TABLE I

OU 2 IM/IRA
FIELD TREATABILITY UNIT CHARACTERIZATION DATA

TOTAL RADIONUCLIDES (1), pCi/L

COLLECTED INFLUENT AT SUMPS (RS-1)(2)

SAMPLE:	FT00395REU2*			FT00401REU2**			DETECTION LIMIT
GROSS ALPHA (3)	4.01	+/-	2.37	1.67	+/-	1.5	2
				3.81	+/-	2.2	
GROSS BETA (3)	7.56	+/-	5.05	6.22	+/-	9.44	4
				4.38	+/-	5.3	
Pu	0.00065	+/-	0.006	0.001	+/-	0.002	0.01
Am	0.004	+/-	0.005	0.0089	+/-	0.007	0.01
TOTAL URANIUM	5.37	+/-	1.69	5.71	+/-	1.59	0.6

EQUALIZATION TANK DISCHARGE (RS-2)

SAMPLE:	FT00396REU2*			FT00402REU2**			DETECTION LIMIT
GROSS ALPHA (3)	6.16	+/-	2.95	2.44	+/-	1.23	2
				2.91	+/-	1.71	
GROSS BETA (3)	3.34	+/-	3.94	4.23	+/-	2.08	4
				3.88	+/-	1.96	
Pu	0.00073	+/-	0.007	0.0049	+/-	0.0005	0.01
Am	0.0026	+/-	0.004	0.0055	+/-	0.006	0.01
TOTAL URANIUM	5.30	+/-	1.84	3.61	+/-	1.32	0.6
				3.64	+/-	1.35	

RRS SYSTEM EFFLUENT (RS-5)

SAMPLE:	FT00397REU2*			FT00403REU2**			DETECTION LIMIT
GROSS ALPHA(3)	0.28	+/-	0.01	3.22	+/-	1.9	2
				2.28	+/-	1.7	
GROSS BETA(3)	5.2	+/-	4.2	2.87	+/-	1.8	4
				5.67	+/-	16.1	
Pu	0.001	+/-	0.002	0.002	+/-	0.003	0.01
Am	0.008	+/-	0.007	0.002	+/-	0.003	0.01
TOTAL URANIUM	1.91	+/-	0.98	3.64	+/-	1.35	0.6
				3.25	+/-	1.17	

FINAL EFFLUENT (RS-7)

SAMPLE:	FT00399REU2*			FT00405REU2**			ARAR
GROSS ALPHA(3)	0.063	+/-	0.59	0.769	+/-	1.16	11
GROSS BETA(3)	3.08	+/-	5.58	8.48	+/-	6.04	19
Pu	0.004	+/-	0.004	0	+/-	0.003	0.05
Am	0.002	+/-	0.003	0.003	+/-	0.004	0.05
TOTAL URANIUM	0.034	+/-	0.27	0.15	+/-	0.353	10.0

VOCs OF CONCERN ABOVE DETECTION LIMITS OR ARARS METHOD 524.2, ug/L

COLLECTED INFLUENT IN SUMPS (RS-1)

SAMPLE	FT 00395*	FT00401 REU2**	DETECTION LIMIT
1,1 - Dichloroethane (1,1-DCA)	0.7	2	0.2
1,1 - Dichloroethene (1,1-DCE)	0.1J	2	0.3
1,2 - Dichloroethene (cis), (1,2-DCE)	11.2	32	0.2
Chloroform ($CHCl_3$)	2	8	0.1
Carbon Tetrachloride (CCl_4)	3	35	0.4
Tetrachloroethene	0.9	18	0.2
Trichloroethene (TCE)	2	28	0.2
Acetone	-	-	-
Methylene Chloride	0.2U	0.2U	0.2
Vinyl Chloride	0 .6	0.2U	0.2

INFLUENT TO GAC (RS-5)

SAMPLE	FT 00397 REU2*	FT 00403 REU2**	DETECTION LIMIT
1,1-DCA	0.2U	0.2U	0.2
1,1- DCE	0.3U	0.3U	0.3
1,2-DCE (Total)	6.2	2.2	0.2
$CHCl_3$	0.5	3	0.1
CCl_4	0.9	0.7	0.4
Tetrachloroethene	1	0.2U	0.2
TCE	2	0.1J	0.2
Acetone	-	-	-
Methylene Chloride	0.1	0.2U	0.2
Vinyl Chloride	0.2U	0.2U	0.2

FINAL EFFLUENT (RS-7)

SAMPLE	FT00 399 REU2*	FT00 405 REU2**	ARARs
1,1-DCA	0.2U	0.2U	-
1,1-DCE	0.3U	0.3U	-
1,2-DCE (TOTAL)	0.4U	0.4U	1U (TBC)
$CHCl_3$	0.3	0.1U	-
CCl_4	0.1J	0.4U	5U
Tetrachloroethylene	0.2U	0.2U	1U
TCE	0.2U	0.2U	5U(TBC)
Acetone	-	-	-
Methylene Chloride	0.2B	0.2U	-
Vinyl Chloride	0.2U	0.2U	-

TOTAL METALS ABOVE ARARs, ug/L -

COLLECTED INFLUENT IN SUMPS (RS-1)	FT00 395 REU2*	FT00 401 REU2**	ARARs
Strontium	502	---	382 (1)
EQUALIZATION TANK DISCHARGE (RS-2)	**FT00 396 REU2***	**FT00 402 REU2****	
Strontium	---	399	382(1)
RRS SYSTEM INFLUENT (RS-5)	**FT00 397 REU2***	**FT00 403 REU2****	
Strontium	---	---	382(1)
FINAL EFFLUENT (RS-9)	**FT00 399 REU2***	**FT00 405 REU2****	
Strontium	---	---	382(1)

(1) TREATMENT GOAL

SLUDGE (RS-9)**

	FT00406REU2			DETECTION LIMIT
GROSS ALPHA(3)	4.44	+/-	2.23	2
	3.43	+/-	1.82	2
GROSS BETA(3)	3.72	+/-	13.5	4
	2.63	+/-	1.79	4
Pu	0.013	+/-	0.008	0.01
Am	0.015	+/-	0.01	0.01
TOTAL URANIUM	3.12	+/-	1.17	0.6
	4.2	+/-	1.31	0.6

NOTES

(1) Latest two week period for which data is available for all analytes of concern: radionuclides, heavy metals and volatile organic compounds. Data are from RFEDS printout of 9/14/92 and are not validated.

(2) Sample points identified in Phase II, SAP, Figure 1-3.

(3) Dissolved analyte values.

* Sample Date 7/14/92

* * Sample Date 7/21/92

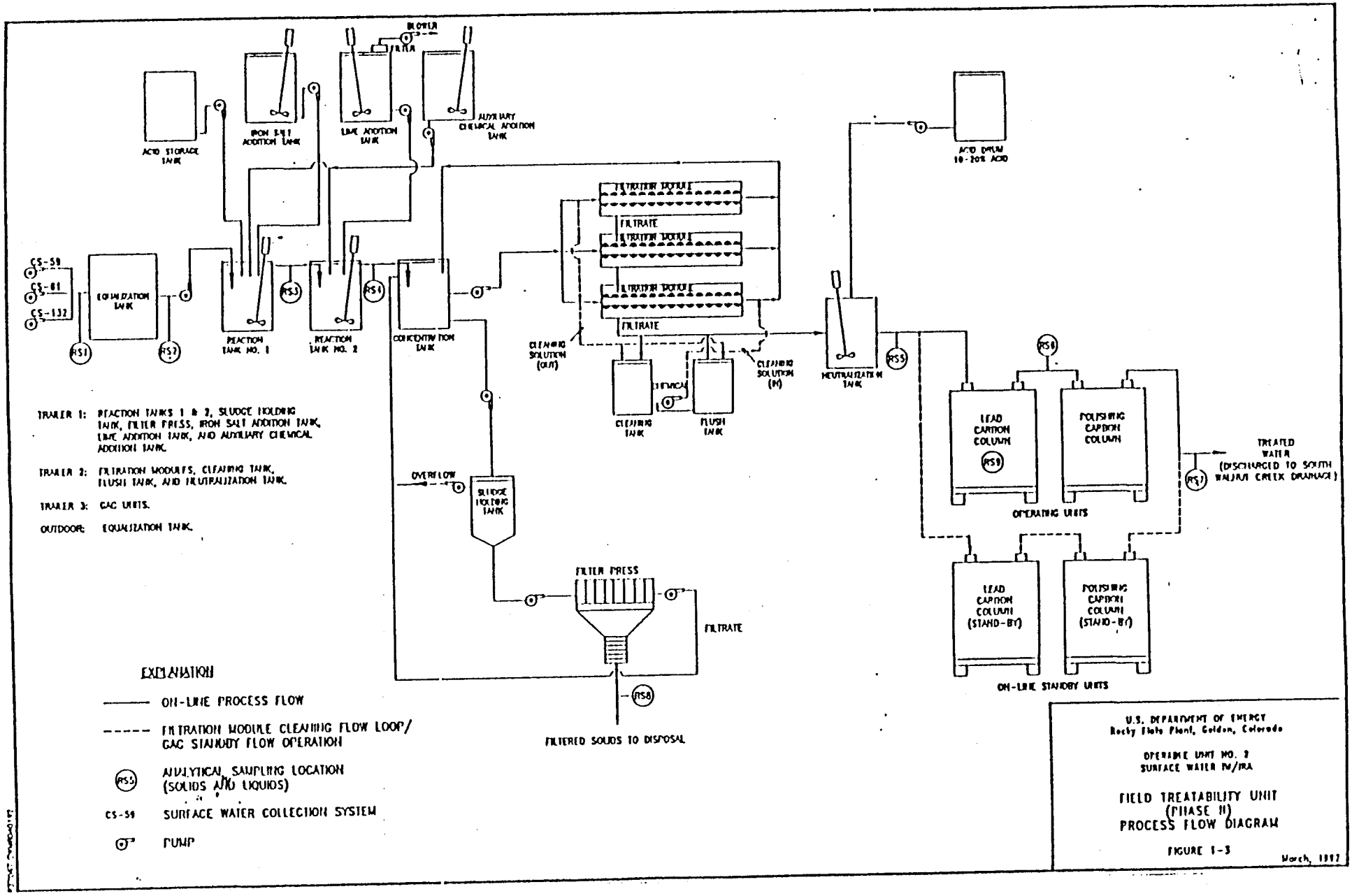
BLOWER
FILTER
ACID STORAGE TANK
IRON SALT ADDITION TANK
LIME ADDITION TANK
AUXILIARY CHEMICAL ADDITION TANK
ACID DRUM 10-20% ACID
CS-59
CS-81
CS-132
EQUALIZATION TANK
RS1
RS2
RS3
RS4
RS5
RS6
RS7
RS8
RS9
REACTION TANK NO. 1
REACTION TANK NO. 2
CONCENTRATION TANK
FILTRATION MODULE
FILTRATE
CLEANING SOLUTION (OUT)
CLEANING SOLUTION (IN)
CHEMICAL
CLEANING TANK
FLUSH TANK
NEUTRALIZATION TANK
LEAD CARBON COLUMN
POLISHING CARBON COLUMN
OPERATING UNITS
LEAD CARBON COLUMN (STAND-BY)
POLISHING CARBON COLUMN (STAND-BY)
ON-LINE STANDBY UNITS
TREATED WATER (DISCHARGED TO SOUTH WALNUT CREEK DRAINAGE)
OVERFLOW
SLUDGE HOLDING TANK
FILTER PRESS
FILTRATE
FILTERED SOLIDS TO DISPOSAL
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, 1992

TABLE 2

PHASE I, COLLECTION SYSTEM AND GAC TREATMENT

COST ESTIMATE

Foundation Pad	
EG&G Support (Includes design and inspection)	$ 5,000
Construction	30,000
Collection System, Storage Task, GAC	
EGG Support	30,000
Design	40,000
Equipment, delivery, fabrication	535,000
Transportation/setup/startup	5,000
Electrical	5,000
250 KW generator	30,000
Support Documentation	40,000
TOTAL	$720,000

PHASE II. CHEMICAL PRECIPITATION AND MICROFILTRATION SYSTEM

COST ESTIMATE

Foundation Pad	
EG&G Support (Includes design and inspection)	$ 5,000
Construction	50,000
CP/MS	
EGG Support	250,000
Design	50,000
Equipment, delivery, Fabrication	450,000
Transportation/setup/startup	5,000
Electrical	15,000
Support Documentation	100,000
Installation of SW/32	25,000
TOTAL	950,000
GRAND TOTAL (Phase I and II)	$1,670,000