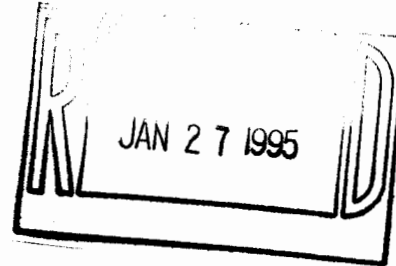


January 26, 1995

0080-3187-95

Mr. Cornelius Amindyas
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
525 Camino de los Marquez, Suite 4
Santa Fe, NM 87502



Re: Kirtland Air Force Base Sewage Lagoons and Golf Course Main Pond Post-Closure Plan

Dear Mr. Amindyas:

This letter serves as the second of five Phase I quarterly monitoring reports for the period August 1 through October 31, 1994, as required by the post-closure plan (PCP) for the Kirtland Air Force Base (KAFB) sewage lagoons and golf course main pond. The sampling was conducted by Daniel B. Stephens and Associates, Inc. (DBS&A) personnel.

The principal accomplishments of the last quarter include:

- Measurement of depths to ground water in all wells prior to purging
- Collection of ground-water samples on October 26, 1994 through November 3, 1994 from KAFB monitor wells 0501, 0502, 0503, and 0504 located at the sewage lagoons, from KAFB monitor wells 0602, 0608, 0609, and 0610 located at the golf course main pond, and from production well 4

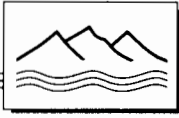
Ground-Water Table Elevations

Depth to ground water was measured at each well prior to purging. Table 1 (Attachment 1) presents ground-water table elevation data calculated for each individual monitor well sampling date. The second round ground-water elevations in all wells at the sewage lagoons dropped about 2.5 feet, except for monitor well 0504 where the drop was nearly 3.5 feet. Ground-water elevations in the wells at the golf course main pond rose slightly between July and October 1994.

Purge Water Volume and Recharge

All monitor wells were purged and sampled as described previously and as specified in the PCP and DBS&A standard operating procedures. Care was taken to ensure that all stagnant water was removed from the monitor wells at the sewage lagoons. These wells were sampled as outlined in the September 16, 1994 letter to Mr. Steve Zappe, which included a modification of the ground-water sampling procedure based on slow recharge rates observed at the sewage lagoon wells.





Mr. Cornelius Amindyas

January 26, 1995

Page 2

Ground-Water Quality

Ground-water samples were collected on October 26 through November 3, 1994 from KAFB monitor wells 0501, 0502, 0503, and 0504 located at the sewage lagoons, from KAFB monitor wells 0602, 0608, 0609, and 0610 located at the golf course main pond, and from production well 4. Ground-water samples were collected using a submersible pump. Turbidity measurements were recorded in the field, and extreme care was taken to minimize the turbidity of the ground-water samples. Samples were collected in clean bottles provided by the analytical laboratory and were handled as specified in the PCP, except for hand-delivery to a local laboratory, Soil and Water West of Rio Rancho. The samples were analyzed for total chromium (Cr) by Environmental Protection Agency (EPA) method 7191, hexavalent Cr by EPA method 7196, and turbidity by EPA method 180.1. Chain-of-custody documentation is included in Attachment 2.

Table 2 summarizes the results of ground-water chemical analytical data from this quarter's sampling activities. All Cr values (total and hexavalent) were below the New Mexico Water Quality Control Commission (WQCC) standard of 0.050 milligrams per liter (mg/L).

Because the concentration of total Cr in the ground-water sample collected from KAFB 0502 during round one exceeded one-half the WQCC standard ($0.5 * 0.050 \text{ mg/L} = 0.025 \text{ mg/L}$), an additional background ground-water sample was collected from KAFB production well 4, which is located approximately 200 yards southeast of the south sewage lagoon. All Cr values (total and hexavalent) in the sample collected from this well were also below the New Mexico WQCC standard of 0.050 milligrams per liter (mg/L).

We believe that this report satisfactorily describes all significant activities undertaken during the quarter. If you have any questions or comments, please call me at 822-9400.

Sincerely yours,

DANIEL B. STEPHENS & ASSOCIATES, INC.

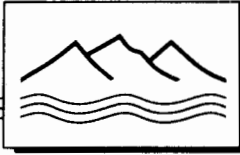
Richard Meixner, Ph.D.
Senior Scientist

RM/sd

Attachments (2)

cc: Steve Lee, KAFB

LIBRARY COPY



DANIEL B. STEPHENS & ASSOCIATES, INC.

ENVIRONMENTAL SCIENTISTS AND ENGINEERS

**SEWAGE LAGOON AND GOLF COURSE MAIN POND
POST-CLOSURE MONITORING
QUARTERLY REPORT**

**Prepared for
Kirtland Air Force Base
Albuquerque, New Mexico**

January 26, 1995



Attachment 1
Tables



**Table 1. Ground-Water Elevation Data
Post-Closure Monitoring**

Well Designation	Water Elevation (fmsl)	Date of Measurement	Depth to Water ¹
KAFB0501	4869.28	11/02/94	488.76
KAFB0502	4867.26	11/01/94	493.95
KAFB0503	4867.38	10/31/94	490.34
KAFB0504	4869.71	11/02/94	484.52
KAFB0602	5046.27	10/25/94	315.22
KAFB0608	5051.21	10/27/94	306.02
KAFB0609	5051.59	10/25/94	310.36
KAFB0610	5053.42	10/26/94	302.18

fmsl = feet above mean sea level

¹ All depths measured from top of well casing

**Table 2. Chromium and Turbidity
Post-Closure Monitoring**

Well Designation ¹	Date Sampled	Total Chromium (mg/L)	Hexavalent Chromium (mg/L)	Turbidity (NTU)
<i>Sewage Lagoons</i>				
KAFB0501	11/03/94	0.02	0.02	2
KAFB0501ad	11/03/94	0.02	0.02	2
KAFB0502	11/02/94	0.03	<0.01	3
KAFB0502ad	11/02/94	0.02	<0.01	3
KAFB0503	11/01/94	<0.02	<0.01	<1
KAFB0503ad	11/01/94	<0.02	<0.01	<1
KAFB0504	11/03/94	<0.02	<0.01	2
KAFB0504D	11/03/94	<0.02	NA	NA
<i>Golf Course Main Pond</i>				
KAFB0602	10/26/94	0.02	<0.01	<1
KAFB0608	10/28/94	<0.02	<0.01	2
KAFB0608ad	10/28/94	<0.02	<0.01	2
KAFB0609	10/26/94	<0.02	<0.01	1
KAFB0609ad	10/26/94	<0.02	<0.01	1
KAFB0610	10/27/94	<0.02	<0.01	<1
KAFB0610ad	10/27/94	<0.02	<0.01	<1
<i>Production Well</i>				
4	11/03/94	<0.02	<0.01	<1

¹ ad = analytical duplicate, D = duplicate sample

mg/L = Milligrams per liter

NTU = Nephelometric turbidity units

NA = Not analyzed

Attachment 2

**Laboratory Data and
Chain-of-Custody Sheets**

SOIL AND WATER WEST, INC.
NATURAL RESOURCE CONSULTANTS
AND TESTING LABORATORIES

1700 Southern Blvd.
Rio Rancho, N. M. 87124

(505) 891-9472
FAX 892-6607

NAME: D.B. Stephens and Associates		DATE: 11/02/94		
ADDRESS: 6020 Academy Road NE, Suite 100 Albuquerque, N.M. 87109		PHONE: 822-9400		
CONTACT: Rich Meixner		PROJECT/PO#:		
DATE RECEIVED: 10/27/94	TIME RECEIVED: 8:00am	NUMBER OF SAMPLES: 1		
LAB #	SAMPLE ID	T Cr mg/L	Hex Cr mg/L	Turbidity NTU's
1704	KAFB0610	<0.02	<0.01	<1
1704-D	DUPLICATE	<0.02	<0.01	<1

COMMENTS:

SIGNED: *Russell H. Zittlösen*
Russell H. Zittlösen
Laboratory Director

DATE: 11/2/94

SIGNED: *Clifford R. Landers*
Clifford R. Landers
President

DATE: 11/2/94

SOIL AND WATER WEST, INC

NATURAL RESOURCE CONSULTANTS
AND TESTING LABORATORIES

1700 Southern Blvd.
Rio Rancho, NM 87124

Phone: (505) 891-9472
Fax: (505) 892-6607

NAME: <u>D.B. Stephens & Associates</u>	DATE: <u>11/2/94</u>
ADDRESS: <u>6020 Academy NE, Suite 100</u>	PHONE: <u>822-9400</u>
<u>Albuquerque, N.M. 87109</u>	NUMBER OF SAMPLES: <u>2</u>
CONTACT: <u>Rich Meixner</u>	PROJECT / PO#: <u>3186</u>
DATE RECEIVED: <u>10/26/94</u>	TIME RECEIVED: <u>8:00am</u>

LAB #	SAMPLE ID	Cr mg/L	Hex Cr mg/L	Turbidity NTU			
1700-1	KAFB0602	0.02	<0.01	<1.0			
1700-2	KAFB0609	<0.02	<0.01	1			
1700-2D	Duplicate	<0.02	<0.01	1			
1700-2S	Matrix Spike Rec.	107%	104%				
Method #:							
Method D/L:							

Comments: _____

SIGNED: *Robert H. Pittman*

DATE: 11/2/94

SIGNED: *Clifford R. Sanderson*

DATE: 11/2/94

SOIL AND WATER WEST, INC

NATURAL RESOURCE CONSULTANTS
AND TESTING LABORATORIES

1700 Southern Blvd.
Rio Rancho, NM 87124

Phone: (505) 891-9472
Fax: (505) 892-6607

NAME: <u>D. B. Stephens & Associates</u>	DATE: <u>11/2/94</u>
ADDRESS: <u>6020 Academy</u>	PHONE: <u>822-9400</u>
<u>Albuquerque, N.M. 87109</u>	NUMBER OF SAMPLES: <u>2</u>
CONTACT: <u>Rich Meixner</u>	PROJECT / PO#: _____
DATE RECEIVED: <u>10/28/94</u>	TIME RECEIVED: <u>8:06am</u>

LAB #	SAMPLE ID	T. Cr mg/L	Hex Cr mg/L	Turbidity NTU			
1706-1	KAFB0502-EB	<0.02					
1706-2	KAFB0608	<0.02	<0.01	2			
1706-2D	Duplicate	<0.02	<0.01	2			
1706-2S	Matrix Spike Rec	102%					
Method #:							
Method D/L:							

Comments: _____

SIGNED: *Robert H. Pittman*

DATE: 11/2/94

SIGNED: *Clifford R. Zamora*

DATE: 11/2/94

SOIL AND WATER WEST, INC

NATURAL RESOURCE CONSULTANTS
AND TESTING LABORATORIES

1700 Southern Blvd.
Rio Rancho, NM 87124

Phone: (505) 891-9472
Fax: (505) 892-6607

NAME: <u>D. B. Stephens</u>	DATE: <u>11/10/94</u>
ADDRESS: <u>6020 Academy, Suite 100</u>	PHONE: <u>822-9400</u>
<u>Albuquerque, N.M. 87109</u>	NUMBER OF SAMPLES: <u>1</u>
CONTACT: <u>Rich Meixner</u>	PROJECT / PO#: <u>KAFB Sewage&GCP</u>
DATE RECEIVED: <u>11/1/94</u>	TIME RECEIVED: <u>8:00am</u>

LAB #	SAMPLE ID	T. Cr mg/L	Hex Cr mg/L	Turbidity NTU's	Nitrate mg/L	Nitrite mg/L	Ammonia mg/L
1712	KAFB0503	<0.02	<0.01	<1	14.2	0.02	<0.1
1712-d	Duplicate	<0.02	<0.01	<1	13.6	0.02	<0.1

Method #:
Method D/L:

Comments: _____

SIGNED: *J. Clarke*

DATE: 11/10/94

SIGNED: *Larry Medina*

DATE: 11/10/94

SOIL AND WATER WEST, INC

NATURAL RESOURCE CONSULTANTS
AND TESTING LABORATORIES

1700 Southern Blvd.
Rio Rancho, NM 87124

Phone: (505) 891-9472
Fax: (505) 892-6607

NAME: <u>D. B. Stephens</u>	DATE: <u>11/16/94</u>
ADDRESS: <u>6020 Academy, Suite 100</u>	PHONE: <u>822-9400</u>
<u>Albuquerque, N.M. 87109</u>	NUMBER OF SAMPLES: <u>1</u>
CONTACT: <u>Rich Meixner</u>	PROJECT / PO#: _____
DATE RECEIVED: <u>11/2/94</u>	TIME RECEIVED: <u>8:00am</u>

LAB #	SAMPLE ID	T. Cr mg/L	Hex Cr mg/L	Turbidity NTU's	Nitrate mg/L	Nitrite mg/L	Ammonia mg/L
1714	KAFB0502	0.03	<0.01	3	14.3	0.02	0.5
1714-D	Duplicate	0.02	<0.01	3	13.6	0.02	0.5
1714-S	Matrix Spike Rec.		108%		106%		
Method #:							
Method D/L:							

Comments: _____

SIGNED: *Russell H. Johnson*

DATE: 11/16/94

SIGNED: *Gerry Sierra*

DATE: 11/16/94

SOIL AND WATER WEST, INC

NATURAL RESOURCE CONSULTANTS
AND TESTING LABORATORIES

1700 Southern Blvd.
Rio Rancho, NM 87124

Phone: (505) 891-9472
Fax: (505) 892-6607

NAME: <u>D. B. Stephens & Associates</u>	DATE: <u>11/15/94</u>
ADDRESS: <u>6020 Academy, Suite 100</u>	PHONE: <u>822-9400</u>
<u>Albuquerque, N.M. 87109</u>	NUMBER OF SAMPLES: <u>4</u>
CONTACT: <u>Rich Meixner</u>	PROJECT / PO#: _____
DATE RECEIVED: <u>11/3/94</u>	TIME RECEIVED: <u>8:35am</u>

LAB #	SAMPLE ID	T. Cr mg/L	Hex Cr mg/L	Turbidity NTU's	Nitrate mg/L	Nitrite mg/L	Ammonia mg/L
1718-1	KAFB0504	<0.02	<0.01	2	8.1	0.02	0.4
1718-2	KAFB0504-DUP	<0.02					
1718-3	PRODUCTION WELL #4	<0.02	<0.01	<1	9.9	0.02	0.3
1718-4	KAFB0501	0.02	0.02	2	7.3	0.02	<0.1
1718-4D	Duplicate	0.02	0.02	2	7.4	0.02	<0.1
1718-4S	Matrix Spike Rec	107%			104%		
Method #:							
Method D/L:							

Comments: _____

SIGNED: *David H. Zittler*

DATE: 11/15/94

SIGNED: *Ferry Garcia*

DATE: 11/14/94

Soil and Water West, Inc.

Natural Resource Consultants and Testing Laboratories
 1700 Southern Blvd., Rio Rancho, NM 87124
 (505) 891-9472 FAX (505) 892-6607

Chain of Custody Record

Laboratory ID No.: 1718

Date Delivered: 11/4/94

Time in Lab: 8:35

Page 1 of 1

Analysis Request

Contact: Mr Bill HENDER
 Company: James S. Stephens & Assoc.
 Address: 1620 N. MAINLINE STREET
A.B. NM 87103
 Phone (FAX): 822 7400
 Sampler: (Print) Barbara Sherris
 Signature: Barbara Sherris

							Remarks					
12/1/94												Normal TAT
			KATR0504		X							} 3 bottles
			KATR0504			X						
			KATR0504				X					
			KATR0504-DUP		X							
		1347	Production well #4		X							
						X						
							X					
12/1/94	11-20	1645	KATR0501		X	X	X					3 bottles

Relinquished by: Barbara Sherris
 Received by: [Signature]
 Date and Time: 11-03-94 0838

Relinquished by: _____
 Received by: _____
 Date and Time: _____

Remarks: For Results...
Lab please

Soil and Water West, Inc.

Natural Resource Consultants and Testing Laboratories
 1700 Southern Blvd., Rio Rancho, NM 87124
 (505) 891-9472 FAX (505) 892-6607

Chain of Custody Record

Page 1 of 1

Laboratory ID No.:

Date Delivered:

Time in Lab:

Contact: Mr. Bob Anderson

Company: Soil and Water West, Inc.

Address: 1700 Southern Blvd. Rio Rancho, NM 87124

Phone (FAX): (505) 892-6607

Sampler: (Print) Bob Anderson

Signature: [Signature]

Analysis Request

Remarks

Matrix	Date	Time	Sample ID	Lab ID

Relinquished by: [Signature]

Received by: [Signature]

Date and Time: 10/21/03 08:03

Relinquished by: _____

Received by: _____

Date and Time: _____

Remarks: _____

Soil and Water West, Inc.

Natural Resource Consultants and Testing Laboratories
 1700 Southern Blvd., Rio Rancho, NM 87124
 (505) 891-9472 FAX (505) 892-6607

Chain of Custody Record

Page 1 of 1

Laboratory ID No.:

Date Delivered:

Time in Lab:

Contact: MELINDA MELYNER

Company: LADIER & STEPHENSON, INC.

Address: 6020 N. FUTURE STE 100
ALBUQUERQUE NM 87109

Phone (FAX): 822 3100

Proj. #: 186

Proj. Name: KAFB 2503

Analysis Request

Matrix Date Time Sample ID Lab ID

11/01/00 11/01/00 1500 KAFB0503

11/01 ↓ ↓ ↓

11/01 ↓ ↓ ↓

Total Chromium
 Chromium at 1000 mg/kg
 Chromium at 100 mg/kg

Remarks

Relinquished by: Indira Singh

Received by: Chifford R. Lusk

Date and Time: 11/1/00 7:13 AM

Relinquished by: _____

Received by: _____

Date and Time: _____

Remarks: For results to

Rich, please.

Soil and Water West, Inc.
 Natural Resource Consultants and Testing Laboratories
 1700 Southern Blvd., Rio Rancho, NM 87124
 (505) 891-9472 FAX (505) 892-6607

Chain of Custody Record

Laboratory ID No.: 1706
 Date Delivered: 10/28/94
 Time in Lab: 8:06 AM

Page 1 of 1

Analysis Request

Contact: DK LEE HEINER
 Company: DANIEL E. HEINER & ASSOC.
 Address: 1700 SOUTHERN BLVD
ALBUQUERQUE NM 87103
 Phone (FAX): 505 892-6607
 Sampler: (Print) DANIEL E HEINER
 Signature: [Signature]

Matrix	Date	Time	Sample ID	Lab ID
	10-27-94	1145	KAEB0502-EB	X
	↓	↓	1511 KAEB0608	X
	↓	↓	1511 KAEB 0608	X

Remarks

Vertical handwritten notes in the grid area.

Relinquished by: [Signature]
 Received by: [Signature]
 Date and Time: 10-28-94 0803

Relinquished by: _____
 Received by: _____
 Date and Time: _____

Remarks: _____

Soil and Water West, Inc.

Natural Resource Consultants and Testing Laboratories
 1700 Southern Blvd., Rio Rancho, NM 87124
 (505) 891-9472 FAX (505) 892-6607

Chain of Custody Record

Laboratory ID No.:

Date Delivered:

Time in Lab:

Page / of /

Contact: MR. RICH HELYNER
 Company: DANIEL B. STEITENS & ASSOC., INC.
 Address: 6020 ACADEMY NE SUITE 100
ALBUQUERQUE, NM 87109
 Phone (FAX): 505-822-2400
 Proj. #: 5026
 Proj. Name: KAFIS Source Lagoons & Golf Course

Analysis Request

Matrix	Date	Time	Sample ID	Lab ID	TOTAL CHROMIUM	HEAVY METALS CHROMIUM / MERCURY													Remarks	
H ₂ O	10-26-04		NAF-0210		X	X														

Relinquished by: [Signature]
 Received by: [Signature]
 Date and Time: 10-26-04
10-27-04 0800

Relinquished by: _____
 Received by: _____
 Date and Time: _____

Remarks:

Soil and Water West, Inc.

Natural Resource Consultants and Testing Laboratories
 1700 Southern Blvd., Rio Rancho, NM 87124
 (505) 891-9472 FAX (505) 892-6607

Chain of Custody Record

Page 1 of 1

Laboratory ID No.:

Date Delivered:

Time in Lab:

Analysis Request

Contact: Mr Rich Henderson
 Company: WALTON MEMBERS & ASSOC
 Address: 120 ACADEMY WALK
ALBUQUERQUE NM
 Phone (FAX): 505 240 2400
 Proj. #: 5186
 Proj. Name: KAYSENUS LAKE / GOLF COURSE

Total Chromium																					
	11 elements at Clean up / 11/20/02																				

Remarks

Matrix	Date	Time	Sample ID	Lab ID
--------	------	------	-----------	--------

110	11/20/02	1525	KAYSENUS LAKE			Y	Y															
						Y	Y															

Relinquished by: [Signature]
 Received by: Cliff R. [Signature]
 Date and Time:

Relinquished by:
 Received by:
 Date and Time:

Remarks: For 10/10/02 to 11/20/02
plus
Altered in 11/20/02 for 10/10/02
Back Street