

ENTERED

ANALYTICAL RESULTS
FOR
U.S. GEOLOGICAL SURVEY
ENSECO-RMAL NO. 011249



SEPTEMBER 29, 1990



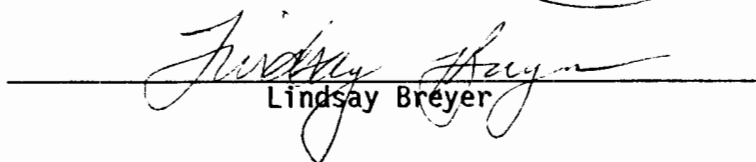
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FOR
U.S. GEOLOGICAL SURVEY
ENSECO-RMAL NO. 011249



SEPTEMBER 29, 1990

Reviewed by:


Randall Thompson


Lindsay Breyer

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- o Sample Description Information
- o Analytical Test Requests
- o Analytical Results
- o Quality Control Report

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

SAMPLE DESCRIPTION INFORMATION
for
U.S. Geological Survey

Lab ID	Client ID	Matrix	Sampled		Received
			Date	Time	Date
011249-0001-SA	KAFB060210-2	AQUEOUS	05 SEP 90	10:57	07 SEP 90
011249-0002-SA	KAFB060211-2	AQUEOUS	05 SEP 90	12:17	07 SEP 90
011249-0003-SA	KAFB060212-2	AQUEOUS	05 SEP 90	13:31	07 SEP 90
011249-0004-SA	KAFB060213-2	AQUEOUS	05 SEP 90	15:46	07 SEP 90
011249-0005-SA	KAFB060214-2	AQUEOUS	05 SEP 90	17:52	07 SEP 90
011249-0006-SA	KAFB060215-2	AQUEOUS	05 SEP 90	18:15	07 SEP 90
011249-0007-SA	KAFB090107-2	AQUEOUS	06 SEP 90	12:50	07 SEP 90
011249-0008-SA	KAFB090108-2	AQUEOUS	06 SEP 90	12:50	07 SEP 90

ANALYTICAL TEST REQUESTS
 for
 U.S. Geological Survey

Lab ID: 011249	Group Code	Analysis Description	Custom Test?
0001 , 0003, 0004 - 0005	A	Chromium, Furnace AA	N
		Chromium, Furnace AA (Total)	N
		Prep - Total Metals, ICP	N
0002	B	Chromium, Furnace AA	N
		Chromium, Furnace AA (Total)	N
		Prep - Total Metals, ICP	N
		ICP Metals (Dissolved)	Y
		ICP Metals (Total)	Y
0006	C	Total Organic Carbon (TOC)	N
		Total Organic Halogen (TOX)	N
		Nitrate Plus Nitrite	N
		Chromium, Furnace AA	N
		Chromium, Furnace AA (Total)	N
		Prep - Total Metals, ICP	N
		ICP Metals (Dissolved)	Y
ICP Metals (Total)	Y		
0007 - 0008	D	Total Organic Carbon (TOC)	N
		Total Organic Halogen (TOX)	N
		Nitrate Plus Nitrite	N
		Chromium, Furnace AA	N
		Chromium, Furnace AA (Total)	N
		Prep - Total Metals, ICP	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for inorganic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, May, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Metals**Total Metals**

Client Name: U.S. Geological Survey
Client ID: KAFB060210-2
Lab ID: 011249-0001-SA
Matrix: AQUEOUS
Authorized: 07 SEP 90

Sampled: 05 SEP 90
Prepared: See Below

Received: 07 SEP 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.0062	mg/L	0.0050	7191	20 SEP 90	25 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals
Total Metals

Client Name: U.S. Geological Survey
 Client ID: KAFB060211-2
 Lab ID: 011249-0002-SA
 Matrix: AQUEOUS
 Authorized: 07 SEP 90

Sampled: 05 SEP 90
 Prepared: See Below

Received: 07 SEP 90
 Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.050	mg/L	0.0050	7191	20 SEP 90	25 SEP 90
Cobalt	ND	mg/L	0.010	6010	20 SEP 90	24 SEP 90
Copper	ND	mg/L	0.020	6010	20 SEP 90	24 SEP 90
Iron	2.2	mg/L	0.10	6010	20 SEP 90	24 SEP 90
Lead	ND	mg/L	0.050	6010	20 SEP 90	24 SEP 90
Manganese	0.054	mg/L	0.010	6010	20 SEP 90	24 SEP 90
Molybdenum	ND	mg/L	0.020	6010	20 SEP 90	24 SEP 90
Nickel	ND	mg/L	0.040	6010	20 SEP 90	24 SEP 90
Vanadium	ND	mg/L	0.010	6010	20 SEP 90	24 SEP 90
Zinc	0.35	mg/L	0.020	6010	20 SEP 90	24 SEP 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Dave Roberts

Metals**Total Metals**

Client Name: U.S. Geological Survey

Client ID: KAFB060212-2

Lab ID: 011249-0003-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 05 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.037	mg/L	0.0050	7191	20 SEP 90	25 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: KAFB060213-2
Lab ID: 011249-0004-SA
Matrix: AQUEOUS
Authorized: 07 SEP 90

Sampled: 05 SEP 90
Prepared: See Below

Received: 07 SEP 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.042	mg/L	0.0050	7191	20 SEP 90	25 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals**Total Metals**

Client Name: U.S. Geological Survey

Client ID: KAFB060214-2

Lab ID: 011249-0005-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 05 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.024	mg/L	0.0050	7191	20 SEP 90	25 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals
Total Metals

Client Name: U.S. Geological Survey
 Client ID: KAFB060215-2
 Lab ID: 011249-0006-SA
 Matrix: AQUEOUS
 Authorized: 07 SEP 90

Sampled: 05 SEP 90
 Prepared: See Below

Received: 07 SEP 90
 Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.045	mg/L	0.0050	7191	20 SEP 90	25 SEP 90
Cobalt	ND	mg/L	0.010	6010	20 SEP 90	24 SEP 90
Copper	0.035	mg/L	0.020	6010	20 SEP 90	24 SEP 90
Iron	0.65	mg/L	0.10	6010	20 SEP 90	24 SEP 90
Lead	ND	mg/L	0.050	6010	20 SEP 90	24 SEP 90
Manganese	ND	mg/L	0.010	6010	20 SEP 90	24 SEP 90
Molybdenum	ND	mg/L	0.020	6010	20 SEP 90	24 SEP 90
Nickel	ND	mg/L	0.040	6010	20 SEP 90	24 SEP 90
Vanadium	ND	mg/L	0.010	6010	20 SEP 90	24 SEP 90
Zinc	0.48	mg/L	0.020	6010	20 SEP 90	24 SEP 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Dave Roberts

Metals**Total Metals**

Client Name: U.S. Geological Survey

Client ID: KAFB090107-2

Lab ID: 011249-0007-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 06 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	ND	mg/L	0.0050	7191	20 SEP 90	25 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals**Total Metals**

Client Name: U.S. Geological Survey

Client ID: KAFB090108-2

Lab ID: 011249-0008-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 06 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.12	mg/L	0.010	7191	20 SEP 90	25 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals

Dissolved Metals

Client Name: U.S. Geological Survey
Client ID: KAFB060210-2
Lab ID: 011249-0001-SA
Matrix: AQUEOUS
Authorized: 07 SEP 90

Sampled: 05 SEP 90
Prepared: See Below

Received: 07 SEP 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	ND	mg/L	0.0050	7191	NA	11 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Scott Moroschan

Approved By: Dave Roberts

Metals

Dissolved Metals

Client Name: U.S. Geological Survey
 Client ID: KAFB060211-2
 Lab ID: 011249-0002-SA
 Matrix: AQUEOUS
 Authorized: 07 SEP 90

Sampled: 05 SEP 90
 Prepared: See Below

Received: 07 SEP 90
 Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.013	mg/L	0.0050	7191	NA	11 SEP 90
Cobalt	ND	mg/L	0.010	6010	NA	25 SEP 90
Copper	ND	mg/L	0.020	6010	NA	25 SEP 90
Iron	0.36	mg/L	0.10	6010	NA	25 SEP 90
Lead	ND	mg/L	0.050	6010	NA	25 SEP 90
Manganese	ND	mg/L	0.010	6010	NA	25 SEP 90
Molybdenum	ND	mg/L	0.020	6010	NA	25 SEP 90
Nickel	ND	mg/L	0.040	6010	NA	25 SEP 90
Vanadium	ND	mg/L	0.010	6010	NA	25 SEP 90
Zinc	0.13	mg/L	0.020	6010	NA	25 SEP 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Dave Roberts

Metals**Dissolved Metals**

Client Name: U.S. Geological Survey

Client ID: KAFB060212-2

Lab ID: 011249-0003-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 05 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	ND	mg/L	0.0050	7191	NA	11 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Scott Moroschan

Approved By: Dave Roberts

Metals**Dissolved Metals**

Client Name: U.S. Geological Survey

Client ID: KAFB060213-2

Lab ID: 011249-0004-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 05 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	ND	mg/L	0.010	7191	NA	18 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals**Dissolved Metals**

Client Name: U.S. Geological Survey
Client ID: KAFB060214-2
Lab ID: 011249-0005-SA
Matrix: AQUEOUS
Authorized: 07 SEP 90

Sampled: 05 SEP 90
Prepared: See Below

Received: 07 SEP 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	ND	mg/L	0.0050	7191	NA	18 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals

Dissolved Metals

Client Name: U.S. Geological Survey
 Client ID: KAFB060215-2
 Lab ID: 011249-0006-SA
 Matrix: AQUEOUS
 Authorized: 07 SEP 90

Sampled: 05 SEP 90
 Prepared: See Below

Received: 07 SEP 90
 Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	ND	mg/L	0.0050	7191	NA	18 SEP 90
Cobalt	ND	mg/L	0.010	6010	NA	25 SEP 90
Copper	ND	mg/L	0.020	6010	NA	25 SEP 90
Iron	ND	mg/L	0.10	6010	NA	25 SEP 90
Lead	ND	mg/L	0.050	6010	NA	25 SEP 90
Manganese	ND	mg/L	0.010	6010	NA	25 SEP 90
Molybdenum	ND	mg/L	0.020	6010	NA	25 SEP 90
Nickel	ND	mg/L	0.040	6010	NA	25 SEP 90
Vanadium	ND	mg/L	0.010	6010	NA	25 SEP 90
Zinc	0.088	mg/L	0.020	6010	NA	25 SEP 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Dave Roberts

Metals**Dissolved Metals**

Client Name: U.S. Geological Survey
Client ID: KAFB090107-2
Lab ID: 011249-0007-SA
Matrix: AQUEOUS
Authorized: 07 SEP 90

Sampled: 06 SEP 90
Prepared: See Below

Received: 07 SEP 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	ND	mg/L	0.0050	7191	NA	18 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

Metals**Dissolved Metals**

Client Name: U.S. Geological Survey
Client ID: KAFB090108-2
Lab ID: 011249-0008-SA
Matrix: AQUEOUS
Authorized: 07 SEP 90

Sampled: 06 SEP 90
Prepared: See Below

Received: 07 SEP 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Chromium	0.037	mg/L	0.0050	7191	NA	18 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Mark Brundege

Approved By: Dave Roberts

General Inorganics

Client Name: U.S. Geological Survey
Client ID: KAFB060215-2
Lab ID: 011249-0006-SA
Matrix: AQUEOUS
Authorized: 07 SEP 90

Sampled: 05 SEP 90
Prepared: See Below

Received: 07 SEP 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate plus Nitrite	23.9	mg/L	1.0	353.2	NA	17 SEP 90
Total Organic Carbon	0.69	mg/L	0.50	9060	NA	17 SEP 90
Total Organic Halogen as Cl	ND	ug/L	30.0	9020	NA	18 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Steve Pope

Approved By: Toni Stovall

General Inorganics

Client Name: U.S. Geological Survey

Client ID: KAFB090107-2

Lab ID: 011249-0007-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 06 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate plus Nitrite	0.14	mg/L	0.10	353.2	NA	17 SEP 90
Total Organic Carbon	ND	mg/L	0.50	9060	NA	17 SEP 90
Total Organic Halogen as Cl	ND	ug/L	30.0	9020	NA	18 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Steve Pope

Approved By: Toni Stovall

General Inorganics

Client Name: U.S. Geological Survey

Client ID: KAFB090108-2

Lab ID: 011249-0008-SA

Matrix: AQUEOUS

Authorized: 07 SEP 90

Sampled: 06 SEP 90

Prepared: See Below

Received: 07 SEP 90

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate plus Nitrite	3.4	mg/L	0.20	353.2	NA	17 SEP 90
Total Organic Carbon	1.1	mg/L	0.50	9060	NA	17 SEP 90
Total Organic Halogen as Cl	ND	ug/L	30.0	9020	NA	18 SEP 90

ND = Not detected
NA = Not applicable

Reported By: Steve Pope

Approved By: Toni Stovall

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analysis of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

- 1) Establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data
- 2) Assess the laboratory's performance of the analytical method by using control limits generated with a well-defined matrix
- 3) Establish clear-cut guidelines for acceptability of analytical results so that QC decisions can be made immediately at the bench, thereby eliminating the need for reanalysis
- 4) Provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QA program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, pre-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/- 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each lot of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot when the DCS pair are not analyzed.

Accuracy for each SCS is measured by Percent Recovery.

$$\% R. = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for each SCS is measured by Relative Percent Difference (RPD).

$$RPD = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

QC LOT ASSIGNMENT REPORT
 Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011249-0001-SA	AQUEOUS	CR-FAA-AD	11 SEP 90-A	-
011249-0001-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A
011249-0002-SA	AQUEOUS	CR-FAA-AD	11 SEP 90-A	-
011249-0002-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A
011249-0002-SA	AQUEOUS	ICP-AD	25 SEP 90-A	-
011249-0002-SA	AQUEOUS	ICP-AT	20 SEP 90-M	20 SEP 90-M
011249-0003-SA	AQUEOUS	CR-FAA-AD	11 SEP 90-A	-
011249-0003-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A
011249-0004-SA	AQUEOUS	CR-FAA-AD	18 SEP 90-D	-
011249-0004-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A
011249-0005-SA	AQUEOUS	CR-FAA-AD	18 SEP 90-D	-
011249-0005-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A
011249-0006-SA	AQUEOUS	CR-FAA-AD	18 SEP 90-D	-
011249-0006-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A
011249-0006-SA	AQUEOUS	ICP-AD	25 SEP 90-A	-
011249-0006-SA	AQUEOUS	ICP-AT	20 SEP 90-M	20 SEP 90-M
011249-0007-SA	AQUEOUS	CR-FAA-AD	18 SEP 90-D	-
011249-0007-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A
011249-0008-SA	AQUEOUS	CR-FAA-AD	18 SEP 90-D	-
011249-0008-SA	AQUEOUS	CR-FAA-AT	20 SEP 90-A	20 SEP 90-A

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Spiked	Concentration		AVG	Accuracy		Precision		
		DCS1	Measured DCS2		Average (%) DCS	Limits	(RPD) DCS	Limit	
Category: CR-FAA-AD									
Matrix: AQUEOUS									
QC Lot: 11 SEP 90-A									
Concentration Units: mg/L									
Chromium	0.02	0.0191	0.0188	0.0190	95	75-125	1.6	20	
Category: CR-FAA-AT									
Matrix: AQUEOUS									
QC Lot: 20 SEP 90-A									
Concentration Units: mg/L									
Chromium	0.2	0.200	0.208	0.204	102	75-125	3.9	20	
Category: ICP-AD									
Matrix: AQUEOUS									
QC Lot: 25 SEP 90-A									
Concentration Units: mg/L									
Aluminum	2.0	1.90	1.91	1.90	95	75-125	0.9	20	
Antimony	0.5	0.455	0.460	0.458	92	75-125	1.1	20	
Arsenic	0.5	0.447	0.449	0.448	90	75-125	0.6	20	
Barium	2.0	1.85	1.88	1.86	93	75-125	1.5	20	
Beryllium	0.05	0.0455	0.0458	0.0456	91	75-125	0.7	20	
Cadmium	0.05	0.0449	0.0408	0.0429	86	75-125	9.6	20	
Calcium	100	93.9	95.5	94.7	95	75-125	1.7	20	
Chromium	0.2	0.184	0.187	0.186	93	75-125	1.6	20	
Cobalt	0.5	0.447	0.453	0.450	90	75-125	1.3	20	
Copper	0.25	0.239	0.241	0.240	96	75-125	1.0	20	
Iron	1.0	0.938	0.947	0.942	94	75-125	1.0	20	
Lead	0.5	0.441	0.442	0.441	88	75-125	0.2	20	
Magnesium	50	48.0	48.7	48.4	97	75-125	1.5	20	
Manganese	0.5	0.452	0.460	0.456	91	75-125	1.8	20	
Nickel	0.5	0.455	0.459	0.457	91	75-125	0.9	20	
Potassium	50	49.3	47.4	48.3	97	75-125	3.9	20	
Silver	0.05	0.0451	0.0451	0.0451	90	75-125	0.0	20	
Sodium	100	95.3	94.6	94.9	95	75-125	0.7	20	
Vanadium	0.5	0.468	0.472	0.470	94	75-125	0.9	20	
Zinc	0.5	0.552	0.563	0.557	111	75-125	2.0	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE CONTROL SAMPLE REPORT
 Metals Analysis and Preparation (cont.)

Analyte	Concentration			AVG	Accuracy		Precision	
	Spiked	DCS1	Measured DCS2		Average(%) DCS	Limits	(RPD) DCS	Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 20 SEP 90-M								
Concentration Units: mg/L								
Aluminum	2.0	1.90	1.94	1.92	96	75-125	2.1	20
Antimony	0.5	0.454	0.471	0.462	93	75-125	3.7	20
Arsenic	0.5	0.452	0.470	0.461	92	75-125	3.9	20
Barium	2.0	1.82	1.89	1.86	93	75-125	3.8	20
Beryllium	0.05	0.0453	0.0480	0.0466	93	75-125	5.8	20
Cadmium	0.05	0.0366	0.0432	0.0399	80	75-125	17	20
Calcium	100	93.2	96.1	94.6	95	75-125	3.1	20
Chromium	0.2	0.184	0.187	0.186	93	75-125	1.6	20
Cobalt	0.5	0.448	0.463	0.456	91	75-125	3.3	20
Copper	0.25	0.246	0.251	0.248	99	75-125	2.0	20
Iron	1.0	0.985	0.979	0.982	98	75-125	0.6	20
Lead	0.5	0.441	0.465	0.453	91	75-125	5.3	20
Magnesium	50	47.5	49.0	48.2	97	75-125	3.1	20
Manganese	0.5	0.451	0.464	0.458	92	75-125	2.8	20
Nickel	0.5	0.454	0.471	0.462	93	75-125	3.7	20
Potassium	50	42.2	43.8	43.0	86	75-125	3.7	20
Silver	0.05	0.0427	0.0438	0.0432	87	75-125	2.5	20
Sodium	100	83.1	86.8	85.0	85	75-125	4.4	20
Vanadium	0.5	0.466	0.484	0.475	95	75-125	3.8	20
Zinc	0.5	0.472	0.474	0.473	95	75-125	0.4	20

Category: CR-FAA-AD
 Matrix: AQUEOUS
 QC Lot: 18 SEP 90-D
 Concentration Units: mg/L

Chromium	0.2	0.207	0.210	0.208	104	75-125	1.4	20
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Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: CR-FAA-AT Matrix: AQUEOUS QC Lot: 20 SEP 90-A QC Run: 20 SEP 90-A			
Chromium	ND	mg/L	0.0050
Test: CR-FAA-AT Matrix: AQUEOUS QC Lot: 20 SEP 90-A QC Run: 20 SEP 90-A			
Chromium	ND	mg/L	0.0050
Test: ICP-AT Matrix: AQUEOUS QC Lot: 20 SEP 90-M QC Run: 20 SEP 90-M			
Cobalt	ND	mg/L	0.010
Copper	ND	mg/L	0.020
Iron	ND	mg/L	0.10
Lead	ND	mg/L	0.050
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.020
Nickel	ND	mg/L	0.040
Vanadium	ND	mg/L	0.010
Zinc	ND	mg/L	0.020
Test: CR-FAA-AT Matrix: AQUEOUS QC Lot: 20 SEP 90-A QC Run: 20 SEP 90-A			
Chromium	ND	mg/L	0.0050
Test: ICP-AT Matrix: AQUEOUS QC Lot: 20 SEP 90-M QC Run: 20 SEP 90-M			
Cobalt	ND	mg/L	0.010
Copper	ND	mg/L	0.020
Iron	ND	mg/L	0.10
Lead	ND	mg/L	0.050
Manganese	ND	mg/L	0.010

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AT			
Matrix: AQUEOUS			
QC Lot: 20 SEP 90-M QC Run: 20 SEP 90-M			
Molybdenum	ND	mg/L	0.020
Nickel	ND	mg/L	0.040
Vanadium	ND	mg/L	0.010
Zinc	ND	mg/L	0.020

Test: CR-FAA-AT			
Matrix: AQUEOUS			
QC Lot: 20 SEP 90-A QC Run: 20 SEP 90-A			
Chromium	ND	mg/L	0.0050

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
011249-0006-SA	AQUEOUS	TOC-A	17 SEP 90-A	-
011249-0006-SA	AQUEOUS	TOX-A	18 SEP 90-A	-
011249-0006-SA	AQUEOUS	NO3-A	17 SEP 90-A	-
011249-0007-SA	AQUEOUS	TOC-A	17 SEP 90-A	-
011249-0007-SA	AQUEOUS	TOX-A	18 SEP 90-A	-
011249-0007-SA	AQUEOUS	NO3-A	17 SEP 90-A	-
011249-0008-SA	AQUEOUS	TOC-A	17 SEP 90-A	-
011249-0008-SA	AQUEOUS	TOX-A	18 SEP 90-A	-
011249-0008-SA	AQUEOUS	NO3-A	17 SEP 90-A	-

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Concentration Measured		AVG	Accuracy Average (%)		Precision (RPD)		
		DCS1	DCS2		DCS	Limits	DCS	Limit	
Category: TOC-A Matrix: AQUEOUS QC Lot: 17 SEP 90-A Concentration Units: mg/L									
Total Organic Carbon	25.0	25.3	25.3	25.3	101	91-109	0.0	20	
Category: TOX-A Matrix: AQUEOUS QC Lot: 18 SEP 90-A Concentration Units: ug Cl/L									
Total Organic Halogen as Cl	100	95.9	93.9	94.9	95	80-120	2.1	20	
Category: NO3-A Matrix: AQUEOUS QC Lot: 17 SEP 90-A Concentration Units: mg/L									
Nitrate as N	3.8	3.82	3.84	3.83	101	91-109	0.5	10	

Calculations are performed before rounding to avoid round-off errors in calculated results.



Appendix

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249-01

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)

SW - Surface Water
GW - Ground Water
 ME - Meteorological

LK - Lake
 ES - Estuary
 SP - Spring
 SS - Special Source
 (505) 262-6678
 Phone (FTS)
BILL DAM

Field ID: USGS/WRD/NEW MEXICO SWMU Project: USGS Collector: USGS
 Station Name: KAFB060210-2 Field Office: USGS/WRD/NEW MEXICO SWMU Project: USGS Collector: USGS
 Station ID or Unique Number: KAFB060210-2 Project Account #: 463536001

File Deposition*
 (Circle one)
 Q - WATSTORE
 X - Lab File

Sample identification

For Laboratory Use Only

Station ID or Unique Number: KAFB060210-2 Project Account #: 463536001

Year: 1990 Month: 09 Day: 05 Time: 10:57 Composite End Date: — State Code: NM District/User Code: 035 County Code: 001

6 = GW
 9 = SW
 6 ✓
 Sample Medium**

Analysis level codes and schedules
 H or 9
 Analysis Status**
 GS FIELD MANGE-LAB
 G
 Analysis Source**

1 = SPIKE
 5 = DUPLICATE
 9 = REGULAR
 9
 Sample Type**
 J = STORM
 9 = ROUTINE
 9
 Hydrologic Event**

PARAMETER: ~~TOC~~ ~~TOX~~ ~~NO2+NO3~~ **DISSOLVED CHROMIUM** **TOTAL CHROMIUM**
 METHOD: ~~SW 9060~~ ~~SW 9020~~ ~~E 353.2~~ **SW 3005/SW 7191** **SW 3020/SW 7191**
 PARAMETER: ~~VOX~~ ~~VOZ~~ ~~DIOXIN-FURANS~~ ~~HERBICIDES~~
 METHOD: ~~SW 5030/SW 8240~~ ~~SW 5030/SW 8240~~ ~~SW 3520/SW 8280~~ ~~SW 3520/SW 8150~~
 PARAMETER: ~~APPENDIX IX ICP, DISSOLVED CO, CU, FE, PB, MN, MO, NI, V, ZN~~ ~~APPENDIX IX ICP TOTAL CO, CU, FE, PB, MN, MO, NI, V, ZN~~
 METHOD: ~~SW 3005/SW 6010~~ ~~SW 3010/SW 6010~~
 PARAMETER: ~~APP. IX SEMI-VOX~~
 METHOD: ~~SW 3520/SW 8280~~

Chain-of-Custody Record

PROJECT NAME KIRTLAND AFB SWMU PROJECT NO. 463536001 P.O. NO. _____

Relinquished by: (Signature) <u>Kim [Signature]</u>	Received by: (Signature) <u>AIRBORNE EXPRESS</u>	Date <u>900906</u>	Time <u>1630</u>
Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date	Time
Relinquished by: (Signature) <u>[Signature]</u>	Received at lab by: (Signature) <u>[Signature]</u>	Date <u>09-07-90</u>	Time <u>0930</u>
Relinquished from lab by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 WELL SSE OF GOLF COURSE POND+SAMPLE FROM 1ST BAIL VOLUME; WL ≈ 34.0 FT; T = 19.9°C,

Record 6 S.P.C. = 628 U.S./CM.; P.H. = 7.62

Total number of sample bottles for this request: 2

SHIP TO:

Enseco-Rocky Mountain Analytical
 4955 Yarrow Street
 Arvada, CO 80002
 (303) 421-6611

ATTENTION: THOMPSON, BREYER, OR MCDEVITT

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249-02

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)

SW - Surface Water
 GW - Ground Water
 ME - Meteorological

LK - Lake
 ES - Estuary
 SP - Spring
 SS - Special Source

Station Name: KAFB060211-2 Field Office: USGS/WRD/NEW MEXICO SWMU Project: USGS Collector: (505)262-6678
 Phone (FTS): BILL DAM

File Deposition* (Circle one)

Q - WATSTORE
 X - Lab File

Sample identification

Station ID or Unique Number*: KAFB060211-2 Project Account #: 463536001

Year*: 1990 Month*: 09 Day*: 05 Time*: 1217 Composite End Date: — State Code*: NM District/User Code*: 035 County Code: 001

Analysis level codes and schedules

6=GW, 9=SW, H or 9, Analysis Status**, Analysis Source**, Hydrologic Condition**, Sample Type**, Hydrologic Event**

PARAMETER: ~~TDC~~ ~~TOX~~ ~~NO2+NO3~~ DISSOLVED CHROMIUM TOTAL CHROMIUM
 METHOD: ~~SW 9060~~ ~~SW 9020~~ ~~E 353.2~~ SW 3005/SW 7191 SW 3020/SW 7191
 PARAMETER: ~~VOX~~ ~~VOG~~ ~~APP. IX~~ APP. IX ICP DISSOLVED APP. IX ICP TOTAL
 METHOD: ~~SW 5030/SW 8010~~ ~~SW 5030/SW 8240~~ ~~SW 3520/SW 8280~~ SW 3005/SW 6010 SW 3010/SW 6010
 PARAMETER: ~~APP. IX SEMI-VOG~~
 METHOD: ~~SW 3520/SW 8270~~

Chain-of-Custody Record

PROJECT NAME KIRTLAND AFB SWMU PROJECT NO. 463536001 P.O. NO. _____

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
<u>Kim Cm</u>	<u>AIRBORNE EXPRESS</u>	<u>900906</u>	<u>1630</u>
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 WELL SSE OF GOLF COURSE POND; SAMPLE AFTER BAILING 0.5 BOREHOLE VOLUME;
 Record 6 OK, 139L; T=20.2° C; PH=7.62; SPC=630 U.S

Total number of sample bottles for this request: 4

SHIP TO:
 Enseco-Rocky Mountain Analytical
 4955 Yarrow Street
 Arvada, CO 80002
 (303) 421-6611

ATTENTION: THOMPSON, BREYER, OR MCDEVITT

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249-03

Special Handling (Circle as appropriate and explain in record 5)

Site Type (circle one)

Hazardous material

SW - Surface Water
GW - Ground Water
ME - Meteorological

LK - Lake
ES - Estuary
SP - Spring
SS - Special Source
(505) 262-6678
Phone (FTS)
BILL DAM

Station Name: KAFB 060212-2 Field ID: USGS/WRD/NEW MEXICO SWMU Project: USGS Collector: USGS
Field Office: USGS Project: USGS Collector: USGS Phone (FTS): 505 262-6678
Field Office: USGS Project: USGS Collector: USGS Phone (FTS): 505 262-6678

File Deposition* (Circle one)

Sample identification

Q - WATSTORE
X - Lab File
For Laboratory Use Only
Station ID or Unique Number*: KAFB 060212-2 Project Account #: 463536001

Year*: 1990 Month*: 09 Day*: 05 Time*: 13.31 Month: --- Day: --- Time: --- State Code*: NM District/ User Code*: 035 County Code: 001
Begin Date: 1990-09-05 13.31 Composite End Date: ---

Analysis level codes and schedules
6 = GW, 9 = SW
H or 9
Analysis Status**
Sample Medium**
Geologic Unit
Analysis Source**
Hydrologic Condition**
Sample Type**
Hydrologic Event**
1 = SPIKE, 5 = DUPLICATE, 9 = REGULAR
J = STORM, 9 = ROUTINE

PARAMETER: TOC TOX NO2+NO3 DISSOLVED CHROMIUM TOTAL CHROMIUM
METHOD: SW 9060 SW 9020 E 353.2 SW 3005/SW 7191 SW 3020/SW 7191
PARAMETER: VOX APP. IX TOC APP. IX DIOXIN/FURANS APP. IX HERBICIDES
METHOD: SW 5030/SW 8010 SW 5030/SW 8240 SW 3520/SW 8280 SW 3820/SW 8150
PARAMETER: APP. IX ICP DISSOLVED APP. IX ICP TOTAL
METHOD: SW 3005/SW 6010 SW 3010/SW 6010
PARAMETER: APP. IX SEMI-VOX
METHOD: SW 8520/SW 8270

Chain-of-Custody Record

PROJECT NAME KIRTLAND AFB SWMU PROJECT NO. 463536001 P.O. NO. _____
Relinquished by: (Signature) [Signature] Received by: (Signature) AIRBORNE EXPRESS Date 900906 Time 1630
Relinquished by: (Signature) _____ Received by: (Signature) _____ Date _____ Time _____
Relinquished by: (Signature) _____ Received at lab by: (Signature) [Signature] Date 09-07-90 Time 0930
Relinquished from lab by: (Signature) _____ Received by: (Signature) _____ Date _____ Time _____

Comments (Only 50 characters stored in NWIS)

Record 5 WELL S.S.E. OF GOLF COURSE POND; SAMPLE
AFTER BAILING 1 BOREHOLE VOLUME;
Record 6 CR 27.8 L; T=20.5; PH=7.58; S.P.C.=6.30

Total number of sample bottles for this request: 2 SHIP TO: Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: THOMPSON, BREYER OR MCDEVITT

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249-04

Special Handling (Circle as appropriate and explain in record 5)
Hazardous material

Site Type (circle one)
 SW - Surface Water LK - Lake
 GW - Ground Water ES - Estuary
 ME - Meteorological SP - Spring
 SS - Special Source

Field ID: USGS/WRD/NEW MEXICO SWMU Project: USGS Collector: (505) 262-6678 Phone (FTS): BILL DAM

Station Name: KAFB060213-2 Field Office: USGS/WRD/NEW MEXICO SWMU Project: USGS Collector: (505) 262-6678

File Deposition* (Circle one)
 Q - WATSTORE
 X - Lab File

Sample identification

Station ID or Unique Number*: KAFB060213-2 Project Account #: 463536001

Begin Date: 1990 Composite End Date: 0905 1546

Year*: 1990 Month*: 09 Day*: 05 Time*: 1546

State Code*: NM District/User Code*: 035 County Code: 001

Analysis level codes and schedules

6=GW 9=SW 1=SPIKE 5=DUPLICATE 9=REGULAR J=STORM 9=ROUTINE

H or 9 GS FIELD MANGE-LAB 9=STABLE

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
<u>6</u>		<u>H</u>	<u>G</u>			
<u>PARAMETER:</u>	<u>TOC</u>	<u>TOX</u>	<u>NO2+NO3</u>	<u>DISSOLVED CHROMIUM</u>	<u>TOTAL CHROMIUM</u>	
<u>METHOD:</u>	<u>SW9060</u>	<u>SW9020</u>	<u>E353.2</u>	<u>SW3005/SW791</u>	<u>SW3020/SW791</u>	
<u>PARAMETER:</u>	<u>VOC</u>	<u>APP. IX</u>	<u>VOC</u>	<u>DIOXIN/FURANS</u>	<u>HERBICIDES</u>	
<u>METHOD:</u>	<u>SW5030/SW8010</u>	<u>SW5030/SW8240</u>	<u>SW3520/SW8280</u>	<u>SW3520/SW8150</u>	<u>SW3520/SW8150</u>	
<u>PARAMETER:</u>	<u>APPENDIX IX ICP, DISSOLVED CO, CU, FE, PB, MANG, MO, NI, V, ZN</u>			<u>APPENDIX IX ICP TOTAL CO, CU, FE, PB, MANG, MO, NI, V, ZN</u>		
<u>METHOD:</u>	<u>SW3005/SW6010</u>			<u>SW3010/SW6010</u>		
<u>PARAMETER:</u>	<u>APP. IX SEMI-VOC</u>					
<u>METHOD:</u>	<u>SW3520/SW8270</u>					

Chain-of-Custody Record

PROJECT NAME KIRTLAND AFB SWMU PROJECT NO. 463536001 P.O. NO. _____

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
<u>[Signature]</u>	<u>AIRBORNE EXPRESS</u>	<u>900906</u>	<u>1630</u>
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
<u>[Signature]</u>	<u>[Signature]</u>		
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
<u>[Signature]</u>	<u>[Signature]</u>	<u>0907-90</u>	<u>0930</u>
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time
<u>[Signature]</u>	<u>[Signature]</u>		

Comments (Only 50 characters stored in NWIS)

Record 5 WELL SSE OF GOLF COURSE POND; SAMPLE AFTER 2 BOREHOLE VOLUMES OR 540L;

Record 6 T=20.2; PH=7.58; SPC=630

Total number of sample bottles for this request: 2 SHIP TO:

Enseco-Rocky Mountain Analytical
 4955 Yarrow Street
 Arvada, CO 80002
 (303) 421-6611

ATTENTION: THOMPSON, BREYER, OR MCDEVITT

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249-05

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)

SW - Surface Water	LK - Lake
GW - Ground Water	ES - Estuary
ME - Meteorological	SP - Spring
	SS - Special Source
	(505) 262-6678
	Phone (FTS)
	BILL DAM

KAFB060214-2
Station Name

Field ID
USGS/WRD/NEW MEXICO SWMU
Field Office Project

USGS
Collector

File Deposition*
(Circle one)

Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

KAFB060214-2
Station ID or Unique Number*

463536001
Project Account #

<u>1990</u> Year*	<u>09</u> Month*	<u>05</u> Day*	<u>1752</u> Time*	Month	Day	Time	<u>NM</u> State Code*	<u>035</u> District/ User Code*	<u>001</u> County Code
Begin Date				Composite End Date					

6=GW
9=SW

Analysis level codes and schedules

1 = SPIKE
5 = DUPLICATE
9 = REGULAR
J = STORM
9 = ROUTINE

<u>6</u> Sample Medium**	Geologic Unit	H or 9 Analysis Status**	<u>G</u> Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
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PARAMETER:	<u>TOC</u>	<u>TOX</u>	<u>NO2+NO3</u>	<u>DISSOLVED CHROMIUM</u>	<u>TOTAL CHROMIUM</u>
METHOD:	<u>SW9060</u>	<u>SW9020</u>	<u>E353.2</u>	<u>SW3005/SW791</u>	<u>SW3020/SW791</u>
PARAMETER:	<u>VOX</u>	<u>VOX</u>	<u>DIOXIN FURANS</u>	<u>HERBICIDES</u>	
METHOD:	<u>SW5030/SW8010</u>	<u>SW5030/SW8240</u>	<u>SW3520/SW8280</u>	<u>SW3520/SW8150</u>	
PARAMETER:	<u>APPENDIX IX ICP, DISSOLVED CO, CU, FE, Pb, Mn, MO, Ni, V, Zn</u>			<u>APPENDIX IX ICP TOTAL CO, CU, FE, Pb, Mn, MO, Ni, V, Zn</u>	
METHOD:	<u>SW3005/SW6010</u>			<u>SW3010/SW6010</u>	
PARAMETER:	<u>APP. IX SEMI-VOX</u>				
METHOD:	<u>SW3520/SW8270</u>				

Chain-of-Custody Record

PROJECT NAME KIRTLAND AFB SWMU PROJECT NO. 463536001 P.O. NO. _____

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
<u>Kim [Signature]</u>	<u>AIRBORNE EXPRESS</u>	<u>900906</u>	<u>1630</u>
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	<u>[Signature] RMA L</u>	<u>09-07-90</u>	<u>0930</u>
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 WELL S.S.E. OF GOLF COURSE POND; SAMPLE AFTER 7.5QL PURGED; T=20.0; pH=7.57;

Record 6 S.P.C.=630

Total number of sample bottles for this request: 2

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: THOMPSON, BREYER, OR MCDEVITT

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249.6

Special Handling

(Circle as appropriate and explain in record 5)

Site Type (circle one)

~~SW~~ Surface Water
 GW Ground Water
 ME Meteorological

LK - Lake
 ES - Estuary
 SP - Spring
 SS - Special Source
 (505) 262-6678
 Phone (FTS)
 BILL DAM

Hazardous material

KAFB 060215

Station Name

Field ID

USGS/WRD/NEW MEXICO SWMU

Field Office

Project

USGS

Collector

File Deposition*

(Circle one)

Q - WATSTORE
 X - Lab File

For Laboratory Use Only

Sample identification

KAFB 060215-2

Station ID or Unique Number*

463536001

Project Account #

1990 Year* 09 Month* 05 Day* 1815 Time* 09 Month 05 Day 1825 Time NM State Code* 035 District/ User Code* 001 County Code

Begin Date

Composite End Date

Analysis level codes and schedules

6 = GW
 9 = SW

GS FIELD
 MANGE-LAB
 G

9 = STABLE

1 = SPIKE
 5 = DUPLICATE
 9 = REGULAR

J = STORM
 9 = ROUTINE

6
 Sample Medium**

Geologic Unit

H or 9
 Analysis Status**

G
 Analysis Source**

Hydrologic Condition**

Sample Type**

Hydrologic Event**

PARAMETER:
 METHOD:

TOC
SW 9060

TOX
SW 9020

NO2+NO3
E 353.2

DISSOLVED CHROMIUM
SW 3005/SW 7191

TOTAL CHROMIUM
SW 3020/SW 7191

PARAMETER:
 METHOD:

VOX
SW 5030/SW 8010

APP. IX VOC
SW 5030/SW 8240

APP. IX DIOXIN-FURANS
SW 3520/SW 8280

APP. IX HERBICIDES
SW 3520/SW 8150

PARAMETER:
 METHOD:

APPENDIX IX ICP DISSOLVED Co, Cu, Fe, Pb, Mn, Mo, Ni, V, Zn
SW 3005/SW 6010

APPENDIX IX ICP TOTAL Co, Cu, Fe, Pb, Mn, Mo, Ni, V, Zn
SW 3010/SW 6010

PARAMETER:
 METHOD:

APP. IX SEMI-VOX
SW 3520/SW 8270

Chain-of-Custody Record

PROJECT NAME KIRTLAND AFB SWMU PROJECT NO. 463536001 P.O. NO. _____

Relinquished by: (Signature) _____ Received by: (Signature) _____ Date _____ Time _____

[Signature] AIRBORNE EXPRESS 900906 1630

Relinquished by: (Signature) _____ Received by: (Signature) _____ Date _____ Time _____

Relinquished by: (Signature) _____ Received at lab by: (Signature) _____ Date _____ Time _____

[Signature] R.M.A.L. 09-07-90 0936

Relinquished from lab by: (Signature) _____ Received by: (Signature) _____ Date _____ Time _____

Comments (Only 50 characters stored in NWIS)

Record 5 WELL S.S.E. OF GOLF COURSE P.O. NO. S.P.C. = 6.30
p.H. = 7.60; T = 19.8

Record 6 _____

Total number of sample bottles for this request: 6

SHIP TO:

Enseco-Rocky Mountain Analytical
 4955 Yarrow Street
 Arvada, CO 80002
 (303) 421-6611

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249-07

Special Handling (Circle as appropriate and explain in record 5)
Hazardous material

Site Type (circle one)
 SW - Surface Water
 GW - Ground Water
 ME - Meteorological
 LK - Lake
 ES - Estuary
 SP - Spring
 SS - Special Source
 (505) 262-6678
 Phone (FTS)
 BILL DAM

Field ID: USGS/WRD/NEW MEXICO SWMU
 Station Name: KAFB090107-2
 Field Office: USGS
 Project: USGS
 Collector: USGS

File Deposition* (Circle one)
 Q - WATSTORE
 X - Lab File

Sample identification
EQUIPMENT BLANK
KAFB090107-2
 Station ID or Unique Number*
463536001
 Project Account #

For Laboratory Use Only

Year: 1990 Month: 09 Day: 06 Time: 1250
 Begin Date
 Month: 09 Day: 06 Time: 1310
 Composite End Date
 State Code: NM District/ User Code: 035 County Code: 001

Analysis level codes and schedules

6 = GW
 9 = SW
 H or 9
 Analysis Status**
 GS FIELD MANGE-LAB
 G
 Analysis Source**
 1 = SPIKE
 5 = DUPLICATE
 9 = REGULAR
 9 = STABLE
 J = STORM
 9 = ROUTINE

Sample Medium**
 Geologic Unit
 Analysis Status**
 Analysis Source**
 Hydrologic Condition**
 Sample Type**
 Hydrologic Event**

PARAMETER: TOC TOX NO2+NO3 DISSOLVED CHROMIUM TOTAL CHROMIUM
 METHOD: SW9060 SW9020 E353.2 SW3005/SW7M1 SW3020/SW7M1

PARAMETER: VOC VOC DIOXIN FURANS HERBICIDES
 METHOD: SW5030/SW6010 SW5030/SW8240 SW3520/SW8280 SW3520/SW8150

PARAMETER: APPENDIX IX ICP DISSOLVED APPENDIX IX ICP TOTAL
 METHOD: SW3005/SW6010 SW3010/SW6010

PARAMETER: APP. IX SEMI-VOC
 METHOD: SW3520/SW8270

Chain-of-Custody Record

PROJECT NAME KIRTLAND AFB SWMU PROJECT NO. 463536001 P.O. NO. _____

Relinquished by: (Signature) Bill Dam Received by: (Signature) AIRBORNE EXPRESS Date 900906 Time 1630

Relinquished by: (Signature) _____ Received by: (Signature) _____ Date _____ Time _____

Relinquished by: (Signature) _____ Received at lab by: (Signature) RNAL Date 09-07-90 Time 0930

Relinquished from lab by: (Signature) _____ Received by: (Signature) _____ Date _____ Time _____

Comments (Only 50 characters stored in NWIS)

Record 5 TIJERAS ARROYO WELL ON EAST SIDE OF
B.A.S.E.; EQUIPMENT BLANK

Record 6 _____

Total number of sample bottles for this request: 4 SHIP TO:

Enseco-Rocky Mountain Analytical
 4955 Yarrow Street
 Arvada, CO 80002
 (303) 421-6611
 ATTENTION: THOMPSON, BREYER, OR MCDEVITT

ENSECO ANALYTICAL SERVICES REQUEST FORM

11249-08

Special Handling (Circle as appropriate and explain in record 5)
Hazardous material
Station Name: KAFB090108-2
Field Office: USGS/WRD/NEW MEXICO SWMU
Project: USGS
Collector: (505) 262-6678
Site Type (circle one): GW - Ground Water
Phone (FTS): BILL DAM

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File
Sample identification
Station ID or Unique Number*: KAFB090108-2
Project Account #: 463536001
Begin Date: 1990 09 06 1250
Composite End Date: 09 06 1310
State Code*: NM
District/ User Code*: 035
County Code: 001

Analysis level codes and schedules
Sample Medium**: 6
Geologic Unit:
Analysis Status**: H or 9
Analysis Source**: G
Hydrologic Condition**:
Sample Type**:
Hydrologic Event**:
PARAMETER: TOC TOX NO2+NO3 DISSOLVED CHROMIUM TOTAL CHROMIUM
METHOD: SW9060 SW9020 E 353.2 SW3005/SW7191 SW3020/SW7191
PARAMETER: VOX VOC APP. IX DIOXIN/FURANS APP. IX HERBICIDES
METHOD: SW5030/SW8010 SW5030/SW8240 SW3520/SW8280 SW3520/SW8150
PARAMETER: APP. IX SEMI-VOC APP. IX ICP DISSOLVED APP. IX ICP TOTAL
METHOD: SW3520/SW8270 Co, Cu, Fe, Pb, Mn, Mo, Ni, V, Zn Co, Cu, Fe, Pb, Mn, Mo, Ni, V, Zn

Chain-of-Custody Record
PROJECT NAME: KIRTLAND AFB SWMU
PROJECT NO.: 463536001
P.O. NO.:
Relinquished by: (Signature) Bill Dam
Received by: (Signature) AIRBORNE EXPRESS
Date: 900906
Time: 1630
Relinquished by: (Signature)
Received by: (Signature)
Date:
Time:
Relinquished by: (Signature)
Received at lab by: (Signature) R.M.A.L.
Date: 09-07-90
Time: 0930
Relinquished from lab by: (Signature)
Received by: (Signature)
Date:
Time:

Comments (Only 50 characters stored in NWIS)
Record 5 T.I.J. ERAS, ARROYO WELL ON EAST SIDE OF BASE; BAILED 3.50 LITERS; T = 20.6; pH =
Record 6 7.071; S.P.C = 5.79

Total number of sample bottles for this request: 4
SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: THOMPSON, BREYER, OR MCDEVITT