Revision 7/01

CORRES CONTROL
OUTGOING LTR NO

DOE ORDER #

02 RF 00287

DIST	LTR	ENC
BRAILSFORD, M D		
FERRERA, D W	X	
FERRI, M S		
FULTON, J C		
GIACOMINI, J		
HALL, L		
MARTINEZ, L A		
PARKER, A M		
POWERS, K		
SCOTT, G K		
SHELTON, D C	X	
SPEARS, M S		
TRICE, K D		
VOORHEIS, G M		
BUTLER, J L	X	X
Brooks, J	X	X
Nesta, S	X	X
Peck, C.	X	X
COR. CONTROL	X	X
ADMN. RECORD	X	X
WASTE REC. CTR.		
TRAFFIC		
PATS/130		
CLASSIFICATION:		
UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE
Exemption – CEX-072-99

Date

N REPLY TO RFP CC NO

ACTION ITEM STATUS

PARTIAL/OPEN

CLOSED

TR APPROVALS

ORIG & TYPIST INITIALS

1/22

KAISER•HILL COMPANY

January 23, 2002

02-RF-00287

Ms Norma Castaneda
Environmental, Safety and Health
Program Assessment
DOE, RFFO

TRANSMITTAL OF RFCA STANDARD OPERATING PROTOCOL FOR ROUTINE SOIL REMEDIATION FY2002 NOTIFICATION# 02-01 – JLB-006-02

Attached please find seven (7) copies of the RFCA Standard Operating Protocol for Routine Soil Remediation FY2002 Notification # 02-01, for submittal to the Colorado Department of Public Health and Environment (CDPHE), the U S Environmental Protection Agency (EPA), the U S Fish and Wildlife Service, and DOE

If you have any questions, please contact me at extension 5245

J Lane Butler
Manager, Environmental Restoration Programs

JLB dm

Orig and 1 cc – Norma Castaneda

Enclosures
As Stated

JAN 2002
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Rocky Flats Environmental Technology Site 10808 Hwy 93 Unit B Golden CO 80403-8200 • 303-966-7000

ENVIRONMENTAL RESTORATION
RFCA STANDARD OPERATING PROTOCOL
FOR ROUTINE SOIL REMEDIATION
FY2002
NOTIFICATION#02-01

January 2002

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ENVIRONMENTAL RESTORATION
RFCA STANDARD OPERATING PROTOCOL
FOR ROUTINE SOIL REMEDIATION
FY2002
NOTIFICATION#02-01

Approval received from the Colorado Department of Public Health and Environment
January 16, 2002

Approval letter contained in the Administrative Record

3

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ACRONYMS

AL	action level
AOC	Area of Concern
COC	contaminant of concern
cy	cubic yard
EDDIE	Environmental Data Dynamic Information Exchange
ER	Environmental Restoration
ER RSOP	Environmental Restoration RSOP for Routine Soil Remediation
FY	Fiscal Year
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
NPWL	New Process Waste Lines
OPWL	Original Process Waste Lines
PAC	Potential Area of Concern
PCB	polychlorinated biphenyl
pCi/g	picocuries per gram
PCOC	Potential Contaminant of Concern
POC	Point of Compliance
POE	Point of Evaluation
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RSOP	RFCA Standard Operating Protocol
SOR	sum of ratios
SVOC	semivolatile organic compound
UBC	Under Building Contamination
VOC	volatile organic compound

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1.0 INTRODUCTION

This Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002) Fiscal Year (FY)02 Notification includes the notification to remediate Individual Hazardous Substance Sites (IHSSs), Potential Areas of Concern (PACs), and Under Building Contamination (UBC) Sites at the Rocky Flats Environmental Technology Site (RFETS) Industrial Area (IA) during FY02 The purpose of this Notification is to invoke the ER RSOP for the listed IHSS Groups Activities specified in the ER RSOP are not reiterated here However, deviations from the ER RSOP are noted where appropriate

Proposed remediation sites covered under ER RSOP Notification #02-01 are listed in Table 1 The locations of the proposed remediation sites are shown on Figure 1

Table 1
FY02 Potential Remediation Areas

IHSS Group	IHSS/PAC/UBC Site	Potential Contaminants of Concern (PCOCs)	Media	Estimated Remediation Volume
100-4	UBC 123 – Health Physics Laboratory	Lead	Subsurface Soil	1 cubic yard (cy)
		2-4 Dinitrotoluene n-Nitroso-di-n-propylamine	Subsurface Soil	<1 cy
	OPWL/ NPWL	Radionuclides	Pipeline and Soil	930 linear feet
	Sumps and Source Pits	Radionuclides	Debris and Soil	8 cy
100-5	100-609 – Building 121 Security Incinerator	Dioxin/Furan	Surface Soil	<1 cy

2.0 IHSS GROUP 100-4

IHSS Group 100-4 includes UBC 123 – Health Physics Laboratory, IHSS 148 – Resource Conservation and Recovery Act (RCRA) Unit 40, 100-603 – Building 123 Bioassay Waste Spill, and 100-611 – Building 123 Scrubber Solution Spill The IHSS Group 100-4 Area of Concern (AOC), and Tier I and Tier II action level (AL) exceedances are shown on Figure 2 (See Section 3 1 1, *Inputs to the Decision,* paragraph f and Figure 15 of the Industrial Area Sampling and Analysis Plan [IASAP][DOE 2001a] for an explanation of how the AOC is determined) Original Process Waste Lines (OPWL), New Process Waste Lines (NPWL), sumps, and source pits are shown in Figure 3 RCRA Units are shown on Figure 4

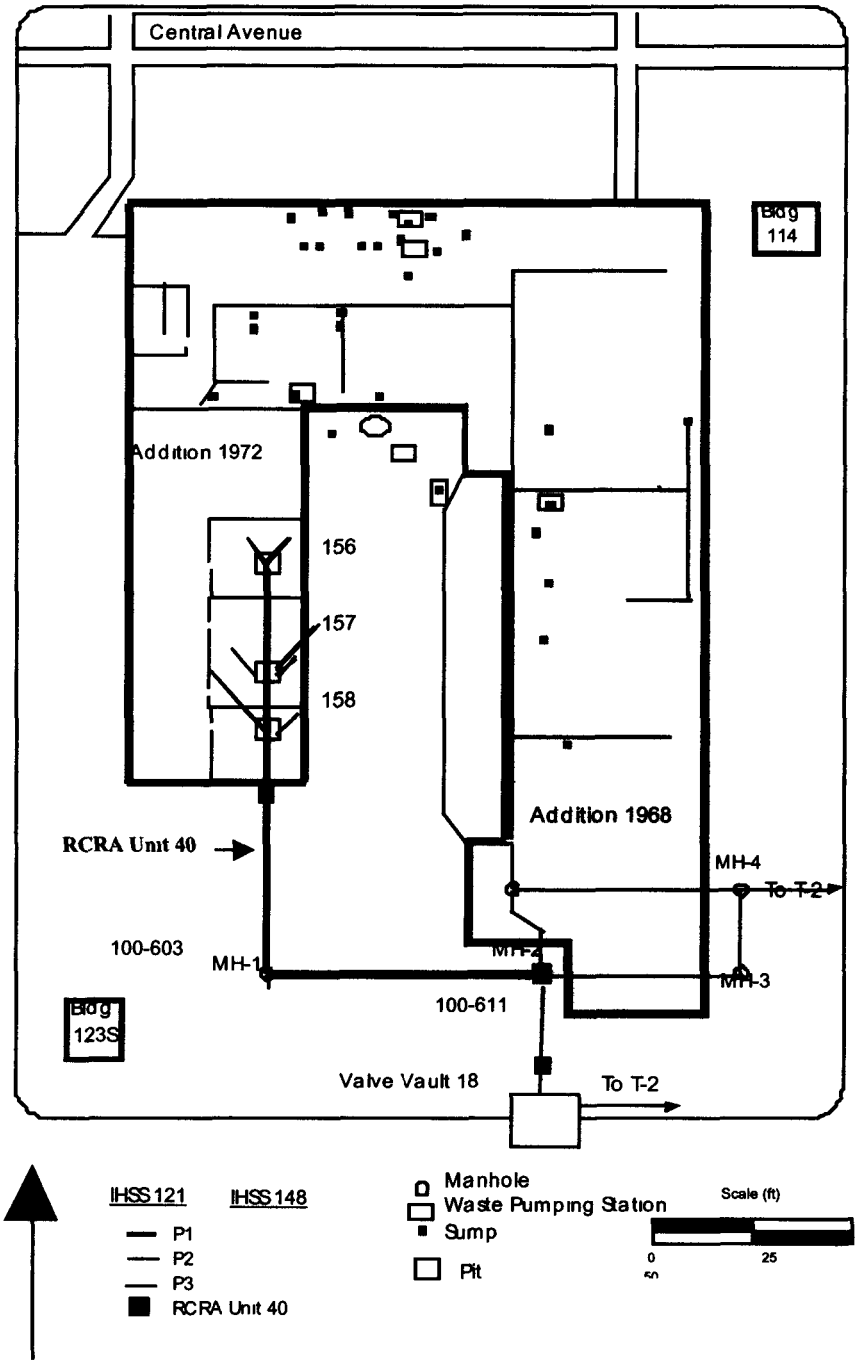
2.1 Contaminants of Concern

Contaminants of concern (COCs) at IHSS Group 100-4 were determined based on data collected during characterization of UBC 123, summarized in the Final Data Summary Report for the Characterization of UBCs 123 and 886 (DOE 2001b) and data collected during previous studies (DOE 2001a, DOE 2000)

Results of previous sampling and analysis of surface and subsurface soil at IHSS Group 100-4 indicate lead was detected in subsurface soil above the Tier I AL (DOE 2000)

7

Figure 4
UBC 123 RCRA Unit 40



at one location The organics 2-4 Dinitrotoluene and n-Nitroso-di-n-propylamine are present above RFCA Tier I ALs in subsurface soil but below method detection limits at one location Additionally, the RFCA Tier I sum of ratios (SOR) is greater than 1 at this location Radionuclides and metals are present at concentrations above background plus two standard deviations (Figure 2) Arsenic exceeding the Tier II AL was detected at one location in surface soil (DOE 2001b) and beryllium exceeding the Tier II AL was detected at one location (DOE 1998) Methylene chloride is present in subsurface soil at levels slightly above the RFCA Tier II AL The limits of the AOC (background plus two standard deviations and method detection limits SORs) and the RFCA Tier I and Tier II AL exceedances are shown on Figure 2 Additionally, there are three process waste lines, source pits, and sumps beneath the 123 slab

2.2 Project Assumptions

The following unique features and remediation challenges are present at IHSS Group 100-4

- The UBC 123 floor slab, which will be dispositioned in accordance with the RSOP for Concrete Recycling,
- The cesium source pit,
- Subsurface soil with lead analytical results greater than Tier I ALs,
- Surface soil with organic analytical results greater than Tier I ALs,
- Several sumps and other below grade structures at UBC 123,
- Portions of OPWL and NPWL at RCRA Unit 40 The pipe chases and sump in Rooms 156, 157, and 158 were closed in accordance with the Closure Plan for Building 123 Components of RCRA Unit 40 (DOE 1997) Closures of the sump in Room 124 and the underground pipe from Room 158 did not meet the closure performance standards and will be addressed as part of this accelerated action (DOE 1998),
- Portions of OPWL P-1, P-2, and P-3 beneath the slab, and portions of P-1 and the valve vault within PAC 100-602, and
- Confirmation samples will be collected in accordance with the IASAP (DOE 2001a)

2.3 Remediation Plan

The remediation plan for IHSS Group 100-4 includes several objectives Remediate lead- and semivolatile organic compound (SVOC)-contaminated locations to below Tier I ALs (Figure 2) Remove OPWL, NPWL, source pits, sumps, and associated soil to below RFCA Tier I ALs (Figure 3)

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OPWL and NPWL in IHSS Group 100-4 will be excavated as close as possible to Valve Vault 18 The extent of this excavation will depend on access to the area not contamination It is anticipated that remediation will stop at Cottonwood Avenue Additional remediation, if required, for Valve Vault 18 and the associated area (Figure 2) will be conducted when IHSS Group 000-2 is addressed

It is anticipated that after the OPWL, NPWL, source pits, sumps, and associated soil are removed there will be areas with concentrations of metals, radionuclides, and organics greater than background plus two standard deviations or method detection limits, but below RFCA Tier II ALs at this site Additionally, it is anticipated that there will be very few areas with concentrations above RFCA Tier II ALs

2.4 Stewardship Evaluation

Based on the potential contaminants of concern (PCOCs) and COCs (Table 1 and Section 2 1) and the ER RSOP (DOE 2002), it is anticipated that all contamination above RFCA Tier I ALs will be remediated Excavation of process waste lines, sumps, and source pits will remove additional subsurface soil contamination and likely reduce contamination to below RFCA Tier II ALs in pipeline, sump, and source pit areas Figure 2 shows the current extent of contamination and Figure 3 shows process waste line, sump, and source pit excavation areas Additional remediation to below Tier I ALs is not required by RFCA

Because the full extent of excavation and remediation is not known at this time, an additional stewardship evaluation will be conducted during remediation through the consultative process A new map of residual contamination will be generated after remediation The following sections contain the stewardship evaluation

2.4.1 Proximity to Other Contaminant Sources

IHSS Group 100-4 is located in the RFETS IA Table 2 lists nearby potential contaminant sources

Table 2
Other Potential Contaminant Sources for IHSS Group 100-4

IHSS Group	PCOCs/COCs	Media	Distance from IHSS Group 100-4
000-2– OPWL - Valve Vault 18	Radionuclides	Subsurface Soil	Adjacent to the south
100-1 – UBC 122 Medical Facility	Radionuclides Volatile Organic Compounds (VOCs) Polychlorinated Biphenyls (PCBs)	Subsurface Soil	Approximately 70 feet to the west
100-2 – UBC 125 Standards Laboratory	VOCs	Subsurface Soil	Approximately 95 feet to the southwest
400-8 – UBC 441 Office Building	Radionuclides VOCs PCBs	Subsurface Soil	Approximately 90 feet to the east

Nearby IHSS Groups have potential contaminants of concern (PCOCs) similar to, and in the same media as, IHSS Group 100-4 It is anticipated that after remediation of these IHSS Groups, they will have residual contamination in subsurface soil similar to the residual contamination anticipated at IHSS Group 100-4 The location of these IHSS Groups is shown on Figure 2

2.4.2 Surface Water Protection

Surface water protection includes the following considerations

Is there a pathway to surface water from potential erosion to streams or drainages?

There are no surface water features in the vicinity of IHSS Group 100-4 This site is in a flat-lying area not prone to erosion

Do characterization data indicate there are contaminants in surface soil?

Arsenic concentrations were greater than the Tier II AL but less than background

Table 3 lists radionuclide data from IHSS Group 100-4, along with background values and RFCA ALs for comparison

Table 3
Characterization Summary

Analyte	Maximum Result picocuries per gram(pCi/g)	Background plus two standard deviations (pCi/g)	Tier II AL (pCi/g)	Tier I AL (pCi/g)
Americium-241	1 14	0 0227	38	209
Plutonium-239/240	0 445	0 066	252	1088
Uranium-233/234	1 87	2 64	307	1627
Uranium-235	0 114	0 12	24	113
Uranium-238	1 52	2 0	103	506

Do monitoring results from Points of Evaluation (POEs) or Points of Compliance (POCs) indicate there are surface water impacts from the area under consideration?

There are no surface water POEs or POCs near IHSS Group 100-4 Therefore it is difficult to attribute potential surface water impacts to IHSS Group 100-4

Is the IHSS Group in an area with high erosion potential, based on the 100-Year Average Erosion Map?

Not applicable The 100-Year Average Erosion Map does not include areas in the IA

2.4.3 Monitoring

Monitoring includes the following considerations

Do monitoring results from POEs or POCs indicate there are groundwater impacts from the area under consideration?

There are no data from surrounding wells indicating groundwater was impacted at this site

Can the impact be traced to a specific IHSS Group?

Contaminants in groundwater monitoring wells cannot be traced to IHSS Group 100-4 Decontamination and decommissioning wells 10098, 10198, 10298, 10398, 10498, and 10598 were evaluated to determine whether contamination from IHSS Group 100-4 could be impacting groundwater Results from Well 10498 indicated sporadic tetrachloroethene exceedances However, the reasons for the fluctuations are not known Well 10498 is screened in a utility corridor and these exceedances are not found at any of the other wells around IHSS Group 100-4 (DOE 2001c) Additionally, tetrachloroethene was not found in subsurface soil at IHSS Group 100-4 Consequently, it is difficult to attribute tetrachloroethene exceedances to IHSS Group 100-4

Are additional monitoring stations needed?

No There is no existing evidence that COCs from this IHSS Group have impacted groundwater

Can existing monitoring locations be deleted if additional remediation is conducted?

Not applicable

2.4.4 Stewardship Actions and Recommendations

There are several stewardship actions and recommendations for IHSS Group 100-4

- Implement near-term institutional controls until final closure and stewardship decisions are implemented, including the following
  - Signs and barriers,
  - Restrictions on soil excavation, and
  - Soil excavations will be controlled through the Site Soil Disturbance Permit process, and
- Implement long-term stewardship actions, including the following
  - Federal ownership, and
  - Land use restrictions to prevent soil excavation Specific land use restrictions will be discussed in the Site Long-Term Stewardship Plan

These recommendations may change based on in-process remediation activities and other future RFETS remediation activities

2.5 Accelerated Action Remediation Goals

ER RSOP remedial action objectives include the following

1 Provide a remedy consistent with the RFETS goal of protection of human health and the environment,

2 Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls, and

3 Minimize the spread of contaminants during implementation of accelerated actions

The accelerated action remediation goals for IHSS Group 100-4 include the following

- Remove the UBC 123 concrete slab and disposition the concrete according to the RSOP for Recycling Concrete (DOE 1999),
- Remove sumps and remediate associated soil to below Tier I ALs at locations noted on Figure 3,
- Remove the cesium source pit (Figure 3) and remediate associated soil to below Tier I ALs,
- Remediate lead (Figure 2) in subsurface soil to below RFCA Tier I ALs,
- Remediate SVOCs (Figure 2) in surface soil to below RFCA Tier I ALs,
- Remove NPWL beneath and south of UBC 123 to as close to Valve Vault 18 as access allows (Figures 3 and 4), and
- Remove OPWL (Figure 3)

2.6 Treatment

Not applicable

2.7 Project-Specific Monitoring

High-volume air samplers may be used at the remediation area consistent with work controls to determine airborne radioactivity concentrations Approximate locations of air samplers are shown on Figure 3

2.8 RCRA Units and Intended Waste Disposition

RCRA Unit 40 includes portions of OPWL and NPWL (Figure 4) The pipe chases and sumps in Rooms 156, 157, and 158 were closed in accordance with the Closure Plan for Building 123 Components of RCRA Unit 40 (DOE 1997) and will be removed Closure of the sump in Room 124 and the underground pipe from Room 158 did not meet the closure performance standards and will be addressed as part of this accelerated action

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(DOE 1998) It is anticipated that waste from these units will be classified as low level mixed waste

2.9 Administrative Record Documents

DOE, 1997, Closure Plan for Building 123 Components of RCRA Unit 40 (Closure Plan), Rocky Flats Environmental Technology Site, Golden, Colorado, November

DOE, 1998, Final Close-Out Report Building 123 Decommissioning Project, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2001, Final Data Summary Report for the Characterization of UBCs 123 and 886, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE 2001, First Quarter RFCA Groundwater Monitoring Report for Calendar Year 2001, Rocky Flats Environmental Technology Site, Golden, Colorado, August

DOE, 2002, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology, Golden, Colorado, January

2.10 Projected Schedule

Remediation of IHSS Group 100-4 will begin in January 2002

3 0 IHSS GROUP 100-5

IHSS Group 100-5 includes PAC 100-609 – Building 121 Security Incinerator A map of IHSS Group 100-5 is provided as Figure 5, along with the potential remediation area

3 1 Contaminants of Concern

PCOCs at IHSS Group 100-5 are based on process knowledge and will be determined during in-process characterization PCOCs include dioxin and furan, for which no RFCA ALs have been established

3 2 Project Assumptions

Unique features and remediation challenges at IHSS Group 100-5 include the following

- Two concrete slabs cover this area,
- After slab removal, characterization, and remediation (if necessary), a gravel cover will be used for temporary stabilization instead of revegetation, and
- Concrete will be recycled according to the RSOP for Recycling Concrete (DOE 1999)

3.3 Stewardship Evaluation

The stewardship evaluation for IHSS Group 100-5 is based on existing data as of October 1, 2001

3 3.1 Proximity to Other Contaminant Sources

IHSS Group 100-5 is located in the RFETS IA Nearby potential contaminant sources are UBCs 122 and 125 Table 4 lists nearby potential contaminant sources, their locations are shown on Figure 5

Table 4
Other Potential Contaminant Sources for IHSS Group 100-5

IHSS Group	PCOCs/COCs	Media	Distance from IHSS Group 100-5
100-1 – UBC 122 Medical Facility	Radionuclides VOCs PCBs	Subsurface Soil	Approximately 25 feet to the east
100-2 – UBC 125 Standards Laboratory	VOCs	Subsurface Soil	Approximately 100 feet to the southeast

Nearby IHSS Groups have PCOCs that are different from IHSS Group 100-5 Additional remediation of IHSS Group 100-5 may be considered because of the unique potential contaminants at this site

3.3.2 Surface Water Protection

Surface water protection includes the following considerations

Is there a pathway to surface water from potential erosion to streams or drainages?

There is a small ditch northwest and upgradient of IHSS Group 100-5 This IHSS Group is in a flat-lying area not prone to erosion

Do characterization data indicate there are contaminants in surface soil?

Process knowledge indicates PCOCs will be near method detection limits

Do monitoring results from POEs or POCs indicate that there are surface water impacts from the area under consideration?

There are no surface water POEs or POCs near IHSS Group 100-5 Therefore it is difficult to attribute potential surface water impacts to IHSS Group 100-5

Is the IHSS Group in an area with high erosion potential, based on the 100-Year Average Erosion Map?

Not applicable The 100-Year Average Erosion Map does not include areas in the IA

3.3.3 Monitoring

Monitoring includes the following considerations

Do monitoring results from POEs or POCs indicate there are groundwater impacts from the area under consideration?

There is no data from surrounding wells indicating groundwater was impacted from this site

Can the impact be traced to a specific IHSS Group?

No Contaminants in groundwater monitoring wells cannot be traced to IHSS Group 100-5

Are additional monitoring stations needed?

No There is no existing evidence that PCOCs from this IHSS Group have impacted groundwater

Can existing monitoring locations be deleted if additional remediation is conducted?

Not applicable

3.3 4 Stewardship Recommendations

There are no stewardship actions and recommendations for IHSS Group 100-5 because remediation to method detection limits or near detection limits will likely eliminate any need for stewardship actions

Stewardship actions or recommendations may be required based on in-process remediation activities and other future Site remediation activities

3.4 Accelerated Action Remediation Goals;

The ER RSOP remedial action objectives include the following

1 Provide a remedy consistent with the RFETS goal of protection of human health and the environment,

2 Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls, and

3 Minimize the spread of contaminants during implementation of accelerated actions

The accelerated action remediation goals for IHSS Group 100-5 include the following

- Remove the concrete slabs, which will be dispositioned in accordance with the RSOP for Concrete Recycling, and

- Remediate soil if dioxins or furans are found at levels greater than method detection limits or a level agreed upon through the RFCA consultative process

3.5 Treatment

Not applicable

3.6 Project-Specific Monitoring

It is not anticipated that air sampling will be required at this site

3.7 RCRA Units and Intended Waste Disposition

Not applicable

3.8 Administrative Record Documents

DOE, 1999, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE, 2002, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology, Golden, Colorado, January

3 9 Projected Schedule

Remediation of IHSS Group 100-5 will begin in January 2002

4.0 PUBLIC PARTICIPATION

ER RSOP Notification #02-01 activities were discussed at the January 15, 2002 ER/D&D Status meeting This Notification is available at the Rocky Flats Reading Rooms and on the Environmental Data Dynamic Information Exchange (EDDIE) website at www rfets gov

5.0 REFERENCES

DOE, 1997, Closure Plan for Building 123 Components of RCRA Unit 40 (Closure Plan), Rocky Flats Environmental Technology Site, Golden, Colorado, November

DOE, 1998, Final Close-Out Report Building 123 Decommissioning Project, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 1999, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE, 2001b, Final Data Summary Report for the Characterization of UBCs 123 and 886, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2001c, First Quarter RFCA Groundwater Monitoring Report for Calendar Year 2001, Rocky Flats Environmental Technology Site, Golden, Colorado, August

DOE, 2002, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology, Golden, Colorado, January

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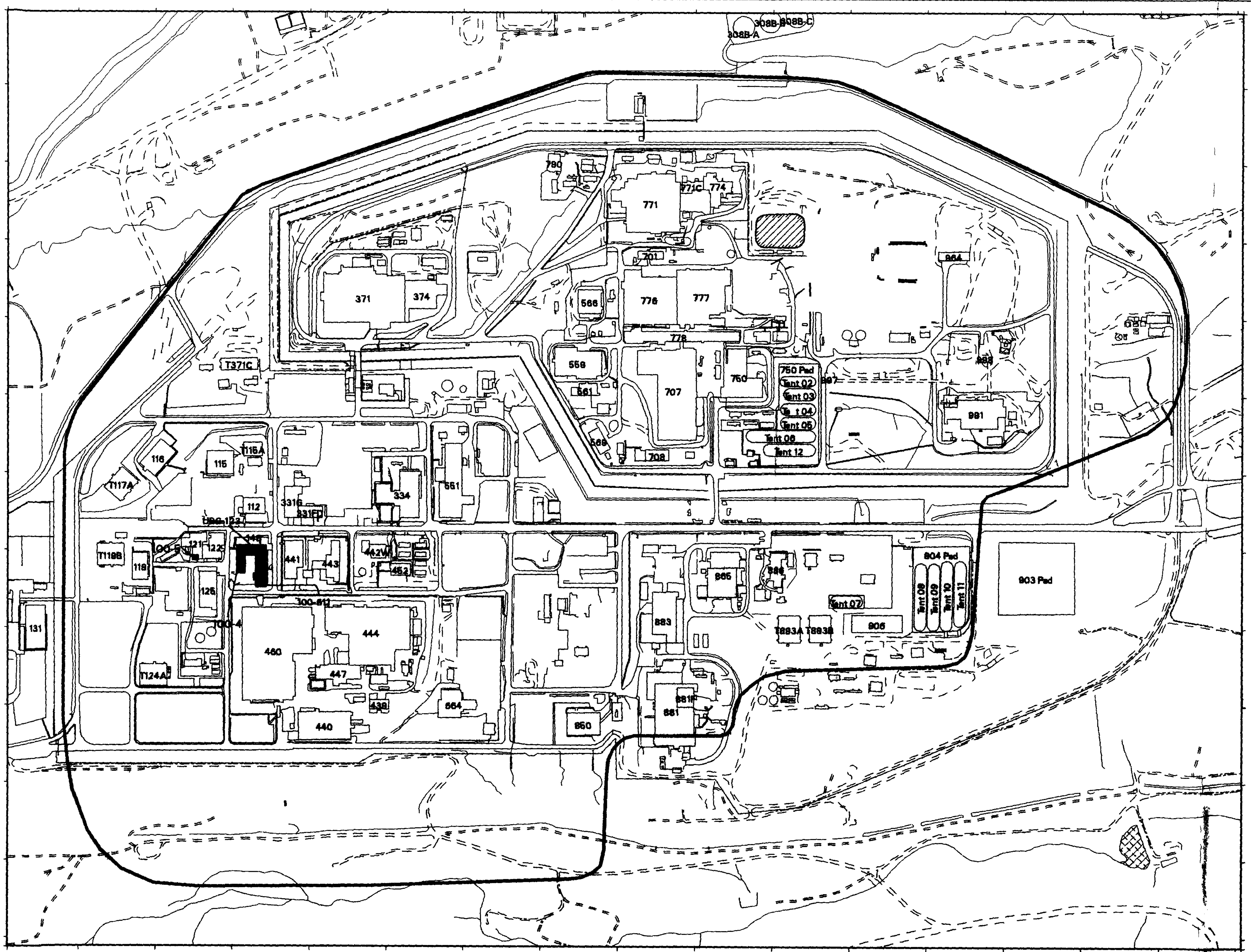

Figure 1

IA Groups Location Map

EXPLANATION

IHSS Groupings

- 100 4
- 100 5

Standard Map Features

- Building and other tructu es
- Sola Evapor tion Ponds (SEPs)
- Lakes nd pond
- Stream ditches, or ther drainage features
- Fences nd oth r b rriers
- Paved road
- Dirt road
- Industrial Area Oper ble Unit Boundary

DATA SOURCE BASE FEATURES:
PACs
Historical Release Report (HRR)
2nd Annual Update
Sept. 30, 199
Individual Hazardous Substance Sites (IHSS)
DOE, 392, HRR eport and Subsequent Updates.
Buildings, fences, hydrography, roads and other features from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas.
Digitized from the orthophotographs. 1/95

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0 400 800

State Plane Co rdinat Project
Colo ad Ce t al Z
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

Prepared by: **DynCorp**

Prepared fo KAISER-HILL

MAP ID: 02-0121

January 07, 2002

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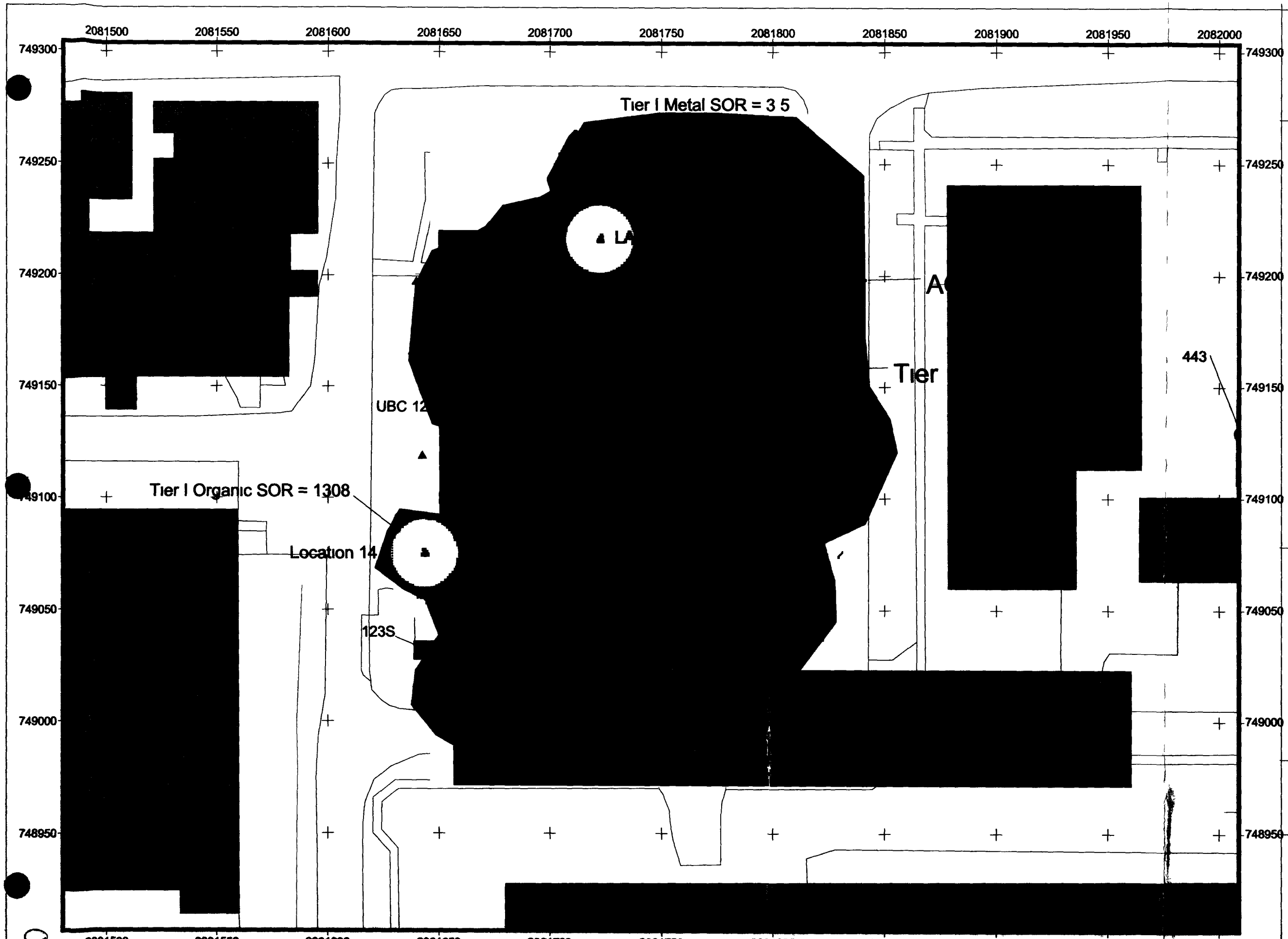
Figure 2
IHSS Group 100-4 AOC and Tier I and Tier II Exceedances



KEY

- Area of Concern
- Tier II Exceedance
- Tier I Exceedance
- FY 2002 IHSS locations
- FY 2002 PAC locations
- FY 2002 UBC locations
- Buildings and other structures
- Paved areas
- Dirt roads
- Streams ditches or other drainage features

Existing soil sampling locations (50-ft buffer)

- ▲ Both subsurface and surface soil
- ▲ Subsurface soil
- ▲ Surface soil

N

Scale = 1 1000

30 0 30 60 Feet

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by
KAISER HILL COMPANY

statgnd.apr

January 2002

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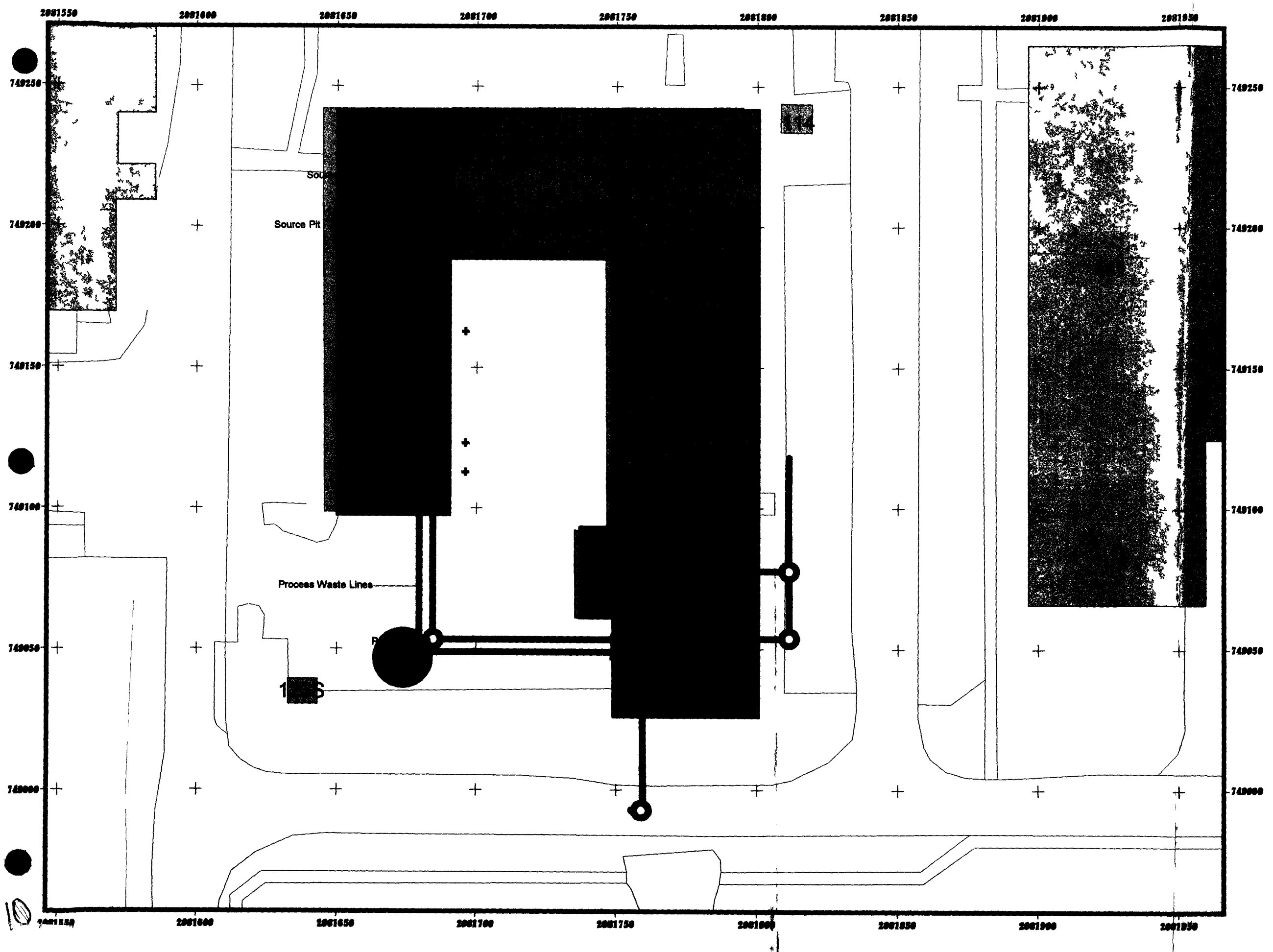
Figure 3
IHSS Group 100-4
OPWL, NPWL, Sumps, and Source Pits



KEY

- Process Waste Lines
- Potential Air Sampler Location
- FY 2002 IHSS locations
- FY 2002 PAC locations
- FY 2002 UBC locations
- Buildings and other structures
- Paved areas
- Dirt roads
- Streams ditches or other drainage features

N

Scale = 1 400

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

U S Department of Energy
Rocky Flats Environmental Technology Site

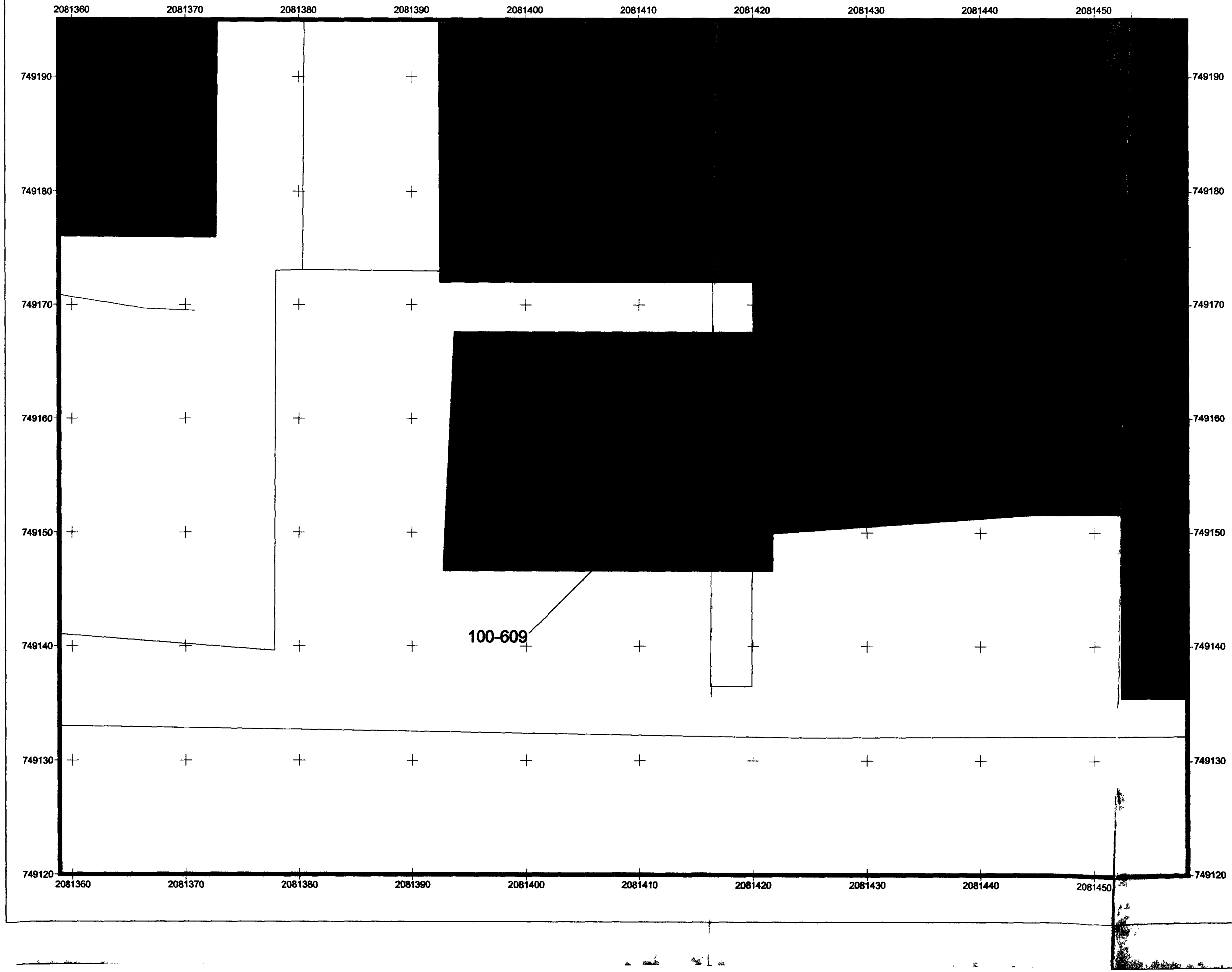
Prepared by

KAISER HILL COMPANY

notification apr

January 2002

Figure 5
IHSS Group 100-5
Potential Remediation Area



KEY

- FY 2002 geostatistical sampling location
- FY 2002 biased sampling location
- FY 2002 statistical sampling location
- Random start 36-ft triangular grid line
- FY 2002 IHSS location
- FY 2002 PAC location
- FY 2002 UBC location
- Building/structure
- Paved area
- Dirt road
- Stream ditch or other drainage feature

Existing soil sampling locations (50-ft buffer)

- Both subsurface and surface soil
- Subsurface soil
- Surface soil

N

Scale = 1 100

4 0 4 8 12 Feet

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:
WATERSTONE
Environment Hydrology and Engineering Inc

Prepared for:
KAISER-HILL COMPANY

statgrid.apr 9 October 2001

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