

CORRES. CONTROL  
OUTGOING LTR NO.

# EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC.  
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

DOE ORDER# 5400.1  
94 RF 09294

DIST.	LTR	ENC
AMARAL, M.E.		
BURLINGAME, A.H.	X	
BUSBY, W.S.		
BRANCH, D.B.		
CARNIVAL, G.J.		
DAVIS, J.G.		
FERRERA, D.W.		
FRAY, R.E.		
GEIS, J.A.		
GLOVER, W.S.		
GOLAN, P.M.		
HANNI, B.J.		
HARMAN, L.K.		
HEALY, T.J.		
HEDAHL, T.		
HILBIG, J.G.		
HUTCHINS, N.M.		
JACKSON, D.T.		
KELL, R.E.		
KUESTER, A.W.		
MARX, G.E.		
McDONALD, M.M.		
McKENNA, F.G.		
MONTROSE, J.K.		
MORGAN, R.V.		
POTTER, G.L.		
PIZZUTO, V.M.		
RISING, T.L.		
SANDLIN, N.B.		
SCHWARTZ, J.K.		
SETLOCK, G.H.		
STEWART, D.L.		
STIGER, S.G.	X	
TOBIN, P.M.		
VOORHEIS, G.M.		
WILSON, J.M.		
<i>C. A. Bisher</i>		
<i>M. S. Budge</i>		
<i>S. H. Halliwell</i>		
<i>E.C. Mack</i>		
<i>E. Ventresca</i>		
CORRES. CONTROL	X	X
ADMN RECORD/080	X	X(2)
TRAFFIC		
PATS/T130G		

September 14, 1994

94-RF-09294

J. M. Roberson  
Acting Assistant Manager  
for Environmental Restoration  
DOE, RFFO

Attn: J. Pepe

CURRENT STATUS POLYCHLORINATED BIPHENYL (PCB) TISSUE SAMPLING FOR WALNUT CREEK, WOMAN CREEK, AND OFFSITE (09005) - SGS-500-94

Action: None

Results of the Operable Unit No. 6 (OU6) pond sediment and tissue sampling project for the Environmental Evaluation (EE) portion of the Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI), indicated that detectable levels of PCBs are found in minnows from some A- and B-series ponds. These levels were found to be below 500 ug/kg, but at levels that can cause adverse effects on some sensitive fish species. Whole body concentrations of 400 ug/kg resulted in reproductive impairment in rainbow trout (EPA, 1980), but non-salmonid species appear to be less sensitive. Eisler (1986) recommends a maximum body burden for trout at 400 ug/kg fresh weight. No recommendations were provided for non-salmonid species. These levels are not known to effect species existing at Rocky Flats Environmental Technology Site (RFETS).

Environmental Protection Agency (EPA) based its Ambient Water Quality Criterion (AWOC) (0.014 ug/l) and Sediment Quality Criterion (SQC) (19 ug PCBs/g total organic carbon) on protection of wildlife feeding in aquatic habitats (EPA, 1980). Each of these criteria is based on preventing bioaccumulation of PCBs in aquatic invertebrates and fish to levels above 640 ug/kg, the level producing reproductive impairment in mink (Platonow and Karstad, 1973).

PCB concentrations in some of the sediments and biota from the Walnut Creek drainage slightly exceed the above noted levels. Ponds in the A-series did not contain detectable quantities of PCBs in sediments. The maximum PCB content in sediments in the B-series is 1300 ug/kg in shallow sediments (less than six inches deep) and 10,000 ug/kg occurring below two feet in depth. The EPA SQC for sediments in the A- and B- series ponds is approximately 300 ug/kg. Bass from A-2 pond, the top aquatic predator in the ponds, contain PCBs ranging from 40 to 57 ug/kg. The maximum concentration in fish tissue collected was about 500 ug/kg in fat head minnows from B-4 pond. A comparison of the fat head minnow tissue results between B-4 and B-5 pond indicates that the PCBs are confined primarily to the upper B-series ponds as evidenced by the significantly lower concentrations of PCBs in fat head minnow tissue in B-5 pond. The maximum values are restricted to B-4 pond. Attachment 2 (Table 1) contains the preliminary data from the recent OU6 sampling where PCBs were detected in the tissues.

The contracted laboratory is currently processing the samples that have been collected for PCB analysis from several onsite ponds and the offsite reservoirs in OU3. The following results were verbally transmitted on Thursday, September 1:

CLASSIFICATION:

JCNI		
JNCLASSIFIED	Y	Y
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER  
SIGNATURE  
DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
CLASSIFICATION OFFICE

REPLY TO RFP CC NO:  
94-RF-09005

OPTION ITEM STATUS  
PARTIAL/OPEN  
 CLOSED

TR APPROVALS:  
VAH  
FIG & TYPIST INITIALS  
VAH/RCT

DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
CLASSIFICATION OFFICE

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<u>Location</u>	<u>Sample Type</u>	<u>PCB ug/kg Aroclor-1254</u>	<u>Sample Date</u>
Great Western	Carp	Below Detection Limit	August 19, 1994
Great Western	Carp	Below Detection Limit	August 19, 1994
Great Western	Carp	Below Detection Limit	August 19, 1994
Great Western	Carp	52.4 ug/kg	August 19, 1994
Great Western	Carp	Below Detection Limit	August 19, 1994
Great Western	Carp	Below Detection Limit	August 19, 1994

According to the contracted laboratory, the large whole body samples have slowed the grinding process considerably. They have committed to deliver the data as soon as possible. The fish samples from Standley Lake Reservoir, Mower Reservoir, and one minnow sample from Great Western Reservoir will be verbally transmitted on September 15, 1994, or early September 16, 1994. These were originally scheduled to be transmitted on September 8, 1994, but have been delayed due to laboratory equipment failure. The analytical results for the crayfish and minnows collected from C-1, C-2, D-1, D-2, and the pond at Walnut and Indiana will be completed and verbally transmitted to EG&G on September 19, 1994.

When the analytical results are completed and transmitted to EG&G, a data summary and short write up will be transmitted to DOE, RFFO.

Appendix I to the Operable Unit 6 Work Plan, "Addendum No. 1, Additional Pond Sediment Investigations," will be revised to encompass the tissue sampling completed in Great Western Reservoir, Standley Lake Reservoir, Mower Reservoir, C-1 pond, and C-2 pond. The document will address the sampling that occurred in OU3, OU5, and OU6 for PCBs in tissues and pond sediment. The results will be evaluated and incorporated into the respective EE report for the Baseline Risk Assessment.

Please call Neil Holsteen at extension 6987 or Frank Vertucci at extension 3427, if you have any questions.



S. G. Stiger, Director  
Environmental Restoration Program Division  
EG&G Rocky Flats, Inc.

NAH:rct

Orig. and 1 cc - J. M. Roberson

Attachments:  
As Stated

cc:  
M. N. Silverman - DOE/RFFO

References Cited

Eisler, R. 1986. Polychlorinated Biphenyl Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review. U.S. Fish and Wildlife Service Biological Report 85 (1.7).

EPA. 1980. 40 FR 791318. Ambient Water Quality Criteria.

Platonow, N.S. and Karstad, L.H. 1973. "Dietary Effects of Polychlorinated Biphenyls on Mink." *Can. J. Comp. Med.*, 30:397-400.

Table 1\_  
 Preliminary OU6 Tissue PCB Data

<u>Pond</u>	<u>Sample Type</u>	<u>Species</u>	<u>PCB ug/kg Aroclor-1254</u>	<u>Sample Date</u>
A-2	Bass	<i>Micropterus salmonoides</i>	40	7/14/94
A-2	Bass	<i>Micropterus salmonoides</i>	47	7/14/94
A-2	Bass	<i>Micropterus salmonoides</i>	56	7/14/94
A-4	fat head minnow	<i>Pimiphales promelas</i>	14	7/12/94
A-4	fat head minnow	<i>Pimiphales promelas</i>	14	7/12/94
A-4	fat head minnow	<i>Pimiphales promelas</i>	24	7/12/94
B-1	tiger salamander	<i>Ambystoma tigrinum</i>	40	7/14/94
B-1	tiger salamander	<i>Ambystoma tigrinum</i>	25.9	7/15/94
B-2	tiger salamander	<i>Ambystoma tigrinum</i>	59	7/15/94
B-2	tiger salamander	<i>Ambystoma tigrinum</i>	134	7/15/94
B-2	tiger salamander	<i>Ambystoma tigrinum</i>	105	7/14/94
B-4	plant		23	6/9/94
B-4	insect		40	6/7/94
B-4	fat head minnow	<i>Pimiphales promelas</i>	479	6/10/94
B-4	fat head minnow	<i>Pimiphales promelas</i>	498	6/10/94
B-4	fat head minnow	<i>Pimiphales promelas</i>	464	6/10/94
B-5	fat head minnow	<i>Pimiphales promelas</i>	168	6/20/94
B-5	fat head minnow	<i>Pimiphales promelas</i>	170	6/20/94
B-5	fat head minnow	<i>Pimiphales promelas</i>	140	6/20/94