

CORRES CONTROL
OUTGOING LTR NO

47792

DOE ORDER# 5400.1

EG&G ROCKY FLATS

94RF 12252

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

DIST	TR	ENC
ARAL ME		
EURLINGAME A H		
BUSBY W S		
BRANCH D B		
CARNIVAL G J		
DAVIS J G		
FERRERA D W		
FRAY R E		
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C OVER W S		
GOLAN P M		
HANNI B J		
HARMAN L K		
HEALY T J		
HEJAH L T		
HILBIG J G		
HUTCHINS N M		
JACKSON D T		
KEIL 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		
SE'LOCK G H		
STEWART D L		
STIGER S G		
TOBIN P M		
VOORHEIS G M		
WILSON J M		
<u>E. W. CHROME</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>R. M. CYENAROWICZ</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>M. L. KACC</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>S. H. KANAWEL</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>E. G. MAST</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>M. SIDERS</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>C. A. BICHER</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CORRES CONTROL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ADMN RECORD/080	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TRAFFIC		
PATS/T130G		

December 13 1994

94 RF 12252

Frazer Lockhart
Environmental Restoration Division
DOE RFFO

Attn Kurt Muenchow

OPERABLE UNIT 5 (OU5) WOMAN CREEK PRIORITY DRAINAGE HUMAN HEALTH RISK ASSESSMENT SECOND DATA AGGREGATION MEETING MINUTES CAB-077 94

Action Forward meeting minutes to the Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) and assist with the closure of two open items

This letter transmits the meeting minutes from the Second Data Aggregation Meeting for the OU 5 Human Health Risk Assessment held on December 7 1994

Attached are the meeting minutes copies of the materials presented at the meeting and copies of the Project Manager s log book with the required signatures from the EPA and the CDPHE

The two open items from the first meeting have not yet been resolved The CDPHE representative Diane Niedzwiecki deferred agreement with the following items to Joe Schieffelin (1) The streamline risk assessment approach will be used for the Original Landfill (IHSS 115 and 196) based on the EPA guidelines for the Presumptive Remedy and (2) The Surface Disturbance (IHSS 209) will be addressed in the uncertainty section of the risk assessment Please assist in providing confirmation from the state regarding these two issues

Please contact Carol Bicher at extension 9100 with any additional questions



Carol A Bicher
Operable Unit No 5 Project Manager
Environmental Restoration Program Division

CAB cb

Orig and 1 cc F Lockhart

Attachments
As Stated

CLASSIFICATION

UCVI		
UNCLASSIFIED	<input checked="" type="checkbox"/>	
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER
DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

IN REPLY TO RFP CC NO

ACTION ITEM STATUS
 PARTIAL/OPEN
 CLOSED
LTR APPROVALS

ORIG & TYPIST INITIALS

CAB/93

ADMIN RECORD

Meeting Date/Time December 7 1994/0830

Meeting Location Advanced Sciences Inc (ASI) Lakewood, CO

Meeting Subject Data Aggregation for Human Health Risk Assessment and Other
Risk Assessment Issues Operable Unit No 5 Rocky Flats
Environmental Technology Site

Attendees	<u>Name</u>	<u>Affiliation</u>
	Carol Bicher	EG&G
	Sherry Boboricken	ASI
	Doug Dennison	ASI
	Fred Duncan	Dames & Moore
	Mary Lee Hogg	ICF Kaiser
	Scott Hollowell	EG&G
	Mike Kelly	Dames & Moore
	Bonnie Lavelle	EPA
	Diane Niedzwiecki	CDPHE

Copies of materials that were handed out during this meeting are attached.

Introduction C Bicher restated the purpose of this meeting and presented the meeting agenda (Attachment 2) Stated that Kurt Muenchow DOE/RFFO would be unable to attend this meeting but could be paged if necessary

A Meeting Minutes from Nov 18, 1994 Data Aggregation Meeting

1 C Bicher Questioned whether EPA or CDPHE had any comments on the meeting minutes from the Data Aggregation meeting on November 18 1994

B Lavelle On pg 3 of the minutes agreed with treating groundwater separately but wants it understood that there is still disagreement about the potability of the groundwater On pg 2 of 5 a typographic error needs to be corrected (IHSS 155 needs to be 115)

D Niedzwiecki No comments on meeting minutes

Open Issues from Nov 18, 1994 Data Aggregation Meeting

2 **C Bicher** Discussed the open issues from the previous data aggregation meeting. The first issue concerns CDPHE's agreement to the streamlined risk assessment approach to the Original Landfill (IHSS 115/196) resulting from the presumptive remedy approach.

D Niedzwiecki Stated that Joe Schieffelin was informed of this issue and is discussing it with his management.

B Lavelle Stated that in EPA's opinion, exceedance of MCLs in groundwater is sufficient to justify presumptive remedy and streamlined risk assessment.

C Bicher In the Feasibility Study (FS) meeting held on November 17, 1994, Joe Schieffelin expressed concern about the presumptive remedy approach and DOE/EG&G are concerned that any future disagreement could result in wasted risk assessment efforts if the presumptive remedy approach is pursued at this time without CDPHE's concurrence.

B Lavelle Stated that EPA's position is that if presumptive remedy is selected, then the traditional FS and RA will not be required at IHSS 115/196. Also stated that, as lead agency, it is EPA's responsibility to get concurrence from CDPHE. Agreed to contact Joe Schieffelin to discuss the presumptive remedy. Discussed that a traditional risk assessment will be required at IHSS 133 to determine if remedial action is required.

S Hollowell Discussed FS team's concern about possible reconsideration of presumptive remedy. Expressed desire to get formal agreement on presumptive remedy.

B Lavelle Discussed step by step approach to presumptive remedy as outlined in the EPA fact sheet.

S Hollowell Explained that FS team would like to meet with agencies early next year to give more detail about cap design/stabilization after FS TM1 (in January).

3 **C Bicher** Discussed the remaining open issue for CDPHE concerning DOE's proposal that the Surface Disturbance West of IHSS 209 be addressed in the uncertainty analysis portion of the Risk Assessment.

D Niedzwiecki Discussed that Joe Schieffelin is aware of this issue and he will need to make a decision regarding CDPHE's acceptance of this proposal.

C Bicher Questioned how any delays in obtaining CDPHE's concurrence affects the schedule for completing the risk assessment.

F Duncan Discussed that if required this area could be put back into the full scale risk assessment with little impact to the risk assessment schedule

B Lavelle Restated EPA's agreement with this approach since this area is likely not to be a risk driver

D Niedzwiecki Agreed with B Lavelle but the final decision will have to be made by Joe Schieffelin

B Data Quantity for Pond Reaches of Woman Creek Drainage AOC

1 Surface Water

F Duncan Reiterated the Areas of Concern (AOCs) agreed to at the November 18 1994 meeting (Attachment 3) Presented and discussed data quantity for pond reaches as shown on Attachments 4 and 5 Reiterated that risk ratios obtained during the CDPHE Conservative Screening process for Pond C 1 was 400 and for Pond C 2 was 40 Stated that the risk ratio for Pond C 1 resulted from radionuclide levels in groundwater samples from wells below the dam Reiterated the proposed exposure scenario for the Woman Creek Drainage AOC which consists of intermittent recreational exposure to residents

Discussed the following information shown on Attachments 4 and 5

(1) Average data for COCs do not change significantly when going from surface water or sediment sampling locations within Pond C 1 to those upstream and downstream of the pond It appears that there will be little difference in the risk calculations if Pond C 1 is treated as the maximum exposure area versus including data from upstream and downstream locations within the maximum exposure area Also reiterated that inclusion/exclusion of data from maximum exposure area shouldn't be of a concern because the entire AOC will be addressed in overall AOC risk calculations

(2) Identification of pentachlorophenol as a COC may be incorrect Further investigation of RFEDS data is underway to determine if pentachlorophenol should be retained as a COC Also discussed that there is no history of the use of pentachlorophenol at Rocky Flats

B Lavelle Questioned how the data presented were averaged Questioned whether temporal variations were accounted for

D Dennison All samples at each location were averaged for each sampling event and then an overall average throughout time for that sample location was calculated

D Niedzwiecki Questioned what approach was being proposed

F Duncan Proposed to include only the Pond C 1 station in the maximum exposure area

B Lavelle Questioned whether data from routine sitewide monitoring programs are to be included

D Dennison Discussed that to a limited extent data from these programs will be used. Data that was collected from these programs during the same time span as the OU5 sampling program will be used. Also stated that TM15 contains the complete dataset to be used

B Lavelle Suggested that inclusion of more data from routine monitoring programs may assist in calculation of a more accurate UCL

D Niedzwiecki Questioned whether the SID would be treated separately because some constituents are at maximum levels there

F Duncan Discussed that there doesn't appear to be any impact from diluting high values with lower values

2 Stream and Pond Sediments

F Duncan Discussed that all values obtained for surface water and sediments within OU5 were below the PPRGs so there doesn't appear to be a problem with aggregating all of the data together

B Lavelle Questioned separating stream and pond sediments in the risk assessment since exposure scenarios are similar

F Duncan Discussed that the proposed approach is an attempt to find an analogy to the grid approach being used at other OU5 IHSSs

B Lavelle Questioned whether an overall set of sediment COCs should be used rather than treating stream sediments differently than pond sediments

M L Hogg Discussed that there may be problem combining stream sediments with pond sediments because exposure to pond sediments are not as likely as exposure to stream sediments

B Lavelle Agreed but discussed that a decision must be made on likely exposure scenarios

F Duncan Discussed that for ecological researchers it makes sense to look at the entire Woman Creek Drainage. Also discussed that looking at a localized reach will add a different perspective to potential exposure that may be relevant to other scenarios.

D Niedzwiecki Questioned whether the addition of data from upstream and downstream stations will aid in the calculation of UCLs.

D Dennison Discussed that the amount of data to be gained is very limited. For example, inclusion of upstream and downstream stations would increase the number of data points for sediments from three to five. Similarly, the number of data points for surface water should increase from five or six to eight.

D Niedzwiecki Questioned how much historical data was to be used.

D Dennison Discussed that very little historical data has been integrated into the data analysis for the risk assessment. These data are limited to those collected since November 1, 1992.

B Lavelle Questioned whether the historical data could be treated in the uncertainty analysis portion of the risk assessment.

M L Hogg Discussed that potential impacts from including historical data could be analyzed, but that the quality of much of historical data is very questionable.

B Lavelle Questioned whether OU1 has data available.

D Dennison Discussed that all data that were available as of January 1994 have been included in the data set.

B Lavelle Questioned whether difference exposure parameters will be developed for pond and stream sediments given different exposure scenarios for these media.

M L Hogg Stated that it is assumed that exposure for pond sediments is similar to stream sediments.

F Duncan Summarized that inclusion of up and downstream data will not make a difference in risk calculations, so only data for Pond C 1 will be used for the maximum exposure area, and risk calculations will also be performed for an AOC wide data set.

B Lavelle Agreed with this approach but understands that exposure parameters will be the same for pond and stream sediments, recognizing that this is conservative.

M L Hogg Discussed that inhalation of pond sediments is not likely but for stream sediments it is

D Niedzwiecki Stated that if perimeter sediments at the ponds are dry at any time it may be reasonable to possibly include data for the inflow and mid point pond sediment samples in inhalation calculations but exclude the deep sediment sample location

M L Hogg Agreed that this approach is reasonable

B Lavelle Agreed that it wouldn't be credible to look at inhalation of deep pond sediments

R Randall Discussed that because of limited data sets maximum concentrations will be used for each of the COCs rather than UCLs. If deep sediments do not contain the maximum concentrations it will not matter whether data for these sediments are included

F Duncan Restated that the agreement is to use all three pond sediment data points incidental exposure and dermal contact but to eliminate the deepest location from inhalation exposure

D Niedzwiecki Agreed with this approach

B Lavelle Agreed with this approach

C Comments on Draft Final COC TM

D Niedzwiecki Stated that correlation coefficients need to be calculated for metals and total suspended solids (TSS)

C Bicher Stated that correlation coefficients are being calculated and will be presented in the final COC TM

B Lavelle Stated that data presentations for the background comparison (e.g. box plots and histograms) need to be included in the COC TM

C Bicher Stated that all box plots etc. have been prepared and will be included in the final COC TM for those constituents to which professional judgement is applied.

B Lavelle Stated that the professional judgement regarding PCOCs should be performed prior to the concentration toxicity (contox) screens

F Duncan Discussed that the understanding was that professional judgement regarding the statistical tests was assumed to occur prior to the contox screens while the spatial/temporal and geochemical evaluations were assumed to occur after the contox screens

B Lavelle Stated that this is a misconception and that all of the professional judgement should occur prior to contox screens

D Niedzwiecki Agreed with B Lavelle

M L Hogg Questioned whether it will be possible to re evaluate the PCOCs and COCs and submit the results separately rather than re issue the entire document

D Niedzwiecki/B Lavelle Agreed

B Lavelle Stated that the inhalation slope factor for arsenic is 50 not 15

M L Hogg Discussed that it is believed that this difference is due to units conversion

B Lavelle Stated that she will recheck this

D Niedzwiecki Stated that the RBC for 2 methylphenol was shown in Table 4-4 for 4 methyl 2 pentanone

F Duncan Stated that this table would be corrected

D Niedzwiecki Stated that the other OUs need to be informed of possible misconceptions about where professional judgement should occur in the PCOC/COC process

B Lavelle Stated that she will contact Win Chromec EG&G regarding this issue

C Bicher Questioned when written comments on the COC TM will be received.

B Lavelle Stated that the written comments should be received within a couple of days Also suggested a meeting to discuss professional judgment steps

C Bicher Agreed but stated that it would be best to have this meeting after the COC TM revision have been submitted to the agencies

M L Hogg Reiterated that the only box plots etc that will be included in the COC TM will be for those constituents being eliminated through professional judgement.

D Comments on CDPHE Letter Report

C Bicher Stated that the CDPHE Letter Report is at DOE/RFFO but hasn't been submitted to the agencies. Also stated that, if necessary, it will be possible to discuss comments on the letter report at a future meeting.

E Revision of Exposure Assessment TM

M L Hogg Discussed that the EATM will be revised to eliminate redundant demographic information etc. that is included in many previous documents. The discussion of exposure parameters will be reduced due to the site-wide paper being prepared that will discuss exposure parameters. Central Tendency (CT) tables will also be included.

F Duncan Discussed that the AOC's and matrix of exposure scenarios vs. AOC's and exposure parameters for direct contact with sediments will also be included in the revised EATM.

F Additional Discussions

B Lavelle Discussed that the future site use working group is looking at potential land suitability options. She will provide a copy of this document to C Bicher.

C Bicher Discussed a possible date of January 5 1996 for follow-up meeting.

B Lavelle Stated that she is still waiting to confirm with CDPHE the December 14 1994 meeting to discuss groundwater modeling.

Summary The following action items resulted from this meeting:

- 1 **B Lavelle** will talk with Joe Schieffelin about the streamlined risk assessment at IHSS 115/196 and will get a formal letter of agreement to DOE/RFFO.
- 2 **D Niedzwiecki** will talk to Joe Schieffelin about the proposal to address the Surface Disturbance West of IHSS 209 in the uncertainty analysis portion of the risk assessment.
- 3 **F Duncan** and **D Dennison** will determine if additional surface water and/or sediment data are available from the OU1 RFI/RI.

MEETING AGENDA

DATA AGGREGATION/ RISK ASSESSMENT OPERABLE UNIT NO. 5

December 7, 1994 8 30 a m
Advanced Sciences, Inc
Lakewood, Colorado

INTRODUCTION

C BICHER, EG&G
D DENNISON, ASI

MEETING MINUTES FROM NOV 18, 1994 DATA
AGGREGATION MEETING

C BICHER, EG&G

OPEN ISSUES FROM NOV 18, 1994 DATA
AGGREGATION MEETING

C BICHER, EG&G

Streamlined Approach to IHSS 115/196 Risk Assessment
Proposal to Address Surface Disturbance West of IHSS 209
in Uncertainty Analysis

DATA QUANTITY FOR POND REACHES OF WOMAN CREEK
DRAINAGE AOC

F DUNCAN, DAMES & MOORE

COMMENTS ON DRAFT FINAL COC TM

C BICHER, EG&G

COMMENTS ON CDPHE LETTER REPORT

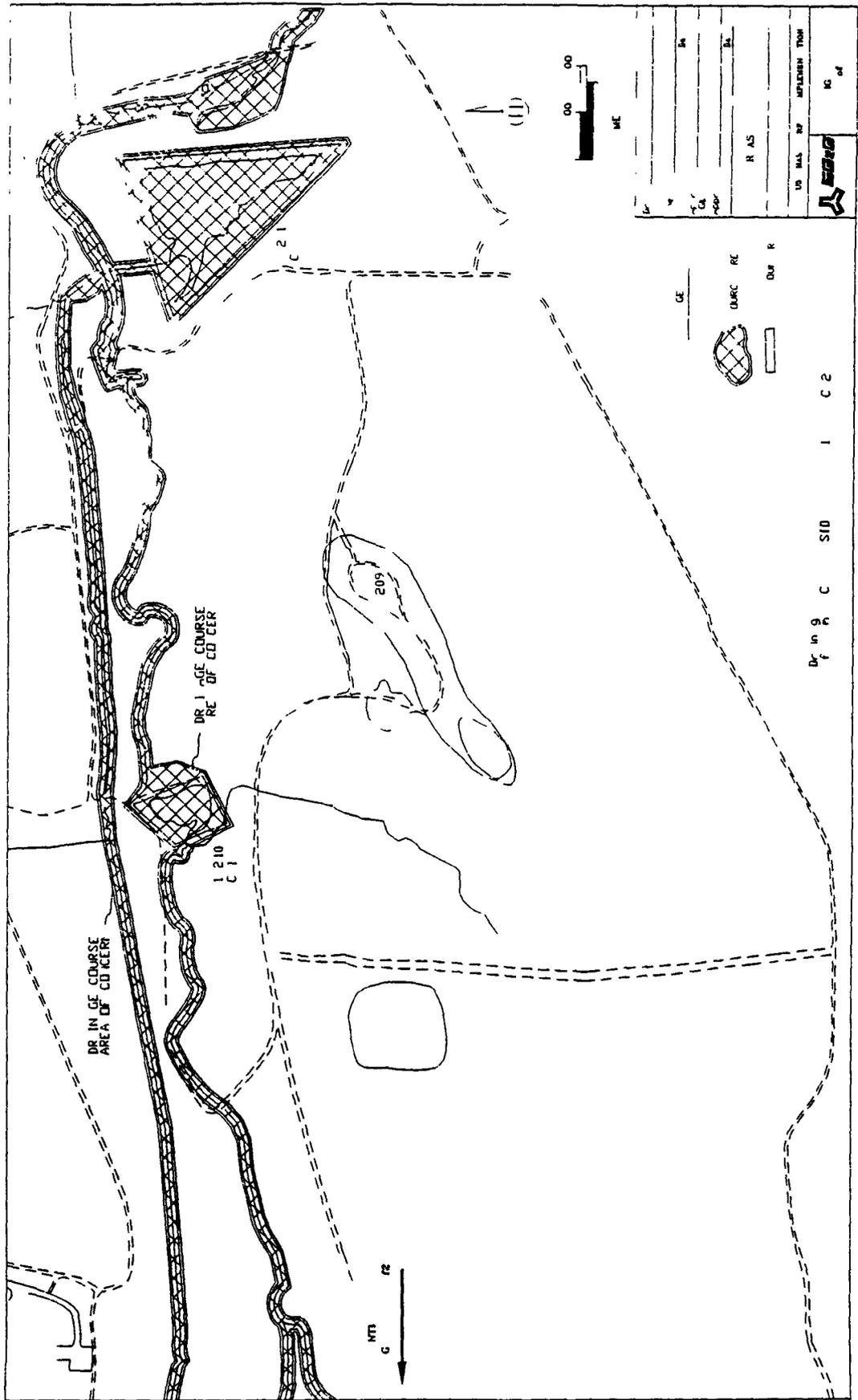
C BICHER, EG&G

REVISION OF EXPOSURE
ASSESSMENT TM

M L HOGG, ICF/KAISER
F DUNCAN, DAMES & MOORE

DISCUSSION

ATTACHMENT 3 (continued)



**AVERAGE CONCENTRATION OF COCs IN
SURFACE WATER VICINITY OF POND C 1 OUS
(In ug/l except radionuclides which are in pCi/l)**

CHEMICAL	UPSTREAM					DOWNSTREAM		MAXIMUM CONCENTRATION WITHIN WOMAN CREEK DRAINAGE AOC	
	SW033	SW034	SW501	SWC 1	SW029	CONCENTRATION	LOCATION	CONCENTRATION	LOCATION
Am 241 (Total)	0.00	0.01	0.00	0.01	0.01	0.18	SW027	0.03	SW029
Pu 239/240 (Total)	0.00	0.00	0.00	0.01	0.02	0.03	SW029	1.98	SW027
U 233/234 (Total)	0.90	0.38	1.30	0.80	1.34	2.14	SW027	397.00	SW027
U 238 (Total)	0.84	0.21	1.02	0.60	0.86	52.00	SW029		
Sroutium (Total)	243.00	226.00	263.50	247.25	273.00				
Pentachlorophenol	50.00	50.00	50.00	50.89	51.00				

**AVERAGE CONCENTRATION OF COCs IN
STREAM AND POND SEDIMENTS VICINITY OF POND C 1 OUS**
(In mg/kg except radionuclides which are in pCi/g)

CHEMICAL	POND C 1					MAXIMUM CONCENTRATION WITHIN WOMAN CREEK DRAINAGE AOC	
	SED501	SFD508	SED509	SI D510	SED027	CONCENTRATION	LOCATION
Am 241	0 01	0 09	0 16	0 08	0 05	0 42	SED512
Pu 239/240	0 04	0 55	0 95	0 59	0 48	2 40	SED513
U 233/234	NA	1 43	2 60	2 35	NA	3 50	SED509
U 235	NA	0 05	0 14	0 10	NA	0 14	SED509
U 238	NA	1 13	2 15	2 10	NA	3 00	SED508
Copper	14 50	NA	NA	NA	8 00	27 10	SED025
Mercury	0 20	NA	NA	NA	0 18	0 26	SED027
Zinc	44 20	NA	NA	NA	33 10	164 00	SED025

UPSTREAM INFLOW MID POINT DOWNSTREAM
 NA = This constituent is not a COC for this medium

**OU5 RFI/RI DATA AGGREGATION MEETING
DECEMBER 7, 1994**

<u>NAME</u>	<u>AFFILIATION</u>	<u>PHONE/FAX</u>
Doug Dennison	ASL	980 0036/980-1206
Carol Bicher	EG&G OUS	966 9100/966 8663
Diane Niedzwieda	CDPITE RE	692-2651/782-018
RONN E LAVELLE	EPA	294-1067/294-7559
SCOTT HOLLOWELL	EG&G	966/8748 966-8663
FRED DUNCAN	DAMES & MOORE	299 7835 FAX 299797
Mary Lee Hogg	ICF-K	966-8716 8663
Roxha Randall	EG&G	966-6924/8663
MIKE KELLY	DAMES & MOORE	299 7876/299-7977

Dec 7, 1994

pg 3/6

① SW data continued

- Diane - @ Have you decided what to do?
- Fred - track w/ C1 stations, ~~start~~ ^{start}
- ~~start~~ M Lee & I can discuss ^{at any other approach}
- Bonnie - ^{some previous} w/ Supt. work useful.
- Doug - data from neutron ongoing programs to used
- CB - Hyd Data Summary will be App to R1 it includes all data up to summer 1994
- Doug - TM15 has the same data
- Bonnie - DO you have enough data do calc a UCL ~~with~~ alone to the true mean?
- Fred - yes we believe so
- Bonnie - Data is wide
- Fred - will look @ whole AOC.
- Diane - are you going to look @ SD separately
- Fred would be included in AOC, will not over look localized pts because of other data that would "dilute" results

pg 4/6

(2) Streams & Pond Sediments

- one handout - all max con < PPRGs
- 8 are likely to be < 10⁻⁶ max when data diff
- Bonnie - is it logical to separate sediment when looking @ exposure
- Fred - it make sense for a grid but in this case (long linear AOC) it make sense to use the AOC
- data set in its entirety
- Olla, not as nice as in TM15
- Bonnie - did OLL sample - Fred will check, Doug said all data in RFEEDs in this area was used.
- M.L. - not likely for someone to be exposed to deep sediments so would not group w/ stream sediments or shallow pond sed.
- deep sed data < and pond sed so it would probably ignore
- Recap - look @ C1 data, along w/ data set aggregated over entire AOC.
- Bonnie - agree with ^{of stream} and exp parameters will be same w/ stream & pond sed ^{recognition - been conservative}

AOC

Dec 7, 1994 Mtg continued pg 5/10

③ stream & pond beds continued

- ML for PRG calcs in support of

OUS & ES an inhalation

exp was added.

- Diane - how many? most of the year

- Inhalation pathway will be

considered but not deep and

- Diane agrees, Bonnie agrees

(C) COC Y-M - comments

- correlation coefficients & show

- data presentation for Ukgnd comparison

needs to be shown - Box plots,

histograms,

- Use of professional judgement -

is this above or below Ukgnd?

Problem is this is done at

the end of the process than

at the beginning, where it

should be., different presentation

(refer version in app to template)

states: statistical,

Spatial & temporal should be,

done first.

Diane concurs.

- Need to determine what is

background & what is not.

Dec 7, 1994 Mtg continued pg 10/10

COC TM comments continued

- Arlene, inhalation slope factor

Diane - table 4.4 small error of Y phone

Diane - text states you didn't use,

residential but tubedoes (pg 275)

respect will be revised)

ML CB - will ~~present~~ ^{present} a submittal of text

changes & box plots histograms

ML - do you only want to box ^{histogram} ~~plots~~

etc plots for those that plot

Diane - Yes for this TM, but include

all in appendix to R1

CB - please provide written comments

will have a follow up meeting where

comment recommendations are discussed

(D) CDPHE letter report

- went to DOE, November

- should go out to agencies this week

on next

(E) ^{revised} EATM format - Ted & Marilee,

Fury & Sue

Arnie working up based a gap to look @

phone use. Meeting is being looked

- copy of Report from Bonnie

Diane, Medzwicki, Diane Medzwicki

Bonnie Lavelle, Bonnie Lavelle

Action
Bonnie

Diane

Action
Bonnie