

KAFB 90

ENTERED

SCHEDULE OF CHANGES

DRAFT

Contract Number: _____

Order Number: _____

Modification Number: 01

Contractor: USGS - Albuquerque NM

Date of Modification: 13 August 90

Pen-and-Ink Changes:

Paragraph Changes

DELETE

1.4.1

"Drill all borings using hollow-stem auger techniques. Drill the following: (1) a maximum of eighteen (18) deep soil (i.e. 100 feet or more) borings, not to exceed a total of two thousand (2000) linear feet, (2) seven (7) shallow twenty-five (25) feet soil borings and (3) sixty-one (61) hand auger (i.e. one to ten feet in depth) soil borings. See Annex A, Table A-1 for distribution of soil borings by site. Obtain split-spoon samples for laboratory analysis using ASTM Method D-1586."

REPLACE WITH

"Drill all borings using hollow-stem auger techniques. Drill the following: (1) a maximum of fourteen (14) deep soil (ie. 25 to 100 foot borings) not to exceed a total of two thousand (2000) linear feet, (2) seven (7) shallow twenty-five (25) feet soil borings and, (3) sixty-one (61) hand auger (ie. one to ten feet in depth) soil borings. See Annex A, Table A-1a for distribution of soil borings by site. Obtain split-spoon samples for laboratory analysis using ASTM Method D-1586."

KAFB1033


DELETE

Annex A, Tables
A-1 thru A-5

Tables A-1 thru A-5.

REPLACE WITH

1.7.1

Tables A-1a thru A-5a.

DELETE

"Drill two (2) 100 ft thirty degree angle from vertical soil borings underneath the landfill. Collect five (5) soil samples for a total of 10 soil samples and analyze for the parameters listed in Table A-3. Install casing and perform neutron logging on each borehole to determine the subsurface moisture content above the water table."

REPLACE WITH

"Drill three (3) deep soil borings to the water table. Collect three (3) soil samples from each bore hole for a total of twelve (12) soil samples and analyze for the parameters listed in Table A-3a. Convert the three (3) bore holes to groundwater monitoring wells. Collect three (3) groundwater samples from each newly installed well and analyze for the parameters listed in Table A-2a. Perform slug tests on each of the three (3) wells to determine aquifer permeability after well installation."

1.7.2

DELETE

"Landfill #2 and #3 LF01 & 07". "Drill two (2) 100 ft thirty degree angle from vertical soil borings underneath the landfill. Collect five (5) soil samples from each boring for a total of 10 soil samples and analyze for the parameters listed in Table A-3. Install casing and perform neutron logging on each borehole to determine the subsurface moisture content above the water table."

REPLACE WITH

"Landfill #2 LF02". "Drill three (3) deep soil borings to the water table. Collect three (3) soil samples from each borehole for a total of twelve (12) soil samples and analyze for the parameters listed in Table A-3a. Convert the three (3) boreholes to groundwater monitoring wells. Collect one (1) groundwater sample from each newly installed well for a total of three (3) groundwater samples and analyze for the parameters listed in Table A-2a. Perform slug tests on each of the three (3) wells to determine aquifer permeability after well installation."

1.7.3

DELETE

"Landfill #4 LF08". "a. Field task include: Drill two (2) 100 ft thirty degree angle from vertical soil borings underneath the landfill. Collect five (5) soil samples for a total of 10 soil samples and analyze for the parameters listed in Table A-3. Install casing and perform neutron logging on each borehole to determine the subsurface moisture content above the water table."

REPLACE WITH

"Landfill #3 LF03." "a. Review data from existing downgradient monitoring wells."

1.7.9

DELETE

"Drill four (4) deep soil borings to the water table. Collect five (5) soil samples from each borehole and analyze for the parameters listed in Table A-3. Convert the four (4) boreholes to groundwater monitoring wells. Collect one (1) groundwater sample from each newly installed well for a total of four (4) groundwater samples and analyze for the parameters listed in Table A-2."

1.7.16

ADD

"Site 16 - Kirtland sewage lagoons, golf course pond, Tijeras arroyo and existing wells at LF01 and LF02."

"Sample groundwater at twelve (12) wells located at Kirtland Sewage Lagoon (4 wells: KAFB0501, KAFB0502, KAFB0503, KAFB0504), golf course pond (4 wells: KAFB0602, KAFB0608, KAFB0609, KAFB0610), Tijeras arroyo wells (2 wells: KAFB0901, KAFB0902), and existing downgradient monitoring wells at LF01 (KAFB0107) and LF02 (KAFB0213). Collect twelve (12) groundwater samples in August 1990 and November 1990 for a total of twenty-four (24) samples. Analyze for the parameter listed in Table A-2a."

Annex B

DELETE

Annex B

REPLACE WITH

Annex B-a.

IV.6.1

CHANGE

<u>Item</u>	<u>Deliverable</u>	<u>Old Date</u>	<u>Revised Date</u>
10	Tech Report Draft 1 Draft 2 Final	91 Sept 15 91 Nov 16	92 April 17 92 Jul 17
13	Microfiche	91 Nov 16	92 Jul 17
14	Data Management	91 Nov 16	92 Jul 17

1.1

DELETE

"Fifteen"

REPLACE WITH

"Sixteen"

1.1a

DELETE

"Remedial investigation of fifteen (15) past disposal."

REPLACE WITH

"Remedial investigation of sixteen (16) past disposal."

General GW Flow North '15280'

Site	Description	ANNEX B-a area	active	depth	covered	GW	MW
Site 1	Landfill #1 LFO1 ^{000ES}	53 acres	65-75	10-30	soil/grass	420	Py/Su/50
Site 2	Landfill #2 LFO2	32	43-67	9-30	soil	K 380	1
Site 3	Landfill #3 LFO3 ^{200E3}						
Site 4	Landfill B LF-15						
Site 5	Landfill C LF-22						
Site 6	Abandon Landfill LF09						
Site 7	Fire Training Pit FT-13						
Site 8	2 Fire Training Pit Drainage FT-39						
Site 9	Manzano Sewage Lagoon #1 (WP-40), 2 (WPC-41), 3 (WPC-42), and 4 (WPC-43), two Drying Beds (WP-16) and Imhoff Tank						
Site 10	Manzano Dump LF-20	1-3 acres	55-56				
Site 11	Radioactive Burial Site RB-11 LF25	6-70	24'		carcass, Hg? controlled site		
Site 12	Fill Area Southeast of Kirtland Sewage Lagoon LF-44						
Site 13	Unnamed Dump LF-45 (Explosive Cost site)						
Site 14	Lake Christian OT-46				polaris tube sep; sheep explosive 60		
Site 15	Landfill A LF-18				surface burn		
Site 16	Kirtland sewage lagoon, golf course pond, Tijeras arroyo, existing wells at LFO1 and LFO2						

added from App II



60 sites Work Plan

Statement of Work list of 16 original or high priority (SOW)

Work Plan per Appendix

Work under separate contracts

LF 04 }
 LF 06 } omitted from App I
 FT 14 }
 OT 29 }

Annex A. Table A-2a
Approximate Number of WATER Analyses by Site

PARAMETER	ANALYTICAL METHOD	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Alkalinity - Carbonate, Bicarbonate & Hydroxide (Field Test)	A403	3	3							6					3		15
Specific Conductance (Field Test)	E120.1	3	3							6					3		15
pH (Field Test)	E150.1	3	3							6					3		15
Total Dissolved Solids	E160.1	3	3							6					3		15
Temperature (Field Test)	E170.1	3	3							6					3		15
Common Anions (Chloride, Flouride, Sulfate)	E300	3	3							6					3		15
Petroleum Hydrocarbons	E418.1	3	3							6					3		15
ICP Screen (23 metals, exclude Boron and Silica)	SW3005/ SW6010																
Total Recoverable Dissolved		3	3							6					3		15
		3	3							6					3		15
Lead	SW3005/ SW7421																
Total Recoverable Dissolved		3	3							6					3		15
		3	3							6					3		15

Annex A. Table A-3a
Approximate Number of Soil Analyses by Site

PARAMETER	ANALYTICAL METHOD	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Site	Drill	Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Cutting	
ICP Screen (23 Metals, Exclude Boron and Silica)	SW3050/ SW6010	12	12		5	6		12	10	28	15		4	12	2	12		130
Mercury	SW7471	12	12		5	6		12	10	28	15		4	12	2	12		130
Volatile Organic Compounds	SW8240	12	12		5	6		12	10	28	15		4	12	2	12	20	150
Semivolatile Organic Compounds	SW3550/	12	12		5	6		12	10	28	15		4	12	2	12	20	150
Extraction Procedure Toxicity, Metals Only	SW1310																20	20
Soil Moisture Content	ASTM D2216	12	12		5	5		12	10	28	15		4	12	4	12		131

Annex A. Table A-4a
Analytical Methods and TOTAL Number of Water Analyses

PARAMETER	ANALYTICAL METHOD	REPORTING UNITS	NUMBER OF ANALYSES	TRIP BLANKS	AMB COND BLANKS	EQUIP BLANKS	*ADDITIONAL		SECOND COLUMM (f)	TOTAL ANALYSES
							QC SAMPLES	DUP/REP		
Alkalinity - carbonate, bicarbonate, & hydroxide (field test)	A403	mg/L	15	0	-	2	-	2	-	19
Specific conductance (field test)	E120.1	us/cm	15	-	-	-	-	-	-	15
pH (field test)	E150.1	pH units	15	-	-	-	-	-	-	15
Total dissolved solids	E160.1	mg/L	15	-	-	-	-	-	-	15
Temperature (field test)	E170.1	deg C	15	-	-	-	-	-	-	15
Common anions (chloride fluoride, sulfate)	E300	mg/L	15	0	-	2	-	2	-	19
Petroleum hydrocarbons	E418.1	mg/L	15	0	-	2	-	2	-	19
ICP Screen (23 metals, exclude boron and silica)	SW3005/ SW6010	mg/L								
Total recoverable			15	0	-	2	-	2	-	19
Dissolved (c)			15	-	-	2	-	2	-	19

*Explanations: Chromium tests on stainless steel casing, stainless steel cable, drilling mud and well grouting. Testing of semivolatile organic compounds and volatile organic compounds that may be leached from rubber gloves.

Annex A. Table A-4a (Cont.)
Analytical Methods and TOTAL Number of Water Analyses

PARAMETER	ANALYTICAL METHOD	REPORTING UNITS	NUMBER OF ANALYSES	TRIP BLANKS	AMB COND BLANKS	EQUIP BLANKS	ADDITIONAL QC SAMPLES	DUP/REP	SECOND COLUMN (f)	TOTAL ANALYSES
Lead	SW3005/ SW7421	mg/L								
Total recoverable			15	0	-	2	-	2	-	19
Dissolved			15	0	-	2	-	2	-	19
Mercury	SW7470	mg/L								
Total recoverable			15	0	-	2	-	2	-	19
Dissolved			15	0	-	2	-	2	-	19
Purgeable Halocarbons	SW5030/ SW8010	ug/L	39	2	-	2	-	2	5	50
Purgeable Aromatics	SW5030/ SW8020	ug/L	15	2	-	2	-	2	5	26
Semivolatile Organic Compounds	SW3510/ SW8070	ug/L	39	0	-	2	-	2	0	43
Total Organic Carbon	SW9060	mg/L	30	-	-	2	-	2	-	34
Total Organic Halides	SW9020	mg/L	30	2	-	2	-	2	-	36
Nitrate + Nitrite	E353.2	mg/L	30	-	-	2	-	2	-	

Annex A. Table A-4a (Cont.)
 Analytical Methods and TOTAL Number of Water Analyses

PARAMETER	ANALYTICAL METHOD	REPORTING UNITS	NUMBER OF ANALYSES	TRIP BLANKS	AMB COND BLANKS	EQUIP BLANKS	ADDITIONAL QC SAMPLES	DUP/REP	SECOND COLUMN (f)	TOTAL ANALYSES
Chromium										
Total	SW3020/ SW7191	mg/L	30	-	-	2	14	2	-	48
Dissolved	SW3005/ SW7191	mg/L	30	-	-	2	14	2	-	48
ICP screen (9 metals)										
Total	SW3010/ SW6010		0	-	-	-	4	-	-	4
Dissolved	SW3005 SW6010		0	-	-	-	4	-	-	4
Purgeable Volatile organic carbon	SW5030 SW8240		8	-	-	2	-	2	-	12

Annex A. Table A-5a
 Analytical Methods and Approximate Methods and TOTAL Number of Soil Analyses (b)

PARAMETER	ANALYTICAL METHOD	REPORTING UNITS	NUMBER OF ANALYSES	TRIP BLANKS	AMB COND BLANKS	EQUIP BLANKS	DUP/REP	SECOND COLUMN (f)	TOTAL ANALYSES
ICP Screen (23 Metals Exclude Boron and Silica)	SW3050/ SW6010	mg/kg	130	-	-	0	15	-	145
Mercury	SW7471	mg/kg	130	-	-	0	15	-	145
Volatile Organic Compounds	SW8240	mg/kg	150	-	-	0	15	-	165
Semivolatile Organic Compounds	SW3550/ SW8270	mg/kg	150	-	-	0	15	-	165
Extractions Procedure Toxicity Metals Only	SW1310	mg/L	20	-	-	0	3	-	23
Soil Moisture Content	ASTM D2216	per cent (%)	131	-	-	0	15	-	146