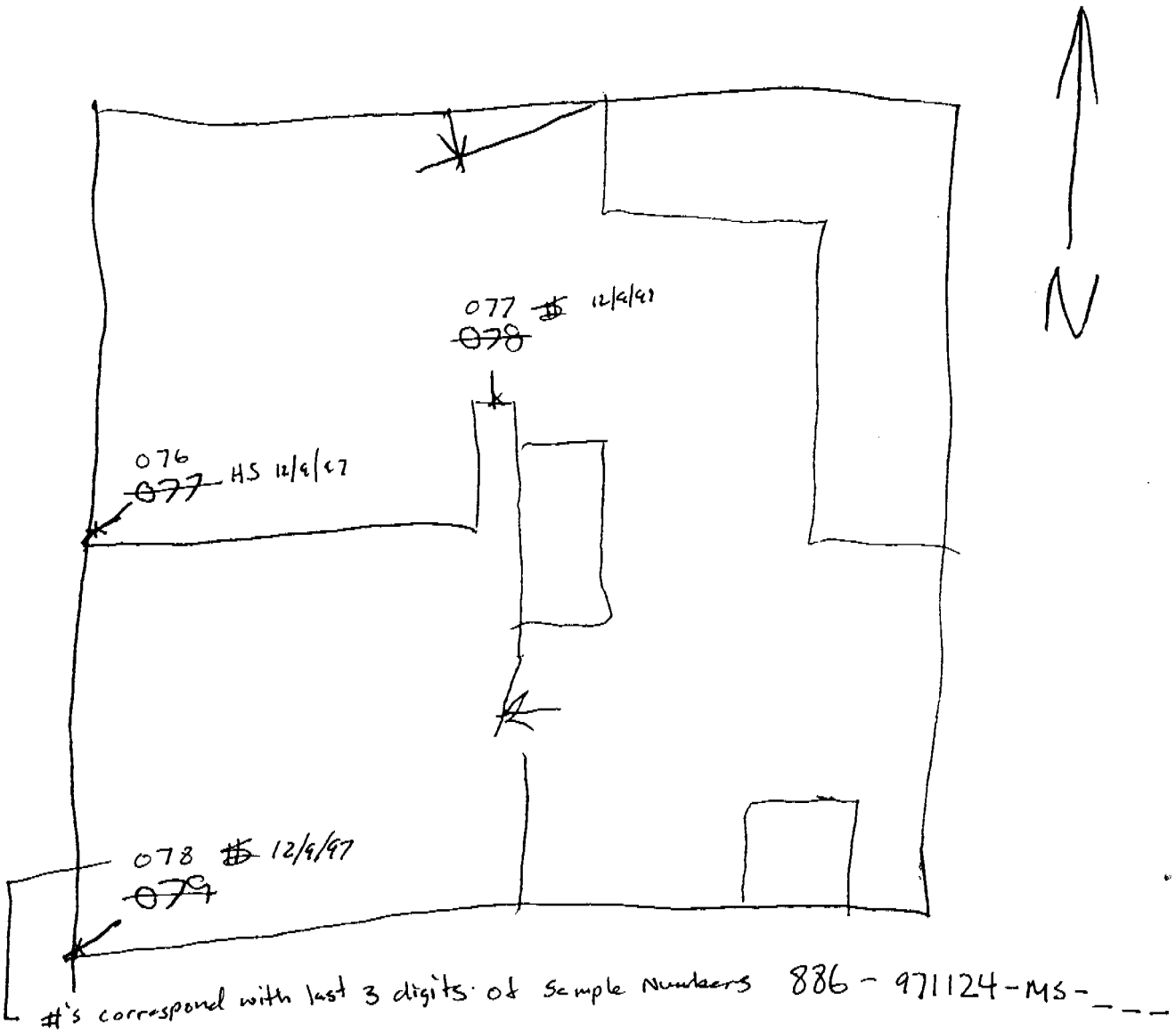
BUILDING 886-FIRST FLOOR PLAN

MASTER DRAWING
MAINTAIN AS-BUILT PER CDEM 6.6.2

Building 886 RLCP

Asbestos Sample Locations - Building 888
12/8/97

Sample Location - Schematic



#'s correspond with last 3 digits of Sample Numbers 886 - 971124 - MS - ___

RIN 98D04452

Illustrated by: M Schluterbusch
Date: 12/8/97
Reviewed by: [signature]
Date: 12/9/97

RFP F 3791.32 (7/95)
Formerly P 530

RIN 98D0452

Rocky Flats Environmental Technology Site
Golden CO 80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Mike Schlueterbusch Title: CAT Bldg/Ext: T130J/4215 Date: Nov 20, 1997 Page 1 of 2

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971119-MS-001	Asbestos/PLM		1000		B		Archive for Point Count	
002								
003								
004								
005								
006								
007								
008								
009								
010								
011								
012								
013			1000					
014			1455					
015			1455					
886-971119-MS-016	Asbestos/PLM		1455		B		Archive for Point Count	

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	0830 11/20/97	[signature]	[signature]	1455 11/21/97
[signature]	[signature]	1505 11/24/97	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill	☐	Verbal To:	966-4046
RMRS	☒	Fax To:	966-6538
SSOC	☐	Report To:	
DynCorp	☐	Bill To:	
WSI	☐	P.O.#/Release:	ME94MA
		Lab:	Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ 24 Hour Rush ☐ 2 Hour Rush ☐ Other

Seal# (Release #) RIN 98D0452

Condition of Seal: ☐ Broken ☐ Unbroken

Signature:
Comments: Rcvd Sealed Bags Signed off Per Bags 11/

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly F

RIN 98D0452

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Mike Schluterbusch Title: CAI Bldg/Ext: T130J/4215 Date: Nov 20, 1997 Page 2 of 2

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971119-MS-017	Asbestos/PLM		1455		B		Archive for Point Count	
018			1520					
019			1520					
020			1520					
021			1520					
022			1520					
023			1520					
024			1600					
886-971119-MS-025	Asbestos/PLM		1604		B		Archive for Point Count	

11/20/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[illegible]	[illegible]	11/20/97 0820	[illegible]	[illegible]	1455 11/21/97
[illegible]	[illegible]	[illegible]			

Report and Billing Instruction

Kaiser-Hill ☐ Verbal To: 966-4046
RMRS ☒ Fax To: 966-6538
SSOC ☐ Report To:
DynCorp ☐ Bill To:
WSI ☐ P.O.#/Release: ME94AA
Lab: Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other
Asbestos Samples
☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments: Rcvd sealed Bags Signed off per Bags

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791 [illegible] (7/95)
Formerly F [illegible]530

RIN 98D0452

Rocky Flats Environmental Technology [illegible]te
Golden [illegible]O 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Mike Schluterbush Title: CAI Bldg/Ext: T130J /4215 Date: Nov 21, 1997 Page 1 of

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971119-MS-026	PLM/Asbestos		0858		B	Archive for Point Count		
-027			0915					
-028			0915					
-029			0915					
-030			0940					
886-971121-MS-031			0940					
-032			0940					
-033			1020					
-034			1020					"
-035			1020					
-036			1055					
-037			1055					
-038			1120					
-039			1120					"
-040			1120					
886-971121-MS-041			1145		B	Archive for Point Count		

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	1455 11/21/97	[signature]	[signature]	1500 11/21/97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

- Kaiser-Hill ☐
- RMRS ☒
- SSOC ☐
- DynCorp ☐
- WSI ☐

Verbal To: fax 966-4046 - Hap Solomon
Fax To: 966 6538 - Mike Schluterbush
Report To:
Bill To:
P.O.#/Release: ME944A
Lab: Kaynar

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature: [signature]
Comments: Request Limited Bags
Signed - 1 COC per bag [signature]

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3[illegible] (7/95)
Formerly R

RIN, 98D0452

Rocky Flats Environmental Technology Site

Golden [illegible]80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Mike Schlueterburg Title: CHI Bldg/Ext: T130J/4215 Date: Nov 21, 1997 Page 2 of

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971121-MS-042	PLM/Asbestos		1145		B		Archive for Point Count	
-043			1145					
-044			1202					
886-971121-MS-045			1202					

11/21/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	1455 11/21/97	[signature]	K Meier	1505 11/21/97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill	☐	Verbal To:	Mike Schlueterburg 966-6538
RMRS	☒	Fax To:	Hope Schwarz 966-4946
SSOC	☐	Report To:	Mike
DynCorp	☐	Bill To:	
WSI	☐	P.O.#/Release:	ME94AA
		Lab:	Roseville

Analysis Request

Industrial Hygiene Sample

☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples

☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #) RIN 98D0452

Condition of Seal: ☐ Broken ☐ Unbroken

Signature:

Comments: Four of Seven Bags used out of box 4/4/97

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly RF-[illegible]

Rocky Flats Environmental Technology Site

Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

RIN 98D0452

Name of Originator: Mike Schluterbusch Title: CAT Bldg/Ext: T730J/4215 Date: Nov 24, 1997 Page 1 of 2

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971121-MS-046	PLM/Asbestos		0900		B	Archive for Point Count		
047			0912					
048			0923					
049			0955					
050			1000					
051			1010					
052			1102					
053			1045					
054			1045					
055			1055					
056			1051					
057			1027					
058			1110					
059			1114					
060			1131					
886-971121-MS-061	PLM/Asbestos		1141		B	Archive for Point Count		

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	Paul D. LeRoux	1600 11/25/97			
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

- Kaiser-Hill ☐
- RMRS ☒
- SSOC ☐
- DynCorp ☐
- WSI ☐

Verbal To: Mike Schluterbusch 966-4046
Fax To: Mike Schluterbusch 966-6538
Report To: K-H
Bill To: K-H
P.O.#/Release: ME94AA
Lab: Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☒ Other 3-5 days

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

AFP 3/91.32-7/95)
Formerly RF-4

RIN 98D0452

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Mike Schuchardt Title: CAT Bldg/Ext: T130J/4215 Date: Nov 25 1997 Page 2 of 2

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971121-MS-062	PCM/Asbestos		1150				Archive for Final Count	
886-971121-MS-063	PCM/Asbestos		1159				Archive for Final Count	

11/25/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	Paul D. McCarty	1600 11/25/97			
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill ☐ Verbal To: Hp Schuch 966-6627
RMRS ☒ Fax To: M Schuchardt 966-6538
SSOC ☐ Report To: K-H
DynCorp ☐ Bill To: K-H
WSI ☐ P.O.#/Release: ME 94AA
Lab: Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☒ Other 3-5 days

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly RF-4

RIN 98D0452

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Hop Salomon Mike Schwartzbach Title: CHI Bldg/Ext: T130J/4215 Date: Nov 25 1997 Page 1 of

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-97112 4-MS-064	PCM/Asbestos		0851		B		Volume for Point Count	
-065			0845					
-066			0835					
-067			0906					
-068			0920					
-069			0935					
-070			1013					
-071			1002					
-072			0945					
886-97112 4MS-073	PCM/Asbestos		0950		B		Volume for Point Count	

11/25/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	Paul D. Rhoades	1600 11/25/97			
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill	☐	~~Verbal~~ Fax To:	Hop Salomon 966-4446
RMRS	☒	Fax To:	M. Schwartzbach 966-6538
SSOC	☐	Report To:	K-H
DynCorp	☐	Bill To:	K-H
WSI	☐	P.O.#/Release:	ME94AA
		Lab:	Rocky Mtn

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ ~~24~~ 48 Hr Rush ☐ 2 Day Rush ☒ Other 5-Day

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly RF-4

RIN 98D0452

Rocky Flats Environmental Technology Site
Golden, C[illegible]80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Mike Schlueter Title: CHT Bldg/Ext: 1130J/4215 Date: December 2, 1997 Page 1 of 1

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-97124-MS-074	Asbestos/PLM		0840		B		Archive for Point Count	
886-97124-MS-075	Asbestos/PLM		0920		B		Archive for Point Count	

12/2/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	1520 12/5/97		[signature]	1542 12/5/97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill ☐ Verbal To: Hope Schwarz 966-4046
RMRS ☐ Fax To: Mike Schlueter 966-6538
SSOC ☐ Report To: K-H
DynCorp ☐ Bill To: K-H
WSI ☐ P.O.#/Release: ME94AA
Lab: Resource

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release # RIN 98D0452)
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (05)
Formerly RF-47

RIN 98D0452

Rocky Flats Environmental Technology Site

Golden, C 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Mike Schluterbusch Title: CAJ Bldg/Ext: T130J/4015 Date: Dec 8, 1997 Page 1 of 1

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971124-MS-076	PLM Asbestos		1450				Archive For Point Count	
886-971124-MS-077	PLM Asbestos		1445				Archive For Point Count	
886-971124-MS-078	PLM Asbestos		1447				Archive For Point Count	

12/8/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	1590 12/8/97	[signature]	[signature]	12/11/97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

- Kaiser-Hill ☐
- RMRS ☒ Verbal To: Hp Schramm 966-4046
- SSOC ☐ Fax To: Mike Schluterbusch 966-6538
- DynCorp ☐ Report To: K-H
- WSI ☐ Bill To: K-H
- P.O.#/Release: ME94AA
- Lab: Reservoir

Analysis Request

Industrial Hygiene Sample

☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples

☐ Standard Service ☐ 24 Rush ☒ 2 Rush ☐ Other

Seal# (Release #) 98D0452

Condition of Seal: ☐ Broken ☐ Unbroken

Signature:

Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly RF-4

RW 98 A 0453

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

Name of Originator: Earl Sorrels Title: HSS Bldg/Ext: T886 / 5356 Date: 11-25-97 Page 1 of 1

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971121-BZ-01	asbestos PCM	416.4	1230	MCE	P		0.8 um 25 mm Millipore	
886-971121-BZ-04	↓	blank	0700	↓	P		0.8 um 25 mm Millipore	
886-971124-BZ-01		345.7	1205		P		0.8 um 37 mm Millipore	
886-971124-BZ-02		blank	0700		P		0.8 um 37 mm Millipore	

11-25-97
BJ

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	1545 11/25/97	[signature]	Paul D. Lokeaho	1600 11/25/97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill ☐ Verbal To: fax M. Schlueterburg 6538
RMRS ☒ Fax To: E. Sorrels 6533
SSOC ☐ Report To: K-H
DynCorp ☐ Bill To: K-H
WSI ☐ P.O.#/Release: ME59AA
Lab: Resinor

Analysis Request

Industrial Hygiene Sample
☒ Standard Service ☐ Rush ☐ Other
Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #)
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments: RW 98 A 0453

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

NVLAP LAB NO. 1896

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

AIHA LAB I.D. 10768

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES Job: 476049

To: Mike S. Tom &

Company: Kaiser

Fax Number: 966-4046/6538 & 3400

From: PJO

Date: 11/24

Number of Pages: _____ (excluding cover sheet)

1987 - 1997
10
YEARS OF EXCELLENCE
Reservoirs Environmental Services, Inc.

Message:

Refax w/ TRIN #

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47649-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	BRUC	Non-Fibrous Components (%)
886-971119-MS-001	EM 318274	A	White fibrous woven material with white paint	20		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	80	Chrysotile	8	0	35	0	0	0	0	0	55
					Amosite	2								
886-971119-MS-002	EM 318275	A	Silver foil	3		ND	0	0	0	0	0	0	0	100
		B	White fibrous woven material with white paint	12		ND	70	0	0	0	0	0	0	30
		C	Yellow fibrous material	20		ND	0	88	0	0	0	0	0	12
		D	White plaster	65	Chrysotile	6	0	37	TR	0	0	0	0	55
					Amosite	2								
886-971119-MS-003	EM 318276	A	White paint	5		ND	0	0	0	0	0	0	0	100
		B	Silver foil	7		ND	0	0	0	0	0	0	0	100
		C	Gray fibrous material	18	Chrysotile	85	0	0	0	0	0	0	TR	15
		D	Gold fibrous material	25		ND	0	85	0	0	0	0	0	15
		E	White fibrous plaster	45	Chrysotile	6	0	37	0	0	0	0	0	55
					Amosite	2								
886-971119-MS-004	EM 318277	A	White paint	8	Chrysotile	TR	0	0	0	0	0	0	0	100
		B	Gray granular plaster	92		ND	0	0	TR	0	0	0	0	100
886-971119-MS-005	EM 318278	A	White fibrous woven material with white paint	5		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	95	Chrysotile	15	0	30	0	0	0	0	0	55
					Amosite	TR								

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47649-1
Client: Kaiser Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOOL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-006	EM 318279	A	White fibrous woven material with white paint	8		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	92	Chrysotile	15	0	30	0	0	0	0	0	55
					Amosite	TR								
886-971119-MS-007	EM 318280	A	White fibrous woven material with white paint	8		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	92	Chrysotile	15	TR	30	0	0	0	0	0	55
					Amosite	TR								
886-971119-MS-008	EM 318281	A	White fibrous woven material w/white paint & tan fibrous material	7		ND	50	0	0	0	0	0	0	50
		B	White fibrous plaster	93	Chrysotile	15	0	0	0	0	0	0	0	70
					Amosite	15								
886-971119-MS-009	EM 318282	A	White fibrous woven material with white paint	6		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	94	Chrysotile	15	0	30	0	0	0	0	0	55
					Amosite	TR								
886-971119-MS-010	EM 318283	A	White fibrous woven material with white paint	5		ND	80	0	0	0	0	0	0	20
		B	Grey fibrous plaster	95	Amosite	20	0	0	0	0	0	0	0	80

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47649-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-011	EM 318284	A	White fibrous woven material with white paint	5		ND	70	0	0	0	0	0	0	30
		B	Gray fibrous plaster	95	Amosite	20	0	0	0	0	0	0	0	80
886-971119-MS-012	EM 318285	A	Tan resin	100		ND	12	0	0	0	0	0	0	88
886-971119-MS-013	EM 318286	A	White fibrous material	1	Chrysotile	98	0	0	0	0	0	0	0	2
		B	White paint	4		ND	0	0	0	0	0	0	0	100
		C	White resinous material	95		ND	0	0	0	0	0	0	0	100
886-971119-MS-014	EM 318287	A	Brown resin	10	Trem-Act	TR	0	0	0	0	0	0	0	100
					Anthophyllite	TR	0	0	0	0	0	0	0	100
		B	Black resinous material	90		ND	0	0	0	0	0	0	0	100
886-971119-MS-015	EM 318288	A	Gray fibrous perlitic material with white paint	100		ND	25	35	0	0	0	0	0	40
886-971119-MS-016	EM 318289	A	Black tar	4		ND	0	0	0	0	0	0	0	100
		B	Tan/white tile	96	Chrysotile	5	0	0	0	0	0	0	0	95

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

NVLAP LAB NO. 1896

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

AIHA LAB I.D. 10768

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES Job: 47646 .47

To: H. Salomon

Company:

Fax Number: 966-4046

From: BL

Date: 11-24-97

Number of Pages: 5 (excluding cover sheet)

1987 - 1997
10
YEARS OF EXCELLENCE
Reservoirs Environmental Services, Inc.

Message:

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47646-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452, ME94AA
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOOL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-017	EM 318242	A	Blue/black paint	5		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	15		ND	0	0	0	0	0	0	0	100
		C	Tan granular plaster	80		ND	0	0	0	0	0	0	0	100
886-971119-MS-018	EM 318243	A	Tan paint w/white plaster	5	Chrysotile	2	0	0	0	0	0	0	0	98
		B	Tan granular plaster	95		ND	0	0	0	0	0	0	0	100
886-971119-MS-019	EM 318244	A	Gray fibrous plaster	35		ND	15	8	10	0	3	0	0	64
		B	Multicolored tile	65		ND	0	0	0	0	0	0	0	100
886-971119-MS-020	EM 318245	A	Yellow resin	5		ND	0	0	0	0	0	10	0	90
		B	Brown resin	7		ND	0	0	0	0	0	3	0	97
		C	Tan resinous material	88		ND	0	0	0	0	0	0	0	100
886-971119-MS-021	EM 318246	A	White fibrous material w/white paint	100	Amosite	4	TR	78	0	0	0	0	0	18
886-971119-MS-022	EM 318247	A	White paint	10		ND	0	98	0	0	0	0	0	2
		B	Yellow fibrous material	90		ND	0	0	0	0	0	10	0	90
886-971119-MS-023	EM 318248	A	White paint	8		ND	0	0	0	0	0	5	0	95
		B	Yellow fibrous material	92		ND	0	90	0	0	0	0	0	10

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PFK

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47646-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452, ME94AA
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-024	EM 318249	A	White fibrous woven material w/white paint	4		ND	90	0	0	0	0	0	0	10
		B	White fibrous plaster	96	Chrysotile	21	0	40	0	0	0	0	0	39
886-971119-MS-025	EM 318250	A	Black tar	5	Chrysotile	5	0	0	0	0	0	0	0	95
		B	Tan tile	95	Chrysotile	4	0	0	0	0	0	0	0	96

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Date QA

RFP-F 8791.33 (7/96)
Formerly RF-47530

RIN 98D0452

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464
Safety and Hygiene Chain of Custody Record and Analysis Request

47646

Name of Originator: Mike Schluterbusch Title: CAI Bldg/Ext: T130J/4215 Date: Nov 20, 1997 Page 2 of 2

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971119-MS-017	Asbestos/PLM		1455		B		Archive for Point Count	
018			1520					
019			1520					
020			1520					
021			1520					
022			1520					
023			1520					
024			1600					
886-971119-MS-025	Asbestos/PLM		1604		B		Archive for Point Count	

11/20/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	11/20/97 0825	[signature]	[signature]	1455 11/21/97
[signature]	[signature]	1505 11/24/97	[signature]	[signature]	1610 11/21/97

Report and Billing Instruction

Kaiser-Hill	☐	Verbal To: 966-4046
RMRS	☒	Fax To: 966-6538
SSOC	☐	Report To:
DynCorp	☐	Bill To:
WSI	☐	P.O.#/Release: HC94MA
		Lab: Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments: Rcvd sealed Bags Signed off per Bags

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47647-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452, ME94AA
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-042	EM 318251	A	White paint	3		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	7		ND	100	0	0	0	0	0	0	0
		C	White plaster (mud)	20		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	70		ND	2	0	0	0	0	0	0	98
886-971121-MS-043	EM 318252	A	White paint	2		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	5		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	15		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	78		ND	2	0	0	0	0	0	0	98
886-971121-MS-044	EM 318253	A	Tan paint	2		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	98	0	0	0	0	0	0	2
		C	Blue foam	10		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	78		ND	3	0	0	0	0	0	0	97
886-971121-MS-045	EM 318254	A	Black tar	3		ND	0	0	0	0	0	0	0	100
		B	Yellow resin	7		ND	0	0	0	0	0	0	0	100
		C	Brown tile	90	Chrysotile	9	0	0	0	0	0	0	0	91

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PFK

Date OA

RFP F 3781.32 (7/85)
Formerly RF-47630

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

47647

RIN 98D0452

Name of Originator: Mike Schluterbusch Title: CAI Bldg/Ext: T130J/4215 Date: Nov 21, 1997 Page 2 of

SAMPLE NUMBER Bldg/Y/MD/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971121-MS-042	PLM/Asbestos		1145		B	Archive for Point Count		
-043	↓		1145		↓	↓		
-044			1202					
886-971121-MS-045			1202					

11/21/97

Relinquished by	Received by	Time/Date 1455	Relinquished by	Received by	Time/Date 1505 11/21/97
Relinquished by	Received by	Time/Date 1610 11/21/97	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill	☐	Verbal To:	Mike Schluterbusch 966-6587
RMRS	☒	Fax To:	Hazi Solomon 966-4046 MS 11/21/97
SSOC	☐	Report To:	Mike
DynCorp	☐	Bill To:	
WSI	☐	P.O.#/Release:	ME94AA
		Lab:	Rocket

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ 24 Rush ☐ 2 Rush ☐ Other

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments: Received Sealed Bags Signed off of by 11/21/97

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

NVLAP LAB NO. 1896

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

AIHA LAB I.D. 10768

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES Job: 47648

To: Tom & Mike & Hap

Company: Kaiser Hill

Fax Number: 966-3400, 966-6538 + 966-4016

From: Peg

Date: 11/24

Number of Pages: 3 (excluding cover sheet)

1987 - 1997
10 YEARS OF EXCELLENCE
Reservoirs Environmental Services, Inc.

Message:

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47648-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452,
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-026	EM 318255	A	Black tar	8		ND	0	0	0	0	0	0	0	100
		B	White/tan tile	92	Chrysotile	4	0	0	0	0	0	0	0	96
886-971119-MS-027	EM 318256	A	Black tar	3		ND	0	0	0	0	0	0	0	100
		B	White/gray tile	97	Chrysotile	3	0	0	0	0	0	0	0	97
886-971119-MS-028	EM 318257	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	15		ND	0	0	0	0	0	0	0	100
		C	White granular plaster	40		ND	TR	0	0	0	0	0	0	100
		D	Blue foam	40		ND	0	0	0	0	0	0	0	100
886-971119-MS-029	EM 318258	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	10		ND	0	0	0	0	0	0	0	100
		C	Blue foam	35		ND	0	0	0	0	0	0	0	100
		D	White granular plaster	50		ND	0	0	0	0	0	0	0	100
886-971119-MS-030	EM 318259	A	Black tar	2		ND	0	0	0	0	0	0	0	100
		B	Tan resin	13		ND	TR	0	8	0	0	0	0	92
		C	White/gray tile	30	Chrysotile	3	0	0	0	0	0	0	0	97
		D	Blue tile	55	Chrysotile	5	0	0	0	0	0	0	0	95
886-971119-MS-031	EM 318260	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	95		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47648-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452,
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-032	EM 318261	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	10		ND	0	0	0	0	0	0	0	100
		C	White granular plaster	40		ND	TR	0	0	TR	0	0	0	100
		D	Blue foam	45		ND	0	0	0	0	0	0	0	100
886-971119-MS-033	EM 318262	A	Black tar	2		ND	0	0	0	0	0	0	0	100
		B	Tan resin	13		ND	2	0	2	0	0	0	0	96
		C	Red/white tile	35	Chrysotile	4	0	0	0	0	0	0	0	96
		D	White tile	50	Chrysotile	4	0	0	0	0	0	0	0	96
886-971119-MS-034	EM 318263	A	White fibrous material w/white paint	100	Amosite	8	0	75	0	0	0	0	0	17
886-971119-MS-035	EM 318264	A	White fibrous material w/white paint	100	Chrysotile	TR	0	80	0	0	0	0	0	20
886-971119-MS-036	EM 318265	A	Tan fibrous perlitic material w/white paint	100		ND	25	40	0	0	0	0	0	35
886-971119-MS-037	EM 318266	A	Black tar	5		ND	0	0	0	0	0	0	0	100
		B	Tan resin	10		ND	1	0	1	0	0	0	0	98
		C	Tan/brown tile	85	Chrysotile	8	0	0	0	0	0	0	0	92

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47648-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452,
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-038	EM 318267	A	Black tar	5		ND	0	0	0	0	0	0	0	100
		B	Tan resin	15		ND	2	0	2	0	0	0	0	98
		C	Tan/brown tile	80	Chrysotile	8	0	0	0	0	0	0	0	92
886-971119-MS-039	EM 318268	A	Multicolored paint	15		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	85		ND	0	0	0	0	0	0	0	100
886-971119-MS-040	EM 318269	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	7		ND	1	0	0	0	0	0	0	99
		C	Tan fibrous material	18		ND	97	0	0	0	0	0	0	3
		D	White fibrous plaster	70		ND	10	0	0	0	0	0	0	90
886-971119-MS-041	EM 318270	A	White paint w/white plaster (mud)	7		ND	0	0	0	0	0	0	0	100
		B	Tan fibrous material	28		ND	95	0	0	0	0	0	0	5
		C	White plaster (drywall)	65		ND	5	0	0	0	0	0	0	95

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Date QA

NVLAP LAB NO. 1696

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

IHA LAB I.D. 10768

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES Job: 47789

To: Tom S., Hop, + Mike S.

Company: Kaiser

Fax Number: 9166 3400 - 4046 - 6538

From: PJ

Date: 12/2

Number of Pages: 5 (excluding cover sheet)

1987 - 1997
10
YEARS OF EXCELLENCE
Reservoirs Environmental Services, Inc.

Message:

RES Job #
Mike

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

RFP F 3291.32 (7/95)
Formerly RF-47530

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464

RIN 98D0452

Safety and Hygiene Chain of Custody Record and Analysis Request 47729

Name of Originator: Mike Schluterbusch Title: CAI Bldg/Ext: T130J/4215 Date: Nov 24, 1997 Page 1 of 2

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971121-MS-046	PLM/Asbestos		0900		B	Archive for Point Count		
047			0912					
048			0923					
049			0955					
050			1000					
051			1010					
052			1102					
053			1045					
054			1045					
055			1055					
056			1051					
057			1027					
058			1110					
059			1114					
060			1131					
886-971121-MS-061	PLM/Asbestos		1141		B	Archive for Point Count		

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	1600 11/24/97	[signature]	[signature]	1700 11-25-97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instructions

- Kaiser-Hill ☐ Verbal To: [illegible] 966-4046
- RMRS ☒ Fax To: Mike Schluterbusch 966-6598
- SSOC ☐ Report To: K-H
- DynCorp ☐ Bill To: K-H
- WSI ☐ P.O.#/Release: ME94AA1
- Lab: Rocmar

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☒ Other 3-5 days

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RFP F 3791.32 (7/95)
Formerly RF-47530

RIN 98D0452

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464

Safety and Hygiene Chain of Custody Record and Analysis Request

47725

Name of Originator: Mike Schluterbusch Title: CAI Bldg/Ext: T130J/4215 Date: Nov 24, 1997 Page 2 of 2

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	P A B	Personal Area Bulk	REMARKS	Lab Number
886-971121-MS-062	PLM/Asbestos		1150				Archive for Point Count	
886-971121-MS-063	PLM/Asbestos		1159				Archive for Point Count	

11/25/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
M Schluterbusch	Paul D. McNally	1600 11/25/97	Paul D. McNally		1700 11-25-97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill	☐	Verbal To:	H. Schlueter, 966-6627
RMRS	☒	Fax To:	M. Schluterbusch 966-6538
SSOC	☐	Report To:	K-H
DynCorp	☐	Bill To:	K-H
WSI	☐	P.O.#/Release:	ME 94MA
		Lab:	Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☐ 24 Rush ☐ 2 Rush ☒ Other 3-5 days

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47729-1
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452,
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-046	EM 318841	A	Gray granular plaster	1		ND	0	0	0	0	0	0	0	100
		B	White plaster w/multicolored paint	4		ND	97	0	0	0	0	0	0	3
		C	Tan fibrous material	15	Chrysotile	TR	0	0	0	0	0	0	0	100
		D	Blue foam	15		ND	0	0	0	0	0	0	0	100
		E	White plaster	65		ND	8	0	0	0	0	0	0	92
886-971121-MS-047	EM 318842	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	20		ND	0	0	0	0	0	0	0	100
		C	Blue foam	20		ND	0	0	0	0	0	0	0	100
		D	White granular plaster	55		ND	TR	0	0	0	0	0	0	100
886-971121-MS-048	EM 318843	A	White plaster	3	Chrysotile	5	0	0	0	0	0	0	0	95
		B	Multicolored paint	7		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	90		ND	0	0	0	0	0	0	0	100
886-971121-MS-049	EM 318844	A	Multicolored resin w/white paint	15	Trem-Act	TR	0	0	0	0	4	4	0	92
		B	Brown resinous material	85		ND	0	0	0	0	0	0	0	100
886-971121-MS-050	EM 318845	A	Multicolored paint	10		ND	0	0	0	0	0	0	0	100
		B	White plaster	30		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	60		ND	TR	0	0	0	0	0	0	100
886-971121-MS-051	EM 318846	A	Tan/brown resin w/pink paint	10	Trem-Act	TR	0	0	0	0	4	1	0	95
		B	Brown resinous material	90		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47729-1
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452,
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-052	EM 318847	A	White fibrous material w/white paint	100	Amosite	10	0	70	0	0	0	0	0	20
886-971121-MS-053	EM 318848	A	White plaster	1	Chrysotile	3	0	0	0	0	0	0	0	97
		B	Multicolored paint	7		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	92		ND	0	0	0	0	0	0	0	100
886-971121-MS-054	EM 318849	A	White plaster	2	Chrysotile	3	0	0	0	0	0	0	0	97
		B	Multicolored paint	6		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	92		ND	0	0	0	0	0	0	0	100
886-971121-MS-055	EM 318850	A	Black tar	8		ND	0	0	0	0	0	0	0	100
		B	Gray/multicolored tile	92	Chrysotile	3	0	0	0	0	0	0	0	97
886-971121-MS-056	EM 318851	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	10		ND	0	0	0	0	0	0	0	100
		C	Blue foam	35		ND	0	0	0	0	0	0	0	100
		D	Gray granular plaster	50		ND	0	0	0	0	0	0	0	100
886-971121-MS-057	EM 318852	A	Black tar	5		ND	0	0	0	0	0	0	0	100
		B	Tan resin	10		ND	10	0	TR	0	0	0	0	90
		C	White tile	40	Chrysotile	5	0	0	0	0	0	0	0	95
		D	Tan tile	45	Chrysotile	5	0	0	0	0	0	0	0	95

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47729-1
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452,
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-058	EM 318853	A	Tan resin w/black tar	10		ND	0	0	0	0	0	0	0	100
		B	White tile	45	Chrysotile	5	0	0	0	0	0	0	0	95
		C	Blue tile	45	Chrysotile	8	0	0	0	0	0	0	0	92
886-971121-MS-059	EM 318854	A	Blue/white paint	3		ND	0	0	0	0	0	0	0	100
		B	White plaster	7		ND	0	0	0	0	0	0	0	100
		C	Blue foam	40		ND	0	0	0	0	0	0	0	100
		D	White granular plaster	50		ND	TR	0	0	TR	0	0	0	100
886-971121-MS-060	EM 318855	A	Black tar	1		ND	0	0	0	0	0	0	0	100
		B	White tile	14	Chrysotile	5	0	0	0	0	0	0	0	95
		C	Gray fibrous material w/white resin	40		ND	30	7	8	0	5	0	0	50
		D	Multicolored resinous tile	45		ND	0	0	0	0	0	0	0	100
886-971121-MS-061	EM 318856	A	Multicolored paint w/white plaster	6	Chrysotile	TR	0	0	0	0	0	0	0	100
		B	Gray granular plaster	94		ND	0	0	0	0	0	0	0	100
886-971121-MS-062	EM 318857	A	White plaster	5	Chrysotile	4	0	0	0	0	0	0	0	96
		B	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	90		ND	TR	0	0	0	0	0	0	100
886-971121-MS-063	EM 318858	A	Multicolored paint	7		ND	0	0	0	0	0	0	0	100
		B	White plaster	8	Chrysotile	5	0	0	0	0	0	0	0	95
		C	Gray granular plaster	85		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

NVLAP LAB NO: 1696

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

AIHA LAB I.D. 10755

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES Job: 47732

To: Tom, Hopi + Mike S.

Company: Kaiser Hill

Fax Number: 966-3400, 4046, 6538

From: Ply

Date: 12/1

Number of Pages: 3 (excluding cover sheet)

1987 - 1997
10
YEARS OF EXCELLENCE
Reservoirs Environmental Services, Inc.

Message:

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47732-1
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452, ME94AA
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-064	EM 318901	A	Silver foil w/white fibrous woven material	10		ND	0	5	0	0	0	0	0	95
		B	Tan fibrous material	10		ND	96	0	0	0	0	0	0	4
		C	Gold fibrous material	15		ND	0	80	0	0	0	0	0	20
		D	Black tar w/pink/white paint	65	Chrysotile	20	0	0	0	0	0	0	0	80
886-971124-MS-065	EM 318902	A	Yellow fibrous material	5		ND	0	80	0	0	0	0	0	20
		B	Silver foil w/tan fibrous material & white fibrous woven material	15		ND	60	10	0	0	0	0	0	30
		C	Black tar w/pink & white paint	80	Chrysotile	20	0	0	0	0	0	0	0	80
886-971124-MS-066	EM 318903	A	Yellow fibrous material	6		ND	0	80	0	0	0	0	0	20
		B	Tan fibrous material w/silver foil, white fibrous woven material	10		ND	60	15	0	0	0	0	0	25
		C	Black fibrous tar w/multicolored paint	85	Chrysotile	45	0	0	0	0	0	0	0	55
886-971124-MS-067	EM 318904	A	Multicolored resinous paint	30		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	70		ND	0	0	0	0	0	0	0	100
886-971124-MS-068	EM 318905	A	Gray granular plaster	15		ND	0	0	0	0	0	0	0	100
		B	Tan/green resinous paint	85		ND	0	0	0	0	0	0	0	100

ND = None Detected CELL = Cellulose ORG = Organic WOLL = Wollastonite GYP = Gypsum Analyst: PDL
TR = Trace, < 1% Visual Estimate Trem-Act = Tremolite-Actinolite BRUC = Brucite SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47732-1
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452, ME94AA
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-069	EM 318906	A	Gray granular plaster	30		ND	0	0	0	0	0	0	0	100
		B	Multicolored resinous paint	70		ND	0	0	0	0	0	0	0	100
886-971124-MS-070	EM 318907	A	Gray granular plaster	35		ND	0	0	0	0	0	0	0	100
		B	Gray plaster w/tan/white paint	65		ND	0	0	0	0	0	0	0	100
886-971124-MS-071	EM 318908	A	Gray granular plaster	40		ND	0	0	0	0	0	0	0	100
		B	Green plaster w/tan & white paint	60		ND	0	0	0	0	0	0	0	100
886-971124-MS-072	EM 318909	A	Gray granular plaster	25		ND	0	0	0	0	0	0	0	100
		B	Green plaster w/tan & white paint	75		ND	0	0	0	0	0	0	0	100
886-971124-MS-073	EM 318910	A	Gray granular plaster	30		ND	0	0	0	0	0	0	0	100
		B	Green plaster w/tan & white paint	70		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RFP F 5791.32 (7/95)
Formerly RF-47530

Rocky Flats Environmental Technology Site
Golden, CO 80402-0464

RIN 98D0452

Safety and Hygiene Chain of Custody Record and Analysis Request

4973a

Name of Originator: Hop i Salomon / Mike Schlafenbach Title: CAI Bldg/Ext: T130J/4215 Date: Nov 25, 1997 Page 1 of

SAMPLE NUMBER Bldg/Y/M/D/P#/S#	ANALYZE FOR	VOLUME liters	SAMPLE TIME/	MEDIA	PAB	Personal Area Bulk	REMARKS	Lab Number
886-971124-MS-064	PLM/Asbestos		0851		B		Archive for Point Count	
-065			0845					
-066			0835					
-067			0916					
-068			0920					
-069			0935					
-070			1013					
-071			1002					
-072			0945					
886-971124MS-073	PLM/Asbestos		0950		B		Archive for Point Count	

11/25/97

Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
[signature]	[signature]	1600 11/25/97	[signature]	[signature]	1700 11-25-97
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date
Relinquished by	Received by	Time/Date	Relinquished by	Received by	Time/Date

Report and Billing Instruction

Kaiser-Hill	☐	~~Verbal~~ FAX To:	Hop i Salomon 966-4096
RMRS	☒	Fax To:	M. Schlafenbach 966-6538
SSOC	☐	Report To:	K-H
DynCorp	☐	Bill To:	K-H
WSI	☐	P.O.#/Release:	ME94AA
		Lab:	Reservoir

Analysis Request

Industrial Hygiene Sample
☐ Standard Service ☐ Rush ☐ Other

Asbestos Samples
☐ Standard Service ☒ 24 Rush (IS 11/25/97) ☐ 2 Rush ☒ Other 3-5 days

Seal# (Release #) RIN 98D0452
Condition of Seal: ☐ Broken ☐ Unbroken
Signature:
Comments:

White - Return to Originator Yellow - Lab Copy Green - Sample Custodian Blue - Originator

NVLAP LAB NO. 1836

AIHA LAB I.D. 10768

ASBESTOS: TEM, PCM, PLM, SEM
METALS: AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES Job #: 479604

To: Tom S, Hopi + Mike S.

Company: Kaiser

Fax Number: 9663400, 4046 + 6538

From: Peg

Date: 12/9

Number of Pages: 1 (excluding cover sheet)

1987 - 1997
10
YEARS OF EXCELLENCE
Reservoirs Environmental Services, Inc.

Message:

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47964-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: December 08, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-074	EM 320266	A	Multicolored paint w/trace gray plaster	3	Chrysotile	TR	0	0	0	0	0	0	0	100
		B	Gray granular plaster	97		ND	0	0	0	0	0	0	0	100
886-971124-MS-075	EM 320267	A	Gray granular plaster w/gray paint	100		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Data QA

PROPERTY/WASTE RELEASE EVALUATION

PRE Number: 971119-T130B-002 Charge Number: ME92AARC

EXTENDED: EXPIRES:

PART I	SENDER/CUSTODIAN
Description of Property/Waste To Be Released/Transferred:	**One hundred (100) bulk asbestos and air samples for asbestos analysis. See attached chain of custody for identification and attached contamination survey results.**
Property's Current Location:	**Building 886.**
Property's Destination:	**Reservoirs Environmental Services, 1827 Grant Street, Denver, CO 80203.**
Property's New Recipient/Custodian:	**Reservoirs Environmental Services.**
Property History/Process Knowledge:	**These one hundred bulk asbestos and air samples listed above were generated for asbestos characterization on the 886 cluster.**
Has the specified property/waste ever been in an RMMA or contacted DOE controlled radioactive materials?	**Unknown.** COPY

ACKNOWLEDGEMENT:

By signing below, the sender/custodian verifies the information above to be true and correct.

(1) Samples shall be shipped in accordance with 49 CFR (DOT) requirements.

(2) The receiving laboratory holds the necessary NRC/State license for the radionuclides being shipped; said license shall be formally documented, retrievable and traceable to each sample shipped.

(3) Paragon Analytic is licensed to handle nuclear material under Colorado Department of Public Health and Environment Nuclear Material License #847-02, Expiration Date See attached letter for comfirmation/renewal.

[redacted] [redacted] Date: 11/20/97 Ext: 6047 Pager: N/A

PART II RADIOLOGICAL ENGINEERING

Radiological Survey for removable and total contamination on the exterior of the package:

1. **Alpha** 2. **Beta/gamma**

Radiological Survey for dose rate on the exterior of the package:

1. **Gamma**

SPECIFIC REQUIREMENTS AND/OR COMMENTS: The Radiological Control Technician (RCT) shall perform contamination surveys on the area where samples were taken. Surveys will be performed on shipping container (package) surfaces per 49 CFR protocols. Results of radiation level on contact shall be less than .5 millirem/hour (total). This evaluation does not constitute an unrestricted release of the specified bulk asbestos and air samples from the Department of Energy radiological controls, i.e. the specified building material samples are only being provided with authorization for transport in accordance with Department of Trans-portation 49 CFR requirements. The Sender/Custodian shall provide a copy of the completed contamination surveys for approval.

[redacted] Date: 11/20/97 Ext.: 8148 Pager: 3977

APPROVAL FOR TRANSFER/SHIPMENT

The property samples specified above may be transferred to the destination indicated in Part 1 of this Release Evaluation.

[redacted] Date: 11/21/97 Ext.: 8451 Page: 5888

LOG# PRE# 971119-T130B-002

RADIOLOGICAL OPERATIONS CONTAMINATION SURVEY FORM

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
1					
2		<60	<205	<60	<455
		<60	<205	<60	<455

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma

RADIOLOGICAL CONTAMINATION &/or DOSE SURVEY FORM (A, B, λ, η)

SURVEY/LOG# Special / Pre-Job	
P/WRE ____ ROUTINE ____	RAD. MT'L TRANSFER ____
R.W.P ____ OTHER XX	UNRESTRICTED RELEASE ____
BUILDING/LOCATION: 886	ROOM: 111, 106, 113, 107, 115
DATE: 11-20-97	TIME: 14:50

ITEM / SURVEY DESCRIPTION:

~~UNRESTRICTED RELEASE OF OFFICE EQUIPMENT~~ CB 11Dec97

COMMENTS:

— Pre —
See map, survey points labled in each room

Performed by (R.C.T.)

[redacted]

Removable Contamination Survey Instruments

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	1158	984		
Date Calib'd:	9-17-97	9-18-97		
Cal Due Date:	3-17-98	3-18-98		

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763	BC 869		
Date Calib'd:	10-6-97	9-29-97		
Cal Due Date:	4-6-98	3-29-98		

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	Ludlum		
Model:	DP-6	31		
Serial #:	1277			
Date Calib'd:	5-28-97			
Cal Due Date:	11-28-97			
Background:	α 1.0 β 553			
Efficiency:	α 22.8% β 29.5%			

Gamma / Neutron Survey Instruments

Mfg:	Ludlum	Eberline		
Model:	12-4	RO-20		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				

Reviewed by (Rad Op's Supervision)

[redacted]

LOG# _____

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable		Total Alpha 60 sec count	Total Beta/ Gamma
		Alpha	Beta/ Gamma		
1					
2		< 18	< 205	< 60	< 455
3		< 18	< 205	< 60	< 455
4		< 18	< 205	< 60	< 455
6		< 18	< 205	< 60	< 455
7		< 18	< 205	< 60	< 455
8		< 18	< 205	< 60	< 455
9		< 18	< 205	< 60	< 455
10		< 18	< 205	< 60	< 455
11		< 18	< 205	< 60	< 455
12		< 18	< 205	< 60	< 455
13		< 18	< 205	< 60	< 455
14		< 18	< 205	< 60	< 455
15		< 18	< 205	< 60	< 455
16		< 18	< 205	< 60	< 455
17		< 18	< 205	< 60	< 455
18		< 18	< 205	< 60	< 455
19		< 18	< 205	< 60	< 455
20		< 18	< 205	< 60	< 455
21		< 18	< 205	< 60	< 455
22		< 18	< 205	< 60	< 455
23		< 18	< 205	< 60	< 455
24		< 18	< 205	< 60	< 455
		< 18	< 205	< 60	< 455
		< 18	< 205	< 60	< 455

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable		Total Alpha 60 sec count	Total Beta/ Gamma
		Alpha	Beta/ Gamma		

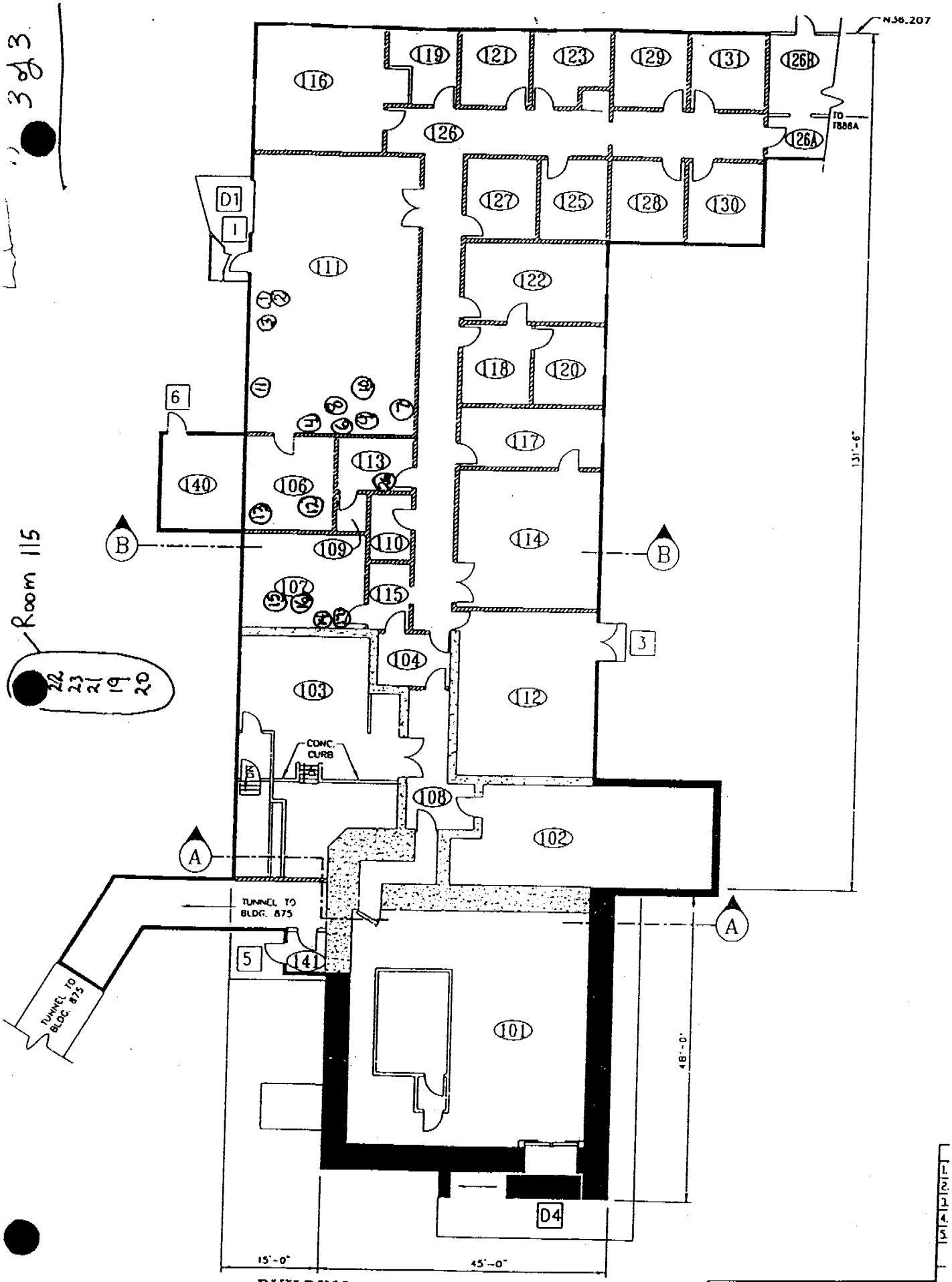
Sheet1

RADIOLOGICAL DOSE SURVEY FORM

LOG NUMBER: PRE# 971119-T130B-002

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
1	<0.5				N/A
2	<0.5				N/A
3					N/A
4					N/A
5					N/A
6					N/A
7					N/A
8					N/A
9					N/A
10					N/A
11					N/A
12					N/A
13					N/A
14					N/A
15					N/A
16					N/A
17					N/A
18					N/A
19					N/A
20					N/A
21					N/A
22					N/A
23					N/A
24					N/A
25					N/A
26					N/A
27					N/A
28					N/A
29					N/A
30					N/A
31					N/A
32					N/A
33					N/A
34					N/A
35					N/A
36					N/A
37					N/A
38					N/A

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
39					N/A
40					N/A
41					N/A
42					N/A
43					N/A
44					N/A
45					N/A
46					N/A
47					N/A
48					N/A
49					N/A
50					N/A
51					N/A
52					N/A
53					N/A
54					N/A
55					N/A
56					N/A
57					N/A
58					N/A
59					N/A
60					N/A
61					N/A
62					N/A
63					N/A
64					N/A
65					N/A
66					N/A
67					N/A
68					N/A
69					N/A
70					N/A
71					N/A
72					N/A
73					N/A
74					N/A
75					N/A
76					N/A



BUILDING 886–FIRST FLOOR PLAN

SCALE: 1"=10'-0"

MASTER DRAWING

MAINTAIN AS-BUILT PER COEM 6.6.2

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: Special - Pre-Job	
P/WRE ____	ROUTINE ____
R.W.P 886-97-5061	OTHER X
BUILDING/LOCATION 886	ROOM#: 111
DATE: 11-19-97	TIME: 12:00
ITEM DESCRIPTION: Pre Job	
COMMENTS: Pre See map on page 3	

STATUS:

____RELEASABLE ____NOT RELEASABLE

____POSTED ____NOT POSTED

✓ WITHIN LIMITS ____LIMITS EXCEEDED

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158		
Date Calib'd:	9-18-97	9-17-97		
Cal. due Date:	3-18-98	3-17-98		

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763	BC 869		
Date Calib'd:	10-6-97	9-29-97		
Cal. due Date:	4-6-98	3-29-98		

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:	1277			
Date Calib'd:	5-28-97			
Cal Due Date:	11-28-97			
Background:	α 0.0 β 513			
Efficiency:	α 22.8% β 27.5%			

Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:	N/A	N/A		

LOG# _____

RADIOLOGICAL OPERATIONS COTAMINATION SURVEY FORM

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma
1	Condensate Tank	<18	<205	<60	<455
2	↓	<18	<205	<60	<455
3	↓	<18	<205	<60	<455
4	Black WALL	<18	<205	<60	<455
5	Chiller return elbow	<18	<205	<60	<455
6	Chiller return valve	<18	<205	<60	<455
7	Chiller Supply elbow	<18	<205	<60	<455
8	Steam Supply straight	<18	<205	<60	<455
9	Steam Supply Tee	<18	<205	<60	<455
10	Steam supply straight	<18	<205	<60	<455
11	Steam Supply Straight	<18	<205	<60	<455

Survey results (DPM/100CM2)

Swipe #	Location/description	Removable Alpha	Removable Beta/ Gamma	Total Alpha 60 sec count	Total Beta/ Gamma

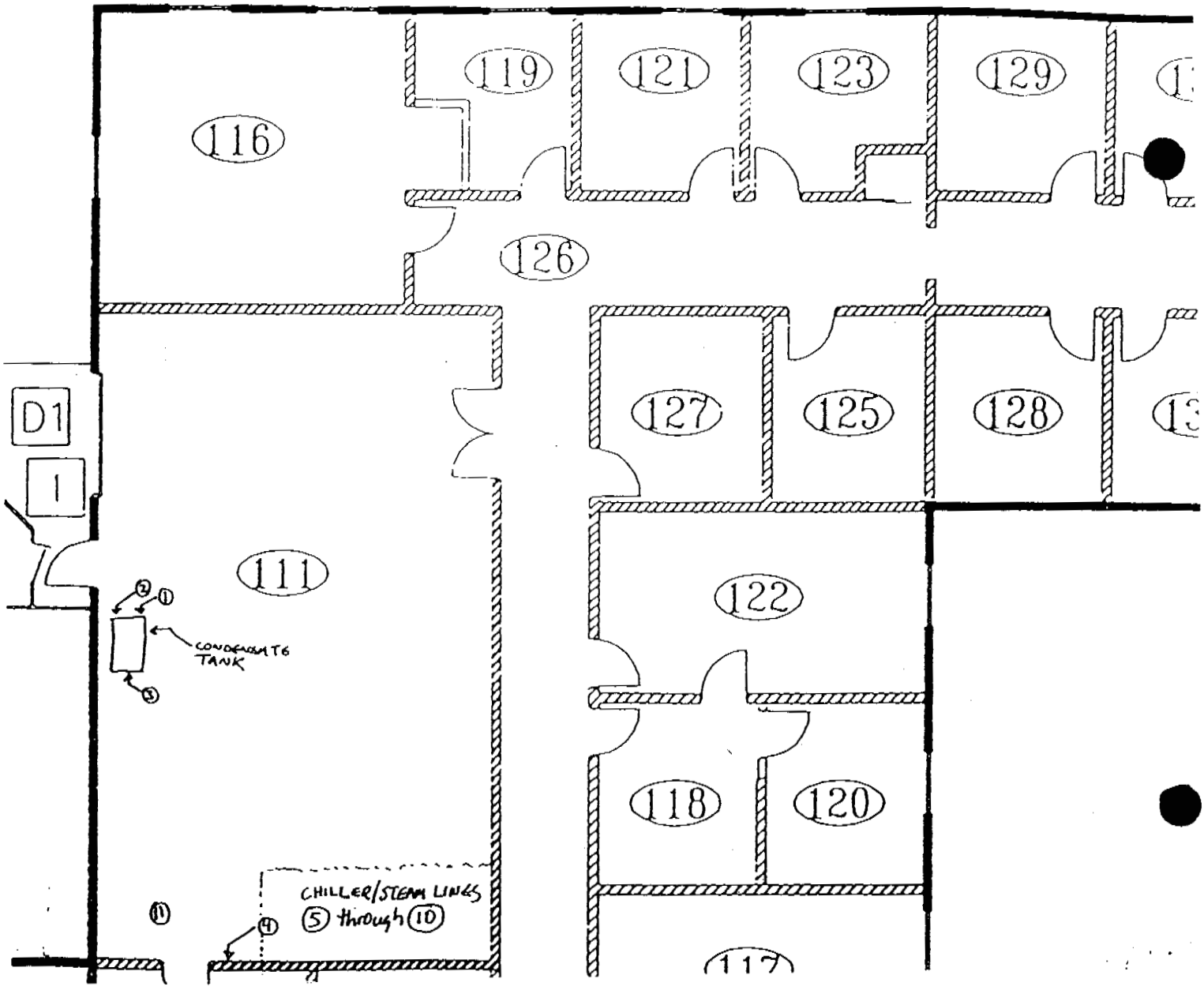
①	886-971119-MS-001	CONDENSATE TANK	MUD + CANVAS
②	002		
③	003		
④	886-971119-MS-004	Block WALL	Mortar, Skim
⑤	886-971119-MS-005	Chiller Return Elbow	MUD fitt
⑥	006	chiller Return ~~straight~~ VALVE	~~Block~~ MUD as 9/14/97
⑦	007	Chiller Supply Elbow	MUD
⑧	886-971119-MS-008	Steam Supply Straight	Block
⑨	009	steam supply Tee	MUD
⑩	D10	STEAM SUPPLY Straight	Block
⑪	886-971119-MS-011	STEAM SUPPLY STRAIGHT	BLOCK

N

BUILDING 886 RLCP SAMPLING LOCATIONS

Asbestos SAMPLING - Nov 19th 1997 Room 111

NOT TO SCALE



RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: PRE# 97119-T1303-002	
P/WRE X	ROUTINE
R.W.P	OTHER
BUILDING/LOCATION: 886	ROOM#:
DATE: 11-21-97	TIME: 9:30
ITEM DESCRIPTION: One bag with tubes of asbestos.	
COMMENTS: outer Bag is sealed with "custody seal." contents inside of bag not surveyed	
STATUS: X RELEASABLE ____ NOT RELEASABLE	
____ POSTED ____ NOT POSTED	
____ WITHIN LIMITS ____ LIMITS EXCEEDED	

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	1158			
Date Calib'd:	9-17-97			
Cal. due Date:	3-17-98			

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763			
Date Calib'd:	10-6-97			
Cal. due Date:	4-6-98			

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:	1277			
Date Calib'd:	5-28-97			
Cal Due Date:	11-28-97			
Background:	α 20 β 526			
Efficiency:	α 22.8% β 29.5%			

Mfg:	Ludlum	Ludlum	Eberline	
Model:	31	31	RO 20	
Serial #:			191	
Date Calib'd:			7-16-97	
Cal Due Date:			1-16-98	
Background:			< 0.5	
Efficiency:	N/A	N/A	N/A	

NVLAP LAB NO. 1896

AIHA LAB I.D. 10768

ASBESTOS - TEM, PCM, PLM, SEM
METALS - AA, FLAME/FURNACE
AIRBORNE PARTICULATES
SPECIAL PARTICLE ANALYSIS

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

Fax Transmittal

RES Job: 48002

To: Hopi & Mike

Company: Kaiser

Fax Number: 4046 & 6538

From: PO

Date: 12/10

Number of Pages: 1 (excluding cover sheet)

1987 - 1997
10 YEARS OF EXCELLENCE
Reservoirs Environmental Services, Inc.

Message:

Please call (303) 830-1986 or 800-678-7374 if transmission is incomplete.

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE 1. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 48002-1
Client: Kaiser-Hill Company, LLC
Client Project: FF332500 / 98D0601,
Date Samples Received: December 09, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-076	EM 320435	A	White paint	5		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	15		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	15		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	65		ND	1	3	0	0	0	0	0	96
886-971124-MS-077	EM 320436	A	White paint	5		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	20		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	65		ND	1	3	0	0	0	0	0	96
886-971124-MS-078	EM 320437	A	White paint	4		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	20		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	66		ND	1	3	0	0	0	0	0	96

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PFK

Data QA

Sampling Record

Project: 886 Cluster RCLP
Building: Entire CLUSTER
Room (if applicable): N.A.
Area is classified as (circle as appropriate): (Affected) Unaffected
Analysis (circle as appropriate): (Asbestos) PCB Swipe (PCB media) (Lead/Metals)

Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
All Building 886 RLCP	Samples collected between Nov 11, Dec 8, 1997 were	collected
using decontaminated	sampling equipment in accordance with section 4.5	of the
RLCP. This was ver	fied to me (Hopi Solomon) by MATT Dessi and	Mike
Schluterbush of SEG		

12/10/97

Signed
~~Evaluated/Sampled~~ by: Hopi Solomon
Date: 12/10/97

Reviewed by:
Date:

PCB samples collected Nov 11, 1997

Project: 886 Cluster RCLP
Building: 886
Room (if applicable): 111
Area is classified as (circle as appropriate): Affected Unaffected
Analysis (circle as appropriate): Asbestos PCB Swipe (PCB media) Lead/Metals

Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
886-971119-MD-001	Red Paint, 1.5 ft N of door 264, Some white undercoat and concrete	
886-971119-MD-002	Duplicate of -001	
886-971119-MD-003	Sprinkler system 6" Pipe, 6 ft South of door D-264 5 feet up from floor	
886-971119-MD-004	Gray Floor Paint 4' West of JB886 Elctrical Box	
886-971119-MD-005	Gasket material from vibration damper Sample in Plastic bag, would not fit in jar	12/4/97

Evaluated/Sampled by: M. Dossi / P. Valentine
Date: 11/20/97

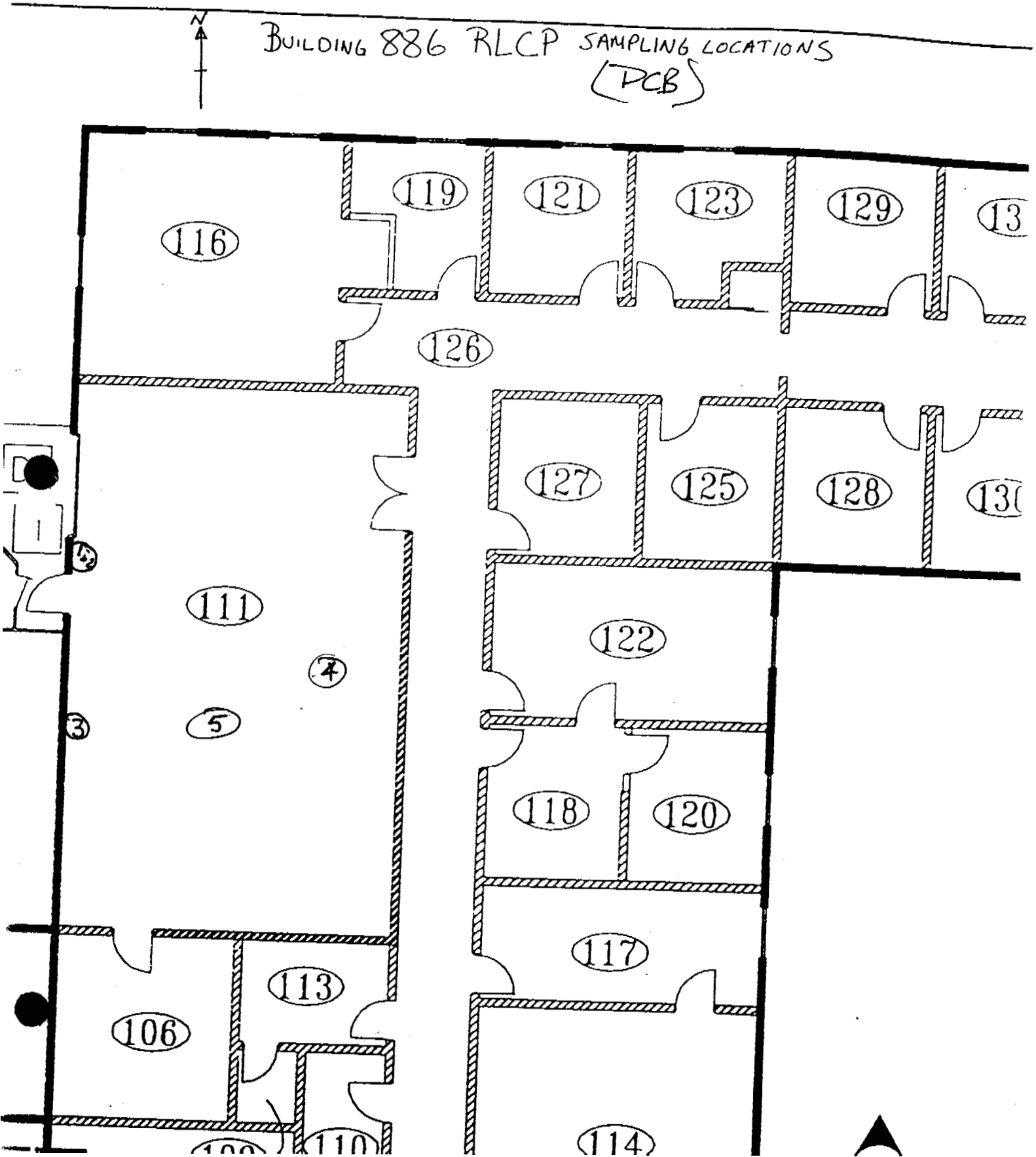
Reviewed by:
Date: 12/10/97

Note: Problems with the COC with respect to following proper APD protocol on bottle and event numbering are noted. This does not affect Sample integrity. 12/10/97

RIN = 98A0450

PCB samples collected Nov 20, 1997

(#) = sample locations that correspond to last 3 digits of the sample number (886-971119-MD-___).



SAMPLERS (Signature) M.H.D. / P.T.

REPORT IDENTIFICATION NUMBER (RIN) 98A0450

LAB/LOCATION: Paragon Analytics

RFETS CONTRACTOR SEG

ROCKY FLATS
ENVIRONMENTAL TECHNOLOGY SITE
CHAIN OF CUSTODY NUMBER N/A

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4°C	NaOH	HNO3	H2 SO4	HCl	Analytes: RCRAs (8081) SS03B006
11/20/97	1000	001	001	886-971119-MD-001		Jar	Paint	✓					X
11/20/97	1000	001	002	886-971119-MD-002		Jar	Paint	✓					X
11/20/97	1000	001	003	886-971119-MD-003		Jar	Paint	✓					X
11/20/97	1000	001	004	886-971119-MD-004		Jar	Paint	✓					X
11/20/97	1000	001	005	886-971119-MD-005		Bag	Gasket	✓					X

Relinquished By	Date	Time	Received By/Organization	Date	Time
P.T.	11/21/97	1625		11/21/97	1625

LABORATORY USE ONLY	Y/N
PCKG REC'D/CUSTODY SEALS INTACT	
SAMPLE LABELS/COCs AGREE	
TEMPERATURE AT TIME OF RECEIPT ___°C	

REMARKS: Faxed results by C.O.B 12/2 (Tues) Ok per Pat Preese

Charge #

Project Bldg 886-RLCR

Shipping Requirements: Overnight Delivery ☐ 2-Day Delivery ☐ Air B

APO COC 6/5/9

SAMPLERS (Signature) M.D.

PARA # 9711247

1 of 1

REPORT IDENTIFICATION NUMBER (RIN) 98A0450

LAB/LOCATION Paragon Analytics

RFETS CONTRACTOR SEG

ROCKY FLATS
ENVIRONMENTAL TECHNOLOGY SITE
CHAIN OF CUSTODY NUMBER N/A

	DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cool to 4°C	NaOH	HNO3	H2SO4	HCl	PCBs (8081) SS03B006
01	11/20/97	1000	001	001	886-971119-MD001		Jar	Paint	✓					*
02	11/20/97	1000	001	002	886-971119-MD002		Jar	Paint	✓					*
03	11/20/97	1000	001	003	886-971119-MD-003		Jar	Paint	✓					*
04	11/20/97	1000	001	004	886-971119-MD-004		Jar	Paint	✓					*
05	11/20/97	1000	001	005	886-971119-MD-005		Bag	Gasket	✓					*

Relinquished By	Date	Time	Received By/Organization	Date	Time
	11/21/97	1625		11/21/97	1625

PCKG REC'D/CUSTODY SEALS INTACT	Y
SAMPLE LABELS/COCs AGREE	Y
TEMPERATURE AT TIME OF RECEIPT 2 °C	

REMARKS: *Faxed results by COB 12/2 (Tues) Ok per Pat Breese

Charge #

Project Bldg 886-RLCR

Shipping Requirements: Overnight Delivery ☐ 2-Day Delivery ☐ Air Bill No.

APO COC 6/5/97

Aroclors

Method SW8081

Method Blank

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9711247
Client Name: Kaiser-Hill Co., L.L.C.
ClientProject ID: 98A0460
Reported on: Tuesday, December 02, 1997

Field ID: LABQC
Lab ID: PCB-OK9711247MB

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3665
Report Basis: NA

Date Collected: 24-Nov-97
Date Extracted: 24-Nov-97
Date Analyzed: 26-Nov-97
Prep Batch: 146166

Sample Aliquot: 2
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
12674-11-2	AROCHLOR-1016	350	ug/kg	350	U	
11104-28-2	AROCHLOR-1221	350	ug/kg	350	U	
11141-16-5	AROCHLOR-1232	350	ug/kg	350	U	
53469-21-9	AROCHLOR-1242	350	ug/kg	350	U	
12672-29-6	AROCHLOR-1248	350	ug/kg	350	U	
11097-69-1	AROCHLOR-1254	350	ug/kg	350	U	
11096-82-5	AROCHLOR-1260	350	ug/kg	350	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	247	ug/kg	280	99	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	245	ug/kg	250	98	47 - 137

U = Less than the Reporting Limit

Aroclors

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9711247
Client Name: Kaiser-Hill Co., L.L.C.
ClientProject ID: 98A0450
Reported on: Tuesday, December 02, 1997

Field ID: 98A0450-001.001
Lab ID: 9711247-1

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3665
Report Basis: AS RECEIVED

Date Collected: 20-Nov-97
Date Extracted: 24-Nov-97
Date Analyzed: 26-Nov-97
Prep Batch: 146166

Sample Aliquot: 2
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
12674-11-2	AROCHLOR-1016	350	ug/kg	350	U	
11104-28-2	AROCHLOR-1221	350	ug/kg	350	U	
11141-16-5	AROCHLOR-1232	350	ug/kg	350	U	
53469-21-9	AROCHLOR-1242	350	ug/kg	350	U	
12672-29-6	AROCHLOR-1248	350	ug/kg	350	U	
11097-69-1	AROCHLOR-1254	350	ug/kg	350	U	
11096-82-5	AROCHLOR-1260	320	ug/kg	350	J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	242	ug/kg	260	97	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	234	ug/kg	250	93	47 - 137

J = Estimated Value

Aroclors

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9711247
Client Name: Kaiser-Hill Co., L.L.C.
ClientProject ID: 98A0460
Reported on: Tuesday, December 02, 1997

Field ID: 98A0460-001,002
Lab ID: 9711247-2

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3665
Report Basis: AS RECEIVED

Date Collected: 20-Nov-97
Date Extracted: 24-Nov-97
Date Analyzed: 26-Nov-97
Prep Batch: 145165

Sample Aliquot: 2
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
12674-11-2	AROCHLOR-1016	350	ug/kg	350	U	
11104-28-2	AROCHLOR-1221	350	ug/kg	350	U	
11141-16-5	AROCHLOR-1232	350	ug/kg	350	U	
53469-21-9	AROCHLOR-1242	350	ug/kg	350	U	
12672-29-6	AROCHLOR-1248	350	ug/kg	350	U	
11097-69-1	AROCHLOR-1254	350	ug/kg	350	U	
11096-82-5	AROCHLOR-1260	350	ug/kg	350	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	234	ug/kg	250	93	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	225	ug/kg	250	90	47 - 137

U = Less than the Reporting Limit

Aroclors

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9711247
Client Name: Kaiser-Hill Co., L.L.C.
ClientProject ID: 98A0450 Reported on: Tuesday, December 02, 1997

Field ID: 98A0450-001,003
Lab ID: 9711247-3

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3665
Report Basis: AS RECEIVED

Date Collected: 20-Nov-97
Date Extracted: 24-Nov-97
Date Analyzed: 26-Nov-97
Prep Batch: 146166

Sample Aliquot: 2
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
12674-11-2	AROCHLOR-1016	350	ug/kg	350	U	
11104-28-2	AROCHLOR-1221	350	ug/kg	350	U	
11141-16-5	AROCHLOR-1232	350	ug/kg	350	U	
53469-21-9	AROCHLOR-1242	350	ug/kg	350	U	
12672-29-6	AROCHLOR-1248	350	ug/kg	350	U	
11097-69-1	AROCHLOR-1254	350	ug/kg	350	U	
11096-82-5	AROCHLOR-1260	350	ug/kg	350	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	233	ug/kg	250	93	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	229	ug/kg	250	92	47 - 137

U = Less than the Reporting Limit

Aroclors

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9711247
Client Name: Kaiser-Hill Co., L.L.C.
ClientProject ID: 98A0460 Reported on: Tuesday, December 02, 1997

Field ID: 98A0460-001.004
Lab ID: 9711247-4

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3665
Report Basis: AS RECEIVED

Date Collected: 20-Nov-97
Date Extracted: 24-Nov-97
Date Analyzed: 26-Nov-97
Prep Batch: 146166

Sample Aliquot: 2
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
12674-11-2	AROCHLOR-1016	350	ug/kg	350	U	
11104-28-2	AROCHLOR-1221	350	ug/kg	350	U	
11141-16-5	AROCHLOR-1232	350	ug/kg	350	U	
53469-21-9	AROCHLOR-1242	350	ug/kg	350	U	
12672-29-6	AROCHLOR-1248	350	ug/kg	350	U	
11097-69-1	AROCHLOR-1254	350	ug/kg	350	U	
11096-82-5	AROCHLOR-1260	270	ug/kg	350	J	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	230	ug/kg	250	92	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	227	ug/kg	250	91	47 - 137

J = Estimated Value

Aroclors

Method SW8081

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9711247
Client Name: Kaiser-Hill Co., L.L.C.
ClientProject ID: 98A0450
Reported on: Tuesday, December 02, 1997

Field ID: 98A0450-001.000
Lab ID: 9711247-5

Sample Matrix: Solid
% Moisture: N/A
Cleanup Method: SW3665
Report Basis: AS RECEIVED

Date Collected: 20-Nov-97
Date Extracted: 24-Nov-97
Date Analyzed: 26-Nov-97
Prep Batch: 146166

Sample Aliquot: 2
Final Volume: 10
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
12674-11-2	AROCHLOR-1016	350	ug/kg	350	U	
11104-28-2	AROCHLOR-1221	350	ug/kg	350	U	
11141-16-5	AROCHLOR-1232	350	ug/kg	350	U	
53469-21-9	AROCHLOR-1242	350	ug/kg	350	U	
12672-29-6	AROCHLOR-1248	350	ug/kg	350	U	
11097-69-1	AROCHLOR-1254	350	ug/kg	350	U	
11096-82-5	AROCHLOR-1260	1000	ug/kg	350		

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
2051-24-3	DECACHLOROBIPHENYL	205	ug/kg	250	82	34 - 129
877-09-8	TETRACHLORO-M-XYLENE	250	ug/kg	250	100	47 - 137

Sampling Record

Project: 886 Cluster RCLP
Building: 886
Room (if applicable): See below
Area is classified as (circle as appropriate): Affected Unaffected
Analysis (circle as appropriate): Asbestos PCB Swipe PCB media Lead/Metals (Total metals)

Room	Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
103	98A0485-001.003	Paint Chips - light/dark purple on HEUN lines	
103	98A0485-002.003	Paint Chips - light/dark yellow on Skps ~~with brownish-red primer coat~~ HS 12/2/97	
103	98A0485-003.003	Paint Chips - green on electrical boxes and piping with brownish-red primer coat	
102	98A0485-004.003	Paint Chips - bright blue on shelving with light gray primer	
101	98A0485-005.003	Paint Chips - brown base paint on I-beams	
Entry to 101	98A0485-007.003	Paint Chip ~~eggshell, white and mint green~~ HS 12/2/97 white on mint green on grey on N wall in entryway	
Entry to 101	98A0485-008.003	Paint Chips ~~- battleship grey - both light and dark + applications~~ medium battleship - light battleship - dark battleship, orcage applications HS 12/2/97	on floor in entryway
Entry to 101	98A0485-010.003	Duplicate of 98A0485-007.003	
		12/2/97	
	98A0485-011.003	Paint on drywall ~~tape~~ guard shack B888 added 12-8-97 LK KK 12-8-97 from east exterior wall of restroom 5'6" from floor 1' North of door jam	

*001 Purple paint samples from Room 103 piping coming back with elevated rad readings 21 DPM, 45 DPM, ~500 DPM. Samples will be sent to the onsite 559 lab. Excess sample from TNU onsite combined into ~~bottle~~ bottle # 002. Onsite 559 recieve 10 tg of sample for both analyses (PCB + Total Metals)
KE 12-5-97

~~Evaluated/Sampled~~ Recorded by: [signature]
Date: 12/2/97

Reviewed by: Kristi Kelly
Date: 12-9-97

003 & 005 had excess sample from Rad screen added to respective sample jars

003.~~00 3~~ 002 bottle not used PCB + Metal
KK 12-9-97 Combined in 003.~~003~~ 003 to 559 lab
KE 12-9-97

Building 886 - CA SAMPLING (Rm 101, 102, 103)

Sampling Record

Project: 886 Cluster RCLP
Building: 886
Room (if applicable): see below
Area is classified as (circle as appropriate): Affected Unaffected
Analysis (circle as appropriate): Asbestos PCB Swipe PCB media Lead/Metals TCLP metals (except Hg)

Room	Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
entry to 101	98A0485-007.004	Core Sample, Concrete with, includes overlying eggshell, white sand mixt green paint	
entry to 101	98A0485-008.004	Core Sample, Concrete floor, includes overlying light and dark battleship grey paint	

12/9/97

Recorded
~~Evaluated/Sampled~~ by: [signature]
Date: 12/2/97

Reviewed by: Kristen Kelly
Date: 12-9-97

Building 886 - CA SAMPLING (Rm 101, 102, 103)
PCB Samples

Sampling Record

Project: 886 Cluster RCLP
Building: 886
Room (if applicable): See below
Area is classified as (circle as appropriate): Affected Unaffected
Analysis (circle as appropriate): Asbestos (PCB Swipe) (PCB media) Lead/Metals See below

Room	Sample Number (RIN - Event. bottle #'s)	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
103	98A0485 - 001.002	PCB media - Paint chips (light/dark purple) on HEUN liners	
103	98A0485 - 002.002	PCB media - Paint chips (light/dark yellow) on steps	
103	98A0485 - 003.002	PCB Media - Paint chips (green on electrical boxes + piping) with brownish red base coat	
102	98A0485 - 004.002	PCB Media - Paint chips (bright blue on shelving) with light gray primer	
101	98A0485 - 006.002	PCB media - Y bottom damper SW corner of room on large air mover, upper platform 12/11/97	
101	98A0485 - 009.002	PCB Hexane Swipe from hydraulic pump for the horizontal split blade, NE Quadrant of ro	

12/2/97

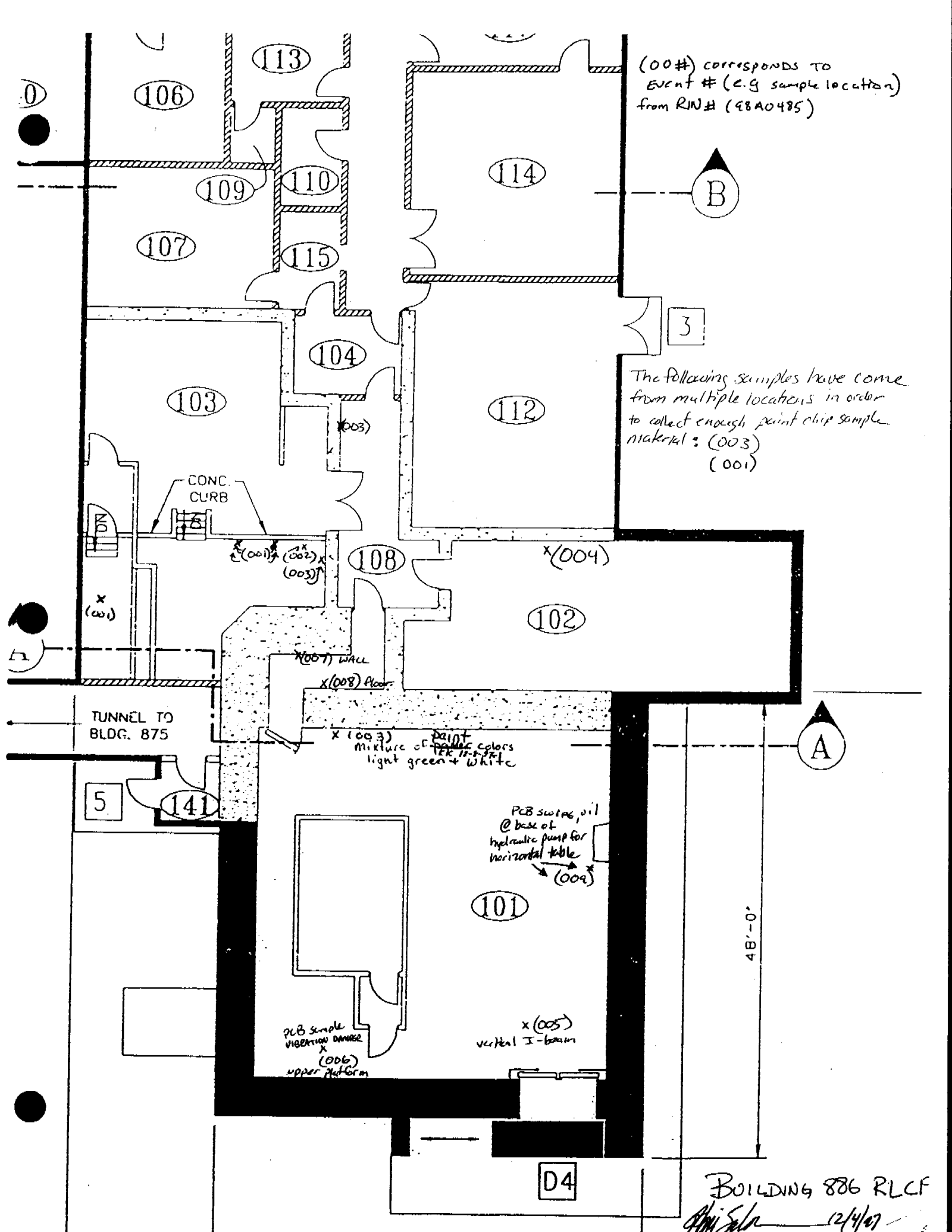
001.002 - Purple Paint composite in 1 bottle for TCLP + PCB's

KK 12-8-97
003 + ~~003~~ had excess sample from Rad Screen added to respective sample jars

KK
12-9-97 ~~003.002~~ jar contains
003.003 both PCB + Metals analysis
bottles 003.00
= 003.002 same sample weight

Recorded
~~Evaluated/Sampled~~ by:
Date: 12/2/97

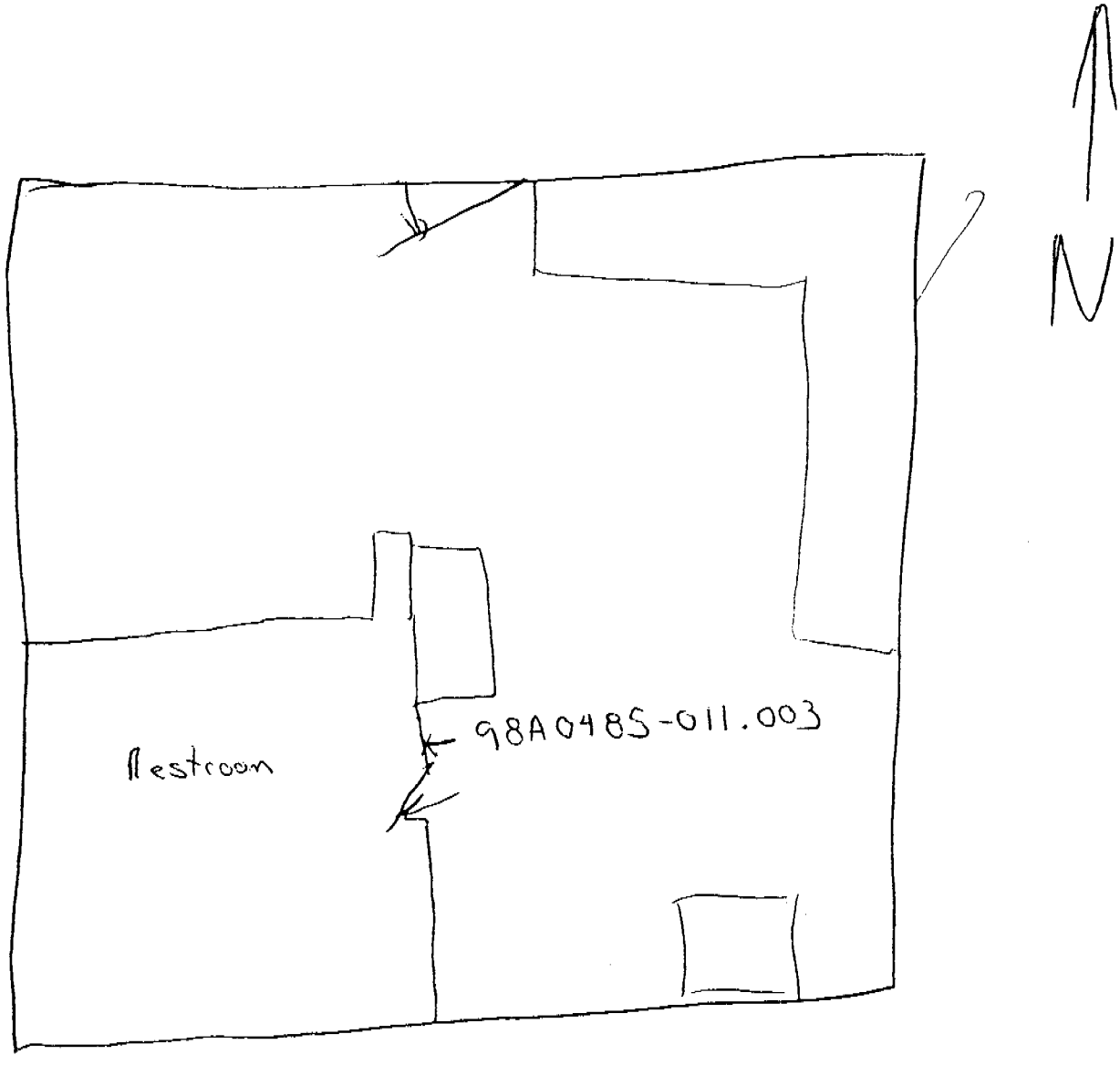
Reviewed by:
Date: 12-9-97


(00#) corresponds to event # (e.g sample location) from RIN# (98A0485)
The following samples have come from multiple locations in order to collect enough paint chip sample material: (003) (001)
113
106
109
110
114
B
107
115
3
104
103
112
(003)
CONC. CURB
(001)
(002)
(003)
108
x(004)
(001)
102
x(007) WALL
x(008) Floor
TUNNEL TO BLDG. 875
x (003) Mixture of paint colors light green + white
A
5
141
PCB sweep oil @ base of hydraulic pump for horizontal table
(009)
101
48'-0"
PCB sample VIBRATION DANGER x (006) upper platform
x(005) vertical I-beam
D4
BUILDING 886 RLCF
12/4/97

Lead Paint Sample Locations - Building 888

12/8/97

Sample Location - Schematic



Illustrated by: M Schluterbusch
Date: 12/8/97
Reviewed by: [signature]
Date: 12/9/97

RADIOLOGICAL CONTAMINATION &/or DOSE SURVEY FORM (A, B, λ, η)

SURVEY/LOG# 971119-T130B-001	
P/WRE X ROUTINE	RAD. MT'L TRANSFER
R.W.P ____ OTHER XX	UNRESTRICTED RELEASE
BUILDING/LOCATION: 886	ROOM: 111
DATE: 11-20-97	TIME: 1500

ITEM / SURVEY DESCRIPTION:

~~UNRESTRICTED RELEASE OF OFFICE EQUIPMENT~~

Survey of sealed blue top cooler of samples taken from building 886 Room 111.

COMMENTS:

PRE#971119-T130B-001

Survey of outside of cooler only.

Performed by (R.C.T.)

Removable Contamination Survey Instruments

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158		
Date Calib'd:	9-18-97	9-17-97		
Cal Due Date:	3-18-98	3-17-98		

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763	BC 869		
Date Calib'd:	10-6-97	9-29-97		
Cal Due Date:	4-6-98	3-29-98		

Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	Ludlum		
Model:	DP-6	31		
Serial #:	1243			
Date Calib'd:	9-15-97			
Cal Due Date:	3-15-98			
Background:	α2.0 cpm β681 cpm			
Efficiency:	α22.8% β31.8%			

Gamma / Neutron Survey Instruments

Mfg:	Ludlum	Eberline	Victoreen	
Model:	12-4	RO-20	450G	
Serial #:			1662	
Date Calib'd:			8-12-97	
Cal Due Date:			2-12-98	
Background:			< 0.5 mR/hr	

Reviewed by (Rad Op's Supervision)

RADIOLOGICAL DOSE SURVEY FORM

LOG NUMBER: PRE # 971119-T130B-001

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
1	<0.5	NA	NA	N	N/A
2	<0.5	NA	NA	N	N/A
3	<0.5	NA	NA	N	N/A
4	<0.5	NA	NA	N	N/A
5	<0.5	NA	NA	N	N/A
6	<0.5	NA	NA	N	N/A
7					N/A
8					N/A
9					N/A
10					N/A
11					N/A
12					N/A
13					N/A
14					N/A
15					N/A
16					N/A
17					N/A
18					N/A
19					N/A
20					N/A
21					N/A
22					N/A
23					N/A
24					N/A
25					N/A
26					N/A
27					N/A
28					N/A
29					N/A
30					N/A
31					N/A
32					N/A
33					N/A
34					N/A
35					N/A
36					N/A
37					N/A
38					N/A

	GAMMA X-RAY	NEUT.	TOTAL GAMMA NEUT.	AREA POSTED Y/N	BETA SHALLOW DOSE (OW-CW)4
39					N/A
40					N/A
41					N/A
42					N/A
43					N/A
44					N/A
45					N/A
46					N/A
47					N/A
48					N/A
49					N/A
50					N/A
51					N/A
52					N/A
53					N/A
54					N/A
55					N/A
56					N/A
57					N/A
58					N/A
59					N/A
60					N/A
61					N/A
62					N/A
63					N/A
64					N/A
65					N/A
66					N/A
67					N/A
68					N/A
69					N/A
70					N/A
71					N/A
72					N/A
73					N/A
74					N/A
75					N/A
76					N/A

SAMPLERS (Signature): M N Schluterbusch / [signature] /

REPORT IDENTIFICATION NUMBER (RIN) 98A0485

LAB/LOCATION: RECRL PA Clion

RFETS CONTRACTOR RMRS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4°C	NaOH	HNO3	H2 SO4	HCl	Analytes: SS05B022	Total metals except Hg	SS08B007	TCLP metals except Hg
~~12/5/97~~	~~1345~~	001	003	KK	12-5-97 Building 886	30 ml Plastic	Paint Chips	X					C			
12-2-97	1525	002	003				Paint Chips	X					C			
		003	003	KK 12-5-97			Paint Chips	X					C			
12/4/97	1453	004	003				Paint Chips	X					C			
		005	003		KK 12-5-97		Paint Chips	X					C			
12/2/97	0900	007	003				Paint Chips	X					C			
12/2/97	0840	007	004			250 ml Glass	Concrete	X						C		
12/2/97	1000	008	003			30 ml Plastic	Paint Chips	X					C			
12/2/97	0927	008	004			250 ml Glass	Concrete	X						C		
12/2/97	0945	010	003		Building 886	30 ml Plastic	Paint Chips	X					C			

12/4/97

12/5/97

Relinquished By:	Date	Time	Received By/Organization	Date	Time
[signature]	12/5/97	1620	[signature]	12/5/97	1530
Kristen Kelly	12-5-97	1544	[signature]	12/5/97	1545

LABORATORY USE ONLY	Y/N
PCKG REC'D/CUSTODY SEALS INTACT	
SAMPLE LABELS/COCs AGREE	
TEMPERATURE AT TIME OF RECEIPT __ °C	

REMARKS:

Charge # 886020SA

Project Bld 886 RLCP

Shipping Requirements: Overnight Delivery ☒ 2-Day Delivery ☐ Air Bill No

SAMPLERS (Signature) M Schluterbusch / K. Kelly

REPORT IDENTIFICATION NUMBER (RIN) 98A0485 LAB/LOCATION: RECRL PA

RFETS CONTRACTOR RMRS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4°C	NaOH	HNO3	H2 SO4	HCl	Analyses: SS05B022	Total Metals except Hg
~~12-8-97~~	~~0922~~	~~003~~	~~003~~	KK 12-8-97	~~Building 886~~	~~30ml Plastic~~	Paint Chips	X					U	U
12-8-97	0945	005	003		Building 886	30ml Plastic	Paint Chips	X					U	U

KK 12-8-97

KK 12-8-97

Relinquished By:	Date	Time	Received By/Organization	Date	Time
Kristi Kelly RTG	12-8-97	0900	K Mahr	12/9/97	9 00

LABORATORY USE ONLY	Y/N
PCKG REC'D/CUSTODY SEALS INTACT	
SAMPLE LABELS/COCs AGREE	
TEMPERATURE AT TIME OF RECEIPT ___°C	
Charge # 886020SA	
Project Bldg 886 ~~RLCP~~ RLCP	

REMARKS: Ultra Rush TAT

Shipping Requirements: Overnight Delivery ☒ 2-Day Delivery ☐ Air Bill No.

SAMPLERS (Signature) M Schluterbusch / [signature] / K. Kelly

REPORT IDENTIFICATION NUMBER (RIN) 98A0485

LAB/LOCATION: RECRA Inc. (RA)

RFETS CONTRACTOR RMRS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4° C	NaOH	HNO3	H2 SO4	HCl	Analytes: SS05B022	Total metals except Hg
12/2/97	1453	D11	003	KK 12-9-97	Building 888	250 ml G	Paint + Drywall	X					U	

12/2/97

Relinquished By:	Date	Time	Received By/Organization	Date	Time
Kristi Kelly	12-9-97	1300	K Mahe	12/9/97	1300

LABORATORY USE ONLY	Y/N
PCKG REC'D/CUSTODY SEALS INTACT	
SAMPLE LABELS/COCs AGREE	
TEMPERATURE AT TIME OF RECEIPT __ °C	
Charge # 8860205A	
Project 886 RLCP	

REMARKS:

Shipping Requirements: Overnight Delivery ☒ 2-Day Delivery ☐ Air Bill No.

SAMPLERS (Signature) MN Schlutenbauer [signature] I. K. Kelly (paperwork)

REPORT IDENTIFICATION NUMBER (RIN) 98A0485 LAB/LOCATION: 559 Lab

RFETS CONTRACTOR RMRS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4°C	NaOH	HNO3	H2 SO4	HCl	Analytes: SS05B022 (Except Hg)	Total Metals	SS03B006	PCBs
12-5-97	1345	001	002		Bldg 886	30ml Plastic	Paint Chips	X					KK 12-5-97	KK 12-5-97	KK 12-8-97	KK 12-8-97

Relinquished By:	Date	Time	Received By/Organization	Date	Time
[signature]	12-8-97	0915	[signature] ASI	12-8-97	0915

LABORATORY USE ONLY — Y/N

- PCKG REC'D/CUSTODY SEALS INTACT
- SAMPLE LABELS/COCs AGREE
- TEMPERATURE AT TIME OF RECEIPT ___°C

REMARKS: ~~10 12-8-97~~ ~~Day~~ ~~TAT~~ KK 12-8-97 As Soon As Possible

KK 12-8-97

ASI Treatment only

Charge # 88602OSA

Project Bldg 886 RLCP

Shipping Requirements: Overnight Delivery ☐ 2-Day Delivery ☐ Air Bill No. Hand Deliver

SAMPLERS (Signature) M Schluterbusch / [signature] / K. Kelly

REPORT IDENTIFICATION NUMBER (RIN) 98A0485 LAB/LOCATION: 559

RFETS CONTRACTOR RMRS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4° C	NaOH	HNO3	H2 SO4	HCl	Analytes: SS05B022	Total Metals except Hg	SS03B006	PCBs
12-8-97	0922	003	~~883~~ KC 12-9-97		Bldg 886	30ml P	Paint Chips	X					U		U	

KK 12-8-97

Relinquished By:	Date	Time	Received By/Organization	Date	Time
Kristen Kelly	12-9-97	0850	D.L. Floyd	12-9-97	0850

LABORATORY USE ONLY	Y/N
PCKG REC'D/CUSTODY SEALS INTACT	
SAMPLE LABELS/COCs AGREE	
TEMPERATURE AT TIME OF RECEIPT ___ °C	

REMARKS: ASAP TAT

Charge # 886020 SA

Project Bldg 886 RLCP

Shipping Requirements: Overnight Delivery ☐ 2-Day Delivery ☐ Air Bill No. Hand Deliver

APO COC 6/5/97

SAMPLERS (Signature) M Schluterbusch K. Kelly

REPORT IDENTIFICATION NUMBER (RIN) 98A0485 LAB/LOCATION: Paragon (Para)

RFETS CONTRACTOR RMRS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4° C	NaOH	HNO3	H2 SO4	HCl	Analytes: SSU3B006	PCBs
12-2-97	1525	002	002	KK 12-8-97	Bldg 886	30ml P	Paint Chips	X					U	
12-4-97	1405	004	002				Paint Chips	X					U	
12-4-97	1422	006	002				Vibration Dampe	X					U	
12-8-97	0955	009	002			250ml G	Hexane Swipe	X					U	

KK 12-8-97

Relinquished By:	Date	Time	Received By/Organization	Date	Time
Ruth Kelly RTG	12-8-97	15:45	P. Valentinelli SEO	12/8/97	1545

LABORATORY USE ONLY	Y/N
PCKG REC'D/CUSTODY SEALS INTACT	
SAMPLE LABELS/COCs AGREE	
TEMPERATURE AT TIME OF RECEIPT __ °C	

REMARKS: Ultra Rush TAT

Charge # 886020SA

Project Bldg 886 RLCP

Shipping R[illegible]ments: Overnight Delivery ☐ 2-Day Delivery ☐ Air B[illegible] Hand Deliver

APO COC 6/5/97

COVER PAGE

INORGANIC ANALYSES DATA PACKAGE

Lab Name: Building 559 PA Inorganic Laboratories SOW No.: 7/93

Section: ICPAES

QC Report Number: SD120697.RJ*T SDG No.: DEC08

Lab Sample ID's beginning with 'X' are TCLP Extracts.

Sample No.	APO Sample I. D.	Lab Sample ID.
1	98A0485-001	Bldg 886 Paint Chips
2	98A0485-001 D	Bldg 886 Paint Chips Lab Duplicate
3	98A0485-003	Bldg 886 Paint Chips
4	R BLANK #1	Deionized Water Preparation Blank
5	CRM 020-050 STD	CRM 020-050 Solid Laboratory Control Standard
6	EPA QC #21 STD	EPA QC #21 Aqueous Laboratory Control Standard
7	EPA QC #7A STD	EPA QC #7A Aqueous Laboratory Control Standard

Were ICP Interelement Corrections applied? Yes/No Y

Were ICP Background Corrections applied? Yes/No Y

I have reviewed the following data for the Sample No.'s listed above.

Signature: Name: J. Pastovich, Jr.

Date: 12/9/97 Title: Analytical Chemist

Signature: Name:

Date: Title: Reviewer

Comments:

FAXED
12/9/97 MAS

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 1

Lab Sample ID: 98A0485-001 Bldg 886 Paint Chips

Section: ICPAES

Lab Sample I.D.s beginning with X' indicates TCLP Extract.

% Solids for Sample : 100.0000

Date Sampled: 12/5/97

SDG No. : DEC08

Lab Receipt Date: 12/8/97

QC Report No.: SD120897.RPT

Matrix: Water ____ Soil ____ Sludge ____ Other X

Elements Identified and Measured

Concentration Units: mg/Kg

Analyte	Concentration	C	Q	M
Aluminum	12121.3283	B		P
Antimony	21.0036	B		P
Arsenic	9.9876	U		P
Barium	63.1011	B		P
Beryllium	0.4994	U		P
Cadmium	9.9276	B		P
Calcium	23300.3945	B		P
Chromium	2190.6717			P
Cobalt	282.1174	B		P
Copper	56.8983	B		P
Iron	8098.9288	B		P
Lead	3878.6316			P
Magnesium	542.6617	B		P
Manganese	195.7463	B		P
Molybdenum	33.7778	B		P
Nickel	1412.3845	B		P
Phosphorus	3541.8727	B		P
Selenium	11.9850	U		P
Silver	2.9963	U		P
Strontium	10.9663	B		P
Thallium	15.0929	B	N	P
Titanium	1307.1960	B		P
Vanadium	11.2459	B		P
Zinc	7674.8065	B		P

Color Before: Purple Clarity Before: Cloudy

Color After: Yellow Clarity After: Clear

Texture:

Artifacts:

Comments: Sample = 100.00 % Solids. Total Metals Digestion only !

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 2

Lab Sample ID: 98A0485-001 D Bldg 886 Paint Chips Lab Duplicate

Section: ICPAES

Lab Sample I.D.s beginning with X' indicates TCLP Extract

% Solids for Sample : 100.0000

Date Sampled: 12/5/97

Lab Receipt Date: 12/8/97

SDG No. : DEC08

QC Report No.: SD120897.RPT

Matrix: Water ____ Soil ____ Sludge ____ Other X

Elements Identified and Measured

Concentration Units: mg/Kg

Analyte	Concentration	C	Q	M
Aluminum	1213.4226	B		P
Antimony	9.9950	U		P
Arsenic	9.9950	U		P
Barium	56.8016	B		P
Beryllium	0.4998	U		P
Cadmium	10.0850	B		P
Calcium	22808.1659	B		P
Chromium	3775.7221	B		P
Cobalt	289.7961	B		P
Copper	66.2569	B		P
Iron	14918.1509	B		P
Lead	3744.8476			P
Magnesium	612.2439	B		P
Manganese	335.5122	B		P
Molybdenum	37.6512	B		P
Nickel	2178.4306	B		P
Phosphorus	3507.4863	B		P
Selenium	11.9940	U		P
Silver	2.9985	U		P
Strontium	10.9345	B		P
Thallium	12.6837	B	N	P
Titanium	1284.3078	B		P
Vanadium	5.8171	B		P
Zinc	7555.4308	B		P

Color Before: Purple Clarity Before: Cloudy

Color After: Yellow Clarity After: Clear

Texture:

Artifacts:

Comments: Sample = 100.00 % Solids. Total Metals Digestion only !

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories Sample No.: 3

Lab Sample ID: 98A0465-003 Bldg 886 Paint Chips

Section: ICPAES

Lab Sample I.D.s beginning with 'X' indicates TCLP Extract.

% Solids for Sample : 100.0000

Date Sampled: 12/8/97

Lab Receipt Date: 12/9/97

SDG No. : DEC08

QC Report No.: SD120897.RPT

Matrix: Water ____ Soil ____ Sludge ____ Other X

Elements Identified and Measured

Concentration Units: mg/Kg

Analyte	Concentration	C	Q	M
Aluminum	30672.4794	B		P
Antimony	18.1678	B		P
Arsenic	17.1886	B		P
Barium	162.8564	B		P
Beryllium	0.4994	U		P
Cadmium	25.5481			P
Calcium	17390.4919	B		P
Chromium	1862.2871			P
Cobalt	107.3059	B		P
Copper	160.6042	B		P
Iron	5610.3171	B		P
Lead	7975.4207			P
Magnesium	3809.1156	B		P
Manganese	78.2522	B		P
Molybdenum	4.9936	U		P
Nickel	46.7715	B		P
Phosphorus	9329.6180	B		P
Selenium	11.9850	U		P
Silver	2.0963	U		P
Strontium	14.9014	B		P
Thallium	9.9875	U	N	P
Titanium	304.2707	B		P
Vanadium	11.5066	B		P
Zinc	14960.4594	B		P

Color Before: Green Clarity Before: Cloudy

Color After: Yellow Clarity After: Clear

Texture:

Artifacts:

Comments: Sample = 100.00 % Solids. Total Metals Digestion only !

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories

Lab Sample ID: R BLANK #1 Sample No.: 4

Section: ICPAES Deionized Water Preparation Blank

Lab Sample I.D.s beginning with X' indicates TCLP Extract.

% Solids for Sample : < 0.5000

Date Sampled: 12/9/97

Lab Receipt Date: 12/9/97

SDG No. : DEC08

QC Report No.: SD120897.RPT

Matrix: Water X
Soil
Sludge
Other

Elements Identified and Measured

Concentration Units: mg/L

Analyte	Concentration	C	Q	M
Aluminum	0.3000	U		P
Antimony	0.1000	U		P
Arsenic	0.1000	U		P
Barium	0.0500	U		P
Beryllium	0.0050	U		P
Cadmium	0.0200	U		P
Calcium	0.2000	U		P
Chromium	0.0500	U		P
Cobalt	0.0500	U		P
Copper	0.1000	U		P
Iron	0.2000	U		P
Lead	0.0600	U		P
Magnesium	0.2000	U		P
Manganese	0.0100	U		P
Molybdenum	0.0500	U		P
Nickel	0.0500	U		P
Phosphorus	0.5000	U		P
Selenium	0.1200	U		P
Silver	0.0300	U		P
Strontium	0.0100	U		P
Thallium	0.1000	U		P
Titanium	0.0200	U		P
Vanadium	0.0500	U		P
Zinc	0.1000	U		P

Color Before: Colorless Clarity Before: Clear

Color After: Colorless Clarity After: Clear

Texture:

Artifacts:

Comments: Sample < 0.50 % Solids. Total Metals Digestion only !

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories SAMPLE NO. 6

Lab Sample ID: EPA QC-21 Standard

Section: ICPAES

Lab Sample I.D.s beginning with 'X' indicates TCLP Extract.

% Solids (0 - N/A): 0.0000

Date Sampled: 12/9/97 SDG No.: DEC08

Lab Receipt Date: 12/9/97 QC Report No.: SD120897.RPT

Matrix: Water X Soil ____ Sludge ____ Other ____

Elements Identified and Measured

Concentration Units: (mg/L)

Analyte	Concentration	C	Q	M
Aluminum				P
Antimony	4.0970	B		P
Arsenic	4.0727	B		P
Barium				P
Beryllium	3.9167	B		P
Cadmium	3.9003			P
Calcium	3.7695	B		P
Chromium	3.8702	B		P
Cobalt	4.0116	B		P
Copper	3.8713	B		P
Iron	3.7805	B		P
Lead	4.2041	B		P
Magnesium	4.0673	B		P
Manganese	3.7126	B		P
Molybdenum	3.9522	B		P
Nickel	3.7976	B		P
Phosphorus				P
Selenium	3.9423			P
Silver				P
Strontium				P
Thallium	3.9640	B		P
Titanium	3.7377	B		P
Vanadium	3.8877	B		P
Zinc	3.7507	B		P

Color Before:
Color After:

Clarity Before:
Clarity After:

Texture:

Artifacts:

Comments: Sample = 0.00 % Solids. Total Metals Digestion only!
EPA QC-21 Trace Metals Aqueous Reference Standard.
(External Control Standard).

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 559 PA Inorganic Laboratories

SAMPLE NO. 7

Lab Sample ID: EPA QC-7A Standard

Section: ICPAES

% Solids (0 - N/A): 0.0000

Lab Sample I.D.s beginning with 'X' indicates TCLP Extract.

Date Sampled: 12/9/97

Lab Receipt Date: 12/9/97

SDG No.: DEC08

QC Report No.: SD120897.RPT

Matrix: Water ___X___ Soil _____ Sludge _____ Other _____

Elements Identified and Measured

Concentration Units: (ug/L)

Analyte	Concentration	C	Q	M
Aluminum	3.5265	B		P
Antimony				P
Arsenic				P
Barium	3.6662	B		P
Beryllium				P
Cadmium				P
Calcium				P
Chromium				P
Cobalt				P
Copper				P
Iron				P
Lead				P
Magnesium				P
Manganese				P
Molybdenum				P
Nickel				P
Phosphorus				P
Selenium				P
Silver	1.8502	B		P
Strontium				P
Thallium				P
Titanium				P
Vanadium				P
Zinc				P

Color Before:
Color After:

Clarity Before:
Clarity After:

Texture:

Artifacts:

Comments:

Sample = 0.00 % Solids. Total Metals Digestion only.
EPA QC-7A Trace Metals Aqueous Reference Standard.
(External Control Standard).

FORM 1A-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Building 669 PA Inorganic Laboratories SAMPLE NO. 5

Lab Sample ID: CRM020-050 Standard, (Metals on Soil)

Section: ICPAES

% Solids (0 - N/A): 100.0000

Lab Sample I.D.s beginning with X indicates TCLP Extract.

Date Sampled: 12/9/97 SDG No.: DEC08

Lab Receipt Date: 12/9/97 QC Report No.: SD120897.RPT

Matrix: Water ____ Soil X Sludge ____ Other ____

Elements Identified and Measured

Concentration Units: (mg/Kg)

Analyte	Concentration	C	Q	M
Aluminum	1520.6776	B		P
Antimony	19.8302	U		P
Arsenic	408.5301			P
Barium	9.9651	U		P
Beryllium	0.9965	U		P
Cadmium	16.6211	B		P
Calcium	22914.6786	B		P
Chromium	11.0214	B		P
Cobalt	9.9651	U		P
Copper	718.0036	B		P
Iron	150229.3572	B		P
Lead	5398.3928			P
Magnesium	2685.6403	B		P
Manganese	885.7508	B		P
Molybdenum	9.9651	U		P
Nickel	20.4066	B		P
Phosphorus	1564.9427	B		P
Selenium	23.9163	U		P
Silver	82.4863	B		P
Strontium	30.4534	B		P
Thallium	53.9512	B		P
Titanium	38.6846	B		P
Vanadium	14.2501	B		P
Zinc	2883.7070	B		P

Color Before: Clarity Before: Texture:
Color After: Clarity After:

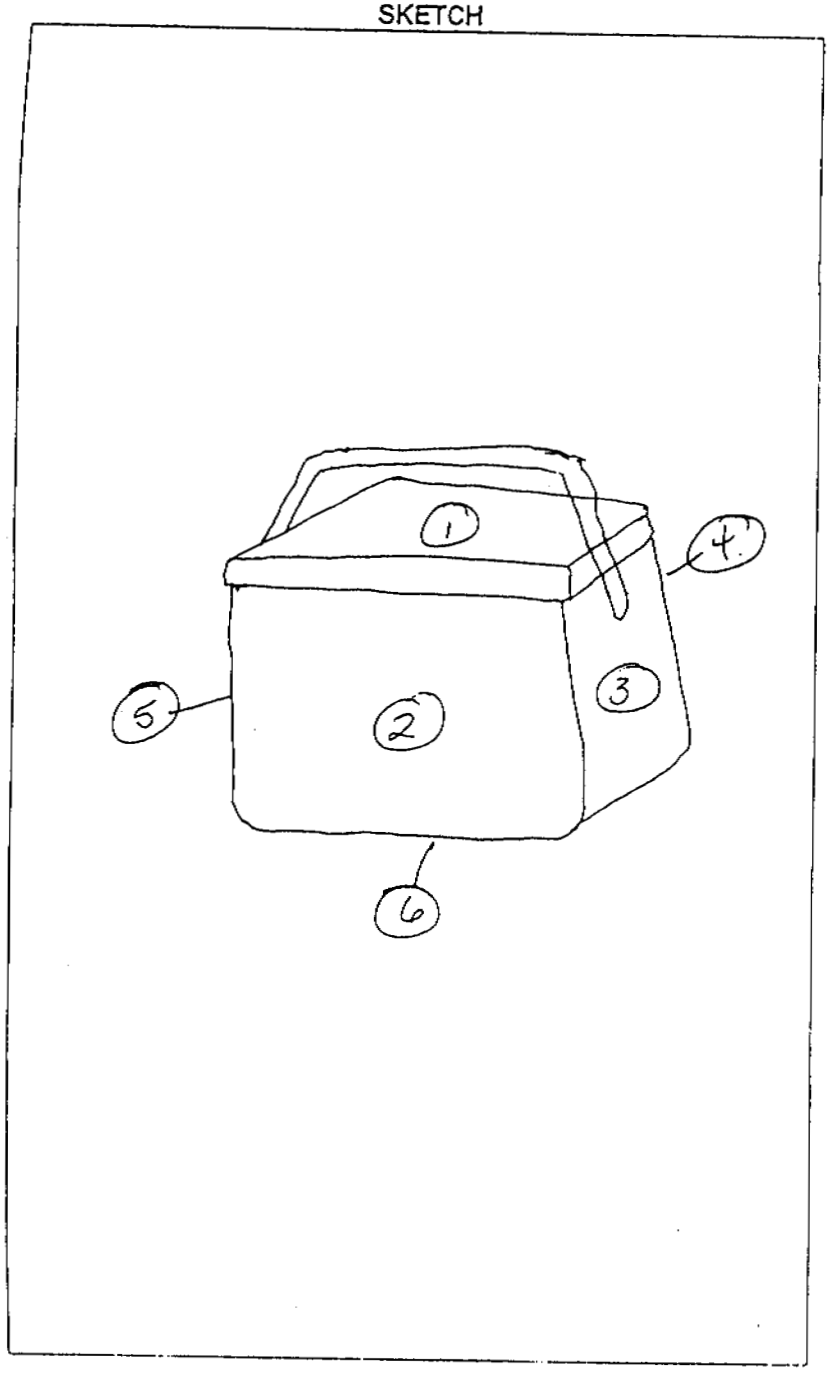
Artifacts:

Comments: Sample = 100.00 % Solids. Total Metals Digestion only!
CRM020-050 QC Trace Metals Solid Reference Standard .
(External Control Standard).

G# PRE# 971119-TP08-001

RADIOLOGICAL OPERATIONS CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (dpm/100cm2)

Swipe #	Location/description	Removable		Total	Total
		Alpha	Beta/ Gamma	Alpha 60 sec count	Beta/ Gamma
1	See Sketch	<18	<205	<60	<455
2		<18	<205	<60	<455
3		<18	<205	<60	<455
4		<18	<205	<60	<455
5		<18	<205	<60	<455
6		<18	<205	<60	<455

RADIOLOGICAL CONTAMINATION SURVEY FORM

LOG NUMBER: Special

P/WRE ____ ROUTINE ____

R.W.P X OTHER ____

BUILDING/LOCATION: 886 ROOM#: 111

DATE: 11-19-97 TIME: 1000

ITEM DESCRIPTION: Pre job survey for PCB/Lead sampling and Post job survey of areas after sampleing

COMMENTS:

STATUS:

____ RELEASABLE ____ NOT RELEASABLE

____ POSTED X NOT POSTED

X WITHIN LIMITS ____ LIMITS EXCEEDED

[redacted]

Removable Contamination Counters

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	SAC-4	SAC-4	SAC-4	SAC-4
Serial #:	984	1158		
Date Calib'd:	9-18-97	9-17-97		
Cal. due Date:	3-18-98	3-18-98		

Mfg:	Eberline	Eberline	Eberline	Eberline
Model:	BC-4	BC-4	BC-4	BC-4
Serial #:	BC 763	BC 869		
Date Calib'd:	10-6-97	9-29-97		
Cal. due Date:	4-6-98	3-29-98		

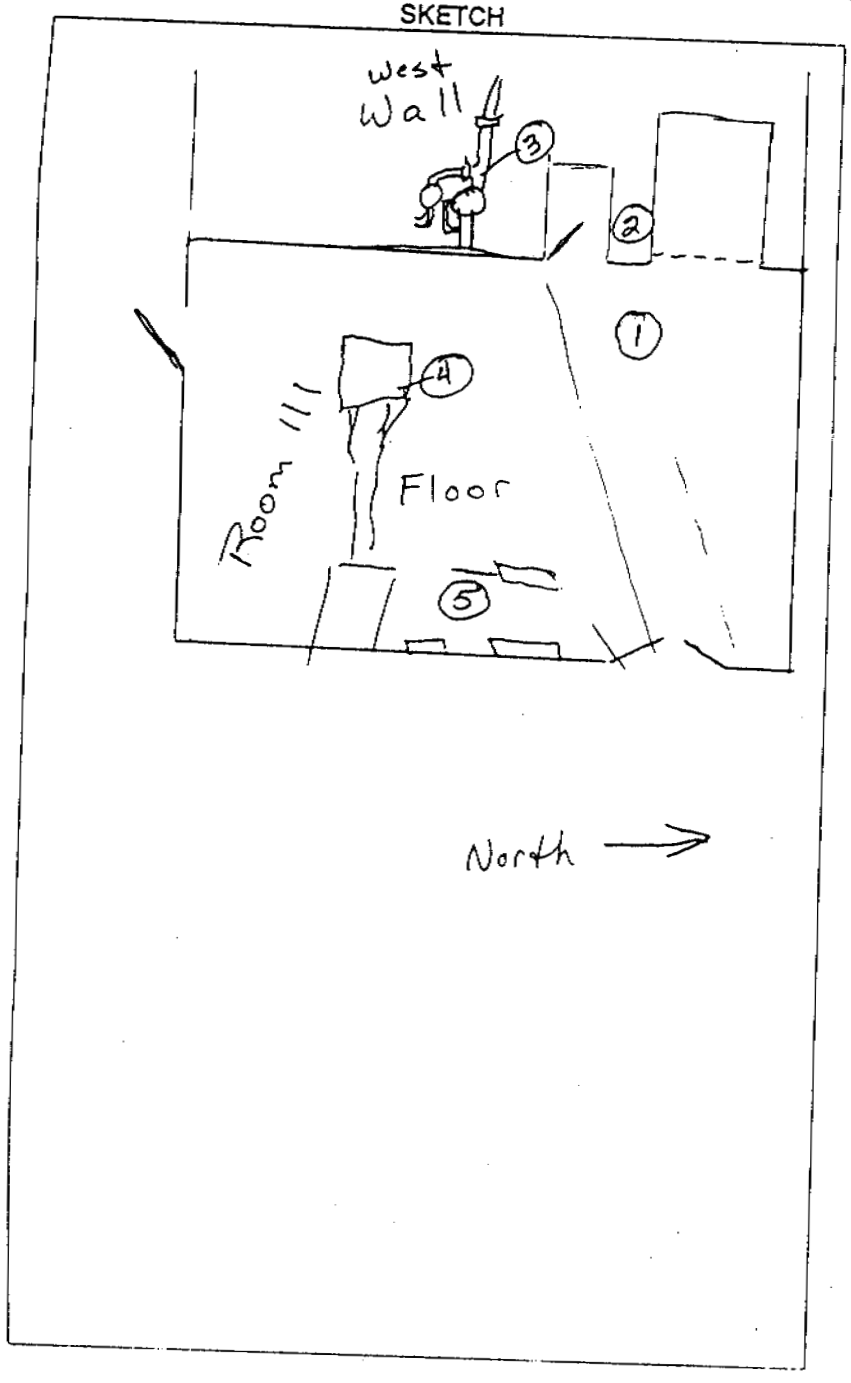
Total (Fixed + Removable) Survey Instruments

Mfg:	NE Electra	NE Electra	Bicron	Bicron
Model:	DP6	DP6	A-100	A-100
Serial #:	1243			
Date Calib'd:	9-15-97			
Cal Due Date:	3-15-98			
Background:	α2.0cpm β633cpm			
Efficiency:	α22.8% β31.8%			

Mfg:	Ludlum	Ludlum		
Model:	31	31		
Serial #:				
Date Calib'd:				
Cal Due Date:				
Background:				
Efficiency:	N/A	N/A		

LOG# _____ RADIOLOGICAL OPERATIONS CONTAMINATION SURVEY FORM

SKETCH



SURVEY RESULTS (dpm/100cm2)

Swipe #	Location/description	Removable		Total Alpha 60 sec count	Total Beta/ Gamma
		Alpha	Beta/ Gamma		
	Pre				
1	Floor/Stripe	<18	<205	<60	<455
2	Wall by Fire Exting.	<18	<205	<60	<455
3	Fire Supression Sys. Pipe	<18	<205	<60	<455
4	Gskt on Ventilation Sys	<18	<205	<60	<455
5	Floor	<18	<205	<60	<455
	Post				
1	Floor/Stripe	Not Sampled			
2	Wall by Fire Exting.	<18	<205	<60	<455
3	Fire Supression Sys. Pipe	<18	<205	<60	<455
4	Gskt on Vent. Sys.	<18	<205	<60	<455
5	Floor	<18	<205	<60	<455

PROPERTY/WASTE RELEASE EVALUATION

PRE Number: 971119-T130B-001 Charge Number: ME92AARC

EXTENDED: EXPIRES:

ART I SENDER/CUSTODIAN

Description of Property/Waste To Be Released/Transferred:	Five (5) paint chips and swipe samples for PCB analysis. See attached chain of custody for identification and attached contamination survey results.
Property's Current Location:	Building 886.
Property's Destination:	Paragon Analytic, 225 Commerce Drive, Fort Collins, CO 80524
Property's New Recipient/Custodian:	Paragon Analytic
Property History/Process Knowledge:	These five paint chip and swipe samples listed above were generated for PCB characterization on the 886 cluster.
Has the specified property/waste ever been in an RMMA or contacted DOE controlled radioactive materials?	Unknown.

ACKNOWLEDGEMENT:

By signing below, the sender/custodian verifies the information above to be true and correct.

(1) Samples shall be shipped in accordance with 49 CFR (DOT) requirements.

(2) The receiving laboratory holds the necessary NRC/State license for the radionuclides being shipped; said license shall be formally documented, retrievable and traceable to each sample shipped.

(3) Paragon Analytic is licensed to handle nuclear material under Colorado Department of Public Health and Environment Nuclear Material [redacted] attached letter for comfirmation/renewal.

[redacted] Date: 11/20/97 Ext: 6047 Pager: N/A

PART II RADIOLOGICAL ENGINEERING

Radiological Survey for removable and total contamination on the exterior of the packages:

1. Alpha 2. Beta/gamma

Radiological Survey for dose rate on the exterior of the package:

1. Gamma

SPECIFIC REQUIREMENTS AND/OR COMMENTS: **The Radiological Control Technician (RCT) shall perform contamination surveys on the area where samples were taken. Surveys will be performed on shipping container (package) surfaces per 49 CFR protocols. Results of radiation level on contact shall be less than .5 millirem/hour (total). This evaluation does not constitute an unrestricted release of the specified PCB samples from the Department of Energy radiological controls, i.e. the specified building material samples are only being provided with authorization for transport in accordance with Department of Transportation 49 CFR requirements. The Sender/Custodian shall provide a copy of the completed contamination**

[redacted] Date: 11/20/97 Ext.: 8148 Pager: 3977

APPROVAL FOR TRANSFER/SHIPMENT

The property samples specified above may be transferred to the destination indicated in Part 1 of this Release Evaluation.

[redacted] Date: 11/21/97 Ext.: 8451 Page: 5888

PARAGON
ANALYTICS, INC.
AN EMPLOYEE OWNED SMALL BUSINESS

225 Commerce Drive Fort Collins, Colorado 80524 (800) 443-1511
Message Phone (970) 490-1511
Fax (970) 490-1522

August 15, 1997

Mr. Pat Priest
Kaiser-Hill, LLC.
Rocky Flats Environmental Technology Site
Golden, CO

Dear Mr. Priest,

As you know our Colorado Radioactive Materials License # 847-02 reached the end of it's 5 year term on June 30 ,1997. As a normal course of business operations, Paragon submitted a radioactive materials license renewal package to the Colorado Department of Public Health and Environment Radiation Control Division on May 30, 1997. As per Colorado Rules and Regulations Pertaining to Radiation Control 3.17.2 " In any case in which a licensee, not less than 30 days prior to expiration of his existing license, has filed an application in proper form for renewal or for a new license authorizing the same activities, such existing license shall not expire until final action by the Department". Enclosed please find copy of a letter from the Colorado Department of Public Health and Environment Radiation Control Division stating that Paragon's Colorado Radioactive Material License #847-02 is under timely renewal and remains in full effect. This renewal process is a normal and customary for radioactive material licenses and in no way prohibits Paragon from performing any of it's normal business activities.

Please forward a copy of the Colorado Department of Public Health and Environment Radiation Control Division's timely license renewal letter to your radioactive material license compliance officer for their files. If you have any questions regarding this letter , please call me at 970-490-1511. Additionally, this letter was delivered to Ms. Virgene Idecker on July 01, 1997

Sincerely yours,

Edward S. Wallace
Radiation Safety Officer

To	Mr. Pat Priest	Company	Kaiser-Hill, LLC.
Fax No.	303-966-3400	Date	8-15-97
From	Edward S. Wallace	Total Pages	2

If you do not receive all the pages, please call us back as soon as possible.

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-3090

Laboratory and Radiation Services Division
8100 Lowry Blvd.
Denver, CO 80220-6428
(303) 692-3090

Colorado Department
of Public Health
and Environment

[illegible] 1997

Paragon Analytic, Inc
225 Commerce Drive
Fort Collins, CO 8052[illegible]

Attention: Edward S[illegible] Vice President, Radiochemistry Operations

This letter is to inform you that your application to renew radioactive materials license number CO-[illegible]02 has been received and is being processed timely. Therefore, all aspects of your current radioactive materials license will remain in effect until final action on your application is taken by this Department.

If [illegible]

Sincerely,

Jay [illegible] Section
Laboratory and Radiation Services Division

JJ[illegible]

STATE OF COLORADO
DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

RADIOACTIVE MATERIALS LICENSE

Pursuant to the Radiation Control Act Title 25, Article 11, CRS 1989, Replacement Volume, as amended, and the Radiation Control Regulations, Part 3, and in reliance on statements and representations heretofore made by the licensee designated below; a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below; and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations, and orders now or hereafter in effect of the Colorado Department of Public Health and Environment and to any conditions specified below.

Licensee

1. Name: Paragon Analytics, Inc.

2. Address: 225 Commerce Drive
Fort Collins, CO 80524

3. License Number Colo. 847-02

4. Expiration date: June 30, 1997

5. Reference number:

6. Radioactive materials (element and mass no.)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Hydrogen 3	A. Any	A. 1000 millicuries
B. Any radionuclide with atomic numbers 3-82, except alpha emitting radionuclides	B. Any	B. 1 millicurie
C. Any alpha emitting radionuclides with atomic numbers 3-82	C. Any	C. 10 microcuries
D. Any radionuclide with atomic numbers 83-98, except as specifically authorized	D. Any	D. 750 microcuries
E. Natural or Depleted Uranium	E. Any	E. 500 millicuries
F. Natural Thorium	F. Any	F. 500 millicuries
G. Any radionuclide with atomic numbers 3-98	G. Sealed sources	G. 1 millicurie total. No single source to exceed 20 microcuries.
H. Cesium 137	H. Sealed source (Nos. 167760, 595255, 598860, or 501095)	H. 1 source not to exceed 40 microcuries

Continued from Page 1

STATE OF COLORADO
DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

RADIOACTIVE MATERIALS LICENSE

License Number Colo. 847-02
Expiration Date: June 30, 1997

CONDITIONS

9.A. Radioactive material authorized in Items 6.A. through 6.F. to be received as environmental, bioassay and industrial samples, to be stored and processed for qualitative and quantitative analysis in the laboratory. Radioactive materials authorized in Items 6.A. through 6.F. may also be received as chemical standards for the calibration of analytical equipment, and as a tracer in analytical procedures and quality control.

B. Radioactive materials authorized in Item 6.G. to be used as standards for calibration of laboratory equipment.

C. Radioactive material authorized in Item 6.H. to be used as a calibration source in a Beckman model LS 6000 Series Liquid Scintillation Counter.

10. Radioactive material may be used and stored only at 225 Commerce Drive, Fort Collins, Colorado 80524.

11. The licensee shall comply with the provisions of the State of Colorado *Rules and Regulations Pertaining to Radiation Control*, Part 10, "Notices, Instructions and Reports to Workers; Inspections" and Part 4, "Standards for Protection Against Radiation."

12. Radioactive material shall be used by, or under the supervision of Douglas J. Van Cleef; Lance R. Steere; Dorothy Stuit; Gus Harris III; or Edward S. Wallace.

13. The designated Radiation Safety Officer is Edward S. Wallace.

14. Radioactive material authorized by Item 6 of this license shall be stored and used in a manner that will preclude use by unauthorized personnel.

15. Each sealed source containing radioactive material authorized in Item 6 shall be tested for leakage and/or contamination in accordance with RH 4.16 of the State of Colorado *Rules and Regulations Pertaining to Radiation Control* at intervals not to exceed six months.

16.A. Individuals involved in operations which utilize, at any one time, more than 100 millicuries of Hydrogen 3 in a non-contained form, other than metallic foil, shall have bioassays performed within one week following a single operation and at weekly intervals for continuing operations. Records of the bioassays shall be maintained for inspection by the Department and the action points listed below shall be observed.

B. (1) Tritium shall not be used in such a manner as to cause any individual to receive a radiation exposure such that urinary excretion rates exceed 28 microcuries of tritium per liter when averaged over a calendar quarter.

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STATE OF COLORADO
DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

RADIOACTIVE MATERIALS LICENSE

License Number Colo. 847-02
Expiration Date: June 30, 1997

16.B. (2) Urinalysis shall be performed at weekly intervals on all individuals who work in the restricted areas of facilities in which tritium is used. If the average concentration of tritium in urine for any single individual during a calendar quarter is less than 10 microcuries per liter, urinalysis may be performed on that individual at monthly intervals for the following calendar quarter and may continue at monthly intervals so long as the average concentration in the calendar quarter remains below 10 microcuries per liter. The urine specimen shall be collected on the same day of the week insofar as possible.

(3) A report of an average concentration in excess of the limit specified in B. (1) above for any individual shall be filed, in writing, within thirty (30) days of the end of the calendar quarter with the Director, Radiation Control Division, Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, Colorado 80222-1530. The report shall contain the results of all urinalyses for the individual during the calendar quarter, the cause of the excessive concentrations, and the corrective steps taken or planned to assure against a recurrence.

(4) Any single urinalysis which discloses a concentration of greater than 50 microcuries per liter shall be reported, in writing, within seven (7) days of the licensee's receipt of the results, to the Director, Radiation Control Division, Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, Colorado 80222-1530.

17. The licensee shall not transfer possession and/or control of materials or products containing radioactive material as a contaminant except:

A. by transfer of waste to an authorized recipient;

B. by transfer to a specifically licensed recipient; or,

C. as provided otherwise by specific condition of this license pursuant to the requirements of RH 3.22 of the State of Colorado *Rules and Regulations Pertaining to Radiation Control*.

18.A. Wipe tests for contamination must be completed weekly when radioactive materials are used.

B. The analysis of the wipes must be capable of detecting 200 DPM of the radioactive material on the test sample.

19. If an area survey or wipe test detects the presence of radioactive materials in excess of the limits specified below, then the area and/or affected equipment shall be decontaminated until:

A. the removable contamination is not greater than 200 DPM per 100 square centimeters.

B. the average fixed contamination is not greater than 1,000 DPM per 100 square centimeters.

C. the maximum fixed contamination is not greater than 3,000 DPM per 100 square centimeters.

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STATE OF COLORADO
DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

RADIOACTIVE MATERIALS LICENSE

License Number Colo. 847-02
Expiration Date: June 30, 1997

20. The licensee shall maintain in effect the Payment Surety Bond number 8136-30-67 issued in the name of Analytical Technologies, Inc. by Federal Insurance Company, 1221 Avenue of the Americas, New York, NY 10020, effective date January 1, 1994, in the amount of $750,000.00.

21. The State of Colorado *Rules and Regulations Pertaining to Radiation Control* shall govern the licensee's statements in applications or letters, unless the licensee's statements are more restrictive than the regulations. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in:

A. the application and attachments dated May 1, 1992; and

B. Floor plan sheet No. A-8.1 dated April 26, 1992; and

C. the correspondence dated May 27, 1992; December 14, 1992; June 16, 1993; September 7, 1993; January 5, 1994; March 14, 1994; November 6, 1995; and March 13, 1996.

FOR THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Date April 3, 1996 By [signature]

OR-RH-18

STATE OF COLORADO
DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

RADIOACTIVE MATERIALS LICENSE

License Number Colo. 847-01
Expiration Date: March 31, 1997
Amendment No. 5

Analytical Technologies, Inc.
225 Commerce Drive
Fort Collins, CO 80524

In accordance with the letter dated March 13, 1996, and concurrently with the issuance of Radioactive Materials License Number Colo. 847-02, Radioactive Materials License Number Colo. 847-01 is hereby TERMINATED.

FOR THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Date April 8, 1996 By

OR-RH-18

Building 886 - CA Sampling (Rm 101, 102, 103)

Sampling Record

Project: 886 Cluster RCLP
Building: 886
Room (if applicable):
Area is classified as (circle as appropriate): Affected Unaffected
Analysis (circle as appropriate): Asbestos PCB Swipe PCB media Lead/Metals (RAD Screen @ Thermo NuTech)

Room	Sample Number	Detailed Sample Type and Description (i.e., type of material, equipment, equipment components, media)	Comments
103	98A0485-001.001	Paint Chips - light/dark purple on HEUN lines	
103	98A0485-002.001	Paint Chips - light/dark yellow on skids ~~(w/ brownish red primer coat)~~ HS 12/2/97	
103+101	98A0485-003.001	Paint Chips - green on electrical boxes and piping (w/ brownish red primer coat)	
102	98A0485-004.001	Paint Chips - bright blue on shelving with light gray primer	
101	98A0485-005.001	Paint Chips - brown base paint on I beams	
101	98A0485-006.001	Cutout of Vibration damper	
entry to 101	98A0485-007.001	Paint Chips - white on mint green on grey	on wall
entry to 101	98A0485-008.001	Paint Chips - medium battleship, light battleship, dark battleship and orange	on floor applications
	98A0485-003.004	Paint Chips - green on electrical boxes (w/ light green ~~primer~~ base white ~~primer~~ CA 12-8-97	CA 12-8-97
		KK 12-9-97	

Note: These rad screen samples were not required by the RLCP but were required by Radiological Engineering to support development of a PRE for offsite shipment of the metals, PCB samples. The RIN-Event #'s correspond to the RIN-Event numbers from the PCB and metals (Total and TCLP).

Recorded
~~Evaluated/Sampled~~ by: [signature]
Date: 12/6/97

Reviewed by: Kristi Kelly
Date: 12-9-97 Rad Screen 003.004 needed due to change in paint ~~primer~~ base coats
~~KK 12-4-97~~
KK 12-8-97

24 HOUR RUSH !

SAMPLERS (Signature) Matt D. Hopi Salomon (for record only)

REPORT IDENTIFICATION NUMBER (RIN) 98A0485 LAB/LOCATION: ThermoNuTech

RFETS CONTRACTOR RMRS

~~98~~ 9712008 1

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4° C	NaOH	HNO3	H2 SO4	HCl	Analytes: 05010A03	RAD Screen
12/2/97	1340	001	001		Building 886	30 ml Plastic	Paint Chips						X	
12-2-97	1525	002	001				Paint Chips						X	
12/3/97	1110	003	001				Paint Chips						X	
12/3/97	1405	004	001				Paint Chips						X	
12/3/97	1505	005	001				Paint Chips						X	
12/3/97	1523	006	001				Vibration Damper						X	
12/2/97	0900	007	001				Paint Chips						X	
12/2/97	1000	008	001		Building 886		Paint Chips						X	

12/2/97

12/3/97

Relinquished By:	Date	Time	Received By/Organization	Date	Time	LABORATORY USE ONLY	Y/N
Matt Dess	12-3-97	3:42 pm		12/3/97	1542	PCKG REC'D/CUSTODY SEALS INTACT	Y
Hopi Salomon	12/3/97	1550	L Godder TNU	12/3/97	1550	SAMPLE LABELS/COCs AGREE	Y
L Godder	12/3/97	1555	C3	12/3/97	1600	TEMPERATURE AT TIME OF RECEIPT __°C	NA
C3	12/5/97	1310	L Godder	12/5/97	1310		NA

REMARKS: X=24 hour rush, FAx Results to APO @ x3400

Relinquished BY: L Godder 12/5/97 1310 Received BY: Kurt Alley 12/5/97 1310

Charge # Bld 886 RLCP

Project

Shipping Requirements: Overnight Delivery ☐ 2-Day Delivery ☐ Air Bill No. _____ HAND DELIVER

SAMPLERS (Signature) K. Kelly (RTG) / / _____ of _____

REPORT IDENTIFICATION NUMBER (RIN) 9840485 LAB/LOCATION: Thermo Nu Tech

RFETS CONTRACTOR RMRS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE CHAIN OF CUSTODY NUMBER _____

DATE	TIME	EVENT	BOTTLE	USER ID	LOCATION	CONTAINER	MATRIX	Preservation: Cooled to 4° C	NaOH	HNO3	H2 SO4	HCl	Analytes: OSOLA03	Rad Scree
12-8-97	0948	003	004		Building 886	30ml Plastic	Paint Chips	X					U	

KK 12-8-97

KK 12-8-97

Relinquished By:	Date	Time	Received By/Organization	Date	Time
Kurt Kellog	12-8-97	1115	Molly Parker TNU	12/8/97	1115

LABORATORY USE ONLY	Y/N
PCKG REC'D/CUSTODY SEALS INTACT	Y
SAMPLE LABELS/COCs AGREE	Y
TEMPERATURE AT TIME OF RECEIPT __ °C	NA
	NA

REMARKS: ASAP Fax results to K. Kelly 6783

Charge # 886020SA

Project Bldg 886 RLCR

Shipping Requirements: Overnight Delivery ☐ 2-Day Delivery ☐ Air Bill No. Hand deliver

Thermo NUtech - Rocky Flats
Radscreen Results

Distribution/Fax: APO/ 3408

RIN: 96A0485
Analysis: Radscreen
Report Date: 1205/97

Laboratory Sample ID	APO Sample ID			Matrix	Gross Alpha		Gross Beta		Total Activity pCi/g	DOT Class
	RIN	Event	Bottle		pCi/g	2σ	pCi/g	2σ		
97120081-01	96A0485	001	001	Waste	252	19	-15	3	274.00	NONRAD
97120081-02	96A0485	002	001	Waste	54	6	-0.1	2.0	62.00	NONRAD
97120081-03	96A0485	003	001	Waste	5	2	3	2	12.00	NONRAD
97120081-04	96A0485	004	001	Waste	37	5	7	2	44.00	NONRAD
97120081-05	96A0485	005	001	Waste	12	2	0.8	1.0	15.80	NONRAD
97120081-06	96A0485	006	001	Waste	26	2	-1.8	0.6	28.50	NONRAD
97120081-07	96A0485	007	001	Waste	1	2	1	2	6.00	NONRAD
97120081-08	96A0485	008	001	Waste	8	2	3	1	14.00	NONRAD

DOT Classification <2000 pCi/g total activity is NONRAD
>= 2000 pCi/g total activity is RAD

Total Activity Calculated as the sum of the gross alpha and beta activities AND the measurement uncertainties for these two measurements. If the measured activity is negative, 0 pCi/g (instead of the negative value) is used to calculate the total activity.

Analysis Methods Sample Preparation Procedure: L-6283-A, "Sample Preparation for Radiological Screening of Soil Samples by Gas Proportional Counting".
Counting Procedure: L-8265-A, "Operation of Tennelec LB4100 Gas Proportional Counters".

K M Hoagland /Date 12/5/97
Technical Review

/Date 12/05/97
Quality Assurance Review

Thermo NUtech - Rocky Flats
[illegible]
[illegible]

Thermo NUtech - Rocky Flats
Radscreen Results

RIN: 98A0485
Analysis: Radscreen
Report Date: 12/10/97

Distribution/Fax: APO/ 3400
K. Kelly/ 6783

Laboratory Sample ID	APO Sample ID			Matrix	Gross Alpha		Gross Beta		Total Activity	DOT
	RIN	Event	Bottle		pCi/g	2σ	pCi/g	2σ	pCi/g	Class
97120134-01	98A0485	003	004	Waste	10	2	1	1	14.00	NONRAD

DOT Classification <2000 pCi/g total activity is NONRAD
>= 2000 pCi/g total activity is RAD

Total Activity Calculated as the sum of the gross alpha and beta activities AND the measurement uncertainties for these two measurements. If the measured activity is negative, 0 pCi/g (instead of the negative value) is used to calculate the total activity.

Analysis Methods Sample Preparation Procedure: L-6283-A, "Sample Preparation for Radiological Screening of Soil Samples by Gas Proportional Counting".
Counting Procedure: L-6295-A, "Operation of Tennelec LB4100 Gas Proportional Counters".

K M Haggland /Date 12/10/97
Technical Review

Ronald L. Taylor /Date 12/10/97
Quality Assurance Review

Thermo NUtech - Rocky Flats
RFETS - Building 788D
Golden, Colorado 80402
(303) 966-6860

APPENDIX C

CERTIFIED ASBESTOS INSPECTOR'S REPORT

Asbestos Characterization Report

Building 886 Cluster

DRAFT

Rocky Mountain Remediation Services

Revision 0

December 1997

TABLE OF CONTENTS

APPENDICES

ATTACHMENTS

1.0 INTRODUCTION

During the weeks of November 17-21, November 24-28, and December 1-5, 1997 The Building 886 cluster was inspected for the presence of asbestos containing building materials (ACBM). This includes buildings 888, 886, 886A, 875, 828 and 881. The purpose of this inspection was to prepare for the demolition of this structure.

The asbestos inspection was conducted according to the guidelines set forth by the Asbestos Hazard Emergency Response Act (AHERA) and complies with the United States Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and State of Colorado regulations covering asbestos inspections.

The enclosed report contains the estimated quantities, physical assessment, location and descriptions of all materials either assumed or identified through sampling and analysis to be asbestos containing.

2.0 ASBESTOS SURVEY

2.1 INSPECTION PROCEDURES

Bulk samples were acquired to determine the presence of asbestos in building materials. Suspect materials were chosen based on historical significance or on the judgement of the accredited inspector. Each sample was assigned an individual number made up of the building number, the date the sample was acquired, the initials of the sampling technician, and a three digit number in sequence. Quality Control samples are designated in the Bulk Sample Data Table as (QC).

A total of 78 samples were acquired from suspected materials. These materials included surfacing materials, thermal systems insulation, and miscellaneous materials. All samples were acquired in a random manner representative of the suspected material.

All bulk samples were analyzed by Reservoirs Environmental Services, Inc. (RESI) of Denver, Colorado. RESI is accredited through the National Institute of Standards and Technology (NIST) and participates in the NIST National Voluntary Laboratory Accreditation Program (NVLAP) as required by the EPA. Bulk samples were analyzed by Polarized Light Microscopy (PLM) in compliance with guidelines established by the EPA 40 CFR 763, Subpart F, Appendix A. Asbestos concentrations were visually estimated and reported in percent by layer of each sample.

2.2 SUMMARY OF ACBM DISCOVERED DURING INSPECTION

During the inspection process of this facility, historical records were accessed and evaluated, along with physical inspection of the cluster. The historical records included original specifications and blueprints, asbestos and lead in paint bulk samples, and interviews with facility occupants including the Facility Manager, Larry Fischer.

2.2.1 BUILDING 886

Building 886 is the main structure of the cluster. It has three construction dates, starting in 1964. The inspection process discovered asbestos containing Thermal Systems Insulation on piping and tanks associated with the domestic water, chiller system, steam system in the interior and exterior of the building, and on a small HVAC system located outside of 886 on the west side. This TSI is generally in good condition and appears to have regular maintenance.

Asbestos containing Surfacing Materials discovered during the inspection were limited to a light

skim coat on the interior cinderblock associated with the oldest section of the structure. This material is covered with a minimum of one coat of paint and is in good condition. Due to the thinness of the application and the relatively low percentage of asbestos (trace to 5%), Point Counting analysis was utilized to more accurately evaluate asbestos content with results indicating levels consistently above 1%. This material must remain as part of the asbestos waste stream even though a composite of this skim coat and the cinderblock would reduce the asbestos percentage to far less than 1%.

Miscellaneous asbestos containing materials discovered during inspection included nine inch and twelve inch floor tiles dispersed throughout the "cold side" of the facility, including under the sheet vinyl in the hallways.. The adhesive associated with the floor tile tested negative for asbestos except in room 110, the janitor's closet. The tiles are in generally good condition and appear to receive regular maintenance.

The predominate pattern of ceiling tiles (2' x 4' white with wide latitudinal grooves, pits and pin holes) tested positive for asbestos. Due to the modular nature of a suspended ceiling, the remaining patterns must be assumed to be contaminated with asbestos. The suspended ceiling system was in good condition at the time of inspection.

A filler between the HVAC ducts and wall penetrations is 98% asbestos. This filler was not observed in all locations, but is predominate throughout the facility. At the time of inspection, the filler was painted and in good condition where observable.

A previous inspector acquired a sample of the electrical wiring in room 114 which indicated asbestos in the insulation. Until the building circuits are de-energized and a comprehensive survey can be completed, it must be assumed that all original wiring insulation for the structure, and for the other original structures in the cluster, is asbestos containing.

Building 886 has a built up roof system that was specified as containing asbestos in the felt and tar. As such, the roof is assumed to be asbestos containing without the need of sampling. Tar impregnated roofing felts may be disposed of with normal demolition debris under most circumstances.

2.2.2 Building 828

Building 828 exterior walls are assumed to be asbestos containing based on historical data from other locations on the site and on the expert judgement of the Certified Asbestos Inspector. The piping associated with the underground storage tanks is uninsulated.

2.2.3 Building 886A

Building 886A is a modular trailer (S.N. 3404) constructed by Elder in 1984. Alan Koenig from G.E. Capital, the parent company of Elder, verified that this particular structure was not constructed with any materials that contained either lead or asbestos.

2.2.4 Building 888

Building 888 is a guard post constructed in the mid 1980's. As such, building materials have a low possibility of containing asbestos. Based on visual inspection, all materials were eliminated as suspect asbestos containing materials except the roofing and the drywall systems. Samples were acquired of the drywall system which indicate no detectable asbestos present. The built-up roofing can be assumed to be asbestos containing tar impregnated roofing felt, which can be disposed of with the regular construction debris in most cases.

2.2.5 Building 875

Building 875 is the Plenum Facility for building 886 and includes the service tunnel to 886. Since this structure is of the same construction date as building 886, suspect asbestos containing

materials are shared. As such, all pipe insulation must be considered to be asbestos containing unless it can be eliminated by physical touch as either a foam or fiberglass product. At the time of inspection, the pipe insulation was a mixture of asbestos containing, foam and fiberglass insulation. The asbestos insulation was predominately confined to the fittings, reductions, hangers, tees and elbows, while the straight runs were predominately foam and fiberglass.

The roof of building 875 is similar in construction as that of building 886. As such, the original specifications called for the use of tar and felt containing asbestos. Based on this information, the roofing materials are assumed to be asbestos containing. These materials may be treated as regular demolition debris in most cases.

2.2.6 Building 880

At the time of inspection, no suspect asbestos containing building materials were discovered in building 880.

2.2.7 Building 888A

Building 888A is the electrical substation for the facility. Due to the inherent safety concerns with sampling live electrical equipment, no samples were acquired. Suspect asbestos containing materials include wiring insulation, arc chutes, arc protection, insulators, and conduit trays. Once the substation is de-energized, samples can be safely acquired of these materials. In the interim, prudence would dictate assuming these materials do contain asbestos.

2.2 DESCRIPTION AND HAZARD ASSESSMENT OF ACM

2.2.1 Building 886

2.2.2.1 Thermal Systems Insulation

2.3 DESCRIPTION OF MATERIALS TESTING NEGATIVE FOR ASBESTOS

2.3.1 Drywall, Tape, and Joint Compound

The drywall, tape and joint compound in the office and restroom areas were sampled and analyzed for asbestos. All sample results indicate there is no detectable asbestos present in the materials.

2.3.2 Concrete

The concrete associated with room101 was rumored to be asbestos containing. Although not normally a suspect matrial, three samples were acquired. Results indicate no asbestos above a trace in this material.

Appendix A

Inspector Certifications

Statement of Certification

The asbestos building inspection evaluation performed on **Building 886 Cluster** was performed in accordance with applicable regulations, and employed only EPA AHERA accredited personnel.

INSPECTOR: [redacted]

EPA ACCREDITATION: [redacted]

STATE OF COLORADO CERTIFICATION: [redacted]

I hereby attest and certify that I performed the asbestos building inspection evaluation on **Building 886 Cluster** at Rocky Flats Environmental Technology Site.

Signature: [signature] Date: 12/15/97

Appendix B

Bulk Asbestos Sample Lab/Data Table

Bulk Sample Data Table

Sample Number	Sample Description and Location	Lab Result PLM (PC)
886-971119-MS-001	TSI mud (B) and canvass (A); from room 111 condensate tank 3' east of west wall, 2' south of west door, 2' from the floor.	A: ND B: 10%
886-971119-MS-002	TSI mud (B) and canvass (A); from room 111 condensate tank 2' east of west wall, 2' south of west door, 3' from the floor.	A: ND B: 8%
886-971119-MS-003	TSI mud (C,E) and canvass/foil (A,B,D); from room 111 condensate tank 2' east of west wall, 2' south of west door, 3' from the floor.	A: ND B: ND C: 85% D: ND E: 8%
886-971119-MS-004	Cinderblock mortar (B) and skim (A); from room 111 south wall 1' east of south door, 6' from the floor.	A: TR B: ND
886-971119-MS-005	TSI mud (B) and canvass (A); from room 111 chiller return pipe elbow 9' east of west wall 2.5' north of the south wall 6.5' from the floor.	A: ND B: 15%
886-971119-MS-006	TSI mud (B) and canvass (A); from room 111 chiller return pipe valve 15' east of west wall, 2.5' north of south wall, 6.5' from the floor.	A: ND B: 15%
886-971119-MS-007	TSI mud (B) and canvass (A); from room 111 chiller supply pipe elbow 2' west of east wall, 3.5' north of south wall, 3' from the floor.	A: ND B: 15%
886-971119-MS-008	TSI mud (B) and canvass (A); from room 111 steam supply pipe 13.5' east of west wall, 2' north of south wall, 4.5' from the floor.	A: ND B: 30%
886-971119-MS-009	TSI mud (B) and canvass (A); from room 111 steam supply pipe tee 13.5' east of west wall, 2' north of south wall, 4.5' from the floor.	A: ND B: 15%
886-971119-MS-010	TSI mud (B) and canvass (A); from room 111 steam supply pipe 14' east of west wall, 7' north of south wall, 6' from the floor.	A: ND B: 20%
886-971119-MS-011	TSI mud (B) and canvass (A); from room 111 steam supply pipe 3' east of west wall, 6' north of south wall, 5' from the floor.	A: ND B: 20%
886-971119-MS-012	Tan carpet mastic; from room 106, 6.5' east of west wall, 5.5' north of south wall.	A: ND
886-971119-MS-013	White duct/wall penetration filler; from room 106 south wall 2.5' east of west wall, 9' from the floor.	A: 98% B: ND C: ND
886-971119-MS-014	Black 4" cove base and black glue; from room 107 south wall, 5' west of east wall.	A: TR B: ND
886-971119-MS-015	White ceiling tile with longitudinal grooves, pits and pin holes; from room 107, 13' west of east wall, 6' north of south wall.	A: ND
886-971119-MS-016	Brown 9" floor tile (B) and black mastic (A); from room 107, 10' west of east wall, 6' north of south wall.	A: ND B: 5%

886-971119-MS-017	Painted (A) concrete (B,C); from room 107, south wall, 3' west of east wall, 5' from the floor.	A: ND B: ND C: ND
886-971119-MS-018	Cinderblock mortar (B) and skim (A); from room 115 west wall, 2.5' south of north wall, 5' from the floor.	A: 2% (1%) B: ND
886-971119-MS-019	Simulated mosaic sheet vinyl flooring; from room 115, 3' north of south wall, 5' west of east wall.	A: ND B: ND
886-971119-MS-020	Grey cove base (C) and tan resin (A,B); from room 115 east wall, 3' south of north wall.	A: ND B: ND C: ND
886-971119-MS-021	White ceiling tile with light latitudinal grooves and pin holes: from room 115, 4' south of north wall, 2' west of east wall.	A: 4% (2%)
886-971119-MS-022	White ceiling tile with light longitudinal grooves and hashes; from room 115, 5' north of south wall, 4.5' west of east wall.	A: ND B: ND
886-971119-MS-023 (QC)	White ceiling tile with light longitudinal grooves and hashes; from room 115, 5' north of south wall, 4.5' west of east wall.	A: ND B: ND
886-971119-MS-024	TSI mud (B) and canvass (A); from room 110 domestic hot water pipe elbow; NW corner 1.5' from the floor.	A: ND B: 21%
886-971119-MS-025	Tan/white flecks 9" floor tile (B) and black mastic (A); from room 110, 1' north of south wall, 3' east of west wall.	A: 5% B: 4%
886-971119-MS-026	Beige with brown streaks 9" floor tile (B) and black mastic (A); from room 113, 4.5' west of east wall, 0.5' north of south wall.	A: ND B: 4%
886-971119-MS-027	White/grey floor tile (B) and black mastic (A) under carpet; from room 116, 8' west of east wall, 4' north of south wall.	A: ND B: 3%
886-971119-MS-028	Painted wall plaster; from room 116 west wall, 2' north of south wall, 4.5' from the floor.	A: ND B: ND C: ND D: ND
886-971119-MS-029 (QC)	Painted wall plaster; from room 116 west wall, 2' north of south wall, 4.5' from the floor.	A: ND B: ND C: ND D: ND
886-971119-MS-030	Grey and tan checkerboard pattern 9" floor tile (C,D) with black/tan mastic (A,B); from room 1190.5' west of east wall, 0.5' south of north wall.	A: ND B: ND C: 3% D: 5%
886-971121-MS-031	Cinderblock mortar (B) and skim (A); from room 119 west wall, 4.5' south of north wall, 5' from the floor.	A: ND B: ND
886-971121-MS-032	Painted (A) wall plaster (B,C) and foam (D); from room 119 north wall, 1.5' east of west wall, 4' from the floor.	A: ND B: ND C: ND D: ND

886-971121-MS-033	Red and tan checkerboard 9" floor tile (B) with black/tan mastic (A) under carpet; from room 123, 6.5' east of west wall, 0.5' north of south wall.	A: ND B: ND C: 4% D: 4%
886-971121-MS-034	White ceiling tile with wide, shallow latitudinal grooves and pin holes; from room 123, 6' west of east wall, 2' south of the north wall.	A: 8%
886-971121-MS-035	White ceiling tile with latitudinal moustache and pin holes; from room 123, 2' west of east wall, 2' south of north wall.	A: TR (ND)
886-971121-MS-036	White ceiling tile with latitudinal worm holes and dense pin holes; from room 129, 2' north of south wall, 4' west of east wall.	A: ND
886-971121-MS-037	Tan/brown floor tile (C) with black/tan mastic (A,B) under carpet; from room 129, 0.5' west of east wall, 0.5' north of south wall.	A: ND B: ND C: 8%
886-971121-MS-038	Tan/brown floor tile (C) with black/tan mastic (A,B) under carpet; from room 131, 0.5' west of east wall, 0.5' north of south wall.	A: ND B: ND C: 8%
886-971121-MS-039	Cinderblock mortar (B) and skim (A); from room 131 west wall, 3' north of south wall, 3' from the floor.	A: ND B: ND
886-971121-MS-040	Drywall (D) tape (C) and joint compound (A,B); from room 131 northeast corner, 3.5' from the floor.	A: ND B: ND C: ND D: ND
886-971121-MS-041	Drywall (C) tape (B) and joint compound (A); from main entry north wall, 3' east of the west wall, 3' from the floor.	A: ND B: ND C: ND
886-971121-MS-042	Drywall (D) tape (C) and joint compound (A,B); from main entry north wall, 1' east of west wall, 8' from the floor.	A: ND B: ND C: ND D: ND
886-971121-MS-043	Drywall (D) tape (C) and joint compound (A,B); from main entry north wall, 1' west of east wall, 8' from the floor.	A: ND B: ND C: ND D: ND
886-971121-MS-044	Drywall (D) tape (C) and joint compound (A,B); from room 130 east wall, 5' north of south wall, 5' from the floor.	A: ND B: ND C: ND D: ND
886-971121-MS-045	Brown floor tile (B) and black/tan mastic (A,B) under carpet; from room 130, 0.5' east of west wall, 0.5' south of north wall.	A: ND B: 9%
886-971121-MS-046	Drywall (D) tape (C) and joint compound (A,B); from room 128 southeast corner, 4' from the floor.	A: ND B: ND C: TR (0.5%) D: ND

886-971121-MS-047	Wall plaster; from room 125 east wall, 3' south of north wall, 5' from floor.	A: ND B: ND C: ND D: ND
886-971121-MS-048	Cinderblock mortar (C) and skim (A,B) ; from room 127, west wall, 5' north of south wall, 5' from floor.	A: 5% (2.25%) B: ND C: ND
886-971121-MS-049	Light brown 4" cove base; from room 118 north wall, 6.5' east of west wall.	A: TR B: ND
886-971121-MS-050	Wall plaster; from room 120 east wall, 4.5' south of north wall, 6' from the floor.	A: ND B: ND C: ND
886-971121-MS-051	Dark brown 4" cove base and tan glue; from room 117 south wall, 4.5' east of west wall.	A: TR B: ND
886-971121-MS-052	White ceiling tile with wide latitudinal grooves and pin holes; from room 114, 10' west of east wall, 6.5' north of south wall.	A: 10%
886-971121-MS-053	Cinderblock mortar (C) and skim (A,B); from room 114 south wall, 6' west of east wall, 6' from the floor.	A: 3% (1.75%) B: ND C: ND
886-971121-MS-054 (QC)	Cinderblock mortar (C) and skim (A,B); from room 114 south wall, 6' west of east wall, 6' from the floor.	A: 3% (1.75%) B: ND C: ND
886-971121-MS-055	Grey/black 9" floor tile (B) with black mastic (A); from room 114, 10' west of east wall, 9' north of south wall.	A: ND B: 3%
886-971121-MS-056	Wall plaster; from room 114 east wall, 8' south of north wall, 5' from the floor.	A: ND B: ND C: ND D: ND
886-971121-MS-057	Light brown and beige checkerboard floor tiles (C,D) with tan/black mastic (A,B); from room 117, 6' west of east wall, at south doorway.	A: ND B: ND C: 5% D: 5%
886-971121-MS-058	Grey and blue checkerboard floor tiles (B,C) and tan/black mastic (A); from room 112, 4' north of south wall, 1' west of east wall.	A: ND B: 5% C: 8%
886-971121-MS-059	Wall plaster; from room 112 east wall, 14' south of north wall, 5' from floor.	A: ND B: ND C: ND D: ND
886-971121-MS-060	Simulated mosaic sheet vinyl flooring (C,D) over white tile (B) and black mastic (A); from 126 hall, 0.5' east of west wall, between rooms 110 & 113.	A: ND B: 5% C: ND D: ND
886-971121-MS-061	Cinderblock mortar (B) and skim (A); from 126 hall, south wall, 3.5' east of 116 entry, 5' from the floor.	A: TR (TR) B: ND

886-971121-MS-062	Cinderblock mortar (C) and skim (A,B); from 126 hall east wall, 2' north of 127 entry, 5' from floor.	A: 4% (1.25%) B: ND C: ND
886-971121-MS-063	Cinderblock mortar (C) and skim (A,B); from 126 hall east wall, 1.5' south of 118 entry, 5' from floor.	A: ND B:5% (3%) C: ND
886-971124-MS-064	TSI canvass (A,B,C) on duct for control room HVAC; west exterior, 20' south of room 140 south wall, 4.5' west of east wall, 10' from ground.	A: ND B: ND C: ND D: 20%
886-971124-MS-065	TSI canvass (A,B) and mud (B) on duct for control room HVAC; west exterior, 20' south of room 140 south wall, 4.5' west of east wall, 10' from ground.	A: ND B: ND C: 20%
886-971124-MS-066	TSI canvass (A,B) and mud/tar (C) on duct for control room HVAC; west exterior, 20' south of room 140 south wall, 4.5' west of east wall, 10' from ground.	A: ND B: ND C: 45%
886-971124-MS-067	Texture on concrete; from 886 exterior, 12.5' north of SW corner, 1.5' from ground.	A: ND B: ND
886-971124-MS-068	Texture on concrete; from 886 exterior, 7' east of SW corner, 3.5' from ground.	A: ND B: ND
886-971124-MS-069	Texture on concrete; from 886 exterior, 19 ' north of SE corner, 5' from ground.	A: ND B: ND
886-971124-MS-070	Texture on cinderblock; from 886 exterior, 18' north of room 140 wall, 5' from ground.	A: ND B: ND
886-971124-MS-071	Texture on cinderblock; from 886 exterior, 27' north of SW corner , 5' west of wall, 5' from ground.	A: ND B: ND
886-971124-MS-072	Texture on cinderblock; from 886 exterior, 1' north of 886 door 3, east wall, 4' from ground.	A: ND B: ND
886-971124-MS-073 (QC)	Texture on cinderblock; from 886 exterior, 1' north of 886 door 3, east wall, 4' from ground.	A: ND B: ND
886-971124-MS-074	Concrete core; from north wall of entry to room 101, 5' from floor.	A: TR B: ND
886-971124-MS-075	Concrete core; from floor in entry hall to 101 at first turn.	A: ND
886-971124-MS-076	Drywall (D) tape (A,B) and joint compound (C); from Building 888; at SW corner main area, 5' from floor.	A: ND B: ND C: ND D: ND
886-971124-MS-077	Drywall (D) tape (A,B) and joint compound (C); from Building 888; at North edge of devising wall main area, 5' from floor.	A: ND B: ND C: ND D: ND

886-971124-MS-078	Drywall (D) tape (A,B) and joint compound (C); from Building 888; at SW corner restroom, 5' from floor.	A: ND B: ND C: ND D: ND

Note: ND means Non 886-971124-MS-064 e Detected; TR means Trace.

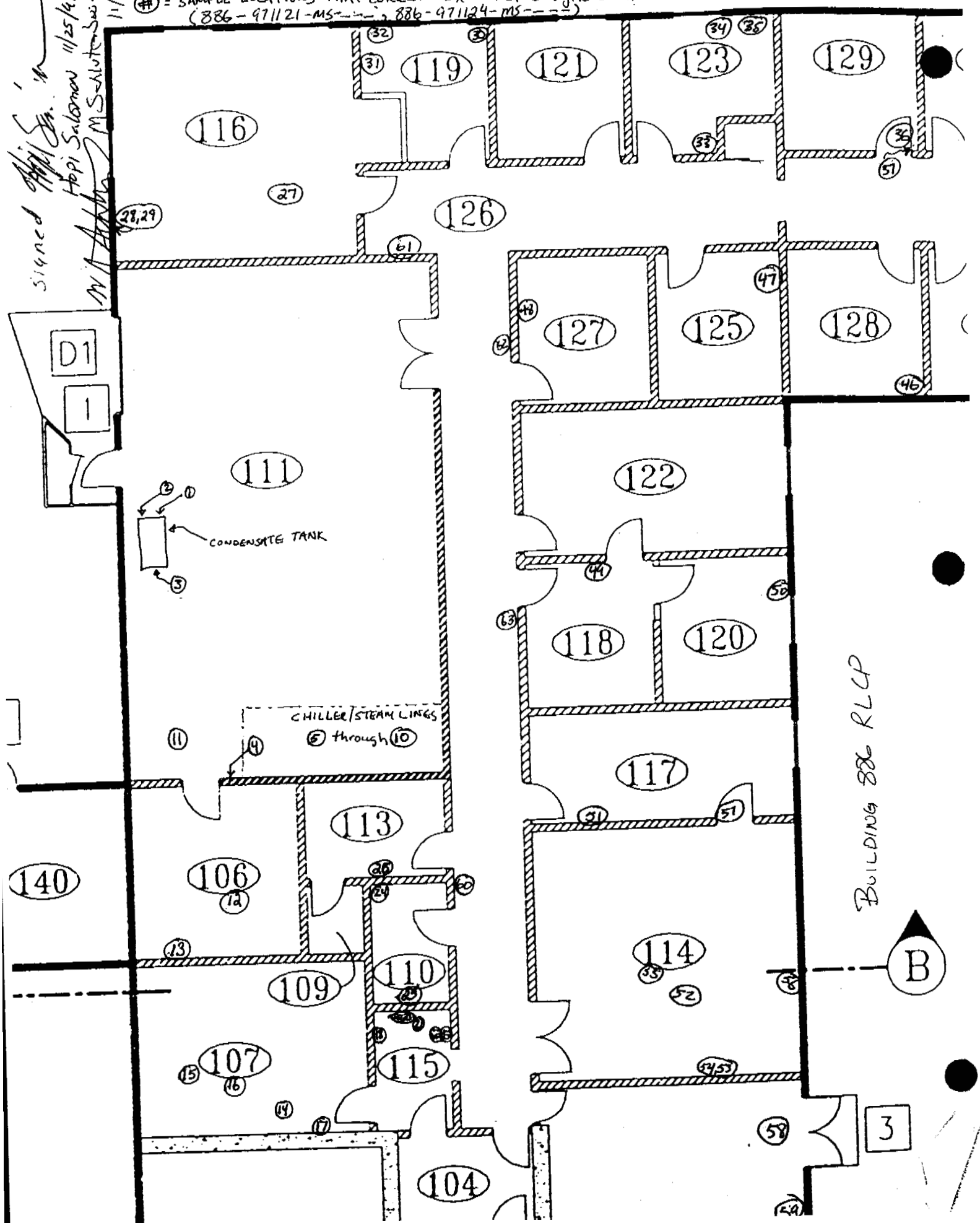
Attachment 1

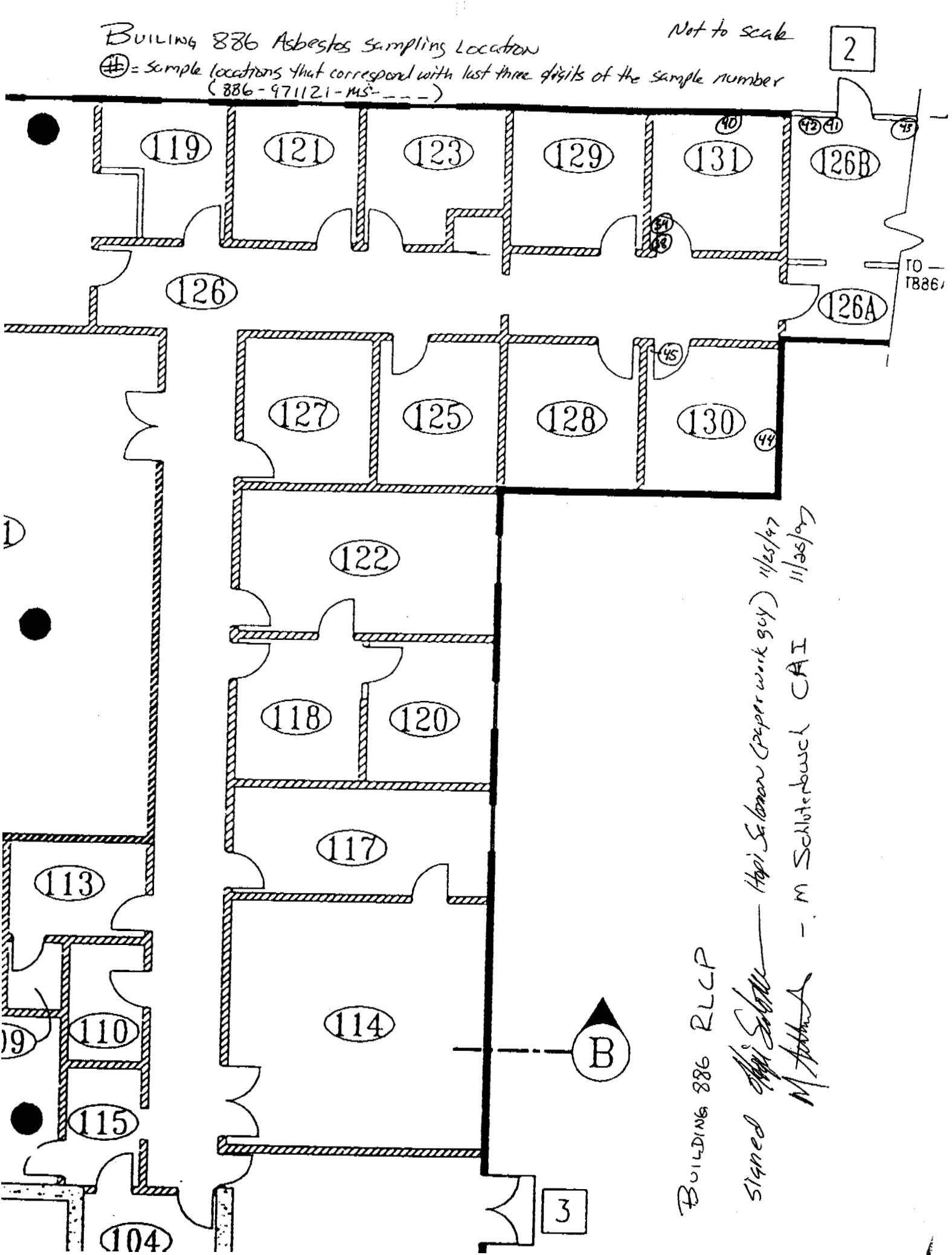
Bulk Asbestos Sample Drawing

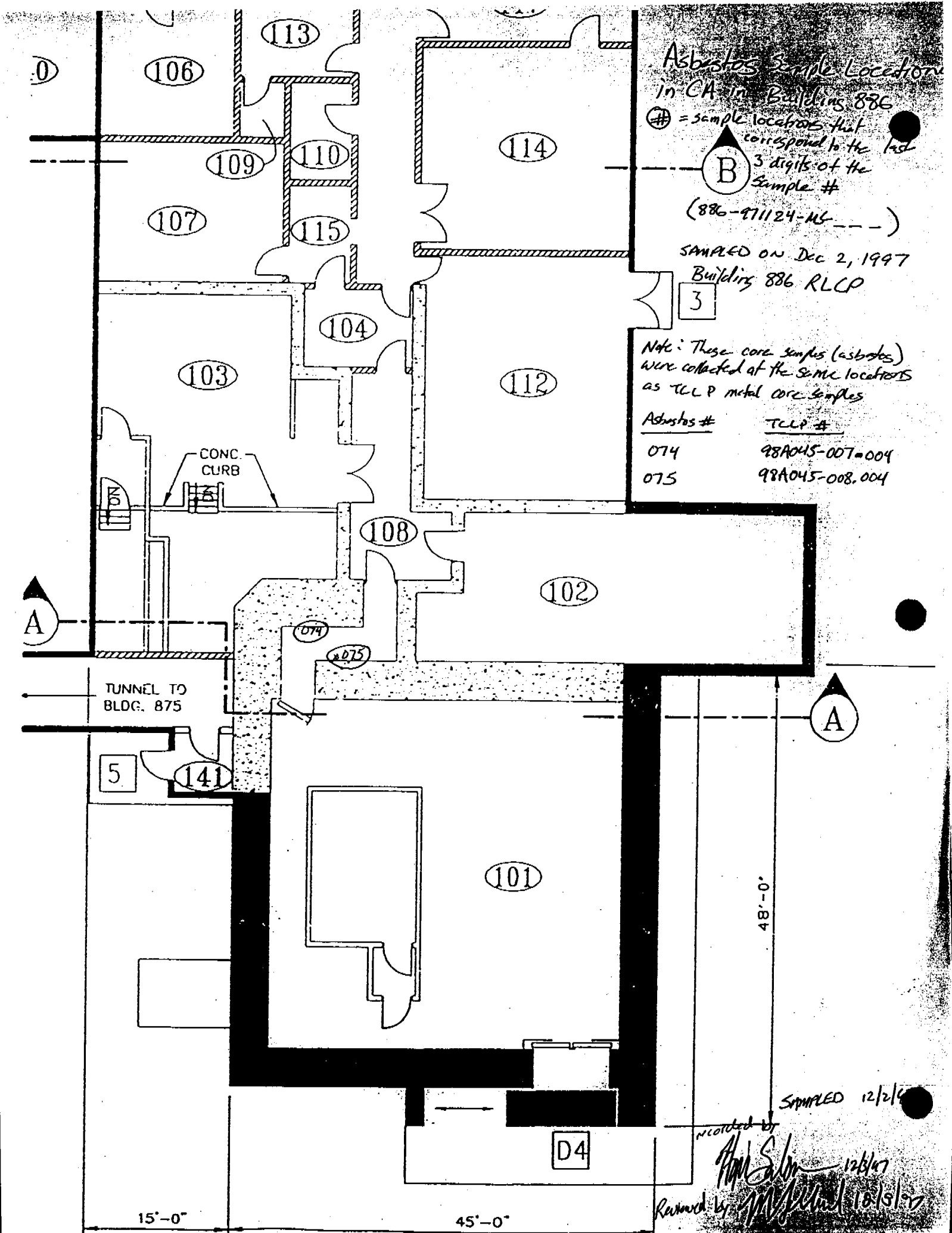
Not to Scale

BUILING 886 RCLP Asbestos Sampling Locations

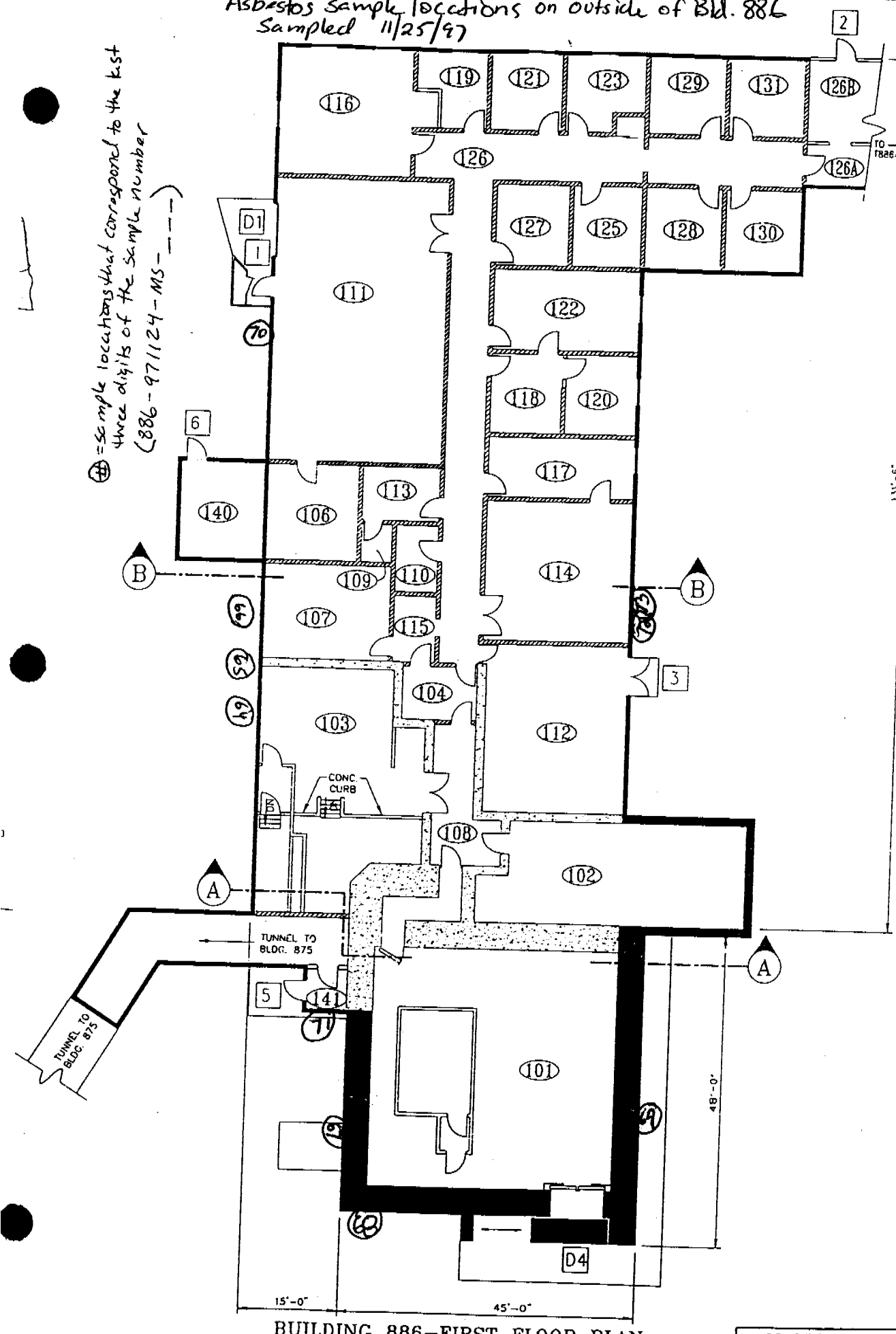
(#) = SAMPLE LOCATIONS THAT CORRESPOND the last 3 digits of the sample number.
(886-971121-MS-___ , 886-971124-MS-___)




Building 886 Asbestos Sampling Location
(#) = sample locations that correspond with last three digits of the sample number
(886-971121-MS-___)
Not to scale
2
119
121
123
129
131
126B
126
126A
TO TB86
127
125
128
130
122
118
120
117
113
114
110
115
104
B
3
Building 886 RLCP
Signed Hapi Solomon (Paperwork 904) 11/25/97
M Schlotterbeck CAI 11/25/97


Asbestos Sample Locations in CA in Buildings 886
= sample locations that correspond to the last 3 digits of the Sample
(886-971124-MS---)
SAMPLED ON Dec 2, 1997
Building 886 RLCP
3
Note: These core samples (asbestos) were collected at the same locations as TCLP metal core samples
Asbestos # TCLP #
074 98A045-007-004
075 98A045-008.004
113
106
109
110
114
B
107
115
104
103
112
CONC. CURB
108
102
A
074
075
TUNNEL TO BLDG. 875
A
5
141
101
48'-0"
SAMPLED 12/2/
D4
15'-0"
45'-0"

Asbestos sample locations on outside of Bld. 886
Sampled 11/25/97



= sample locations that correspond to the last three digits of the sample number (886-971124-MS-___)

Samplers - Phil Salomon (paperwork) 11/25/97
CIH - M. Flynn
HIS - B. Somers
Sample acquisition 11/26/97
Wed 11 + Thurs 11-25-97

BUILDING 886 RLCP

BUILDING 886-FIRST FLOOR PLAN
SCALE: 1"=10'-0"

MASTER DRAWING
MAINTAIN AS-BUILT PER COEM 6.6.2

Attachment 2

Bulk Asbestos Sample Photographs

Attachment 3

Laboratory Data

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE 1. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47649-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	BRUC	Non-Fibrous Components (%)
886-971119-MS-001	EM 318274	A	White fibrous woven material with white paint	20		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	80	Chrysotile	8	0	35	0	0	0	0	0	55
					Amosite	2								
886-971119-MS-002	EM 318275	A	Silver foil	3		ND	0	0	0	0	0	0	0	100
		B	White fibrous woven material with white paint	12		ND	70	0	0	0	0	0	0	30
		C	Yellow fibrous material	20		ND	0	88	0	0	0	0	0	12
		D	White plaster	65	Chrysotile	6	0	37	TR	0	0	0	0	55
					Amosite	2								
886-971119-MS-003	EM 318276	A	White paint	5		ND	0	0	0	0	0	0	0	100
		B	Silver foil	7		ND	0	0	0	0	0	0	0	100
		C	Gray fibrous material	18	Chrysotile	85	0	0	0	0	0	0	TR	15
		D	Gold fibrous material	25		ND	0	85	0	0	0	0	0	15
		E	White fibrous plaster	45	Chrysotile	6	0	37	0	0	0	0	0	55
					Amosite	2								
886-971119-MS-004	EM 318277	A	White paint	8	Chrysotile	TR	0	0	0	0	0	0	0	100
		B	Gray granular plaster	92		ND	0	0	TR	0	0	0	0	100
886-971119-MS-005	EM 318278	A	White fibrous woven material with white paint	5		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	95	Chrysotile	15	0	30	0	0	0	0	0	55
					Amosite	TR								

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47649-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOOL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-006	EM 318279	A	White fibrous woven material with white paint	8		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	92	Chrysotile	15	0	30	0	0	0	0	0	55
					Amosite	TR								
886-971119-MS-007	EM 318280	A	White fibrous woven material with white paint	8		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	92	Chrysotile	15	TR	30	0	0	0	0	0	55
					Amosite	TR								
886-971119-MS-008	EM 318281	A	White fibrous woven material w/white paint & tan fibrous material	7		ND	50	0	0	0	0	0	0	50
		B	White fibrous plaster	93	Chrysotile	15	0	0	0	0	0	0	0	70
					Amosite	15								
886-971119-MS-009	EM 318282	A	White fibrous woven material with white paint	6		ND	70	0	0	0	0	0	0	30
		B	White fibrous plaster	94	Chrysotile	15	0	30	0	0	0	0	0	55
					Amosite	TR								
886-971119-MS-010	EM 318283	A	White fibrous woven material with white paint	5		ND	80	0	0	0	0	0	0	20
		B	Gray fibrous plaster	95	Amosite	20	0	0	0	0	0	0	0	80

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Tram-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47649-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOOL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-011	EM 318284	A	White fibrous woven material with white paint	5		ND	70	0	0	0	0	0	0	30
		B	Gray fibrous plaster	95	Amosite	20	0	0	0	0	0	0	0	80
886-971119-MS-012	EM 318285	A	Tan resin	100		ND	12	0	0	0	0	0	0	88
886-971119-MS-013	EM 318286	A	White fibrous material	1	Chrysotile	98	0	0	0	0	0	0	0	2
		B	White paint	4		ND	0	0	0	0	0	0	0	100
		C	White resinous material	95		ND	0	0	0	0	0	0	0	100
886-971119-MS-014	EM 318287	A	Brown resin	10	Trem-Act	TR	0	0	0	0	0	0	0	100
					Anthophyllite	TR	0	0	0	0	0	0	0	100
		B	Black resinous material	90		ND	0	0	0	0	0	0	0	100
886-971119-MS-015	EM 318288	A	Gray fibrous perlitic material with white paint	100		ND	25	35	0	0	0	0	0	40
886-971119-MS-016	EM 318289	A	Black tar	4		ND	0	0	0	0	0	0	0	100
		B	Tan/white tile	96	Chrysotile	5	0	0	0	0	0	0	0	95

Date QA

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIC, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 47646-2**
Client: **Kaiser-Hill Company, LLC**
Client Project: **RIN98D0462, ME94AA**
Date Samples Received: **November 21, 1997**
Analysis Type: **PLM Short Report, Bulk**
Turnaround: **24 Hour**

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	ASBESTOS CONTENT BY LAYER Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-017	EM 318242	A	Blue/black paint	5		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	15		ND	0	0	0	0	0	0	0	100
		C	Tan granular plaster	80		ND	0	0	0	0	0	0	0	100
886-971119-MS-018	EM 318243	A	Tan paint w/white plaster	5	Chrysotile	2	0	0	0	0	0	0	0	98
					Point Count	*1.00*								
		B	Tan granular plaster	95		ND	0	0	0	0	0	0	0	100
886-971119-MS-019	EM 318244	A	Gray fibrous plaster	35		ND	15	8	10	0	3	0	0	64
		B	Multicolored tile	65		ND	0	0	0	0	0	0	0	100
886-971119-MS-020	EM 318245	A	Yellow resin	5		ND	0	0	0	0	0	10	0	90
		B	Brown resin	7		ND	0	0	0	0	0	3	0	97
		C	Tan resinous material	88		ND	0	0	0	0	0	0	0	100
886-971119-MS-021	EM 318246	A	White fibrous material w/white paint	100	Amosite	4	TR	78	0	0	0	0	0	18
					Point Count	*2.00*								
886-971119-MS-022	EM 318247	A	White paint	10		ND	0	98	0	0	0	0	0	2
		B	Yellow fibrous material	90		ND	0	0	0	0	0	10	0	90
886-971119-MS-023	EM 318248	A	White paint	8		ND	0	0	0	0	0	5	0	95
		B	Yellow fibrous material	92		ND	0	90	0	0	0	0	0	10

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Tremo-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PFK

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47646-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452, ME94AA
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOOL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-024	EM 318249	A	White fibrous woven material w/white paint	4		ND	90	0	0	0	0	0	0	10
		B	White fibrous plaster	96	Chrysotile	21	0	40	0	0	0	0	0	39
886-971119-MS-025	EM 318250	A	Black tar	5	Chrysotile	5	0	0	0	0	0	0	0	95
		B	Tan tile	95	Chrysotile	4	0	0	0	0	0	0	0	96

ND = None Detected CELL = Cellulose ORG = Organic WOLL = Wollastonite GYP = Gypsum
TR = Trace, < 1% Visual Estimate Trem-Act = Tremolite-Actinolite BRUC = Brucite SYNTH = Synthetic

Date QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47648-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452,
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-026	EM 318255	A	Black tar	8		ND	0	0	0	0	0	0	0	100
		B	White/tan tile	92	Chrysotile	4	0	0	0	0	0	0	0	96
886-971119-MS-027	EM 318256	A	Black tar	3		ND	0	0	0	0	0	0	0	100
		B	White/gray tile	97	Chrysotile	3	0	0	0	0	0	0	0	97
886-971119-MS-028	EM 318257	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	15		ND	0	0	0	0	0	0	0	100
		C	White granular plaster	40		ND	TR	0	0	0	0	0	0	100
		D	Blue foam	40		ND	0	0	0	0	0	0	0	100
886-971119-MS-029	EM 318258	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	10		ND	0	0	0	0	0	0	0	100
		C	Blue foam	35		ND	0	0	0	0	0	0	0	100
		D	White granular plaster	50		ND	0	0	0	0	0	0	0	100
886-971119-MS-030	EM 318259	A	Black tar	2		ND	0	0	0	0	0	0	0	100
		B	Tan resin	13		ND	TR	0	8	0	0	0	0	92
		C	White/gray tile	30	Chrysotile	3	0	0	0	0	0	0	0	97
		D	Blue tile	55	Chrysotile	5	0	0	0	0	0	0	0	95
886-971119-MS-031	EM 318260	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	95		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Tram-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47648-2
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452, ME94AA
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-032	EM 318261	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	10		ND	0	0	0	0	0	0	0	100
		C	White granular plaster	40		ND	TR	0	0	TR	0	0	0	100
		D	Blue foam	45		ND	0	0	0	0	0	0	0	100
886-971119-MS-033	EM 318262	A	Black tar	2		ND	0	0	0	0	0	0	0	100
		B	Tan resin	13		ND	2	0	2	0	0	0	0	96
		C	Red/white tile	35	Chrysotile	4	0	0	0	0	0	0	0	96
		D	White tile	50	Chrysotile	4	0	0	0	0	0	0	0	96
886-971119-MS-034	EM 318263	A	White fibrous material w/white paint	100	Amosite	8	0	75	0	0	0	0	0	17
886-971119-MS-035	EM 318264	A	White fibrous material w/white paint	100	Chrysotile *Point Count*	TR *ND*	0	80	0	0	0	0	0	20
886-971119-MS-036	EM 318265	A	Tan fibrous perlitic material w/white paint	100		ND	25	40	0	0	0	0	0	35
886-971119-MS-037	EM 318266	A	Black tar	5		ND	0	0	0	0	0	0	0	100
		B	Tan resin	10		ND	1	0	1	0	0	0	0	98
		C	Tan/brown tile	85	Chrysotile	8	0	0	0	0	0	0	0	92

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47640-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452,
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971119-MS-038	EM 318267	A	Black tar	5		ND	0	0	0	0	0	0	0	100
		B	Tan resin	15		ND	2	0	2	0	0	0	0	96
		C	Tan/brown tile	80	Chrysotile	8	0	0	0	0	0	0	0	92
886-971119-MS-039	EM 318268	A	Multicolored paint	15		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	85		ND	0	0	0	0	0	0	0	100
886-971119-MS-040	EM 318269	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	7		ND	1	0	0	0	0	0	0	99
		C	Tan fibrous material	18		ND	97	0	0	0	0	0	0	3
		D	White fibrous plaster	70		ND	10	0	0	0	0	0	0	90
886-971119-MS-041	EM 318270	A	White paint w/white plaster (mud)	7		ND	0	0	0	0	0	0	0	100
		B	Tan fibrous material	28		ND	95	0	0	0	0	0	0	5
		C	White plaster (drywall)	65		ND	5	0	0	0	0	0	0	95

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Date QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47647-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN98D0452, ME94AA
Date Samples Received: November 21, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-042	EM 318251	A	White paint	3		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	7		ND	100	0	0	0	0	0	0	0
		C	White plaster (mud)	20		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	70		ND	2	0	0	0	0	0	0	98
886-971121-MS-043	EM 318252	A	White paint	2		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	5		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	15		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	78		ND	2	0	0	0	0	0	0	98
886-971121-MS-044	EM 318253	A	Tan paint	2		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	98	0	0	0	0	0	0	2
		C	Blue foam	10		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	78		ND	3	0	0	0	0	0	0	97
886-971121-MS-045	EM 318254	A	Black tar	3		ND	0	0	0	0	0	0	0	100
		B	Yellow resin	7		ND	0	0	0	0	0	0	0	100
		C	Brown tile	90	Chrysotile	9	0	0	0	0	0	0	0	91

Analyst: PFK

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47729-2
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452,
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-046	EM 318841	A	Gray granular plaster	1		ND	0	0	0	0	0	0	0	100
		B	White plaster w/multicolored paint	4		ND	97	0	0	0	0	0	0	3
		C	Tan fibrous material	15	Chrysotile	TR	0	0	0	0	0	0	0	100
					Point Count	*0.5*								
		D	Blue foam	15		ND	0	0	0	0	0	0	0	100
		E	White plaster	65		ND	8	0	0	0	0	0	0	92
886-971121-MS-047	EM 318842	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	20		ND	0	0	0	0	0	0	0	100
		C	Blue foam	20		ND	0	0	0	0	0	0	0	100
		D	White granular plaster	55		ND	TR	0	0	0	0	0	0	100
886-971121-MS-048	EM 318843	A	White plaster	3	Chrysotile	5	0	0	0	0	0	0	0	95
					Point Count	*2.25*								
		B	Multicolored paint	7		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	90		ND	0	0	0	0	0	0	0	100
886-971121-MS-049	EM 318844	A	Multicolored resin w/white paint	15	Trem-Act	TR	0	0	0	0	4	4	0	92
		B	Brown resinous material	85		ND	0	0	0	0	0	0	0	100
886-971121-MS-050	EM 318845	A	Multicolored paint	10		ND	0	0	0	0	0	0	0	100
		B	White plaster	30		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	60		ND	TR	0	0	0	0	0	0	100
886-971121-MS-051	EM 318846	A	Tan/brown resin w/pink paint	10	Trem-Act	TR	0	0	0	0	4	1	0	95
		B	Brown resinous material	90		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Date QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47729-2
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452,
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-052	EM 318847	A	White fibrous material w/white paint	100	Amosite	10	0	70	0	0	0	0	0	20
886-971121-MS-053	EM 318848	A	White plaster	1	Chrysotile	3	0	0	0	0	0	0	0	97
					Point Count	*1.75*								
		B	Multicolored paint	7		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	92		ND	0	0	0	0	0	0	0	100
886-971121-MS-054	EM 318849	A	White plaster	2	Chrysotile	3	0	0	0	0	0	0	0	97
					Point Count	*1.0*								
		B	Multicolored paint	6		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	92		ND	0	0	0	0	0	0	0	100
886-971121-MS-055	EM 318850	A	Black tar	8		ND	0	0	0	0	0	0	0	100
		B	Gray/multicolored tile	92	Chrysotile	3	0	0	0	0	0	0	0	97
886-971121-MS-056	EM 318851	A	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		B	White plaster	10		ND	0	0	0	0	0	0	0	100
		C	Blue foam	35		ND	0	0	0	0	0	0	0	100
		D	Gray granular plaster	50		ND	0	0	0	0	0	0	0	100
886-971121-MS-057	EM 318852	A	Black tar	5		ND	0	0	0	0	0	0	0	100
		B	Tan resin	10		ND	10	0	TR	0	0	0	0	90
		C	White tile	40	Chrysotile	5	0	0	0	0	0	0	0	95
		D	Tan tile	45	Chrysotile	5	0	0	0	0	0	0	0	95

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47729-2
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452,
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971121-MS-058	EM 318853	A	Tan resin w/black tar	10		ND	0	0	0	0	0	0	0	100
		B	White tile	45	Chrysotile	5	0	0	0	0	0	0	0	95
		C	Blue tile	45	Chrysotile	8	0	0	0	0	0	0	0	92
886-971121-MS-059	EM 318854	A	Blue/white paint	3		ND	0	0	0	0	0	0	0	100
		B	White plaster	7		ND	0	0	0	0	0	0	0	100
		C	Blue foam	40		ND	0	0	0	0	0	0	0	100
		D	White granular plaster	50		ND	TR	0	0	TR	0	0	0	100
886-971121-MS-060	EM 318855	A	Black tar	1		ND	0	0	0	0	0	0	0	100
		B	White tile	14	Chrysotile	5	0	0	0	0	0	0	0	95
		C	Gray fibrous material w/white resin	40		ND	30	7	8	0	5	0	0	50
		D	Multicolored resinous tile	45		ND	0	0	0	0	0	0	0	100
886-971121-MS-061	EM 318856	A	Multicolored paint w/white plaster	6	Chrysotile	TR	0	0	0	0	0	0	0	100
					Point Count	*TR*	Observed but not countable under protocol, < 0.25%							
		B	Gray granular plaster	94		ND	0	0	0	0	0	0	0	100
886-971121-MS-062	EM 318857	A	White plaster	5	Chrysotile	4	0	0	0	0	0	0	0	96
					Point Count	*1.25*								
		B	Multicolored paint	5		ND	0	0	0	0	0	0	0	100
		C	Gray granular plaster	90		ND	TR	0	0	0	0	0	0	100
886-971121-MS-063	EM 318858	A	Multicolored paint	7		ND	0	0	0	0	0	0	0	100
		B	White plaster	8	Chrysotile	5	0	0	0	0	0	0	0	95
					Point Count	*3.0*								
		C	Gray granular plaster	85		ND	0	0	0	0	0	0	0	100

ND = None Detected CELL = Cellulose ORG = Organic WOLL = Wollastonite GYP = Gypsum
TR = Trace, < 1% Visual Estimate Trem-Act = Tremolite-Actinolite BRUC = Brucite SYNTH = Synthetic

Beta QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47732-1
Client: Kaiser-Hill Company, LLC
Client Project: 98D0452, ME94AA
Date Samples Received: November 25, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 3-5 Day

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER: Mineral	ASBESTOS CONTENT BY LAYER: Visual Estimate (%)	Non-Asbestos Fibrous Components (%): CELL	GLASS	SYNTH	HAIR	WOOL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-064	EM 318901	A	Silver foil w/white fibrous woven material	10		ND	0	5	0	0	0	0	0	95
		B	Tan fibrous material	10		ND	96	0	0	0	0	0	0	4
		C	Gold fibrous material	15		ND	0	80	0	0	0	0	0	20
		D	Black tar w/pink/white paint	65	Chrysotile	20	0	0	0	0	0	0	0	80
886-971124-MS-065	EM 318902	A	Yellow fibrous material	5		ND	0	80	0	0	0	0	0	20
		B	Silver foil w/tan fibrous material & white fibrous woven material	15		ND	60	10	0	0	0	0	0	30
		C	Black tar w/pink & white paint	80	Chrysotile	20	0	0	0	0	0	0	0	80
886-971124-MS-066	EM 318903	A	Yellow fibrous material	5		ND	0	80	0	0	0	0	0	20
		B	Tan fibrous material w/silver foil, white fibrous woven material	10		ND	60	15	0	0	0	0	0	25
		C	Black fibrous tar w/multicolored paint	85	Chrysotile	45	0	0	0	0	0	0	0	55
886-971124-MS-067	EM 318904	A	Multicolored resinous paint	30		ND	0	0	0	0	0	0	0	100
		B	Gray granular plaster	70		ND	0	0	0	0	0	0	0	100
886-971124-MS-068	EM 318905	A	Gray granular plaster	15		ND	0	0	0	0	0	0	0	100
		B	Tan/green resinous paint	85		ND	0	0	0	0	0	0	0	100

Analyst: PDL

Dana DA

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 47732-1**
Client: **Kaiser-Hill Company, LLC**
Client Project: **98D0452, ME94AA**
Date Samples Received: **November 25, 1997**
Analysis Type: **PLM Short Report, Bulk**
Turnaround: **3-5 Day**

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-069	EM 318906	A	Gray granular plaster	30		ND	0	0	0	0	0	0	0	100
		B	Multicolored resinous paint	70		ND	0	0	0	0	0	0	0	100
886-971124-MS-070	EM 318907	A	Gray granular plaster	35		ND	0	0	0	0	0	0	0	100
		B	Gray plaster w/tan/white paint	65		ND	0	0	0	0	0	0	0	100
886-971124-MS-071	EM 318908	A	Gray granular plaster	40		ND	0	0	0	0	0	0	0	100
		B	Green plaster w/tan & white paint	60		ND	0	0	0	0	0	0	0	100
886-971124-MS-072	EM 318909	A	Gray granular plaster	25		ND	0	0	0	0	0	0	0	100
		B	Green plaster w/tan & white paint	75		ND	0	0	0	0	0	0	0	100
886-971124-MS-073	EM 318910	A	Gray granular plaster	30		ND	0	0	0	0	0	0	0	100
		B	Green plaster w/tan & white paint	70		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 47964-1
Client: Kaiser-Hill Company, LLC
Client Project: RIN 98D0452
Date Samples Received: December 08, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 24 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-074	EM 320266	A	Multicolored paint w/trace gray plaster	3	Chrysotile	TR	0	0	0	0	0	0	0	100
		B	Gray granular plaster	97		ND	0	0	0	0	0	0	0	100
886-971124-MS-075	EM 320267	A	Gray granular plaster w/gray paint	100		ND	0	0	0	0	0	0	0	100

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PDL

Data QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

TABLE I. PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: RES 48002-1
Client: Kaiser-Hill Company, LLC
Client Project: FF332500 / 98D0601,
Date Samples Received: December 09, 1997
Analysis Type: PLM Short Report, Bulk
Turnaround: 2 Hour

Note: The US EPA requires use of stratified analysis for NESHAP and AHERA compliance. Composite results only apply for specific exceptions.

Client Sample Number	Lab ID Number	Layer	Physical Description	Portion of Total Sample (%)	ASBESTOS CONTENT BY LAYER Mineral	ASBESTOS CONTENT BY LAYER Visual Estimate (%)	Non-Asbestos Fibrous Components (%) CELL	GLASS	SYNTH	HAIR	WOLL	TALC	OTHER	Non-Fibrous Components (%)
886-971124-MS-076	EM 320435	A	White paint	5		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	15		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	15		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	65		ND	1	3	0	0	0	0	0	96
886-971124-MS-077	EM 320436	A	White paint	5		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	20		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	65		ND	1	3	0	0	0	0	0	96
886-971124-MS-078	EM 320437	A	White paint	4		ND	0	0	0	0	0	0	0	100
		B	Brown fibrous material	10		ND	98	0	0	0	0	0	0	2
		C	White plaster (mud)	20		ND	0	0	0	0	0	0	0	100
		D	White plaster (drywall)	66		ND	1	3	0	0	0	0	0	96

ND = None Detected
TR = Trace, < 1% Visual Estimate
CELL = Cellulose
ORG = Organic
Trem-Act = Tremolite-Actinolite
WOLL = Wollastonite
BRUC = Brucite
GYP = Gypsum
SYNTH = Synthetic

Analyst: PFK

Beta QA