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INTEROFFICE CORRESPONDENCE

DATE: December 20, 1995

TO: K. L. Wiemelt, Kaiser-Hill, L.L.C., Building T-130F, X9883

FROM: B. A. Troutman, Solar Pond Projects, Building 080, X8588/D4622

SUBJECT: TRANSMITTAL OF THE FINAL SOLAR EVAPORATION POND 207-C CHARACTERIZATION REPORT - BAT-072-95

Action(s): None Required

DOE Order: 4700.1

Attached is a copy of the Final Solar Evaporation Pond 207-C Characterization Report, produced by Parsons Engineering-Science, Inc. under Subcontract MTS 236642GG3, and in support of Work Package 12474.

Rocky Mountain Remediation Services, L.L.C. welcomes your comments on this final report subsequent to your review of the document. Please contact me at extension 8588 or digital page 4622 with any questions or comments that you may have.

BAT

Attachments:
As Stated

cc:
G. I. Greene (w/o attachment)
J. A. Ledford (w/o attachment)
A. M. Parker (w/o attachment)
D. E. Steffen (w/o attachment)
PFC (2)
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SOLAR EVAPORATION POND 207-C
CHARACTERIZATION REPORT

for the

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

December, 1995

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SEP 207-C CHARACTERIZATION REPORT

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Attachment A: Raw Analytical Results

SEP 207-C CHARACTERIZATION REPORT

1.0 INTRODUCTION

Characterization of Solar Evaporation Pond (SEP) 207-C is the final task in the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) at Operable Unit 4 (OU4) the Rocky Flats Environmental Technology Site (RFETS). This investigation was undertaken to satisfy the requirements of RCRA (as amended), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Colorado Hazardous Waste Act (CHWA), under the requirements of the Interagency Agreement (IAG) of 1991.

This report is an amendment to the Phase I data contained in the "OU4 Solar Evaporation Ponds Interim Measures/Interim Remedial Measures Environmental Assessment Decision Document, Part II, Volumes 1 through 8."

1.1 Purpose and Organization of the SEP 207-C Characterization Report

The purpose of this investigation was to characterize asphalt and soil beneath SEP 207-C in order to satisfy Phase I reporting requirements and to provide data to support the closure design of Individual Hazardous Substance Site (IHSS) 101. All work was conducted according to the OU4 Phase I RFI/RI Work Plan, as amended by applicable Document Modification Requests (DMRs). It was determined at an April 26, 1995 DOE, CDPHE, and EPA joint working group meeting, that characterization data would be collected from the top few feet of soils, specifically, from depths not to exceed six feet below ground surface. This agreement was reached due to the fact that the contaminants of concern in the previously sampled SEPs were primarily contained in the first several feet and it was acknowledged that it would be difficult to mobilize an adequately sized drill rig into SEP 207-C.

This report is organized into: an introductory section (Section 1.0); a sample collection methodology section (Section 2.0); a results section (Section 3.0) which includes a comparison of SEP 207-C results with SEP 207-A and the B-series SEP results and site background results; and a conclusion section (Section 4.0). Analytical results are included in Appendix A.

2.0 SAMPLE COLLECTION METHODOLOGY

2.1 Location of Samples

To eliminate the airborne transport of contamination, the floor of SEP 207-C is covered with water. SEP 207-C was partially drained in order to conduct the characterization program. The SEP 207-C floor slopes towards a sump located at the northeast corner of the SEP as a

result of the partial draining the west, southwest and south portions of the SEP floor were exposed. Drilling locations were limited to areas of the SEP floor that were not covered by water. Figure 2.1 depicts the approximate sampling locations.

Borehole 48195 is located along the south side of the SEP, approximately midway between the east and west berms. Borehole 48295 is located near the southwest corner of the SEP, and borehole 48395 is located along the west side of the SEP, midway between the north and south berms. Borehole locations and the limit of standing water are shown based on the field geologists notes and approximations. Location surveying was not performed due to SEP access difficulties and because the SEP was re-filled with water immediately after the holes were hot tar sealed.

2.2 Drilling Methodology

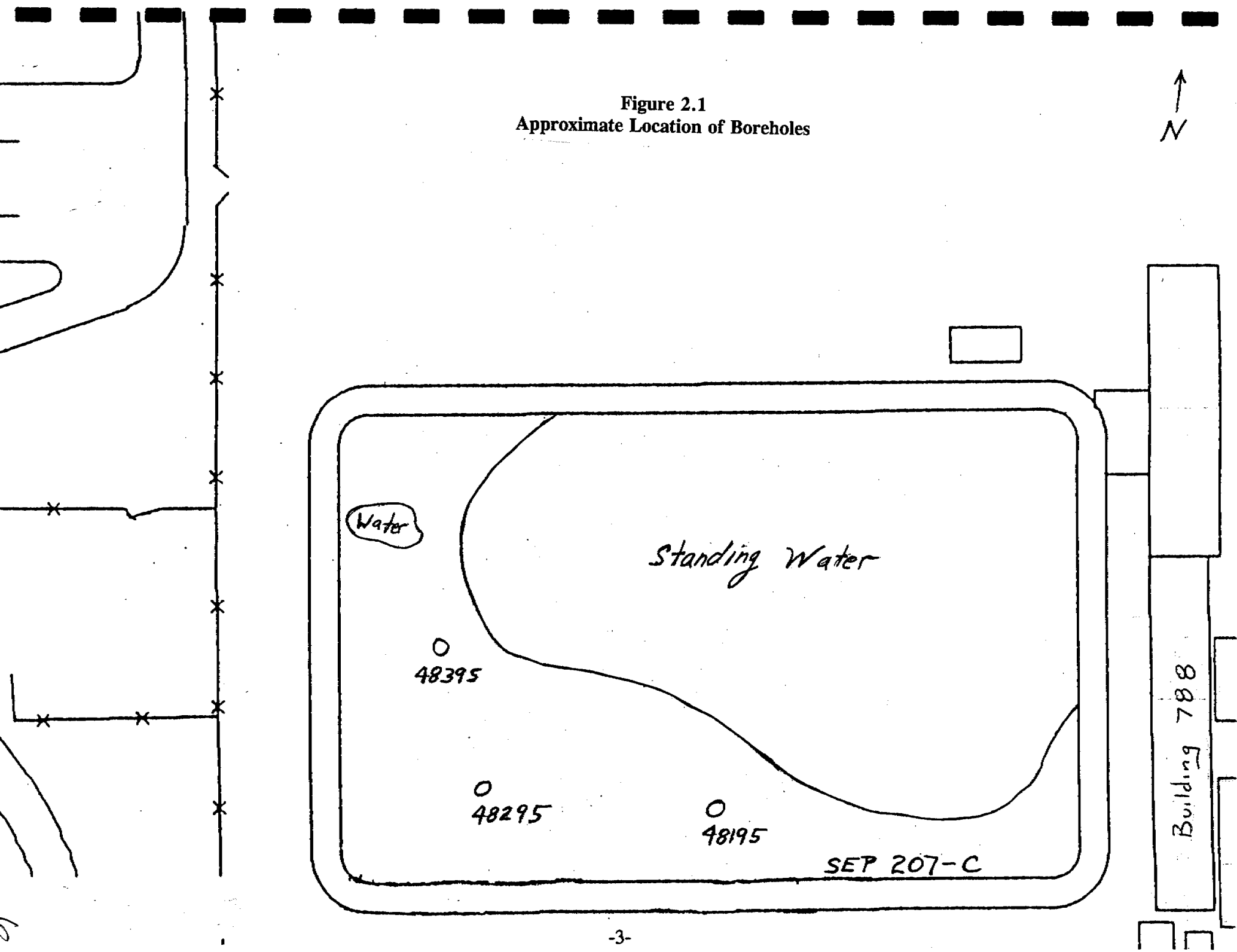
Each of the three borehole locations were prepared by adhering a wooden (three foot square) plastic-coated, water diversion structure to the SEP floor with silicone sealant. The water diversion structure had an open bottom which permitted access to the SEP floor while keeping out any water that could have accumulated near the hole due to potential precipitation. The open top of the water diversion structure was kept sealed with 5 mil plastic. Once the asphalt liner was penetrated, the water diversion structure was kept covered with plastic whenever work was not being performed. The water diversion structure remained in place until the liner was re-sealed with hot tar.

Asphalt samples were collected by cutting a hole and breaking up the asphalt with a pneumatic demolition hammer (jack hammer). Most of the soil samples were collected by driving a 2 inch outside diameter (OD) split spoon sampler to the desired depth with the demolition hammer. The last sample from location 48395 was obtained with a 2 1/2 inch outside diameter split spoon sampler. Retrieval of the split spoon sampler was accomplished manually with a lever and fulcrum arrangement consisting of a 20 inch high welded steel A-Frame fulcrum and a 6 foot long hollow steel bar as a lever.

The sampler advanced easily due to the pneumatic equipment. However, manual removal with the lever and fulcrum was difficult, especially on the deeper samples. Sample depth was limited to the 5.0 to 6.5 feet range (depending on the soil material) due to the lever and fulcrum arrangement.

After sampling was completed at each location, the borehole was filled with a mixture of 5% bentonite Pure Gold® grout to the surface. After all three locations were filled with bentonite grout, the boreholes were sealed with Koch® #9070 joint and crack sealer (hot tar) heated to approximately 375 degrees Fahrenheit.

Figure 2.1
Approximate Location of Boreholes



2.3 Sample Collection Description

The two split spoon samplers used on the job held either one or two (for duplicates) six inch by 1.9 inch stainless steel sleeves at the bottom end of the sampler. The stainless steel sleeves were used to collect intact soil samples for volatile organic analysis.

Once the sampler was pulled from the ground and screened for health and safety purposes, the stainless steel sleeve was removed from the sampler, capped with teflon tape and plastic caps, labeled and cooled to 4 degrees centigrade. After completing a preliminary field log of the core, the remaining soil sample was placed into a stainless steel bowl, stirred and transferred to the appropriate glass or plastic sample containers, and cooled to 4 degrees, if necessary.

Samples were labeled, sealed with tamper evident tape and placed in a sample cooler. The outside surface of each sample container was swiped to check for removable radioactive contamination before removal from the SEP 207-C work area.

For comparative analysis with the other SEPs, most samples were collected and analyzed for volatile organic compounds (VOC), semi-volatile organic compounds (SVOCs), cyanide, sulfide, nitrate/nitrite, total organic carbon (TOC), gross alpha and beta, plutonium-239/240, americium-241, uranium-233/234, uranium-235, uranium-238, total strontium, cesium-134, cesium-137 DA (Daughter Analysis), target analyte list (TAL) and toxicity characteristic leaching procedure (TCLP) metals. The asphalt liner was not sampled for VOC, SVOCs, Cyanide, Sulfide, Nitrate/Nitrite, or TOC while the soils were not sampled for TCLP metals. Not enough soil was derived for sample BH00109PE to perform TOC, total strontium, radium-226 DA, radium-228 DA, cesium-134, or cesium-137 DA analytical tests.

3.0 RESULTS

3.1 Tabulated Summary of the Analytical Results

Tabulated results from the 207-C pond characterization, are shown in Table 3.1.

3.2 QA/QC Results

Equipment rinseate samples contained detectable amounts of plutonium-239/240 and americium-241. Reports from the field sampling crew indicate that full equipment decontamination could not have been achieved with the standard decontamination procedures. Small amounts of tar from the pond bottom would stick to the sampling equipment and could not be removed with cold water, soap and a brush. Alternative decontamination procedures

(solvents) were not used to remove the small amounts of residual tar because hazardous waste would have been generated.

3.3 Comparison of Results from the Three SEP 207-C Locations

Data analysis shows that, in general, contaminant concentrations within the subsurface soils are fairly consistent at the three sampling depths within each borehole as well as between the three borehole locations (Table 3.1). The maximum concentration of plutonium-239/240 and americium-241 was higher for asphalt liner samples than for the subsurface soil samples. Field health and safety monitoring showed that elevated alpha and beta-gamma levels were associated with the sticky tar material found on the SEP bottom. For uranium-233/234 -235, and -238 maximum concentrations occurred in the subsurface soil samples rather than in the asphalt samples. Asphalt sample plutonium-239/240 concentrations ranged from 1.31 to 4.59 pCi/g, and americium-241 concentrations ranged from 2.95 to 12.07 pCi/g. The concentration of plutonium-239/240 ranged from 0.33 pCi/g to 1.75 pCi/g for subsurface soils. The subsurface soil concentration of americium-241 ranged from 0.24 pCi/g to 0.85 pCi/g. Two of the highest uranium-233/234 values (10.35 and 14.37 pCi/g) were found in soil samples immediately beneath the asphalt liner which had uranium-233/234 levels ranging from 1.39 to 2.11 pCi/g. The plutonium-239/240 and americium-241 subsurface soil concentrations are generally highest at the first sampling interval beneath the liner. The uranium isotopes show less of a pattern, with the variation between the concentrations for the three sample depth intervals being less in comparison to plutonium-239/240, americium-241, and uranium-235.

There is a general trend that the TAL metal constituents have the highest concentrations in the upper 2.5 feet of subsurface soil. Sample location 48395 is an exception to this trend in that the maximum concentrations at this borehole occur at the 2.5 to 4.5 feet depth interval. Antimony, cadmium, mercury, cesium, and uranium (non-isotope) were below the detection limits, while molybdenum, silver, and thallium were generally below the detection limits. Table 3.1 shows that the detected TAL metals generally have similar concentration ranges between the three SEP 207-C sampling locations. Section 3.5 compares the SEP 207-C results to site background concentrations to identify constituents that may require further assessment via risk analysis.

There were mostly non-detection values for the organic compounds (volatile organic compounds and semi-volatile compounds). However, the laboratory estimated several tentatively identified compounds (TICs). It is important to note that TICs were discounted from consideration as potential contaminants of concern (PCOCs) in the OU4 IM/IRA.

3.4 Comparison of SEP 207-C Locations with SEP 207-A, 207-B North and 207-B Center

A tabular presentation of maximum concentrations from SEP 207 A, B North, B Center and C are shown in Table 3.2 (asphalt liner data) and Table 3.3 (subgrade soil data). Visual inspection of the data reveals that, in general, the asphalt sample data for most of the compounds analyzed are similar between SEP 207-C and the previously characterized SEPs (SEP 207-A, SEP 207-B North, and SEP 207-B Center). Several exceptions to this are americium-241, plutonium-239/240 and the metal species barium, iron, potassium, sodium, and strontium which were detected in SEP 207-C asphalt samples at concentrations higher than concentrations detected in the other SEPs. Parsons ES considers the higher contaminant levels in SEP 207-C asphalt are a result of SEP 207-C not being decontaminated by the same procedures used for the A and B-series SEPs, and the differences in the stored waste stream characteristics. A difference may also be attributed to the tar-like substance placed upon the SEP 207-C liner which may have sequestered contaminants that were washed off the asphalt in the 207-A and the B-series SEPs.

Analysis of subgrade soil samples shows that several metal species were detected at higher levels in SEP 207-C samples than in SEP 207-A and B-series SEP samples. Americium-241 and plutonium-239/240 were detected at lower levels in SEP 207-C soil samples than in SEP 207-A or SEP 207-B soil samples. The semi-volatile compound 2-methlynapthalene and numerous TICs were identified in SEP 207-C soil samples. It is important to note that TICs were discounted from consideration as PCOCs in the OU4 IM/IRA.

It is important to note that the maximum values between the SEPs are similar. This means that the decisions made for closure of the SEP 207-A and B-series SEPs are also appropriate for SEP 207-C. It is expected however, that the average concentrations from SEP 207-C would generally be higher than the average concentrations for the SEP 207-A and B-series SEPs (based upon inspection).

3.5 Comparison of SEP 207-C Subsurface Soil Results to Background Concentrations

Table 3.4 presents a comparison of the maximum concentrations of metals and radionuclides detected in SEP 207-C subsurface soils to the background subsurface soil concentrations presented in Section III.2.3 of the IM/IRA-EA Decision Document for the OU4 IM/IRA PCOCs. This comparison identifies the specific contaminants which may be determined to be PCOCs upon subsequent statistical evaluation conducted during risk assessment activities.

As a result of this comparison, the following analytes are likely to be determined PCOCs for SEP 207-C following statistical analysis:

- Barium,
- Manganese,
- Nitrate,
- Zinc,
- Am-241,
- Pu-239/240,
- Ra-226,
- U-238,
- U-235, and
- U-234.

There are no other constituents that are expected to be PCOCs for SEP 207-C that were not previously identified from the other SEPs because the contaminant concentrations beneath SEP 207-C are similar to the concentrations beneath the other SEPs. It should be noted that selenium, silver and cesium-134 as presented in Table 3.1 were not detected in the SEP 207-A or the B-series SEPs, and subsurface background data was not available for comparison.

4.0 CONCLUSIONS

The SEP 207-C liner concentrations for radionuclides are generally higher than the soil concentrations beneath SEP 207-C and the previous SEP 207-A and B-series SEP liner samples. Generally, the SEP 207-C liner concentrations are typically less than an order of magnitude different from the previous liner samples. It is hypothesized that the SEP 207-C liner concentrations are elevated since the liners were not rinsed when the sludge was removed, and the differences between the wastes that were stored in the SEP 207-C. Instead of rinsing the SEP 207-C liner, a tar-like substance was used to stabilize the removable contamination. Therefore, contaminants may have been sequestered by the tar instead of being removed in rinse water.

The results of the SEP 207-C subsurface soil characterization reveal that contamination beneath SEP 207-C is very similar to the contamination beneath the previously characterized SEP 207-A and the B-series SEPs. The detected contaminants are generally the same, and the concentrations are not expected to be significantly different when statistical analysis is performed for risk assessment purposes. As a result of this SEP 207-C characterization program, it is unlikely that the list of PCOCs for the OU4 IM/IRA will require modification. The contaminants are generally concentrated in the upper soil sampling intervals beneath the liners.

TABLE 3.1
SEP 207-C ANALYTICAL RESULTS

LOCATION	Interval	Analyte		Cyanide mg/kg	Sulfide Reactive, mg/Kg	Gross Alpha (pCi/g)	Gross Beta (pCi/g)
		VOC	SVOC				
48195							
AS00001PE	0.0 to 0.5 ft	NS	NS	NS	NS	26	31
BH00101PE	0.5 to 2.5 ft	ND	ND, 15 TICs	0.191	Reactive, <200	26	32
BH00102PE	2.5 to 4.5 ft	ND	ND, 6 TICs	0.25	Reactive, <200	11	26
BH00103PE	4.5 to 6.5 ft.	ND	ND, 6 TICs	<0.170	Reactive, <200	9	24
48295							
AS00002PE	0.0 to 0.5 ft	NS	NS	NS	NS	10	20
BH00104PE	0.5 to 1.7 ft	ND	ND, 17 TICs	<0.170	Reactive, <200	25	34
BH00105PE	2.5 to 4.3 ft	ND	ND, 12 TICs	<0.170	Reactive, <200	15	32
BH00106PE	4.5 to 6.1 ft	ND	ND, 19 TICs	<0.170	Reactive, <200	11	24
48395							
AS00003PE	0.0 to 0.5 ft	NS	NS	NS	NS	25	43
BH00107PE	0.5 to 1.8 ft	Acetone, 14ppb	ND, 10 TICs	<0.170	Reactive, <200	21	38
BH00108PE	2.5 to 4.5 ft	NS	ND, 18 TICs	<0.170	Reactive, <200	20	36
BH00109PE	4.5 to 5.0 ft	ND	ND, 20 TICs	<0.170	Reactive, <200	21	34
BH00110PE	0.5 to 2.0 ft	ND	ND, 6 TICs	<0.170	Reactive, <200	13	30
AS00004PE	0.0 to 0.5 ft	NS	NS	NS	NS	20	35
BH00111PE	Equip. Rinse	NS	ND	<0.003 mg/L	0.082 mg/L	0.4	0.3

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107PE
AS00004PE is dupe of AS00003PE

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS

LOCATION	Interval	Plutonium 239/240 (pCi/g)	Americium 241 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Radium-226 DA	Radium-228 DA
48195								
AS00001PE	0.0 to 0.5 ft	3.361+- 0.176	8.188+- 0.743	2.107+- 0.098	0.106+- 0.014	2.040+- 0.095	1.59	2.73
BH00101PE	0.5 to 2.5 ft	1.576+- 0.093	0.852+- 0.071	10.353+- 0.401	0.387+- 0.029	4.59 +- 0.190	9.28	1.73
BH00102PE	2.5 to 4.5 ft	0.332+- 0.024	0.308+- 0.032	3.938+- 0.148	0.157+- 0.016	1.111 +- 0.054	2.37	0.987
BH00103PE	4.5 to 6.5 ft.	0.613+- 0.049	0.557+- 0.047	1.755 +- 0.087	0.056+- 0.011	1.103+- 0.062	1.85	1.21
48295								
AS00002PE	0.0 to 0.5 ft	1.532+- 0.092	3.063+- 0.280	2.011+- 0.085	0.065+- 0.010	2.047+- 0.086	2.31	2
BH00104PE	0.5 to 1.7 ft	1.192+- 0.086	0.646+- 0.046	3.015+- 0.152	0.114+- 0.018	1.217+- 0.076	3.83	1.88
BH00105PE	2.5 to 4.3 ft	0.363+- 0.063	0.561+- 0.035	3.11 +- 0.162	0.100+- 0.018	1.592+- 0.096	2.21	1.7
BH00106PE	4.5 to 6.1 ft	0.414+- 0.051	0.598+- 0.042	6.098+- 0.241	0.195+- 0.020	3.971+- 0.165	1.51	1.35
48395								
AS00003PE	0.0 to 0.5 ft	1.310+- 0.080	2.951+- 0.226	1.463 +- 0.068	0.049+- 0.009	1.411+- 0.066	1.32	2.08
BH00107PE	0.5 to 1.8 ft	1.747+- 0.095	0.238+- 0.018	14.371 +- 0.538	0.461+- 0.034	5.624+- 0.226	8.66	1.65
BH00108PE	2.5 to 4.5 ft	0.328+- 0.027	0.755+- 0.097	1.915+- 0.093	0.072+- 0.012	1.764+- 0.087	1.64	1.54
BH00109PE	4.5 to 5.0 ft	0.494+- 0.032	0.753+- 0.084	2.232+- 0.099	0.083+- 0.013	1.983+- 0.090	NS	NS
BH00110PE	0.5 to 2.0 ft	0.213+- 0.018	0.086+-0.017	7.622 +- 0.293	0.249+- 0.023	3.952+- 0.163	4.8	1.85
AS00004PE	0.0 to 0.5 ft	4.593+- 0.248	12.068+- 1.150	1.391 +- 0.066	0.056+- 0.010	1.355+- 0.064	1.73	2.28
BH00111PE	Equip. Rinse	0.511 +-0.032	1.273+-0.07	0.065+-0.01	0.00+-0.0	0.062+-0.01	NS	NS

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107PE
AS00004PE is dupe of AS00003PE

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS

LOCATION	Interval	Nitrate/Nitrite as N ug/g	Total Organic Carbon ug/g	Total Strontium (pCi/g)	Cesium 134 (pCi/g)	Cesium 137 DA DA=daughter product (pCi/g)	TAL Metals Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)
48195									
AS00001PE	0.0 to 0.5 ft	NS	NS	-0.000413	-0.0485	-0.00205	6,100	ND	1.1
BH00101PE	0.5 to 2.5 ft	1600	7040 ug/g	0.044	0.0101	0.0158	13,300	ND	7.3
BH00102PE	2.5 to 4.5 ft	923	875 ug/g	0.0253	-0.0246	0.0415	15,400	ND	3.5
BH00103PE	4.5 to 6.5 ft.	206	707 ug/g	0.0955	-0.0396	-0.00192	9,960	ND	2.2
48295									
AS00002PE	0.0 to 0.5 ft	NS	NS	0.0422	-0.0124	0.0237	4,210	ND	0.96
BH00104PE	0.5 to 1.7 ft	1062	2650 ug/g	0.0158	-0.00332	-0.00518	14,500	ND	7.0
BH00105PE	2.5 to 4.3 ft	619	2710 ug/g	0.0638	0.00854	-0.00222	11,200	ND	1.8
BH00106PE	4.5 to 6.1 ft	316	566 ug/g	0.202	0.00299	0.0158	7,900	ND	2.2
48395									
AS00003PE	0.0 to 0.5 ft	NS	NS	0.272	-0.00069	0.00768	6,970	ND	1.2
BH00107PE	0.5 to 1.8 ft	696	5640 ug/g	0.0859	-0.000483	-0.00496	9,670	ND	3.2
BH00108PE	2.5 to 4.5 ft	920	7510 ug/g	0.152	-0.00367	-0.00371	43,000	ND	11.8
BH00109PE	4.5 to 5.0 ft	430	NS	NS	NS	NS	15,100	ND	9.7
BH00110PE	0.5 to 2.0 ft	1738	7290 ug/g	0.0407	-0.00773	0.00151	34,400	ND	10.3
AS00004PE	0.0 to 0.5 ft	NS	NS	0.0126	-0.0809	-0.00514	7,450	ND	1.3
BH00111PE	Equip. Rinse	NS	0.98 mg/l	-0.112 pCi/L	-0.89 pCi/L	1.45 pCi/L	NS	NS	ND

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107PE
AS00004PE is dupe of AS00003PE

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS

LOCATION	Interval	TAL Metals									
		Barium (mg/kg)	Beryllim (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Lithium (mg/kg)
48195											
AS00001PE	0.0 to 0.5 ft	50.4	0.33	ND	2,640	15.7	4.3	9.6	11,100	5.7	12.1
BH00101PE	0.5 to 2.5 ft	71.1	0.63	ND	2,700	56.9	5.9	14.6	17,900	9.4	21.7
BH00102PE	2.5 to 4.5 ft	49.3	0.86	ND	1,690	50.8	7.1	12.2	14,500	4.7	9.7
BH00103PE	4.5 to 6.5 ft.	29.3	0.50	ND	2,160	28.4	5.6	12.8	14,000	3.8	9.2
48295											
AS00002PE	0.0 to 0.5 ft	41.4	ND	ND	2,150	13.0	4.0	9.7	8,710	4.6	8.5
BH00104PE	0.5 to 1.7 ft	72.9	0.59	ND	1,760	25.9	5.1	11.0	14,400	11.8	21.4
BH00105PE	2.5 to 4.3 ft	33.0	0.54	ND	1,120	19.6	3.2	8.4	7,570	2.8	6.0
BH00106PE	4.5 to 6.1 ft	25.9	0.37	ND	1,090	15.5	2.6	7.8	7,370	5.8	5.7
48395											
AS00003PE	0.0 to 0.5 ft	56.4	ND	ND	2,200	20.6	4.1	11.7	12,200	7.9	13.1
BH00107PE	0.5 to 1.8 ft	69.6	0.38	ND	3,390	26.7	4.1	11.0	10,600	9.6	18.5
BH00108PE	2.5 to 4.5 ft	175	1.9	ND	4,320	35.8	11.0	20.1	31,100	10.4	21.9
BH00109PE	4.5 to 5.0 ft	139	0.78	ND	2,360	16.8	8.8	13.6	16,000	7.7	11.3
BH00110PE	0.5 to 2.0 ft	83.0	1.4	ND	1,640	23.9	6.8	8.6	20,000	9.4	24.1
AS00004PE	0.0 to 0.5 ft	82.7	0.38	ND	2,580	19.6	4.3	12.8	12,100	ND	13.3
BH00111PE	Equip. Rinse	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107PE
AS00004PE is dupe of AS00003PE

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS

LOCATION	Interval	TAL Metals									
		Magnesium (mg/kg)	Manganese (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Strontium (mg/kg)	Thallium (mg/kg)
48195											
AS00001PE	0.0 to 0.5 ft	2,410	149	ND	10.4	2,800	0.48	ND	1,540	17.6	ND
BH00101PE	0.5 to 2.5 ft	2,530	192	3.1	29.5	5,050	ND	0.44	3,880	21.4	ND
BH00102PE	2.5 to 4.5 ft	1,360	167	4.0	25.0	2,020	ND	0.47	1,920	17.8	ND
BH00103PE	4.5 to 6.5 ft.	3,000	157	4.4	12.6	715	0.64	ND	731	14.7	ND
48295											
AS00002PE	0.0 to 0.5 ft	2,180	127	ND	8.6	2300	0.33	ND	1,240	15.4	ND
BH00104PE	0.5 to 1.7 ft	2,550	149	1.8	20.5	5060	1.4	ND	3,550	18.2	ND
BH00105PE	2.5 to 4.3 ft	1,240	90.1	ND	8.1	1,350	0.49	ND	1,320	14.4	ND
BH00106PE	4.5 to 6.1 ft	1,460	75.5	1.9	8.2	966	0.52	ND	675	9.2	ND
48395											
AS00003PE	0.0 to 0.5 ft	2,750	162	ND	7.8	3,110	0.47	ND	1,230	17.5	ND
BH00107PE	0.5 to 1.8 ft	2,540	142	ND	6.5	3,960	1.1	0.5	2,380	22.6	ND
BH00108PE	2.5 to 4.5 ft	5,700	792	ND	39.6	4,890	0.95	0.67	4,430	28.5	0.41
BH00109PE	4.5 to 5.0 ft	2,510	772	2.3	20.7	2,170	0.80	ND	1,770	24.2	0.31
BH00110PE	0.5 to 2.0 ft	2,810	89.8	ND	20.2	7,470	1.8	ND	6,770	14.4	0.47
AS00004PE	0.0 to 0.5 ft	2,530	155	ND	6.8	2,670	0.40	ND	1,560	41.7	ND
BH00111PE	Equip. Rinse	NS	NS	NS	NS	NS	ND	NS	NS	NS	ND

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107PE
AS00004PE is dupe of AS00003PE

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS

LOCATION	Interval	TAL Metals						
		Tin (mg/kg)	Titanium (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Mercury (mg/kg)	Cesium (mg/kg)
48195								
AS00001PE	0.0 to 0.5 ft	ND	431	ND	36.8	28.3	ND	ND
BH00101PE	0.5 to 2.5 ft	3.3	464	ND	41.1	32.1	ND	ND
BH00102PE	2.5 to 4.5 ft	3.9	141	ND	31.0	21.7	ND	ND
BH00103PE	4.5 to 6.5 ft.	2.3	242	ND	21.7	26.7	ND	ND
48295								
AS00002PE	0.0 to 0.5 ft	ND	322	ND	34.2	24.2	ND	ND
BH00104PE	0.5 to 1.7 ft	3.5	397	ND	33.3	30.4	ND	ND
BH00105PE	2.5 to 4.3 ft	ND	124	ND	14.4	17.3	ND	ND
BH00106PE	4.5 to 6.1 ft	2.4	118	ND	13.0	14.6	ND	ND
48395								
AS00003PE	0.0 to 0.5 ft	ND	468	ND	35.5	32.6	ND	ND
BH00107PE	0.5 to 1.8 ft	2.6	321	ND	23.2	30.1	ND	ND
BH00108PE	2.5 to 4.5 ft	ND	NS	ND	66.4	53.0	ND	ND
BH00109PE	4.5 to 5.0 ft	ND	NS	ND	39.0	24.5	ND	ND
BH00110PE	0.5 to 2.0 ft	2.6	NS	ND	43.9	31.0	ND	ND
AS00004PE	0.0 to 0.5 ft	ND	505	ND	31.5	27.2	ND	ND
BH00111PE	Equip. Rinse	NS	NS	NS	NS	NS	ND	ND

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107PE
AS00004PE is dupe of AS00003PE

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS (TCLP METAL)
(ASPHALT ONLY)

Location	Interval	Aluminum (µg/kg)	Antimony (µg/kg)	Arsenic (µg/kg)	Barium (µg/kg)	Beryllim (µg/kg)	Cadmium (µg/kg)	Calcium (µg/kg)	Chromium (µg/kg)	Cobalt (µg/kg)	Copper (µg/kg)
48195											
AS00001PE	0.0 to 0.5 ft	934	ND	ND	458	10.9	52.4	51,800	32.1	10.5	15.7
48295											
AS00002PE	0.0 to 0.5 ft	1,450	ND	ND	491	ND	ND	28,600	4.5	10.2	7.9
48395											
AS00003PE	0.0 to 0.5 ft	412	ND	ND	384	ND	ND	23,700	ND	7.5	5.7
AS00004PE	0.0 to 0.5 ft	541	ND	ND	420	ND	ND	14,400	6.2	7.8	5.9

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107PE
AS00004PE is dupe of AS00003PE

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS (TCLP METAL)
(ASPHALT ONLY)

Location	Interval	Iron (µg/kg)	Lead (µg/kg)	Lithium (µg/kg)	Magnesium (µg/kg)	Manganese (µg/kg)	Molybdenum (µg/kg)	Nickel (µg/kg)	Potassium (µg/kg)	Selenium (µg/kg)	Silver (µg/kg)
48195											
AS00001PE	0.0 to 0.5 ft	1,670	ND	43.1	4,630	1,210	ND	18.6	14,500	ND	ND
48295											
AS00002PE	0.0 to 0.5 ft	1,320	ND	61.8	2,790	1,500	ND	21.7	36,100	ND	ND
48395											
AS00003PE	0.0 to 0.5 ft	830	ND	26.1	3,020	1,190	ND	12.4	14,900	ND	ND
AS00004PE	0.0 to 0.5 ft	640	ND	53.1	2,140	944	ND	ND	24,500	ND	ND

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107
AS00004PE is dupe of AS00003P

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TABLE 3.1 (Continued)
SEP 207-C ANALYTICAL RESULTS (TCLP METAL)
(ASPHALT ONLY)

Location	Interval	Sodium (µg/kg)	Strontium (µg/kg)	Thallium (µg/kg)	Tin (µg/kg)	Titanium (µg/kg)	Uranium (µg/kg)	Vanadium (µg/kg)	Zinc (µg/kg)	Mercury (µg/kg)
48195 AS00001PE	0.0 to 0.5 ft	1,500,000	295	ND	ND	ND	ND	ND	206	ND
48295 AS00002PE	0.0 to 0.5 ft	1,550,000	205	ND	ND	ND	ND	ND	181	ND
48395 AS00003PE	0.0 to 0.5 ft	1,530,000	185	ND	ND	ND	ND	ND	65.1	ND
AS00004PE	0.0 to 0.5 ft	1,540,000	131	ND	28.6	ND	ND	ND	83.3	ND

NS = No Sample
ND = Not Detected
AS = Asphalt Liner Sample
BH = Borehole Soil Sample
BH00110PE is dupe of BH00107
AS00004PE is dupe of AS00003P

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TABLE 3.2
COMPARISON OF LINER SAMPLES BETWEEN SEPS
(maximum values mg/kg or pCi/g)

Analyte	SEP 207-A	SEP 207-B North	SEP 207-B Center	SEP 207-C
Aluminum	4,520	3,940	4,890	7,450
Antimony	ND	ND	ND	ND
Arsenic	1.7	1.5	1.0	1.3
Barium	57.5	51.7	52.3	82.7
Beryllium	ND	0.70	0.46	0.38
Cadmium	9.9	69.7	7.3	ND
Calcium	2,010	2,400	2,660	2,640
Chromium	37.5	25.6	26.9	20.6
Cobalt	3.4	3.9	4.7	4.3
Copper	22.1	24.6	19.6	12.8
Iron	9,340	7,800	9,400	12,200
Lead	107	7.2	6.8	7.9
Lithium	13.4	8.6	10.9	13.3
Magnesium	2,350	2,130	2,400	2,750
Manganese	124	135	142	162
Molybdenum	ND	ND	ND	ND
Nickel	15.1	16.2	15.8	10.4
Potassium	2,370	1,860	2,200	3,110
Selenium	ND	ND	ND	0.48
Silver	ND	ND	ND	ND
Sodium	1,000	388	1,050	1,560
Strontium	14.8	13.3	14.4	41.7
Thallium	ND	ND	ND	ND
Tin	0.51	0.62	0.66	ND
Vanadium	37.8	30.5	39.0	36.8
Zinc	74.0	26.0	24.8	32.6
Am-241	ND	3.9	0.58	12.1
Cs-134	ND	ND	ND	ND
Cs-137	ND	ND	ND	0.02
Pu-239/240	2.2	3.1	0.5	4.6

TABLE 3.2 (Continued)
COMPARISON OF LINER SAMPLES BETWEEN SEPs
(maximum values mg/kg or pCi/g)

Analyte	SEP 207-A	SEP 207-B North	SEP 207-B Center	SEP 207-C
Sr	0.5	0.5	0.4	0.3
U-238	2.7	0.9	1.7	2.0
U-235	0.1	0.09	0.11	0.1
U-233/234	4.66	1.54	2.2	2.1

ND=non-detect
NA=not analyzed

TABLE 3.3
COMPARISON OF SUBGRADE SOILS BENEATH THE LINERS
(maximum values mg/kg or pCi/g)

Analyte	SEP 207-A	SEP 207-B North	SEP 207-B Center	SEP 207-C
Aluminum	7,520	10,700	12,200	43,000
Antimony	10.6	10.4	6.6	ND
Arsenic	1.7	3.2	6.9	11.8
Barium	93.7	86.4	88.5	175
Beryllium	ND	ND	0.76	1.9
Cadmium	9.8	56.7	0.81	ND
Calcium	1,330	15,600	17,800	4,320
Chromium	120	51.3	13.4	56.9
Cobalt	5.8	4.7	8.8	11.0
Copper	79.7	88.6	15.7	20.1
Iron	13,500	12,500	13,400	31,100
Lead	15.4	13.6	6.4	11.8
Lithium	24.8	46.6	29.2	24.1
Magnesium	3,080	2,290	2,580	5,700
Manganese	154	109	328	792
Mercury	0.32	0.57	ND	ND
Molybdenum	ND	ND	1.6	4.4
Nickel	10.1	29.8	18.8	39.6
Potassium	6,230	7,290	8,620	7,470
Selenium	ND	ND	ND	1.8
Silver	ND	ND	ND	0.67
Sodium	3,160	3,660	7,440	6,770
Strontium	13.3	25.4	27.6	28.5
Thallium	ND	ND	0.25	0.47
Tin	ND	ND	ND	3.9
Vanadium	29.9	26.6	32.0	66.4
Zinc	66.0	37.1	26.1	53
Nitrate/Nitrite	1,500	2,230	5,170	1,738
Am-241	4.9	44.6	0.06	0.85
Cs-134	ND	ND	ND	0.01
Cs-137	.13	0.09	0.02	0.04

TABLE 3.3 (Continued)
COMPARISON OF SUBGRADE SOILS BENEATH THE LINERS
(maximum values mg/kg or pCi/g)

Analyte	SEP 207-A	SEP 207-B North	SEP 207-B Center	SEP 207-C
Pu-239/240	14.0	19.7	0.27	1.75
Radium-226	NA	10.7	4.4	9.28
Strontium 89/90	0.56	0.1	1.09	0.2
U-238	7.0	25.4	10.0	5.62
U-235	0.29	1.68	0.39	0.46
U-233/234	11.0	63.4	11.7	14.37
Acetone	NA	NA	NA	14.0 (lab contaminant)
2-Methylnapthalene	150	120	ND	950
2-Pentanone,4 hydroxy - 4 met	NI	NI	NI	100,000 (tic)

NI=Not Identified
TIC=Tentatively Identified Compound

TABLE 3.4
COMPARISON OF SEP 207-C CONCENTRATIONS TO BACKGROUND CONCENTRATIONS

Analyte	Maximum Concentration SEP 207-C (mg/kg or pCi/g)	Background Concentration (mg/kg or pCi/g)
Barium	175.0	93.9
Cadmium	ND	2.3
Lithium	24.1	83.2
Manganese	792.0	190.5
Nitrate	1,738.0	7.1
Zinc	53.0	23.6
Am-241	0.89	0.01
Cs-137	0.04	0.17
Pu-239/240	1.75	0.02
Ra 226	9.28	0.65
Sr 89/90	0.2	0.54
U-238	5.62	0.63
U-235	0.46	0.10
U-234	14.37	0.53

Attachment A: Raw Analytical Results

VOLATILE ORGANIC COMPOUND RESULTS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87505

Lab Name: GLAB Contract:

Lab Code: GLAB Case No.: 99074 SAS No.: 95E1 SDG No.:

101

Matrix: (soil/water) SOIL Lab Sample ID: BH000101PE

VOC

Sample wt/vol: 5. (g/mL) G Lab File ID: SEP1801

Level: (low/med) LOW Date Received: 9/13/95

% Moisture: not dec. 0. Date Analyzed: 9/18/95

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	5.	U
591-78-6	2-Hexanone	5.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87506

b Name: GLAB Contract:

ab Code: GLAB Case No.: 99076 SAS No.: 95E1 SDG No.:

atrix: (soil/water) SOIL Lab Sample ID: BH000102PE

mple wt/vol: 5. (g/mL) G Lab File ID: SEP1802

evel: (low/med) LOW Date Received: 9/13/95

Moisture: not dec. 0. Date Analyzed: 9/18/95

olumn: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	1.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
[illegible]	Bromoform	5.	U
[illegible]	4-Methyl-2-Pentanone	5.	U
[illegible]	2 Hexanone	5.	U
[illegible]	Tetrachloethane	5.	U
[illegible]	1,1,2,2, Tetrachloroethane	5.	U
[illegible]	Toluene	5.	U
108-90-[illegible]	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87507

Lab Name: GLAB Contract:

Lab Code: GLAB Case No.: 99079 SAS No.: 95E1 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: BH000103PE

Sample wt/vol: 5. (g/mL) G Lab File ID: SEP1803

Level: (low/med) LOW Date Received: 9/13/95

% Moisture: not dec. 0. Date Analyzed: 9/18/95

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	3.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	5.	U
591-78-6	2-Hexanone	5.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88004

Lab Name: GLAB Contract:

Lab Code: GLAB Case No.: 99166 SAS No.: 95E1 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: BH00104PE

Sample wt/vol: 5. (g/mL) G Lab File ID: SEP1804

Level: (low/med) LOW Date Received: 9/13/95

% Moisture: not dec. 0. Date Analyzed: 9/18/95

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	1.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	5.	U
591-78-6	2-Hexanone	5.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88005

Lab Name: GLAB Contract:

Lab Code: GLAB Case No.: 99167 SAS No.: 95E1 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: BH00105PE

Sample wt/vol: 5. (g/mL) G Lab File ID: SEP1805

Level: (low/med) LOW Date Received: 9/13/95

% Moisture: not dec. 0. Date Analyzed: 9/18/95

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	3.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	5.	U
591-78-6	2-Hexanone	5.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88701

Lab Name: GLAB Contract:

Lab Code: GLAB Case No.: 99280 SAS No.: 95E1 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: BH00106PE

Sample wt/vol: 5. (g/mL) G Lab File ID: SEP1901

Level: (low/med) LOW Date Received: 9/14/95

% Moisture: not dec. 0. Date Analyzed: 9/19/95

Column: (pack/cap) CAP Dilution Factor: 1.00

	CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1	74-87-3	Chloromethane	10.	U
	74-83-9	Bromomethane	10.	U
	75-01-4	Vinyl Chloride	10.	U
	75-00-3	Chloroethane	10.	U
5	75-09-2	Methylene Chloride	5.	U
	67-64-1	Acetone	2.	1 J
	75-15-0	Carbon Disulfide	5.	U
	75-35-4	1,1-Dichloroethene	5.	U
	75-34-3	1,1-Dichloroethane	5.	U
10	540-59-0	1,2-Dichloroethene (total)	5.	U
	67-66-3	Chloroform	5.	U
	107-06-2	1,2-Dichloroethane	5.	U
	78-93-3	2-Butanone	10.	U
	71-55-6	1,1,1-Trichloroethane	5.	U
15	56-23-5	Carbon Tetrachloride	5.	U
	75-27-4	Bromodichloromethane	5.	U
	78-87-5	1,2-Dichloropropane	5.	U
	10061-01-5	cis-1,3-Dichloropropene	5.	U
	79-01-6	Trichloroethene	5.	U
20	124-48-1	Dibromochloromethane	5.	U
	79-00-5	1,1,2-Trichloroethane	5.	U
	71-43-2	Benzene	5.	U
	10061-02-6	trans-1,3-Dichloropropene	5.	U
	75-25-2	Bromoform	5.	U
25	108-10-1	4-Methyl-2-Pentanone	5.	U
	591-78-6	2-Hexanone	5.	U
	127-18-4	Tetrachloroethene	5.	U
	79-34-5	1,1,2,2-Tetrachloroethane	5.	U
	108-88-3	Toluene	5.	U
30	108-90-7	Chlorobenzene	5.	U
	100-41-4	Ethylbenzene	5.	U
	100-42-5	Styrene	5.	U
33	1330-20-7	Xylene (total)	5.	U

U = compound not found, PQL is listed

J = compound found, below PQL

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
88702

Lab Name: GLAB Contract:

Lab Code: GLAB Case No.: 99282 SAS No.: 95E1 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: BH00107PE

Sample wt/vol: 5. (g/mL) G Lab File ID: SEP1902

Level: (low/med) LOW Date Received: 9/14/95

% Moisture: not dec. 0. Date Analyzed: 9/19/95

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	14.	
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	2.	J
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	5.	U
591-78-6	2-Hexanone	5.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

89201

b Name: QLAB Contract:

b Code: QLAB Case No.: 99417 SAS No.: 95E1 SDG No.:

atrix: (soil/water) SOIL Lab Sample ID: BH00109PE

ample wt/vol: 5. (g/mL) G Lab File ID: SEP2501

evel: (low/med) LOW Date Received: 9/18/95

Moisture: not dec. 0. Date Analyzed: 9/25/95

olumn: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	5.	U
591-78-6	2-Hexanone	5.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
88703

Lab Name: QLAB Contract:

Lab Code: QLAB Case No.: 99284 SAS No.: 95E1 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: BH00110PE

Sample wt/vol: 5. (g/mL) G Lab File ID: SEP1903

Level: (low/med) LOW Date Received: 9/14/95

% Moisture: not dec. 0. Date Analyzed: 9/19/95

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	6.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	5.	U
591-78-6	2-Hexanone	5.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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SEMI-VOLATILE ORGANIC COMPOUND RESULTS

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87508

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99080 BH000101PE

Sample wt/vol: 30.5 (g/mL) G Lab File ID: SEP2503

Level: (low/med) Date Received: 09/14/95

% Moisture: 13. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	760.	U
111-44-4	bis(2-Chloroethyl)ether	760.	U
95-57-8	2-Chlorophenol	760.	U
541-73-1	1,3-Dichlorobenzene	760.	U
106-46-7	1,4-Dichlorobenzene	760.	U
95-50-1	1,2-Dichlorobenzene	760.	U
95-48-7	2-Methylphenol	760.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	760.	U
106-44-5	4-Methylphenol	760.	U
621-64-7	N-Nitroso-di-n-propylamine (	760.	U
67-72-1	Hexachloroethane	760.	U
98-95-3	Nitrobenzene	760.	U
78-59-1	Isophorone	760.	U
88-75-5	2-Nitrophenol	760.	U
105-67-9	2,4-Dimethylphenol	760.	U
111-91-1	bis(2-Chloroethoxy)methane	760.	U
120-83-2	2,4-Dichlorophenol	760.	U
120-82-1	1,2,4-Trichlorobenzene	760.	U
91-20-3	Naphthalene	59.	J
106-47-8	4-Chloroaniline	760.	U
87-68-3	Hexachlorobutadiene	760.	U
59-50-7	4-Chloro-3-methylphenol	760.	U
91-57-6	2-Methylnaphthalene	210.	BJ
77-47-4	Hexachlorocyclopentadiene	760.	U
88-06-2	2,4,6-Trichlorophenol	760.	U
95-95-4	2,4,5-Trichlorophenol	1900.	U
91-58-7	2-Chloronaphthalene	760.	U
88-74-4	2-Nitroaniline	1900.	U
131-11-3	Dimethylphthalate	760.	U
208-96-8	Acenaphthylene	760.	U
606-20-2	2,6-Dinitrotoluene	760.	U
99-09-2	3-Nitroaniline	1900.	U
83-32-9	Acenaphthene	760.	U

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87508

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99080 BH006101E

Sample wt/vol: 30.5 (g/mL) G Lab File ID: SEP2503

Level: (low/med) Date Received: 09/14/95

% Moisture: 13. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900.	U
100-02-7	4-Nitrophenol	1900.	U
132-64-9	Dibenzofuran	760.	U
121-14-2	2,4-Dinitrotoluene	760.	U
84-66-2	Diethylphthalate	760.	U
7005-72-3	4-Chlorophenyl-phenylether	760.	U
86-73-7	Fluorene	760.	U
100-01-6	4-Nitroaniline	1900.	U
534-52-1	4,6-Dinitro-2-methylphenol	1900.	U
86-30-6	N-Nitrosodiphenylamine (1)	760.	U
101-55-3	4-Bromophenyl-phenylether	760.	U
118-74-1	Hexachlorobenzene	760.	U
87-86-5	Pentachlorophenol	1900.	U
85-01-8	Phenanthrene	27.	J
120-12-7	Anthracene	760.	U
86-74-8	Carbazole	760.	U
84-74-2	Di-n-butylphthalate	35.	BJ
206-44-0	Fluoranthene	760.	U
129-00-0	Pyrene	760.	U
85-68-7	Butylbenzylphthalate	48.	BJ
91-94-1	3,3'-Dichlorobenzidine	760.	U
56-55-3	Benzo(a)anthracene	760.	U
218-01-9	Chrysene	43.	J
117-81-7	bis(2-Ethylhexyl)phthalate	80.	BJ
117-84-0	Di-n-octylphthalate	760.	U
205-99-2	Benzo(b)fluoranthene	760.	U
207-08-9	Benzo(k)fluoranthene	760.	U
50-32-8	Benzo(a)pyrene	34.	J
193-39-5	Indeno(1,2,3-cd)pyrene	760.	U
53-70-3	Dibenz(a,h)anthracene	760.	U
191-24-2	Benzo(g,h,i)perylene	760.	U

(1) - Cannot be separated from diphenylamine

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

87508

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99080 BH100101PE

Sample wt/vol: 30.5 (g/mL) G Lab File ID: SEP2503

Level: (low/med) Date Received: 09/14/95

% Moisture: 13. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.5

Number TICs found: 15

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN HYDROCARBON	4.13	2000.	J
2.	- -	UNKNOWN HYDROCARBON	4.37	6000.	J
3.	123-42-2	2-Pentanone, 4-hydroxy-4-met	5.13	100,000.	J N
4.	5076-20-0	Oxirane, tetramethyl-	5.19	1000.	J N
5.	5076-20-0	Oxirane, tetramethyl-	5.20	1000.	J N
6.	- -	UNKNOWN HYDROCARBON	5.72	600.	J
7.	- -	UNKNOWN HYDROCARBON	6.61	6000.	J
8.	- -	UNKNOWN HYDROCARBON	7.25	2000.	J
9.	556-67-2	Cyclotetrasiloxane, octameth	8.47	2000.	J N
10.	- -	UNKNOWN	8.71	3000.	J
11.	112-40-3	Dodecane	12.37	1000.	J N
12.	629-59-4	Tetradecane	15.65	2000.	J N
13.	629-62-9	Pentadecane	17.12	1000.	J N
14.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.16	5000.	J N
15.	544-63-8	Tetradecanoic acid	20.64	900.	J N
16.					
17.					
18.					
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87509

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99081 BH000102PE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: SEP2506

Level: (low/med) Date Received: 09/14/95

% Moisture: 17. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	790.	U
111-44-4	bis(2-Chloroethyl)ether	790.	U
95-57-8	2-Chlorophenol	790.	U
541-73-1	1,3-Dichlorobenzene	790.	U
106-46-7	1,4-Dichlorobenzene	790.	U
95-50-1	1,2-Dichlorobenzene	790.	U
95-48-7	2-Methylphenol	790.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	790.	U
106-44-5	4-Methylphenol	790.	U
621-64-7	N-Nitroso-di-n-propylamine (	790.	U
67-72-1	Hexachloroethane	790.	U
98-95-3	Nitrobenzene	790.	U
78-59-1	Isophorone	790.	U
88-75-5	2-Nitrophenol	790.	U
105-67-9	2,4-Dimethylphenol	790.	U
111-91-1	bis(2-Chloroethoxy)methane	790.	U
120-83-2	2,4-Dichlorophenol	790.	U
120-82-1	1,2,4-Trichlorobenzene	790.	U
91-20-3	Naphthalene	790.	U
106-47-8	4-Chloroaniline	790.	U
87-68-3	Hexachlorobutadiene	790.	U
59-50-7	4-Chloro-3-methylphenol	790.	U
91-57-6	2-Methylnaphthalene	46.	BJ
77-47-4	Hexachlorocyclopentadiene	790.	U
88-06-2	2,4,6-Trichlorophenol	790.	U
95-95-4	2,4,5-Trichlorophenol	2000.	U
91-58-7	2-Chloronaphthalene	790.	U
88-74-4	2-Nitroaniline	2000.	U
131-11-3	Dimethylphthalate	790.	U
208-96-8	Acenaphthylene	790.	U
606-20-2	2,6-Dinitrotoluene	790.	U
99-09-2	3-Nitroaniline	2000.	U
83-32-9	Acenaphthene	790.	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87509

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99081 BH000102PE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: SEP2506

Level: (low/med) Date Received: 09/14/95

% Moisture: 17. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2000.	U
100-02-7	4-Nitrophenol	2000.	U
132-64-9	Dibenzofuran	790.	U
121-14-2	2,4-Dinitrotoluene	790.	U
84-66-2	Diethylphthalate	790.	U
7005-72-3	4-Chlorophenyl-phenylether	790.	U
86-73-7	Fluorene	790.	U
100-01-6	4-Nitroaniline	2000.	U
534-52-1	4,6-Dinitro-2-methylphenol	2000.	U
86-30-6	N-Nitrosodiphenylamine (1)	790.	U
101-55-3	4-Bromophenyl-phenylether	790.	U
118-74-1	Hexachlorobenzene	790.	U
87-86-5	Pentachlorophenol	2000.	U
85-01-8	Phenanthrene	790.	U
120-12-7	Anthracene	790.	U
86-74-8	Carbazole	790.	U
84-74-2	Di-n-butylphthalate	37.	BJ
206-44-0	Fluoranthene	790.	U
129-00-0	Pyrene	790.	U
85-68-7	Butylbenzylphthalate	44.	BJ
91-94-1	3,3'-Dichlorobenzidine	790.	U
56-55-3	Benzo(a)anthracene	790.	U
218-01-9	Chrysene	790.	U
117-81-7	bis(2-Ethylhexyl)phthalate	120.	BJ
117-84-0	Di-n-octylphthalate	790.	U
205-99-2	Benzo(b)fluoranthene	790.	U
207-08-9	Benzo(k)fluoranthene	790.	U
50-32-8	Benzo(a)pyrene	790.	U
193-39-5	Indeno(1,2,3-cd)pyrene	790.	U
53-70-3	Dibenz(a,h)anthracene	790.	U
191-24-2	Benzo(g,h,i)perylene	790.	U

(1) - Cannot be separated from diphenylamine

Best Available Copy

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

87509

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99081 BH000102PE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: SEP2506

Level: (low/med) Date Received: 09/14/95

% Moisture: 17. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 6

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	4.14	1000.	J
2.	- -	UNKNOWN HYDROCARBON	5.24	100,000.	J
3.	- -	UNKNOWN HYDROCARBON	6.64	6000.	J
4.	- -	UNKNOWN	7.28	1000.	J
5.	- -	UNKNOWN	8.74	2000.	J
6.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.18	4000.	J N
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Best Available Copy

112

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87510

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99083 BH000103PE

Sample wt/vol: 30.3 (g/mL) G Lab File ID: SEP2507

Level: (low/med) Date Received: 09/14/95

% Moisture: 0. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ppb UG/KG	Q
108-95-2	Phenol	660.	U
111-44-4	bis(2-Chloroethyl)ether	660.	U
95-57-8	2-Chlorophenol	660.	U
541-73-1	1,3-Dichlorobenzene	660.	U
106-46-7	1,4-Dichlorobenzene	660.	U
95-50-1	1,2-Dichlorobenzene	660.	U
95-48-7	2-Methylphenol	660.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	660.	U
106-44-5	4-Methylphenol	660.	U
621-64-7	N-Nitroso-di-n-propylamine	660.	U
67-72-1	Hexachloroethane	660.	U
98-95-3	Nitrobenzene	660.	U
78-59-1	Isophorone	660.	U
88-75-5	2-Nitrophenol	660.	U
105-67-9	2,4-Dimethylphenol	660.	U
111-91-1	bis(2-Chloroethoxy)methane	660.	U
120-83-2	2,4-Dichlorophenol	660.	U
120-82-1	1,2,4-Trichlorobenzene	660.	U
91-20-3	Naphthalene	660.	U
106-47-8	4-Chloroaniline	660.	U
87-68-3	Hexachlorobutadiene	660.	U
59-50-7	4-Chloro-3-methylphenol	660.	U
91-57-6	2-Methylnaphthalene	35.	BJ
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	660.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	660.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	660.	U
208-96-8	Acenaphthylene	660.	U
606-20-2	2,6-Dinitrotoluene	660.	U
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	660.	U

U = compound not found, value is CRQL, Certified Quantitation Reporting Limit
J = compound found, value estimated
B = compound found also found in the method blank

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

87510

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99083 BH000103 PE

Sample wt/vol: 30.3 (g/mL) G Lab File ID: SEP2507

Level: (low/med) Date Received: 09/14/95

% Moisture: 0. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
34 51-28-5	2,4-Dinitrophenol	1700.	U
35 100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	660.	U
121-14-2	2,4-Dinitrotoluene	660.	U
84-66-2	Diethylphthalate	20.	J
7005-72-3	4-Chlorophenyl-phenylether	660.	U
40 86-73-7	Fluorene	660.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	660.	U
101-55-3	4-Bromophenyl-phenylether	660.	U
45 118-74-1	Hexachlorobenzene	660.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	660.	U
120-12-7	Anthracene	660.	U
86-74-8	Carbazole	660.	U
50 84-74-2	Di-n-butylphthalate	48.	BJ
206-44-0	Fluoranthene	660.	U
129-00-0	Pyrene	17.	J
85-68-7	Butylbenzylphthalate	29.	BJ
91-94-1	3,3'-Dichlorobenzidine	660.	U
55 56-55-3	Benzo(a)anthracene	660.	U
218-01-9	Chrysene	660.	U
117-81-7	bis(2-Ethylhexyl)phthalate	430.	BJ
117-84-0	Di-n-octylphthalate	660.	U
205-99-2	Benzo(b)fluoranthene	660.	U
60 207-08-9	Benzo(k)fluoranthene	660.	U
50-32-8	Benzo(a)pyrene	660.	U
193-39-5	Indeno(1,2,3-cd)pyrene	660.	U
53-70-3	Dibenz(a,h)anthracene	660.	U
64 191-24-2	Benzo(g,h,i)perylene	660.	U

(1) - Cannot be separated from diphenylamine

44

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

87510

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix: (soil/water) SOIL Lab Sample ID: 99083 BH000103 PE

Sample wt/vol: 30.3 (g/mL) G Lab File ID: SEP2507

Level: (low/med) Date Received: 09/14/95

% Moisture: 0. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Best Available Copy

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-Pentanone, 4-hydroxy-4-met	5.22	90000.	J N
2.	- -	UNKNOWN	6.64	5000.	J
3.	- -	UNKNOWN	7.29	1000.	J
4.	556-67-2	Cyclotetrasiloxane, octameth	8.48	1000.	J N
5.	- -	UNKNOWN	8.74	2000.	J
6.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.25	6000.	J N
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88006

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

Matrix: (soil/water) SOIL Lab Sample ID: 99168 BH000104PE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: SEP2508

Level: (low/med) Date Received: 09/15/95

% Moisture: 11. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	740.	U
111-44-4	bis(2-Chloroethyl)ether	740.	U
95-57-8	2-Chlorophenol	740.	U
541-73-1	1,3-Dichlorobenzene	740.	U
106-46-7	1,4-Dichlorobenzene	740.	U
95-50-1	1,2-Dichlorobenzene	740.	U
95-48-7	2-Methylphenol	740.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	740.	U
106-44-5	4-Methylphenol	740.	U
621-64-7	N-Nitroso-di-n-propylamine (	740.	U
67-72-1	Hexachloroethane	740.	U
98-95-3	Nitrobenzene	740.	U
78-59-1	Isophorone	740.	U
88-75-5	2-Nitrophenol	740.	U
105-67-9	2,4-Dimethylphenol	740.	U
111-91-1	bis(2-Chloroethoxy)methane	740.	U
120-83-2	2,4-Dichlorophenol	740.	U
120-82-1	1,2,4-Trichlorobenzene	740.	U
91-20-3	Naphthalene	390. ☆	J
106-47-8	4-Chloroaniline	740.	U
87-68-3	Hexachlorobutadiene	740.	U
59-50-7	4-Chloro-3-methylphenol	740.	U
91-57-6	2-Methylnaphthalene	950. ☆	B
77-47-4	Hexachlorocyclopentadiene	740.	U
88-06-2	2,4,6-Trichlorophenol	740.	U
95-95-4	2,4,5-Trichlorophenol	1800.	U
91-58-7	2-Chloronaphthalene	740.	U
88-74-4	2-Nitroaniline	1800.	U
131-11-3	Dimethylphthalate	740.	U
208-96-8	Acenaphthylene	740.	U
606-20-2	2,6-Dinitrotoluene	740.	U
99-09-2	3-Nitroaniline	1800.	U
83-32-9	Acenaphthene	740.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88006

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

Matrix: (soil/water) SOIL Lab Sample ID: 99168 BH000104PE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: SEP2508

Level: (low/med) Date Received: 09/15/95

% Moisture: 11. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG ppb	Q
51-28-5	2,4-Dinitrophenol	1800.	U
100-02-7	4-Nitrophenol	1800.	U
132-64-9	Dibenzofuran	740.	U
121-14-2	2,4-Dinitrotoluene	740.	U
84-66-2	Diethylphthalate	330.	J
7005-72-3	4-Chlorophenyl-phenylether	740.	U
86-73-7	Fluorene	66.	J
100-01-6	4-Nitroaniline	1800.	U
534-52-1	4,6-Dinitro-2-methylphenol	1800.	U
86-30-6	N-Nitrosodiphenylamine (1)	67.	J
101-55-3	4-Bromophenyl-phenylether	740.	U
118-74-1	Hexachlorobenzene	740.	U
87-86-5	Pentachlorophenol	1800.	U
85-01-8	Phenanthrene	88.	J
120-12-7	Anthracene	740.	U
86-74-8	Carbazole	740.	U
84-74-2	Di-n-butylphthalate	77.	BJ
206-44-0	Fluoranthene	59.	J
129-00-0	Pyrene	70.	J
85-68-7	Butylbenzylphthalate	57.	BJ
91-94-1	3,3'-Dichlorobenzidine	740.	U
56-55-3	Benzo(a)anthracene	740.	U
218-01-9	Chrysene	55.	J
117-81-7	bis(2-Ethylhexyl)phthalate	130.	BJ
117-84-0	Di-n-octylphthalate	740.	U
205-99-2	Benzo(b)fluoranthene	740.	U
207-08-9	Benzo(k)fluoranthene	740.	U
50-32-8	Benzo(a)pyrene	740.	U
193-39-5	Indeno(1,2,3-cd)pyrene	740.	U
53-70-3	Dibenz(a,h)anthracene	740.	U
191-24-2	Benzo(g,h,i)perylene	740.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

88006

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

Matrix: (soil/water) SOIL Lab Sample ID: 99168 BH60D 104PF

Sample wt/vol: 30.4 (g/mL) G Lab File ID: SEP2508

Level: (low/med) Date Received: 09/15/95

% Moisture: 11. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

Number TICs found: 17

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541-05-9	Cyclotrisiloxane, hexamethyl	4.13	1000.	J N
2.	123-42-2	2-Pentanone, 4-hydroxy-4-met	5.34	100,000.	BJ N
3.	- -	UNKNOWN	5.83	600.	J
4.	- -	UNKNOWN	6.70	8000.	J
5.	124-18-5	Decane	8.45	2000.	J N
6.	- -	UNKNOWN	8.50	3000.	J
7.	- -	UNKNOWN	8.78	3000,	J
8.	629-59-4	Tetradecane	10.55	3000.	J N
9.	629-50-5	Tridecane	12.42	4000.	J N
10.	17301-23-4	Undecane, 2,6-dimethyl-	12.65	1000.	J N
11.	- -	UNKNOWN AROMATIC	13.58	200.	J
12.	61141-72-8	Dodecane, 4,6-dimethyl-	13.65	2000.	J N
13.	629-50-5	Tridecane	14.12	4000.	J N
14.	74645-98-0	Dodecane, 2,7,10-trimethyl-	15.32	600.	J N
15.	629-59-4	Tetradecane	15.70	2000.	J N
16.	1795-15-9	Cyclohexane, octyl-	16.41	300.	J N
17.	629-62-9	Pentadecane	16.60	800.	J N
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88007

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

Matrix: (soil/water) SOIL Lab Sample ID: 99169 BH000105 PE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SEP2511

Level: (low/med) Date Received: 09/15/95

% Moisture: 14. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	770.	U
111-44-4	bis(2-Chloroethyl)ether	770.	U
95-57-8	2-Chlorophenol	770.	U
541-73-1	1,3-Dichlorobenzene	770.	U
106-46-7	1,4-Dichlorobenzene	770.	U
95-50-1	1,2-Dichlorobenzene	770.	U
95-48-7	2-Methylphenol	770.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	770.	U
106-44-5	4-Methylphenol	770.	U
621-64-7	N-Nitroso-di-n-propylamine (	770.	U
67-72-1	Hexachloroethane	770.	U
98-95-3	Nitrobenzene	770.	U
78-59-1	Isophorone	770.	U
88-75-5	2-Nitrophenol	770.	U
105-67-9	2,4-Dimethylphenol	770.	U
111-91-1	bis(2-Chloroethoxy)methane	770.	U
120-83-2	2,4-Dichlorophenol	770.	U
120-82-1	1,2,4-Trichlorobenzene	770.	U
91-20-3	Naphthalene	98.	J
106-47-8	4-Chloroaniline	770.	U
87-68-3	Hexachlorobutadiene	770.	U
59-50-7	4-Chloro-3-methylphenol	770.	U
91-57-6	2-Methylnaphthalene	280.	BJ
77-47-4	Hexachlorocyclopentadiene	770.	U
88-06-2	2,4,6-Trichlorophenol	770.	U
95-95-4	2,4,5-Trichlorophenol	1900.	U
91-58-7	2-Chloronaphthalene	770.	U
88-74-4	2-Nitroaniline	1900.	U
131-11-3	Dimethylphthalate	770.	U
208-96-8	Acenaphthylene	770.	U
606-20-2	2,6-Dinitrotoluene	770.	U
99-09-2	3-Nitroaniline	1900.	U
83-32-9	Acenaphthene	40.	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88007

b Name: E.G.&G., Rocky Flats Contract:

ab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

trix: (soil/water) SOIL Lab Sample ID: 99169 BH00105PE

mple wt/vol: 30.0 (g/mL) G Lab File ID: SEP2511

evel: (low/med) Date Received: 09/15/95

Moisture: 14. decanted: (Y/N) N Date Extracted: 09/20/95

oncentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

jection Volume: 2.0 (uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 8.1

Best Available

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900.	U
100-02-7	4-Nitrophenol	1900.	U
132-64-9	Dibenzofuran	770.	U
121-14-2	2,4-Dinitrotoluene	770.	U
84-66-2	Diethylphthalate	770.	U
7005-72-3	4-Chlorophenyl-phenylether	770.	U
86-73-7	Fluorene	770.	U
100-01-6	4-Nitroaniline	1900.	U
534-52-1	4,6-Dinitro-2-methylphenol	1900.	U
86-30-6	N-Nitrosodiphenylamine (1)	770.	U
101-55-3	4-Bromophenyl-phenylether	770.	U
118-74-1	Hexachlorobenzene	770.	U
87-86-5	Pentachlorophenol	1900.	U
85-01-8	Phenanthrene	770.	U
120-12-7	Anthracene	770.	U
86-74-8	Carbazole	770.	U
84-74-2	Di-n-butylphthalate	27.	BJ
206-44-0	Fluoranthene	770.	U
129-00-0	Pyrene	39.	J
85-68-7	Butylbenzylphthalate	29.	BJ
91-94-1	3,3'-Dichlorobenzidine	770.	U
56-55-3	Benzo(a)anthracene	770.	U
218-01-9	Chrysene	770.	U
117-81-7	bis(2-Ethylhexyl)phthalate	68.	BJ
117-84-0	Di-n-octylphthalate	770.	U
205-99-2	Benzo(b)fluoranthene	770.	U
207-08-9	Benzo(k)fluoranthene	770.	U
50-32-8	Benzo(a)pyrene	770.	U
193-39-5	Indeno(1,2,3-cd)pyrene	770.	U
53-70-3	Dibenz(a,h)anthracene	770.	U
191-24-2	Benzo(g,h,i)perylene	770.	U

(1) - Cannot be separated from diphenylamine

50

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

88007

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

Matrix: (soil/water) SOIL Lab Sample ID: 99169 BH00105PE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SEP2511

Level: (low/med) Date Received: 09/15/95

% Moisture: 14. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Best Available Copy

Number TICs found: 12

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	4.16	1000.	J
2.	123-42-2	2-Pentanone, 4-hydroxy-4-met	5.27	100000.	BJ N
3.	- -	UNKNOWN	6.68	5000.	J
4.	- -	UNKNOWN	7.30	1000.	J
5.	1120-21-4	Undecane	8.45	300.	J N
6.	556-67-2	Cyclotetrasiloxane, octameth	8.50	2000.	J N
7.	- -	UNKNOWN	8.76	2000.	J
8.	1120-21-4	Undecane	10.55	1000.	J N
9.	112-40-3	Dodecane	12.40	1000.	J N
10.	1120-21-4	Undecane	15.68	2000.	J N
11.	629-62-9	Pentadecane	17.16	2000.	J N
12.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.23	5000.	BJ N
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88704

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00106PE

Sample wt/vol: 30.1 (g/mL) G Lab File ID: SEP2704

Level: (low/med) Date Received: 09/18/95

% Moisture: 15. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

FAX: 6533 SVOA's

TO: RAY DEARON
FROM: LAURA JOHNSON X7789
10/16/95
15 PGS

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	790.	U
111-44-4	bis(2-Chloroethyl)ether	790.	U
95-57-8	2-Chlorophenol	790.	U
541-73-1	1,3-Dichlorobenzene	790.	U
106-46-7	1,4-Dichlorobenzene	790.	U
95-50-1	1,2-Dichlorobenzene	790.	U
95-48-7	2-Methylphenol	790.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	790.	U
106-44-5	4-Methylphenol	790.	U
621-64-7	N-Nitroso-di-n-propylamine (	790.	U
67-72-1	Hexachloroethane	790.	U
98-95-3	Nitrobenzene	790.	U
78-59-1	Isophorone	790.	U
88-75-5	2-Nitrophenol	790.	U
105-67-9	2,4-Dimethylphenol	790.	U
111-91-1	bis(2-Chloroethoxy)methane	790.	U
120-83-2	2,4-Dichlorophenol	790.	U
120-82-1	1,2,4-Trichlorobenzene	790.	U
91-20-3	Naphthalene	790.	U
106-47-8	4-Chloroaniline	790.	U
87-68-3	Hexachlorobutadiene	790.	U
59-50-7	4-Chloro-3-methylphenol	790.	U
91-57-6	2-Methylnaphthalene	790.	U
77-47-4	Hexachlorocyclopentadiene	790.	U
88-06-2	2,4,6-Trichlorophenol	790.	U
95-95-4	2,4,5-Trichlorophenol	2000.	U
91-58-7	2-Chloronaphthalene	790.	U
88-74-4	2-Nitroaniline	2000.	U
131-11-3	Dimethylphthalate	790.	U
208-96-8	Acenaphthylene	790.	U
606-20-2	2,6-Dinitrotoluene	790.	U
99-09-2	3-Nitroaniline	2000.	U
83-32-9	Acenaphthene	790.	U

Best Available Copy

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88704

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/ ater) SOIL Lab Sample ID: BH00106PE

Sample wt/vol: 30.1 (g/mL) G Lab File ID: SBP2704

Level: (low/med) Date Received: 09/18/95

% Moisture: 15. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Best Available Copy

CAS. NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2000.	U
100-02-7	4-Nitrophenol	2000.	U
132-64-9	Dibenzofuran	790.	U
121-14-2	2,4-Dinitrotoluene	790.	U
84-66-2	Diethylphthalate	790.	U
7005-72-3	4-Chlorophenyl-phenylether	790.	U
86-73-7	Fluorene	790.	U
100-01-6	4-Nitroaniline	2000.	U
534-52-1	4,6-Dinitro-2-methylphenol	2000.	U
86-30-6	N-Nitrosodiphenylamine (1)	790.	U
101-55-3	4-Bromophenyl-phenylether	790.	U
118-74-1	Hexachlorobenzene	790.	U
87-86-5	Pentachlorophenol	2000.	U
85-01-8	Phenanthrene	790.	U
120-12-7	Anthracene	790.	U
86-74-8	Carbazole	790.	U
84-74-2	Di-n-butylphthalate	28.	J
206-44-0	Fluoranthene	790.	U
129-00-0	Pyrene	790.	U
85-68-7	Butylbenzylphthalate	23.	J
91-94-1	3,3'-Dichlorobenzidine	790.	U
56-55-3	Benzo(a)anthracene	790.	U
218-01-9	Chrysene	790.	U
117-81-7	bis(2-Ethylhexyl)phthalate	44.	BJ
117-84-0	Di-n-octylphthalate	790.	U
205-99-2	Benzo(b)fluoranthene	790.	U
207-08-9	Benzo(k)fluoranthene	790.	U
50-32-8	Benzo(a)pyrene	790.	U
193-39-5	Indeno(1,2,3-cd)pyrene	790.	U
53-70-3	Dibenz(a,h)anthracene	790.	U
191-24-2	Benzo(g,h,i)perylene	790.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

88704

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00106PE

Sample wt/vol: 30.1 (g/mL) G Lab File ID: SEP2704

Level: (low/med) Date Received: 09/18/95

% Moisture: 15. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Best Available Copy

Number TICs found: 19

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1576-87-0	2-Pentenal, (E)-	3.35	600.	J N
2.	141-78-6	Ethyl Acetate	3.47	1000.	BJ N
3.	62238-37-3	3-Penten-1-ol, 2-methyl-	3.62	9000.	J N
4.	- -	UNKNOWN	3.90	500.	J
5.	- -	UNKNOWN	4.11	2000.	J
6.	- -	UNKNOWN HYDROCARBON	4.34	4000.	J
7.	123-42-2	2-Pentanone, 4-hydroxy-4-met	4.82	40000.	BJ N
8.	5076-20-0	Oxirane, tetramethyl-	4.96	4000.	J N
9.	- -	UNKNOWN	6.30	700.	J
10.	- -	UNKNOWN	6.33	1000.	J
11.	- -	UNKNOWN	6.45	2000.	J
12.	- -	UNKNOWN	7.11	800.	J
13.	556-67-2	Cyclotetrasiloxane, octameth	8.41	2000.	J N
14.	- -	UNKNOWN	8.69	7000.	J
15.	- -	UNKNOWN	9.19	600.	J
16.	111-87-5	1-Octanol	9.92	600.	J N
17.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.18	6000.	J N
18.	- -	UNKNOWN	19.20	500.	J
19.	557-35-7	Octane, 2-bromo-	25.05	2000.	J N
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57

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88705

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00107PE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: SEB2515

Level: (low/med) Date Received: 09/18/95

% Moisture: 18. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	810.	U
111-44-4	bis(2-Chloroethyl)ether	810.	U
95-57-8	2-Chlorophenol	810.	U
541-73-1	1,3-Dichlorobenzene	810.	U
106-46-7	1,4-Dichlorobenzene	810.	U
95-50-1	1,2-Dichlorobenzene	810.	U
95-48-7	2-Methylphenol	810.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	810.	U
106-44-5	4-Methylphenol	810.	U
621-64-7	N-Nitroso-di-n-propylamine (	810.	U
67-72-1	Hexachloroethane	810.	U
98-95-3	Nitrobenzene	810.	U
78-59-1	Isophorone	810.	U
88-75-5	2-Nitrophenol	810.	U
105-67-9	2,4-Dimethylphenol	810.	U
111-91-1	bis(2-Chloroethoxy)methane	810.	U
120-83-2	2,4-Dichlorophenol	810.	U
120-82-1	1,2,4-Trichlorobenzene	810.	U
91-20-3	Naphthalene	140.	J
106-47-8	4-Chloroaniline	810.	U
87-68-3	Hexachlorobutadiene	810.	U
59-50-7	4-Chloro-3-methylphenol	810.	U
91-57-6	2-Methylnaphthalene	350.	BJ
77-47-4	Hexachlorocyclopentadiene	810.	U
88-06-2	2,4,6-Trichlorophenol	810.	U
95-95-4	2,4,5-Trichlorophenol	2000.	U
91-58-7	2-Chloronaphthalene	810.	U
88-74-4	2-Nitroaniline	2000.	U
131-11-3	Dimethylphthalate	810.	U
208-96-8	Acenaphthylene	810.	U
606-20-2	2,6-Dinitrotoluene	810.	U
99-09-2	3-Nitroaniline	2000.	U
83-32-9	Acenaphthene	25.	J

55

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88705

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00107PE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: SEF2515

Level: (low/med) Date Received: 09/18/95

% Moisture: 18. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2000.	U
100-02-7	4-Nitrophenol	2000.	U
132-64-9	Dibenzofuran	810.	U
121-14-2	2,4-Dinitrotoluene	810.	U
84-66-2	Diethylphthalate	810.	U
7005-72-3	4-Chlorophenyl-phenylether	810.	U
86-73-7	Fluorene	21.	J
100-01-6	4-Nitroaniline	2000.	U
534-52-1	4,6-Dinitro-2-methylphenol	2000.	U
86-30-6	N-Nitrosodiphenylamine (1)	810.	U
101-55-3	4-Bromophenyl-phenylether	810.	U
118-74-1	Hexachlorobenzene	810.	U
87-86-5	Pentachlorophenol	2000.	U
85-01-8	Phenanthrene	25.	J
120-12-7	Anthracene	810.	U
86-74-8	Carbazole	810.	U
84-74-2	Di-n-butylphthalate	54.	BJ
206-44-0	Fluoranthene	810.	U
129-00-0	Pyrene	810.	U
85-68-7	Butylbenzylphthalate	23.	BJ
91-94-1	3,3'-Dichlorobenzidine	810.	U
56-55-3	Benzo(a)anthracene	810.	U
218-01-9	Chrysene	810.	U
117-81-7	bis(2-Ethylhexyl)phthalate	59.	BJ
117-84-0	Di-n-octylphthalate	810.	U
205-99-2	Benzo(b)fluoranthene	810.	U
207-08-9	Benzo(k)fluoranthene	810.	U
50-32-8	Benzo(a)pyrene	810.	U
193-39-5	Indeno(1,2,3-cd)pyrene	810.	U
53-70-3	Dibenz(a,h)anthracene	810.	U
191-24-2	Benzo(g,h,i)perylene	810.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

88705

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00107PE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: SEP2515

Level: (low/med) Date Received: 09/18/95

% Moisture: 18. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-Pentanone, 4-hydroxy-4-met	5.27	100000.	BJ N
2.	- -	UNKNOWN	6.64	6000.	J
3.	526-73-8	Benzene, 1,2,3-trimethyl-	8.29	700.	J N
4.	556-67-2	Cyclotetrasiloxane, octameth	8.47	2000.	J N
5.	- -	UNKNOWN	8.74	3000.	J
6.	1120-21-4	Undecane	10.51	2000.	J N
7.	112-40-3	Dodecane	12.37	2000.	J N
8.	629-59-4	Tetradecane	15.65	3000.	J N
9.	629-62-9	Pentadecane	17.12	2000.	J N
10.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.22	6000.	BJ N
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

89202

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1892

Matrix: (soil/water) SOIL Lab Sample ID: BH00108PE

Sample wt/vol: 30.7 (g/mL) G Lab File ID: SEP2707

Level: (low/med) Date Received: 09/19/95

% Moisture: 2. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	660.	U
111-44-4	bis(2-Chloroethyl)ether	660.	U
95-57-8	2-Chlorophenol	660.	U
541-73-1	1,3-Dichlorobenzene	660.	U
106-46-7	1,4-Dichlorobenzene	660.	U
95-50-1	1,2-Dichlorobenzene	660.	U
95-48-7	2-Methylphenol	660.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	660.	U
106-44-5	4-Methylphenol	660.	U
621-64-7	N-Nitroso-di-n-propylamine (	660.	U
67-72-1	Hexachloroethane	660.	U
98-95-3	Nitrobenzene	660.	U
78-59-1	Isophorone	660.	U
88-75-5	2-Nitrophenol	660.	U
105-67-9	2,4-Dimethylphenol	660.	U
111-91-1	bis(2-Chloroethoxy)methane	660.	U
120-83-2	2,4-Dichlorophenol	660.	U
120-82-1	1,2,4-Trichlorobenzene	42.	J
91-20-3	Naphthalene	660.	U
106-47-8	4-Chloroaniline	660.	U
87-68-3	Hexachlorobutadiene	660.	U
59-50-7	4-Chloro-3-methylphenol	660.	U
91-57-6	2-Methylnaphthalene	54.	J
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	660.	U
95-95-4	2,4,5-Trichlorophenol	1700.	U
91-58-7	2-Chloronaphthalene	660.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	660.	U
208-96-8	Acenaphthylene	660.	U
606-20-2	2,6-Dinitrotoluene	660.	U
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	57.	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

89202

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1892

Matrix: (soil/water) SOIL Lab Sample ID: BH00108PE

Sample wt/vol: 30.7 (g/mL) G Lab File ID: SEP2707

Level: (low/med) Date Received: 09/19/95

% Moisture: 2. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	U
132-64-9	Dibenzofuran	660.	U
121-14-2	2,4-Dinitrotoluene	43.	J
84-66-2	Diethylphthalate	660.	U
7005-72-3	4-Chlorophenyl-phenylether	660.	U
86-73-7	Fluorene	660.	U
100-01-6	4-Nitroaniline	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	U
86-30-6	N-Nitrosodiphenylamine (1)	660.	U
101-55-3	4-Bromophenyl-phenylether	660.	U
118-74-1	Hexachlorobenzene	660.	U
87-86-5	Pentachlorophenol	1700.	U
85-01-8	Phenanthrene	660.	U
120-12-7	Anthracene	660.	U
86-74-8	Carbazole	660.	U
84-74-2	Di-n-butylphthalate	660.	U
206-44-0	Fluoranthene	660.	U
129-00-0	Pyrene	45.	J
85-68-7	Butylbenzylphthalate	660.	U
91-94-1	3,3'-Dichlorobenzidine	660.	U
56-55-3	Benzo(a)anthracene	660.	U
218-01-9	Chrysene	660.	U
117-81-7	bis(2-Ethylhexyl)phthalate	39.	BJ
117-84-0	Di-n-octylphthalate	660.	U
205-99-2	Benzo(b)fluoranthene	660.	U
207-08-9	Benzo(k)fluoranthene	660.	U
50-32-8	Benzo(a)pyrene	660.	U
193-39-5	Indeno(1,2,3-cd)pyrene	660.	U
53-70-3	Dibenz(a,h)anthracene	660.	U
191-24-2	Benzo(g,h,i)perylene	660.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

89202

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1892

Matrix: (soil/water) SOIL Lab Sample ID: BH00108PE

Sample wt/vol: 30.7 (g/mL) G Lab File ID: SEP2707

Level: (low/med) Date Received: 09/19/95

% Moisture: 2. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Best Available Copy

Number TICs found: 18

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1576-87-0	2-Pentenal, (E)-	3.33	200.	J N
2.	- -	UNKNOWN	3.54	1000.	J
3.	- -	UNKNOWN	4.04	600.	J
4.	563-78-0	1-Butene, 2,3-dimethyl-	4.27	1000.	J N
5.	123-42-2	2-Pentanone, 4-hydroxy-4-met	4.77	10000.	BJ N
6.	- -	UNKNOWN	4.88	200.	J
7.	- -	UNKNOWN	4.89	1000.	J
8.	79-34-5	Ethane, 1,1,2,2-tetrachloro-	6.32	200.	J N
9.	- -	UNKNOWN	6.44	300.	J
10.	556-67-2	Cyclotetrasiloxane, octameth	8.42	400.	J N
11.	- -	UNKNOWN	8.62	1000.	J
12.	- -	UNKNOWN	11.54	300.	J
13.	112-40-3	Dodecane	12.32	300.	J N
14.	544-76-3	Hexadecane	15.60	400.	J N
15.	629-62-9	Pentadecane	17.07	300.	J N
16.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.08	1000.	BJ N
17.	- -	UNKNOWN	19.19	600.	J
18.	629-27-6	Octane, 1-iodo-	25.10	2000.	J N
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

89203

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1892

Matrix: (soil/water) SOIL Lab Sample ID: BH00109PE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SEP2710

Level: (low/med) Date Received: 09/19/95

% Moisture: 11. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Best Available

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	750.	U
111-44-4	bis(2-Chloroethyl)ether	750.	U
95-57-8	2-Chlorophenol	750.	U
541-73-1	1,3-Dichlorobenzene	750.	U
106-46-7	1,4-Dichlorobenzene	750.	U
95-50-1	1,2-Dichlorobenzene	750.	U
95-48-7	2-Methylphenol	750.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	750.	U
106-44-5	4-Methylphenol	750.	U
621-64-7	N-Nitroso-di-n-propylamine (	750.	U
67-72-1	Hexachloroethane	750.	U
98-95-3	Nitrobenzene	750.	U
78-59-1	Isophorone	750.	U
88-75-5	2-Nitrophenol	750.	U
105-67-9	2,4-Dimethylphenol	750.	U
111-91-1	bis(2-Chloroethoxy)methane	750.	U
120-83-2	2,4-Dichlorophenol	750.	U
120-82-1	1,2,4-Trichlorobenzene	750.	U
91-20-3	Naphthalene	93.	J
106-47-8	4-Chloroaniline	750.	U
87-68-3	Hexachlorobutadiene	750.	U
59-50-7	4-Chloro-3-methylphenol	750.	U
91-57-6	2-Methylnaphthalene	270.	J
77-47-4	Hexachlorocyclopentadiene	750.	U
88-06-2	2,4,6-Trichlorophenol	750.	U
95-95-4	2,4,5-Trichlorophenol	1900.	U
91-58-7	2-Chloronaphthalene	750.	U
88-74-4	2-Nitroaniline	1900.	U
131-11-3	Dimethylphthalate	750.	U
208-96-8	Acenaphthylene	750.	U
606-20-2	2,6-Dinitrotoluene	750.	U
99-09-2	3-Nitroaniline	1900.	U
83-32-9	Acenaphthene	750.	U

61

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

89203

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1892

Matrix: (soil/water) SOIL Lab Sample ID: BH00109PE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SBR2710

Level: (low/med) Date Received: 09/19/95

% Moisture: 11. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900.	U
100-02-7	4-Nitrophenol	1900.	U
132-64-9	Dibenzofuran	750.	U
121-14-2	2,4-Dinitrotoluene	750.	U
84-66-2	Diethylphthalate	750.	U
7005-72-3	4-Chlorophenyl-phenylether	750.	U
86-73-7	Fluorene	750.	U
100-01-6	4-Nitroaniline	1900.	U
534-52-1	4,6-Dinitro-2-methylphenol	1900.	U
86-30-6	N-Nitrosodiphenylamine (1)	750.	U
101-55-3	4-Bromophenyl-phenylether	750.	U
118-74-1	Hexachlorobenzene	750.	U
87-86-5	Pentachlorophenol	1900.	U
85-01-8	Phenanthrene	750.	U
120-12-7	Anthracene	750.	U
86-74-8	Carbazole	750.	U
84-74-2	Di-n-butylphthalate	44.	BJ
206-44-0	Fluoranthene	750.	U
129-00-0	Pyrene	750.	U
85-68-7	Butylbenzylphthalate	750.	U
91-94-1	3,3'-Dichlorobenzidine	750.	U
56-55-3	Benzo(a)anthracene	750.	U
218-01-9	Chrysene	750.	U
117-81-7	bis(2-Ethylhexyl)phthalate	88.	BJ
117-84-0	Di-n-octylphthalate	750.	U
205-99-2	Benzo(b)fluoranthene	750.	U
207-08-9	Benzo(k)fluoranthene	750.	U
50-32-8	Benzo(a)pyrene	750.	U
193-39-5	Indeno(1,2,3-cd)pyrene	750.	U
53-70-3	Dibenz(a,h)anthracene	750.	U
191-24-2	Benzo(g,h,i)perylene	750.	U

(1) - Cannot be separated from diphenylamine

62

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

89203

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1892

Matrix: (soil/water) SOIL Lab Sample ID: BH00109PE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SEP2710

Level: (low/med) Date Received: 09/19/95

% Moisture: 11. decanted: (Y/N) N Date Extracted: 09/25/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/27/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Best Available Copy

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	584-94-1	Hexane, 2,3-dimethyl-	3.49	900.	J N
2.	62238-37-3	3-Penten-1-ol, 2-methyl-	3.62	7000.	J N
3.	- -	UNKNOWN	4.11	1000.	J
4.	- -	UNKNOWN	4.34	3000.	J
5.	- -	UNKNOWN	4.91	9000.	J
6.	- -	UNKNOWN	4.94	60000.	J
7.	- -	UNKNOWN	5.08	4000.	J
8.	79-34-5	Ethane, 1,1,2,2-tetrachloro-	6.35	1000.	J N
9.	- -	UNKNOWN	6.49	2000.	J
10.	112-58-3	Hexane, 1,1'-oxybis-	6.83	900.	J N
11.	- -	UNKNOWN AROMATIC	8.41	3000.	J
12.	- -	UNKNOWN	8.71	8000.	J
13.	1120-21-4	Undecane	10.46	1000.	J N
14.	112-40-3	Dodecane	12.33	2000.	J N
15.	74645-98-0	Dodecane, 2,7,10-trimethyl-	15.23	1000.	J N
16.	629-59-4	Tetradecane	15.60	3000.	J N
17.	17312-53-7	Decane, 3,6-dimethyl-	16.51	1000.	J N
18.	629-62-9	Pentadecane	17.07	2000.	J N
19.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.23	8000.	BJ N
20.	544-76-3	Hexadecane	18.46	1000.	J N
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88706

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00110PE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: SEP2516

Level: (low/med) Date Received: 09/18/95

% Moisture: 17. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	800.	U
111-44-4	bis(2-Chloroethyl)ether	800.	U
95-57-8	2-Chlorophenol	800.	U
541-73-1	1,3-Dichlorobenzene	800.	U
106-46-7	1,4-Dichlorobenzene	800.	U
95-50-1	1,2-Dichlorobenzene	800.	U
95-48-7	2-Methylphenol	800.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	800.	U
106-44-5	4-Methylphenol	800.	U
621-64-7	N-Nitroso-di-n-propylamine (	800.	U
67-72-1	Hexachloroethane	800.	U
98-95-3	Nitrobenzene	800.	U
78-59-1	Isophorone	800.	U
88-75-5	2-Nitrophenol	800.	U
105-67-9	2,4-Dimethylphenol	800.	U
111-91-1	bis(2-Chloroethoxy)methane	800.	U
120-83-2	2,4-Dichlorophenol	800.	U
120-82-1	1,2,4-Trichlorobenzene	800.	U
91-20-3	Naphthalene	800.	U
106-47-8	4-Chloroaniline	800.	U
87-68-3	Hexachlorobutadiene	800.	U
59-50-7	4-Chloro-3-methylphenol	800.	U
91-57-6	2-Methylnaphthalene	91.	BJ
77-47-4	Hexachlorocyclopentadiene	800.	U
88-06-2	2,4,6-Trichlorophenol	800.	U
95-95-4	2,4,5-Trichlorophenol	2000.	U
91-58-7	2-Chloronaphthalene	800.	U
88-74-4	2-Nitroaniline	2000.	U
131-11-3	Dimethylphthalate	800.	U
208-96-8	Acenaphthylene	800.	U
606-20-2	2,6-Dinitrotoluene	800.	U
99-09-2	3-Nitroaniline	2000.	U
83-32-9	Acenaphthene	800.	U

6of

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

88706

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00110PE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: SEP2516

Level: (low/med) Date Received: 09/18/95

% Moisture: 17. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2000.	U
100-02-7	4-Nitrophenol	2000.	U
132-64-9	Dibenzofuran	800.	U
121-14-2	2,4-Dinitrotoluene	800.	U
84-66-2	Diethylphthalate	800.	U
7005-72-3	4-Chlorophenyl-phenylether	800.	U
86-73-7	Fluorene	800.	U
100-01-6	4-Nitroaniline	2000.	U
534-52-1	4,6-Dinitro-2-methylphenol	2000.	U
86-30-6	N-Nitrosodiphenylamine (1)	800.	U
101-55-3	4-Bromophenyl-phenylether	800.	U
118-74-1	Hexachlorobenzene	800.	U
87-86-5	Pentachlorophenol	2000.	U
85-01-8	Phenanthrene	32.	J
120-12-7	Anthracene	800.	U
86-74-8	Carbazole	800.	U
84-74-2	Di-n-butylphthalate	34.	BJ
206-44-0	Fluoranthene	38.	J
129-00-0	Pyrene	36.	J
85-68-7	Butylbenzylphthalate	800.	U
91-94-1	3,3'-Dichlorobenzidine	800.	U
56-55-3	Benzo(a)anthracene	800.	U
218-01-9	Chrysene	800.	U
117-81-7	bis(2-Ethylhexyl)phthalate	66.	BJ
117-84-0	Di-n-octylphthalate	800.	U
205-99-2	Benzo(b)fluoranthene	800.	U
207-08-9	Benzo(k)fluoranthene	800.	U
50-32-8	Benzo(a)pyrene	800.	U
193-39-5	Indeno(1,2,3-cd)pyrene	800.	U
53-70-3	Dibenz(a,h)anthracene	800.	U
191-24-2	Benzo(g,h,i)perylene	800.	U

(1) - Cannot be separated from diphenylamine

65

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

88706

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1887

Matrix: (soil/water) SOIL Lab Sample ID: BH00110PE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: SEP2516

Level: (low/med) Date Received: 09/18/95

% Moisture: 17. decanted: (Y/N) N Date Extracted: 09/20/95

Concentrated Extract Volume: 1000.0 (uL) Date Analyzed: 09/25/95

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 10.0

Best Available Copy

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	4.13	1000.	J
2.	123-42-2	2-Pentanone, 4-hydroxy-4-met	5.24	100000.	BJ N
3.	- -	UNKNOWN	6.63	4000.	J
4.	556-67-2	Cyclotetrasiloxane, octameth	8.46	2000.	J N
5.	- -	UNKNOWN	8.72	2000.	J
6.	120-40-1	Dodecanamide, N,N-bis(2-hydr	18.21	5000.	BJ N
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4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK01

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Lab File ID: SEP2501 Lab Sample ID: SONICATION BLK

Instrument ID: HP5972#2 Date Extracted: 09/20/95

Matrix: (soil/water) SOIL Date Analyzed: 09/25/95

Level: (low/med) Time Analyzed: 09:02

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	LCS1	LAB CONTRL SPK	SEP2502	09/25/95
2	87508	99080	SEP2503	09/25/95
3	87508MS	99080	SEP2504	09/25/95
4	87508MSD	99080	SEP2505	09/25/95
5	87509	99081	SEP2506	09/25/95
6	87510	99083	SEP2507	09/25/95
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COMMENTS:

FORM IV SV

Best Available Copy

3/90

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Best Available Copy

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
1	LCS1	80	77	103	75	76	79	71	77	0
2	SBLK01	101	90	103	81	68	55	77	91	0
3	88006	100	83	99	83	81	94	81	84	0
4	88006MS	100	81	99	83	83	98	74	71	0
5	88006MSD	107	81	92	82	82	99	73	77	0
6	88007	98	85	87	81	80	81	79	80	0
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S3 (TPH)	= Terphenyl-d14	(18-137)	
S4 (PHL)	= Phenol-d5	(24-113)	
S5 (2FP)	= 2-Fluorophenol	(25-121)	
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM II SV-1 3/90

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
1	LCS1	80	77	103	75	76	79	71	77	0
2	SBLK01	101	90	103	81	68	55	77	91	0
3	87508	69	65	65	55	49	45	53	62	0
4	87508MS	92	83	92	80	80	87	72	72	0
5	87508MSD	87	82	77	78	79	83	70	75	0
6	87509	88	82	79	72	71	78	71	75	0
7	87510	95	84	80	76	73	80	76	79	0
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S3 (TPH)	= Terphenyl-d14	(18-137)	
S4 (PHL)	= Phenol-d5	(24-113)	
S5 (2FP)	= 2-Fluorophenol	(25-121)	
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM II SV-2 Best Available Copy 3/90

3D
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1880

Matrix Spike - EPA Sample No.: 88006 Level:(low/med)

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
Phenol	11137.	0.	4000.	36	26- 90
2-Chlorophenol	11137.	0.	4400.	40	25-102
1,4-Dichlorobenzene	7424.	0.	2500.	34	28-104
N-Nitroso-di-n-prop.(1)	7424.	0.	3700.	50	41-126
1,2,4-Trichlorobenzene	7424.	0.	3000.	40	38-107
4-Chloro-3-methylphenol	11137.	0.	5000.	45	26-103
Acenaphthene	7424.	0.	3000.	40	31-137
4-Nitrophenol	11137.	0.	9500.	85	11-114
2,4-Dinitrotoluene	7424.	0.	2800.	38	28- 89
Pentachlorophenol	11137.	0.	3500.	31	17-109
Pyrene	7424.	70.	3100.	41	35-142

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	11100.	4100.	37	3	35	26- 90
2-Chlorophenol	11100.	4400.	40	0	50	25-102
1,4-Dichlorobenzene	7400.	2600.	35	3	27	28-104
N-Nitroso-di-n-prop.(1)	7400.	3900.	53	6	38	41-126
1,2,4-Trichlorobenzene	7400.	3100.	42	5	23	38-107
4-Chloro-3-methylphenol	11100.	5000.	45	0	33	26-103
Acenaphthene	7400.	3300.	45	12	19	31-137
4-Nitrophenol	11100.	11000.	99	15	50	11-114
2,4-Dinitrotoluene	7400.	3100.	42	10	47	28- 89
Pentachlorophenol	11100.	3700.	33	6	47	17-109
Pyrene	7400.	2900.	38	8	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS:

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3D
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: E.G.&G., Rocky Flats Contract:

Lab Code: GLABS Case No.: SAS No.: 95E SDG No.: 1875

Matrix Spike - EPA Sample No.: 87508 Level:(low/med)

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
Phenol	5754.	0.	4200.	73	26- 90
2-Chlorophenol	5754.	0.	4600.	80	25-102
1,4-Dichlorobenzene	3836.	0.	2700.	70	28-104
N-Nitroso-di-n-prop.(1)	3836.	0.	3700.	96	41-126
1,2,4-Trichlorobenzene	3836.	0.	3100.	81	38-107
4-Chloro-3-methylphenol	5754.	0.	4900.	85	26-103
Acenaphthene	3836.	0.	3200.	83	31-137
4-Nitrophenol	5754.	0.	8100.	141 *	11-114
2,4-Dinitrotoluene	3836.	0.	3100.	81	28- 89
Pentachlorophenol	5754.	0.	3600.	63	17-109
Pyrene	3836.	0.	2900.	76	35-142

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	5774.	4100.	71	3	35	26- 90
2-Chlorophenol	5774.	4400.	76	5	50	25-102
1,4-Dichlorobenzene	3849.	2600.	68	3	27	28-104
N-Nitroso-di-n-prop.(1)	3849.	4000.	104	8	38	41-126
1,2,4-Trichlorobenzene	3849.	3100.	81	0	23	38-107
4-Chloro-3-methylphenol	5774.	5100.	88	3	33	26-103
Acenaphthene	3849.	3100.	81	2	19	31-137
4-Nitrophenol	5774.	7900.	137 *	3	50	11-114
2,4-Dinitrotoluene	3849.	3000.	78	4	47	28- 89
Pentachlorophenol	5774.	3200.	55	14	47	17-109
Pyrene	3849.	2800.	73	4	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 2 out of 22 outside limits

COMMENTS:

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SVOA CLP EXTRACTION & ANALYSIS REPORT
DETERMINED BY GAS CHROMATORGRAPHY/
MASS SPECTROSCOPY

LAB NUMBER: 95E1913
REPORT DATE: 10/5/95

note: All form I results are calculated on off-line PC's using CLP Terwilliger software and complete sample information (e.g., sample volume, sample weights, final extraction volume, etc.) and updated calibration response factors. These final results are checked manually for randomly selected compounds by the chemist and QA/QC, and should be exact to the best of the responsible chemist's knowledge. However, final results reported on instrument quantitation reports are estimates only (e.g. they are "cosmetic") and should never be used to check the validity of form I results (this is because instrument quantitation results never use complete sample information in calculations, and also because current one-point calibrations are not always used when performing these "estimates").

EXTRACTION NARRATIVE

The following sample(s) were received on 9/18/95 and extracted according to method L6218F on 9/20/95 and 9/25/95 (and GPC cleanup completed on 9/25/95 and 9/26/95):

LAB ID/ LIMS UMERIC ID	E NUMBER/ SAMPLE NAME ID	SAMPLING POINT	CUSTOMER SAMPLE ID	EXTRACT ID	EPA SAMPLE ID	DATE RCV'D	DATE EXT'D	HOLDING TIME EXPIRATION DATE
99813	95E191306	EWRINSES-P	BH00111PE	95E191306	91306	9/21/95	9/26/95	9/26/95
99814	95E191307	EWRINSES-P	BH00111PE	95E191307	91306MS*	9/21/95	9/26/95	9/26/95
99815	95E191308	EWRINSES-P	BH00111PE	95E191308	91306MSD*	9/21/95	9/26/95	9/26/95

* The MS/MSD must use the same 5-digit EPA sample name as the unspiked sample for forms processing, etc.

The above samples were extracted according to 90' CLP methodology according to specifications within GRRASP 3.0.

The samples were extracted on 9/26/95 and no problems were encountered during routine extractions.

No dilutions were necessary. All holding times were met.

All the sample was used so no sample will be returned to the customer.

ANALYSIS NARRATIVE

All the samples listed above in the extraction narrative were analyzed on 9/28/95 (well within holding times) per 90' CLP protocols (method L6216D).

All QA/QC was in control for the method, including contamination for the method blanks, surrogate recoveries, spiking recoveries, internal standard drift criteria, calibration criteria, and holding times per

SVOA CLP EXTRACTION & ANALYSIS REPORT DETERMINED BY GAS CHROMATORGRAPHY/ MASS SPECTROSCOPY

LAB NUMBER: 95E1913
REPORT DATE: 10/5/95

90' CLP protocols. In general, surrogate and spiking recoveries were excellent.

A few phthalate compounds were found in the blank, but an order of magnitude below the CRQL for the. Several unidentified tentatively identified compounds (TICs) from a library search was found in the blank (at very low levels). The blank met all CLP QA/QC criteria.

A few of the same phthalate compounds were found in the sample, at nearly the same low levels as found in the blank. No library seach compounds were detected. The sample met all QC criteria per CLP protocols, and so the data should be valid.

All data reported in this data package meets all CLP QA/QC per the 90' CLP *SOW* requirements and should therefore be valid.

CHEMIST L U Wolf DATE: 10/5/95

CYANIDE RESULTS

KAISER-HILL CO.
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
P.O. BOX 464
GOLDEN, COLORADO 80402

GENERAL LABORATORY
BUILDING 881

CASE NARRATIVE

SDG NUMBER: 95E1875, 1880, 1887, 1892
DATE: 10-2-95
DATA: WATER LAB CYANIDE RESULTS

SAMPLE DESCRIPTION:

SAMPLE I.D.	CYANIDE RESULTS	LAB I.D.
BH00101PE	0.191 mg/kg	95E1875
BH00102PE	0.250 mg/kg	95E1875
BH00103PE	<0.170 mg/kg	95E1875
BH00104PE	<0.170 mg/kg	95E1880
BH00105PE	<0.170 mg/kg	95E1887
BH00106PE	<0.170 mg/kg	95E1875
BH00107PE	<0.170 mg/kg	95E1887
BH00108PE	<0.170 mg/kg	95E1892
BH00109PE	<0.170 mg/kg	95E1892
BH00110PE	<0.170 mg/kg	95E1887

Narrative

Samples were distilled and analyzed for Cyanide. Recovery Standard number 2 had a low spike yield of 79 %. All blanks, control, duplicates and other recovery standards ran well so this batch was accepted. All samples other than BH000101PE and BH000102PE ran below the detection limits of 5 ppb.

This report is for your information only. ?

N.K. Harward

CHEMICAL ANALYSIS AND WATER LAB AREAS REPORT
Total Cyanide

Lab Number: 95E1913
Report Date: 10-26-95

The colorimetric procedure used by the Technicon TRAACS 800 system uses a modified version of the 4500-CN method, version E, given in Standard Methods for the Examination of Water and Waste water, 18th Edition, 1992.

Narrative for 95E1913

Two bottles of the sample, BH00111PE from the sampling point EWRINSES-P with the Lab numbers 95E1913-0009 and 95E1913-0010 were distilled on 9-28-95 with quality control samples and another sample with the Lab number 95E1918. Both samples for BH00111PE were distilled within the accepted 14 day hold time after being sampled. Analysis of the 9-28-95 distillation batch was completed on 10-03-95, which is within the 14 day analysis hold time from the date of distillation. All analysis batch Quality Control samples for the 10-03-95 analysis batch were acceptable. All the distillation batch Quality Control samples for the 9-28-95 distillation batch were acceptable exceptable for the distillation spike recovery. The distillation spike recovery was only 72%, which is below the limit of 75%. However, an analysis spike of the sample distillate had an acceptable recovery of 89.1%. The low recovery of the distillation spike is expected to be due to a loss of cyanide through leakage in the distillation process. Also the analysis results appear to be bias low by approximately 10%. Therefore, the distillatibn spike recovery would be acceptable if the spike result were 10 % higher. Note, this 10% negative bias is acceptable for the analysis Quality Control samples. All sample and Quality Control Data are given in the following Sections.

Sample Results

Following is the total cyanide results for the sample BH00111PE from the sampling point EWRINSES-P with Lab number 95E1913-0009 and 95E1913-0010:

NOTE: The results are qualified due to the poor distillation spike recovery, although all other distillation and analysis QC are acceptable.

Sample Identification	Cyanide Concentration
BH00111PE 95E1913-0009 LIMS# 99816	<0.003 mg/L
BH00111PE 95E1913-0010 LIMS# 99817	<0.003 mg/L

HYDROGEN SULFIDE RESULTS

HYDROGEN SULFIDE RELEASED FROM WASTES

ANALYST Jim A & Jack W

DATE RUN 9-18-95 LAB # 95E 1880 / 1875

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DRAGER TUBE STANDARDIZATION			
0.60 mg H_2S/ml Standard Aliquot (ml)	ug H_2S	Drager Tube Reading	Drager Tube #
0.60 X 0.2 mL =	.120	48	ARHH - 0031

SAMPLE ANALYSIS					
	LAB # SAMPLE I.D.	WEIGHT (gms.) (+/- 0.1 gm) SPIKE ADDED	DRAEGER TUBE # ARHH-0031 READING	pH	CALCULATIONS RESULTS (mg/Kg) RECOVERY (%)
1.	95E 1880 0031 BH00104 PE	10.2 g	Ø	2	<200 mg/Kg
2.	95E 1880 0032 BH00106 PE	10.2 g	Ø	2	<200 mg/Kg
3.	95E 1875 0033 BH00101 PE	10.0 g	Ø	2	<200 mg/Kg
4.	95E 1875 0034 BH00102 PE	10.0 g	Ø	2	<200 mg/Kg
5.	95E 1875 0035 BH00103 PE	10.3 g	Ø	2	<200 mg/Kg
6.	95E 1875 (Lab Dup) BH00102 PE	10.2 g (Lab Dup)	Ø	2	<200 mg/Kg
7.	95E 1880 Spike BH00106 PE	10.9 + 0.2 mL of Std. (Spike)	10	2	10/48 X 100 = 21% Recovery Low
8.	Std. Check	0.2 mL of Std.	55	N/A	N/A
9	95E 1887 0036 BH00105 PE	10.1	Ø	2	<200 mg/Kg
10	95E 1887 0037 BH00110 PE	10.0 g	Ø	2	<200 mg/Kg
11	95E 1887 0038 BH00107 PE	10.2 g	Ø	2	<200 mg/Kg

101, 102, 103, 104, 105, 106, 107, 110

HYDROGEN SULFIDE RELEASED FROM WASTES

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ANALYST Jim & Jack

DATE RUN 9-18-95 LAB # 95G0816

DRAGER TUBE STANDARDIZATION			
0.60 mg H_2S/ml Standard Aliquot (ml)	ug H_2S	Drager Tube Reading	Drager Tube #
0.60 x 0.2 ml Std	.120	48	ARHH-0031

	SAMPLE ANALYSIS					
	LAB # SAMPLE I.D.	WEIGHT (gms.) (+/- 0.1 gm) SPIKE ADDED	DRAEGER TUBE # ARHH-0031 READING	pH	CALCULATIONS RESULTS (mg/Kg) RECOVERY (%)	
1	95G0816 A638111	10.1g	Ø	2	<200mg/Kg	
2	95G0816 A637711 FB	10.0g	Ø	2	<200mg/Kg	
3	95G0816 A638801 D Dup	10.1g	Ø	2	<200mg/Kg	
4	95G0816 A637909	10.0g	Ø	2	<200mg/Kg	
5	95G0816 A638410 D	10.0g	Ø	2	<200mg/Kg	
5-D	95G0816 LAB A638410D Dup	10.0g (Lab Dup)	Ø	2	<200mg/Kg	
6	95G0816 A637509	10.0g	Ø	2	<200mg/Kg	
7 Spike	95G0816 Spike A637610D	10.1g+0.2mL Std. (Spike)	45	2	45/48 x 100 = 94%	Recc
7 Sample	95G0816 A637610 Sample	10.1g	Ø	2	<200mg/Kg	
8	95G0816 A638309	10.0g	Ø	2	<200mg/Kg	
9	95G0816 A638511 FB	10.2g	Ø	2	<200mg/Kg	
10	Std Check	0.2mL of Std.	57	N/A	57/48 x 100 = 119%	Recov

H_2S STANDARDIZATION/RECOVERY

Rocky Flats Plant--881 General Labs

Analyst Jim A. & Jack N. Date 9-18-95

Normality of Iodine Solution .0247 Date Standardized 7-24-95

Normality of $Na_2S_2O_3$ Solution .0252 Date Standardized 9-14-95

mg $S^=$ = [mls of I_2)(N of I_2) - (mls of $Na_2S_2O_3$)(N of $Na_2S_2O_3$)]16.03mg$S^=$/Meq
mg H_2S = (mg$S^=$)1.0625

H_2S STANDARDIZATION (Na_2S)							
Aliquot	Iodine Added (ml)	(meg)	ml of H_2S added (A)	$Na_2S_2O_3$ Titrated (ml)	(meg)	mg $S^=$	mg H_2S Calculated
1	10ml	.247	5ml	1.91	.04813	3.19	3.00
2	10ml	.247	5ml	1.92	.04838	3.18	3.00
3							
4							
				Average of aliquot			(B) 3.00

mg H_2S/ml = (B/A) = 0.60

SYSTEM RECOVERY

Apparatus	Iodine Added (ml)	(meg)	ml/mg H_2S STD Processed (ml)	(mg)(B)	$Na_2S_2O_3$ Titrated (ml)	(meg)	Calculated mg H_2S Trapped in NaOH by Titration (C)	Recovery % (C/B)(100)
3	10ml	.247	5ml	3.00	3.68	.09274	2.33	$\frac{2.33}{3.00}$x100 = 78%
4	10ml	.247	5ml	3.00	2.99	.07535	2.59	$\frac{2.59}{3.00}$x100 = 86%
								Avg: 82%

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CHEMICAL ANALYSIS AREA REPORT
RELEASABLE (REACTIVE) HYDROGEN SULFIDE

LAB NUMBER: 95E1892
REPORT DATE: October 18, 1995

Replicate samples and matrix spikes are processed with each sample batch or for each sample matrix, whichever is more frequent.

Significant Figures

The number of significant figures for a result will depend upon the method of quantification used and the level detected. All data will be reported to the correct number of significant figures.

Narrative for 95E1892

Two solid samples, Sample ID #'s BH000108PE and BH000109PE were taken on September 18, 1995 respectively and delivered to the General Laboratories for analysis.

Sample ID # BH000108PE was spiked and analyzed in duplicate. There were no recoveries observed on the matrix spike. For a full recovery of the matrix spike, the sample pH must be less than 2. The pH observed for these samples using pH paper was 3, therefore a good recovery of the matrix spike cannot be expected. The duplicate analysis agreed well with the original sample.

All other quality control samples for this batch were within limits.

Emphasis should be placed on the fact that only sulfides released under these specific test conditions are measured. This is not a measure of the total sulfide present.

Sample Result - 95E1892

< 200 mg H_2S per kg sample

Chemist Approval William F. Santiago Date: October 18, 1995

William F. Santiago

CHEMICAL ANALYSIS AREA REPORT
DISSOLVED SULFIDES

LAB NUMBER: 95E1913
REPORT DATE: October 3, 1995

Method Summary

The base methods for this analysis are Standard Method 4500E from Standard Methods for the Examination of Water and Wastewater 18th Edition (1992) and Method 9030A. *Acid-Soluble and Acid-Insoluble Sulfides*. from SW846 (July 1992).

Sulfide is often present in groundwater, especially in hot springs. Its common presence in wastewaters comes partly from the decomposition of organic matter, sometimes from industrial wastes, but mostly from the bacterial reduction of sulfate. Hydrogen sulfide escaping from the air from sulfide-containing wastewater causes odor nuisances. The threshold odor concentration of H_2S in clean water is between 0.025 and 0.25 ug/L. H_2S is very toxic and has claimed the lives of numerous sewer workers.

Iodine reacts with sulfide in acid solution, oxidizing it to sulfur. A titration based on this reaction is an accurate method for determining sulfide concentrations above 1 mg/L if interferences are absent and if losses of H_2S are avoided.

Samples are received by the General Labs and preserved by refrigeration at 4°C ± 2°C until the time of analysis. The samples are filtered and the aqueous phase removed. The filter paper, precipitate, and 100 mL of Type II water are added to the sample bottle. 0.0247 N Iodine solution is added to the samples until they maintain an orange color (usually 10 mL) and acidified. The samples are then titrated using 0.0202 N Sodium thiosulfate solution until they turn a pale yellow. At this point, a few drops of starch indicator solution is added to the samples. The samples are further titrated using the same Sodium thiosulfate solution until they turn from pale yellow to blue. All reagent volumes are recorded and the sample concentration of sulfide is calculated according to the following formula:

$$\text{mg/L } S^{2-} = \frac{[(\text{mL Iodine Sol.})(\text{N of Iodine Sol.}) - (\text{mL } Na_2S_2O_3)(\text{N of } Na_2S_2O_3)] * 16.03}{\text{Liters of Sample Used}}$$

Sample Results for 95E1913

A single sample from BH00111PE was delivered to the General Laboratories for analysis on September 21, ~~1995~~. Sample results are given in mg/L.

Sample #	LIMS #	Liters of Sample	mL of Iodine	mL of $Na_2S_2O_3$	S^{2-} in Sample (mg/L)
95E1913	99818	0.975	10.00	9.6	0.082

Chemist Approval: William F. Santiago Date: October 3, 1995

William F. Santiago

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GROSS ALPHA & GROSS BETA RESULTS

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881 LABORATORY

RADIOCHEMISTRY GROSS ALPHA/BETA REPORT SDG NUMBER:95E1875 DATE: 9/27/95

Gross Alpha/Gross Beta Analysis Results

Sample ID	Gross Alpha pCi/g	Gross Beta pCi/g	QC Batch	Sys/Date	Analysis Date
99088 AS00001PE	26 ± 4 (MDA 5) 26 ± 3 (MDA 5)	30 ± 3 (MDA 3) 31 ± 2 (MDA 2)	95AB251	TN4/A1	09/25/95 09/26/95
99089 BH00101PE	24 ± 4 (MDA 5) 26 ± 3 (MDA 4)	32 ± 3 (MDA 2) 32 ± 2 (MDA 2)	95AB251	TN4/A2	09/25/95 09/26/95
99089DUP	25 ± 4 (MDA 6) 27 ± 4 (MDA 6)	35 ± 3 (MDA 3) 36 ± 2 (MDA 2)	95AB251	TN4/A3	09/25/95 09/26/95
99090 BH00102PE	10 ± 3 (MDA 4) 11 ± 2 (MDA 3)	26 ± 3 (MDA 2) 25 ± 2 (MDA 2)	95AB251	TN4/A4	09/25/95 09/26/95
99092 BH00103PE	9 ± 2 (MDA 3) 9 ± 2 (MDA 3)	24 ± 2 (MDA 2) 22 ± 2 (MDA 1)	95AB251	TN4/B1	09/25/95 09/26/95

Preparation QC

Preparation Blank

QC Batch	Preparation Date	Prep Blank Alpha pCi/g	Prep Blank Beta pCi/g	Sys/Date	Analysis Date
95AB251	9/20/95	0.0 ± 0.4 (MDA 0.7) 0.1 ± 0.3 (MDA 0.5)	-0.9 ± 0.8 (MDA 1.5) 0.3 ± 0.6 (MDA 0.9)	TN4/C1	09/25/95 09/26/95

Laboratory Control Sample (LCS)

QC Batch	Lab Control Sample	Observed Activity (pCi/ml ± 3σ)	Standard Value (pCi/ml ± 3σ)	Sys/Date	Analysis Date
95AB251	670731 (^{241}Am)	10.0 ± 3.4 10.6 ± 2.2	10.2 ± 0.2	TN4/C2	09/25/95 09/26/95
95AB251	670722 (^{90}Sr)	11.0 ± 3.5 9.8 ± 2.2	9.4 ± 0.1	TN4/C2	09/25/95 09/26/95

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RADIOCHEMISTRY GROSS ALPHA/BETA REPORT SDG NUMBER:95E1880 DATE: 9/27/95

Gross Alpha/Gross Beta Analysis Results

Sample ID	Gross Alpha pCi/G	Gross Beta pCi/G	QC Batch	Sys/Det#	Analysis Date
99174 A50002PE	10 ± 2 (MDA 3) 9 ± 2 (MDA 3)	20 ± 2 (MDA 3) 20 ± 2 (MDA 2)	95AB251	TN4/B2	09/25/95 09/26/95
99175 BH00104PE	23 ± 4 (MDA 5) 25 ± 3 (MDA 5)	34 ± 3 (MDA 2) 34 ± 2 (MDA 2)	95AB251	TN4/B3	09/25/95 09/26/95
99176 BH00106PE	11 ± 3 (MDA 4) 10 ± 2 (MDA 3)	24 ± 3 (MDA 3) 23 ± 2 (MDA 2)	95AB251	TN4/B4	09/25/95 09/26/95

Preparation QC

Preparation Blank

QC Batch	Preparation Date	Prep Blank Alpha pCi/G	Prep Blank Beta pCi/G	Sys/Det#	Analysis Date
95AB251	9/20/95	0.0 ± 0.4 (MDA 0.7) 0.1 ± 0.3 (MDA 0.5)	-0.9 ± 0.8 (MDA 1.5) 0.3 ± 0.6 (MDA 0.9)	TN4/C1	09/25/95 09/26/95

Laboratory Control Sample (LCS)

QC Batch	Source Laboratory Control Sample	Observed Activity (pCi/mL ± 3σ)	Standard Value (pCi/mL ± 3σ)	Sys/Det#	Analysis Date
95AB251	670731 (^{241}Am)	10.0 ± 3.4 10.6 ± 2.2	10.2 ± 0.2	TN4/C2	09/25/95 09/26/95
95AB251	670722 (^{90}Sr)	11.0 ± 3.5 9.8 ± 2.2	9.4 ± 0.1	TN4/C2	09/25/95 09/26/95

10/5/95

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To Roy Denardon	From Laura Johnson
Co.	Co. KH
Dept.	Phone # 7789
Fax # 6533	Fax # 3400

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RADIOCHEMISTRY GROSS ALPHA/BETA REPORT SDG NUMBER:95E1892 DATE: 9/28/95

Gross Alpha/Gross Beta Analysis Results

Sample ID	Gross Alpha pCi/g	Gross Beta pCi/g	QC Batch	Sys/Det#	Analysis Date
99446 BH00108PE	18 ± 4 (MDA 6) 20 ± 3 (MDA 5)	36 ± 3 (MDA 3) 34 ± 2 (MDA 2)	95AB252	TN4/B3	09/25/95 09/27/95
99448 BH00109PE	19 ± 4 (MDA 6) 21 ± 3 (MDA 5)	34 ± 3 (MDA 3) 34 ± 2 (MDA 2)	95AB252	TN4/B4	09/25/95 09/27/95

Preparation QC

Preparation Blank

QC Batch	Preparation Date	Prep Blank Alpha pCi/g	Prep Blank Beta pCi/g	Sys/Det#	Analysis Date
95AB252	9/20/95	0.1 ± 0.5 (MDA 0.9) 0.1 ± 0.3 (MDA 0.5)	0.4 ± 1.1 (MDA 1.8) -0.4 ± 0.6 (MDA 1.1)	TN4/D1 TN4/C2	09/25/95 09/27/95

Laboratory Control Sample (LCS)

QC Batch	Lab Control Sample (x)	Observed Activity (pCi/ml ± 3σ)	Standard Value (pCi/ml ± 3σ)	Sys/Det#	Analysis Date
95AB252	670731 (^{241}Am)	10.3 ± 3.8 10.3 ± 2.4	10.2 ± 0.2	TN4/D2 TN4/C1	09/25/95 09/27/95
95AB252	670722 (^{90}Sr)	10.7 ± 4.0 9.2 ± 2.6	9.4 ± 0.1	TN4/D2 TN4/C1	09/25/95 09/27/95

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RADIOCHEMISTRY GROSS ALPHA/BETA REPORT SDG NUMBER:95E1887 DATE: 9/28/95

Gross Alpha/Gross Beta Analysis Results

Sample ID	Gross Alpha pCi/G	Gross Beta pCi/G	QC Batch	Sys/Det#	Analysis Date
99321 AS00003PE	22 ± 5 (MDA 8) 25 ± 4 (MDA 7)	43 ± 4 (MDA 3) 41 ± 3 (MDA 2)	95AB252	TN4/A1	09/25/95 09/27/95
99323 AS00004PE	20 ± 4 (MDA 5) 20 ± 3 (MDA 5)	35 ± 3 (MDA 3) 33 ± 2 (MDA 2)	95AB252	TN4/A2	09/25/95 09/27/95
99323D	28 ± 4 (MDA 6) 25 ± 3 (MDA 5)	38 ± 3 (MDA 3) 35 ± 2 (MDA 2)	95AB252	TN4/A3	09/25/95 09/27/95
99327 BH00105PE	15 ± 4 (MDA 5) 14 ± 3 (MDA 5)	32 ± 3 (MDA 3) 32 ± 2 (MDA 2)	95AB252	TN4/A4	09/25/95 09/27/95
99329 BH00107PE	21 ± 4 (MDA 6) 20 ± 3 (MDA 6)	38 ± 4 (MDA 3) 38 ± 3 (MDA 2)	95AB252	TN4/B1	09/25/95 09/27/95
99331 BH00110PE	12 ± 3 (MDA 5) 13 ± 3 (MDA 5)	29 ± 3 (MDA 2) 30 ± 2 (MDA 1)	95AB252	TN4/B2	09/25/95 09/27/95

Preparation QC

Preparation Blank

QC Batch	Preparation Date	Prep Blank Alpha pCi/G	Prep Blank Beta pCi/G	Sys/Det#	Analysis Date
95AB252	9/20/95	0.1 ± 0.5 (MDA 0.9) 0.1 ± 0.3 (MDA 0.5)	0.4 ± 1.1 (MDA 1.8) -0.4 ± 0.6 (MDA 1.1)	TN4/D1 TN4/C2	09/25/95 09/27/95

Laboratory Control Sample (LCS)

QC Batch	Lab Control Sample	Observed Activity (pCi/mL ± 3σ)	Standard Value (pCi/mL ± 3σ)	Sys/Det#	Analysis Date
95AB252	670731 (^{241}Am)	10.3 ± 3.8 10.3 ± 2.4	10.2 ± 0.2	TN4/D2 TN4/C1	09/25/95 09/27/95
95AB252	670722 (^{90}Sr)	10.7 ± 4.0 9.2 ± 2.6	9.4 ± 0.1	TN4/D2 TN4/C1	09/25/95 09/27/95

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
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GENERAL LABORATORY
881 LABORATORY

RADIOCHEMISTRY GROSS ALPHA/BETA REPORT SDG NUMBER:95EI913 DATE: 10/2/95

Gross Alpha/Gross Beta Analysis Results

Sample ID	Gross Alpha pCi/L	Gross Beta pCi/L	QC Batch	Sys/Det #	Analysis Date
BH00111PE Lab ID - 99820	0.2 ± 0.6 MDA 1.0	0.1 ± 1.1 MDA 2.0	95AB257	TN4/C1	10/2/95
BH00111PE Lab ID - 998200	0.4 ± 0.6 MDA 1.0	0.3 ± 1.1 MDA 1.9	95AB257	TN4/C2	10/2/95

Preparation QC

Preparation Blank

QC Batch	Preparation Date	Prep. Blank Alpha pCi/L	Prep. Blank Beta pCi/L	Sys/Det #	Analysis Date
95AB257	9/27/95	-0.2 ± 0.5 MDA 1.0	0.0 ± 1.1 MDA 1.9	TN4/C3	10/2/95

Laboratory Control Sample (LCS)

QC Batch	QC Control Sample	Measured Activity (pCi/L ± 3σ)	Standard Value (pCi/L ± 3σ)	Sys/Det #	Analysis Date
95AB257	BAB CTRL3 (Alpha)	30.6 ± 8.1	25.5 ± 0.4	TN4/C4	10/2/95
95AB257	BAB CTRL3 (Beta)	25.4 ± 7.4	23.4 ± 0.3	TN4/C4	10/2/95

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To Roy Dexter Dod	From Laura Johnson
Co.	Co. K-H
Dept.	Phone # 7789
Fax # 6533	Fax # 3400

RADIOCHEMISTRY ISOTOPIC ANALYSIS
BY ALPHA SPECTROMETRY
RESULTS

John Evans

General Lab, Building 881 Lab Number: 95E1875, 1880, 1887 Report Date: 9/28/95
Sample Date: 09/18/95

RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALPHA SPECTROMETRY

SAMPLE ID	PLUTONIUM 239/240 (pCi/g)	BATCH #
BH00101PE	1.576 ± 0.093 (MDA 0.003)	ISO95-110
BH00102PE	0.332 ± 0.024 (MDA 0.002)	ISO95-110
BH00103PE	0.613 ± 0.049 (MDA 0.012)	ISO95-110
BH00104PE	1.192 ± 0.086 (MDA 0.004)	ISO95-110
BH00105PE	0.363 ± 0.063 (MDA 0.016)	ISO95-110
BH00106PE	0.414 ± 0.051 (MDA 0.030)	ISO95-110
BH00107PE	1.747 ± 0.095 (MDA 0.003)	ISO95-110
BH00110PE	0.213 ± 0.018 (MDA 0.003)	ISO95-110
BH00110PE DUP	0.207 ± 0.020 (MDA 0.010)	ISO95-110
AS00001PE	3.361 ± 0.176 (MDA 0.011)	ISO95-118
AS00002PE	1.532 ± 0.092 (MDA 0.009)	ISO95-118
AS00003PE	1.310 ± 0.080 (MDA 0.003)	ISO95-118
AS00004PE	4.593 ± 0.248 (MDA 0.008)	ISO95-118
BH00108PE	0.328 ± 0.027 (MDA 0.012)	ISO95-118
BH00108PE DUP	0.433 ± 0.032 (MDA 0.003)	ISO95-118
BH00109PE	0.494 ± 0.032 (MDA 0.003)	ISO95-118

SAMPLE ID	AMERICIUM 241 (pCi/g)	BATCH #
BH00101PE	0.852 ± 0.071 (MDA 0.012)	ISO95-112
BH00102PE	0.308 ± 0.032 (MDA 0.018)	ISO95-112
BH00103PE	0.557 ± 0.047 (MDA 0.018)	ISO95-112
BH00104PE	0.646 ± 0.046 (MDA 0.003)	ISO95-112
BH00105PE	0.561 ± 0.035 (MDA 0.006)	ISO95-112
BH00106PE	0.598 ± 0.042 (MDA 0.018)	ISO95-112
BH00107PE	0.238 ± 0.018 (MDA 0.009)	ISO95-112
BH00110PE	0.086 ± 0.017 (MDA 0.019)	ISO95-112
BH00110PE DUP	0.066 ± 0.012 (MDA 0.005)	ISO95-112
AS00001PE	8.188 ± 0.743 (MDA 0.029)	ISO95-120
AS00002PE	3.063 ± 0.280 (MDA 0.029)	ISO95-120
AS00003PE	2.951 ± 0.226 (MDA 0.006)	ISO95-120
AS00004PE	12.068 ± 1.150 (MDA 0.010)	ISO95-120
BH00108PE	0.775 ± 0.097 (MDA 0.031)	ISO95-120
BH00108PE DUP	0.894 ± 0.098 (MDA 0.031)	ISO95-120
BH00109PE	0.753 ± 0.084 (MDA 0.031)	ISO95-120

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General Lab, Building 881 Lab Number: 95E1875, 1880, 1887 Report Date: 9/28/95
Sample Date: 09/18/95

RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALPHA SPECTROMETRY

SAMPLE ID	URANIUM 233/234 (pCi/g)	BATCH #
BH00101PE	10.353 ± 0.401 (MDA 0.005)	ISO95-111
BH00102PE	3.938 ± 0.148 (MDA 0.011)	ISO95-111
BH00103PE	1.755 ± 0.087 (MDA 0.005)	ISO95-111
BH00104PE	3.015 ± 0.152 (MDA 0.007)	ISO95-111
BH00105PE	3.111 ± 0.162 (MDA 0.008)	ISO95-111
BH00106PE	6.098 ± 0.241 (MDA 0.014)	ISO95-111
BH00107PE	14.371 ± 0.538 (MDA 0.005)	ISO95-111
BH00110PE	7.622 ± 0.293 (MDA 0.005)	ISO95-111
BH00110PE DUP	8.453 ± 0.304 (MDA 0.021)	ISO95-111
AS00001PE	2.107 ± 0.098 (MDA 0.005)	ISO95-119
AS00002PE	2.011 ± 0.085 (MDA 0.011)	ISO95-119
AS00003PE	1.463 ± 0.068 (MDA 0.011)	ISO95-119
AS00004PE	1.391 ± 0.066 (MDA 0.004)	ISO95-119
BH00108PE	1.915 ± 0.093 (MDA 0.005)	ISO95-119
BH00108PE DUP	1.693 ± 0.077 (MDA 0.021)	ISO95-119
BH00109PE	2.232 ± 0.099 (MDA 0.013)	ISO95-119

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General Lab, Building 881 Lab Number: 95E1875, 1880, 1887 Report Date: 9/28/95
Sample Date: 09/18/95

RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALPHA SPECTROMETRY

SAMPLE ID	URANIUM 238 (pCi/g)	BATCH #
BH00101PE	4.590 ± 0.190 (MDA 0.005)	ISO95-111
BH00102PE	1.111 ± 0.054 (MDA 0.011)	ISO95-111
BH00103PE	1.103 ± 0.062 (MDA 0.015)	ISO95-111
BH00104PE	1.217 ± 0.076 (MDA 0.007)	ISO95-111
BH00105PE	1.592 ± 0.096 (MDA 0.028)	ISO95-111
BH00106PE	3.971 ± 0.165 (MDA 0.005)	ISO95-111
BH00107PE	5.624 ± 0.226 (MDA 0.018)	ISO95-111
BH00110PE	3.952 ± 0.163 (MDA 0.005)	ISO95-111
BH00110PE DUP	4.171 ± 0.161 (MDA 0.004)	ISO95-111
AS00001PE	2.040 ± 0.095 (MDA 0.004)	ISO95-119
AS00002PE	2.047 ± 0.086 (MDA 0.014)	ISO95-119
AS00003PE	1.411 ± 0.066 (MDA 0.004)	ISO95-119
AS00004PE	1.355 ± 0.064 (MDA 0.015)	ISO95-119
BH00108PE	1.764 ± 0.087 (MDA 0.005)	ISO95-119
BH00108PE DUP	1.533 ± 0.071 (MDA 0.004)	ISO95-119
BH00109PE	1.983 ± 0.090 (MDA 0.005)	ISO95-119

SAMPLE ID	URANIUM 235 (pCi/g)	BATCH #
BH00101PE	0.387 ± 0.029 (MDA 0.005)	ISO95-111
BH00102PE	0.157 ± 0.016 (MDA 0.004)	ISO95-111
BH00103PE	0.056 ± 0.011 (MDA 0.005)	ISO95-111
BH00104PE	0.114 ± 0.018 (MDA 0.007)	ISO95-111
BH00105PE	0.100 ± 0.018 (MDA 0.022)	ISO95-111
BH00106PE	0.195 ± 0.020 (MDA 0.005)	ISO95-111
BH00107PE	0.461 ± 0.034 (MDA 0.005)	ISO95-111
BH00110PE	0.249 ± 0.023 (MDA 0.005)	ISO95-111
BH00110PE DUP	0.274 ± 0.023 (MDA 0.004)	ISO95-111
AS00001PE	0.106 ± 0.014 (MDA 0.005)	ISO95-119
AS00002PE	0.065 ± 0.010 (MDA 0.004)	ISO95-119
AS00003PE	0.049 ± 0.009 (MDA 0.004)	ISO95-119
AS00004PE	0.056 ± 0.010 (MDA 0.004)	ISO95-119
BH00108PE	0.072 ± 0.012 (MDA 0.005)	ISO95-119
BH00108PE DUP	0.068 ± 0.011 (MDA 0.004)	ISO95-119
BH00109PE	0.083 ± 0.013 (MDA 0.013)	ISO95-119

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General Lab, Building 881 | Lab Number: 95E1913 | Report Date: 10/5/95
Sample Date: 09/21/95

RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALPHA SPECTROMETRY

SAMPLE ID	PLUTONIUM 239/240 (pCi/L)	BATCH #
BH00111PE	0.511 ± 0.032 (MDA 0.002)	ISO95-121

SAMPLE ID	AMERICIUM 241 (pCi/L)	BATCH #
BH00111PE	1.273 ± 0.070 (MDA 0.010)	ISO95-121

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General Lab, Building 881

Lab Number: 95E1913

Report Date: 10/5/95
Sample Date: 09/21/95

RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALPHA SPECTROMETRY

SAMPLE ID	URANIUM 238 (pCi/L)	BATCH #
BH00111PE	0.062 ± 0.010 (MDA 0.010)	ISO95-121

SAMPLE ID	URANIUM 235 (pCi/L)	BATCH #
BH00111PE	0.000 ± 0.000 (MDA 0.004)	ISO95-121

SAMPLE ID	URANIUM 234/233 (pCi/L)	BATCH #
BH00111PE	0.065 ± 0.010 (MDA 0.004)	ISO95-121

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General Lab, Building 881 | Lab Number: 95E1913 | Report Date: 10/5/95
Sample Date: 09/21/95

RADIOCHEMISTRY REPORT
ISOTOPIC ANALYSIS RESULTS BY ALHPA SPECTROSCOPY

Quality Assurance/Quality Control Data

ANALYSIS		CSL CONTROL		CONTROL STANDARD (d/m/ml)	
BATCH #	DATE	ID NUMBER	ISOTORE	OBSERVED VALUE	STANDARD VALUE
ISO95-121	10/04/95	CSL 670776	U-238	10.3 ± 0.4	10.2 ± 0.1
ISO95-121	10/04/95	CSL 670776	U-233/234	10.3± 0.4	10.1 ± 0.1
ISO95-121	10/4/95	CSL 650142	PU-238/239	5.2 ± 0.3	5.0 ± 0.1
ISO95-121	10/4/95	CSL 610720	AM-241	2.3 ± 0.3	2.0 ± 0.02

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General Lab, Building 881 Lab Number: 95E1875, 1880, 1887 Report Date: 9/28/95
Sample Date: 09/18/95

RADIOCHEMISTRYREPORT
ISOTOPIC ANALYSIS RESULTS BY ALHPA SPECTROSCOPY

Quality Assurance/Quality Control Data

ANALYSIS		CSL CONTROL		CONTROL STANDARD (d/m/ml)	
BATCH #	DATE	ID NUMBER	ISOTOPE	OBSERVED VALUE	STANDARD VALUE
ISO95-111	9/28/95	CSL 670776	U-238	10.3 ± 0.5	10.1 ± 0.2
ISO95-111	9/28/95	CSL 670776	U-233/234	10.2 ± 0.5	10.2 ± 0.2
ISO95-110	9/24/95	CSL 650142	PU-239/240	5.0 ± 0.3	5.0 ± 0.1
ISO95-112	9/27/95	CSL 610720	AM-241	2.3 ± 0.3	2.02 ± 0.02
ISO95-119	9/27/95	CSL 670776	U-238	10.0 ± 0.5	10.1 ± 0.2
ISO95-119	9/27/95	CSL 670776	U-233/234	10.5 ± 0.6	10.2 ± 0.2
ISO95-118	9/27/95	CSL 650142	PU-239/240	5.0 ± 0.3	5.0 ± 0.1
ISO95-120	9/28/95	CSL 610720	AM-241	2.3 ± 0.3	2.02 ± 0.02

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NITRATE/NITRITE RESULTS

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To ROY DEHREN	From AURA JOHNSON
Co.	Co. K-H
Dept.	Phone # 7789
Fax # 8663 Iur.	Fax # 3400

KAISER HILL
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SIT
P.O. BOX 464
GOLDEN, COLORADO 80402

CASE NARRATIVE

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SDG NUMBER: 95E1875
DATE: 10-24-95
DATA PACKAGE: WATER QUALITY PARAMETERS

SAMPLE DESCRIPTION:

SAMPLE I.D.	LAB I.D.	Total Nitrate/Nitrite as N
BH00101PE	95E1875-0002	1600 MG/KG
BH00102PE	95E1875-0003	923 MG/KG
BH00103PE	95E1875-0004	206 MG/KG
BH00104PE	95E1880-0010	1062 MG/KG
BH00105PE	95E1887-0009	619 MG/KG
BH00106PE	95E1887-0010	316 MG/KG
BH00107PE	95E1887-0011	696 MG/KG
BH00108PE	95E1892-0006	920 MG/KG
BH00109PE	95E1892-0007	430 MG/KG
BH00110PE	95E1892-0008	1738 MG/KG

SHIPMENT:

The soil samples with the Lab number 95E1875 were received on September 14, 1995 at 13:08. The soil sample with the Lab number 95E1880 was received on September 15,1995 at 11.03. The soil samples with the Lab number 95E1887 were received on September 18, 1995 at 11:06. The soil samples with the Lab number 95E1892 were received on September 19, 1995 at 10:50.

GENERAL CHEMISTRY:

An aliquot of at least 20 grams weighed to the nearest 0.01 grams of each soil sample was shaken with 20 times the sample weight of water for 2 hours and then the aqueous phase separated from the soil for analysis per the Lab procedure L-6291. The extract or filtrate was then analyzed for total nitrate/nitrite using a Technicon TRAACS 800 auto colormetric analyzer with Technicon method 782-86T which follows the EPA Method 353.1 and method 4500-NO_3 H from "*Standard Methods for the Examination of Water and Wastewater*".

All the samples, except BH00107PE were leached with water on 9-25-95 and the sample extracts analyzed on 9-28-95. The sample, BH00107PE was leached with water on 10-04-95 and the sample extract analyzed on 10-09-95. The reported

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GENERAL LABORATORY
BUILDING 881

WATER QUALITY PARAMETERS REPORT SDG NUMBER: 95E1875 DATE: 10-24-95

results are determined from the weight of total nitrate/nitrite as N in the extract per the weight of the solid sample extracted.

Analysis results for total nitrate/nitrite are the average of two replicates. A duplicate and spike of the water extract were analyzed with the sample extract for both the samples, BH00103PE and BH00107PE.

For the sample, BH00103PE the duplicate extract result was 206 MG/KG, the same as the sample extract result. A 1.0 mg/L analysis spike of a 1 to 10 dilution of the sample extract had a result of 1.93 mg/L for a recovery of 103.5%.

For the sample, BH00107PE the duplicate extract result was 706 MG/KG, with a 0.8% RPD of the sample extract result, 696 MG/KG. A 1.0 mg/L analysis spike of a 1 to 50 dilution of the sample extract had a result of 1.71 mg/L for a recovery of 98.8%.

All quality control samples for both the 9-25-95 and 10-9-95 total nitrate/nitrite analysis batches were within acceptable limits for this sample delivery group.

The original raw analysis data supporting this narrative and report is filed under 95E1875 and 96E0007 in the General Laboratories data file.

Chemist Approval Norm Ross 10-24-95
DATE

TOTAL ORGANIC CARBON RESULTS

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KAISER-HILL
Rocky Flats Environ. Tech. Site
Bldg. 881, Room 242
Golden, CO 80402

Project: 262.01

Category: TOC
Method: EPA 415.1
Matrix: SOLID

Sample Date : 09/13/95
Receipt Date : 09/22/95
Report Date : 09/25/95

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analysis Date	Result	Unit	Qual.	Detection Limit	Dil.
BH00101PE	9395-001	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	7040	UG/G		25.0	1
BH00102PE	9395-002	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	875	UG/G		25.0	1
BH00103PE	9395-003	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	707	UG/G		25.0	1
BH00103PE	9395-003DUP	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	719	UG/G		25.0	1
BH00103PE	9395-003MS	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	87	%REC			1
BH00104PE	9395-004	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	2650	UG/G		25.0	1
BH00105PE	9395-005	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	2710	UG/G		25.0	1
BH00106PE	9395-006	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	566	UG/G		25.0	1
BH00107PE	9395-007	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	5640	UG/G		25.0	1
BH00110PE	9395-008	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	7290	UG/G		25.0	1
BH00108PE	9395-009	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	7510	UG/G		25.0	1
QCBLK78697-1	QCBLK78697-1	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	25.0	UG/G	U	25.0	1
QCLCS78697-1	QCLCS78697-1	Total Organic C	C-012	QCBLK78697-1	09/22/95	09/22/95	98	%REC			1

ppm

Need

101

General Inorganics

Client Name: Kaiser-Hill
Client ID: BH00111PE sample
Lab ID: 044800-0001-SA
Matrix: AQUEOUS
Authorized: 22 SEP 95

Sampled: 20 SEP 95
Prepared: See Below

Received: 22 SEP 95
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Total Organic Carbon	0.98	mg/L ppm	1.0	415.1	NA	26 SEP 95 J

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Note J : Result is detected below the reporting limit or is an estimated concentration.

ND = Not detected
NA = Not applicable

Reported By: Judy Lange

Approved By: Roxanne Sullivan

General Inorganics

Client Name: Kaiser-Hill
Client ID: BH00111PE Duplicate
Lab ID: 044800-0001-DU
Matrix: AQUEOUS
Authorized: 22 SEP 95

Sampled: 20 SEP 95
Prepared: See Below

Received: 22 SEP 95
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Total Organic Carbon	0.95	mg/L	1.0	415.1	NA	26 SEP 95 J

Note J : Result is detected below the reporting limit or is an estimated concentration.

ND = Not detected
NA = Not applicable

Reported By: Judy Lange

Approved By: Roxanne Sullivan

General Inorganics

Client Name: Kaiser-Hill
Client ID: BH00111PE Matrix Spike
Lab ID: 044800-0001-MS
Matrix: AQUEOUS Sampled: 20 SEP 95 Received: 22 SEP 95
Authorized: 22 SEP 95 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Total Organic Carbon	26.5	mg/L	25.0	415.1	NA	26 SEP 95

ND = Not detected
NA = Not applicable

Reported By: Judy Lange Approved By: Roxanne Sullivan

CESIUM/STRONTIUM/RADIUM RESULTS

22-Sep-95 04:37 PM

IT ANALYTICAL SERVICES
2800 GEORGE WASHINGTON WAY, RICHLAND, WA
RADIOCHEMICAL ANALYSIS REPORT Contract no. n
ROF Account(s) Listed
Results reported on 950922

SAMPLE TYPE	CLNT#	ISOTOPE		RESULT		COUNTING ERROR	OVERALL ERROR	ANALYSIS SIZE	PERCENT MOIST	SAMPLE DATE	TIME	ON DATE	TIME	G	GROUP	IT/
** Reported on 950922																
SOIL	A800001PE	TOTAL-SR	123	*-4.13E-04	PCI/G	3.03E-02	3.03E-02(2S)	1.38E+01	G	950913	0950	950913	0950	I	341	5092/
SOIL	A800001PE	CS-137DA	024	*-2.08E-03	PCI/G	2.80E-02	2.50E-02(2S)	6.05E+01	G	950913	0950	950913	0950	I	341	5092
SOIL	A800001PE	CS-134	027	*-4.85E-02	PCI/G	2.35E-02	2.38E-02(2S)	6.05E+01	G	950913	0950	950913	0950	I	341	5092
SOIL	A800001PE	RA-226DA	101	1.59E+00	PCI/G	3.22E-01	3.46E-01(2S)	6.05E+01	G	950913	0950	950913	0950	I	341	5092/
SOIL	A800001PE	RA-228DA	430	2.73E+00	PCI/G	2.17E-01	3.49E-01(2S)	6.05E+01	G	950913	0950	950913	0950	I	341	5092
SOIL	A800001PE	GAMMA	998				(9)	0.00E+00		950913	0950	950913	0950	I	341	5092/
SOIL	BH00101PE	TOTAL-SR	123	4.40E-02	PCI/G	3.05E-02	3.21E-02(2S)	1.50E+01	G	950913	1010	950913	1010	I	341	5092/
SOIL	BH00101PE	CS-137DA	024	* 1.58E-02	PCI/G	2.63E-02	2.64E-02(2S)	4.24E+01	G	950913	1010	950913	1010	I	341	5092/
SOIL	BH00101PE	CS-134	027	* 1.01E-02	PCI/G	2.39E-02	2.39E-02(2S)	4.24E+01	G	950913	1010	950913	1010	I	341	5092/
SOIL	BH00101PE	RA-226DA	101	9.28E+00	PCI/G	7.31E-01	1.18E+00(2S)	4.24E+01	G	950913	1010	950913	1010	I	341	5092/
SOIL	BH00101PE	RA-228DA	430	1.73E+00	PCI/G	1.99E-01	2.64E-01(2S)	4.24E+01	G	950913	1010	950913	1010	I	341	5092
SOIL	BH00101PE	GAMMA	998				(8)	0.00E+00		950913	1010	950913	1010	I	341	5092/
SOIL	BH00102PE	TOTAL-SR	123	* 2.33E-02	PCI/G	2.66E-02	2.73E-02(2S)	1.50E+01	G	950913	1040	950913	1040	I	341	5092/
SOIL	BH00102PE	CS-137DA	024	4.15E-02	PCI/G	2.33E-02	2.37E-02(2S)	3.90E+01	G	950913	1040	950913	1040	I	341	5092/
SOIL	BH00102PE	CS-134	027	*-2.46E-02	PCI/G	2.49E-02	2.51E-02(2S)	3.90E+01	G	950913	1040	950913	1040	I	341	5092/
SOIL	BH00102PE	RA-226DA	101	2.37E+00	PCI/G	6.70E-01	7.11E-01(2S)	3.90E+01	G	950913	1040	950913	1040	I	341	5092/
SOIL	BH00102PE	RA-228DA	430	9.87E-01	PCI/G	1.93E-01	2.19E-01(2S)	3.90E+01	G	950913	1040	950913	1040	I	341	5092/
SOIL	BH00102PE	GAMMA	998				(8)	0.00E+00		950913	1040	950913	1040	I	341	5092/
SOIL	BH00103PE	TOTAL-SR	123	9.55E-02	PCI/G	3.23E-02	3.96E-02(2S)	1.50E+01	G	950913	1330	950913	1330	I	341	5092/
SOIL	BH00103PE	CS-137DA	024	*-1.92E-03	PCI/G	2.78E-02	2.78E-02(2S)	3.84E+01	G	950913	1330	950913	1330	I	341	5092/
SOIL	BH00103PE	CS-134	027	*-3.96E-02	PCI/G	3.01E-02	3.04E-02(2S)	3.84E+01	G	950913	1330	950913	1330	I	341	5092/
SOIL	BH00103PE	RA-226DA	101	1.85E+00	PCI/G	7.02E-01	7.26E-01(2S)	3.84E+01	G	950913	1330	950913	1330	I	341	5092/
SOIL	BH00103PE	RA-228DA	430	1.21E+00	PCI/G	2.33E-01	2.63E-01(2S)	3.84E+01	G	950913	1330	950913	1330	I	341	5092/
SOIL	BH00103PE	GAMMA	998				(8)	0.00E+00		950913	1330	950913	1330	I	341	5092/

24 Records listed

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Superceded by
more legible copy,
see attached

* Denotes a result less than the overall error; (n%) specifies the level of error, 1 sigma or 2 sigma

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	50924401	MATRIX:	SOIL
CLIENT ID:	AS00001PE	DATE RECEIVED:	9/15/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-4.85E-02	2.3E-02	2.4E-02	3.44E-02	pCi/g	N/A	RD3219
CS-137DA	-2.05E-03	2.3E-02	2.3E-02	3.67E-02	pCi/g	N/A	RD3219
RA-226DA	1.59E+00	5.2E-01	5.5E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	2.73E+00	2.2E-01	3.5E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	-4.13E-04	3.0E-02	3.0E-02	8.80E-02	pCi/g	54.30%	RD3204

Number of Results: 5

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M7

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	50924402	MATRIX:	SOIL
CLIENT ID:	BH00101PE	DATE RECEIVED:	9/15/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	1.01E-02	2.6E-02	2.6E-02	4.43E-02	pCi/g	N/A	RD3219
CS-137DA	1.58E-02	2.6E-02	2.6E-02	4.43E-02	pCi/g	N/A	RD3219
RA-226DA	9.28E+00	7.3E-01	1.2E+00	N/A	pCi/g	N/A	RD3219
RA-228DA	1.73E+00	2.0E-01	2.6E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	4.40E-02	3.1E-02	3.2E-02	7.26E-02	pCi/g	61.50%	RD3204

Number of Results: 5

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Quanterra Environmental Services

DUPLICATE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	G0924402	MATRIX:	SOIL
CLIENT ID:	BH00101PE	DATE RECEIVED:	9/15/95 10:30:00 A
ORIG LAB SAMPLE ID:	50924402		

ISOTOPE	DUP RESULT	COUNTING ERROR ±	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
STRONTIUM	2.53E-02	3.3E-02	3.3E-02	8.52E-02	pCi/g	51.10%	RD3204	4.40E-02	53.97

Number of Results: 1

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Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	50924403	MATRIX:	SOIL
CLIENT ID:	BH00102PE	DATE RECEIVED:	9/15/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-2.46E-02	2.5E-02	2.5E-02	4.05E-02	pCi/g	N/A	RD3219
CS-137DA	4.15E-02	2.3E-02	2.4E-02	4.09E-02	pCi/g	N/A	RD3219
RA-226DA	2.37E+00	6.7E-01	7.1E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	9.87E-01	2.0E-01	2.2E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	2.53E-02	2.7E-02	2.7E-02	6.78E-02	pCi/g	67.10%	RD3204

Number of Results: 5

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Environmental Services

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	50924404	MATRIX:	SOIL
CLIENT ID:	BH00103PE	DATE RECEIVED:	9/15/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-3.96E-02	3.0E-02	3.0E-02	4.55E-02	pCi/g	N/A	RD3219
CS-137DA	-1.92E-03	2.8E-02	2.8E-02	4.50E-02	pCi/g	N/A	RD3219
RA-226DA	1.85E+00	7.0E-01	7.3E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	1.21E+00	2.3E-01	2.6E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	9.55E-02	3.2E-02	3.9E-02	6.32E-02	pCi/g	71.10%	RD3204

Number of Results: 5

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DUPLICATE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	G0924404	MATRIX:	SOIL
CLIENT ID:	BH00103PE	DATE RECEIVED:	9/15/95 10:30:00 A
ORIG LAB SAMPLE ID:	50924404		

ISOTOPE	DUP RESULT	COUNTING ERROR %	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
CS-134	-8.98E-03	2.8E-02	2.8E-02	4.66E-02	pCi/g	N/A	RD3219	-3.96E-02	126.0
CS-137DA	-9.98E-03	2.8E-02	2.8E-02	4.54E-02	pCi/g	N/A	RD3219	-1.92E-03	135.4
RA-226DA	1.95E+00	7.5E-01	7.7E-01	N/A	pCi/g	N/A	RD3219	1.85E+00	5.2
RA-228DA	1.30E+00	2.0E-01	2.4E-01	N/A	pCi/g	N/A	RD3219	1.21E+00	7.1

Number of Results: 4

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SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	50926501	MATRIX:	SOIL
CLIENT ID:	AS00002PE	DATE RECEIVED:	9/19/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-1.24E-02	2.1E-02	2.1E-02	3.50E-02	pCi/g	N/A	RD3219
CS-137DA	2.37E-02	2.0E-02	2.0E-02	3.43E-02	pCi/g	N/A	RD3219
RA-226DA	2.31E+00	5.3E-01	5.8E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	2.00E+00	1.8E-01	2.7E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	4.22E-02	4.0E-02	4.1E-02	1.19E-01	pCi/g	37.30%	RD3204

Number of Results: 5

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SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	50926502	MATRIX:	SOIL
CLIENT ID:	BH00104PE	DATE RECEIVED:	9/19/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-3.32E-03	2.6E-02	2.6E-02	4.33E-02	pCi/g	N/A	RD3219
CS-137DA	-5.18E-03	2.8E-02	2.8E-02	4.49E-02	pCi/g	N/A	RD3219
RA-226DA	3.83E+00	7.2E-01	8.1E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	1.86E+00	2.5E-01	3.1E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	1.58E-02	2.6E-02	2.6E-02	8.21E-02	pCi/g	56.10%	RD3204

Number of Results: 5

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SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	50926503	MATRIX:	SOIL
CLIENT ID:	BH00105PE	DATE RECEIVED:	9/19/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	8.54E-03	2.4E-02	2.4E-02	3.87E-02	pCi/g	N/A	RD3219
CS-137DA	-2.22E-03	2.4E-02	2.4E-02	3.94E-02	pCi/g	N/A	RD3219
RA-226DA	2.21E+00	5.8E-01	6.2E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	1.70E+00	1.8E-01	2.5E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	6.38E-02	2.7E-01	2.7E-01	8.98E-01	pCi/g	82.10%	RD3204

Number of Results: 5

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SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	50926508	MATRIX:	SOIL
CLIENT ID:	BH00106PE	DATE RECEIVED:	9/19/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	2.99E-03	2.0E-02	2.0E-02	3.28E-02	pCi/g	N/A	RD3219
CS-137DA	1.58E-02	2.1E-02	2.1E-02	3.50E-02	pCi/g	N/A	RD3219
RA-226DA	1.51E+00	5.3E-01	5.5E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	1.35E+00	1.9E-01	2.3E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	2.02E-01	3.0E-01	3.1E-01	9.61E-01	pCi/g	98.10%	RD3204

Number of Results: 5

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SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	50926504	MATRIX:	SOIL
CLIENT ID:	AS00003PE	DATE RECEIVED:	9/19/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-6.90E-04	1.9E-02	1.9E-02	2.98E-02	pCi/g	N/A	RD3219
CS-137DA	7.68E-03	2.0E-02	2.0E-02	3.22E-02	pCi/g	N/A	RD3219
RA-226DA	1.32E+00	4.5E-01	4.7E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	2.08E+00	1.9E-01	2.8E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	2.72E-01	4.6E-01	4.6E-01	1.46E+00	pCi/g	67.20%	RD3204

Number of Results: 5

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27-Sep-95 05:34 PM

IT ANALYTICAL SERVICES
2800 GEORGE WASHINGTON WAY, RICHLAND, WA
RADIOCHEMICAL ANALYSIS REPORT Purchase order no. NA
ROF Account(s) Listed
Results reported on 950927

** Reported => 950927

SAMPLE TYPE	CUST#	ISOTOPE	RESULT	COUNTING ERROR	OVERALL ERROR	ANALYSIS SIZE	PERCENT MOIST	SAMPLE DATE	TIME	ON DATE	TIME	U C	GROUP	ITAS#
SOIL	BH00108PE	TOTAL-SR 123	1.52E-01 PCI/G	4.43E-02	5.63E-02(2S)	1.50E+01 G		950918	1023	950918	1023	I	341	50929601
SOIL	BH00108PE	CS-137DA 024	*-3.71E-03 PCI/G	2.11E-02	2.11E-02(2S)	5.19E+01 G		950918	1023	950918	1023	I	341	50929601G
SOIL	BH00108PE	CS-134 027	*-3.67E-03 PCI/G	2.05E-02	2.05E-02(2S)	5.19E+01 G		950918	1023	950918	1023	I	341	50929601G
SOIL	BH00108PE	RA-226DA 101	1.64E+00 PCI/G	5.36E-01	5.61E-01(2S)	5.19E+01 G		950918	1023	950918	1023	I	341	50929601G
SOIL	BH00108PE	RA-228DA 430	1.54E+00 PCI/G	2.01E-01	2.53E-01(2S)	5.19E+01 G		950918	1023	950918	1023	I	341	50929601G
SOIL	BH00108PE	GAMMA 998			(S)	0.00E+00		950918	1023	950918	1023	I	341	50929601G
SOIL	BH00107PE	TOTAL-SR 123	8.59E-02 PCI/G	4.14E-02	4.58E-02(2S)	1.50E+01 G		950918	1200	950918	1200	I	341	50929602
SOIL	BH00107PE	CS-137DA 024	* 4.96E-03 PCI/G	2.69E-02	2.69E-02(2S)	4.39E+01 G		950918	1200	950918	1200	I	341	50929602G
SOIL	BH00107PE	CS-134 027	*-4.83E-04 PCI/G	2.73E-02	2.73E-02(2S)	4.39E+01 G		950918	1200	950918	1200	I	341	50929602G
SOIL	BH00107PE	RA-226DA 101	8.66E+00 PCI/G	7.79E-01	1.16E+00(2S)	4.39E+01 G		950918	1200	950918	1200	I	341	50929602G
SOIL	BH00107PE	RA-228DA 430	1.65E+00 PCI/G	2.36E-01	2.88E-01(2S)	4.39E+01 G		950918	1200	950918	1200	I	341	50929602G
SOIL	BH00107PE	GAMMA 998			(S)	0.00E+00		950918	1200	950918	1200	I	341	50929602G

12 Records listed

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* Denotes a result less than the overall error; (nS) specifies the level of error, 1 sigma or 2 sigma

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SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	50926507	MATRIX:	SOIL
CLIENT ID:	BH00110PE	DATE RECEIVED:	9/19/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-7.73E-03	3.1E-02	3.1E-02	5.13E-02	pCi/g	N/A	RD3219
CS-137DA	1.51E-03	3.0E-02	3.0E-02	4.97E-02	pCi/g	N/A	RD3219
RA-226DA	4.80E+00	7.5E-01	8.9E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	1.85E+00	2.6E-01	3.2E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	4.07E-02	2.7E-02	2.9E-02	7.68E-02	pCi/g	57.10%	RD3204

Number of Results: 5

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DUPLICATE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	G0926507	MATRIX:	SOIL
CLIENT ID:	BH00110PE	DATE RECEIVED:	9/19/95 10:30:00 A
ORIG LAB SAMPLE ID:	50926507		

ISOTOPE	DUP RESULT	COUNTING ERROR ±	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
STRONTIUM	1.25E-01	6.5E-02	6.9E-02	1.74E-01	pCi/g	24.90%	RD3204	4.07E-02	101.75%

Number of Results: 1

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	50926505	MATRIX:	SOIL
CLIENT ID:	AS00004PE	DATE RECEIVED:	9/19/95 10:30:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-8.09E-02	2.3E-02	2.4E-02	3.22E-02	pCi/g	N/A	RD3219
CS-137DA	-5.14E-03	2.0E-02	2.0E-02	3.30E-02	pCi/g	N/A	RD3219
RA-226DA	1.73E+00	5.1E-01	5.4E-01	N/A	pCi/g	N/A	RD3219
RA-228DA	2.28E+00	2.0E-01	3.0E-01	N/A	pCi/g	N/A	RD3219
STRONTIUM	1.26E-02	2.6E-02	2.6E-02	8.56E-02	pCi/g	64.20%	RD3204

Number of Results: 5

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5581
LAB SAMPLE ID:	50933801	MATRIX:	WATER
CLIENT ID:	BH00111PE	DATE RECEIVED:	9/22/95 11:00:00 AM

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-8.90E-01	1.5E+00	1.5E+00	2.42E+00	pCi/L	N/A	RD3219
CS-137DA	1.45E+00	1.5E+00	1.5E+00	2.56E+00	pCi/L	N/A	RD3219
STRONTIUM	-1.12E-01	3.0E-01	3.0E-01	8.87E-01	pCi/L	93.40%	RD3204

Number of Results: 3

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LABORATORY CONTROL SAMPLE

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	M092651S	MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	EXPECTED	RECOVER
CS-134	5.92E+00	2.0E-01	6.2E-01	N/A	pCi/g	N/A	5.96E+00	99.33%
CS-137DA	3.07E+00	1.2E-01	3.3E-01	N/A	pCi/g	N/A	3.08E+00	99.68%
RA-226DA	4.28E+00	1.0E+00	1.1E+00	N/A	pCi/g	N/A	6.10E+00	70.16%
RA-228DA	5.21E+00	4.3E-01	6.8E-01	N/A	pCi/g	N/A	5.05E+00	103.17%
STRONTIUM	8.56E-01	6.0E-02	2.4E-01	5.15E-02	pCi/g	100.00%	9.03E-01	94.80%

Number of Results: 5

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BLANK RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5552
LAB SAMPLE ID:	M092651B	MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	3.98E-02	3.3E-02	3.3E-02	5.68E-02	pCi/g	N/A	RD3219
CS-137DA	3.02E-02	3.3E-02	3.3E-02	5.71E-02	pCi/g	N/A	RD3219
RA-226DA	1.62E+00	4.3E-01	4.6E-01	7.57E-01	pCi/g	N/A	RD3219
RA-228DA	2.42E-01	1.3E-01	1.3E-01	2.41E-01	pCi/g	N/A	RD3219
STRONTIUM	5.92E-04	1.5E-02	1.5E-02	5.09E-02	pCi/g	97.10%	RD3204

Number of Results: 5

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BLANK RESULTS

LAB NAME: ITAS-RICHLAND SDG: 5545

LAB SAMPLE ID: M092441B MATRIX: SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	9.56E-03	4.0E-02	4.0E-02	6.44E-02	pCi/g	N/A	RD3219
CS-137DA	-3.62E-03	3.6E-02	3.6E-02	5.91E-02	pCi/g	N/A	RD3219
RA-226DA	9.80E-01	4.6E-01	4.7E-01	7.87E-01	pCi/g	N/A	RD3219
RA-228DA	2.89E-01	1.5E-01	1.6E-01	2.71E-01	pCi/g	N/A	RD3219
STRONTIUM	8.14E-03	1.8E-02	1.8E-02	4.93E-02	pCi/g	100.00%	RD3204

Number of Results: 5

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LABORATORY CONTROL SAMPLE

LAB NAME:	ITAS-RICHLAND	SDG:	5581
LAB SAMPLE ID:	M0933818	MATRIX:	WATER

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	EXPECTED	RECOVER
CS-137DA	2.62E+01	1.8E+00	3.2E+00	N/A	pCi/L	N/A	2.27E+01	115.42%
STRONTIUM	1.27E+01	1.0E+00	3.4E+00	8.20E-01	pCi/L	91.70%	1.36E+01	93.38%

Number of Results: 2

Quanterra
Environmental Services

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LABORATORY CONTROL SAMPLE

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	M092441M	MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	EXPECTED	RECOVER
CS-134	6.07E+00	2.3E-01	6.5E-01	N/A	pCi/g	N/A	5.96E+00	101.85%
CS-137DA	3.06E+00	1.1E-01	3.3E-01	N/A	pCi/g	N/A	3.08E+00	99.35%
RA-226DA	5.63E+00	1.0E+00	1.2E+00	N/A	pCi/g	N/A	6.10E+00	92.30%
RA-228DA	5.61E+00	4.2E-01	7.0E-01	N/A	pCi/g	N/A	5.05E+00	111.09%

Number of Results: 4

Quanterra Environmental Services

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LABORATORY CONTROL SAMPLE

LAB NAME:	ITAS-RICHLAND	SDG:	5545
LAB SAMPLE ID:	M092441S	MATRIX:	SOIL

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	EXPECTED	RECOVE
STRONTIUM	2.09E+00	1.0E-01	5.6E-01	4.87E-02	pCi/g	100.00%	2.37E+00	88.19%

Number of Results: 1

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BLANK RESULTS

LAB NAME:	ITAS-RICHLAND	SDG:	5581
LAB SAMPLE ID:	M093381B	MATRIX:	WATER

ISOTOPE	RESULT	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CS-134	-1.45E-01	6.9E-01	6.9E-01	1.09E+00	pCi/L	N/A	RD3219
CS-137DA	8.26E-02	6.8E-01	6.8E-01	1.14E+00	pCi/L	N/A	RD3219
STRONTIUM	1.10E-01	2.9E-01	2.9E-01	7.71E-01	pCi/L	92.50%	RD3204

Number of Results: 3

TARGET ANALYTE LIST METAL RESULTS

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Best Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ANALYTICAL LABORATORIES

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

95E1875-0001

Lab Name: BLDG. 881 GENERAL LABORATORIES TAL Metals

Matrix (soil/water): SOIL SDG No.: SEP20.198

Level (low/med): LOW Lab Sample ID: AS00001PE

% Solids (0.0 = N/A): 98.02 Date Taken: 13-SEP-1995 Date Received: 14-SEP-1995

<IDL
U non detect
B - detected >IDL <LRDL
N Spike recovery outside of 75-125% range

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	6100			P
7440-36-0	ANTIMONY	5.1	U	N	P
7440-38-2	ARSENIC	21.6	U		P
7440-39-3	BARIUM	50.4	B		P
7440-41-7	BERYLLIUM	0.33	B		P
7440-43-9	CADMIUM	0.81	U		P
7440-70-2	CALCIUM	2640 X			P
7440-47-3	CHROMIUM	15.7 X			P
7440-48-4	COBALT	4.3	B		P
7440-50-8	COPPER	9.6			P
7439-89-6	IRON	11100			P
7439-92-1	LEAD	9.5	U		P
7439-93-2	LITHIUM	12.1	B		P
7439-95-4	MAGNESIUM	2410			P
7439-96-5	MANGANESE	149			P
7439-98-7	MOLYBDENUM	2.4	U		P
7440-02-0	NICKEL	10.4 X	B		P
7440-09-7	POTASSIUM	2800			P
7782-49-2	SELENIUM	10.3	U		P
7440-22-4	SILVER	0.81	U		P
7440-23-5	SODIUM	1540			P
7440-24-6	STRONTIUM	17.6	B		P
7440-28-0	THALLIUM	17.8	U		P
7440-31-5	TIN	4.3	U		P
7440-32-6	TITANIUM	431			P
11-09-6	URANIUM	26.2	U		P
7440-62-2	VANADIUM	36.8 X			P
7440-66-6	ZINC	28.3			P

IDL = Instrument Detection Limit

CRDL - Certified Reportable Detection Limit

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comment: Results are reported for a two-fold dilution of the sample made at the time of analysis for matrix effects. Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

GENERAL LABS PRELIMINARY RESULTS

DATE: October 30, 1995 FROM: Carol Gies

TO: Laura Johnson, APO

Available Copy

INFORMATION ONLY

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.

| 95E1875-0001 |

Lab Name: BLDG. 881 GENERAL LABORATORIES

SDG No.: BATCH.65

Matrix (soil/water): SOIL

Lab Sample ID: AS00001PE

Level (low/med): LOW

% Solids (0.0 = N/A): 98.02

Date Taken: 13-SEP-1995

Date Received: 14-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	1.1	B	W	F
7440-46-2	CESIUM	13.5	U		A
7439-92-1	LEAD	5.7			F
7439-97-6	MERCURY	0.10	U		CV
7782-49-2	SELENIUM	0.48	B	WN	F
7440-28-0	THALLIUM	0.74	U	N	F

Color Before: BLACK-BROWN
Color After: YELLOW

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

FORM I - IN

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GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Best Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ANALYTICAL LABORATORIES

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

95E1875-0002

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: SEP20.198

Level (low/med): LOW

Lab Sample ID: BH00101PE

% Solids (0.0 = N/A): 97.75

Date Taken: 13-SEP-1995

Date Received: 14-SEP-1995

E Serial dilution qualifier is off ≠ 10-110%

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	13300		1	P
7440-36-0	ANTIMONY	2.6	U	N	P
7440-38-2	ARSENIC	11.6	B		P
7440-39-3	BARIUM	71.1		2	P
7440-41-7	BERYLLIUM	0.63	B		P
7440-43-9	CADMIUM	0.41	U		P
7440-70-2	CALCIUM	2700		3	P
7440-47-3	CHROMIUM	56.9		4	P
7440-48-4	COBALT	5.9	B		P
7440-50-8	COPPER	14.6		5	P
7439-89-6	IRON	17900		6	P
7439-92-1	LEAD	11.3	B		P
7439-93-2	LITHIUM	21.1		7	P
7439-95-4	MAGNESIUM	2530		8	P
7439-96-5	MANGANESE	192	9	N	P
7439-98-7	MOLYBDENUM	3.1	B		P
7440-02-0	NICKEL	29.5	10		P
7440-09-7	POTASSIUM	5050	11		P
7782-49-2	SELENIUM	5.2	U		P
7440-22-4	SILVER	0.44	B		P
7440-23-5	SODIUM	3880	12		P
7440-24-6	STRONTIUM	21.4	B		P
7440-28-0	THALLIUM	9.0	U		P
7440-31-5	TIN	3.3	B		P
7440-32-6	TITANIUM	464	13		P
11-09-6	URANIUM	13.2	U		P
7440-62-2	VANADIUM	41.1	14		P
7440-66-6	ZINC	32.1	15	E	P

Antimony: not unusual to have not good spike recovery. Chlor Antimony volatized during digestion

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comment: Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

GENERAL LABS PRELIMINARY RESULTS
DATE: October 30, 1995 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

Best Available Copy

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1875-0002

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: BH00101PE

% Solids (0.0 = N/A): 97.75

Date Taken: 13-SEP-1995

Date Received: 14-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	7.3	B	W	F
7440-46-2	CESIUM	13.6	U		A
7439-92-1	LEAD	9.4		N	F
7439-97-6	MERCURY	0.10	U		CV
7782-49-2	SELENIUM	0.79	U		F
7440-28-0	THALLIUM	0.79	U		F

Remaining Metals
BH 101, 102, 103
104, 105, 106
107, 111
AH 001, 002
003, 004

Co
Color After: YELLOW

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

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GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Best Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1875-0003

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: SEP20.198

Level (low/med): LOW

Lab Sample ID: BH00102PE

% Solids (0.0 = N/A): 96.12

Date Taken: 13-SEP-1995

Date Received: 13-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	15400	1		P
7440-36-0	ANTIMONY	2.6	U	N	P
7440-38-2	ARSENIC	11.1	U		P
7440-39-3	BARIUM	49.3	2		P
7440-41-7	BERYLLIUM	0.86	3		P
7440-43-9	CADMIUM	0.42	U		P
7440-70-2	CALCIUM	1690	4		P
7440-47-3	CHROMIUM	50.8	5		P
7440-48-4	COBALT	7.1	6		P
7440-50-8	COPPER	12.2	7		P
7439-89-6	IRON	14500	8		P
7439-92-1	LEAD	5.5	B		P
7439-93-2	LITHIUM	9.7	B		P
7439-95-4	MAGNESIUM	1360	9		P
7439-96-5	MANGANESE	167	10	N	P
7439-98-7	MOLYBDENUM	4.0	B		P
7440-02-0	NICKEL	25.0	11		P
7440-09-7	POTASSIUM	2020	12		P
7782-49-2	SELENIUM	5.3	U		P
7440-22-4	SILVER	0.47	B		P
7440-23-5	SODIUM	1920	13		P
7440-24-6	STRONTIUM	17.8	B		P
7440-28-0	THALLIUM	9.2	U		P
7440-31-5	TIN	3.9	B		P
7440-32-6	TITANIUM	141	14		P
11-09-6	URANIUM	13.5	U		P
7440-62-2	VANADIUM	31.0	15		P
7440-66-6	ZINC	21.7	16	E	P

Color Before: brown
Color After: yellow

Clarity Before: opaque
Clarity After: clear

Texture:
Artifacts:

Comment: Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

GENERAL LABS PRELIMINARY RESULTS

DATE: October 30, 1995 FROM: Carol Gies

TO: Laura Johnson, APO

Best Available Copy

INFORMATION ONLY

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1875-0003

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: BH00102PE

% Solids (0.0 = N/A): 96.12

Date Taken: 13-SEP-1995

Date Received: 13-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	3.5	B	W	F
7440-46-2	CESIUM	13.8	U		A
7439-92-1	LEAD	4.7		N	F
7439-97-6	MERCURY	0.10	U		CV
7782-49-2	SELENIUM	0.82	U		F
7440-28-0	THALLIUM	0.82	U		F

Color Before: BROWN
Clarity Before:
Texture:
Color After: COLORLESS
Clarity After: CLEAR
Artifacts:

Comment:

FORM I - IN ILM02.0

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

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INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ANALYTICAL LABORATORIES

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

95E1875-0004

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL SDG No.: SEP20.198

Level (low/med): LOW Lab Sample ID: BH00103PE

% Solids (0.0 = N/A): 96.34 Date Taken: 13-SEP-1995 Date Received: 14-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	9960	1		P
7440-36-0	ANTIMONY	2.6	U	E	P
7440-38-2	ARSENIC	11.1	U		P
7440-39-3	BARIUM	29.3	2		P
7440-41-7	BERYLLIUM	0.50	B		P
7440-43-9	CADMIUM	0.41	U		P
7440-70-2	CALCIUM	2160	3		P
7440-47-3	CHROMIUM	28.4	4		P
7440-48-4	COBALT	5.6	B		P
7440-50-8	COPPER	12.8	5		P
7439-89-6	IRON	14000	6		P
7439-92-1	LEAD	5.4	B		P
7439-93-2	LITHIUM	9.2	B		P
7439-95-4	MAGNESIUM	3000	7		P
7439-96-5	MANGANESE	157	8	N	P
7439-98-7	MOLYBDENUM	4.4	B		P
7440-02-0	NICKEL	12.6	9		P
7440-09-7	POTASSIUM	715	10		P
7782-49-2	SELENIUM	5.3	U		P
7440-22-4	SILVER	0.41	U		P
7440-23-5	SODIUM	731	11		P
7440-24-6	STRONTIUM	14.7	B		P
7440-28-0	THALLIUM	9.1	U		P
7440-31-5	TIN	2.3	B		P
7440-32-6	TITANIUM	242	12		P
11-09-6	URANIUM	13.4	U		P
7440-62-2	VANADIUM	21.7	13		P
7440-66-6	ZINC	26.7	14	E	P

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comments: Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

FORM I - IN ILM02.0

GENERAL LABS PRELIMINARY RESULTS

DATE: October 30, 1995 FROM: Carol Gies

TO: Laura Johnson, APO

INFORMATION ONLY

Best Available Copy

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1875-0004

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: BK00103PE

% Solids (0.0 = N/A): 96.34

Date Taken: 13-SEP-1995

Date Received: 14-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	2.2	B		F
7440-46-2	CESIUM	13.8	U		A
7439-92-1	LEAD	3.8		N	F
7439-97-6	MERCURY	0.10	U		CV
7782-49-2	SELENIUM	0.64	B	W	F
7440-28-0	THALLIUM	0.81	U		F

Color Before: BROWN
Clarity Before:
Texture:
Color After: COLORLESS
Clarity After: CLEAR
Artifacts:

Comment:

FORM I - IN ILM02.0

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ANALYTICAL LABORATORIES

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

95E1880-0002

Lab Name: BLDG. 881 GENERAL LABORATORIES TAL Metals

Matrix (soil/water): SOIL SDG No.: SEP20.198

Level (low/med): LOW Lab Sample ID: AS00002PE

% Solids (0.0 = N/A): 98.57 Date Taken: 14-SEP-1995 Date Received: 15-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	4210			P
7440-36-0	ANTIMONY	5.0	U	N	P
7440-38-2	ARSENIC	21.3	U		P
7440-39-3	BARIUM	41.4	B		P
7440-41-7	BERYLLIUM	0.27	U		P
7440-43-9	CADMIUM	0.80	U		P
7440-70-2	CALCIUM	2150			P
7440-47-3	CHROMIUM	13.0			P
7440-48-4	COBALT	4.0	B		P
7440-50-8	COPPER	9.7			P
7439-89-6	IRON	8710			P
7439-92-1	LEAD	9.3	U		P
7439-93-2	LITHIUM	8.5	B		P
7439-95-4	MAGNESIUM	2180			P
7439-96-5	MANGANESE	127			P
7439-98-7	MOLYBDENUM	2.4	U		P
7440-02-0	NICKEL	8.6	B		P
7440-09-7	POTASSIUM	2300			P
7782-49-2	SELENIUM	10.1	U		P
7440-22-4	SILVER	0.80	U		P
7440-23-5	SODIUM	1240	B		P
7440-24-6	STRONTIUM	15.4	B		P
7440-28-0	THALLIUM	17.5	U		P
7440-31-5	TIN	4.3	U		P
7440-32-6	TITANIUM	322			P
11-09-6	URANIUM	25.8	U		P
7440-62-2	VANADIUM	34.2			P
7440-66-6	ZINC	24.2			P

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comment: Results are reported for a two-fold dilution of the sample made at the time of analysis for matrix effects. Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

Faxed to R. Deeson 10/31/95

GENERAL LABS PRELIMINARY RESULTS

DATE: October 30, 1995 FROM: Carol Gies

TO: Laura Johnson, APO

INFORMATION ONLY

Available Copy

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1880-0002

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: AS00002PE

% Solids (0.0 = N/A): 98.57

Date Taken: 14-SEP-1995

Date Received: 15-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	0.96	B	W	F
7440-46-2	CESIUM	13.2	U		A
7439-92-1	LEAD	4.6			F
7439-97-6	MERCURY	0.10	U		CV
7782-49-2	SELENIUM	0.33	B	WN	F
7440-28-0	THALLIUM	0.78	U	N	F

Color Before: BLACK
Color After: YELLOW

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

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GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Best Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1880-0010

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: SEP20.198

Level (low/med): LOW

Lab Sample ID: BH00104PE

% Solids (0.0 = N/A): 87.69

Date Taken: 14-SEP-1995

Date Received: 15-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	14500	1		P
7440-36-0	ANTIMONY	2.9	U	N	P
7440-38-2	ARSENIC	12.1	U		P
7440-39-3	BARIUM	72.9	2		P
7440-41-7	BERYLLIUM	0.59	B		P
7440-43-9	CADMIUM	0.45	U		P
7440-70-2	CALCIUM	1760	3		P
7440-47-3	CHROMIUM	25.9	4		P
7440-48-4	COBALT	5.1	B		P
7440-50-8	COPPER	11.0	5		P
7439-89-6	IRON	14400	6		P
7439-92-1	LEAD	7.1	B		P
7439-93-2	LITHIUM	21.4	7		P
7439-95-4	MAGNESIUM	2550	8		P
7439-96-5	MANGANESE	149	9	N	P
7439-98-7	MOLYBDENUM	1.8	B		P
7440-02-0	NICKEL	20.5	10		P
7440-09-7	POTASSIUM	5060	11		P
7782-49-2	SELENIUM	5.7	U		P
7440-22-4	SILVER	0.45	U		P
7440-23-5	SODIUM	3550	12		P
7440-24-6	STRONTIUM	18.2	B		P
7440-28-0	THALLIUM	10.0	U		P
7440-31-5	TIN	3.5	B		P
7440-32-6	TITANIUM	397	13		P
11-09-6	URANIUM	14.6	U		P
7440-62-2	VANADIUM	33.3	14		P
7440-66-6	ZINC	30.4	15	E	P

Color Before: brown
Color After: yellow

Clarity Before: opaque
Clarity After: clear

Texture:
Artifacts:

Comment: Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

Best Available Copy

GENERAL LABS PRELIMINARY RESULTS
DATE: October 30, 1995 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1880-0010

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: BK00104PE

% Solids (0.0 = N/A): 87.69

Date Taken: 14-SEP-1995

Date Received: 15-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	7.0	B		F
7440-46-2	CESIUM	15.1	U		A
7439-92-1	LEAD	11.8		N	F
7439-97-6	MERCURY	0.11	U		CV
7782-49-2	SELENIUM	1.4	B	W	F
7440-28-0	THALLIUM	0.86	U		F

Color Before: BROWN
Clarity Before:
Texture:
Color After: COLORLESS
Clarity After: CLEAR
Artifacts:

Comment:

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Best Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1887-0009

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: SEP20.198

Level (low/med): LOW

Lab Sample ID: BH00105PE

% Solids (0.0 = N/A): 96.93

Date Taken: 14-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	11200	1		P
7440-36-0	ANTIMONY	2.6	U	N	P
7440-38-2	ARSENIC	10.9	U		P
7440-39-3	BARIUM	33.0	2		P
7440-41-7	BERYLLIUM	0.54	B		P
7440-43-9	CADMIUM	0.41	U		P
7440-70-2	CALCIUM	1120	3		P
7440-47-3	CHROMIUM	19.6	4		P
7440-48-4	COBALT	3.2	B		P
7440-50-8	COPPER	8.4	5		P
7439-89-6	IRON	7570	6		P
7439-92-1	LEAD	4.8	U		P
7439-93-2	LITHIUM	6.0	B		P
7439-95-4	MAGNESIUM	1240	7		P
7439-96-5	MANGANESE	90.1	8	N	P
7439-98-7	MOLYBDENUM	1.2	U		P
7440-02-0	NICKEL	8.1	9		P
7440-09-7	POTASSIUM	1350	10		P
7782-49-2	SELENIUM	5.2	U		P
7440-22-4	SILVER	0.41	U		P
7440-23-5	SODIUM	1320	11		P
7440-24-6	STRONTIUM	14.4	B		P
7440-28-0	THALLIUM	9.0	U		P
7440-31-5	TIN	2.2	U		P
7440-32-6	TITANIUM	124	12		P
11-09-6	URANIUM	13.2	U		P
7440-62-2	VANADIUM	14.4	13		P
7440-66-6	ZINC	17.3	14	E	P

Color Before: brown
Color After: yellow

Clarity Before: opaque
Clarity After: clear

Texture:
Artifacts:

Comment: Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

Best Available Copy

GENERAL LABS PRELIMINARY RESULTS
DATE: October 30, 1995 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1887-0009

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: BH00105PE

% Solids (0.0 = N/A): 96.93

Date Taken: 14-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	1.8		W	F
7440-46-2	CESIUM	13.6	U		A
7439-92-1	LEAD	2.8		N	F
7439-97-6	MERCURY	0.10	U		CV
7782-49-2	SELENIUM	0.49	B	W	F
7440-28-0	THALLIUM	0.69	U		F

Color Before: BROWN
Color After: COLORLESS

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

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ILM02.0

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Best Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE 1 INORGANIC ANALYSIS DATA SHEET ANALYTICAL LABORATORIES SAMPLE NO. 95E1887-0010

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL SDG No.: SEP20.198

Level (low/med): LOW Lab Sample ID: BH00106PE

% Solids (0.0 = N/A): 94.60 Date Taken: 14-SEP-1995 Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	7900	1		P
7440-36-0	ANTIMONY	2.6	U	N	P
7440-38-2	ARSENIC	11.2	U		P
7440-39-3	BARIUM	25.9	B		P
7440-41-7	BERYLLIUM	0.37	B		P
7440-43-9	CADMIUM	0.42	U		P
7440-70-2	CALCIUM	1090	2		P
7440-47-3	CHROMIUM	15.5	3		P
7440-48-4	COBALT	2.6	B		P
7440-50-8	COPPER	7.8	4		P
7439-89-6	IRON	7370	5		P
7439-92-1	LEAD	4.9	U		P
7439-93-2	LITHIUM	5.7	B		P
7439-95-4	MAGNESIUM	1460	6		P
7439-96-5	MANGANESE	75.5	7	N	P
7439-98-7	MOLYBDENUM	1.9	B		P
7440-02-0	NICKEL	8.2	8		P
7440-09-7	POTASSIUM	966	9		P
7782-49-2	SELENIUM	5.3	U		P
7440-22-4	SILVER	0.42	U		P
7440-23-5	SODIUM	675	B		P
7440-24-6	STRONTIUM	9.2	B		P
7440-28-0	THALLIUM	9.2	U		P
7440-31-5	TIN	2.4	B		P
7440-32-6	TITANIUM	118	10		P
11-09-6	URANIUM	13.5	U		P
7440-62-2	VANADIUM	13.0	11		P
7440-66-6	ZINC	14.6	12	E	P

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comment: Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

GENERAL LABS PRELIMINARY RESULTS
DATE: October 30, 1995 FROM: Carol Gies
TO: Laura Johnson, APO

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INFORMATION ONLY

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1887-0010

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: BH00106PE

% Solids (0.0 = N/A): 94.6

Date Taken: 14-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	2.2	B	W	F
7440-46-2	CESIUM	13.9	U		A
7439-92-1	LEAD	5.8		N	F
7439-97-6	MERCURY	0.11	U		CV
7782-49-2	SELENIUM	0.52	B	W	F
7440-28-0	THALLIUM	0.83	U		F

Color Before: BROWN
Clarity Before:
Texture:
Color After: COLORLESS
Clarity After: CLEAR
Artifacts:

Comment:

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GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

Available Copy

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1887-0007

Lab Name: BLDG. 881 GENERAL LABORATORIES

TAL Metals

Matrix (soil/water): SOIL

SDG No.: SEP20.198

Level (low/med): LOW

Lab Sample ID: AS00003PE

% Solids (0.0 = N/A): 84.18

Date Taken: 15-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	6970			P
7440-36-0	ANTIMONY	5.9	U	N	P
7440-38-2	ARSENIC	24.7	U		P
7440-39-3	BARIUM	56.4	B		P
7440-41-7	BERYLLIUM	0.31	U		P
7440-43-9	CADMIUM	0.93 X	U		P
7440-70-2	CALCIUM	2200			P
7440-47-3	CHROMIUM	20.6 X			P
7440-48-4	COBALT	4.1	B		P
7440-50-8	COPPER	11.7			P
7439-89-6	IRON	12200 X			P
7439-92-1	LEAD	10.8 ND	U		P
7439-93-2	LITHIUM	13.1	B		P
7439-95-4	MAGNESIUM	2750 X			P
7439-96-5	MANGANESE	162 X			P
7439-98-7	MOLYBDENUM	2.8 ND	U		P
7440-02-0	NICKEL	7.8	B		P
7440-09-7	POTASSIUM	3110 X			P
7782-49-2	SELENIUM	11.8 ND	U		P
7440-22-4	SILVER	0.93 ND	U		P
7440-23-5	SODIUM	1230	B		P
7440-24-6	STRONTIUM	17.5	B		P
7440-28-0	THALLIUM	20.4	U		P
7440-31-5	TIN	4.9	U		P
7440-32-6	TITANIUM	468			P
11-09-6	URANIUM	30.0	U		P
7440-62-2	VANADIUM	35.5			P
7440-66-6	ZINC	32.6 X			P

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comment: Results are reported for a two-fold dilution of the sample made at the time of analysis for matrix effects. Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

GENERAL LABS PRELIMINARY RESULTS

DATE: October 30, 1995

TO: Laura Johnson, APO

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REPORT DATE: 12-OCT-

ENTAL TECHNOLOGY SITE

1

ANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.

| 95E1887-0007 |

Lab Name: BLDG. 881 GENERA IES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: AS00003PE

% Solids (0.0 = N/A): 84.18

Date Taken: 15-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	1.2	B	W	F
7440-46-2	CESIUM	15.4	U		A
7439-92-1	LEAD	7.9			F
7439-97-6	MERCURY	0.12	U		CV
7782-49-2	SELENIUM	0.47	B	WN	F
7440-28-0	THALLIUM	0.89	U	N	F

Color Before: BLACK-BROWN

Clarity Before:

Texture:

Color After: YELLOW

Clarity After: CLEAR

Artifacts:

Comment:

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GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE ANALYTICAL LABORATORIES

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

95E1887-0011

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL SDG No.: SEP20.19B

Level (low/med): LOW Lab Sample ID: BH00107PE

% Solids (0.0 = N/A): 88.14 Date Taken: 15-SEP-1995 Date Received: 18-SEP-1995

Concentration Units: mg/Kg

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Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	9670	1		P
7440-36-0	ANTIMONY	2.9	U	N	P
7440-38-2	ARSENIC	12.1	U		P
7440-39-3	BARIUM	69.6	2		P
7440-41-7	BERYLLIUM	0.38	B		P
7440-43-9	CADMIUM	0.45	U		P
7440-70-2	CALCIUM	3390	3		P
7440-47-3	CHROMIUM	26.7	4		P
7440-48-4	COBALT	4.1	B		P
7440-50-8	COPPER	11.0	5		P
7439-89-6	IRON	10600	6		P
7439-92-1	LEAD	5.3	U		P
7439-93-2	LITHIUM	18.5	7		P
7439-95-4	MAGNESIUM	2540	8		P
7439-96-5	MANGANESE	142	9	N	P
7439-98-7	MOLYBDENUM	1.4	U		P
7440-02-0	NICKEL	6.5	10		P
7440-09-7	POTASSIUM	3960	11		P
7782-49-2	SELENIUM	5.7	U		P
7440-22-4	SILVER	0.50	B		P
7440-23-5	SODIUM	2380	12		P
7440-24-6	STRONTIUM	22.6	B		P
7440-28-0	THALLIUM	10.0	U		P
7440-31-5	TIN	2.6	B		P
7440-32-6	TITANIUM	321	13		P
11-09-6	URANIUM	14.7	U		P
7440-62-2	VANADIUM	23.2	14		P
7440-66-6	ZINC	30.1	15	E	P

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comment: Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

GENERAL LABS PRELIMINARY RESULTS
DATE: October 30, 1995 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1887-0011

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: BH00107PE

% Solids (0.0 = N/A): 88.14

Date Taken: 15-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	3.2	B	W	F
7440-46-2	CESIUM	15.1	U		A
7439-92-1	LEAD	9.6		N	F
7439-97-6	MERCURY	0.11	U		CV
7782-49-2	SELENIUM	1.1		W	F
7440-28-0	THALLIUM	0.70	U		F

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Color Before: BROWN
Color After: COLORLESS

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

150

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 2, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 2-OCT-1995

EG&G ROCKY FLATS, INC.
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1892-0006

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: SEP25A.302

Level (low/med): LOW

Lab Sample ID: BH00108PE

% Solids (0.0 = N/A): 76.49

Date Taken: 18-SEP-1995

Date Received: 19-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	43000 ×	1	*	P
7440-36-0	ANTIMONY	3.3	U	N	P
7440-38-2	ARSENIC	13.8	B		P
7440-39-3	BARIUM	175 ×	2	*	P
7440-41-7	BERYLLIUM	1.9	7		P
7440-43-9	CADMIUM	0.51	U		P
7440-70-2	CALCIUM	4320	4	*	P
7440-47-3	CHROMIUM	35.8	5	*	P
7440-48-4	COBALT	11.0	6	*	P
7440-50-8	COPPER	20.1	7		P
7439-89-6	IRON	31100	8	*	P
7439-92-1	LEAD	7.7	8		P
7439-93-2	LITHIUM	21.9	9		P
7439-95-4	MAGNESIUM	5700	10	*	P
7439-96-5	MANGANESE	792	11	*	P
7439-98-7	MOLYBDENUM	1.5	U		P
7440-02-0	NICKEL	39.6	12	*	P
7440-09-7	POTASSIUM	4890	13	*	P
7782-49-2	SELENIUM	6.5	U		P
7440-22-4	SILVER	0.67	B		P
7440-23-5	SODIUM	4430	14	*	P
7440-24-6	STRONTIUM	28.5	B		P
7440-28-0	THALLIUM	11.3	U		P
7440-31-5	TIN	2.7	U		P
11-09-6	URANIUM	16.6	U		P
7440-62-2	VANADIUM	66.4	15		P
7440-66-6	ZINC	53.0	16	*E	P

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Color Before: BROWN
Color After: YELLOW

Clarity Before: OPAQUE
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

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151

GENERAL LABS PRELIMINARY RESULTS

DATE: November 6, 1995 FROM: Carol Gies

TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 1-NOV-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1892-0006

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.68

Level (low/med): LOW

Lab Sample ID: BA00108PE

% Solids (0.0 = N/A): 76.49

Date Taken: 18-SEP-1995

Date Received: 19-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	11.8			F
7440-46-2	CESIUM	17.1	U		A
7439-92-1	LEAD	10.4			F
7439-97-6	MERCURY	0.13		U	CV
7782-49-2	SELENIUM	0.95	B	W	F
7440-28-0	THALLIUM	0.41	B		F

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Evans

Color Before: brown
Color After: COLORLESS

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 2, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 2-OCT-1995

EG&G ROCKY FLATS, INC.
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1892-0007

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: SEP25A.302

Level (low/med): LOW

Lab Sample ID: BH00109PE

% Solids (0.0 = N/A): 91.19

Date Taken: 18-SEP-1995

Date Received: 19-SEP-1995

Concentration Units: mg/Kg

Best Available Copy

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	15100	1	*	P
7440-36-0	ANTIMONY	2.7	U	N	P
7440-38-2	ARSENIC	27.2 X	B		P
7440-39-3	BARIUM	139	2	*	P
7440-41-7	BERYLLIUM	0.78	3		P
7440-43-9	CADMIUM	0.42	U		P
7440-70-2	CALCIUM	2360	4	*	P
7440-47-3	CHROMIUM	16.8	5	*	P
7440-48-4	COBALT	8.8	6	*	P
7440-50-8	COPPER	13.6	7		P
7439-89-6	IRON	16000	8	*	P
7439-92-1	LEAD	7.0	B		P
7439-93-2	LITHIUM	11.3	B		P
7439-95-4	MAGNESIUM	2510	9	*	P
7439-96-5	MANGANESE	772	10	*	P
7439-98-7	MOLYBDENUM	2.3	B		P
7440-02-0	NICKEL	20.7	11	*	P
7440-09-7	POTASSIUM	2170	12	*	P
7782-49-2	SELENIUM	5.4	U		P
7440-22-4	SILVER	0.42	U		P
7440-23-5	SODIUM	1770	13	*	P
7440-24-6	STRONTIUM	24.2	B		P
7440-28-0	THALLIUM	9.3	U		P
7440-31-5	TIN	2.3	U		P
11-09-6	URANIUM	13.7	U		P
7440-62-2	VANADIUM	39.0	14		P
7440-66-6	ZINC	24.5	15	*E	P

Plasma

< NOTI?

Color Before: BROWN
Color After: YELLOW

Clarity Before: OPAQUE
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

GENERAL LABS PRELIMINARY RESULTS

DATE: November 6, 1995 FROM: Carol Gies

TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 1-NOV-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1892-0007

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.68

Level (low/med): LOW

Lab Sample ID: BH00109PE

% Solids (0.0 = N/A): 91.19

Date Taken: 18-SEP-1995

Date Received: 19-SEP-1995

Best Available Copy

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	9.7			F
7440-46-2	CESIUM	14.1	U		A
7439-92-1	LEAD	7.7			F
7439-97-6	MERCURY	0.11	U		CV
7782-49-2	SELENIUM	0.80	B	W	F
7440-28-0	THALLIUM	0.31	B		F

Color Before: BROWN
Color After: COLORLESS

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 2, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 2-OCT-1995

EG&G ROCKY FLATS, INC.
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1892-0008

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: SEP25A.302

Level (low/med): LOW

Lab Sample ID: BH00110PE

% Solids (0.0 = N/A): 83.1%

Date Taken: 18-SEP-1995

Date Received: 19-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	34400	1	*	P
7440-36-0	ANTIMONY	3.0	U	N	P
7440-38-2	ARSENIC	27.1	B		P
7440-39-3	BARIUM	83.0	2	*	P
7440-41-7	BERYLLIUM	1.4	3		P
7440-43-9	CADMIUM	0.48	U		P
7440-70-2	CALCIUM	1640	4	*	P
7440-47-3	CHROMIUM	23.9	5	*	P
7440-48-4	COBALT	6.8	6	*	P
7440-50-8	COPPER	5.6	6		P
7439-89-6	IRON	20000	7	*	P
7439-92-1	LEAD	8.0	B		P
7439-93-2	LITHIUM	24.1	8		P
7439-95-4	MAGNESIUM	2810	9	*	P
7439-96-5	MANGANESE	89.5	10	*	P
7439-98-7	MOLYBDENUM	1.4	U		P
7440-02-0	NICKEL	20.2	11	*	P
7440-09-7	POTASSIUM	7470	12	*	P
7782-49-2	SELENIUM	6.0	U		P
7440-22-4	SILVER	0.48	U		P
7440-23-5	SODIUM	6770	13	*	P
7440-24-6	STRONTIUM	14.4	B		P
7440-28-0	THALLIUM	10.5	U		P
7440-31-5	TIN	2.6	B		P
11-09-6	URANIUM	15.4	U		P
7440-62-2	VANADIUM	43.9	14		P
7440-66-6	ZINC	31.0	15	*E	P

Color Before: BROWN
Color After: YELLOW

Clarity Before: OPAQUE
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

155

GENERAL LABS PRELIMINARY RESULTS

DATE: November 6, 1995 FROM: Carol Gies

TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 1-NOV-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1892-0008

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.68

Level (low/med): LOW

Lab Sample ID: BN00110PE

% Solids (0.0 = N/A): 83.15

Date Taken: 18-SEP-1995

Date Received: 19-SEP-1995

Concentration Units: mg/Kg

Duplicate Copy

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	10.3			F
7440-46-2	CESIUM	15.8	U		A
7439-92-1	LEAD	9.4			F
7439-97-6	MERCURY	0.12	U		CV
7782-49-2	SELENIUM	1.8	B	W	F
7440-28-0	THALLIUM	0.47	B		F

Color Before: BROWN
Color After: COLORLESS

Clarity Before:
Clarity After: CLEAR

Texture:
Artifacts:

Comment:

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: September 29, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 6533 VERIFY: 7380

INFORMATION ONLY

Note that ICPES arsenic, lead, selenium, and thallium results reported below are for information only. Results to the CRDL are reported by another analytical technique (GFAAS).

REPORT DATE: 27-SEP-1995 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE 1 INORGANIC ANALYSIS DATA SHEET ANALYTICAL LABORATORIES SAMPLE NO. 95E1887-0008

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL SDG No.: SEP20.198

Level (low/med): LOW Lab Sample ID: AS00004PE

% Solids (0.0 = N/A): 96.45 Date Taken: 15-SEP-1995 Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	7450 X			P
7440-36-0	ANTIMONY	5.2 ND	U	N	P
7440-38-2	ARSENIC	23.7 <>	B		P
7440-39-3	BARIUM	82.7 X			P
7440-41-7	BERYLLIUM	0.38 X <>	B		P
7440-43-9	CADMIUM	0.82 ND	U		P
7440-70-2	CALCIUM	2580			P
7440-47-3	CHROMIUM	19.6 X			P
7440-48-4	COBALT	4.3 X	B		P
7440-50-8	COPPER	12.8 X			P
7439-89-6	IRON	12100			P
7439-92-1	LEAD	9.6	U		P
7439-93-2	LITHIUM	13.3 X	B		P
7439-95-4	MAGNESIUM	2530			P
7439-96-5	MANGANESE	155			P
7439-98-7	MOLYBDENUM	2.5	U		P
7440-02-0	NICKEL	6.8	B		P
7440-09-7	POTASSIUM	2670			P
7782-49-2	SELENIUM	10.4	U		P
7440-22-4	SILVER	0.82	U		P
7440-23-5	SODIUM	1560 X			P
7440-24-6	STRONTIUM	41.7 X	B		P
7440-28-0	THALLIUM	18.0 ND	U		P
7440-31-5	TIN	4.4 ND	U		P
7440-32-6	TITANIUM	505 X			P
11-09-6	URANIUM	26.5	U		P
7440-62-2	VANADIUM	31.5			P
7440-66-6	ZINC	27.2			P

Color Before: brown Clarity Before: opaque Texture:
Color After: yellow Clarity After: clear Artifacts:

Comment: Results are reported for a two-fold dilution of the sample made at the time of analysis for matrix effects. Arsenic, lead, selenium, and thallium results determined by GFAAS will be reported on an additional form.

Available Copy

GENERAL LABS PRELIMINARY RESULTS
DATE: October 30, 1995 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 12-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1887-0008

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): SOIL

SDG No.: BATCH.65

Level (low/med): LOW

Lab Sample ID: AS00004PE

% Solids (0.0 = N/A): 96.45

Date Taken: 15-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: mg/Kg

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	1.3	B	W	F
7440-46-2	CESIUM	13.6	U		A
7439-92-1	LEAD	0.81	U		F
7439-97-6	MERCURY	0.10	U		CV
7782-49-2	SELENIUM	0.40	B	WN	F
7440-28-0	THALLIUM	0.81	U	N	F

Best Available Copy

Color Before: BLACK-BROWN
Clarity Before:
Texture:
Color After: YELLOW
Clarity After: CLEAR
Artifacts:

Comment:

GENERAL LABS PRELIMINARY RESULTS
DATE: November 1, 1995 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 31-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1913-0001

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: BATCH.71

Level (low/med): LOW

Lab Sample ID: BH00111PE

% Solids (0.0 = N/A): 0.0

Date Taken: 20-SEP-1995

Date Received: 21-SEP-1995

Concentration Units: UG/L

Best Available Copy

Cas No.	Analyte	Concentration	C	Q	M
7440-38-2	ARSENIC	2.0	U	N	F
7440-46-2	CESIUM	100.0	U		A
7439-92-1	LEAD	1.0	U	W	F
7439-97-6	MERCURY	0.2	U		CV
7782-49-2	SELENIUM	1.0	U		F
7440-28-0	THALLIUM	1.0	U		F

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comment: Mercury preparation date 27-SEP-95; mercury analysis date 28-SEP-95.

TCLP METAL RESULTS
(liners only)

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 5, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 831-8208 VERIFY: 7380

INFORMATION ONLY

Mercury, a TCLP metal, will be reported on a separate Form 1.

REPORT DATE: 3-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1880-0001

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: SEP26.303

Level (low/med): LOW

Lab Sample ID: AS00001PE

% Solids (0.0 = N/A): 0.0

Date Taken: 14-SEP-1995

Date Received: 15-SEP-1995

Concentration Units: ug/L

Best Available Copy

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	934	1		P
7440-36-0	ANTIMONY	19.0	U		P
7440-38-2	ARSENIC	80.0	U		P
7440-39-3	BARIUM	458	2		P
7440-41-7	BERYLLIUM	10.9	3		P
7440-43-9	CADMIUM	52.4	4		P
7440-70-2	CALCIUM	51800	5		P
7440-47-3	CHROMIUM	32.1	6		P
7440-48-4	COBALT	10.5	B		P
7440-50-8	COPPER	15.7	B		P
7439-89-6	IRON	1670	7		P
7439-92-1	LEAD	35.0	U		P
7439-93-2	LITHIUM	43.1	B		P
7439-95-4	MAGNESIUM	4630	B		P
7439-96-5	MANGANESE	1210	8		P
7439-98-7	MOLYBDENUM	9.0	U		P
7440-02-0	NICKEL	18.6	B		P
7440-09-7	POTASSIUM	14500	9		P
7782-49-2	SELENIUM	38.0	U		P
7440-22-4	SILVER	3.0	U	N	P
7440-23-5	SODIUM	1500000	10		P
7440-24-6	STRONTIUM	295	11		P
7440-28-0	THALLIUM	66.0	U		P
7440-31-5	TIN	16.0	U		P
7440-32-6	TITANIUM	2.0	U		P
11-09-6	URANIUM	97.0	U		P
7440-62-2	VANADIUM	3.0	U		P
7440-66-6	ZINC	206	12		P

Color Before: colorless Clarity Before: clear Texture:
Color After: colorless Clarity After: clear Artifacts:

Comment: Reported above are TCLP leachate results. The reported sodium result is above the instrument linear range.

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GENERAL LABS PRELIMINARY RESULTS

DATE: November 16 1995 (6)
FROM: Carol Gies
TO: Laura Johnson. APO

INFORMATION ONLY

REPORT DATE: 25-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1880-0001

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

Level (low/med): LOW

% Solids (0.0 = N/A): 0.0

Date Taken: 14-SEP-1995

SDG No.: BATCH.70

Lab Sample ID: AS00001PE

Date Received: 15-SEP-1995

Concentration Units: UG/L

Cas No.	Analyte	Concentration	C	Q	M
7439-97-6	MERCURY	0.20	U	N	CV

Best Available Copy

Color Before:
Color After:

Clarity Before:
Clarity After:

Texture:
Artifacts:

Comment: Reported above are TCLP leachate results.

FORM I - IN

ILM02.0

11/6/95

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To ROY DEGREN	From LAURA JOHNSON
Co.	Co. K-H
Dept.	Phone # 7789
Fax # 8663	Fax # 3400

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GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 5, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 831-8208 VERIFY: 7380

INFORMATION ONLY

Mercury, a TCLP metal, will be reported on a separate Form 1.

REPORT DATE: 3-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1880-0003

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: SEP26.303

Level (low/med): LOW

Lab Sample ID: AS00002PE

% Solids (0.0 = N/A): 0.0

Date Taken: 13-SEP-1995

Date Received: 15-SEP-1995

Concentration Units: ug/L

Best Available Copy

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	1450	1		P
7440-36-0	ANTIMONY	19.0	U		P
7440-38-2	ARSENIC	80.0	U		P
7440-39-3	BARIUM	491	2		P
7440-41-7	BERYLLIUM	1.0	U		P
7440-43-9	CADMIUM	3.0	U		P
7440-70-2	CALCIUM	28600	3		P
7440-47-3	CHROMIUM	4.5	B		P
7440-48-4	COBALT	10.2	B		P
7440-50-8	COPPER	7.9	B		P
7439-89-6	IRON	1320	4		P
7439-92-1	LEAD	35.0	U		P
7439-93-2	LITHIUM	61.8	B		P
7439-95-4	MAGNESIUM	2790	B		P
7439-96-5	MANGANESE	1500	5		P
7439-98-7	MOLYBDENUM	9.0	U		P
7440-02-0	NICKEL	21.7	B		P
7440-09-7	POTASSIUM	36100	6		P
7782-49-2	SELENIUM	38.0	U		P
7440-22-4	SILVER	3.0	U	N	P
7440-23-5	SODIUM	1550000	7		P
7440-24-6	STRONTIUM	205	8		P
7440-28-0	THALLIUM	66.0	U		P
7440-31-5	TIN	16.0	U		P
7440-32-6	TITANIUM	2.0	U		P
11-09-6	URANIUM	97.0	U		P
7440-62-2	VANADIUM	3.0	U		P
7440-66-6	ZINC	181	9		P

Color Before: colorless Clarity Before: clear Texture:
Color After: colorless Clarity After: clear Artifacts:

Comment: Reported above are TCLP leachate results. The reported sodium result is above the instrument linear range.

GENERAL LABS PRELIMINARY RESULTS
DATE: November 16 1995 6 0 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 25-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1880-0003

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: BATCH.70

Level (low/med): LOW

Lab Sample ID: AS00002PE

% Solids (0.0 = N/A): 0.0

Date Taken: 13-SEP-1995

Date Received: 15-SEP-1995

Concentration Units: UG/L

Cas No.	Analyte	Concentration	C	Q	M
7439-97-6	MERCURY	0.20	U	N	CV

Best Available Copy

Color Before:
Color After:

Clarity Before:
Clarity After:

Texture:
Artifacts:

Comment: Reported above are TCLP leachate results.

FORM I - IN 1LN02.0

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 5, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 831-8208 VERIFY: 7380

INFORMATION ONLY

Mercury, a TCLP metal, will be reported on a separate Form 1.

REPORT DATE: 3-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1887-0015

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SOG No.: SEP26.303

Level (low/med): LOW

Lab Sample ID: AS00003PE

% Solids (0.0 = N/A): 0.0

Date Taken: 14-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: ug/L

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	412	1		P
7440-36-0	ANTIMONY	19.0	U		P
7440-38-2	ARSENIC	80.0	U		P
7440-39-3	BARIUM	384	2		P
7440-41-7	BERYLLIUM	1.0	U		P
7440-43-9	CADMIUM	3.0	U		P
7440-70-2	CALCIUM	23700	3		P
7440-47-3	CHROMIUM	4.0	U		P
7440-48-4	COBALT	7.5	B		P
7440-50-8	COPPER	5.7	B		P
7439-89-6	IRON	830	4		P
7439-92-1	LEAD	35.0	U		P
7439-93-2	LITHIUM	26.1	B		P
7439-95-4	MAGNESIUM	3020	B		P
7439-96-5	MANGANESE	1190	5		P
7439-98-7	MOLYBDENUM	9.0	U		P
7440-02-0	NICKEL	12.4	B		P
7440-09-7	POTASSIUM	14900	6		P
7782-49-2	SELENIUM	38.0	U		P
7440-22-4	SILVER	3.0	U	N	P
7440-23-5	SODIUM	1530000	7		P
7440-24-6	STRONTIUM	185	B		P
7440-28-0	THALLIUM	66.0	U		P
7440-31-5	TIN	16.0	U		P
7440-32-6	TITANIUM	2.0	U		P
11-09-6	URANIUM	97.0	U		P
7440-62-2	VANADIUM	3.0	U		P
7440-66-6	ZINC	65.1	8		P

Color Before: colorless Clarity Before: clear Texture:
Color After: colorless Clarity After: clear Artifacts:

Comment: Reported above are TCLP leachate results. The reported sodium result is above the instrument linear range.

Not Available Copy

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GENERAL LABS PRELIMINARY RESULTS
DATE: November 10 1995 FROM: Carol Gies
TO: Laura Johnson. APO

INFORMATION ONLY

REPORT DATE: 25-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
95E1887-0015

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: BATCH.70

Level (low/med): LOW

Lab Sample ID: AS00003PE

% Solids (0.0 = N/A): 0.0

Date Taken: 14-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: UG/L

Cas No.	Analyte	Concentration	C	Q	M
7439-97-6	MERCURY	0.20	U	N	CV

Best Available Copy

Color Before:
Color After:

Clarity Before:
Clarity After:

Texture:
Artifacts:

Comment: Reported above are TCLP leachate results.

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GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 5, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 831-8208 VERIFY: 7380

INFORMATION ONLY

Mercury, a TCLP metal, will be reported on a separate Form 1.

REPORT DATE: 3-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1887-0016

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: SEP26.303

Level (low/med): LOW

Lab Sample ID: A500004PE

% Solids (0.0 = N/A): 0.0

Date Taken: 15-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: ug/L

Available Copy

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	541	1		P
7440-36-0	ANTIMONY	19.0	U		P
7440-38-2	ARSENIC	80.0	U		P
7440-39-3	BARIUM	420	2		P
7440-41-7	BERYLLIUM	1.0	U		P
7440-43-9	CADMIUM	3.0	U		P
7440-70-2	CALCIUM	14400	3		P
7440-47-3	CHROMIUM	6.2	B		P
7440-48-4	COBALT	7.8	B		P
7440-50-8	COPPER	5.9	B		P
7439-89-6	IRON	640	4		P
7439-92-1	LEAD	35.0	U		P
7439-93-2	LITHIUM	53.1	B		P
7439-95-4	MAGNESIUM	2140	B		P
7439-96-5	MANGANESE	944	5		P
7439-98-7	MOLYBDENUM	9.0	U		P
7440-02-0	NICKEL	10.0	U		P
7440-09-7	POTASSIUM	24500	6		P
7782-49-2	SELENIUM	38.0	U		P
7440-22-4	SILVER	3.0	U	N	P
7440-23-5	SODIUM	1540000	7		P
7440-24-6	STRONTIUM	131	B		P
7440-28-0	THALLIUM	66.0	U		P
7440-31-5	TIN	28.6	B		P
7440-32-6	TITANIUM	2.0	U		P
11-09-6	URANIUM	97.0	U		P
7440-62-2	VANADIUM	3.0	U		P
7440-66-6	ZINC	83.3	8		P

Color Before: colorless Clarity Before: clear Texture:
Color After: colorless Clarity After: clear Artifacts:

Comment: Reported above are TCLP leachate results. The reported sodium result is above the instrument linear range.

GENERAL LABS PRELIMINARY RESULTS

DATE: November 16 1995 FROM: Carol Gies

TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 25-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES SAMPLE NO.
95E1887-0016

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: BATCH.70

Level (low/med): LOW

Lab Sample ID: AS00004PE

% Solids (0.0 = N/A): 0.0

Date Taken: 15-SEP-1995

Date Received: 18-SEP-1995

Concentration Units: UG/L

Cas No.	Analyte	Concentration	C	Q	M
7439-97-6	MERCURY	0.28	U	N	CV

Best Available Copy

Color Before:
Color After:

Clarity Before:
Clarity After:

Texture:
Artifacts:

Comment: Reported above are TCLP leachate results.

GENERAL LABS FACSIMILE TRANSMITTAL ROUTING

DATE: October 5, 1995 FROM: Carol Gies
TO: John Evans FAX: 4365
FAX: 831-8208 VERIFY: 7380

INFORMATION ONLY

Mercury, a TCLP metal, will be reported on a separate Form 1.

REPORT DATE: 3-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.
BLK-8TCLPBLANK-1.65

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: SEP26.303

Level (low/med): LOW

Lab Sample ID:

% Solids (0.0 = N/A): 0.0

Date Taken:

Date Received:

Best Available Copy

Concentration Units: ug/L

Cas No.	Analyte	Concentration	C	Q	M
7429-90-5	ALUMINUM	47.6	B		P
7440-36-0	ANTIMONY	19.0	U		P
7440-38-2	ARSENIC	80.0	U		P
7440-39-3	BARIUM	68.9	B		P
7440-41-7	BERYLLIUM	1.0	U		P
7440-43-9	CADMIUM	3.0	U		P
7440-70-2	CALCIUM	389	U		P
7440-47-3	CHROMIUM	4.0	U		P
7440-48-4	COBALT	4.0	U		P
7440-50-8	COPPER	10.3	B		P
7439-89-6	IRON	8.4	B		P
7439-92-1	LEAD	35.0	U		P
7439-93-2	LITHIUM	2.0	U		P
7439-95-4	MAGNESIUM	22.0	U		P
7439-96-5	MANGANESE	1.0	U		P
7439-98-7	MOLYBDENUM	9.0	U		P
7440-02-0	NICKEL	10.0	U		P
7440-09-7	POTASSIUM	570	U		P
7782-49-2	SELENIUM	38.0	U		P
7440-22-4	SILVER	3.0	U	N	P
7440-23-5	SODIUM	1480000			P
7440-24-6	STRONTIUM	3.0	B		P
7440-28-0	THALLIUM	66.0	U		P
7440-31-5	TIN	20.7	B		P
7440-32-6	TITANIUM	2.0	U		P
11-09-6	URANIUM	97.0	U		P
7440-62-2	VANADIUM	3.0	U		P
7440-66-6	ZINC	58.5			P

Color Before: colorless Clarity Before: clear Texture:
Color After: colorless Clarity After: clear Artifacts:

Comment: Results reported above are for the TCLP extraction blank for all samples in Job numbers 95E1880, and 95E1887.

The reported sodium result is above the instrument linear range.

GENERAL LABS PRELIMINARY RESULTS
DATE: November 16 1995 FROM: Carol Gies
TO: Laura Johnson, APO

INFORMATION ONLY

REPORT DATE: 25-OCT-1995

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
1
INORGANIC ANALYSIS DATA SHEET

ANALYTICAL LABORATORIES
SAMPLE NO.

| BLK-8TCLPBLANK-1.65 |

Lab Name: BLDG. 881 GENERAL LABORATORIES

Matrix (soil/water): WATER

SDG No.: BATCH.70

Level (low/med): LOW

Lab Sample ID:

% Solids (0.0 = N/A): 0.0

Date Taken:

Date Received:

Not Available Only

Concentration Units: UG/L

Cas No.	Analyte	Concentration	C	Q	M
7439-97-6	MERCURY	0.20	U	N	CV

Color Before:
Color After:

Clarity Before:
Clarity After:

Texture:
Artifacts:

Comment: Results reported above are for the TCLP extraction blank for samples in job numbers 95E1887 and 95E1880.

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