



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 833D COMBAT SUPPORT GROUP (TAC)

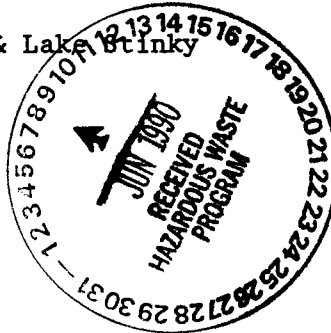
HOLLOMAN AIR FORCE BASE NM 88330-5000

07 JUN 1990

REPLY TO: 833 CSG/DEV
ATTN OF:

SUBJECT: Contaminant Study/Lake Holloman & Lake Stinky

TO: US Department of the Interior
Office of the Secretary
Attn: Raymond Churan
Office of Environmental Affairs
PO Box 649
Albuquerque, NM 87103



1. On 5 June 1990, the base received a Scope of Work (attached) from the Fish and Wildlife Service for a contaminant study in Lake Holloman and Lake Stinky. Prior to submitting this scope to our headquarters, Holloman AFB requests a letter of concurrence from the Department of the Interior (DOI) that this scope will address all concerns from any agency under the DOI. Should other agencies under the DOI have additional concerns, we would like to address them at the same time.
2. We are rapidly approaching the end of the third quarter of FY90. The base needs to submit this funding request, as soon as possible, in order to be considered for late FY90 funds that may not have otherwise been obligated. Consequently, your immediate attention to this scope of work is requested as the base will not act upon it until we receive your letter, stating this scope will address all concerns of all agencies under the DOI or a concurrence with this scope and an additional statement of work.
3. We look forward to working with you on this project. If you have any questions, please contact Sharon Moore at 479-3931.


HOWARD E. MOFFITT
Deputy Base Civil Engineer

Atch
Scope of Work

cc: w/Atch
BLM (Jim Fox)
F&W Service (Tom O'Brien)
NMEID (Bruce Swanton)

Readiness is our Profession



Rec'd DEV
5 June 90

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

May 31, 1990

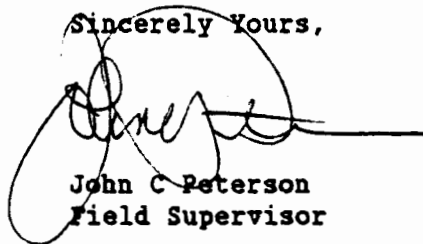
Ms. Sharon N. Moore
U. S. Air Force
833 CSG/DEV
Holloman Air Force Base, New Mexico 88330

Dear Ms. Moore:

This letter is a follow up to the April 20, 1990 meeting regarding the Holloman Air Force Base Waste Water Treatment Facility. The Fish and Wildlife Service (Service) remains concerned that potential contaminants in Lake Holloman could adversely impact Department of Interior Trust Resources. Consequently, the Albuquerque Field Office's Environmental Contaminant staff members have prepared a scope of work outlining a proposed contaminant study that addresses both the Service's concerns regarding trust responsibilities and those of the Bureau of Land Management. The scope of work addresses two different analytical schedules, a 90 day and a 15 day turnaround for sample analysis. The Service's, Patuxent Analytical Control Facility, Laurel Maryland, handles all contracts with our contract labs and would be unable to enter these samples into the 1990 analytical contract schedule. By conducting the field work in FY 1990, the samples would be put into the analytical queue in early FY 1991.

Please contact Thomas O'Brien or Mike Donahoo at (505) 883-7877 or Fts 474-7877 if you have any question regarding the scope of work or to schedule a meeting to discuss this project.

Sincerely Yours,



John C. Peterson
Field Supervisor

cc:
Regional Director, U.S. Fish and Wildlife Service, Fish and Wildlife
Enhancement, Albuquerque, New Mexico

Fiscal Year 1990
Scope of Work
Contaminant Study, Lake Holloman
Holloman Air Force Base, New Mexico

Description of Project: Lake Holloman is a natural playa lake located in the Tularosa Basin approximately 10 miles southwest of Alamogordo, New Mexico. Lake Holloman and adjacent Lake Stinky have a surface area of approximately 180 acres (72.84 hectares). Surface water is comprised of approximately 50 percent ground water and 50 percent surface inflow from the wastewater treatment plant on Holloman Air Force Base. The Bureau of Land Management has surface management responsibility for most of the land surrounding Lakes Holloman and Stinky. The lakes have been designated as official bird sanctuaries by the National Audubon Society. Other recreational activities including hunting occur at the lakes.

The Fish and Wildlife Service (Service) recognizes Lake Holloman and Lake Stinky as important year-round habitat for migratory birds. These lakes are also frequented by the Federally endangered peregrine falcon (Falco peregrinus tundrius). Several bird species that are candidates for listing under the Endangered Species Act have also been recorded as occurring at Lake Holloman including the snowy plover (Charadrius alexandrinus), white-faced ibis (Plegadis chihi), and long-billed curlew (Numenius arquata). The Mesilla Valley Audubon Society has documented the presence of over 80 species of birds utilizing the Lake Holloman area. Over 1,000 waterfowl and shorebirds were observed on Lake Holloman October 26, 1989.

Lake Holloman has served as the end discharge point of the Holloman Air Force Base (HAFB) wastewater treatment facility (WWTF). Historic records for the HAFB indicate that past discharge of priority pollutants have occurred at the WWTF. Numerous organic and inorganic compounds have been identified in the series of six lagoons that comprise a portion of the WWTF and eventually discharge to Lake Holloman. These compounds include various aliphatic and polycyclic aromatic hydrocarbons such as 1,2,4-trichlorobenzene, 2-methylnaphthalene, bis(2-ethylhexyl)phthalate, fluorene and pyrene. Inorganic compounds that were identified in the lagoons and are of concern to the Service in migratory birds include arsenic, cadmium, chromium, lead, mercury and cyanide compounds. In addition to the previously mentioned compounds, the Service is concerned about potential high levels of PCB compounds that may exist in Lake Holloman, concentrations up to 191 ug/gram were found in the sludge of lagoons A and B. The presence of these compounds may represent a long term adverse impact to Department of Interior Trust Resources. These compounds in food chain organisms at high levels can result in biomagnification to concentrations that result in behavioral or reproductive impairment to migratory birds.

This contaminant study will investigate whether the organic and inorganic compounds that have been noted to occur in the WWTF lagoons also occur in biological samples collected from Lake Holloman, Lake Stinky and Lagoon G. The study will determine if contaminants are present in plants, fish, aquatic

invertebrates and birds at levels that may cause behavioral or reproductive problems to Interior Trust Resources. To make these determinations the Service will need to collect and analyze biological samples for inorganic, organic, aliphatic and polycyclic aromatic hydrocarbon compounds (PAH).

Description of Needs: The determination of the presence of and concentration levels of inorganic, organic, aliphatic and PAH compounds in biological materials will require the collection and analysis of aquatic plants, aquatic invertebrates, fish and birds. Separate sample sets of plants, aquatic invertebrates, fish and birds will be collected for each analytical test. Bird species that may be collected for analysis may include the american coot (Fulica americana), killdeer (Charadrius wilsonia) and western kingbirds (Tyrannus verticalis). The bird samples will be dissected to obtain the respective tissue type for each analysis proposed; for example, liver and kidney tissue will be used for inorganic analysis and carcass tissue will be used for organic analysis. The sample set and analysis that will be conducted are as follows:

<u>Sample type</u>	<u>Sample Matrix</u>	<u>Analysis Requested</u>
Plant	10 composites	ICP(precon), Hg, As, Se
Invertebrate	5 composites	ICP(precon), Hg, As, Se
Invertebrate	5 composites	organochlorine scan
Invertebrate	5 composites	aliphatic scan
Invertebrate	5 composites	PAH scan
Mosquitofish	5 composites	ICP(precon), Hg, As, Se
Mosquitofish	5 composites	organochlorine scan
Mosquitofish	5 composites	aliphatic scan
Mosquitofish	5 composites	PAH scan
Waterfowl species	10 individual	ICP(precon), Hg, As, Se
Waterfowl species	10 individual	organochlorine scan
Waterfowl species	10 individual	aliphatic scan
Waterfowl species	10 individual	PAH scan
Shore bird	10 individual	ICP(precon), Hg, As, Se
Shore bird	10 individual	organochlorine scan
Shore bird	10 individual	aliphatic scan
Shore bird	10 individual	PAH scan
Kingbird	10 individual	ICP(precon), Hg, As, Se
Kingbird	10 individual	organochlorine scan
Kingbird	10 individual	aliphatic scan
Kingbird	10 individual	PAH scan

Description of Functions: Consultation and coordination with the environmental staff at Holloman Air Force Base would occur at every phase of the project. If Holloman Air Force Base requires duplicate samples for analysis by an Air Force contractor, the Service will assist in sample collection and preparation of the samples. The Service will also coordinate with the Bureau of Land Management to address the management responsibilities of the Bureau. Coordination with the New Mexico Environmental Improvement Division will also occur to insure that issues relevant to the Resource Conservation and Recovery Act closure plan are addressed. The Service will also coordinate with the New Mexico Department of Game and Fish as well as the

Department of Interior Office of Environmental Project Review. This study will evaluate a wide suite of compounds and should address the concerns of the Service as well as those of the Bureau of Land Management and the Office of Environmental Project Review. This study will also be sensitive to the concerns that have been expressed by the general public about Lake Holloman and the surrounding area.

The tasks that will be accomplished for this study include collection of samples, preparation of samples for analysis, preparation of a sample analysis catalog with detailed instructions for required analytical detection limits, shipment of samples to analytical labs, evaluation and interpretation of analytical data and report preparation of final results. Analytical samples for the proposed study can not be processed through Fish and Wildlife Service contract labs in FY 1990 as these labs are at capacity for sample analysis for FY 1990. The catalog can be prepared in FY 1990 and submitted to the analytical queue in early FY 1991.

Schedule of Function

- A. Biological Sample CollectionJuly-August 1990
- B. Analytical sample preparation and
catalog preparationSeptember 1990
- C. Sample analysis availability of data
15 day turn aroundDecember 1990
90 day turn aroundMarch 1991
- D. Report preparation
15 day turn aroundJanuary 1991
90 day turn aroundApril 1991

Staff Day and Funding:

	Staff Days	
	FY 90	FY 91
A. Biological collections, Sample preparation catalog preparation	115	
B. Report preparation		72
	115	72
FY 1990 Staff Days 115 x \$225.00.....	\$25,875	
38 % overhead	\$9,833	
	<u>\$35,708</u>	
FY 1991 Staff Days 72 x 225.00	\$16,200	
38 % overhead.....	\$6,156	
		<u>\$22,356</u>

C. Analytical Costs

90 day turnaround

Inorganic

Plants \$290 x 10 samples	=	\$2,900
Invertebrates \$290 X 5 Samples	=	\$1,450
Fish \$290 x 5 samples	=	\$1,450
Birds \$290 x 30 samples	=	\$7,440

Organic

Invertebrates \$384 x 5 samples	=	\$1,920
Fish \$384 x 5 samples	=	\$1,920
Birds \$384 x 30 samples	=	\$11,520

Aliphatic

Invertebrates \$222 x 5 samples	=	\$1,110
Fish \$222 x 5 samples	=	\$1,110
Birds \$195 x 30 samples	=	\$5,850

PAH

Invertebrates \$294 x 5 samples	=	\$1,470
Fish \$294 x 5 samples	=	\$1,470
Birds \$290 x 30 samples	=	\$8,700

Total		<u>\$48,310</u>
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15 Day Turnaround

Inorganic

Plants \$580 x 10 samples	=	\$5,800
Invertebrates \$580 x 5 samples	=	\$2,900
Fish \$580 x 5 samples	=	\$2,900
Birds \$496 x 30 samples	=	\$14,880

Organic

Invertebrates \$768 x 5 samples	=	\$3,840
Fish \$768 x 5 samples	=	\$3,840
Birds \$760 x 30 samples	=	\$22,800

Aliphatic

Invertebrates \$444 x 5 samples	=	\$2,220
Fish \$444 x 5 samples	=	\$2,220
Birds \$390 x 30 samples	=	\$11,700

PAH

Invertebrates \$588 x 5 samples	=	\$2,940
Fish \$588 x 5 samples	=	\$2,940
Birds \$580 x 30 samples	=	\$17,400
		<hr/>
	Total	\$96,380

D. Total Project Cost

	FY 90	FY 91
90 day turnaround:		
Staff days	\$35,708	\$22,356
Analytical costs	-0-	\$48,310
	<hr/>	<hr/>
	\$35,708	\$77,666
15 day turnaround:		
Staff days.....	\$35,707	\$22,356
Analytical costs	-0-	\$96,380
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	\$35,707	\$118,736