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Field Summary Report

1996 and 1997 Site Investigation Activities at Field Unit 1, TA-0, Wastewater Treatment Plants PRSs 0-018(a, b) and 0-019

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ACRONYMS

bgs	below ground surface
CGI	combustible gas indicator
DOT	Department of Transportation
ER	Environmental Restoration
EPA	Environmental Protection Agency
FIMAD	Facility for Information Mapping, Analysis, and Display
ft	feet
I.D.	inside diameter
in.	inches
LANL	Los Alamos National Laboratory
LEL	lower explosive limit
MRAL	mobile radiochemical analysis laboratory
O.D.	outside diameter
OU	Operable Unit
PCB	polychlorinated biphenyls
PPE	personal protective equipment
PRS	potential release site
PID	photoionization detector
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
SMO	Sample Management Office
SOP	Standard Operating Procedure
SPCCI Plan	Spill Prevention Control and Countermeasures Implementation Plan
SSHASP	Site-Specific Health and Safety Plan
SVOC	semivolatile organic compound
TA	Technical Area
TAL Metals	Target Analyte List Metals
VOC	volatile organic compound
WCS Form	Waste Characterization Strategy Form

1.0 INTRODUCTION

Potential Release Site (PRS) Group 0-2 includes PRS 0-018(a), Pueblo Canyon Wastewater Treatment Plant; PRS 0-018(b), Bayo Canyon Wastewater Treatment Plant; and PRS 0-019, the decommissioned Central Wastewater Treatment Plant. These PRSs are located on Los Alamos County property (Figure 1).

1.1 Site Descriptions and History

The Pueblo Canyon Wastewater Treatment Plant (Figure 2), located at the end of Olive Street in Pueblo Canyon, became the primary supplier of effluent for irrigation at the Los Alamos Golf Course when the plant began operations in 1951. The Pueblo Canyon plant received waste from TA-43, a medical research laboratory, until 1983 (LANL 1990, 0145; Francis 1991, 05-0038) and may have received radioactive and chemical waste from the Los Alamos National Laboratory (LANL 1990, 0145). Later, the Pueblo Canyon plant only received sanitary waste from businesses and residences and was operated only during warm weather to provide treated effluent to the county golf course for irrigation. The Pueblo Canyon plant was decommissioned in 1992.

The Bayo Canyon Wastewater Treatment Plant (Figure 3), located at the intersection of Pueblo and Bayo Canyons east of Kwage Mesa receives sanitary waste from businesses and residences. The work plan stated that it was possible the Bayo Plant received residual contamination left in drains from operations in TA-1 (Voelz 1973, 01-0128; DOE 1987, 0264).

The Central Wastewater Treatment Plant (Figure 4), located west of the East Park tennis courts, treated sanitary sewage from the Laboratory including waste from TA-1 sanitary drains, residences, and industries from the 1940's until its decommissioning in the early 1960's. Treated effluent from the Central treatment plant was diverted through a drainline along Canyon Road to the golf course beginning in 1948. In 1951, most of the effluent from the Central treatment plant started to be used as make-up water for the cooling towers at TA-3.

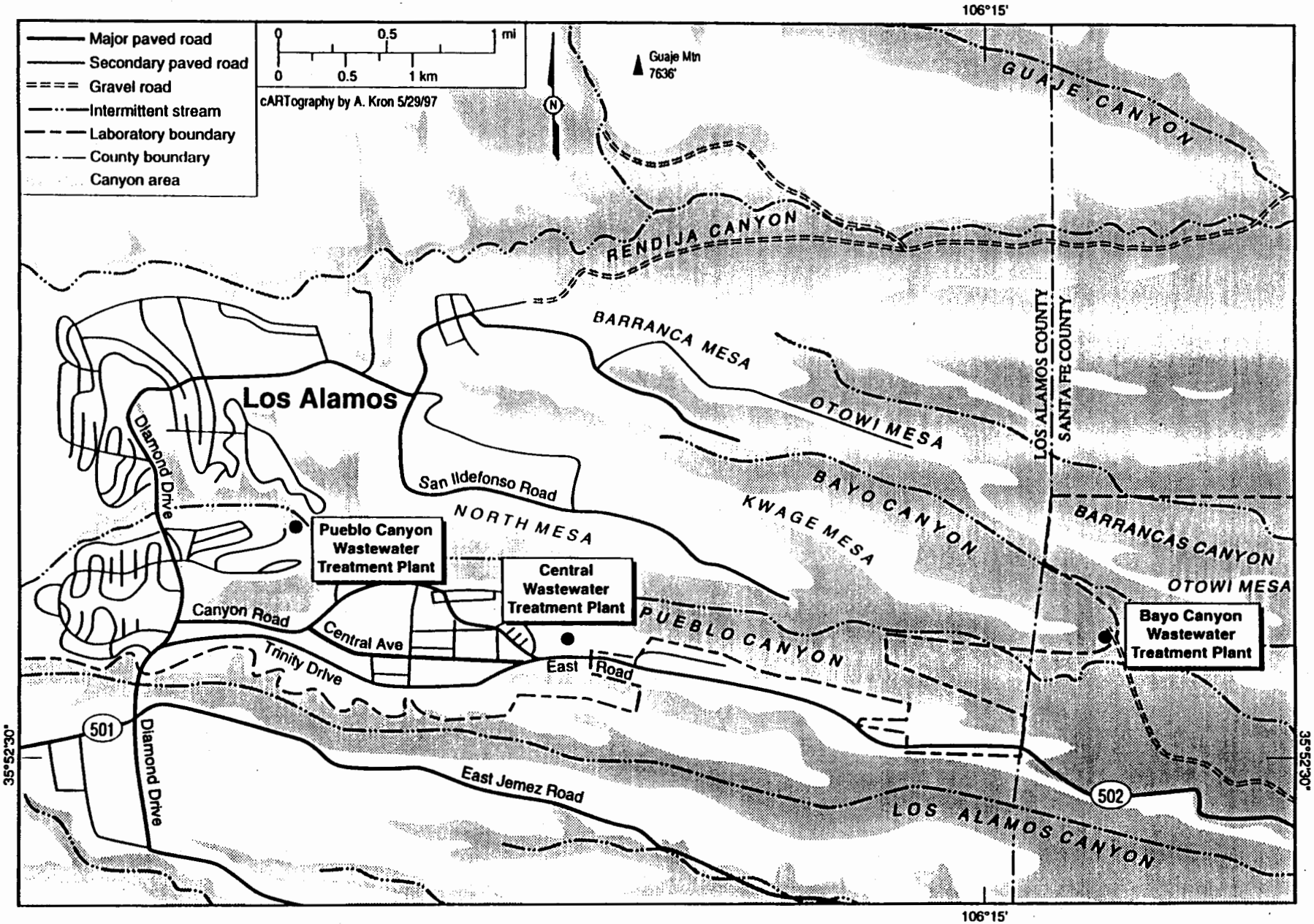

Figure 1. Location map for PRS Group 0-2, Pueblo, Bayo, and Central Wastewater Treatment plants.

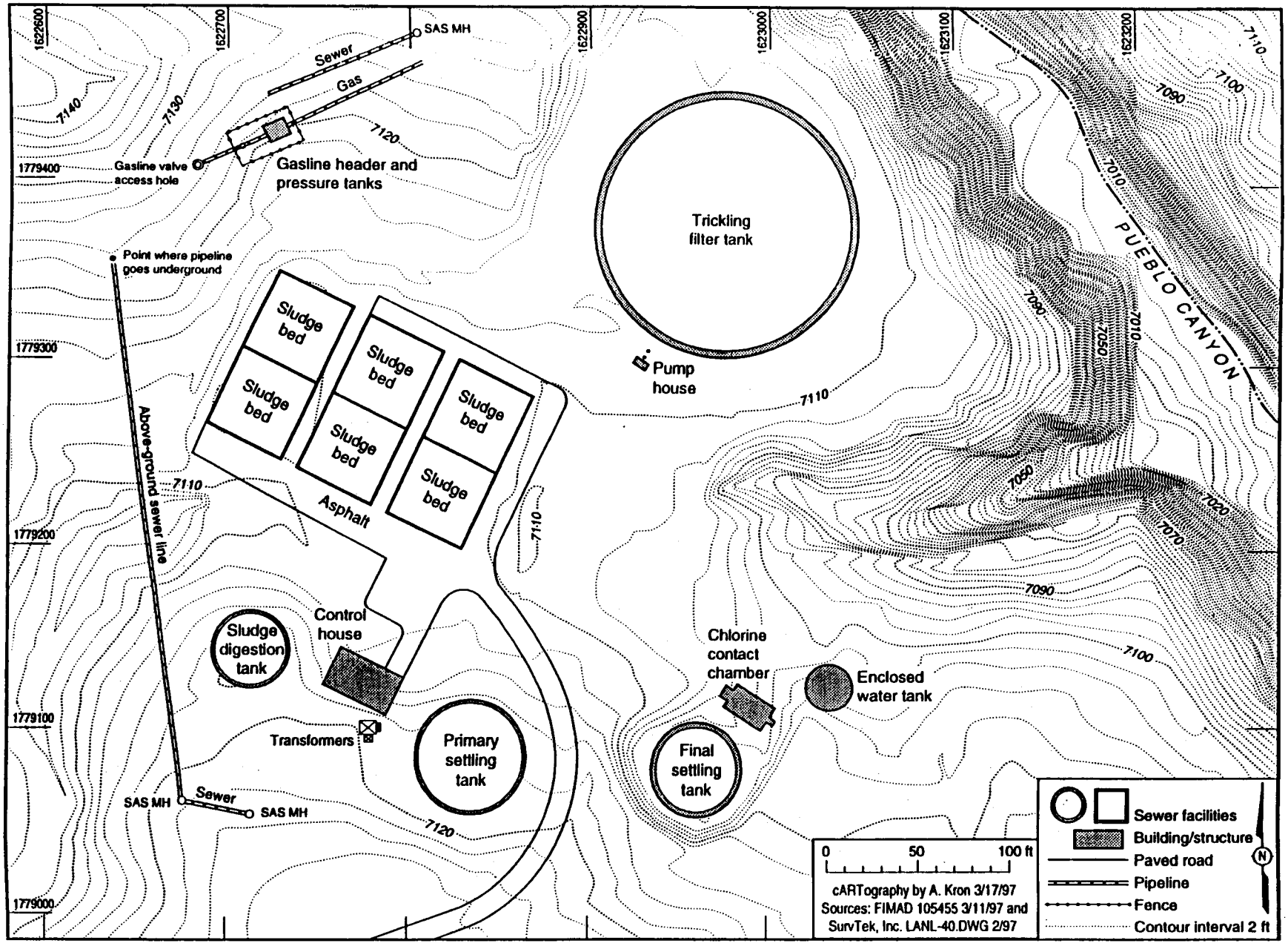

Figure 2. Pueblo Canyon Wastewater Treatment Plant, PRS 0-018(a), site location map.

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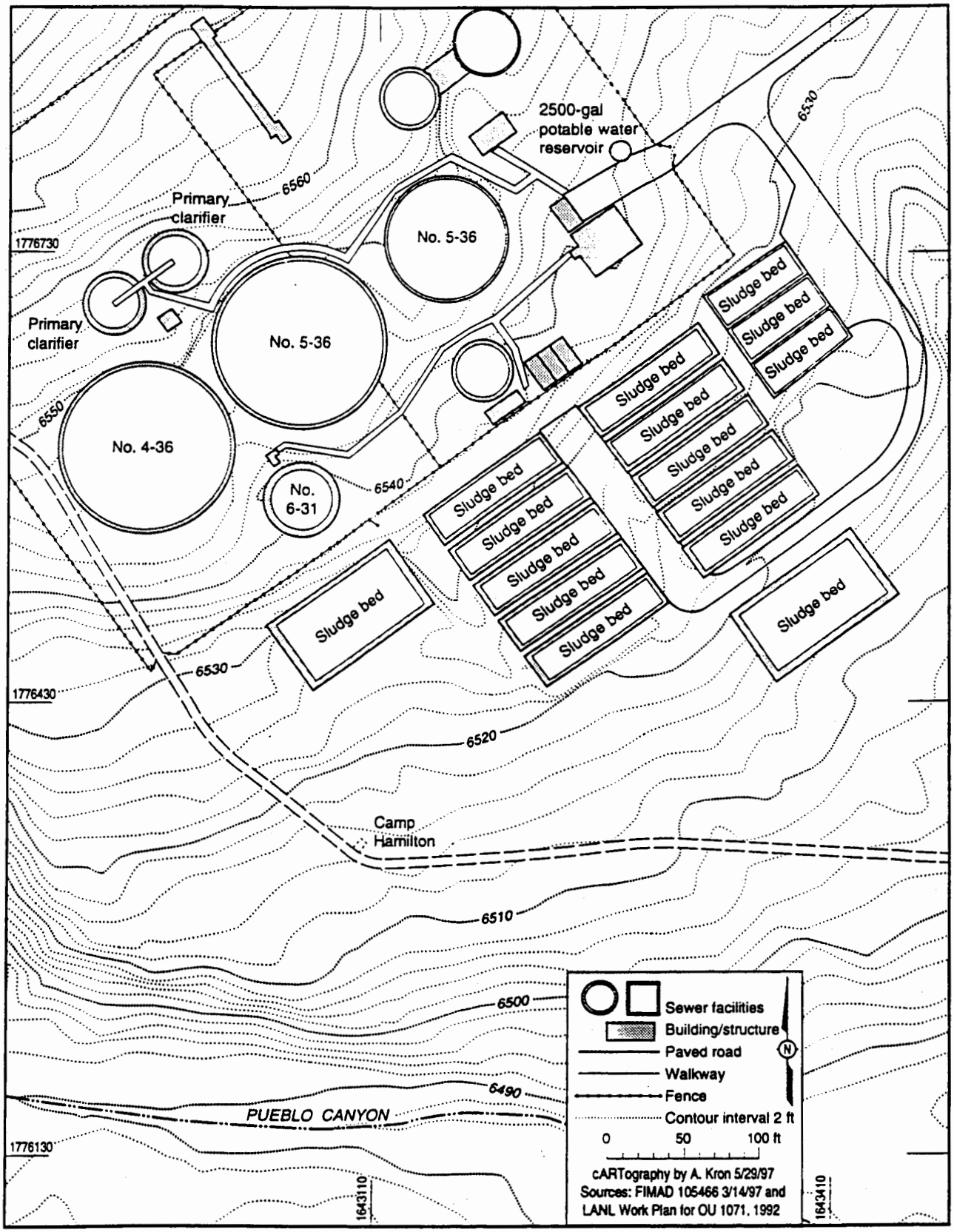
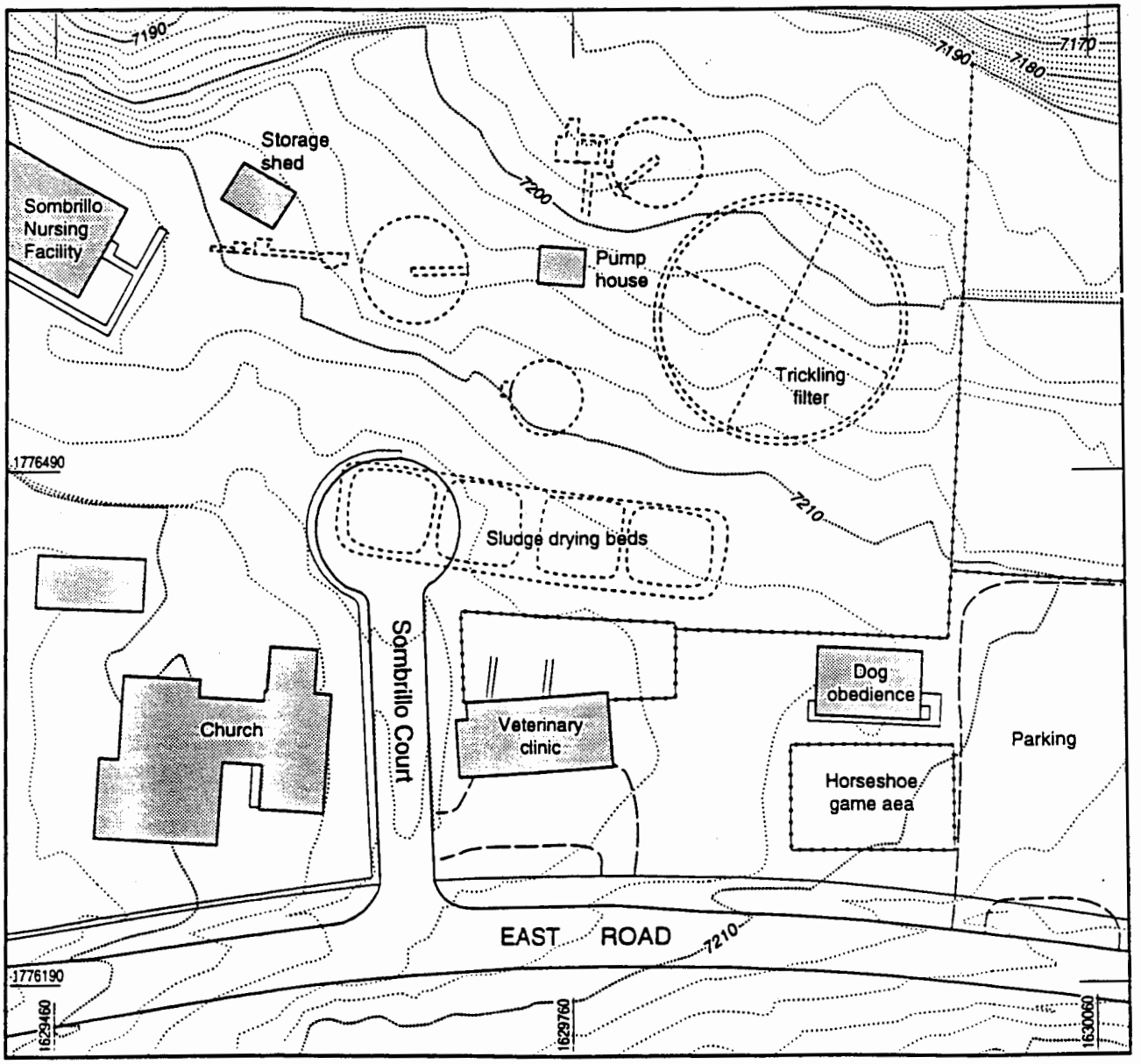


Figure 3. Bayo Canyon Wastewater Treatment Plant [PRS 0-018(b)], site location map.



Existing structure
Former structure
Paved road
Unimproved road
Walkway
Fence
Contour interval 2 ft

0 50 100 ft

cARTography by A. Kron 3/18/97
Sources: FIMAD 105467 3/14/97 and
LANL Work Plan for OU 1071, 1992

Figure 4. Central Wastewater Treatment Plant, PRS 0-019, site location map.

2.0 OBJECTIVES AND APPROACH

2.1 Objectives

There were two primary objectives of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). The first objective was to determine whether any contamination was present beneath the older drying beds and areas in which sludge was used as landfill. The second objective was to determine the presence or absence of, and the nature and extent of, any contaminants present at each site.

2.2 Approach

The approach to the RFI at PRS Group 0-2, as described in the Operable Unit (OU) 1071 Work Plan (LANL, 1992a), consisted of two primary tasks. These tasks are described below.

2.2.1 Site Survey

A site survey was originally proposed to locate the boundaries of the former and current sludge-drying areas, sludge storage areas, and fill areas. Boundary locations would be determined from examining historic aerial photographs, reviewing historical records (maps and engineering plans), and performing site inspections. A detailed site map would be prepared for each PRS on a scale of 1:1000 and the relative ages of the sludge-drying beds and the order of filling in areas with sludge would be determined.

2.2.2 Subsurface Sampling

The work plan originally proposed drilling boreholes into the oldest sludge-drying beds and the sludge disposal areas at each treatment plant. One borehole would be drilled into the oldest sludge-drying bed and penetrate the fill material until native material is encountered at each PRS. In the sludge disposal areas at each treatment plant, four regularly spaced boreholes will be drilled through the sludge material until native material is encountered.

A total of four samples would be collected from each borehole drilled in the sludge-drying beds. Three samples would be collected from the sludge and one sample would be collected from the uppermost layer of native material. If field screening suggested the possible presence of organic vapors or radionuclides in the native material, drilling would continue into native material at 5-foot intervals. The last sample would be collected 5-feet below the last positive field screening result. All subsurface samples plus one field duplicate would be submitted to fixed laboratories and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Target Analyte List (TAL) metals, pesticides, polychlorinated biphenyls (PCBs), gamma spectrometry, tritium (^3H), total uranium (uranium-234 and uranium-236), and cesium-137.

A total of four samples would be collected from each borehole drilled into the sludge fill areas. Three samples would be collected from the sludge and one sample would be collected from the uppermost layer of native material. If field screening suggested the possible presence of organic vapors or radionuclides in the native material, drilling would continue into native material at 5-foot intervals. The last sample would be collected 5-feet below the last positive field screening result. All samples that indicated a positive field screening response and 50% of the remaining samples would be submitted to fixed laboratories and analyzed for VOCs, SVOCs, TAL metals, pesticides/PCBs, gamma spectrometry, tritium, uranium-234, uranium-236, and cesium-137.

3.0 FIELD INVESTIGATION

A readiness review meeting was conducted on September 6, 1996 in preparation for field work. The following documents were prepared by the field team and were subsequently approved by the Field Unit 1 Field Project Leader or designee:

- Site-Specific Health and Safety Plan (SSHASP);
- Waste Characterization Strategy (WCS) Form; and
- Spill Prevention, Control, and Countermeasures Implementation (SPCCI) Plan.

3.1 General Field Activities

Field activities were conducted intermittently from September, 1996 through March, 1997. All activities were conducted in accordance with all applicable Los Alamos National Laboratory (LANL) Environmental Restoration (ER) Program Standard Operation Procedures (SOPs).

3.1.1 Site Survey

Site survey activities included interviewing Los Alamos County personnel, reviewing historic aerial photographs, maps, and engineering drawings and performing site inspections at each plant. The oldest sludge drying beds at all three wastewater treatment plants and the location of the sludge drying area at Pueblo treatment plant were identified. A detailed site map was not prepared because it was not required for planning borehole locations.

3.1.2 Geodetic Survey

On November 5, 1996, sampling locations and surface structures were surveyed at Pueblo Canyon, Bayo Canyon, and Central Wastewater Treatment Plants to determine their northing and easting coordinates and elevations. On February 24, 1997, all site structures at Pueblo were surveyed to determine the northing and easting coordinates and elevation and develop a site map. On April 2, 1997, four outfall sample locations at the Central Wastewater Treatment Plant were surveyed to determine the northing and easting coordinates and elevation. Survey points were recorded in the New Mexico state planar coordinate system. Facility for Information Mapping,

Analysis, and Display (FIMAD) identification numbers were assigned to each borehole and sampling location (Table 1). Land surveying was conducted in accordance with LANL-ER-SOP-03.01, Land Surveying Procedures (LANL, 1994c).

Table 1. Borehole Designations, FIMAD Location I.D.s, Geodetic Survey Information and Borehole Depths

Treatment Plant	Field Borehole Designation	FIMAD Location I.D.	Northing	Easting	Elevation (feet a.m.s.l.)	Total Borehole Depth (feet bgs)
Pueblo	P-1	00-04971	1779231.292	1622820.788	7108.130	9.5
Pueblo	P-2	00-04972	1779267.308	1622839.437	7107.750	12.5
Pueblo	P-3	00-04975	1779254.782	1622922.377	7108.990	0.5
Pueblo	P-4	00-04976	1779209.525	1622959.048	7106.950	0.5
Pueblo	P-5	00-04977	1779167.906	1622949.486	7105.690	0.5
Pueblo	P-6	00-04978	1779172.154	1622902.038	7107.660	2.0
Pueblo	P-7	00-04980	1779213.200	1622884.236	7109.030	1.5
Pueblo	P-8	00-04979	1779281.349	1623033.886	7108.730	0.5
Bayo	Bayo-1	00-04973	1776491.744	1643165.010	6528.550	63.0
Bayo	Bayo-2	00-04974	1776484.697	1643165.103	6527.510	66.5
Central	C-1	00-04981	1776454.7565	1629721.7033	7213.4100	12.5
Central	C-2	00-04982	1776453.1994	1629776.0771	7212.2700	10.0
Central	C-3	00-05941	1776772.51	1629747.05	7193.57	0.25
Central	C-4	00-05942	1776791.63	1629735.99	7180.91	0.33
Central	C-5	00-05943	1776765.99	1629574.74	7194.93	NA
Central	C-6	00-05944	1776790.61	1629574.46	7187.41	0.67

a.m.s.l. = above mean sea level
bgs = below ground surface
NA = not available

3.1.3 Hand Augering and Drilling Activities

Hand augering activities were initiated on September 11, 1996 by the ERM/Golder field team. The boreholes were advanced using a stainless steel 3-inch outer diameter (O.D.) hand auger. Hand augering samples were collected at the Pueblo Canyon Wastewater Treatment Plant and the outfall area of Central Wastewater Treatment Plant.

Drilling operations were initiated on September 22, 1996. Drilling and subsurface sampling services were provided by LANL subcontractor, Stewart Brothers Drilling Company. The boreholes were advanced using a CME-750 drill rig with 8.25-inch O.D., 4-inch inside diameter (I.D.), hollow stem augers. Continuous subsurface core samples were collected using 3.125-inch O.D., 5-foot long, stainless steel, split barrel samplers that were retrieved on a wireline system. The drill rig and associated equipment were inspected prior to being brought on site. Daily drilling

equipment inspections were also performed by the driller prior to beginning operations each day. After drilling operations were completed, equipment and personnel demobilized from each site.

3.1.4 Field Screening

The field team screened recovered hand augered samples and core for radioactivity and organic vapors immediately after the sample was removed from the hand auger or after the core barrel was opened. The core was sampled and logged after field screening. The top of the boreholes and the workers' breathing zone were also screened.

Screening for beta/gamma radiation was performed using an Eberline ESP-1 rate meter with a HP260 pancake probe. Screening for alpha radiation was performed using a Ludlum Model 139 survey meter equipped with an air proportional alpha detector. Screening was conducted in accordance with the LANL-ER-SOP-06.23, Measurement of Gamma-Ray Fields Using a Sodium Iodide Detector (LANL, 1993b), and LANL-ER-SOP-10.07, Field Monitoring for Surface and Volume Radioactivity Levels (LANL, 1994a). Daily performance checks were performed for both the beta/gamma and alpha survey meters following ESH-1-07-85, Rev. 0, Operational Checks of Beta/Gamma Survey Instruments (LANL, 1994h), and ESH-1-07-86, Rev. 0, Operational Checks of Alpha Survey Instruments (LANL, 1994g). The results of these performance checks were recorded each day on Survey Instrument Performance Test Logs (Exhibit A). Daily background readings were performed outdoors in uncontaminated areas for each meter following ESH-1-07-02, Rev. 0, Operating the Ludlum 139 With Air Proportional Probe (LANL, 1994f), and ESH-1-07-04, Rev. 0, Operating the ESP/HP260 (LANL, 1994e).

Screening results are recorded on survey forms (Exhibit B) and individual sample collection logs (Exhibit C) and are summarized in Tables 2, 3, and 4. Site specific field screening results are discussed under field activities for each treatment plant later in this report.

Organic vapor monitoring was performed using a photoionization detector (PID) to monitor the hand auger samples and the core immediately after opening the core barrels. The workers' breathing zone was also monitored. PID readings were recorded on PID field data forms (Exhibit D) and on individual sample collection logs (Exhibit C). Site specific field screening results are discussed under field activities for each treatment plant later in this report.

Combustible gases in the breathing zone and around the borehole were monitored using either an MSA 361 or MSA 360 combustible gas indicator (CGI). No sustained indication of combustible gas around the borehole or in the workers' breathing zone was encountered during field

Table 2. Summary of Field Screening Results for Pueblo Wastewater Treatment Plant, PRS 0-018 (a), Hand Augering, Drilling, and Sampling Activities.

Date	FIMAD Location ID	Sample No. 0100-96-XXXX	Sample Depth (feet bgs)	Photoionization Detector Readings		Combustible Gas Indicator			Radiation Screening			
									Direct Alpha		Direct Beta/Gamma	
				Breathing Zone (ppm)	Core/ cuttings (ppm)	Lower Explosive Limit (%)	Oxygen (%)	Hydrogen Sulfide (ppm)	Results	Background	Results	Background
9/11/96	00-04971	0501	0 - 1.8	0.0	0.0	0	20.7	0.0	3	3.2	240	290
9/11/96	00-04971	0502	1.8 - 2.2	0.0	0.0	0	20.7	0.0	2	3.2	190	290
9/11/96	00-04971	0503	0 - 0.5	NR	NR	NR	NR	NR	NR	NR	NR	NR
9/11/96	00-04972	0504	0 - 0.25	0.0	0.0	0	21.0	0.0	4	3.2	260	290
9/11/96	00-04972	0505	0.25 - 1.2	0.0	0.0	0	20.8	0.0	2	3.2	245	290
9/11/96	00-04972	0506	1.2 - 1.8	0.0	0.0	0	20.8	0.0	3	3.2	250	290
9/16/96	00-04975	0507	0 - 0.5	0.0	0.0	0	20.8	0.0	NDA	2.6	NDA	246
9/16/96	00-04976	0508	0 - 0.5	0.0	0.0	0	20.8	0.0	NDA	2.6	NDA	246
9/16/96	00-04977	0509	0 - 0.5	0.0	0.0	0	20.8	0.0	NDA	2.6	NDA	246
9/16/96	00-04978	0510	0 - 1.0	0.0	0.0	0	20.8	0.0	NDA	2.6	NDA	246
9/16/96	00-04978	0511	1.0 - 2.0	0.0	0.0	0	20.8	0.0	NDA	2.6	NDA	246
9/16/96	00-04979	0512	0 - 0.5	0.0	0.0	0.2	20.8	0.0	3	2.6	250	246
9/17/96	00-04980	0513	0 - 1.0	0.0	0.0	0	20.8	0.0	1	2.4	202	281
9/17/96	00-04980	0514	1 - 1.5	0.0	0.0	0	20.8	0.0	NDA	2.4	NDA	281
9/12/96	00-04971	0528	0 - 0.5	0.0	0.0	0	20.8	0.0	3	3.2	240	290
9/17/96	00-04980	0530	0 - 0.5	0.0	0.0	0	20.8	0.0	NDA	2.4	NDA	281
10/25/96	00-04971	0523	5.5 - 6.5	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	280
10/25/96	00-04972	0524	6.0 - 7.0	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	280
10/25/96	00-04972	0525	10 - 11	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	280

bgs = below ground surface
ppm = parts per million
NR = reading not recorded
NDA = no detectable activity

Table 3. Summary of Field Screening Results for Bayo Wastewater Treatment Plant, PRS 0-018(b), Drilling and Sampling Activities.

Date	FIMAD Location ID	Sample No. 0100-96-XXXX	Sample Depth (feet bgs)	Photoionization Detector Readings		Combustible Gas Indicator			Radiation Screening			
									Direct Alpha		Direct Beta/Gamma	
				Breathing Zone (ppm)	Core/ cuttings (ppm)	Lower Explosive Limit (%)	Oxygen (%)	Hydrogen Sulfide (ppm)	Results	Background	Results	Background
10/22/96	00-04973	NS	0	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	5	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	10	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	15	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	20	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	25	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	30	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	0561	33 - 35.5	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	0562	33 - 35.5	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	40	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	45	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	50	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	0563	54.5 - 56.5	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/22/96	00-04973	NS	60	0.0	0.0	0	20.8	0.0	NDA	1.4	NDA	316
10/23/96	00-04974	NS	0	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	10	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	0564	16 - 17	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	20	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	25	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	0565	31.5 - 32.6	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	35	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	40	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	45	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	0566	51.5 - 52.5	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	55	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	60	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	65	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320
10/23/96	00-04974	NS	70	0.0	0.0	0	20.8	0.0	NDA	1.0	NDA	320

bgs = below ground surface
ppm = parts per million
NDA = no detectable activity
NS = sample not collected

Table 4. Summary of Field Screening Results for Central Wastewater Treatment Plant, PRS 0-019, Drilling and Sampling Activities.

Date	FIMAD Location ID	Sample No. 0100-96-XXXX	Sample Depth (feet bgs)	Photoionization Detector Readings		Combustible Gas Indicator			Radiation Screening			
									Direct Alpha		Direct Beta/Gamma	
				Breathing Zone (ppm)	Core/ cuttings (ppm)	Lower Explosive Limit (%)	Oxygen (%)	Hydrogen Sulfide (ppm)	Results	Background	Results	Background
10/30/96	00-04981	NS	0.0	0.0	0.0	0	20.8	NR	NDA	1.8	NDA	224
10/30/96	00-04981	NS	2.5	0.0	0.0	0	20.8	NR	NDA	1.8	NDA	224
10/30/96	00-04981	0567	5 - 6.1	0.0	0.0	0	21.0	NR	NDA	1.8	NDA	224
10/30/96	00-04981	NS	7.5	0.0	0.0	0	20.8	NR	NDA	1.8	NDA	224
10/30/96	00-04981	NS	10.0	0.0	0.0	0	20.8	NR	NDA	1.8	NDA	224
10/30/96	00-04981	0568	11.4 - 12.5	0.0	0.0	0	21.0	NR	NDA	1.8	NDA	224
10/30/96	00-04982	NS	2.5	0.0	0.0	0	20.8	NR	NDA	1.8	NDA	224
10/30/96	00-04982	0569	5.3 - 6.6	0.0	0.0	0	21.0	NR	NDA	1.8	NDA	224
10/30/96	00-04982	NS	7.5	0.0	0.0	0	20.8	NR	NDA	1.8	NDA	224
10/30/96	00-04982	0570	8.8 - 10	0.0	0.0	0	21.0	NR	NDA	1.8	NDA	224
10/30/96	00-04982	NS	clay pipe	0.0	0.0	0	20.8	NR	NDA	1.8	260	224
3/19/97	00-05941	0100-97-0201	0.25	0.0	0.0	NR	NR	NR	NDA		178	
3/19/97	00-05942	0100-97-0202	0.33	0.0	0.0	NR	NR	NR	NR (sample too wet)		185	
3/19/97	00-05943	0100-97-0203	NA	0.0	0.0	NR	NR	NR	NDA		215	
3/19/97	00-05944	0100-97-0204	0.67	0.0	0.0	NR	NR	NR	NDA		245	

bgs = below ground surface
ppm = parts per million
NR = reading not collected
NDA = no detectable activity
NS = sample not collected

operations at all three wastewater treatment plants. Combustible gas readings, expressed as percent lower explosive limit (LEL) were recorded on combustible gas indicator/oxygen monitoring data forms (Exhibit E) and are summarized in Tables 2, 3, and 4.

Any deviations from the field screening methods described in this section will be discussed in the field activities section for each wastewater treatment plant.

3.1.5 Borehole Logging

Core extracted from each borehole was lithologically logged by an ERM/Golder geologist. Borehole sample logs (Exhibit F) were completed to describe the core for each run which were typically 2.5 feet (ft) or 5 ft in length. Drill cuttings and excess core were temporarily placed in labeled drum liners. After reaching total depth of a borehole and all core logging and sample collection tasks have been completed, the recovered cuttings were returned to the borehole at the approximate depth from which they originated. Any excess cuttings and core were placed in lined Department of Transportation (DOT) approved, open top 55-gallon drums for temporary storage on site until disposal could be arranged. Table 5 presents a summary of each borehole drilled and sampled at each wastewater treatment plant. Any deviations from the borehole logging described in this section will be discussed in the field activities section for each wastewater treatment plant.

3.1.6 Subsurface Sampling

Sample containers, sample labels, and quality assurance/quality control samples were prepared in accordance with LANL-ER-SOP-01.05, Field Quality Control Samples (LANL, 1992a) and LANL-ER-SOP-01.02, Sample Containers and Preservation (LANL, 1992d). Samples were documented, handled, and shipped in accordance with LANL-ER-SOP-01.03, Handling, Packaging, and Shipping of Samples (LANL, 1994b), and LANL-ER-SOP-01.04, Sample Control and Field Documentation (LANL, 1994d). Samples were collected and submitted to the LANL Sample Management Office (SMO) for laboratory analysis of VOCs by EPA SW-846 Method 8260, SVOCs by EPA SW-846 Method 8270, TAL Metals by EPA SW-846 Method 6010, pesticides/PCBs by EPA SW-846 Method 8080, gamma spectrometry, gross alpha, gross beta and tritium. During September 11 - 17, 1996, samples collected during the hand augering activities at the Pueblo treatment plant were submitted to the Mobile Radiological Analytical Laboratory (MRAL) for gross alpha, beta, and gamma, gamma scan, moisture and tritium screening to assist with determining if additional radiological analyses were required by a fixed laboratory. The MRAL was not available after mid-September 1996 for field screening of samples to be collected from the other wastewater treatment plants. Subsequently, the radiological screening lab at TA-21 was used for gross alpha, beta, gamma, moisture, and tritium screening for sample

Table 5. Borehole Summary Information.

Treatment Plant	Location Description	FIMAD Location I.D.	Sample Number	Sampled Interval From (feet bgs)	Sampled Interval To (feet bgs)	Borehole Diameter (inches)	Total Depth (feet bgs)	Comments
Pueblo	P-1	00-04971	0100-96-0503	0.0	0.5	3		Hand auger used to an approximate depth of 2.2 ft.
			0100-96-0528	0.0	0.5			
			0100-96-0501	0.0	1.8			
			0100-96-0502	1.8	2.2			
			0100-96-0523	5.5	6.5	8.25	9.5	Drill rig used to collect samples from tuff.
Pueblo	P-2	00-04972	0100-96-0504	0.0	0.25	3		Hand auger used to an approximate depth of 1.75 ft.
			0100-96-0505	0.25	1.2			
			0100-96-0593	0.25	1.2			
			0100-96-0506	1.2	1.8			
			0100-96-0524	6.0	7.0	8.25		Drill rig used to collect samples from tuff.
			0100-96-0525	10.0	11.0		12.5	
Pueblo	P-3	00-04975	0100-96-0507	0.0	0.5	3		
			0100-96-0588	0.0	0.5		0.5	
Pueblo	P-4	00-04976	0100-96-0508	0.0	0.5	3		
			0100-96-0589	0.0	0.5		0.5	
Pueblo	P-5	00-04977	0100-96-0509	0.0	0.5	3		
			0100-96-0590	0.0	0.5		0.5	
Pueblo	P-6	00-04978	0100-96-0510	0.0	1.0	3		
			0100-96-0511	1.0	2.0			
			0100-96-0591	1.0	2.0		2.0	
Pueblo	P-7	00-04980	0100-96-0513	0.0	1.0	3		
			0100-96-0530	0.0	0.5			
			0100-96-0514	1.0	1.5		1.5	
Pueblo	P-8	00-04979	0100-96-0512	0.0	0.5	3		
			0100-96-0592	0.0	0.5		0.5	
Bayo	Bayo-1	00-04973	0100-96-0561	33.0 [a]	35.5 [a]	8.25		Angle borehole at 44 deg. from vertical. Duplicate sample of 0100-96-0561
			0100-96-0562	33.0 [a]	35.5 [a]			
			0100-96-0563	54.5 [a]	56.5 [a]		63	
Bayo	Bayo-2	00-04974	0100-96-0564	16 [a]	17 [a]	8.25		Angle borehole at 30 deg. from vertical.
			0100-96-0565	31.5 [a]	32.6 [a]			
			0100-96-0566	51.5 [a]	52.5 [a]		66.5	

Treatment Plant	Location Description	FIMAD Location I.D.	Sample Number	Sampled Interval		Borehole Diameter (inches)	Total Depth (feet bgs)	Comments
				From (feet bgs)	To (feet bgs)			
Central	C-1	00-04981	0100-96-0567 0100-96-0568	5.0 11.4	6.1 12.5	8.25	12.5	
Central	C-2	00-04982	0100-96-0569 0100-96-0570	5.3 8.8	6.6 10.0	8.25	10.0	
Central	C-3	00-05941	0100-97-0201	0.0	0.25	NA	0.25	Sample collected beneath eastern outfall pipe
Central	C-4	00-05942	0100-97-0202	0.0	0.33	NA	0.33	Sample collected 15-20 ft downslope from eastern outfall pipe
Central	C-5	00-05943	0100-97-0203	NA	NA	NA	NA	Sample collected inside western outfall pipe
Central	C-6	00-05944	0100-97-0204	0.25	0.67	3.0	0.67	Sample collected 15 ft downslope from western outfall pipe

a = Sample depth is length along the borehole not depth below ground surface.
bgs = below ground surface
NA = not available

transportation requirements. Sample collection logs (Exhibit C) were completed for each sample. Results of the fixed laboratory analyses are the subject of a pending RFI Report.

The subsurface sampling protocol used during this field investigation generally followed that stated in the Work Plan. Samples were collected from the material within the oldest sludge drying beds and from the underlying tuff at each treatment plant. In addition, samples were collected from the sludge fill areas at Pueblo treatment plant. Samples were not collected from the sludge fill areas at Bayo and Central treatment plants because the existence of these areas could not be confirmed. Sampling details are presented in individual sample collection logs (Exhibit C). Any deviations from the subsurface sampling activities described in this section will be discussed in the field activities section for each wastewater treatment plant.

3.1.7 Equipment Decontamination Procedures

The drill rig, augers, and core barrels were decontaminated by steam cleaning prior to mobilizing for the project. Each auger flight and core barrel was dry decontaminated after each use and prior to being used in a new borehole. After decontamination and assembly of the core barrels, they were stored on racks away from the drilling and decontamination activities. All downhole drilling equipment was also decontaminated before final demobilization from each site. A temporary decontamination pad was constructed in an area designated for equipment decontamination.

The nondisposable sampling equipment used during drilling and hand augering activities were decontaminated between samples in a small decontamination pad set up within the exclusion zone. This equipment was scrubbed with an Alconox/potable water wash to remove any soil adhered to the equipment, then rinsed with deionized water. All decontamination fluids were captured in plastic buckets then disposed of on site according to the site specific SPCCI Plan. Any deviations from the equipment decontamination procedures described in this section will be discussed in the field activities section for each wastewater treatment plant.

3.1.8 Borehole Abandonment

In accordance with LANL-ER-AP-05.3, Management of Environmental Restoration Program Wastes (LANL, 1994i), each borehole was abandoned by backfilling with cuttings. Cuttings and core temporarily stored in plastic drum liners were returned to the borehole in the reverse order from which there were displaced. The upper two feet of the borehole was capped with bentonite and hydrated with potable water. Any cuttings which could not be returned to the boreholes were placed in 55-gallon drums for temporary storage. Any deviations from this borehole abandonment section will be discussed in the field activities section for each wastewater treatment plant.

3.1.9 Quality Assurance/Quality Control Sample Collection

One sample (0100-96-0562) was collected for quality assurance/quality control. This sample was a field duplicate collected during drilling activities at the Bayo Canyon Wastewater Treatment Plant. The sample was submitted, along with the associated soil samples, to the SMO for fixed laboratory analyses.

The purpose of a field duplicate is to document variability at the point of sample collection and as a quality control check on the analytical laboratory. A field duplicate is a separate, independent sample taken from the same source and collected to represent the same matrix as a soil sample collected at a given location and time (LANL 1992a).

3.1.10 Waste Management

Solid waste generated during the investigation of PRS Group 0-2, included drill cuttings and core, disposable sampling equipment, plastic sheeting, empty plastic cuttings bags, and personal protective equipment (PPE), was placed in open-top 55-gallon drums. Liquid waste produced during hand-augering activities were disposed of on site at the end of daily field sampling activities in accordance with the SPCCI Plan. Waste drums are temporarily stored in small temporary waste staging areas at each PRS until the waste could be profiled and disposal could be arranged. Any deviations from the waste management activities described in this section will be discussed in the field activities section for each wastewater treatment plant.

3.2 PRS 0-018(a), Pueblo Wastewater Treatment Plant

3.2.1 Field Activities

Hand augering activities were initiated on September 11, 1996 in the sludge drying beds. Boreholes P-1 (Location ID 00-04971) and P-2 (Location ID 00-04972) were augered through the center of sludge drying beds #1 and #2, respectively, (Figure 5). Bed #1 consisted of 6 inches of a dark brown silty sand material (residual sludge) underlain by approximately 12 inches of a moderate yellowish brown, moist, well graded sand, underlain by approximately 8.5 inches of a moderate yellowish brown, moist, well sorted sandy gravel to approximately 2.2 ft below ground surface (bgs). One sample was collected from each different zone within borehole P-1 for a total of three samples from within the sludge drying bed. Sample 0100-96-0503 was collected from 0.0 to 0.5 ft bgs. Sample #0100-96-0501 was collected from 0.0 inches to 1.8 ft bgs. Sample #0100-96-0502 was collected from 1.8 ft to 2.2 ft bgs. Auger refusal was encountered at approximately 2.2 ft bgs.

Soil encountered in Bed #2 was similar to those in Bed #1. The surface sludge (loose dark brown, fine silty sand) was only 0.25 ft thick. The sludge is underlain by a sand filter (0.96 ft) and a gravel (0.58 ft) where auger refusal was met at 1.8 ft bgs. Three samples were collected from P-2 which was located within sludge drying bed #2 (Figure 5). Sample 0100-96-0504 was collected from 0.0 to 0.25 ft bgs. Sample 0100-96-0505 was collected from 0.25 to 1.2 ft bgs. Sample 0100-96-0506 was collected from 1.2 to 1.8 ft bgs. Auger refusal was encountered at 1.8 ft bgs because of the presence of gravel too large and loose to auger through.

Hand augering activities continued on September 13, 1996. Auger hole P-3 was attempted 50 ft east of the northern wall of the sludge drying pit in the sludge fill area. Tuff was encountered at approximately 0.5 to 1 ft bgs in most of the sludge fill area. In several locations, auger refusal was not encountered until approximately 1.5 to 2 ft bgs. In two locations, pits were dug to confirm the depth to tuff. An ERM/Golder field team member contacted Nelson Edmonds at Los Alamos County to confirm that the thickness of the sludge fill area at Pueblo was very thin. A decision was made to collect surface samples from the sludge fill area to determine the presence or absence of any contaminants. On September 16, 1996, soil samples were collected from boreholes P-3 (Location ID 00-04975), P-4 (Location ID 00-04976), P-5 (Location ID 00-04977), and P-6 (Location ID 00-04978). Surface sampling was completed at the Pueblo treatment plant on September 17, 1996 by collecting samples from P-7 (Location ID 00-04980) and P-8 (Location ID 00-04979). Sample 0100-96-0507 was collected from 0 to 0.5 ft bgs from borehole P-3. Sample 0100-96-0508 was collected from 0 to 0.5 ft bgs from borehole P-4. Sample 0100-96-0509 was

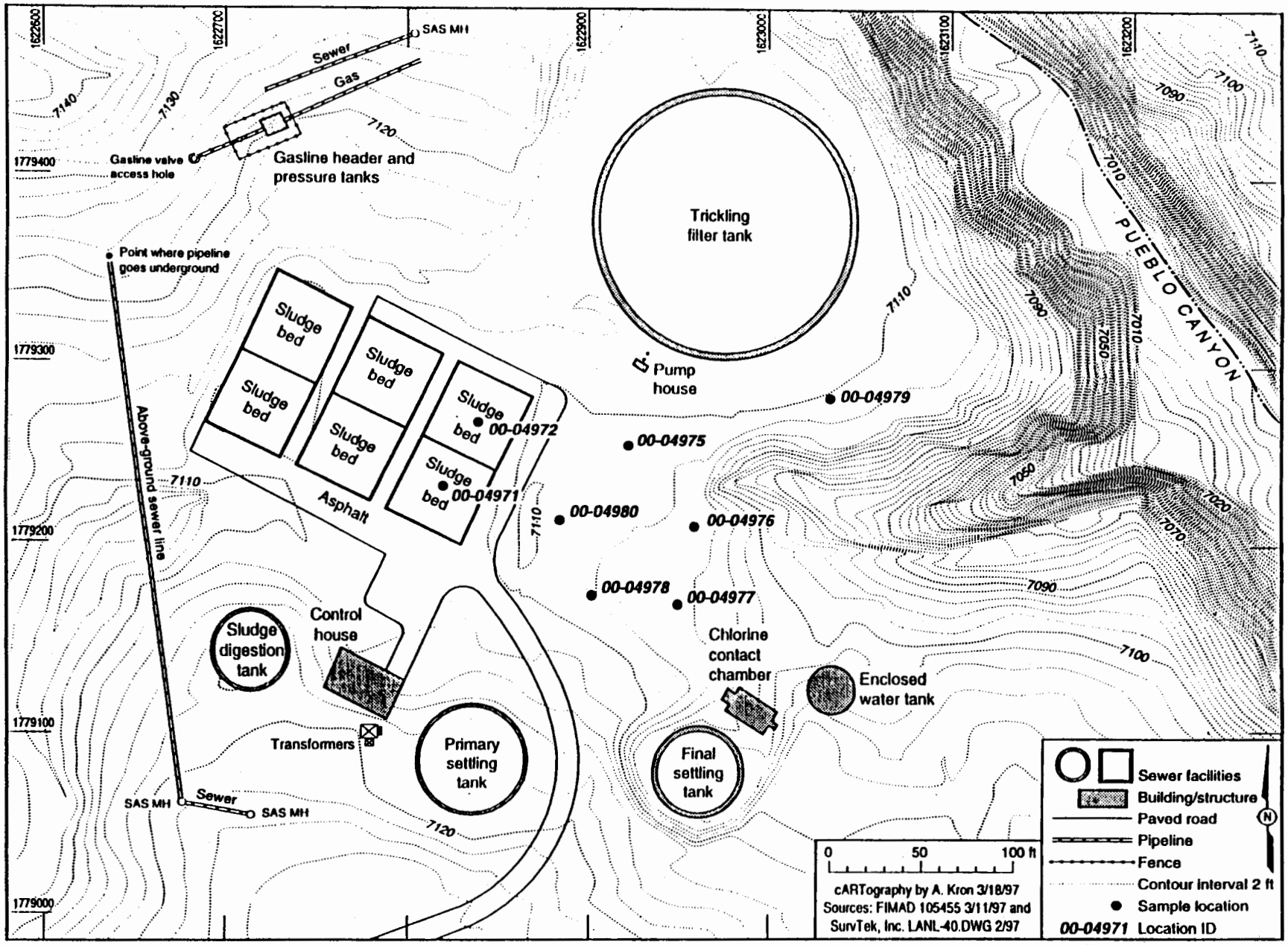


Figure 5. Borehole and sampling location map for Pueblo Wastewater Treatment Plant, PRS 0-018(a).

collected at 0 to 0.5 ft bgs from borehole P-5.

Sample 0100-96-0510 was collected from 0 to 1 ft bgs from borehole P-6. Sample 0100-96-0511 was collected from 1 to 2 ft bgs from borehole P-6. Sample 0100-96-0513 was collected from 0 to 1 ft bgs from borehole P-7. Sample 0100-96-0530 was collected from 0 to 0.5 ft bgs from borehole P-7. Sample 0100-96-0514 was collected from 1 to 1.5 ft bgs from borehole P-7. Sample 0100-96-0512 was collected from 0 to 0.5 ft bgs from borehole P-8. A summary of the samples collected are presented in Table 5.

On October 25, 1996, boreholes P-1 and P-2 were drilled with hollow stem augers as described in Section 3.1.3 in order to collect samples from the tuff beneath sludge drying beds #1 and #2. Sample 0100-96-0523 was collected at 5.5 to 6.5 ft bgs from location P-1. Sample 0100-96-0524 was collected at 6 to 7 ft bgs from location P-2. Sample 0100-96-0525 was collected at 10 to 11 ft bgs from location P-2. A summary of the samples collected are presented in Table 5.

3.2.2 Field Screening Results

Field screening was performed as described in Section 3.1.4. All radiological field screening results were at or below the average background radiological levels for the site.

Organic vapor monitoring was performed using a PID to monitor the hand auger samples, the core immediately after opening the core barrels, and the workers' breathing zone. All organic vapor screening results for this site were 0.0 ppm.

Combustible gas monitoring was performed using a CGI for percent LEL and percent oxygen adjacent to the borehole during drilling. No sustained indication of combustible gas around the boreholes or in the workers' breathing zones were encountered during field activities. All LEL readings were 0.0% with the exception of one elevated reading obtained during hand augering activities at borehole P-8 where a reading of 0.2% LEL was detected. The average percent oxygen observed at the site during field activities was 20.8%.

3.2.3 Subsurface Sampling

Subsurface sampling details are presented in Section 3.1.6. Deviations from Section 3.1.6 for subsurface sampling at the Pueblo Canyon treatment plant are presented here. Initially, the hand auger samples were submitted to the MRAL for radiological screening to support field decisions. During field activities for the investigation of all wastewater treatment plants, the MRAL was shut down for ER Project use. Subsequently, all samples were submitted to the radiochemical

screening laboratory at TA-21 for sample transportation requirements only and a fixed laboratory for gross alpha/beta, gamma scan, moisture, and tritium analyses.

Hand augered samples collected from boreholes P-1 through P-8 were not initially submitted to a fixed laboratory for radiochemical analysis because the MRAL was being utilized to screen samples to support field decisions and determine which subset of samples would be submitted for analyses at a fixed laboratory. After receiving returned samples from the SMO for boreholes P-1 through P-8, a few samples were selected and placed in 500 milliliter polyethylene bags, given new sample numbers, and returned to the SMO under separate COCs for gross alpha/beta and gamma scan analyses at a fixed laboratory. Samples were selected from locations P-2 (sample 0100-96-0505), P-3 (sample 0100-96-0507), P-4 (sample 0100-96-0508), P-5 (sample 0100-96-0509), P-6 (sample 0100-96-0511), and P-8 (sample 0100-96-0512). These correlate with new sample numbers 0100-96-0593, 0100-96-0588, 0100-96-0589, 0100-96-0590, 0100-96-0591, and 0100-96-0592. respectively. A summary of the samples collected are presented in Table 5.

Samples 0100-96-0528 and 0100-96-0530 from boreholes P-1 and P-7, respectively, were submitted to a fixed laboratory for gross alpha/beta and gamma scan analyses. Samples, 0100-96-0523 (P-1 location), 0100-96-0524 (P-2 location), and 0100-96-0525 (P-2 location), collected during drilling activities were submitted to a fixed laboratory for gross alpha/beta, gamma scan, moisture, and tritium analyses. A summary of the samples collected are presented in Table 5.

3.2.4 Drilling and Sampling Equipment Decontamination Procedures

Equipment decontamination procedures are detailed in Section 3.1.7. Approximately 6 pints of decontamination fluids generated during hand augering activities were disposed of on site according to the site specific SPCCI Plan.

3.2.5 Borehole Abandonment

Borehole abandonment procedures are detailed in Section 3.1.8.

3.2.6 Demobilization

All sampling activities at Pueblo Canyon Wastewater Treatment Plant were concluded on October 25, 1996. All equipment and personnel were demobilized from the site on the same date. Two solid waste drums containing drill cuttings, plastic, sampling debris, and PPE are temporarily stored on site. The drums were roped off with yellow caution tape for a temporary drum staging area.

3.3 PRS 0-018(b), Bayo Wastewater Treatment Plant

It was determined after reviewing the references again and interviewing some of the memo authors that the document interpretation in the work plan was incorrect and misleading (Newton, 1997). It was very unlikely that the Bayo plant received any contamination from TA-1 (Newton, 1997).

3.3.1 Field Activities

Drilling activities were initiated on October 22, 1996 adjacent to sludge drying beds #1 and #2. Bayo-1 (Location ID 00-04973) was located approximately 11.5 ft southwest of the southwest corner of bed #1 (Figure 6). Los Alamos County did not want the bed liners damaged, therefore the drill rig was set up to drill beneath bed #1 with an angle towards and across the sludge drying bed. The approximate azimuth of the borehole was N22E and was angled at 45° from the vertical. The first 18 linear ft were drilled with a center bit and no samples were collected until the augers were beneath the sludge drying bed. Subsequently, continuous core was collected from 18 ft to total length of the borehole while boring directly beneath the sludge drying bed. The objective was to collect a sample from the soil/tuff interface. However, the tuff interface was never encountered. Water was encountered at a linear depth of approximately 48 feet (34 vertical ft bgs). Drilling was terminated at 63 linear ft because the augers extended beyond the northern boundary of the sludge drying bed.

Soils beneath bed #1 consisted of a moist, well sorted, moderate yellowish brown sand with trace amounts of gravel from surface to 28 linear ft. A moist, fine to coarse, well graded, moderate yellowish brown sand extended from 28 to 45 linear ft. A moist, moderate to dark yellowish brown, silty fine sand to fine sandy silt, became saturated at 48 ft. extended from 45 to 53 linear ft. A saturated, moderate yellowish brown sand with occasional gravel or silt stringers and oxidized zones extended from 53 to 63 linear ft. Sample 0100-96-0561 was collected from 33 to 35.5 linear ft. Sample 0100-96-0562 is a duplicate of sample 0100-96-0561. Sample 0100-96-0563 was collected from 54.5 to 56.5 linear ft.

Bayo-2 (Location ID 00-04974) was set up approximately 20 ft west of bed #2 (Figure 6). The approximate azimuth of the borehole was N55E and was angled at 30° from the vertical. The drill rig was set up to auger along the long axis of the sludge drying bed. The first 15 linear ft were drilled with a center bit and no samples were collected until the augers were beneath the sludge drying bed. Subsequently, continuous core was collected from 15 ft to total borehole length. The tuff interface was never encountered in this borehole. Water was encountered at a linear depth of approximately 40 ft (35 vertical ft bgs).

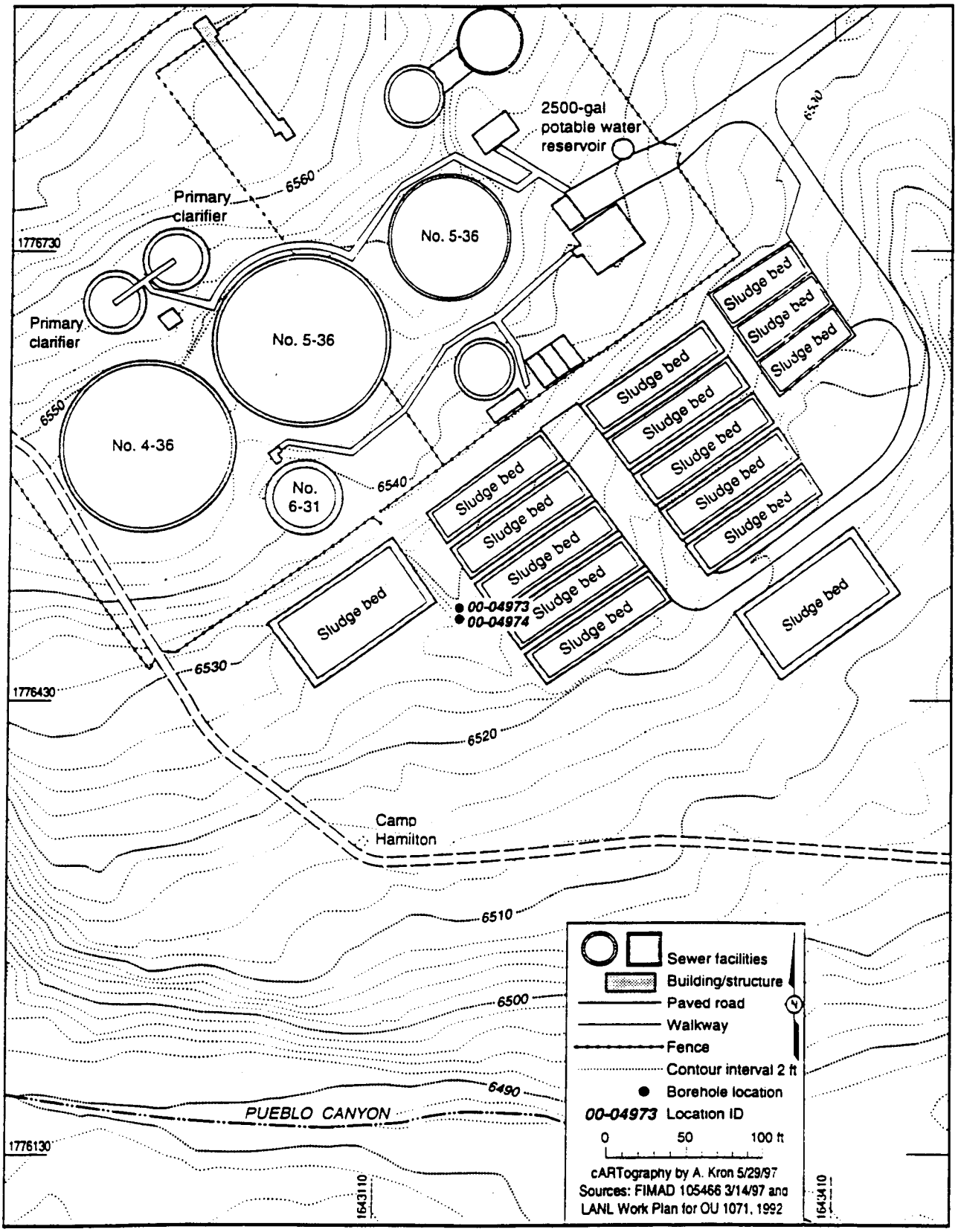


Figure 6. Borehole location map for Bayo Canyon Wastewater Treatment Plant [PRS 0-018(b)].

Attempts were made to collect a water sample but there was not enough water in the borehole. Drilling was terminated at 66.5 linear ft because an obstruction blocked further advance with the core barrel, and the borehole had been advanced well into native material.

Soils beneath bed #2 consisted of a slightly moist to moist, moderate yellowish brown, fine to coarse grained sand with trace amounts of gravel from surface to 36 linear ft. A moist to wet, dark yellowish brown sand and silty sand from 36 to 46 linear ft. Saturated cobbles from 46 to 50 linear ft. Saturated, dark yellowish brown gravely, fine to coarse sand from 50 to 66.5 linear ft. Sample 0100-96-0564 was collected from 16 to 17 linear ft. Sample 0100-96-0565 was collected from 31.5 to 32.6 linear ft. Sample 0100-96-0566 was collected from 51.5 to 52.5 linear ft. A summary of the samples collected are presented in Table 5.

3.3.2 Field Screening Results

Field screening was performed as described in Section 3.1.4. All field screening results were below the average radiological background levels for the site.

Organic vapor monitoring was performed using a PID to monitor the hand auger samples, the core immediately after opening the core barrels, and the workers' breathing zone. All organic vapor screening results for this site were 0.0 ppm.

Combustible gas monitoring was performed using a CGI for percent LEL and percent oxygen adjacent to the borehole during drilling. No sustained indication of combustible gas around the boreholes or in the workers' breathing zones were encountered during field activities. All LEL readings were 0.0%. The average percent oxygen observed at the site during the field activities was 20.8%.

3.3.3 Subsurface Sampling

Subsurface sampling details are presented in Section 3.1.6. A duplicate soil sample was collected in Bayo-1 borehole. Sample 0100-96-0562, is a duplicate of sample 0100-96-0561, collected from 33 to 35.5 linear ft.

3.3.4 Drilling and Sampling Equipment Decontamination Procedures

Equipment decontamination procedures are presented in Section 3.1.7.

3.3.5 Borehole Abandonment

Borehole abandonment procedures are presented in Section 3.1.8. Groundwater was encountered in both Bayo-1 and Bayo-2 at approximately 34 ft bgs. The saturated zones of each

borehole were backfilled with bentonite and the cuttings for these intervals were placed in 55-gallon drums for storage and subsequent disposal.

3.3.6 Demobilization

All sampling activities at Bayo Wastewater Treatment Plant were concluded on October 24, 1996. All equipment and personnel were demobilized from the site on the same date. Two solid waste drums containing drill cuttings, plastic, sampling debris, and PPE were left on site. The drums were roped off with yellow caution tape for a temporary drum staging area.

3.4 PRS 0-019, Central Wastewater Treatment Plant

3.4.1 Field Activities

Drilling activities were initiated on October 30, 1996 in the sludge drying beds at PRS 0-019, Central Wastewater Treatment Plant. Two boreholes were advanced through the two middle sludge drying beds (Figure 8). Soil in borehole C-1 (Location ID 00-04981) consisted of wet to moist, dark yellowish brown, gravelly, silty to medium grained sand from surface to 3.0 ft bgs. Moderately welded, pinkish gray to medium gray tuff with common pumice up to 5 millimeters from 3.0 to 9.0 ft bgs. Poorly welded, pinkish gray to reddish gray tuff from 9.0 to 10.0 ft bgs. Moderately welded, reddish gray tuff with a few sanidine crystals from 10 to 11.2 ft bgs. Poorly to moderately welded, medium gray tuff, with trace sanidine crystals from 11.2 to 12.5 ft bgs. The total depth of the borehole was 12.5 ft. Sample 0100-96-0567 was collected from 5 to 6.1 ft bgs. Sample 0100-96-0568 was collected from 11.4 to 12.5 ft bgs.

Borehole C-2 (Location ID 00-04982) was located in the westernmost central sludge drying pit. Soils consisted of moderate yellowish brown, gravelly fine sand (fill) with trace amounts of asphalt from surface to 0.6 ft bgs. No core was recovered from 0.6 to 2.5 ft bgs. Gravel and clay pipe fragments were recovered from 2.5 to 3.2 ft bgs. No core was recovered from 3.2 to 5.0 ft bgs because a clay pipe was drilled through. Moderate yellowish brown, gravelly sand (possibly slough) from 5.0 to 5.2 ft bgs. Poorly to moderately welded, light gray tuff from 5.2 to 10.0 ft bgs. The total depth of the borehole was 10.0 ft. Sample 0100-96-0569 was collected from 5.3 to 6.6 ft bgs. Sample 0100-96-0570 was collected from 8.8 to 10.0 ft bgs. A summary of the samples collected are presented in Table 5.

Samples were not collected from the sludge fill areas because evidence could not be found to document the existence of a sludge fill area at the Central Wastewater Treatment Plant.

Sampling from the outfall pipes and in the outfall area were performed on March 19. 1997 (Figure 8). Two samples were collected near the eastern outfall pipe. The 12-inch diameter corrugated aluminum outfall pipe is located north of the existing pump house. Sample 0100-97-0201 was collected beneath the rusted-out pipe adjacent to the edge of the bank from 0 to 3 inches (in.) bgs. Sample 0100-97-0202 was collected approximately 15 to 20 ft downslope from the mouth of the pipe in a crevice between tuff boulders from 0 to 4 in. bgs. Two samples were collected near the western outfall pipe. Sample 0100-97-0203 was collected inside the 8-inch vitrified clay pipe. Sample 0100-97-0204 was collected approximately 15 ft downslope from the mouth of the pipe in the drainage channel from 3 to 8 in. bgs. A summary of the samples collected are presented in Table 5.

3.4.2 Field Screening Results

Field screening was performed as described in Section 3.1.4. All field screening results were below the average radiological background levels for the site. A summary of the field screening results are presented in Table 4.

Organic vapor monitoring was performed using a PID to monitor the hand auger samples, the core immediately after opening the core barrels, and the workers' breathing zone. All organic vapor screening results for this site were 0.0 ppm.

Combustible gas monitoring was performed using a CGI for percent LEL and percent oxygen adjacent to the borehole during during drilling activities. No sustained indication of combustible gas around the boreholes or in the workers' breathing zones were encountered during field activities. All LEL readings were 0.0%. The average percent oxygen observed at the site during the field activities was 21.0%. During collection of samples in the outfall areas, monitoring with a CGI for combustible gases was not performed.

3.4.3 Subsurface Sampling

Subsurface sampling details are presented in Section 3.1.6.

3.4.4 Drilling and Sampling Equipment Decontamination Procedures

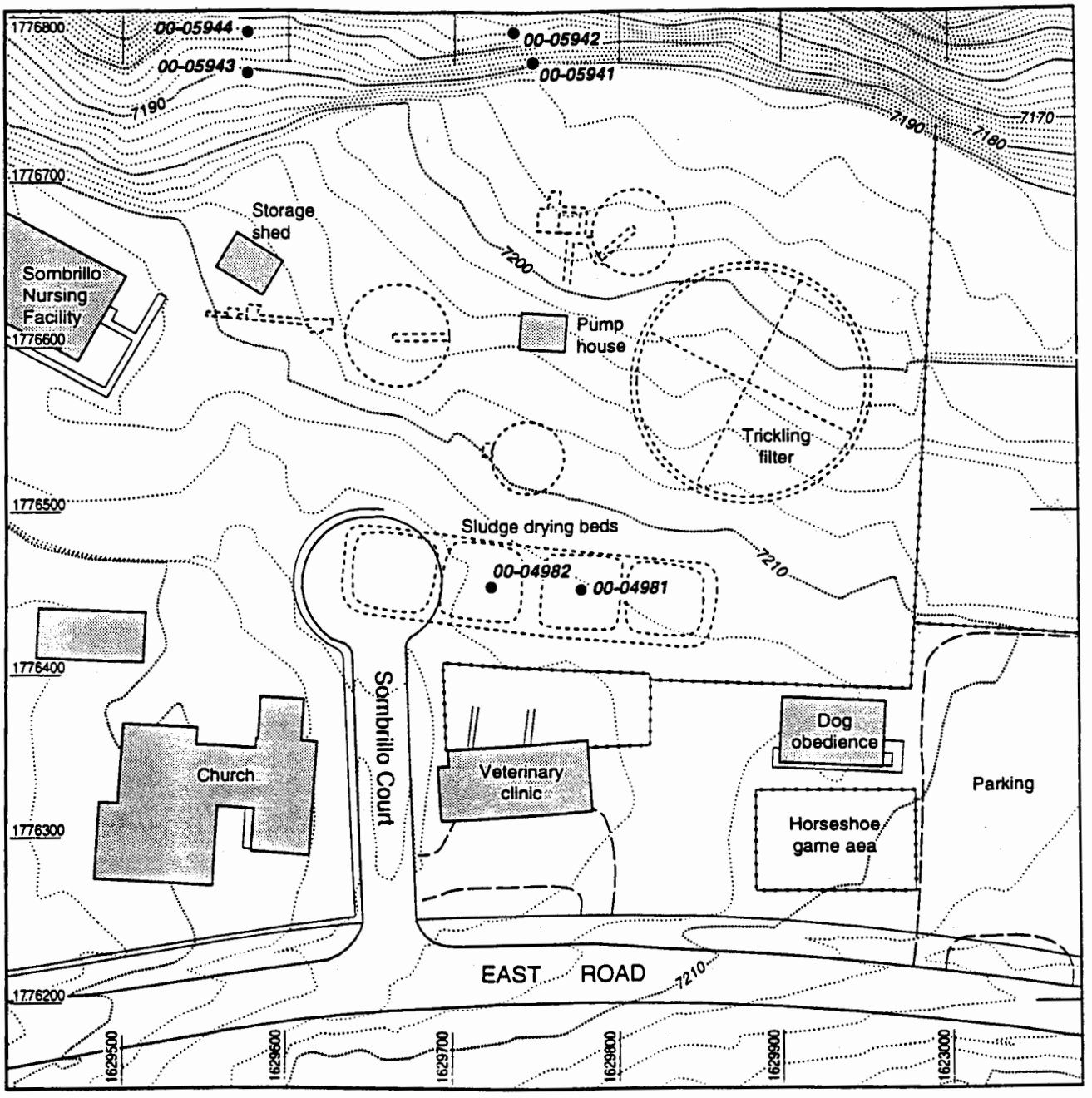
Equipment decontamination procedures are presented in Section 3.1.7.

3.4.5 Borehole Abandonment

Borehole abandonment procedures are presented in Section 3.1.8.

3.4.6 Demobilization

All drilling activities at Central Wastewater Treatment Plant were concluded on October 30, 1996. All equipment and personnel were demobilized from the site on that date. One solid waste drum containing drill cuttings, plastic, sampling debris, and PPE was left on site. The drum was roped off with yellow caution tape for a temporary drum staging area.



Existing structure
Former structure
Paved road
Unimproved road
Walkway
Fence
Contour interval 2 ft
Borehole location
00-04981 Location ID

0 50 100 ft

cARTography by A. Kron 5/19/97
Sources: FIMAD 105467 3/14/97 and
LANL Work Plan for OU 1071, 1992

Figure 7. Borehole location map for Central Wastewater Treatment Plant, PRS 0-019.

4.0 DEVIATIONS FROM WORK PLAN

Deviations from the planned approach stated in the Work Plan include the following:

1. The geomorphic mapping portion of the investigation was not conducted to produce a detailed site map for each PRS on a scale of 1:1000. The intent of the mapping was to locate the oldest sludge drying beds and sludge fill areas at each wastewater treatment plant. These areas were defined by discussing activities with Los Alamos County personnel.
2. All samples were submitted to a fixed laboratory for analyses from the sludge fill areas for Bayo and Central treatment plants because during the investigation of these two treatment plants, the ER Project stopped using the MRAL for screening samples for making field decisions. The TA-21 radiochemical screening lab was used for transportation requirements.
3. Four samples were not collected from each borehole in either the sludge drying beds or the sludge fill areas, because the sludge was not thick enough to collected three different samples. The sludge thickness ranged from 0.25 ft to 0.5 ft with the thinnest areas being in the sludge fill areas at Pueblo treatment plant.
4. Soil samples were not collected from sludge fill areas at Bayo and Central Wastewater Treatment Plants because they did not exist at these facilities.
5. The boreholes advanced beneath the sludge drying beds at the Bayo Wastewater Treatment Plant did not encounter the soil/tuff interface. Samples were collected from the native alluvial material beneath the beds.
6. Soil samples were not analyzed for total uranium. Because the gross alpha analysis did not initially indicate elevated levels, an analysis of total or isotopic uranium was not required to determine the types of radionuclides present.
7. Sediment and soil samples were collected from two outfall areas at the Central Wastewater Treatment Plant.
8. Moisture and tritium analyses were included as part of the standard TA-21 screening lab suite. However, because these analyses were for transportation screening purposes only, moisture and tritium were added to the fixed laboratory analytical suite as well.
9. One duplicate soil sample was collected as a quality control check of the analytical laboratories.

The planned and actual samples collected during the investigations of all three wastewater treatment plants are presented in Table 6.

Table 6. Planned and Actual Samples at the Wastewater Treatment Plants, PRS Group 0-2

Analysis	Borehole Core Samples		Quality Assurance / Quality Control Samples	
	Planned	Actual	Planned	Actual
Pueblo Wastewater Treatment Plant (PRS 0-018(a))				
Field Analysis (MRAL) for:				
Gross alpha	32	14	0	0
Gross beta	32	14	0	0
Gross gamma	32	14	0	0
Gamma Scan	0	8	0	0
moisture	0	14	0	0
Tritium	0	14	0	0
Laboratory Analysis for:				
Gross alpha	0	11	0	0
Gross beta	0	11	0	0
Gamma Spectrometry	20	11	0	0
Tritium	20	3	0	0
moisture	0	3	0	0
Total uranium (^{234}U, ^{236}U)	20	0	0	0
Volatile organic compounds	20	17	0	0
Semivolatile organic compounds	20	17	0	0
TAL metals	20	17	0	0
Pesticides/PCBs	20	17	0	0
Bayo Wastewater Treatment Plant (PRS 0-018(b))				
TA-21 Field Screening for:				
Gross alpha	0	7	0	1
Gross beta	0	7	0	1
Gross gamma	0	7	0	1
moisture	0	7	0	1
Tritium	0	7	0	1
Laboratory Analysis for:				
Gamma Spectrometry	20	7	0	1
Tritium	20	7	0	1
moisture	20	7	0	1
Total uranium (^{234}U, ^{236}U)	20	7	0	1
Volatile organic compounds	20	7	0	1
Semivolatile organic compounds	20	7	0	1
TAL metals	20	7	0	1
Pesticides/PCBs	20	7	0	1

Table 6. Continued

Analysis	Borehole Core Samples		Quality Assurance / Quality Control Samples	
	Planned	Actual	Planned	Actual
Central Wastewater Treatment Plant (PRS 0-019)				
TA-21 Field Screening for:				
Gross alpha	0	4	0	0
Gross beta	0	4	0	0
Gross gamma	0	4	0	0
moisture	0	4	0	0
Tritium	0	4	0	0
Laboratory Analysis for:				
Gamma Spectrometry	8	4	0	0
Tritium	8	4	0	0
moisture	8	4	0	0
Total uranium (^{234}U, ^{236}U)	8	4	0	0
Volatile organic compounds	8	4	0	0
Semivolatile organic compounds	8	4	0	0
TAL metals	8	4	0	0
Pesticides/PCBs	8	4	0	0

5.0 WASTE MANAGEMENT

5.1 Pueblo Central Wastewater Treatment Plant

Solid waste generated during hand augering and drilling activities included decontamination water (6 pints) and PPE, plastic, sample bottles, and sampling debris (65 gallons). The decontamination water generated during hand augering activities was disposed of daily onsite as specified in the SPPCI Plan. The PPE, plastic, sampling debris, and sample bottles were profiled as sanitary waste and were disposed of at the Los Alamos County Landfill during April 1997.

5.2 Bayo Wastewater Treatment Plant

Solid waste generated during drilling activities included drill cuttings (55 gallons), and PPE, plastic, sample bottles, and sampling debris (55 gallons). The cuttings were characterized and profiled based on soil analytical results for the specified depths of cuttings and were disposed of as nonhazardous waste during April 1997. The PPE, plastic, sampling debris. and sample bottles were profiled as sanitary waste and were disposed of at the Los Alamos County Landfill during April 1997.

5.3 Central Wastewater Treatment Plant

Solid waste generated during drilling activities included drill cuttings (10 gallons), and PPE, plastic, sample bottles, and sampling debris (43 gallons). The cuttings were characterized and profiled based on soil analytical results for the specified depths of cuttings and were disposed of

as nonhazardous waste during April 1997. The PPE, plastic, sampling debris. and sample bottles were profiled as sanitary waste and were disposed of at the Los Alamos County Landfill during April 1997.

6.0 DATA ASSESSMENT

Subsurface soil samples were collected from 8 boreholes at the Pueblo Central Wastewater Treatment Plant, PRS 0-018(a). Samples were submitted to the MRAL for radiochemical screening and the SMO for organic and inorganic laboratory analyses. Select samples were resubmitted to the SMO for fixed radiochemical analyses. Validated fixed laboratory analytical results are not currently available and this data will be assessed in a pending RFI report.

Subsurface soil samples were collected from 2 boreholes at the Bayo Wastewater Treatment Plant, PRS 0-018(b). Samples were submitted to the SMO for radiochemical, organic, and inorganic analyses. Validated fixed laboratory analytical results are not currently available and this data will be assessed in a pending RFI Report.

Subsurface soil samples were collected from 2 boreholes at the Central Wastewater Treatment Plant, PRS 0-019. Samples were submitted to the SMO for radiochemical, organic, and inorganic analyses. Validated fixed laboratory analytical results are not currently available and this data will be assessed in a pending RFI Report.

7.0 REFERENCES

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EXHIBIT A

SURVEY INSTRUMENT PERFORMANCE TEST LOGS

FU 01 ALPHA SURVEY INSTRUMENT PERFORMANCE TEST LOG

Instrument Manufacturer: ludlum _____ Model: 139 _____ HSE(P/N) #: 3629 _____ Cal. Due Date 5/22/97 _____ Location ERM _____

Date Reference Readings Established: 8/9/96 ___

RSP: J. Crocker _____ / J Crocker _____
Printed Name Signature

☐ ACS-5 Calibrator ☐ TMA/Eberline ☐ Other: _____

If the TMA/Eberline source set is used, then record the 2 _ cpm from each source as the Reference Reading and calculate the Acceptance Range (±20%)

Check Source Pu-239 _____

ID #: 92-4634 _____

Isotope: Pu-239 _____

Activity: 0.71 uCi _____

Reference: 2500 _____

±20%: 2000 to 3000 _____

Reference Source Isotope: Alpha Calibrator (ACS-5) ~~SR-90 Calibrator~~

Isotope: _____

Activity: _____

ID # _____

Filler Position or Range	1	2	3	4
Reference Reading	675	5500	60000	550000
Acceptance Rang (± 20%)	540 / 810	4400 / 6600	48000 / 72000	440000 / 660000

Date/Time	Instrument Reading Range 1	Instrument Reading Range 2	Instrument Reading Range 3	Instrument Reading Range 4	Check Source Reading	Results (pass/ fail)	Printed Name / Signature	Comments
9/11/96	675	5500	60000	550000	2500	P	John Crocker / J Crocker	
9/12/96	650	5250	60000	525000	2500	P	John Crocker / J Crocker	
9/13/96	700	5500	60000	525000	2500	P	John Crocker / J Crocker	
9/16/96	650	5250	60000	550000	2500	P	John Crocker / J Crocker	
9/17/96	675	5500	60000	550000	2500	P	John Crocker / J Crocker	
9/24/96	650	5250	60000	525000	2300	P	John Crocker / J Crocker	
9/25/96	700	5500	60000	550000	2500	P	John Crocker / J Crocker	
9/26/96	650	5500	60000	550000	2500	P	John Crocker / J Crocker	
9/27/96	650	5500	60000	550000	2500	P	John Crocker / J Crocker	
9/30/96	650	5500	60000	550000	2500	P	John Crocker / J Crocker	
10/1/96	650	5500	60000	550000	2500	P	John Crocker / J Crocker	
10/2/96	650	5500	60000	550000	2500	P	John Crocker / J Crocker	
10/3/96	650	5500	60000	550000	2500	P	John Crocker / J Crocker	

Date/Time	Instrument Reading Range 1	Instrument Reading Range 2	Instrument Reading Range 3	Instrument Reading Range 4	Check Source Reading	Results (pass/ fail)	Printed Name / Signature	Comments
10/4/96	675	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/7/96	650	5250	60000	525000	2500	P	John Crocker/ JCrocker	
10/8/96	700	5500	60000	525000	2500	P	John Crocker/ JCrocker	
10/9/96	650	5250	60000	550000	2500	P	John Crocker/ JCrocker	
10/10/96	675	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/11/96	650	5250	60000	525000	2300	P	John Crocker/ JCrocker	
10/14/96	700	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/15/96	650	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/16/96	650	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/17/96	650	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/18/96	650	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/21/96	650	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/22/96	650	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/23/96	675	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/24/96	650	5250	60000	525000	2500	P	John Crocker/ JCrocker	
10/25/96	650	5250	60000	550000	2500	P	John Crocker/ JCrocker	
10/28/96	650	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/29/96	625	5500	60000	550000	2500	P	John Crocker/ JCrocker	
10/30/96	650	5250	60000	550000	2500	P	John Crocker/ JCrocker	
10/31/96	675	5500	60000	550000	2500	P	John Crocker/ JCrocker	

Project No. 19588

Task No. 11J588

File No. 8.8.8.2

21. 2/1/96

Date Filed 2/11/97

Project Folder Records

FU 01 BETA/GAMMA SURVEY INSTRUMENT PERFORMANCE TEST LOG

Instrument Manufacturer: EBERTLINE Model: ESP-1 HSE(P/N) #: 7470__ Cal. Due Date 8/20/97__ Location ERM___

Date Reference Readings: 8/9/96_____ RCT: J. CROCKER _____ J Crocker

Printed Name Signature

Check Source Pu-239_____

ID #: 92-4634_____

Isotope: 92-4634_____

Activity: 0.71 uCi_____

Reference: 257000_____

± 20%: 205600 to 308400

Reference Source Isotope: Sr^{90} Cal. Wheel, P.C.

Isotope: 90 Sr - Y_____

Activity: 45 uCi_____

ID # ?_____

Filler Position or Range	1	2	3	4 open P.C. w/ plastic adapter.
Reference Reading	2490_____	2690_____	2880_____	3070_____
Acceptance Rang (± 20%)	1992 / 2988	2152 / 3228	2304 / 3456	2456 / 3684__

Date/Time	Instrument Reading Range 1	Instrument Reading Range 2	Instrument Reading Range 3	Instrument Reading Range 4	Check Source Reading	Results (pass/ fail)	Printed Name / Signature	Comments
9/11/96	2490	2690	2880	3070	260000	P	John Crocker/ J Crocker	
9/12/96	2500	2600	3000	3100	250000	P	John Crocker/ J Crocker	
9/13/96	2500	2700	2900	3050	250000	P	John Crocker/ J Crocker	
9/15/96	2400	2600	2900	3050	260000	P	John Crocker/ J Crocker	
9/17/96	2500	2700	2900	3100	260000	P	John Crocker/ J Crocker	
9/23/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
9/24/96	2500	2600	2900	3050	250000	P	John Crocker/ J Crocker	
9/25/96	2500	2600	2900	3100	250000	P	John Crocker/ J Crocker	
9/26/96	2500	2600	2900	3100	250000	P	John Crocker/ J Crocker	
9/27/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
9/30/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
10/1/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
10/2/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	

Date/Time	Instrument Reading Range 1	Instrument Reading Range 2	Instrument Reading Range 3	Instrument Reading Range 4	Check Source Reading	Results (pass/ fail)	Printed Name / Signature	Comments
10/3/96	2490	2690	2880	3070	260000	P	John Crocker/ J Crocker	
10/4/96	2500	2600	3000	3100	250000	P	John Crocker/ J Crocker	
10/7/96	2500	2700	2900	3050	250000	P	John Crocker/ J Crocker	
10/8/96	2400	2600	2900	3050	260000	P	John Crocker/ J Crocker	
10/9/96	2500	2700	2900	3100	260000	P	John Crocker/ J Crocker	
10/10/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
10/11/96	2500	2600	2900	3050	250000	P	John Crocker/ J Crocker	
10/14/96	2500	2600	2900	3100	250000	P	John Crocker/ J Crocker	
10/15/96	2500	2600	2900	3100	250000	P	John Crocker/ J Crocker	
10/16/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
10/17/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
10/18/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
10/21/96	2500	2600	2900	3100	260000	P	John Crocker/ J Crocker	
10/22/96	2490	2690	2880	3070	260000	P	John Crocker/ J Crocker	
10/23/96	2500	2600	3000	3100	250000	P	John Crocker/ J Crocker	
10/24/96	2500	2700	2900	3050	250000	P	John Crocker/ J Crocker	
10/25/96	2500	2600	3000	3050	250000	P	John Crocker/ J Crocker	
10/28/96	2490	2600	2900	3070	250000	P	John Crocker/ J Crocker	Job No. 19588
10/29/96	2500	2900	2900	3100	260000	P	John Crocker/ J Crocker	Task No. AJ588
10/30/96	2400	2700	3000	3100	260000	P	John Crocker/ J Crocker	File No. 8.8.8.2
10/31/96	2400	2900	2900	3100	260000	P	John Crocker/ J Crocker	Date Filed 2/11/97c

ERM/Gol
Project File No.

ALPHA SURVEY INSTRUMENT PERFORMANCE TEST LOG

Instrument Manufacturer: Ludlum Model: 139 HSE (P/N) #: 003784 Cal Due Date: 6/20/97 Location: L.A.

Date Reference Readings Established: 3/19/97

☒ ACS-5 Calibrator ☐ TMA/Eberline ☐ Other:

If the TMA/Eberline source set is used, then record the 2 π cpm from each source as the Reference Reading and calculate the Acceptance Range (± 20 %).

BET: Clint Daymon / Clint Daymon
RSO
Printed Name / Signature

Reference Source
Isotope: Pu 239
Activity: 0.75 uci
ID#: 92-4660

Filter Position or Range	x1	2 x10	3 x100	4 x1000
Reference Reading	750 cpm	7,000 cpm	60,000 cpm	600,000 cpm
Acceptance Range (± 20 %)	600 / 900	5600 / 8400	48,000 / 72,000	480,000 / 720,000

Check Source
ID #: 9412470297 8
Isotope: Th 230 (x100)
Activity: 18,500 dpm
Reference: 9,000 cpm
± 20 %: 7,200 - 10,800

Date/Time	Instrument Reading Range 1	Instrument Reading Range 2	Instrument Reading Range 3	Instrument Reading Range 4	Check Source Reading	Results (pass/fail)	Printed Name/Signature	Comments
3/19/97 0937	700	6,500	72,500	590,000	10,000	PASS	Clint Daymon / Clint Daymon	10,000 / 18,500 = 54% eff
5/21/97 0646	725	6,500	70,000	600,000	8,000	PASS	Clint Daymon / Clint Daymon	8,000 / 18,500 = 43% eff
							/	
							/	
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							/	
							/	
							/	

Attachment 1

BETA/GAMMA SURVEY INSTRUMENT PERFORMANCE TEST LOG

Instrument Manufacturer: Eberline Model: ESP-1 HSE (P/N) #: 607390 Cal Due Date: 2/19/98 Location L.A.

Date Reference Readings Established: 3/19/97 ~~BCT~~ RSP: clint Dyman / Clint Dyman
Printed Name / Signature

Reference Source
Isotope: Sr-Y-90
Activity: 45.1 uci
ID#: 104

	1 (open)	2	3	4
Filter Position or Range		N/A	N/A	N/A
Reference Reading	2,650 cpm	/	/	/
Acceptance Range (± 20 %)	2120 / 3,180			

Check Source
ID #: 94SR470 2777
Isotope: Sr-Y-90
Activity: 21,700 dpm
Reference: 14,400
± 20 %: 11,520 - 17,280

Date/Time	Instrument Reading Range 1	Instrument Reading Range 2	Instrument Reading Range 3	Instrument Reading Range 4	Check Source Reading	Results (pass/fail)	Printed Name/Signature	Comments
3/19/97 0959	2,660	N/A	N/A	N/A	13,800	P. SS	Clint Dyman / Clint Dyman	13,800 / 21,700 = 63% eff.
5/21/97 0657	2,670				12,400	P. SS	Clint Dyman / Clint Dyman	57% eff
							/	
							/	
							/	
							/	
							/	
							/	
							/	
							/	
							/	
							/	
							/	
							/	
							/	

EXHIBIT B

RADIOLOGICAL SURVEY FORMS

FU 01 SURVEY FORM (Continued)

Item Surveyed: augered soils **Page** 1 **of** 1 **Date:** 7 / 11 / 96

RCT: J. Crocker

Signature: J Crocker

Item Survey	Direct Alpha		Direct Beta/Gamma		Removable Alpha		Removable Beta/Gamma		Dose Rate	Comments
	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	micro-R/hr	
Bed 1	4		200							
"	3		240							0.5
"	3		141							1.0
"	2		190							0.2
Bed 2	4		260							0-0.25
"	2		245							.25-1.2
"	3		250							1.2-1.8
"										
"										

9-11-96

Project No. 14588

Task No. A14588

File No. 8.8.8.4

Date Filed 2/12/97

ERM/Golder

Project Folder

MDC (Ratemeter) = 3σ (units cpm)
MDC (Ratemeter) = MDC/Efficiency × probe correction
MDA (Scaler) = $[2.71 + (4.65 \cdot (b^{\circ} \cdot t_S)^{0.5})]/(Eff \cdot t_S)$
t_S = Sample Count Rate
b° Background Count Rate

$\sigma = [0.25 \times (\Sigma(B_i - B)^2)]^{1/2}$ (units cpm), $i = 1$ to n
B_i = individual background count reading
B = the mean or average of 5 different background count readings from different areas

Probe type	Correction Factors
β/γ Ludlum GM Pancake probe	100/15 5(cm²/cm²)
α Ludlum GM Pancake probe	100/75 cm²/cm²)
α Eberline AC-3 (Zns) probe	100/59 cm²/cm²)

FU 01 Survey Form

Item Surveyed: CUTTINGS AND CORE **Page 1** of 1 **Date:** 10 / 22 / 96

Site: WWTPs (~~Pueblo~~ Bayo Plant) SPB 11/23/96 RCT Name: JOHN CROCKER Signature: J. Crocker Comments: CUTTINGS AND CORE FROM COREHOLE(S):	α Direct Ratemeter: Ludlum 139 Probe: Air Proportional Cal. Due Date: 5/22/97 HSE #: 003629 Bkgd: 1.4 cpm Eff: 50 %	β/γ Direct Ratemeter: ESP-1 Probe: HP-260 Cal. Due Date: 8/20/97 HSE #: 7470 Bkgd: 31 cpm Eff: 50%	α Removable: -NA- Ratemeter: -NA- Probe: -NA- Cal. Due Date: -NA- HSE #: -NA- Bkgd: -NA- cpm Eff: -NA-%	β/γ Removable: -NA- Ratemeter: -NA- Probe: -NA- Cal. Due Date: -NA- HSE #: -NA- Bkgd: -NA- cpm Eff: -NA-%

Item Survey	Direct Alpha		Direct Beta/Gamma		Removable Alpha		Removable Beta/Gamma		Dose Rate	Comments
	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	micro-R/hr	
0-5' cuttings	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	Angle hole –
5-10' "	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	footage is linear
10-15	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	not vert
15-20	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	core
20-25	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	"
25-30	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	"
30-35	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	"
35-40	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	"
40-45	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	"
45-50	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	
50-55	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	
55-60	NDA	–	NDA	–	-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	

Project No. 19588
Task No. AH588
File No. 8.8.84
Date Filed 2/12/97

FRM/Golder
Project File Records

FU 01 Survey Form

Item Surveyed: CUTTINGS AND CORE **Page 1** of 1 **Date:** 10 / 23 / 96

Site: WWTPs (Pueblo Plant)	α Direct	β/γ Direct	α Removable: -NA-	β/γ Removable: -NA-
RCT	Ratemeter: Ludlum 139	Ratemeter: ESP-1	Ratemeter: -NA-	Ratemeter: -NA-
Name: JOHN CROCKER	Probe: Air Proportional	Probe: HP-260	Probe: -NA-	Probe: -NA-
Signature:	Cal. Due Date: 5/22/97	Cal. Due Date: 8/20/97	Cal. Due Date: -NA-	Cal. Due Date: -NA-
Comments: CUTTINGS AND CORE FROM COREHOLE(S):	HSE #: 003629	HSE #: 7470	HSE #: -NA-	HSE #: -NA-
	Bkgd: cpm Eff: 50 %	Bkgd: cpm Eff: 50%	Bkgd: -NA- cpm Eff: -NA-%	Bkgd: -NA- cpm Eff: -NA-%

Item Survey	Direct Alpha		Direct Beta/Gamma		Removable Alpha		Removable Beta/Gamma		Dose Rate	Comments
	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	micro-R/hr	
Cutt. 0-10'	NDA	—	NDA		-NA-	-NA-	-NA-	-NA-	-NA-	Linear feet 30° Angle hole
10-15	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	"
core 15'-20'	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
20-25	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
25-30 core	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	core and cuttings
30-35	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	moist
35-40	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	moist
40-45	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
45-50	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
50-55	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
55-60	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
60-65	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
65-70	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	
		10-23-96			-NA-	-NA-	-NA-	-NA-	-NA-	
		[illegible]			-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	

Project No. 19588

Task No. A+158

File No. 888.4

Date Filed 2/12/97

ERM/Golder Project File Record

FU 01 Survey Form

Item Surveyed: CUTTINGS AND CORE **Page 1** ____ **of** 1 **Date:** 10 / 24 / 96

Site: WWTPs (Pueblo Plant)	α Direct	β/γ Direct	α Removable: -NA-	β/γ Removable: -NA-
RCT	Ratemeter: Ludlum 139	Ratemeter: ESP-1	Ratemeter: -NA-	Ratemeter: -NA-
Name: JOHN CROCKER	Probe: Air Proportional	Probe: HP-260	Probe: -NA-	Probe: -NA-
Signature: [signature]	Cal. Due Date: 5/22/97	Cal. Due Date: 8/20/97	Cal. Due Date: -NA-	Cal. Due Date: -NA-
Comments: CUTTINGS AND CORE FROM COREHOLE(S): No Drilling Today.	HSE #: 003629	HSE #: 7470	HSE #: -NA-	HSE #: -NA-
	Bkgd: 514 cpm Eff: 50 %	Bkgd: 3358 cpm Eff: 50%	Bkgd: -NA- cpm Eff: -NA-%	Bkgd: -NA- cpm Eff: -NA-%

Item Survey	Direct Alpha		Direct Beta/Gamma		Removable Alpha		Removable Beta/Gamma		Dose Rate	Comments
	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	micro-R/hr	
					-NA-	-NA-	-NA-	-NA-	-NA-	No Material
					-NA-	-NA-	-NA-	-NA-	-NA-	To Survey.
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	

Project No. 19588
Task No. AH588
File No. 8.8.8.4
Date Filed 2/2/97

ER/WQ Folder
Project File Records

FU 01 Survey Form

Item Surveyed: CUTTINGS AND CORE **Page 1** ____ **of** 1 **Date:** 10 / 25 / 96

Site: WWTPs (Pueblo Plant) RCT Name: JOHN CROCKER Signature: [signature] Comments: CUTTINGS AND CORE FROM COREHOLE(S):	α Direct Ratemeter: Ludlum 139 Probe: Air Proportional Cal. Due Date: 5/22/97 HSE #: 003629 Bkgd: ____ cpm Eff: 50 %	β/γ Direct Ratemeter: ESP-1 Probe: HP-260 Cal. Due Date: 8/20/97 HSE #: 7470 Bkgd: ____ cpm Eff: 50%	α Removable: -NA- Ratemeter: -NA- Probe: -NA- Cal. Due Date: -NA- HSE #: -NA- Bkgd: -NA- cpm Eff: -NA-%	β/γ Removable: -NA- Ratemeter: -NA- Probe: -NA- Cal. Due Date: -NA- HSE #: ____ -NA- Bkgd: -NA- cpm Eff: -NA-%

Item Survey	Direct Alpha		Direct Beta/Gamma		Removable Alpha		Removable Beta/Gamma		Dose Rate	Comments
	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	micro-R/hr	
0-2' cuttings	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	Bed 1 (Pueblo)
2-5' core	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	"
0-2' cuttings	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	Bed 2
2-5 core	NDA		NDA		-NA-	-NA-	-NA-	-NA-	-NA-	Bed 2
5-7.5	NDA		NDA		-NA-	-NA-	-NA-	-NA-	-NA-	"
7.5-10	NDA		NDA		-NA-	-NA-	-NA-	-NA-	-NA-	"
10-12.5	NDA		NDA		-NA-	-NA-	-NA-	-NA-	-NA-	"
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	

[signature] 10-25-96

Project No. 19588
Task No. A11588
File No. 8884
Date Filed 2/12/97

FU 01 Survey Form

Item Surveyed: CUTTINGS AND CORE **Page 1** _____ **of** _____ **Date:** 10 / 30 / 96

Site: WWTPs (Pueblo Plant)	α Direct	β/γ Direct	α Removable: -NA-	β/γ Removable: -NA-
RCT	Ratemeter: Ludlum 139	Ratemeter: ESP-1	Ratemeter: -NA-	Ratemeter: -NA-
Name: JOHN CROCKER	Probe: Air Proportional	Probe: HP-260	Probe: -NA-	Probe: -NA-
Signature:	Cal. Due Date: 5/22/97	Cal. Due Date: 8/20/97	Cal. Due Date: -NA-	Cal. Due Date: -NA-
Comments: CUTTINGS AND CORE FROM COREHOLE(S):	HSE #: 003629	HSE #: 7470	HSE #: -NA-	HSE #: -NA-
	Bkgd: 1.5 cpm Eff: 50 %	Bkgd: 3.24 cpm Eff: 50%	Bkgd: -NA- cpm Eff: -NA-%	Bkgd: -NA- cpm Eff: -NA-%

Item Survey	Direct Alpha		Direct Beta/Gamma		Removable Alpha		Removable Beta/Gamma		Dose Rate	Comments
	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	micro-R/hr	
ground @ B.H	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	Pre-start
0-2.5'	" NDA	—	" NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	core
2.5-5.0	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	"
5.0-7.5	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	"
7.5-10	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	"
10-12.5	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	"
ground sfc @ C-2	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	Pre-start
0-2.5'	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	cuttings
"	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	core
2.5-5	Nda	—	Nda	—	-NA-	-NA-	-NA-	-NA-	-NA-	Core/clay pipe
clay pipe	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	Core
core 5.0-7.5	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	"
clay pipe in cuttings	NDA	—	260	—	-NA-	-NA-	-NA-	-NA-	-NA-	Clay pipe.
7.5-10	NDA	—	NDA	—	-NA-	-NA-	-NA-	-NA-	-NA-	core/Tuff cuttings
					-NA-	-NA-	-NA-	-NA-	-NA-	
					-NA-	-NA-	-NA-	-NA-	-NA-	

SURVEY FORM

Item Surveyed: Soil Samples

Page 1 **of** 1

Date: 3/ 19 / 1997

Site: TA-00-019 Central Waste Water Treatment Plant RSP/RCT Name: Clint Daymon Signature: [signature] Comments:	α Direct Ratemeter: Ludlum 139 Probe: Air proportional Cal. Due Date: 6/20/97 HSE #: 003784 Bkgd: 1.2 cpm Eff: 54%	β/γ Direct Ratemeter: ESP-1 Probe: HP-260 Cal. Due Date 2/19/98 HSE #: 007390 Bkgd: 227 cpm Eff: 63%	Dose Rate Dose Ratemeter: N/A Probe: NA Cal. Due Date: N/A HSE #: N/A Bkgd: N/A cpm Eff: N/A %	β/γ Removable Ratemeter: N/A Probe: N/A Cal. Due Date: N/A HSE #: N/A Bkgd: N/A cpm Eff: N/A %

Item Survey	Direct Alpha		Direct Beta/Gamma		Removable Alpha		Removable Beta/Gamma		Dose Rate	Comments
Sample #	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	cpm	dpm/100cm²	RO 20	
0100-97-0001	NDA	N/A	178	N/A	N/A	N/A	N/A	N/A	N/A	Location # 05941
0100-97-0002	NDA		185							" 05942
0100-97-0003	NDA		215							" 05943
0100-97-0004	NDA		245							

3/19/97

Project No. 12555 A1455
Task No. A1455
File No. 5.5.5.4
Date Filed 6/3/97
ERM/Golder Project File Records

EXHIBIT C

SAMPLE COLLECTION LOGS

AND

CHAIN OF CUSTODY FORMS

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0563

Date 10/11/96 **Time** 1550 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** ~~John Grecker~~ Clint Dayman 10/11/96

Composite Type: None **Signature** Clint Dayman

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	Bayc-1		54.5	56.5	ft	~~5t~~	G1	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~ N/A	~~125 ml Polyethylene~~	~~Ice~~	~~1071-96-0492~~
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0493
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0493
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather Sunny, 58°F

Sample Description fine grained gray silty sand very moist.

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	NDA	cpm	
	0 to	0	Oxygen	2-8	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

SDMS TA-00-DB08A

Doc. No. 19588
Page No. AH588
5.3
1/29/97c

Property of Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0561

Date 10/24/96 Time 1355 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No Name (Print) Clint Daymon ~~John Crocker~~ CC 10/24/96

Composite Type: None Signature Clint Daymon

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	Bayc-1		33.0	35.50	ft.	5L		

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~	~~125 ml Polyethylene~~	~~Ice~~	~~1071-96-0492~~ CC 10/24/96
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0493
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0493
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather Clear, Sunny, 48°F

Sample Description Med coarse grain Sand Light brown

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0	%LEL	
	~~0 to 0~~	~~Field Rad (alpha)~~	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	~~AHT~~ CC NDA	cpm	
	0 to 0	Oxygen	~~20.5~~	%	
	0 to 0	PID	0.0	ppm	

CC 10/24/96

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

SDMS TA-00-DB08A

19588
AH588
5.3
1/29/97c

Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0562

Date 10 Jun 96 **Time** 1355 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Dayman ~~John Crocker~~ CE 10/08/96

Composite Type: None **Signature** Clint Dayman

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	Bayo-1		33.0	35.50	ft	~~5L~~		

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~	~~125 ml Polyethylene~~	~~Ice~~	~~1071-96-0492~~ CE 10/08/96
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
~~07~~	~~RVGROSSAB+RVGROSSG+RVH2O+RVH3~~	~~Resealable Poly Bag~~	~~Ice~~	~~1071-96-0493~~ CE 10/08/96
~~08~~	~~RVGSCAN~~	~~Resealable Poly Bag~~	~~Ice~~	~~1071-96-0493~~ CE
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather Clear Sunny 115°F

Sample Description Med-coarse grain light brown sand

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0	%LEL	
	0 to 0	Field Rad (alpha)	NDA CE	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	20.8	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments: Duplicate of 0100-96-0561

SDMS TA-00-DB08A

Project No. 19588

Task No. ~~AH588~~

File No. 5.3

Date Filed 1/29/97

ER Holder

Project Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0564

Date [illegible] **Time** 0917 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Dorman ~~John Crocker~~ [illegible]

Composite Type: None **Signature** [illegible]

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	[illegible]	16.0	17.0	FT	5	L	[illegible]

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~	~~125 ml Polyethylene~~	~~Ice~~	~~1071-96-0492~~ [illegible]
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0493
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0493
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather [illegible]

Sample Description Moderate yellowish brown SAND.

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
Bore 2	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	N/A	cpm	
	0 to	0	Field Rad (beta/gam)	N/A	cpm	
	0 to	0	Oxygen	20.8	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

n/a

Comments:

SDMS TA-00-DB08A

Project No. 19588
Task No. A4588
File No. 5.3
Date Filed 1/29/97

ERM/Golder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0565

Date 11/13/96 **Time** 1010 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint D-xman ~~John Creeker~~ CC 11/13/96

Composite Type: None **Signature** Clint Dexman

Grabs:

	Location ID	Stake ID	Start	Depth	End	Depth	Units	Vol	Units	Comments
1	B-00-2		31.5	0	32.6	0	ft	5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~	~~125 ml Polyethylene~~	~~Ice~~	~~1071-96-0492~~ CC 11/13/96
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0493
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0493
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather Clear Sunny, 42°F

Sample Description Moderate yellowish brown fine SAND, moist

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
B-00-2	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	NDA	cpm	
	0 to	0	Oxygen	20.5	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

n/a

Comments:

SDMS TA-00-DB08A

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97C

ER Administrator
Project File Accums

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0566

Date 10/23/96 **Time** 1155 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Dickman ~~John Crocker~~ CC 10/23/96

Composite Type: None **Signature** [signature]

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	Bench		51.5 0	52.5 0	ft	5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0494
~~02~~	~~GROSSG~~	125 ml Polyethylene	Ice	~~1071-96-0494~~ CC 10/23/96
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0494
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0494
05	METTAL	125 ml Polyethylene	Ice	1071-96-0494
06	PESTPCB	125 ml Glass	Ice	1071-96-0494
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0495
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0495
09	SEMIN	125 ml Glass	Ice	1071-96-0494
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0494

Weather Sunny 42-1°F

Sample Description Med. gray gravelly SAND. wet

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0	%LEL	
	0 to 0	Field Rad (alpha)	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	20.8	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

SDMS TA-00-DB08A

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97

ERM/Golder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0523

Date [illegible] **Time** [illegible] **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** [illegible]

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	P-1		0.5	0.5	ft	4.5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~	~~125 ml Polyethylene~~	~~Ice~~ N/A	~~1071-96-0492~~ [illegible]
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0493
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0493
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather [illegible]

Sample Description [illegible]

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	[illegible]	%LEL	
	0 to 0	Field Rad (alpha)	N/A	cpm	
	0 to 0	Field Rad (beta/gam)	N/A	cpm	
	0 to 0	Oxygen	[illegible]	%	
	0 to 0	PID	[illegible]	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

SDMS TA-00-DB08A

Project No. 19588
Task No. A11588
File No. 5.3
Date Filed 1/29/97c

ERM/Golder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0524

Date [illegible] **Time** [illegible]

Technical Area 00 **Operable Unit** 1071

QA/QC Type None

Composite: ○ Yes ◉ No

Composite Type: None

Grabs:

Sample Type Soil

Sample Location TA-00-18(a) Waste Water Treatment Plant

Name (Print) ~~John Crocker~~ Clint D. [illegible]

Signature [illegible]

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	[illegible]		0	7.0	ft	5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~	~~125 ml Polyethylene~~	~~Ice~~	~~1071-96-0492~~
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0493
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0493
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather [illegible]

Sample Description [illegible]

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	[illegible]	%LEL	
	0 to	0	Field Rad (alpha)	[illegible]	cpm	
	0 to	0	Field Rad (beta/gam)	[illegible]	cpm	
	0 to	0	Oxygen	[illegible]	%	
	0 to	0	PID	[illegible]	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

SDMS TA-00-DB08A

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

EPM/Golder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0525

Date 10/25/96 **Time** 1120 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** ~~John Grocker~~ RPB 10/25/96 Ron Bacon

Composite Type: None **Signature** [signature]

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	P-2		10.0	11.0	FT	5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0492
~~02~~	~~GROSSG~~ RPB 10/25/96	~~125 ml Polyethylene~~	~~Ice~~	~~1071-96-0492~~
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0492
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0492
05	METTAL	125 ml Polyethylene	Ice	1071-96-0492
06	PESTPCB	125 ml Glass	Ice	1071-96-0492
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0493
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0493
09	SEMIN	125 ml Glass	Ice	1071-96-0492
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0492

Weather Partly cloudy cool

Sample Description Pinkish gray Tuff (crushed)

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
P-2	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	NDA	cpm	
	0 to	0	Oxygen	20.6	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

n/a

Comments:

SDMS TA-00-DB08A

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97
EPM/Grocker
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0567

Date 1.13.96 **Time** 0952 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Daymon

Composite Type: None **Signature** Clint Daymon

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	C-1		5.0 ft	6.1 ft	Ft.	5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0502
~~03~~	~~GSCAN~~	~~500 ml Polyethylene~~	~~Ice~~	~~1071-96-0502~~
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0502
05	METTAL	125 ml Polyethylene	Ice	1071-96-0502
06	PESTPCB	125 ml Glass	Ice	1071-96-0502
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0503
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0503
09	SEMIN	125 ml Glass	Ice	1071-96-0502
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0502

0-4

Weather Sunny, 45° F

Sample Description Medium Gray Tuff (crushed)

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
C-1	0 to	0	CGI	0	%LEL	
	0 to	0	Field Rad (alpha)	N.D.A	cpm	
	0 to	0	Field Rad (beta/gam)	N.D.A	cpm	
	0 to	0	Oxygen	21.0	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

n/a

Comments:

SDMS TA-00-DB08A

Upper Tuff

Analyzed for GSCAN.

Project No. 19588
Task No. A1588
File No. 5.3
Date Filed 1/29/97

ER M/Golder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0568

Date 10/30/96 **Time** 1012 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Daymon

Composite Type: None **Signature** Clint Daymon

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	C-1		11.4 0	12.5 0		5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0502
~~03~~	~~GSCAN~~	~~500 ml Polyethylene~~	~~Ice~~	~~1071-96-0502~~
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0502
05	METTAL	125 ml Polyethylene	Ice	1071-96-0502
06	PESTPCB	125 ml Glass	Ice	1071-96-0502
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0503
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0503
09	SEMIN	125 ml Glass	Ice	1071-96-0502
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0502

O.K. 10/30/96

Weather Sunny 45°F

Sample Description MED. GRAY TUFF (CRUSHED)

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
C-1	0 to 0	CGI	0	%LEL	
	0 to 0	Field Rad (alpha)	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	21.0	%	
	0 to 0	PID	0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

SDMS TA-00-DB08A Analyzed for GSCAN

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 11/29/96
ER Recorder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0569

Date 10/30/96 **Time** 1351 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Daymon

Composite Type: None **Signature** Clint Daymon

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	C-2		5.3 ~~0~~	6.6 ~~0~~	ft.	5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0502
~~03~~	~~GSCAN~~	~~500 ml Polyethylene~~	~~Ice~~	~~1071-96-0502~~
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0502
05	METTAL	125 ml Polyethylene	Ice	1071-96-0502
06	PESTPCB	125 ml Glass	Ice	1071-96-0502
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0503
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0503
09	SEMIN	125 ml Glass	Ice	1071-96-0502
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0502

CH 10/30-96 CH 10/30-96

Weather Sunny 52°F

Sample Description Light gray TUFF. Dry (crushed)

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
C-2	0 to 0	CGI	0	%LEL	
	0 to 0	Field Rad (alpha)	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	21.0	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

n/a

Comments:

SDMS TA-00-DB08A

Uppermost Tuff

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97c

Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0570

Date 10/30/96 **Time** 1400 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Daymon

Composite Type: None **Signature** Clint Daymon

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	C-2		8.5 ft	10.0 ft	ft.	5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0502
~~03~~	~~GSCAN~~	~~500 ml Polyethylene~~	~~Ice~~	~~1071-96-0502~~
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0502
05	METTAL	125 ml Polyethylene	Ice	1071-96-0502
06	PESTPCB	125 ml Glass	Ice	1071-96-0502
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0503
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0503
09	SEMIN	125 ml Glass	Ice	1071-96-0502
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0502

e.h 10/30/96

Weather Sunny 52°F

Sample Description Light gray TUFF (crushed)

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
C-2	0 to 0	CGI	0	%LEL	
	0 to 0	Field Rad (alpha)	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	21.0	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

n/a

Comments:

SDMS TA-00-DB08A Bottom of hole

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0572

Date 11/4/96 **Time** 1405 **Sample Type** Soil from pipe.

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-19 Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Daymon

Composite Type: None **Signature** Clint Daymon

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	Bore-Pipe		0	0		5	L	

These Samples were collected using LANL ER SOP 06.26

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0502
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0502
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0502
05	METTAL	125 ml Polyethylene	Ice	1071-96-0502
06	PESTPCB	125 ml Glass	Ice	1071-96-0502
07	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0503
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0503
09	SEMIN	125 ml Glass	Ice	1071-96-0502
10	VOAGCMSN	125 ml Septum Amber G	Ice	1071-96-0502

Weather Sunny, 50°F

Sample Description Fine course grain sand / Organic rich silty material

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	~~0 to~~	~~0~~	~~CGI~~	~~N/A~~	~~%LEL~~	~~CL 11/4/96~~
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	"	cpm	
	~~0 to~~	~~0~~	~~Oxygen~~	~~N/A~~	~~%~~	~~CL 11/4/96~~
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments: Sample taken from inside pipe. Abundant Rust inside pipe and in material taken from pipe.

SDMS TA-00-DB08A

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97

ERM/Golder
Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0572

Date November 4, 1996 **Time** 1405 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(b) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Clint Daymon

Composite Type: None **Signature** _____

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1		0	0		5	L	

These Samples were collected using LANL ER SOP 06.09

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0506
03	GSCAN	500 ml Polyethylene	Ice	1071-96-0506
04	H2O+H3	500 ml Polyethylene	Ice	1071-96-0506
05	METTAL	125 ml Polyethylene	Ice	1071-96-0506
06	PESTPCB	125 ml Glass	Ice	1071-96-0506
07	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0507
08	RVGSCAN	Resealable Poly Bag	Ice	1071-96-0507
09	SEMIN	125 ml Glass	Ice	1071-96-0506
10	VOAGCMSN	125 ml Septum Amber	Ice	1071-96-0506

Weather sunny 50 deg.

Sample Description Fine to coarse grained sand and organic rich silty material.

Field Screening

ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	NA	%LEL	
	0 to 0	Field Rad (alpha)	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	NA	%	
	0 to 0	PID	0.0	ppm	Inside pipe and off samp.

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

SDMS TA-00-DB08A

Sample taken from inside pipe. Abundant rust inside pipe and in material taken from pipe.

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

ER/M/Colder
Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0501

Date 9/11/96. Time 1342 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-18(a) Waste Water Treatment Plant

QC Type None

Composite: ○ Yes ◉ No Name (Print) John Crocker

Composite Type: None Signature J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04971	~~P-3~~ P-1	0.0 ~~0~~ 9-11-96	~~0~~ 1.8 9-11-96		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
01	~~CVMETXRF~~ Not collected JC	125 ml Polyethylene	Ice	1071-96-0478
02	~~CVVOAN~~ Not collected JC	125 ml Septum Amber	Ice	1071-96-0478
03	METTAL	125 ml Polyethylene	Ice	1071-96-0477
04	PESTPCB	125 ml Glass	Ice	1071-96-0477
05	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0478
06	SEMIN	125 ml Glass	Ice	1071-96-0477
07	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0477

Weather ~~Fine Sand Moist~~ Partly 78° Slight Breeze

Sample Description Fine Sand Moist

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0.0	%LEL	
	0 to 0	Field Rad (alpha)	3	cpm	
	0 to 0	Field Rad (beta/gam)	240	cpm	
	0 to 0	Oxygen	20.7	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

0.0 – 1.8 Bed #1 (southern bed).

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97

ERM/Golder
Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0502

Date 9/11/96 **Time** 1400 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04971	P-1	1.8 0	2.20		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
~~01~~	~~CVMETXRF~~ Not collected	125 ml Polyethylene	Ice	1071-96-0478
~~02~~	~~CVVOAN~~ Not collected	125 ml Septum Amber	Ice	1071-96-0478
03	METTAL	125 ml Polyethylene	Ice	1071-96-0477
04	PESTPCB	125 ml Glass	Ice	1071-96-0477
05	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0478
06	SEMIN	125 ml Glass	Ice	1071-96-0477
07	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0477

Weather P Cloudy 78° Light Breeze

Sample Description Coarse rounded gravel & coarse sand Moist

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0.0	%LEL	
	0 to 0	Field Rad (alpha)	2	cpm	
	0 to 0	Field Rad (beta/gam)	190 ~~2CAVGM~~	cpm	
	0 to 0	Oxygen	20.7	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

1.8-2.2'. Refusal in coarse gravel (Bed 1)

Project No. 19588
Proj. No. AH588
File No. 5.3
Date Filed 1/29/97
ER Volcker
Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0503

Date 11/96 **Time** 1430 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-64971	P-1	0	0.5 ft		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
~~01~~	~~CVMETXRF~~ > Not collected	125 ml Polyethylene	Ice	1071-96-0478
~~02~~	~~CVVOAN~~	125 ml Septum Amber	Ice	1071-96-0478
03	METTAL	125 ml Polyethylene	Ice	1071-96-0477
04	PESTPCB	125 ml Glass	Ice	1071-96-0477
05	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0478
06	SEMIN	125 ml Glass	Ice	1071-96-0477
07	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0477

Weather Black dry soil abundant fine roots

Sample Description Cloudy 74 Light Breeze

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI		%LEL	
	0 to 0	Field Rad (alpha)		cpm	
	0 to 0	Field Rad (beta/gam)		cpm	
	0 to 0	Oxygen		%	
	0 to 0	PID		ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

0-0.5', Bed 1

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0504

Date 9/11/96 **Time** 1530 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-CM72	P.2	0	0.25'		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
01	CVMETXRF	125 ml Polyethylene	Ice	1071-96-0478
02	CVVOAN	125 ml Septum Amber	Ice	1071-96-0478
03	METTAL	125 ml Polyethylene	Ice	1071-96-0477
04	PESTPCB	125 ml Glass	Ice	1071-96-0477
05	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0478
06	SEMIN	125 ml Glass	Ice	1071-96-0477
07	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0477

Weather P. Cloudy 78° Light Breeze

Sample Description Dry Organic rich Black Soil

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	4	cpm	
	0 to	0	Field Rad (beta/gam)	260	cpm	
	0 to	0	Oxygen	21.0	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

0.0' To 0.25', (Bed 2) JC 9-11-96

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97 c

ERM/Golder
Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0505

Date 9/11/96 **Time** 1540 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04972	~~P-8~~ P-2 JC 9-11-96	0.25	81.2 JC		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
~~01~~	~~CVMETXRF~~ not collected	125 ml Polyethylene	Ice	1071-96-0478
~~02~~	~~CVVOAN~~ JC 9-11-96	125 ml Septum Amber	Ice	1071-96-0478
03	METTAL	125 ml Polyethylene	Ice	1071-96-0477
04	PESTPCB	125 ml Glass	Ice	1071-96-0477
05	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0478
06	SEMIN	125 ml Glass	Ice	1071-96-0477
07	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0477

Weather P Cloudy 78° light Breeze

Sample Description Moist Med-crs grain sand.

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	2	cpm	
	0 to	0	Field Rad (beta/gam)	245	cpm	
	0 to	0	Oxygen	20.8	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments: 0.25'-1.2, Bed 2

Project No. 19588
Task No. A41588
File No. 5.3
Date Filed 1/29/97 C

ERM-Golder
Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0506

Date 01/11/96 **Time** 1555 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04972	P-2	0 1.2	0 1.8	FT	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
~~01~~	~~CVMETXRF~~ > Not collected JC 01-11-96	125 ml Polyethylene	Ice	1071-96-0478
~~02~~	~~CVVOAN~~	125 ml Septum Amber	Ice	1071-96-0478
03	METTAL	125 ml Polyethylene	Ice	1071-96-0477
04	PESTPCB	125 ml Glass	Ice	1071-96-0477
05	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0478
06	SEMIN	125 ml Glass	Ice	1071-96-0477
07	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0477

Weather S Cloudy 78 Lt. Breeze

Sample Description Crs Gravel + med-crs sand.

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	3	cpm	
	0 to	0	Field Rad (beta/gam)	350	cpm	
	0 to	0	Oxygen	20.8	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

1.2 - 1.8 Refusal @ 1.8', Bed 2

Project No. 19588
Task No. A4588
File No. 5.3
Date Filed 1/29/97c
Initials Holder
Standards

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0507

Date 1430 **Time** 7/16/96 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

mposite: ○ Yes ◉ No **Name (Print)** John Crocker

..mposite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	CO-04973	P-3	0	0.5	FT	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather Clear, warm 77° 5-10MPH Breeze

Sample Description Moderate to dark yellowish brown silty sand

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	NDA	cpm	
	0 to	0	Oxygen	20.5	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

- NA -

Comments:

P3, 0-0.5'
Refusal @ 0.5'

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97

ERM/Golder
Project File Records

12L

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0508

Date 9/16/96 Time 1455

Technical Area 00 Operable Unit 1071

QA/QC Type None

Composite: ○ Yes ◉ No

Composite Type: None

Grabs:

Sample Type Soil

Sample Location TA-00-18(a) Waste Water Treatment Plant

Name (Print) John Crocker

Signature J Crocker

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04976	P-4	0.00	0.50	ft	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather Clear Warm 77° Breezy ~5-10mph

Sample Description M. Brown, silty soil w/1cm sized pebbles.

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	NDA	cpm	
	0 to	0	Oxygen	20.5	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

0-0.5', P4

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

ERM/Golder
Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0509

Date 7/16/96 **Time** 520 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04977	P-5	0.0 ft	0.5 ft	ft.	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather Clear & warm. 77deg F. 5-10mph Breeze.

Sample Description Moderate to Dark Yellowish Brown silty sand

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	NDA	cpm	
	0 to	0	Oxygen	20.9	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

0 - 0.5' P5

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97

SDI provider
[illegible] Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0510

Date 6/11/96 **Time** 1545 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04978	P-6	0	1.0	ft	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather Moderate to Dark Yellowish Brown Silty Sand

Sample Description Clear and warm, 77°F 5-10mph Breeze

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0.0	%LEL	
	0 to 0	Field Rad (alpha)	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	>0.5	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

0-1.0', P6

Project No. 19588
Task No. A+588
File No. 5.3
Date 11/29/97
Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0511

Date 9/16/96 Time 1605

Technical Area 00 Operable Unit 1071

QA/QC Type None

Composite: ○ Yes ◉ No

Composite Type: None

Grabs:

Sample Type Soil

Sample Location TA-00-18(a) Waste Water Treatment Plant

Name (Print) John Crocker

Signature J Crocker

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04974	P-6	8/20	2.0	iT	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather Clear Warm 77 ~5mph Breeze

Sample Description Ground Tuff Pinkish grey, Dry

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0.0	%LEL	
	0 to 0	Field Rad (alpha)	NDA	cpm	
	0 to 0	Field Rad (beta/gam)	NDA	cpm	
	0 to 0	Oxygen	20.6	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

-NA-

Comments:

Voa @ 1.6, P6 1.0-2.0'

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

EPIC Builder
Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0512

Date 9/17/96 Time 0947 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No Name (Print) John Crocker

Composite Type: None Signature J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04974	P-5	0.80	0.5	FT	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather P Cloudy, Warm 70°F 5-10 mph variable.

Sample Description Med Brown silty Soil. minor Roots

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0.2	%LEL	
	0 to 0	Field Rad (alpha)	3	cpm	
	0 to 0	Field Rad (beta/gam)	250	cpm	
	0 to 0	Oxygen	20.5	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

PB

VOA @ 0.25 To 0.5

Project No. 19588

Task No. AN588

File No. 5.3

Date Filed 1/29/97

SRM/Calder Project File Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0513

Date 9/17/96 **Time** 1020 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04956	P-7	0	1.0		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather P. Cloudy, Warm 70 Deg F 5-10 mph Breeze

Sample Description Med Brown silty soil w/ minor roots

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	0.0	%LEL	
	0 to 0	Field Rad (alpha)	1	cpm	
	0 to 0	Field Rad (beta/gam)	202	cpm	
	0 to 0	Oxygen	20.5	%	
	0 to 0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

P7 0-1.0

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97C
ER Holder
Project File Records

Los Alamos National Laboratory Environmental Restoration

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0514

Date 9/17 **Time** 1130 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04950	P-7	1.0	1.5	FT	3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
02	METTAL	125 ml Polyethylene	Ice	1071-96-0487
03	PESTPCB	125 ml Glass	Ice	1071-96-0487
04	RVGROSSAB+RVGROSSG+RVH2O+RVH:	Resealable Poly Bag	Ice	1071-96-0488
05	SEMIN	125 ml Glass	Ice	1071-96-0487
06	VOAGCMSN	125 ml Polyethylene	Ice	1071-96-0487
07	RVGSCAN	Resealable Poly Bag	None	1071-96-0488

Weather P. Cloudy and Warm, 70 deg. F

Sample Description Med. Brown silt/soil and Tuff fragments

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm	
	0 to	0	Field Rad (beta/gam)	NDA	cpm	
	0 to	0	Oxygen	20.5	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

- NA -

Comments:

1.0-1.5, P7

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97c

Folder

Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0528

Date 9/11/96 Time 1430 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No Name (Print) John Crocker

Composite Type: None Signature J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Unitss	Vol	Units	Comments
1	00-04971	P-1	0	0.50		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0477
02	GROSSG	125 ml Polyethylene	Ice	1071-96-0477
03	GSCAN	125 ml Polyethylene	Ice	1071-96-0477

Weather P. Cloudy 78° Light Breeze

Sample Description Black, dry organic rich soil.

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	3	cpm	
	0 to	0	Field Rad (beta/gam)	340	cpm	
	0 to	0	Oxygen	20.7	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

N/A

Comments:

0 - 0.5', soil

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

ERM-Golder
Project Records

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0530

Date September 17, 1996 **Time** 1020 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QC Type None

Composite: ○ Yes ◉ No **Name (Print)** John Crocker

Composite Type: None **Signature** J Crocker

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	00-04950	P7.gc	0	0.5 ft gc		3	L	

These Samples were collected using LANL ER SOP

ID	Analysis	Container	Preservative	C of C Control No.
01	GROSSAB	125 ml Polyethylene	Ice	1071-96-0491
04	GSCAN	125 ml Polyethylene	None	1071-96-0491

Weather Lt Br. Silty Fine Sand

Sample Description P. Cloudy, warm 70°F 5-10mph Breeze

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
	0 to	0	CGI	0.0	%LEL	
	0 to	0	Field Rad (alpha)	NDA	cpm (1)	
	0 to	0	Field Rad (beta/gam)	NDA	cpm (100)	
	0 to	0	Oxygen	20.8	%	
	0 to	0	PID	0.0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

SDMS TA-00-DB08A

P7 0.0' to 0.5'

Project No. 19588
Task No. AH588
File No. 5.3
Date Filed 1/29/97c

ERM/Golder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0588

Date 9/16/96 Time 1430 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-18(a) Waste Water Treatment Pla

QA/QC Type None

Composite: ○ Yes ◉ No Name (Print) J. Crocker ~~Clint Daymon~~

Composite Type: None Signature J. Crocker

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1		0	0		500	ml	

These Samples were collected using LANL ER SOP 06.10

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-96-0509

Weather See Col log 0100-96-0507

Sample Description See Col log 0100-96-0507

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	NA	%LEL	
	0 to 0	Field Rad (alpha)	NA	cpm	
	0 to 0	Field Rad (beta/gam)	NA	cpm	
	0 to 0	Oxygen	NA	%	
	0 to 0	PID	NA	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

Comments:

SDMS TA-00-DB08A

Re-analysis of: 0100-96-0507
orig. collected 9/16/96 1430

Project No. 19588

Task No. A11588

File No. 5.3

Date Filed 1/29/97C

EPM/Golder
Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0589

Date 9/16/96 **Time** 1455 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** ~~Clint Daymon~~

Composite Type: None **Signature**

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1		0	0		500	ml	

These Samples were collected using LANL ER SOP 06.10

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-96-0509

Weather See Col. log 0100-96-0589

Sample Description See Col. Log 0100-96-0589

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	NA	%LEL	
	0 to 0	Field Rad (alpha)	NA	cpm	
	0 to 0	Field Rad (beta/gam)	NA	cpm	
	0 to 0	Oxygen	NA	%	
	0 to 0	PID	NA	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

SDMS TA-00-DB08A

0100-96-0508 material originally collected 9/16/96 @ 1455 hrs.

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97c

ERM/Golder Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0590

Date 9/16/96 Time 1520 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No Name (Print) J. Crocker ~~Clint Daymon~~

Composite Type: None Signature J Crocker

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1		0	0		500	ml	

These Samples were collected using LANL ER SOP 06.10

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-96-0509

Weather See Col. log 0100-96-0509

Sample Description See Col. Log 0100-96-0509

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	NA	%LEL	
	0 to 0	Field Rad (alpha)	NA	cpm	
	0 to 0	Field Rad (beta/gam)	NA	cpm	
	0 to 0	Oxygen	NA	%	
	0 to 0	PID	NA	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

SDMS TA-00-DB08A

Same material as 0100-96-0509 coll. on 9/16/96 @ 1520

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

ER/Golder Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0591

Date 9/16/96 **Time** ~~9/16/96~~ JC 1605 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** J. Crocker ~~Clint Daymon~~

Composite Type: None **Signature** J Crocker

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1		0	0		500	ml	

These Samples were collected using LANL ER SOP 06.10

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-96-0509

Weather See Col. Log 0100-96-0511

Sample Description

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	NA	%LEL	
	0 to 0	Field Rad (alpha)	NA	cpm	
	0 to 0	Field Rad (beta/gam)	NA	cpm	
	0 to 0	Oxygen	NA	%	
	0 to 0	PID	NA	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

SDMS TA-00-DB08A

same material as 0100-96-0511 collected 9/16/96 1605 hrs.

Project No. 19588
Task No. AH588
File No. 6.3
Date Filed 1/29/97

ERM/Golder
Project File Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0592

Date 9/17/96 Time 0947 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No Name (Print) J. Crocker ~~Clint Daymon~~

Composite Type: None Signature J. Crocker

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1		0	0		500	ml	

These Samples were collected using LANL ER SOP 06.10

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-96-0509

Weather See col. 0100-96-0512

Sample Description See Col log 0100-96-0512

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	NA	%LEL	
	0 to 0	Field Rad (alpha)	NA	cpm	
	0 to 0	Field Rad (beta/gam)	NA	cpm	
	0 to 0	Oxygen	NA	%	
	0 to 0	PID	NA	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

-NA-

Comments:

SDMS TA-00-DB08A

Same material as 0100-96-0512 JC

orig. collected 9/17/96 JC 0947 hrs

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

EM Project Records

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-96-0593

Date 9/12/96 Time 1540 Sample Type Soil

Technical Area 00 Operable Unit 1071 Sample Location TA-00-18(a) Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No Name (Print) J. Crocker ~~Clint Daymon~~

Composite Type: None Signature J Crocker

Grabs:

Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1		0	0		500	ml	

These Samples were collected using LANL ER SOP 06.10

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-96-0509

Weather See 0100-96-~~0593~~ 0505 JC 12/18/96

Sample Description See 0100-96-0505

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
	0 to 0	CGI	NA	%LEL	
	0 to 0	Field Rad (alpha)	NA	cpm	
	0 to 0	Field Rad (beta/gam)	NA	cpm	
	0 to 0	Oxygen	NA	%	
	0 to 0	PID	NA	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

-NA-

Comments:

SDMS TA-00-DB08A

Same material 0100-96-505 collected on 9/12/96 @

Project No. 19588

Task No. AH588

File No. 5.3

Date Filed 1/29/97

Folder

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-97-0201

Date March 19, 1997 **Time** 1445 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-019 Central Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Jayne Jones

Composite Type: None **Signature**

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	00-05941	C-3	0	3	in	2	L	

These Samples were collected using LANL ER SOP 06.09

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-97-0128
02	METTAL	125 ml Polyethylene	Ice	1071-97-0128
03	PESTPCB	125 ml Glass	Ice	1071-97-0128
04	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-97-0129
05	SEMIN	125 ml Glass	Ice	1071-97-0128
06	VOAGCMSN	125 ml Septum Amber G	Ice	1071-97-0128

Weather Sunny clear; 55°F

Sample Description Wet fine to very coarse sand; dark brown

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
00-05941	0 to 3 in	Field Rad (alpha)	NDA	cpm	
00-05941	0 to 3 in	Field Rad (beta/gam)	178	cpm	
00-05941	0 to 3 in	PID	0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

1997-TA-00-DB03
Beneath corrugated pipe; eastern outfall pipe; north of pump house.

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-97-0202

Date March 19, 1997 **Time** 1540

Technical Area 00 **Operable Unit** 1071

QA/QC Type None

Composite: ○ Yes ◉ No

Composite Type: None

Grabs:

Sample Type Soil

Sample Location TA-00-019 Central Waste Water Treatment Plant

Name (Print) Jayne Jones

Signature

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	00-05942	C-4	0	4	in	2	L	

These Samples were collected using LANL ER SOP 06.09

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-97-0128
02	METTAL	125 ml Polyethylene	Ice	1071-97-0128
03	PESTPCB	125 ml Glass	Ice	1071-97-0128
04	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-97-0129
05	SEMIN	125 ml Glass	Ice	1071-97-0128
06	VOAGCMSN	125 ml Septum Amber G	Ice	1071-97-0128

Weather Sunny clear; 55°F

Sample Description Wet fine to very coarse sand;dark brown

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
00-05942	0 to 4 in	Field Rad (alpha)	NA	cpm	sample too wet
00-05942	0 to 4 in	Field Rad (beta/gam)	185	cpm	
00-05942	0 to 4 in	PID	0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

1997-TA-00-DB03

15 to 20 feet downslope from corrugated outfall pipe in rock crevice.

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-97-0203

Date March 19, 1997 **Time** 1608 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-019 Central Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Jayne Jones

Composite Type: None **Signature**

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	00-05943	C-5	0	0	NA	2	L	

These Samples were collected using LANL ER SOP 06.09

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-97-0128
02	METTAL	125 ml Polyethylene	Ice	1071-97-0128
03	PESTPCB	125 ml Glass	Ice	1071-97-0128
04	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-97-0129
05	SEMIN	125 ml Glass	Ice	1071-97-0128
06	VOAGCMSN	125 ml Septum Amber G	Ice	1071-97-0128

Weather Sunny clear; 55°F

Sample Description Very fine to medium sand with trace of very coarse gravel; medium brown.

Field Screening

Loc ID	Depth		Screening Method	Result	Units	Comments
00-05943	0 to	0 NA	Field Rad (alpha)	NDA	cpm	
00-05943	0 to	0 NA	Field Rad (beta/gam)	215	cpm	
00-05943	0 to	0 NA	PID	0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

1997-TA-00-DB03
Inside 8 inch VCP pipe; west outfall pipe.

Los Alamos National Laboratory Environmental Restoration Program

SAMPLE COLLECTION LOG FOR SAMPLE ID 0100-97-0204

Date March 19, 1997 **Time** 1618 **Sample Type** Soil

Technical Area 00 **Operable Unit** 1071 **Sample Location** TA-00-019 Central Waste Water Treatment Plant

QA/QC Type None

Composite: ○ Yes ◉ No **Name (Print)** Jayne Jones

Composite Type: None **Signature**

Grabs:

	Location ID	Stake ID	Start Depth	End Depth	Units	Vol	Units	Comments
1	00-05944	C-6	3	8	in	2	L	

These Samples were collected using LANL ER SOP 06.09

ID	Analysis	Container	Preservative	C of C Control No.
01	GSCAN	500 ml Polyethylene	Ice	1071-97-0128
02	METTAL	125 ml Polyethylene	Ice	1071-97-0128
03	PESTPCB	125 ml Glass	Ice	1071-97-0128
04	RVGROSSAB+RVGROSSG+RVH2O+RVH3	Resealable Poly Bag	Ice	1071-97-0129
05	SEMIN	125 ml Glass	Ice	1071-97-0128
06	VOAGCMSN	125 ml Septum Amber G	Ice	1071-97-0128

Weather Sunny clear; 55°F

Sample Description Very fine to medium silty sand; dark brown

Field Screening

Loc ID	Depth	Screening Method	Result	Units	Comments
00-05944	3 to 8 in	Field Rad (alpha)	NDA	cpm	
00-05944	3 to 8 in	Field Rad (beta/gam)	245	cpm	
00-05944	3 to 8 in	PID	0	ppm	

Photo (Roll, Frame, Azimuth, Subject, Participants):

NA

Comments:

1997-TA-00-DB03

15 feet downslope from the end of the VCP pipe in the drainage channel.

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/12/96	**LANL Destination**	SMO	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	10/12/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Relinquished by: John Crocker **(Signature):** Crocker **Affiliation:** ERM/Golder	**Date:** 9/12/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: **(Signature):** Adrianna Sparks **Affiliation:** SMO	**Time:** 11:07	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances):
Radiological___ **Highly Toxic**___
Flammable___ **Skin Irritant**___ **Non-Hazard**___ **Other**___

SCREENING METHOD: Rad Van/Chem Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0501	03	09/12/96 1342	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0501	04	09/12/96 1342	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0501	06	09/12/96 1342	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0501	07	09/12/96 1342	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0502	03	09/12/96 1400	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0502	04	09/12/96 1400	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0502	06	09/12/96 1400	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0502	07	09/12/96 1400	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0503	03	09/12/96 1430	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0503	04	09/12/96 1430	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0503	06	09/12/96 1430	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0503	07	09/12/96 1430	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0504	03	09/12/96 1530	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0504	04	09/12/96 1530	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-05[illegible]	06	09/12/96 1530	125 ml Glass	Soil	Ice	SEMIN	

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/12/96	**LANL Destination**	SMO	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	10/12/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0504	07	09/12/96 1530	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0505	03	09/12/96 1540	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0505	04	09/12/96 1540	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0505	06	09/12/96 1540	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0505	07	09/12/96 1540	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0506	03	09/12/96 1555	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0506	04	09/12/96 1555	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0506	06	09/12/96 1555	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0506	07	09/12/96 1555	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0528	01	09/12/96 1430	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0528	02	09/12/96 1430	125 ml Polyethylene	Soil	Ice	GROSSG	
0100-96-0528	03	09/12/96 1430	125 ml Polyethylene	Soil	Ice	GSCAN	

Project No. L9588
Task No. A1588
File No. 5.5
Date Filed 2/7/97

ERM/Golder
Project File Records

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)
CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/12/96	**LANL Destination**	Rad Van to Chem Van	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	10/12/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Relinquished by: John Crocker **(Signature):** [signature] **Affiliation:** ERM/Golder	**Date:** 9/12/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: Adrianna Jinks **(Signature):** [signature] **Affiliation:**	**Time:** 11:27	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances):
Radiological___ Highly Toxic___
Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van/Chem Van
SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
✓0100-96-0501	05	09/12/96 1342	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
✓0100-96-0502	05	09/12/96 1400	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
✓0100-96-0503	05	09/12/96 1430	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
✓0100-96-0504	05	09/12/96 1530	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
✓0100-96-0505	05	09/12/96 1540	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
✓0100-96-0506	05	09/12/96 1555	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	

Project No. 19588
Task No. A01588
File No. 5.5
Date Filed 2/7/96

ER Project Manager
Project [illegible]

Original - LA Destination Yellow - [illegible] Pink - FTL

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)
CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/17/96	**LANL Destination**	SMO	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	10/17/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Relinquished by: John Crocker **(Signature):** J Crocker **Affiliation:** ERM/Golder	**Date:** 9/18/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: **(Signature):** Jacqueline Drelles **Affiliation:**	**Time:** 10:20	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances):
Radiological___ **Highly Toxic**___
Flammable___ **Skin Irritant**___ **Non-Hazard**___ **Other**___

SCREENING METHOD: Rad Van/Chem Van
SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0530	01	09/17/96 1020	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0530	04	09/17/96 1020	125 ml Polyethylene	Soil	None	GSCAN	

Project No. 19588
Task No. A11588
File No. 5.5
Date Filed 2/7/97

ERM/Golder
Project File Records

Original LANL Destination Yellow: RPF

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/16/96	LANL Destination	SMO	Turnaround	30 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	10/16/96
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Relinquished by: John Crocker (Signature): John Crocker Affiliation: ERM/Golder	Date: 11/1/96	Relinquished by: (Signature): Affiliation:	Date:	Relinquished by: (Signature): Affiliation:	Date:
Received by: (Signature): Affiliation:	Time: 1105	Received by: (Signature): Affiliation:	Time:	Received by: (Signature): Affiliation:	Time:

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances):
Radiological___ Highly Toxic___
Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van/Chem Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0507	02	09/16/96 1430	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0507	03	09/16/96 1430	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0507	05	09/16/96 1430	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0507	06	09/16/96 1430	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0508	02	09/16/96 1455	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0508	03	09/16/96 1455	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0508	05	09/16/96 1455	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0508	06	09/16/96 1455	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0509	02	09/16/96 1520	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0509	03	09/16/96 1520	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0509	05	09/16/96 1520	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0509	06	09/16/96 1520	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0510	02	09/16/96 1545	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0510	03	09/16/96 1545	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-051[illegible]	05	09/16/96 1545	125 ml Glass	Soil	Ice	SEMIN	

Project No. 19588
Task No. A61588
File No. 5.5
Date Filed 2/7/97 c

ERM/Golder
Project File Records

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/16/96	LANL Destination	SMO	Turnaround	30 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	10/16/96
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0510	06	09/16/96 1545	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0511	02	09/16/96 1605	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0511	03	09/16/96 1605	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0511	05	09/16/96 1605	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0511	06	09/16/96 1605	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0512	02	09/17/96 0947	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0512	03	09/17/96 0947	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0512	05	09/17/96 0947	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0512	06	09/17/96 0947	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0513	02	09/17/96 1020	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0513	03	09/17/96 1020	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0513	05	09/17/96 1020	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0513	06	09/17/96 1020	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
0100-96-0514	02	09/17/96 1030	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0514	03	09/17/96 1030	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0514	05	09/17/96 1030	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0514	06	09/17/96 1030	125 ml Polyethylene	Soil	Ice	VOAGCMSN	
~~0100-96-0529~~	~~01~~	~~09/17/96 1020~~	~~125 ml Polyethylene~~	~~Soil~~	~~Ice~~	~~GROSSAB~~ JC 9/17/96	
~~0100-96-0529~~	~~02~~	~~09/17/96 1020~~	~~125 ml Polyethylene~~	~~Soil~~	~~None~~	~~GSCAN~~ JC 9/17/96	

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/16/96	**LANL Destination**	Rad Van to Chem Van	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	10/16/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Relinquished by: John Crocker **(Signature):** **Affiliation:** ERM/Golder	**Date:** 9/16/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: **(Signature):** **Affiliation:**	**Time:** 1400	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances):
Radiological___ Highly Toxic___
Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van/Chem Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0507	04	09/16/96 1430	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0507	07	09/16/96 1430	Resealable Poly Bag	Soil	None	RVGSCAN	
0100-96-0508	04	09/16/96 1455	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0508	07	09/16/96 1455	Resealable Poly Bag	Soil	None	RVGSCAN	
0100-96-0509	04	09/16/96 1520	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0509	07	09/16/96 1520	Resealable Poly Bag	Soil	None	RVGSCAN	
0100-96-0510	04	09/16/96 1545	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0510	07	09/16/96 1545	Resealable Poly Bag	Soil	None	RVGSCAN	
0100-96-0511	04	09/16/96 1605	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0511	07	09/16/96 1605	Resealable Poly Bag	Soil	None	RVGSCAN	
0100-96-0512	04	09/17/96 0947	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0512	07	09/17/96 0947	Resealable Poly Bag	Soil	None	RVGSCAN	
0100-96-0513	04	09/17/96 1020	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0513	07	09/17/96 1020	Resealable Poly Bag	Soil	None	RVGSCAN	
0100-96-051[illegible]	04	09/17/96 1030	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	09/16/96	**LANL Destination**	Rad Van to Chem Van	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	10/16/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0514	07	09/17/96 1030	Resealable Poly Bag	Soil	None	RVGSCAN	

Project No. 19588
Task No. AH588
File No. 5.5
Date Filed 2/10/97

ERM/Golder
Project File Records

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	10/23/96	**LANL Destination**	SMO	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	11/22/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Relinquished by: John Crocker **(Signature):** **Affiliation:** ERM/Golder	**Date:** 10/25/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: **(Signature):** **Affiliation:** 5110	**Time:** 3:25	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances): Radiological___ Highly Toxic___ Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0561	01	10/22/96 1355	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0561	03	10/22/96 1355	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0561	04	10/22/96 1355	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0561	05	10/22/96 1355	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0561	06	10/22/96 1355	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0561	09	10/22/96 1355	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0561	10	10/22/96 1355	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0562	01	10/22/96 1355	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0562	03	10/22/96 1355	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0562	04	10/22/96 1355	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0562	05	10/22/96 1355	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0562	06	10/22/96 1355	125 ml Glass	Soil	Ice	PESTPCB	

Original - LANL Destination Yellow - RPF Pink - Field Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	10/23/96	**LANL Destination**	SMO	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	11/22/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0562	09	10/22/96 1355	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0562	10	10/22/96 1355	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0563	01	10/22/96 1550	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0563	03	10/22/96 1550	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0563	04	10/22/96 1550	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0563	05	10/22/96 1550	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0563	06	10/22/96 1550	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0563	09	10/22/96 1550	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0563	10	10/22/96 1550	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0564	01	10/23/96 0917	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0564	03	10/23/96 0917	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0564	04	10/23/96 0917	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0564	05	10/23/96 0917	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0564	06	10/23/96 0917	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0564	09	10/23/96 0917	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0564	10	10/23/96 0917	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0565	01	10/23/96 1010	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0565	03	10/23/96 1010	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0565	04	10/23/96 1010	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0565	05	10/23/96 1010	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0565	06	10/23/96 1010	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0565	09	10/23/96 1010	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0565	10	10/23/96 1010	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0566	01	10/23/96 1155	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0566	04	10/23/96 1155	500 ml Polyethylene	Soil	Ice	H2O+H3	

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	10/23/96	LANL Destination	SMO	Turnaround	30 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	11/22/96
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0566	05	10/23/96 1155	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0566	06	10/23/96 1155	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0566	09	10/23/96 1155	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0566	10	10/23/96 1155	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0566	11	10/23/96 1155	125 ml Polyethylene	Soil	None	GSCAN	

Project No. 19588
Task No. A-41588
File No. 5.5
Date Filed 2/7/97

ERM/Golder
Project File Records

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Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	10/25/96	LANL Destination	SMO	Turnaround	30 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	11/24/96
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Relinquished by: John Crocker (Signature): Affiliation: ERM/Golder	Date: / /	Relinquished by: (Signature): Affiliation:	Date:	Relinquished by: (Signature): Affiliation:	Date:
Received by: (Signature): Affiliation:	Time:	Received by: (Signature): Affiliation:	Time:	Received by: (Signature): Affiliation:	Time:

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances): Radiological___ Highly Toxic___ Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0523	01	10/25/96 1005	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0523	03	10/25/96 1005	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0523	04	10/25/96 1005	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0523	05	10/25/96 1005	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0523	06	10/25/96 1005	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0523	09	10/25/96 1005	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0523	10	10/25/96 1005	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0524	01	10/25/96 1105	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0524	03	10/25/96 1105	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0524	04	10/25/96 1105	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0524	05	10/25/96 1105	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0524	06	10/25/96 1105	125 ml Glass	Soil	Ice	PESTPCB	

Project No. 19588
Task No. A#588
File No. 5.5
Date Filed 2/7/97c
ERM/Golder Project File Records

Original - LANL Destination Yellow - RPF ~~Pink~~ FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)
CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area 00	**Send Lab Report to** Janet Newlin	**Field Unit Leader** Garry Allen	
Operable Unit 1071	E525	(505)667-3394	
Date 10/25/96	**LANL Destination** SMO	**Turnaround** 30 days	
OU Contact Rebecca Eaton	**LANL Contact** John Miglio	**Lab Report Required** 11/24/96	
Contact Phone No (505) 667-2813	**LANL Mail Stop**	**Charge Code** MA13B0900000	

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0524	09	10/25/96 1105	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0524	10	10/25/96 1105	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0525	01	10/25/96 1120	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0525	03	10/25/96 1120	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0525	04	10/25/96 1120	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0525	05	10/25/96 1120	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0525	06	10/25/96 1120	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0525	09	10/25/96 1120	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0525	10	10/25/96 1120	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	10/30/96	**LANL Destination**	SMO	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	11/29/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Relinquished by: Clint Daymon **(Signature):** **Affiliation:** ERM/Golder	**Date:** 10/31/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: Adrianna Smith **(Signature):** **Affiliation:** SMO	**Time:** 2:30	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances): **Radiological**___ **Highly Toxic**___ **Flammable**___ **Skin Irritant**___ **Non-Hazard**___ **Other**___

SCREENING METHOD: Rad Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0567	01	10/30/96 0952	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0567	03	10/30/96 0952	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0567	04	10/30/96 0952	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0567	05	10/30/96 0952	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0567	06	10/30/96 0952	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0567	09	10/30/96 0952	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0567	10	10/30/96 0952	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0568	01	10/30/96 1012	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0568	03	10/30/96 1012	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0568	04	10/30/96 1012	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0568	05	10/30/96 1012	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0568	06	10/30/96 1012	125 ml Glass	Soil	Ice	PESTPCB	

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	10/30/96	LANL Destination	SMO	Turnaround	30 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	11/29/96
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0568	09	10/30/96 1012	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0568	10	10/30/96 1012	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0569	01	10/30/96 1351	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0569	03	10/30/96 1351	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0569	04	10/30/96 1351	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0569	05	10/30/96 1351	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0569	06	10/30/96 1351	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0569	09	10/30/96 1351	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0569	10	10/30/96 1351	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-96-0570	01	10/30/96 1400	125 ml Polyethylene	Soil	Ice	GROSSAB	
0100-96-0570	03	10/30/96 1400	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0570	04	10/30/96 1400	500 ml Polyethylene	Soil	Ice	H2O+H3	
0100-96-0570	05	10/30/96 1400	125 ml Polyethylene	Soil	Ice	METTAL	
0100-96-0570	06	10/30/96 1400	125 ml Glass	Soil	Ice	PESTPCB	
0100-96-0570	09	10/30/96 1400	125 ml Glass	Soil	Ice	SEMIN	
0100-96-0570	10	10/30/96 1400	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	

Project No. 19588
Task No. A4588
File No. 5.5
Date Filed 2/7/97c

ERM/Golder
Project File Records

Original ANL Destination Yel RPF Pink Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)
CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area 00	**Send Lab Report to** Janet Newlin	**Field Unit Leader** Garry Allen
Operable Unit 1071	E525	(505)667-3394
Date 10/30/96	**LANL Destination** Rad Van	**Turnaround** 1 days
OU Contact Rebecca Eaton	**LANL Contact** John Miglio	**Lab Report Required** 10/31/96
Contact Phone No (505) 667-2813	**LANL Mail Stop**	**Charge Code** MA13B0900000

Relinquished by: Clint Daymon **(Signature):** [illegible] **Affiliation:** ERM/Golder	**Date:** 10/30/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: **(Signature):** [illegible] **Affiliation:** LANL	**Time:** 14:7	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances): **Radiological** ___ **Highly Toxic** ___ **Flammable** ___ **Skin Irritant** ___ **Non-Hazard** ___ **Other** ___

SCREENING METHOD: Rad Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0567	07	10/30/96 0952	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0567	08	10/30/96 0952	Resealable Poly Bag	Soil	Ice	RVGSCAN	
0100-96-0568	07	10/30/96 1012	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0568	08	10/30/96 1012	Resealable Poly Bag	Soil	Ice	RVGSCAN	
0100-96-0569	07	10/30/96 1351	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0569	08	10/30/96 1351	Resealable Poly Bag	Soil	Ice	RVGSCAN	
0100-96-0570	07	10/30/96 1400	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0570	08	10/30/96 1400	Resealable Poly Bag	Soil	Ice	RVGSCAN	
0100-96-666		10/30/96 1400		UCP	ice	RVGROSSAB+RVGROSSG	

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	**Send Lab Report to**	Janet Newlin	**Field Unit Leader**	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	11/04/96	**LANL Destination**	SMO	**Turnaround**	30 days
OU Contact	Rebecca Eaton	**LANL Contact**	John Miglio	**Lab Report Required**	12/04/96
Contact Phone No	(505) 667-2813	**LANL Mail Stop**		**Charge Code**	MA13B0900000

Relinquished by: Clint Daymon **(Signature):** Clint Daymon **Affiliation:** ERM/Golder	**Date:** 11/4/96	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: Antoinette Sparks **(Signature):** **Affiliation:**	**Time:** 1:20	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances):
Radiological___ **Highly Toxic**___
Flammable___ **Skin Irritant**___ **Non-Hazard**___ **Other**___

SCREENING METHOD: Rad Van/Chem Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)
0100-96-0572	01	11/04/96 1405	125 ml Polyethylene	Soil	Ice	GROSSAB
0100-96-0572	03	11/04/96 1405	500 ml Polyethylene	Soil	Ice	GSCAN
0100-96-0572	04	11/04/96 1405	500 ml Polyethylene	Soil	Ice	H2O+H3
0100-96-0572	05	11/04/96 1405	125 ml Polyethylene	Soil	Ice	METTAL
0100-96-0572	06	11/04/96 1405	125 ml Glass	Soil	Ice	PESTPCB
0100-96-0572	09	11/04/96 1405	125 ml Glass	Soil	Ice	SEMIN
0100-96-0572	10	11/04/96 1405	125 ml Septum Amber	Soil	Ice	VOAGCMSN

REMARKS (Conditions of receipt, etc.)

Project No. 19588
Task No. A4588
File No. 5.5
Date Filed 2/7/97

ERM/Golder
Project File Records

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	11/04/96	LANL Destination	Rad Van	Turnaround	30 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	12/04/96
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Relinquished by: Clint Daymon (Signature): Affiliation: ERM/Golder	Date: 11/4/96	Relinquished by: (Signature): Affiliation:	Date:	Relinquished by: (Signature): Affiliation:	Date:
Received by: (Signature): Affiliation: ESH-1/RP	Time: 1550	Received by: (Signature): Affiliation:	Time:	Received by: (Signature): Affiliation:	Time:

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances):
Radiological___ Highly Toxic___
Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van/Chem Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserva	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0572	07	11/04/96 1405	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-96-0572	08	11/04/96 1405	Resealable Poly Bag	Soil	Ice	RVGSCAN	

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area 00	**Send Lab Report to** Janet Newlin	**Field Unit Leader** Garry Allen
Operable Unit 1071	E525	(505)667-3394
Date 09/12/96	**LANL Destination** SMO	**Turnaround** 30 days
OU Contact Rebecca Eaton	**LANL Contact** John Miglio	**Lab Report Required** 10/12/96
Contact Phone No (505) 667-2813	**LANL Mail Stop**	**Charge Code** MA13B0900000

John Crocker

Relinquished by: ~~Clint Daymon~~ **(Signature):** **Affiliation:** ERM/Golder	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**	**Relinquished by:** **(Signature):** **Affiliation:**	**Date:**
Received by: **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**	**Received by:** **(Signature):** **Affiliation:**	**Time:**

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances): Radiological___ Highly Toxic___ Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van/Chem Van

SAMPLE DISPOSAL: Return to Client

Comments: Analyze For Gross alpha and Gross Beta (all samples).

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-96-0588	01	09/16/96 1430	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0589	01	09/16/96 1455	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0590	01	09/16/96 1520	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0591	01	09/16/96 1605	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0592	01	09/17/96 0947	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-96-0593	01	09/12/96 1540	500 ml Polyethylene	Soil	Ice	GSCAN	

Project No. 19588
Task No. AH588
File No. 55
Date Filed 2/10/97

ERM/Golder
Project File Records

Original - LANL Destination Yellow - RPF Pink - Field Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	03/19/97	LANL Destination	Rad Van	Turnaround	1 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	03/20/97
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Relinquished by: Clint Daymon (Signature): Clint Daymon Affiliation: ERM/Golder	Date: 3/19/97	Relinquished by: (Signature): Affiliation:	Date:	Relinquished by: (Signature): Affiliation:	Date:
Received by: (Signature): Affiliation: ESH-1	Time: 0845	Received by: (Signature): Affiliation:	Time:	Received by: (Signature): Affiliation:	Time:

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances): Radiological___ Highly Toxic___ Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-97-0201	04	03/19/97 1445	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-97-0202	04	03/19/97 1540	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-97-0203	04	03/19/97 1608	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	
0100-97-0204	04	03/19/97 1618	Resealable Poly Bag	Soil	Ice	RVGROSSAB+RVGROSSG+RVH2O+RVH3	

Original - LANL Destination Yellow - RPF Pink - FTL Copy

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	03/19/97	LANL Destination	SMO	Turnaround	15 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	04/03/97
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Relinquished by: Clint Daymon (Signature): Affiliation: ERM/Golder	Date: 3-20-97	Relinquished by: (Signature): Affiliation:	Date:	Relinquished by: (Signature): Affiliation:	Date:
Received by: (Signature): Affiliation:	Time: 7:30	Received by: (Signature): Affiliation:	Time:	Received by: (Signature): Affiliation:	Time:

POSSIBLE HAZARD IDENTIFICATION: (please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances): Radiological___ Highly Toxic___ Flammable___ Skin Irritant___ Non-Hazard___ Other___

SCREENING METHOD: Rad Van

SAMPLE DISPOSAL: Return to Client

Comments:

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-97-0201	01	03/19/97 1445	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-97-0201	02	03/19/97 1445	125 ml Polyethylene	Soil	Ice	METTAL	
0100-97-0201	03	03/19/97 1445	125 ml Glass	Soil	Ice	PESTPCB	
0100-97-0201	05	03/19/97 1445	125 ml Glass	Soil	Ice	SEMIN	
0100-97-0201	06	03/19/97 1445	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-97-0202	01	03/19/97 1540	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-97-0202	02	03/19/97 1540	125 ml Polyethylene	Soil	Ice	METTAL	
0100-97-0202	03	03/19/97 1540	125 ml Glass	Soil	Ice	PESTPCB	
0100-97-0202	05	03/19/97 1540	125 ml Glass	Soil	Ice	SEMIN	
0100-97-0202	06	03/19/97 1540	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-97-0203	01	03/19/97 1608	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-97-0203	02	03/19/97 1608	125 ml Polyethylene	Soil	Ice	METTAL	

Original - [illegible] Destination Yellow [illegible]F Pink - F[illegible] [illegible]opy

3 525

Los Alamos National Laboratory Environmental Restoration (Los Alamos, NM 87545)

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

Technical Area	00	Send Lab Report to	Janet Newlin	Field Unit Leader	Garry Allen
Operable Unit	1071		E525		(505)667-3394
Date	03/19/97	LANL Destination	SMO	Turnaround	15 days
OU Contact	Rebecca Eaton	LANL Contact	John Miglio	Lab Report Required	04/03/97
Contact Phone No	(505) 667-2813	LANL Mail Stop		Charge Code	MA13B0900000

Field Unique Sample #/ID	Cont ID	Date & Time Collected	Sample Container Volume/Material	Matrix	Preserv	ANALYSIS REQUESTED: (SMO Order Codes)	REMARKS (Conditions of receipt, etc.)
0100-97-0203	03	03/19/97 1608	125 ml Glass	Soil	Ice	PESTPCB	
0100-97-0203	05	03/19/97 1608	125 ml Glass	Soil	Ice	SEMIN	
0100-97-0203	06	03/19/97 1608	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	
0100-97-0204	01	03/19/97 1618	500 ml Polyethylene	Soil	Ice	GSCAN	
0100-97-0204	02	03/19/97 1618	125 ml Polyethylene	Soil	Ice	METTAL	
0100-97-0204	03	03/19/97 1618	125 ml Glass	Soil	Ice	PESTPCB	
0100-97-0204	05	03/19/97 1618	125 ml Glass	Soil	Ice	SEMIN	
0100-97-0204	06	03/19/97 1618	125 ml Septum Amber G	Soil	Ice	VOAGCMSN	

EXHIBIT D

PHOTOIONIZATION FIELD DATA FORMS

FU 01 PHOTOIONIZATION DETECTOR FIELD DATA FORM

TA 00 OU 1071 Site Work Plan SSHASP# ~~0101~~ 105 Page 1 of 1

Facility Code ~~Townsite Septic Tanks~~ WWTP Log Date 7/11/96

Location ID ~~Tank 0-030( )~~ Pueblo Plant Location Type Surface sample

Photoionization Detector Instrument: Field Rep Joe Louck

Manufacturer ~~FINU~~ Thermo Env. Model ~~DL-101~~ OVM

Serial No. ~~367069~~ 923693 Date/Time Calibrated 0700 / 7/11/96

CALIBRATION GASES:			
	Type/Cylinder No.		Concentration (PPM)/Span
1	Isobutylene	1	100 ppm
2		2	

Comments

Time (HH:MM)	Sample ID	Observed Reading (ppm) DH	HS	BZ	D	OT	Drilling Depth (ft)	Comments
1330	0.0'	0.0ppm					0.0	Drill auger hole
	1.0'	0.0		0.0			1.0	1.0' Sample 501
	2.2	0.0		0.0			2.0	2.0' Sample 502
1525	0.0	0.0		0.0				0.0

Project No. 19588

Task No. AH588

File No. 857

Date Filed 2/12/97

ERM/Golder Project File Records

LOCATION TYPES:
BH - Borehole
SS - Soil Sample
SL - Surface Location
SB - Sample Bottle
TP - Test Pit
WL - Well
OT - Other

OBSERVED READING:
DH - Downhole
HS - Headspace
D - During Drilling (BZ)
BZ - Breathing Zone
~~OT - Other~~

~~Raymond D. Wright~~ J. Crocker (Name) SSO (Title) J Crocker (Signature) 7/11/96 (Date)

ATTACHMENT 6

PHOTOIONIZATION DETECTOR FIELD DATA FORM

PHOTOIONIZATION DETECTOR FIELD DATA

FACILITY CODE _____ LOG DATE 9-13-96

LOCATION ID SWMU C-C(Sa) LOCATION TYPE _____

LOGGER CODE _____ FIELD REP _____

PHOTOIONIZATION DETECTOR INSTRUMENT: MODEL 580B OVM

MANUFACTURER Thermo ENV. DATE/TIME CALIBRATED 9-13 96 0700

SERIAL NO 484-54-281

CALIBRATION GASES:	
TYPE/CYLINDER ID NO.	CONCENTRATION (PPM)/SPAN
1 Span Gas (Isobut)	1 100ppm
2	2

COMMENTS _____

TIME (HH:MM)	SAMPLE ID	OBSERVED READING (ppm)					DRILLING DEPTH (FT)	COMMENTS
		DH	HS	BZ	D	OT		
0930	-NA-			0.0			0.0FT	BZ before Start.
0945	NA	0.0		0.0			0.5FT	
		0.0		0.0			0.7FT	Refusal.

Project No. 19588

Task No. A4588

File No. 8-8-7

Date Filed 2/12/97

LOCATION TYPES:
BH - BOREHOLE
SS - SOIL SAMPLE
SL - SURFACE LOCATION
SB - SAMPLE BOTTLE
TP - TEST PIT
WL - WELL
OT - OTHER

OBSERVED READING:
DH - DOWNHOLE
HS - HEADSPACE
D - DURING DRILLING (BZ)
BZ - BREATHING ZONE
OT - OTHER

CH2M/Golder Project File Records

J. Crocker JMcCrocker
FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

ATTACHMENT 6

PHOTOIONIZATION DETECTOR FIELD DATA FORM

PHOTOIONIZATION DETECTOR FIELD DATA

FACILITY CODE WWTP

LOG DATE 9/16/96

LOCATION ID Pueblo Canyon

LOCATION TYPE Pueblo Canyon Surf. Samp

LOGGER CODE

FIELD REP Ann Rundle

PHOTOIONIZATION DETECTOR INSTRUMENT:

MODEL 580B OVM

MANUFACTURER Thermo Env.

DATE/TIME CALIBRATED 0600 / 9/16/96

SERIAL NO 923643

CALIBRATION GASES:	
TYPE/CYLINDER ID NO.	CONCENTRATION (PPM)/SPAN
1 Isobut.	1 100 ppm
2	2

COMMENTS

TIME (HH:MM)	SAMPLE ID	OBSERVED READING (ppm)					DRILLING DEPTH (FT)	COMMENTS
		DH	HS	BZ	D	OT		
1400	NA	—	—	0.0	—	—	NA	Pre-Sampling

Project No. 19588

Task No. AH588

File No. 8.8.7

Date Filed 2/12/97

EFWC Older Records

LOCATION TYPES:
BH - BOREHOLE
SS - SOIL SAMPLE
SL - SURFACE LOCATION
SB - SAMPLE BOTTLE
TP - TEST PIT
WL - WELL
OT - OTHER

OBSERVED READING:
DH - DOWNHOLE
HS - HEADSPACE
D - DURING DRILLING
BZ - BREATHING ZONE
OT - OTHER

J. Crocker / J. Crocker

FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

FU 01P HOTOIONIZATION DETECTOR FIELD DATA FORM

TA OU 00 Site Work Plan 1071 Page 1 of 2

Facility Code -NA- Log Date 10/22/96

Location ID Bayo canyon 10 TP Location Type drill site

Photoionization Detector Instrument: Field Rep Ann Rundle

Manufacturer Thermo Environmental Model 580B OVM

Serial No. 48455-281 Date/Time Calibrated 0700 10/22/96

CALIBRATION GASES:	
Type/Cylinder No.	Concentration (PPM)/Span
1 Isobut.	1 100 ppm
2	2

Comments 100 ppm read after cal.

Time (HH:MM)	Sample ID	Observed Reading (ppm) DH	HS	BZ	D	OT (Core)	Drilling Depth (ft)	Comments
1045		–	–	0.0	–	–	–	rig start
1210				0.0	0.0	0.0	0-5'	cuttings
1240				0.0	0.0	0.0	5'-10'	"
1300				0.0	0.0	0.0	10'-15	"
1315				0.0	0.0	0.0	15-20	" & core
1320				0.0	0.0	0.0	20-25	"
1330				0.0	0.0	0.0	25-30	"
1345				0.0	0.0	0.0	30.35	"
1400				0.0	0.0	0.0	35-40	"
1500				0.0	0.0		40-45	"
1518				0.0	0.0	0.0	45-50	"
1610				0.0	0.0	0.0	50-55	"

LOCATION TYPES:
BH - Borehole
SS - Soil Sample
SL - Surface Location
SB - Sample Bottle
TP - Test Pit
WL - Well
OT - Other

OBSERVED READING:
DH - Downhole
HS - Headspace
D - During Drilling (BZ)
BZ - Breathing Zone
OT - Other

JOHN CROCKER SSO J Crocker
(Name) (Title) (Signature) (Date)

10/22/96

FU 01 PHOTOATION DETECTOR FIELD DATA FORM (Continued)

TA 00 OU 1071 Site Work Plan OU-1071 WWTPs RFI Page 2 of 2

Facility Code -NA Log Date 10/23/96

Location ID Bayo WTP Field Rep Ann Rundle

Time (HH:MM)	Sample ID	Observed Reading (ppm) DH	HS	BZ	D	OT (Core)	Drilling Depth (ft)	Comments
1645				0.0	0.0	0.0	55-60	"

Project No. 19588

Task No. A1588

File No. 8.8.7

Date Filed 2/12/97

EHM/Golder Project File Records

LOCATION TYPES:
BH - Borehole
SS - Soil Sample
SL - Surface Location
SB - Sample Bottle
TP - Test Pit
WL - Well
OT - Other

OBSERVED READING:
DH - Downhole
HS - Headspace
D - During Drilling (BZ)
BZ - Breathing Zone
OT - Other

JOHN CROCKER SSO 10/23/96

(Name) (Title) (Signature) (Date)

FU 01P PHOTOIONIZATION DETECTOR FIELD DATA FORM

TA OU 00 Site Work Plan 1071 Page 1 of 2

acility Code -NA- Log Date

Location ID Location Type drill site

Photoionization Detector Instrument: Field Rep Ann Rundle

Manufacturer Thermo Environmental Model 580B OVM

Serial No. 48455-281 Date/Time Calibrated 10/23/96

CALIBRATION GASES:	
Type/Cylinder No.	Concentration (PPM)/Span
1 Isobut.	1 100 ppm
2	2

Comments 100 ppm read,

Time (HH:MM)	Sample ID	Observed Reading (ppm)						Comments
		DH	HS	BZ	D	OT (Core)	Drilling Depth (ft)	
0845				0.0	0.0	0.0	0-10	drilling 30° hole
0910				0.0	0.0	0.0	10-15	"
0925				0.0	0.0	0.0	15-20	core 30° angle hole
0940				0.0	0.0	0.0	20-25	"
1020				0.0	0.0	0.0	25-30	"
1040				0.0	0.0	0.0	30-35	"
1115				0.0	0.0	0.0	35-40	"
1130				0.0	0.0	0.0	40-45	"
1205				0.0	0.0	0.0	45-50	"
1220				0.0	0.0	0.0	50-55	"
1240				0.0	0.0	0.0	55-60	"
1345				0.0	0.0	0.0	60-65	"

LOCATION TYPES:
BH - Borehole
SS - Soil Sample
SL - Surface Location
SB - Sample Bottle
TP - Test Pit
WL - Well
OT - Other

OBSERVED READING:
DH - Downhole
HS - Headspace
D - During Drilling (BZ)
BZ - Breathing Zone
OT - Other

JOHN CROCKER SSO 10/23/96

(Name) (Title) (Signature) (Date)

FU 01P HOTOATION DETECTOR FIELD DATA FORM (Continued)

TA 00 OU 1071 Site Work Plan OU-1071 WWTPs RFI Page 2 of 2

Facility Code -NA Log Date ___

Location ID _____ Field Rep Ann Rundle

Time (HH:MM)	Sample ID	Observed Reading (ppm)						Comments
		DH	HS	BZ	D	OT (Core)	Drilling Depth (ft)	
1415				0.0	0.0	0.0	65-70	

Project No. 19588
Task No. AH588
File No. 8.8.7
Date Filed 3/17/97
ERM/Golder Project File Records

LOCATION TYPES:
BH - Borehole
SS - Soil Sample
SL - Surface Location
SB - Sample Bottle
TP - Test Pit
WL - Well
OT - Other

OBSERVED READING:
DH - Downhole
HS - Headspace
D - During Drilling (BZ)
BZ - Breathing Zone
OT - Other

JOHN CROCKER SSO 10/12/96
(Name) (Title) (Signature) (Date)

FU 01P HOTOIONIZATION DETECTOR FIELD DATA FORM

TA OU 00 Site Work Plan 1071 Page 1 of 1

Facility Code -NA- Log Date 10/24/96

Location ID Waste Water Treatment Plants Location Type drill site

Photoionization Detector Instrument: Field Rep Ann Rundle

Manufacturer Thermo Environmental Model 580B OVM

Serial No. 48455-281 Date/Time Calibrated 0000 10/24/96

CALIBRATION GASES:	
Type/Cylinder No.	Concentration (PPM)/Span
1 Isobut.	1 100 ppm
2	2

Comments 100ppm read after cal. No drilling today.

Time (HH:MM)	Sample ID	Observed Reading (ppm) DH	HS	BZ	D	OT (Core)	Drilling Depth (ft)	Comments

Project No. 19588

Task No. AH588

File No. 8.8.7

Date Filed 2/12/97

EDM Coordinator

Project File Records

J Crocker 10-24-96

LOCATION TYPES:		OBSERVED READING:	
BH - Borehole	SB - Sample Bottle		D - During Drilling (BZ)
SS - Soil Sample	TP - Test Pit	DH - Downhole	BZ - Breathing Zone
SL - Surface Location	WL - Well	HS - Headspace	OT - Other
	OT - Other		

JOHN CROCKER SSO J Crocker 10/24/96

(Name) (Title) (Signature) (Date)

FU 01P HOTOIONIZATION DETECTOR FIELD DATA FORM

TA OU 00 Site Work Plan 1071 Page 1 of 1

Facility Code -NA- Log Date 10/25/96

Location ID Pueblo WMTP Sump C-015b Location Type drill site

Photoionization Detector Instrument: Field Rep Ann Rundle

Manufacturer Thermo Environmental Model 580B OVM

Serial No. 48455-281 Date/Time Calibrated 10/25/96 0630

CALIBRATION GASES:	
Type/Cylinder No.	Concentration (PPM)/Span
1 Isobut.	1 100 ppm
2	2

Comments 100ppm Measured for span gas. 10-25-96

Time (HH:MM)	Sample ID	Observed Reading (ppm) DH	HS	BZ	D	OT (Core)	Drilling Depth (ft)	Comments
0950		0.0	-	0.0	0.0	-	0-2.5	Pueblo Bed 1
1015		0.0	-	0.0	0.0	0.0	2.5-5.0	"
1100		0.0	-	0.0	0.0	—	0-2.5	Pueblo Bed
1115		0.0	-	0.0	0.0	0.0	2.5-7.5	cuttings/core
1120		-	—	0.0	0.0	0.0	7.5-10	
1125		0.0	-	0.0	0.0	0.0	10-12.5	
1135		-	-	0.0	—	-	-	BACKFILL

LOCATION TYPES:
BH - Borehole
SS - Soil Sample
SL - Surface Location
SB - Sample Bottle
TP - Test Pit
WL - Well
OT - Other

OBSERVED READING:
DH - Downhole
HS - Headspace
D - During Drilling (BZ)
BZ - Breathing Zone
OT - Other

JOHN CROCKER SSO 10/25/96
(Name) (Title) (Signature) (Date)

FU 01P Photoionization Detector Field Data Form

TA OU 00 Site Work Plan 1071 Page 1 of 1

Facility Code -NA- Log Date 10/30/96

Location ID Central WWTP SWMU 0-019 Location Type drill site. Central WWTP SWMU 0-019

Photoionization Detector Instrument: Field Rep Ann Rundle

Manufacturer Thermo Environmental Model 580B OVM

Serial No. 48455-281 Date/Time Calibrated 10/30/96 0700

CALIBRATION GASES:	
Type/Cylinder No.	Concentration (PPM)/Span
1 Isobut.	1 100 ppm
2	2

Comments

Time (HH:MM)	Sample ID	Observed Reading (ppm)						Comments
		DH	HS	BZ	D	OT (Core)	Drilling Depth (ft)	
0930		—	—	0.0	—	—	0	0-1
0940				0.0	0.0	0.0	0-2.5	0-2.5'
0950		—	—	0.0	0.0	0.0	2.5-5.0	
1000		—	—	0.0	0.0	0.0	5-7.5	
1010		—	—	0.0	0.0	0.0	7.5-10	
1020				0.0	0.0	0.0	10-12.5	
0-2	—	—	—	—	—	—	—	—
1155				0.0	0.0	0.0	0-2.5	Core/cuttings
1205				0.0	0.0	0.0	2.5-5.0	Hit clay pipe
1340				0.0	0.0	0.0	@5.0'	Re-start drilling
1400				0.0	0.0	0.0	5.0-7.5	
1412				0.0	0.0	0.0	7.5-10	

Location Types:
BH - Borehole
SS - Soil Sample
SL - Surface Location
SB - Sample Bottle
TP - Test Pit
WL - Well
OT - Other

Observed Reading:
DH - Downhole
HS - Headspace
D - During Drilling (BZ)
BZ - Breathing Zone
OT - Other

JOHN CROCKER SSO [signature] 10/30/96

(Name) (Title) (Signature) (Date)

ATTACHMENT 6

PHOTOIONIZATION DETECTOR FIELD DATA FORM

PHOTOIONIZATION DETECTOR FIELD DATA

FACILITY CODE WWTP (Central) LOG DATE 3/19/97

LOCATION ID N/A LOCATION TYPE Soil Samples

LOGGER CODE N/A FIELD REP Clint Dayman

PHOTOIONIZATION DETECTOR INSTRUMENT: MODEL 580 B

MANUFACTURER Thermo Environmental DATE/TIME CALIBRATED 3/19/97 1015

SERIAL NO 923692

CALIBRATION GASES:	
TYPE/CYLINDER ID NO.	CONCENTRATION (PPM)/SPAN
1 Isobutylene	1 100 ppm
2	2

COMMENTS Calibrated to 100 ppm

TIME (HH:MM)	SAMPLE ID	OBSERVED READING (ppm)					DRILLING DEPTH (FT)	COMMENTS
		DH	HS	BZ	D	OT		
1445	0201 ~~0204~~					0	Surface	
1540	0202					0	"	
1608	0203					0	"	
1618	0204					0	"	

Clint Dayman 3/19/97

LOCATION TYPES:
BH - BOREHOLE
SS - SOIL SAMPLE
SL - SURFACE LOCATION
SB - SAMPLE BOTTLE
TP - TEST PIT
WL - WELL
OT - OTHER

OBSERVED READING:
DH - DOWNHOLE
HS - HEADSPACE
D - DURING DRILLING (BZ)
BZ - BREATHING ZONE
OT - OTHER

Clint Dayman 3/19/97
FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

EXHIBIT E

COMBUSTIBLE GAS INDICATOR/OXYGEN MONITORING DATA FORMS

FU 01 Combustible Gas Indicator (CGI) Monitoring Data

TA 00 OU ~~1171~~ 1671 Site Work Plan ~~Townsite Septic Tanks~~ OU 1671 WWTP RFI Page 1 of 1

Facility Code ~~Tank #0-030( )~~ WWTP (Pueblo Plant) Log Date 9/16/96

Field Rep Joe Louck CGI Model No. MSA 361

CGI Manufacturer MSA Calibration Date/Time 0700 9/16/96

Serial No. Battery Condition Good

Location ID or Description	Coordinates (ft) North	Coordinates (ft) East	Monitoring Time (HH:MM)	Location Type	% Lower Explosive Limit	TOX PPM	% Oxygen
Bed 1 0.0	—	—	13:30	Pueblo	0.0	0.0	20.6
1.0			1350	"	0.0	0.0	20.6
2.2'			1405	"	0.0	0.0	20.7
Bed 2 0.0			1525	"	0.0	0.0	21.0
1.0			1555	"	0.0	0.0	20.8
P3							

Project No. 19588
Task No. AH588
File No. 6882
Date Filed 2/12/97c

Location Types: BH - Borehole SL - Surface Location TP - Test Pit WL- Well

Completed by ~~Raymond D. Wright~~ J. Crocker SSO J Crocker
(Print Name) (Title) (Signature)

FU 01 Combustible Gas Indicator (CGI) Monitoring Data

TA 0 OU 1071 Site Work Plan WWTPs AREA RFI Page 1 of 1

Facility Code -NA- Log Date 10/22/96

Field Rep Ann Rundle CGI Model No. MSA MODEL 361

CGI Manufacturer MSA Calibration Date/Time CPC / 10-22-96

Serial No. 923691 Battery Condition GOOD

Location ID or Description	Coordinates (ft) North	Coordinates (ft) East	Monitoring Time (HH:MM)	Location Type	% Lower Explosive Limit	H_2S PPM	% Oxygen
Pip start			1045	BH/SL	0.0	0.0	20.5
0-5			1200	BH	0.0	0.0	20.8
5-10			1241	"	0.0	0.0	20.8
10-15			1300	"	0.0	0.0	20.5
15-20			1315	"	0.0	0.0	20.5
20-25			1320	"	0.0	0.0	20.5
25-30			1330	"	0.0	0.0	20.5
30-35			1345	"	0.0	0.0	20.5
35-40			1400		0.0	0.0	20.5
40-45			1500	"	0.0	0.0	20.8
45-50			1515	"	0.0	0.0	20.8
50-55			1610	"	0.0	0.0	20.8
55-60			1620	"	0.0	0.0	20.8

Project No. 19588
Task No. AH588
File No. 8.8.2
Date Filed 2/12/97
EBI/Golder Project File Records

Location Types: BH - Borehole SL - Surface Location TP - Test Pit WL - Well

Completed by JOHN CROCKER (Print Name) SSO (Title) J Crocker (Signature)

FU 01 COMBUSTIBLE GAS INDICATOR (CGI) MONITORING DATA

TA 0 OU 1071 Site Work Plan WWTPs AREA RFI Page 1 of 1

acility Code -NA- Log Date 10/23/96

Field Rep Ann Rundle CGI Model No. MSA MODEL 361

CGI Manufacturer MSA Calibration Date/Time 10/23/96 0630

Serial No. 923691 Battery Condition GOOD

Location ID or Description	Coordinates (ft) North	Coordinates (ft) East	Monitoring Time (HH:MM)	Location Type	% Lower Explosive Limit	PPM	% Oxygen
Bkgd 0-10'				BH 20' Area/K	0.0	0.0	20.5
10-15				"	0.0	0.0	20.5
15-20				"	0.0	0.0	20.8
20-25				"	0.0	0.0	20.5
25-30			1020	"	0.0	0.0	20.8
30-35			1040	"	0.0	0.0	20.5
35-40			1115	"	0.0	0.0	20.8
40-45			1130	"	0.0	0.0	20.8
45-50			1205	"	0.0	0.0	20.8
50-55			1220	"	0.0	0.0	20.8
55-60			1240	"	0.0	0.0	20.8
60-65			1345	"	0.0	0.0	20.8
65-70			1415	"	0.0	0.0	20.8

Project No. 19588

Task No. AH588

File No. 882

Date Filed 2/12/97

ERM/Golder Project File Records

Location Types: BH - Borehole SL - Surface Location TP - Test Pit WL- Well

ompleted by JOHN CROCKER (Print Name) SSO (Title) (Signature)

FU 01 Combustible Gas Indicator (CGI) Monitoring Data

TA 0 OU 1071 Site Work Plan WWTPs AREA RFI Page 1 of 1

Facility Code -NA- Log Date

Field Rep Ann Rundle CGI Model No. MSA MODEL 361

CGI Manufacturer MSA Calibration Date/Time 0660 10/24/96

Serial No. 923691 Battery Condition GOOD

Location ID or Description	Coordinates (ft) North	Coordinates (ft) East	Monitoring Time (HH:MM)	Location Type	% Lower Explosive Limit	PPM	% Oxygen
No Drilling Today.							

Crocker 10-24-96

Project No. 14588
Task No. AH558
File No. 882
Date Filed 2/12/97c
ERM/Golder Project File Records

Location Types: BH - Borehole SL - Surface Location TP - Test Pit WL- Well

Completed by JOHN CROCKER (Print Name) SSO (Title) J Crocker (Signature)

FU 01 Combustible Gas Indicator (CGI) Monitoring Data

TA 0 OU 1071 Site Work Plan WWTPs AREA RFI Page 1 of 1

Facility Code -NA- Log Date 11/25/96

Field Rep Ann Rundle CGI Model No. MSA MODEL 361

CGI Manufacturer MSA Calibration Date/Time 11/25/96 0630

Serial No. 923691 Battery Condition GOOD

Location ID or Description	Coordinates (ft) North	Coordinates (ft) East	Monitoring Time (HH:MM)	Location Type	% Lower Explosive Limit	H_2S PPM	% Oxygen
Bed 1 Trench			0950	Pit	0.0	0.0	20.8
"			1015	"	0.0	0.0	20.8
Bed 2 Trench			1100	"	0.0	0.0	20.8
"			1115	"	0.0	0.0	20.5
"			1130	"	0.0	0.0	20.8
"			1145	"	0.0	0.0	20.8
"			1135	"	0.0	0.0	20.8

Project No. 14588
Task No. A1588
File No. 8.8.2
Date Filed 3/27/97
ERM/Golder Project File Records

10-25-96

Location Types: BH - Borehole SL - Surface Location TP - Test Pit WL- Well

Completed by JOHN CROCKER (Print Name) SSO (Title) (Signature)

FU 01 Combustible Gas Indicator (CGI) Monitoring Data

TA 0 OU 1071 Site Work Plan WWTPs RFI Page 1 of 1

Facility Code -NA-

Log Date 10/31/96

Field Rep Ann Rundle

CGI Model No. MSA MODEL 361

CGI Manufacturer MSA

Calibration Date/Time 10/31/96 0715

Serial No. 923691

Battery Condition GOOD

Location ID or Description	Coordinates (ft) North	Coordinates (ft) East	Monitoring Time (HH:MM)	Location Type	% Lower Explosive Limit	PPM	% Oxygen
A-1				BH	0.0	—	20.5
0-2.5				~~Core~~ BH	0.0	—	20.5
2.5-5.0				"	0.0	—	20.8
5.0-7.5				"	0.0	—	20.8
7.5-10				"	0.0	—	20.8
10-12.5				"	0.0	—	20.8
C-2	—	—	—	—	—	—	—
0-2.5	—	—	1155	—	0.0	—	20.5
2.5-5.0			1205	"	0.0	—	20.5
5.0-7.5	—	—	1400	"	0.0	—	20.8
7.5-10	—	—	1412	"	0.0	—	20.8

Project No. 14588
Task No. A 14588
File No. 8.8.2
Date Filed 2/12/97
ERM/Golder Project File Records

Location Types: BH - Borehole SL - Surface Location TP - Test Pit WL- Well

Completed by JOHN CROCKER (Print Name) SSO (Title) (Signature)

EXHIBIT F

BOREHOLE SAMPLE LOGS

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY

CORE SAMPLE LOG

Borehole ID BAYO-1 TA/ 0-019 Drill Depth From 0 To 24 Page 1 of 3

Driller S. JOHNSON (STEWART DRIL) Box #(s) n/a Start Date/Time 10-22-96/1150 End Date/Time 10-22-96/1622

Drilling Equip./Method CME 750/HOLLOW STEM AUGER Sampling Equip./Method 3" STAINLESS STEEL CORE BARREL

Depth (feet)	Recovery (feet per feet / %)	Field Anaytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
0'					MODERATE YELLOWISH BROWN F.-C. SAND, LITTLE GRAVEL (TO 1"), SLIGHTLY MOIST.			1130 SET UP 11.5 FT. SW OF SW CORNER OF BED #1. ANGLE IS 44° OFF VERTICAL
2								1150 BEGIN DRILLING WITH CENTER BIT.
4								1255 DRILLED TO 15.5 FT. (DEPTH = LONG. DISTANCE = 12.5 FT.) SWITCHING TO CORE BARREL
6								
8								
10								
12								
14								
16								
18					18.0 - 28.5 MODERATE YELLOWISH BROWN SAND, WELL ~~GRADED~~ SORTED, SLIGHTLY MOIST. TRACE GRAVEL			1307 BEGIN CORE RUN 1311 - RUN #1 CORE PULLED OFF POOR RECOVERY
20	2.5/15.0							
22								
24								

Prepared by R. Bleigan Date 10/22/96 Checked By _____ Date _____

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY

CORE SAMPLE LOG

Borehole ID BAYO-1 TA/ 0-019 Drill Depth From 24 To 48 Page 2 of 3

Driller S. Johnson Box #(s) n/a Start Date/Time 10-22-96/1150 End Date/Time 10-22-96/1622

Drilling Equip./Method CME 750/Hollow-Stem Auger Sampling Equip./Method 3" Stainless Steel Core Barrel

Depth (feet)	Recovery (feet per feet / %)	Field Analytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
24	2.0/5.0				23.0-25.0 SAME AS ABOVE			1520 - Run #2 Core packs off easily. Poor recovery.
25			BG - BKGD α - BKGD PID - 0.0					
26					25.0-28.0 No Recovery			
28					28.0-30.5 Moderate yellowish brown f.-c. SAND. Well graded. Slightly moist.			1338 - Run #3 Packed off. Poor recovery
27								
30	2.5/5.0		BG - BKGD α - BKGD PID - 0.0					
28								
32								
29					33.0-35.5 SAME AS ABOVE			1355 Run #4 Duplicate samples 0100-96-0561 & 0100-96-0562 Interval 33.0-35.5 Depth of sample is 25 ft. below center of bed.
34	2.5/5.0	0561 0562						
35			SAME		35.5-38 No Recovery			
36								
38					38.0-40.5 - SAME AS ABOVE			1403 - Run #5
39								
40	2.5/5.0		SAME		40.5-43.0 No Recovery			1415 - Crew taking break.
42								
					43.0-46.5 Moderate yellowish brown f.-c. SAND, grading to pale yellowish brown silty f. SAND. Slightly moist.			1446 - Resume drilling 1458 Run #6
44	3.5/5.0							
46								
48					46.5-48.0 No Recovery			

Prepared by R. Bleggan Date 10/22/96 Checked By _____ Date _____

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY

CORE SAMPLE LOG

Borehole ID BAYO-1 TA/ 0-019 Drill Depth From 48 To 60 Page 3 of 3

Driller S. JOHNSON Box #(s) n/a Start Date/Time 10-22-96/ End Date/Time 10-22-96/ 1622

Drilling Equip./Method CME 750/ HOLLOW STEM AUGER Sampling Equip./Method 3" STAINLESS STEEL CORE BARREL

Depth (feet)	Recovery (feet per feet / %)	Field Anaytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
48	2.7/5.0		BS - BKGD. CL - BKGD PID - 0.0	—	48.0 - 50.3 MODERATE YELLOWISH BROWN SILTY F. SAND. MOIST.			1527 - RUN # 7 BETWEEN 0.4 FEET DAMP. LIQUID SQUEEZES OUT WHEN TAPPED, POSSIBLE PERCHED ZONE
50				—	50.3 - 50.7 DARK YELLOWISH BROWN TO DARK GRAY F. SANDY SILT. DAMP.			
52					50.7 - 53 NO RECOVERY			
54	3.5/5.0			—	53.0 - 56.5 MODERATE YELLOWISH BROWN FINE SAND WITH OCCASIONAL BANDS OF F. GRAVEL AND/OR SILT. MOIST TO DAMP. OCCASIONAL OXIDIZED ZONES.			1550 - RUN #5 SAMPLE OVER 96-0563 INTERVAL 54.5-56.5
56				—	56.5 - 58 NO RECOVERY			
58				—	58.0 - 61.0 MODERATE YELLOWISH BROWN F.-C. SAND WITH OCCASIONAL GRAVEL STRINGERS, ANGULAR GRAVEL TO 1 INCH DIAMETER. DAMP TO WET.			1615 - RUN #6
60	3.0/5.0			—	61.0 - 63.0 NO RECOVERY			1622 BEGIN BACKFILLING SATURATED ZONE WITH BENTONITE.
62								
64				—	TD @ 63.0 FT. BGS ACTUAL DEPTH 44.5 FT BGS NEAR NORTH EDGE OF DRYING BED			

Prepared by R. Bleigh Date 10/22/96 Checked By _____ Date _____

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY | **CORE SAMPLE LOG**

Borehole ID BAYC-2 TA/ (OB18th) Drill Depth From 0 To 60 Page 1 of 2

Driller S. Johnson (Stewart Brothers) Box #(s) 1/9 Start Date/Time 10-23-96/0820 End Date/Time 10-23-96/1500

Drilling Equip./Method CME 75C / Hollow-Stem Auger Sampling Equip./Method 3" Stainless Steel Core Barrel

Depth (feet)	Recovery (feet per feet / %)	Field Analytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
0.0 0				—	0.0 to 15.0' Moderate yellowish brown F.-C. sand. Trace gravel. Little silt (based on cuttings)			1500 Begin Drilling. Drill with center bit to 15 ft. Drilling west to east at 30° angle.
5				—				
10				—				0900 Switching to core barrel at 15 ft.
15	2.0/5.0	0564	NDA	—	15.0'-17.0' Moderate yellowish brown F.-C. sand. Trace gravel. Little silt (<10%). Loose. Slightly moist. 17.0-20.0 No Recovery			0917 - Run #1 Sample C100-96-0564 Interval 16.0-17.0
20	1.9/5.0		NDA	—	20.0-21.9 Same as above. 21.9-25.0 No Recovery			0930 - Run #2
25	2.6/5.0		NDA	—	25.0-27.6 Same as above. 27.6-30.0 No Recovery			0945 - Run #3
30	2.6/5.0	0565	NDA	—	30.0-32.6 Moderate yellowish brown F. sand. Little silt. Trace F. gravel. Slightly moist changing to moist.			1010 - Run #4 Sample C101-96-0565 Interval 31.5-32.6
35	2.5/5.0		NDA	—	35.0-36.0 Same as above. 36.0-37.5 Dark yellowish brown to med. gray silty F. sand. Few silt stringers. Moist to wet.			1030 - Run #5 Wet at ~36 ft.
40	2.0/5.0		NDA	—	40.0-41.3 Dark yellowish brown Gr.-C. sand. Wet. 41.3-42.0 Dark yellowish brown silty F. sand. Wet. Single basalt cobble. 42.0-45.0 No Recovery			1100 - Run #6
45	0.5/5.0		NDA	—	45.0-46.0 ? 46.0-50.0 Cobbles			1115 Rig chatter and slow drilling at 46'. 1130 - Run #7 Core barrel packed off with cobble (basaltic). No recovery.
50	2.5/5.0	0566	NDA	—	50.0-51.5 Moderate yellowish brown gravelly F.-C. sand. Wet. 51.5-52.5 Medium gray gravelly sand. Few basaltic cobbles. Wet			1155 - Run #8 Sample C102-96-0566 Interval 51.5-52.5
55	2.7/5.0		NDA	—	55.0-57.7 Dark yellowish brown F.-C. sand. 10% F. gravel. Trace silt. Wet.			1230 Run #9
60								1245 Lunch Break

Prepared by R. Blagen Date 10/23/96 Checked By _____ Date _____

SAMPLE MANAGEMENT FACILITY

CORE SAMPLE LOG

Borehole ID BAYC-2 TA/ 01-018(6) Drill Depth From 60 To 66.5 Page 2 of 2

Driller S. JOHNSON Box #(s) n/a Start Date/Time 10-23-96/ End Date/Time 10-23-96/1500

Drilling Equip./Method CME 750 / HOLLOW STEM AUGER Sampling Equip./Method 3" STAINLESS STEEL CORE BARREL

Depth (feet)	Recovery (feet per feet / %)	Field Anaytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
0.0								
60	3.0/5C		NDA	—	60.0 - 63.0 DARK YELLOWISH BROWN F.-C. SAND, SUBANGULAR TO ROUNDED, 10-15% FINE GRAVEL, TRACE FINES. DAMP.			1322 - RESUME DRILLING 1334 RUN #10
					63.0 - 65.0 NO RECOVERY			1400 - HIT SOMETHING HARD AT 66.5 FT.
65	1.5/1.5				65.0 - 66.5 SAME AS ABOVE			1416 RETRIEVED CORE AFTER 1.5 FT. RUN. (RUN #11)
				—	TD @ 66.5 FEET			1420 TRIPPING IN WITH CENTER BIT.
70				—				1420 DRILLER CUTS HAND, REFER TO FTL AND SSO NOTEBOOKS
75				—				~1500 RECEIVED APPROVAL TO TERMINATE DRILLING.
				—				TD @ 66.5 FT.
				—				
				—				
				—				
				—				
				—				
				—				
				—				

Prepared by R. Blegen Date 10/23/96 Checked By _____ Date _____

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY

CORE SAMPLE LOG

Borehole ID P-1 TA/ 0-018(a) Drill Depth From 0 To 9.5 Page 1 of 1

Driller S. Johnson (Stewart Bros.) Box #(s) n/a Start Date/Time 10-25-96/0945 End Date/Time 10-25-96/1010

Drilling Equip./Method CME 750/Hollow-Stem Auger Sampling Equip./Method 3" Stainless Steel Core Barrel

Depth (feet)	Recovery (feet per feet / %)	Field Analytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
0					0.0-0.5 Dark gray silty f. sand [dried sludge] (based on hand-augering 9/11/96)			0945 Begin Drilling
1					0.5-1.0 Moderate yellowish brown sand [filter media]			
2			NDA PID = 0.0 (off of cuttings)		1.0-4.0 Moderate yellowish brown c. gravel and cobbles. [filter media]			0952 Drilled to 4.5 ft. Switching to core barrel
3								
4					4.0-4.5 Tuff(?)			
5					4.5' to 7.5' Pinkish gray tuff. Moderately to strongly welded. Pumice to 10 mm throughout. Tuff is soft to approx. 5.8 ft., then firms up.			1005 Run #1 Sample 0100-96-0523 Interval 5.5'-6.5' (upper tuff)
6	3.0/5.0							
7								
8								
9								1010 - TD @ 9.5 ft. Begin pulling augers and backfilling hole.
10					TD @ 9.5 ft BGS			

Prepared by R. Blegen Date 10/25/96 Checked By _____ Date _____

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY | **CORE SAMPLE LOG**

Borehole ID P-2 TA/ 0-058(a) Drill Depth From 0 To 12.5 Page 1 of 1

Driller S. Johnson Box #(s) n/a Start Date/Time 10-25-96/1040 End Date/Time 10-25-96/1120

Drilling Equip./Method CME 750/Hollow Stem Auger Sampling Equip./Method 3" Stainless Steel Core Barrel

Depth (feet)	Recovery (feet per feet / %)	Field Anaytical Sample Number	Field Screening Results	Top/Bottom of Core In Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
0					0.0' 0.25' Dark brown silty f. sand [sludge]			1040 - Setting up rig. Drilling first 5' feet with center bit.
					0.25'-1.2' Sand [filter material] m.-c. sand			
1					1.2 - 5.0' Gravel [filter material] to 2"			1045 - Begin drilling.
					Based on hand-auger drilling			1048 - Switching to core barrel
2			N.D.A					1100 - Hit tuff at 5 ft. Changing swivel
3								
4								
5					5.0 [illegible] Dk. yellowish brown silty, sandy gravel (~~[illegible]~~) [illegible]			1105 - Run #1 2.5' Run
6	2.0/2.5		N.D.A		6.0-7.0 Dark pinkish gray tuff. Soft. Weathered. Slightly moist			Sample [illegible] 0524 Interval 6.0-7.0
7								
8					7.5-8.5 Pinkish gray tuff (ground up). Contains some fill material. Dry. No sample. Shoe contained strongly welded tuff fragment.			1110 - Run #2 Core barrel packed off. Poor recovery
9	1.0/2.5		N.D.A		8.5-10 No recovery			
10					10.0-11.0 Pinkish gray tuff. Strongly welded. Dry. Sanidine crystals (~2%). Pumice to 5mm common.			1120 - Run #3 Sample [illegible] 0525 Interval 10.0-11.0
11	1.0/2.5				11.0 to 12.5 No recovery			TD @ 12.5 ft.
12								
12.5								

Prepared by R. Blagen Date 10/25/96 Checked By _____ Date _____

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY | **CORE SAMPLE LOG**

Borehole ID C-1 (CENTRAL PLANT) TA/ 0-019 Drill Depth From 0 To 12.5 Page 1 of 1

Driller S. JOHNSON Box #(s) n/a Start Date/Time 10-30-96/0925 End Date/Time 10-30-96/1020

Drilling Equip./Method CME 750/HOLLOW STEM AUGER Sampling Equip./Method 3" STAINLESS STEEL CORE BARREL

Depth (feet)	Recovery (feet per feet / %)	Field Analytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
0	1.7/2.5		NDA	—	0.0 - 1.2 DARK YELLOWISH BROWN GRAVELLY SILTY SAND. MOIST (WET AT SURFACE). LOOSE. 1.2 - 1.7 DARK YELLOWISH BROWN F. GRAVELLY SAND. MOIST. LOOSE. 1.7 - 2.5 NO RECOVERY			0925 - Begin drilling. 0930 - Run #1 (SUBANGULAR TO SUBROUND GRAVEL 2"-3")
	1.1/2.5		NDA	—	2.5 - 3.0 DARK YELLOWISH BROWN F.-M. SAND LITTLE F. GRAVEL. SLIGHTLY MOIST. 3.0 - 3.6 PINKISH GRAY TUFF PUMICE TO 5mm COMMON. MODERATELY WELDED. DRY			0948 - Run #2 HIT TUFF AT 3 FEET (POSSIBLE BOULDER?)
5	2.5/2.5	0567	NDA	—	3.6 - 5.0 NO RECOVERY 5.0 - 7.5 PINKISH GRAY TO MEDIUM GRAY TUFF. MODERATELY WELDED. FEW PUMICE TO 5mm. DRY			0952 - Run #3 SAMPLE 0100-96-0567 INTERVAL 5.0-6.1
	2.5/2.5		NDA	—	7.5 - 9.0 SAME AS ABOVE 9.0 - 10.0 PINKISH GRAY TO REDDISH GRAY TUFF. POORLY WELDED. DRY			1000 - Run #4 LOST CORE (DROPPED) NEED ANOTHER RUN.
10	2.5/2.5		NDA	—	10.0 - 11.2 REDDISH GRAY TUFF. MODERATELY WELDED. DRY. FEW SANIDINE CRYSTALS 11.2 - 12.5 MEDIUM GRAY TUFF. POORLY TO MODERATELY WELDED. DRY. TRACE SANIDINE CRYSTALS			1012 - Run #5 SAMPLE 0100-96-0568 INTERVAL 11.9-12.5
				—	TD @ 12.5 FT. BGS.			1020 - TD BOREHOLE AT 12.5 FT B.G.S. BEGIN BACKFILLING. NO INDICATION OF POSSIBLE CONTAMINATION FOUND.
15				—				
				—				
				—				
20				—				
				—				
				—				
				—				

Prepared by R. BLEGEN Date 10/30/96 Checked By _____ Date _____

LOS ALAMOS NATIONAL LABORATORY ENVIRONMENTAL RESTORATION PROGRAM

SAMPLE MANAGEMENT FACILITY | **CORE SAMPLE LOG**

Borehole ID C-2 TA/ 0-019 (CENTRAL PLANT) Drill Depth From 0. To 10 Page 1 of 1

Driller S. JOHNSON Box #(s) n/a Start Date/Time 10-30-96/1148 End Date/Time 10-30-96/1411

Drilling Equip./Method CME 750 / HOLLOW STEM AUGER Sampling Equip./Method 3" STAINLESS STEEL CORE BARREL

Depth (feet)	Recovery (feet per feet / %)	Field Analytical Sample Number	Field Screening Results	Top/Bottom of Core in Box	Lithology-Petrology - Soil	Graphic Log	Lithologic Unit	Notes
0				—	0.0 - 0.6 Moderate yellowish brown gravelly f. SAND. Trace asphalt. Dry (FILL)			1148 - BEGIN DRILLING
1				—				1149 Run #1 CORE BARREL PACKED OFF - POOR RECOVERY
	0.6/2.5		NDA	—				
2								
3					2.5 - 3.2 GRAVEL AND CLAY PIPE FRAGMENTS (SEGREGATED PIPE FOR RADIAN SAMPLE)			1155 Run #2 RPO w/30/40 DRILLER REPORTS DRILLING THROUGH CLAY PIPE TAKING LUNCH/BREAK
	0.7/2.5		NDA	—	3.2 - 5.0 NO RECOVERY DRILLER ESTIMATES TOP OF PIPE AT ABOUT 4 FEET. TUFF FRAGMENTS IN BOTTOM OF SHOE			
4				—	[PIPE SAMPLE 0100-96-0571. PIPE FRAGMENTS UNCRUSHED.]	PIPE		1330 RESUME DRILLING AFTER COUNTY CONFIRMED PIPE ISN'T ACTIVE. RE-DRILLING TO 5 FEET TO REMOVE SLOUGH.
5					5.0 - 5.2 Moderate yellowish brown gravelly SAND (possible slough).			
		0569		—	5.2 - 7.5 Lt. gray TUFF. Poorly - to moderately welded. Dry			
6	2.5/2.5		NDA	—				1351 - Run #3 SAMPLE 0100-96-0569 Interval 5.3 - 8.6
7								
					7.5 - 10.0 Light Gray TUFF. Poorly to moderately welded. Dry			
8	2.5/2.5		NDA	—				1400 - Run #4 SAMPLE 0100-96-0570 INTERVAL 8.8 - 10.0
9		0570		—				
10					TD @ 10 FT. BGS			1411 NO INDICATION OF CONTAMINATION BEGIN BACKFILLING BOREHOLE.
				—				
11								
				—				
12								

Prepared by R. Blegen Date 10/30/96 Checked By _____ Date _____