RCRA CONTINGENCY PLAN
Implementation Report No. 93-002

RCRA CONTINGENCY PLAN
IMPLEMENTATION REPORT
ROCKY FLATS PLANT
EPA ID NUMBER CO7890010526

This report is made in compliance with the requirements of 6 CCR 1007-3, Parts 264.56 (j) and 265.56 (j) for a written report within 15 days of the implementation of the RCRA Contingency Plan. The requirements for this are given below and will be addressed in the order listed, excerpted from 6 CCR 1007-3, Parts 264.56 and 265.56:

"(j)...Within 15 days after the incident, he must submit a written report on the incident to the department. The report must include:

(1) Name, address, and telephone number of the owner or operator
(2) Name, address, and telephone number of the facility
(3) Date, time, and type of incident (fire, explosion)
(4) Name and quantity of material(s) involved
(5) The extent of injuries, if any
(6) An assessment of actual or potential hazards to human health and the environment, where this is applicable; and
(7) Estimated quantity and disposition of recovered material resulted from the incident."

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(1) Name, address and telephone number of the owner of the facility:

United States Department of Energy
Rocky Flats Plant
Post Office Box 928
Golden, Colorado 80402
(303) 966-2025

Facility Contact:
A. H. Pauole, Acting Manager

(2) Name, address and telephone number of the facility:

U.S. Department of Energy
Rock Flats Plant
Post Office Box 928
Golden, Colorado 80402
(303) 966-2025

(3) Date, time, and type of incident:

A. SUMMARY:

The RCRA Contingency Plan was implemented on March 9, 1993, due to a release of approximately 50 gallons of contaminated surface water collected from Walnut Creek as part of a treatability study for OU No. 2. Surface water is partially diverted from the creek bed and treated in a Chemical Precipitation/ Microfiltration/Granular Activated Carbon System to test the effectiveness of the treatment. The treated water is then returned to the creek.

The release occurred at 3:10 p.m. on Tuesday, March 9, 1993. An employee of Riedel Environmental Services discovered the release from an influent water line in response to an alarm signaling that a release had occurred. The line in question has secondary containment. The line was found to be leaking from a connection in the line when a retaining clamp failed under normal operating pressure. The surge in pressure in the secondary containment line caused a rupture at an elbow causing the release. Approximately 50 gallons was released before the pump was turned off. Corrective action was taken to limit the spread of the release and the wetted area was limited to approximately 150 ft^2.

Based on the results of previous analytical testing, F001 listed hazardous waste constituents have been detected in the water treated in the Chemical Precipitation/Microfiltration/Granular Activated Carbon System. The F001 listed contaminants that have been detected are carbon tetrachloride, trichloroethene and tetrachloroethene. Additionally, chromium and 1,2-dichloroethene which are RCRA-regulated hazardous wastes for the characteristic of toxicity have been detected in the influent water but not at levels that would make the water a characteristic hazardous waste. Other contaminants that have been tested for but not found are 1,1-dichloroethene, 1,1-dichloroethane, chloroform, acetone, methylene chloride, vinyl chloride, barium, cadmium, lead and mercury. This is based on 56 sampling events that took place from May 29, 1991, to February 13, 1992. The exact source of the contamination is unknown. The level of contamination is slightly above drinking water standards. Surface water that contains a listed hazardous waste must be managed as a hazardous waste when it is removed from the stream bed (the "contained in" rule); therefore, the feed to the Chemical Precipitation/ Microfiltration/Granular Activated Carbon System is managed as RCRA-regulated hazardous waste after it is removed from the stream.

The pipe connection was immediately repaired and the system was placed back into service. The released material was not directly recoverable because it soaked into the soil. Based on previous analytical results of the contaminated water, the immediate removal of the affected soil is not required because the contaminant concentrations in the soil should not pose an unacceptable risk to human health and the environment. This RCRA Contingency Plan will be included in the quarterly update of the Historical Release Report.

B. SYSTEM DESCRIPTION:

The system involved with this incident was originally installed in May 1991. The influent line is approximately 1800 feet from the inlet at the creek to the

primary tank system. The line has secondary containment and is equipped with alarms to signal a leak or release of material into the secondary containment system. The line leads into the system that consists of numerous tanks, filters and treatment columns. (See figure 1 for a diagram of the treatment system.) The leak detectors are visually inspected daily and were inspected at 2:00 p.m. on the day of the incident. The pipeline is a partial diversion system for the transfer of creek water to the treatment system. The pipeline is styrofoam insulated and has a heat trace for winter operation. This OU No. 2 treatment facility is a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) facility and is mandated by the Interagency Agreement (IAG). No Individual Hazardous Substance Site (IHSS) was involved in this incident.

The water in Walnut Creek is managed as a hazardous waste after the water is removed from its natural state (pumped from the stream). The EPA requires ground water and other media which contains listed hazardous waste be managed as hazardous waste when it is removed from the ground. This is known as the "contained-in" interpretation. The point of regulation has been designated at the inlet of the transfer piping system.

C. DESCRIPTION OF INCIDENT:

A release of water from an influent pipe system leading from Walnut Creek to the treatment system occurred due to a clamp failure in the primary line. The release occurred at 3:10 p.m. on Tuesday, March 9, 1993. An employee of Riedel Environmental Services discovered the release from an influent water line in response to an alarm signaling that a release had occurred. The line in question has secondary containment. The line was found to be leaking from a connection in the line when a retaining clamp failed under normal operating pressure. The surge in pressure in the secondary containment line caused a rupture at an elbow causing the release.

D. CORRECTIVE ACTION:

The pump was de-energized immediately after the leak was discovered. The contractor personnel took corrective action to use soil within the area of the release to construct a dike to minimize the spread of the release. The wetted area was limited to approximately 150 ft^2. The Rocky Flats Plant Shift Superintendent and the Department of Energy Shift Duty Office were notified and were at the scene prior to 5:00 p.m. The contractor personnel immediately began repairs on the pipe. The pipeline was repaired and the system was back in operation within 3 hours. During the repairs to the pipeline, the contractor personnel wore the proper protective clothing. The pump was re-energized and the system was returned to normal operation.

(4) EQUIPMENT STATUS:

The clamp that failed was replaced. The system was returned to normal operation within 3 hours. The daily inspections of the pipeline are continuing. Representatives from CDH and EPA, Region VIII were notified prior to resuming operations.

(5) NAME AND QUANTITY OF MATERIAL INVOLVED:

Approximately 50 gallons of influent water was released from the system. The water is collected from SW-59, SW-61 and SW-132 [most of which is surface runoff

from within the Protected Area (PA)]. The water is treated for removal of volatile organic and soluble metals. The water is sampled weekly for characterization. F001 listed hazardous waste constituents have been detected in trace amounts in the influent water. The most recent sample date from the time of the incident was conducted March 9 and 10, 1993. The F001 listed contaminants that have been detected are carbon tetrachloride, trichloroethene and tetrachloroethene. Additionally, chromium and 1,2-dichloroethene have been detected in the influent water but not at levels that would make the water a characteristic hazardous waste. Other contaminants that have been tested for but not found are 1,1-dichloroethene, 1,1-dichloroethane, chloroform, acetone, methylene chloride, vinyl chloride, barium, cadmium, lead and mercury. This is based on 56 sampling events that took place from May 29, 1991, to February 13, 1992 (refer to Tables 1 and 2). The series of samples was taken to determine the constituents that may be present in the water. The water is also sampled weekly on a continuing basis. The result of previous sampling are available in Table 1 and 2. The analytical results of the sample taken during the week of March 9, 1993, will be included in the Final Phase II Treatability Study Report. If the analytical results for the samples taken at the time of this incident are outside the normal range of analytical results, these results will be submitted to CDH and EPA, Region VIII upon completion of the analysis.

(6) EXTENT OF INJURIES:

There were no injuries.

(7) AN ASSESSMENT OF ACTUAL OR POTENTIAL THREAT TO HUMAN HEALTH AND ENVIRONMENT:

The released material was not directly recoverable because it soaked into the soil. Based on the analytical results, the immediate removal of the affected soil is not required because the contaminant concentrations in the soil do not pose an unacceptable risk to human health and the environment. This RCRA Contingency Plan will be included in the quarterly update of the Historical Release Report.

(8) ESTIMATE QUANTITY AND DISPOSITION OF RECOVERED MATERIAL THAT RESULTED FROM THE INCIDENT:

Approximately 50 gallons of contaminated surface water was released to the area west of the treatment system (see Figure 2). No immediate action was taken to recover this material. The tables reflect the findings of 56 samples taken from May 29, 1991, to February 13, 1992 (refer to Tables 1 and 2). The material was sampled for dissolved metals and volatile organic compounds to determine the types of constituents in the influent water. All dissolved metals are below the regulatory limit for toxicity under the RCRA regulations. F001 listed hazardous waste constituents that have been detected are carbon tetrachloride, tetrachloroethene and trichloroethene. These "F" listed constituents are also characteristic hazardous waste for the characteristic of toxicity. The highest observations of these constituents are below the regulatory limit for toxicity. Additionally, chromium and 1,2-dichloroethene which are also hazardous wastes for the characteristic of toxicity have been detected but not in amounts that are above the regulatory limit for a characteristic waste under the RCRA regulations. Due to the presence of F001 constituents in the influent water and due to the fact that the EPA requires surface water and other media which contains listed hazardous

waste must be managed as hazardous waste when it is removed from the ground (the "contained in" rule), the RCRA Contingency Plan was implemented.

TABLE 1
Baseline Data for Influent Dissolved and Total Metals (mg/L) *

Analyte	Highest Value Detected (mg/L)	CRDL (mg/L)	RCRA TCLP Regulatory Limit (mg/L)
Barium (D005)	Below Detection Limit	0.200	100.0
Cadmium (D006)	Below Detection Limit	0.005	1.0
Chromium (D007)	.015	0.010	5.0
Lead (D008)	Below Detection Limit	0.003	5.0
Mercury (D009)	Below Detection Limit	0.0	0.2

CRDL - Contract Required Detection Limit
TCLP - Toxicity Characteristic Leaching Procedure

TABLE 2
VOLATILE ORGANIC COMPOUNDS *

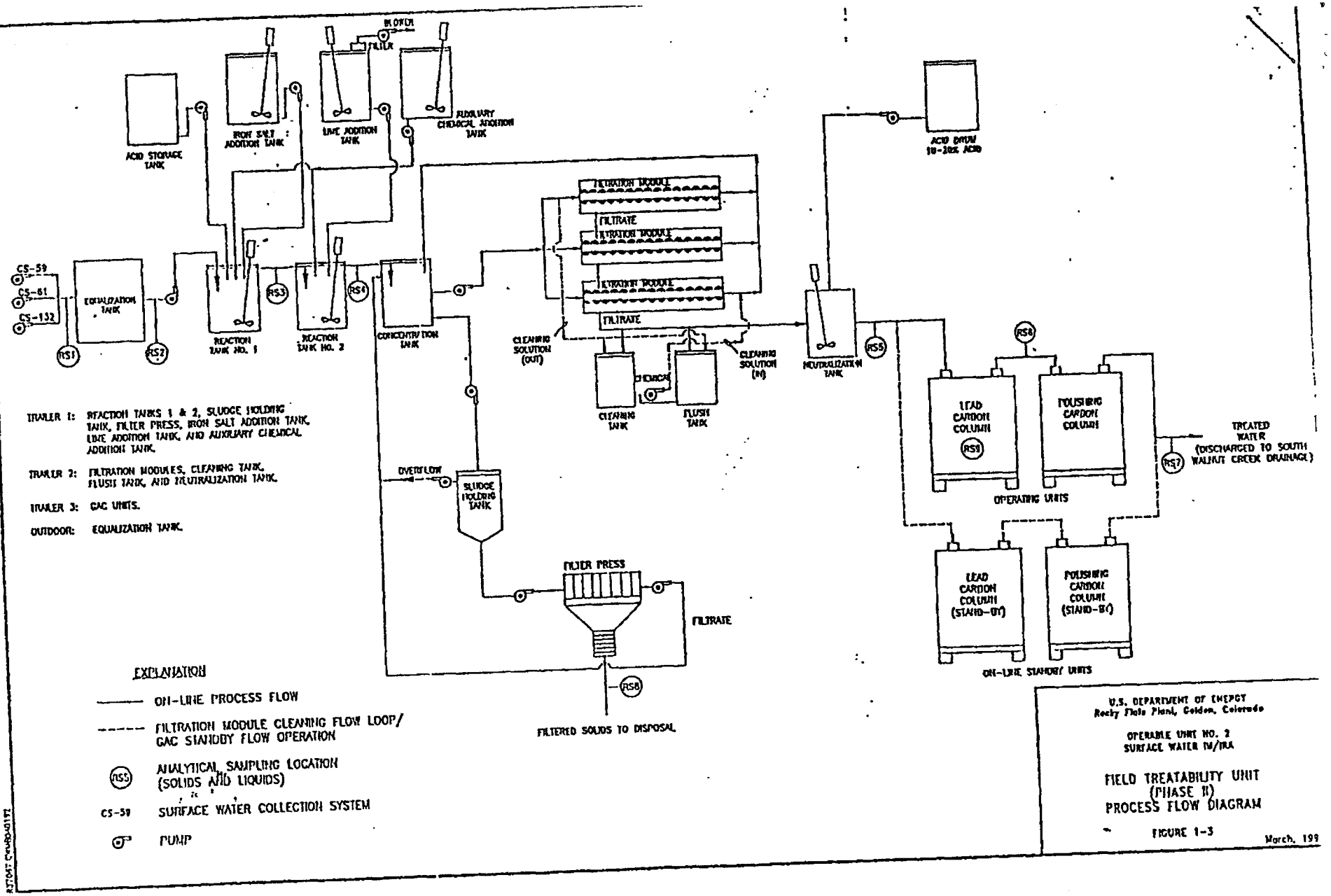
Analyte	Highest/Average Value Detected (mg/L)	SWDA MCLs (mg/L)	Regulatory Limit (mg/L)
Trichlorethene (F001) (D040)	0.011/0.006	0.005	0.05
1,2-Dichloroethene (D028)	0.043/0.016	0.005	0.50
Carbon tetrachloride (F001) (D019)	0.008/0.006	0.005	0.50
Tetrachloroethylene (F001) (D039)	0.020/0.005	0.005	0.70

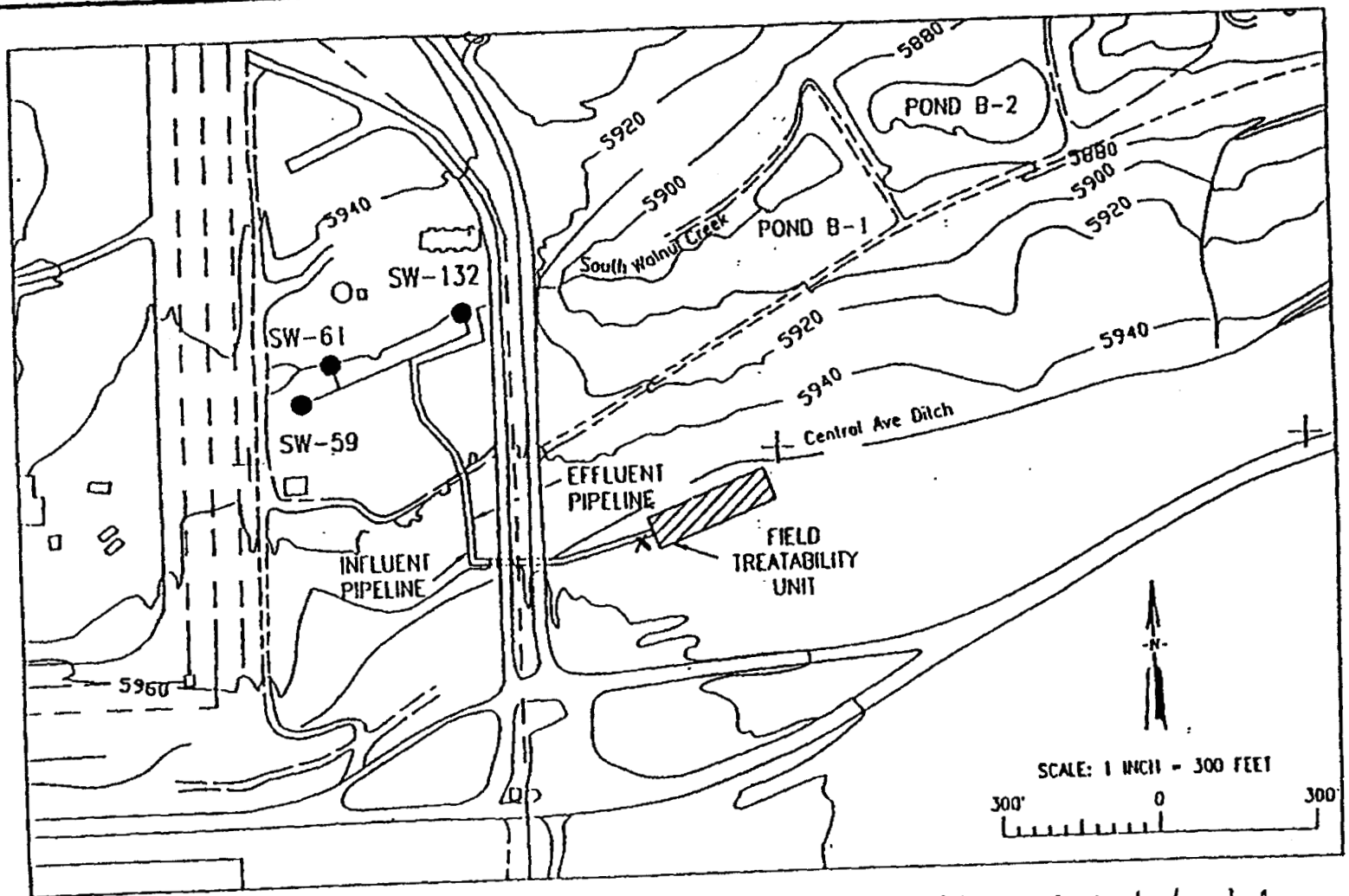
MCLs - Maximum Contaminant Levels

Volatile Organic Compounds Sampled for but not found:

1,1-Dichloroethane	(D029)
Chloroform	(D022)
Acetone	(F003)
Methylene Chloride	(F001)
Vinyl Chloride	(D043)

* (Based on 56 sample events from May 29, 1991, to February 13, 1992.)


ACID STORAGE TANK
IRON SALT ADDITION TANK
LIME ADDITION TANK
BLOWER
FILTER
AUXILIARY CHEMICAL ADDITION TANK
ACID DRUM 10-20% ACID
CS-59
CS-61
CS-132
EQUALIZATION TANK
RS1
RS2
REACTION TANK NO. 1
REACTION TANK NO. 2
RS3
RS4
CONCENTRATION TANK
FILTRATION MODULE
FILTRATE
FILTRATION MODULE
FILTRATION MODULE
FILTRATE
CLEANING SOLUTION (OUT)
CLEANING TANK
HEATER
FLUSH TANK
CLEANING SOLUTION (IN)
NEUTRALIZATION TANK
RS5
RS6
LEAD CARBON COLUMN
RS9
POLISHING CARBON COLUMN
OPERATING UNITS
RS7
TREATED WATER (DISCHARGED TO SOUTH WALNUT CREEK DRAINAGE)
OVERFLOW
SLUDGE HOLDING TANK
FILTER PRESS
FILTRATE
RS8
FILTERED SOLIDS TO DISPOSAL
LEAD CARBON COLUMN (STAND-BY)
POLISHING CARBON COLUMN (STAND-BY)
ON-LINE STANDBY UNITS
TRAILER 1: REACTION TANKS 1 & 2, SLUDGE HOLDING TANK, FILTER PRESS, IRON SALT ADDITION TANK, LIME ADDITION TANK, AND AUXILIARY CHEMICAL ADDITION TANK.
TRAILER 2: FILTRATION MODULES, CLEANING TANK, FLUSH TANK, AND NEUTRALIZATION TANK.
TRAILER 3: GAC UNITS.
OUTDOOR: EQUALIZATION TANK.
EXPLANATION
ON-LINE PROCESS FLOW
FILTRATION MODULE CLEANING FLOW LOOP/ GAC STANDBY FLOW OPERATION
ANALYTICAL SAMPLING LOCATION (SOLIDS AND LIQUIDS)
CS-59 SURFACE WATER COLLECTION SYSTEM
PUMP
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO. 2
SURFACE WATER IM/IRA
FIELD TREATABILITY UNIT (PHASE II)
PROCESS FLOW DIAGRAM
FIGURE 1-3
March, 199



X approx location of leak/spill

U.S. DEPARTMENT OF ENERGY Rocky Flats Plant Golden, Colorado	FIELD TREATABILITY UNIT PLOT PLAN SOUTH WALNUT CREEK BASIN	FIGURE 2.1-1