

Meeting Date/Time November 18, 1994/0830
Meeting Location Advanced Sciences, Inc (ASI), Lakewood, CO
Meeting Subject Data Aggregation for Human Health Risk Assessment, Operable Unit No 5, Rocky Flats Environmental Technology Site

Attendees	<u>Name</u>	<u>Affiliation</u>
	Carol Bicher	EG&G
	Sherry Boboricken	ASI
	Win Chromec	EG&G
	Doug Dennison	ASI
	Fred Duncan	Dames & Moore
	Mary Lee Hogg	ICF Kaiser
	Scott Hollowell	EG&G
	Tim Howell	DOE/RFFO
	Paul Jordan	ASI
	Mike Kelly	Dames & Moore
	Bonnie Lavelle	EPA
	Frazer Lockhart	DOE/RFFO
	Ed Mast	EG&G
	Kurt Muenchow	DOE/RFFO
	Diane Niedzwiecki	CDPHE
	Mary Siders	EG&G

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

Introduction- C Bicher restated the purpose of this meeting, outlined the steps of the data aggregation process agreed to by DOE, EPA and CDPHE (see Attachment 2), and described those steps to be completed during this meeting

P Jordan - Discussed the presentation of data and the types of information that can be presented using ArcView Presented the five source areas agreed to by DOE, EPA and CDPHE during the meeting held October 21, 1994

F Duncan - Discussed the results of the CDPHE screen for each OU5 IHSS IHSSs (source areas) 115/196 and 133 scored in the 300 to 3,000 range, the South Interceptor Ditch (SID)/Pond C-2 source area scored approximately 40, and the Woman Creek/Pond C-1 source area scored approximately 400 in this screen The Surface Disturbance South of the Ash Pits scored less than 10 in the screen The Surface Disturbance West of IHSS 209 scored approximately 2 based on

a single elevated activity (5.01 pCi/g) of plutonium-239/240 (Risk ratios were not calculated for IHSS 209, because only calcium was present in concentrations exceeding background mean plus two standard deviations) Based on the results of the CDPHE screen, proposed three areas of concern (AOCs) - 1) IHSS 155/196, 2) IHSS 133, and 3) the entire Woman Creek drainage which includes the SID/Pond C-2 and Woman Creek/Pond C-1 source areas

F Duncan - Presented the IHSS 133 AOC with contaminants of concern for all media plotted. This area is approximately 26 acres. Proposed the placement of three 10-acre grid cells (based on residential exposure scenario) as shown in Attachment 3

M L Hogg - Questioned where the groundwater sampling locations were in respect to the proposed grids. This is important in that it appears that groundwater will be driving the risk assessment in the IHSS 133 area

F Duncan - All groundwater sampling locations are within the southeastern-most grid cell where concentrations exceeding PRGs for all media occur

B Lavelle - Agreed that this grid placement looks reasonable but expressed a desire that the risk assessment be performed over all three grid cells

F Duncan - Responded that the risk assessment for other exposure scenarios will encompass the entire source area

D Niedzwiecki - Agreed that the grid placement looks reasonable but would like to look at the data used for this analysis prior to making a final decision

C Bicher - Responded that all of the raw data for OU5 samples are contained in Technical Memorandum No 15 (TM15) and that cleaned-up data could be provided if requested

F Duncan - Presented the IHSS 115/196 AOC with contaminants of concern for all media plotted. This area is also approximately 26 acres. Discussed the presumptive remedy approach to the landfill and that a preliminary comparison to MCLs indicates that the presumptive remedy will be a likely alternative. Proposed the placement of three 10-acre grid cells (based on residential exposure scenario) as shown on attached figure to be used if a traditional risk assessment is required

M L Hogg - Questioned how much risk assessment will be required for the presumptive remedy of the Original Landfill (IHSS 115/196)

B Lavelle - If groundwater data indicate that MCLs have been exceeded in groundwater at the landfill, then no additional risk assessment is needed. Agreed with proposed grid placement, if a traditional risk assessment is required

D Niedzwiecki - Agreed with EPA's conclusion, but would like to confirm this with Joe Schieffelin, CDPHE

K Muenchow - Stated that the presumptive remedy approach has been agreed to by the agencies

D Niedzwiecki - Agreed, but wants to ensure that the residual risk at IHSS 115/196, after the presumptive remedy has been implemented, is evaluated

F Duncan - Presented the Woman Creek drainage AOC with contaminants of concern for all media plotted

K Muenchow - Clarified that the portion of the SID that is within the IHSS 115/196 AOC will be treated within the IHSS 115/196 AOC. It is likely that this portion of the SID will be eliminated by the presumptive remedy alternative

B Lavelle - Questioned whether there are any concentration gradients apparent within the stream drainage. Also questioned whether it would be reasonable to include portions of the drainage within another AOC

M L Hogg - Clarified that Woman Creek, the SID, and Ponds C-1 and C-2 would be treated as a single AOC, however, it will be possible to add any exposure resulting from this AOC to that for another AOC

F Duncan - Presented data for the area immediately surrounding Pond C-1. This is the only area where PRGs were exceeded for any media. The PRGs were exceeded for several radionuclides in groundwater samples from the two monitoring wells downgradient of the pond

B Lavelle - Requested that data for pond sediments from Pond C-1 also be displayed

F Duncan - Presented the data for pond sediments

M L Hogg - Suggested that the risk resulting from groundwater be calculated and shown separately but not added to the residential scenario risk because a groundwater receptor does not exist

B Lavelle - Agreed that this approach is reasonable

F Duncan - Suggested that the risk assessment could also focus on the Pond C-1 reach of Woman Creek as well as on the entire drainage

B Lavelle - Agreed but it must be recognized that the decision for the entire drainage will be based on decisions made for the Pond C-1 reach

M L Hogg - Discussed that for the purposes of the FS, the risk for the entire drainage will have to be evaluated

B Lavelle - Questioned whether the agencies will have input to the decisions made during this process

K. Muenchow - Responded that the agencies will be involved in subjective decisions made during this process

D Niedzwiecki - Questioned how the SID and Pond C-2 will be handled

M L Hogg - Responded that the data for the SID and Pond C-2 will be included in the risk assessment for the Woman Creek drainage AOC

F Duncan - Discussed that the Woman Creek drainage AOC does not lend itself to the placement of grids. Proposed that risk posed by this AOC be evaluated using a residential-recreation scenario in which receptors receive intermittent exposure

B Lavelle and D Niedzwiecki - Agreed that this approach is reasonable

F. Duncan - Presented the Surface Disturbance West of IHSS 209 source area with contaminants of concern for all media plotted. Discussed that the only exceedance of a PRG was for plutonium-239/240 (5.01 pCi/g) in one surface soil sample. All other surface soil samples from this area had activities of plutonium-239/240 in the 0.26 pCi/g range. Proposed that this area be treated in the uncertainty analysis portion of the risk assessment

B Lavelle - Questioned what this approach will entail

F Duncan - Clarified that when the data for this source area are aggregated, the risk will be less than 10^{-6}

B Lavelle - Suggested that decisions on this source area may be more relevant to the FS

D Niedzwiecki - Stated that Joe Schieffelin will need to make any decision regarding this source area

E Mast - Discussed that additional investigation of this area is being conducted as part of the implementation of TM15. This investigation consists of HPGe surveys of the area and, if necessary, FIDLER surveys and additional surface-soil sampling. Also discussed that a

preliminary HPGe survey was conducted at the location where the surface soil sample with the relatively high activity of plutonium-239/240 was collected. This survey was performed several months after the sample was collected and did not indicate above-background activities of any radionuclides at this location.

B. Lavelle - Agreed that this area does not appear to be a problem and that the approach proposed is reasonable. Discussed that EPA's review of the COC TM is in progress but that it is not likely that any changes in COCs will result in modification to the AOCs or grid placement.

C. Bicher - Discussed that the amount of data to be included for the Pond C-1 reach of the Woman Creek drainage AOC needs to be discussed further.

D. Niedzwiecki - Questioned whether there will be enough data to evaluate this area statistically.

M. L. Hogg - Responded that if there is insufficient data to calculate UCLs, then it is possible to use maximum concentrations for each COC.

C. Bicher - Suggested that this issue, along with comments on the COC TM, be discussed in a follow-up meeting. A meeting date of December 7, 1994 at 8:30 a.m. was agreed to. This meeting will be held at ASI's Lakewood Office.

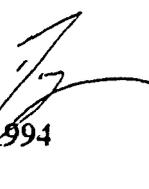
Summary - The following AOCs were agreed to, pending confirmation by CDPHE (see enclosed figures, Attachment 3)

- 1 The IHSS 133 AOC,
- 2 The IHSS 115/196 AOC including the portion of the SID present in this area, and
- 3 The Woman Creek drainage AOC, including Woman Creek, the SID outside of the IHSS 115/196 AOC, Pond C-1, and Pond C-2

Additional Discussions -

- A meeting date of December 7, 1994 was agreed to for the meeting to further discuss data aggregation. This meeting will be held at ASI's Office (405 Urban Street, Suite 401, Lakewood) beginning at 8:30 a.m.

MEMORANDUM

To Carol Bicher
From Doug Dennison 
Date November 30, 1994
Subject Final Meeting Minutes for OU5 Data Aggregation Meeting

Enclosed are the final meeting minutes for the OU5 data aggregation meeting held on November 18, 1994 Also enclosed is a copy of Attachment 3 to the minutes

If you have any questions, please call me at 980-0036

cc File 9691 05 01 50

MEETING AGENDA
for
DATA AGGREGATION
FOR OU5, WOMAN CREEK
on
November 18, 1994 8:30 a.m.
at
LAKWOOD OFFICES OF ADVANCED SCIENCES, INC

- INTRODUCTION CAROL A. BICHER
EG&G ROCKY FLATS
- DATA PRESENTATION PAUL J. JORDAN and
SHERRY BOBORICKEN, ASI
- SOURCE AREAS PAUL J. JORDAN, ASI
- AREAS OF CONCERN FRED DUNCAN
DAMES & MOORE
- DATA FOR GRID PLACEMENT FRED DUNCAN
DAMES & MOORE
- PROPOSED GRID PLACEMENT FRED DUNCAN
DAMES & MOORE
- DISCUSSION (if necessary) EVERYONE
- AGREEMENT EVERYONE

HUMAN HEALTH BASELINE RISK ASSESSMENT DATA AGGREGATION

- STEP 1: IDENTIFY CONTAMINANTS OF CONCERN (COCS)
- STEP 2: IDENTIFY THE REASONABLE MAXIMUM EXPOSURE SCENARIO(S)
- STEP 3: AGREE ON THE SIZE OF THE EXPOSURE AREA BY CONSIDERING
- TOXICITY OF THE COCS
 - EXPOSURE PATHWAYS
 - DATA VARIABILITY
 - RECEPTOR ACTIVITY PATTERNS

DOCUMENT THE AGREEMENT REACHED IN STEP 3 AND OBTAIN CONSENSUS AMONG ALL THREE AGENCIES' RISK ASSESSORS, TOXICOLOGISTS, AND HEALTH PHYSICISTS

**HUMAN HEALTH BASELINE RISK ASSESSMENT
DATA AGGREGATION**

- STEP 4: PLOT ALL DATA FOR THE COCs WHICH ARE WITHIN THE AREA OF CONCERN ON A MAP OF THE OPERABLE UNIT
- STEP 5: PLACE A GRID OF THE AGREED UPON EXPOSURE AREA OVER THE AREA OF CONCERN MAP WITH DATA. THIS WILL REQUIRE CONSENSUS AMONG ALL THREE AGENCIES' RISK ASSESSORS, TOXICOLOGISTS, AND HEALTH PHYSICISTS

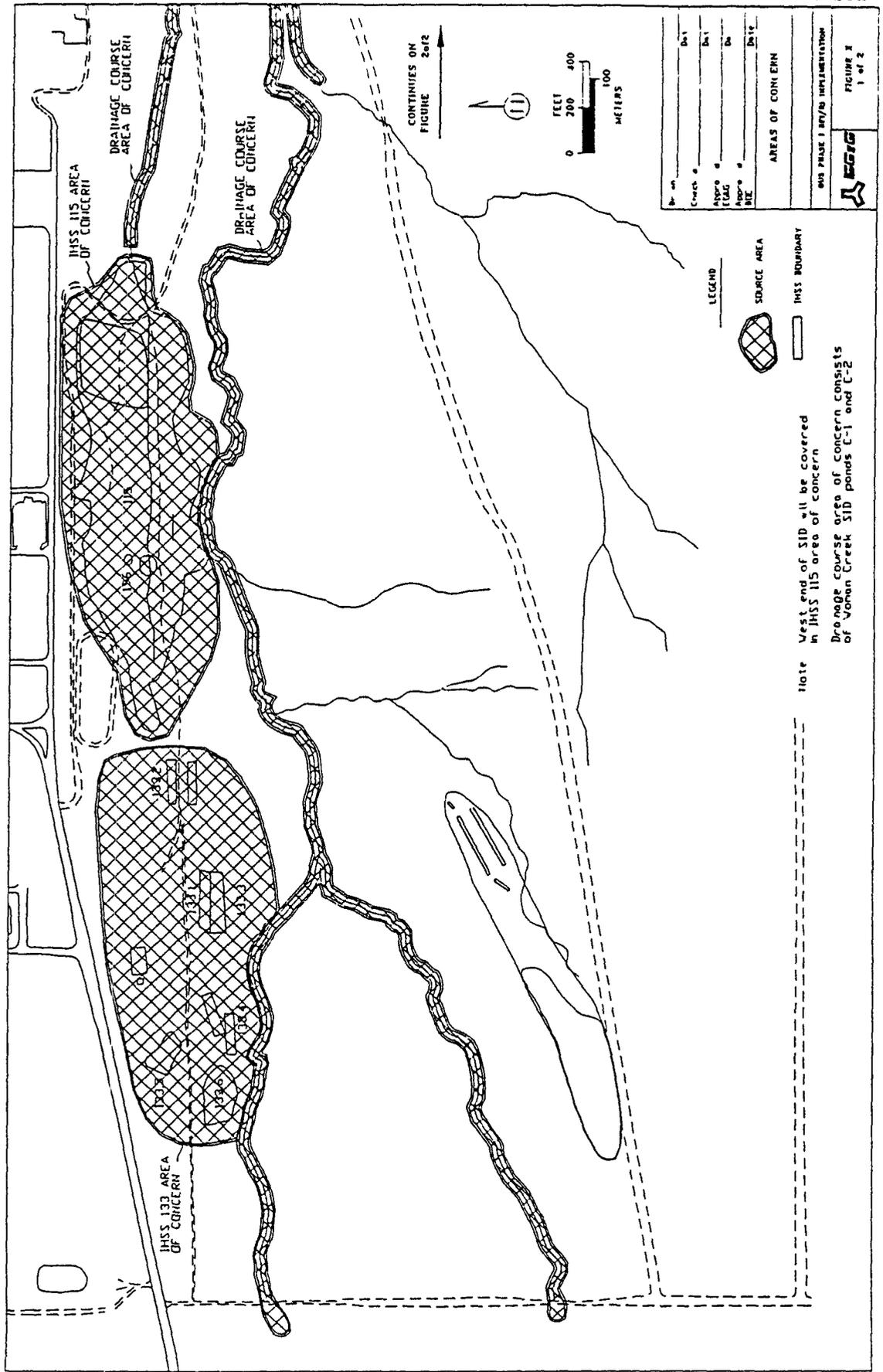
**HUMAN HEALTH BASELINE RISK ASSESSMENT
DATA AGGREGATION**

STEP 6. WITHIN EACH AREA OF CONCERN, IDENTIFY THE EXPOSURE AREA FROM THE GRID WHICH IS ASSOCIATED WITH THE HIGHEST RISK CONSIDER

- COC CONCENTRATIONS AND TOXICITY
- CONTAMINATED MEDIA (MULTIPLE OR SINGLE)
- EXPOSURE PATHWAYS

STEP 7. CALCULATE THE 95% UCL OF THE ARITHMETIC MEAN FOR EACH COC OVER THE EXPOSURE AREA. USE EPA'S "SUPPLEMENTAL GUIDANCE TO RAGS CALCULATING THE CONCENTRATION TERM" AS GUIDANCE

ATTACHMENT 3



Nov 18, 1994 - Data Aggregation mtg pg 1/4

1 Introduction

- brief overview of Data Agg. Meth steps 1-7

2 Paul Jordan - brief overview of last mtg.

5 source areas

Review ^{CDM} C-13 system - coded by rads,

and symbol coded by y > PPRG

to show a grading

3 Fred Duncan - CDH screen review

8 IHSS 115

- IHSS 133, CDH screen ran

- surplus of 5 of 133 < 1 on com screen

- surplus of 269 ≈ 2 solely due to

1 bit of DL @ 5 p/b/gm - would like
to handle in unincorporated section
since next closest is 2 to p/b

- woman creek drainage ^{C1 & creek} C2 & SID

• ^{rule} IHSS: 400 C2 & SID; 4000 C1 & creek

• for risk assmt make 1 area of concern
since there doesn't appear to be
any ~~seam~~ apparent adv or disad
to separate

4 Fred Duncan - check to 133 IHSS

- 26 areas - source area - in order to place
grads w/10 acre grad could place 2 1/2 for

• a contiguous area of most metals
& rads would end up to a net 10 acre

comment
minutes
today

Data Report Mtg continued.

summary 209
7, continued

pg 4/4

- will go back over w/ FIDLER

Summary - mtg

1 CCC TM hasn't been approved ^{comments}
& could change sm things - ^{to be} discussed ^{also at} mtg

2 How much data: up & down stream

to be included w/ duth ponds

- Diana: is there enough data for statistically
workable

Fred - could use maximum

Marylee - will discuss

3 mtg Dec '7 @ 8-30

to discuss above & any problems

w/ mtg minutes from today & resolve issues

4 maps of grid placement over

1HSS 133 & 1HSS 115

Signatures

EPA Bonnie Luvelles

CDPHE, DICKIE

DOE Kurt Wilunahow

Bonnie Luvelles

Liane Medwoska

Walt Ford

DATA AGGREGATION MEETING
FOR OU 5 WOMAN CREEK PRIORITY DRAINAGE

November 18, 1994 @ 8 30 a m

	Name	Company	Phone
1	Carol Bicker	EG&G	966-9100
2	Doug Dennison	ASI	980-0036
3	Paul Jordan	ASI	980-0036
4	Mary Siders	EG&G	966-6933
5	Mary Lee Hogg	ECF-H	966-8716
6	Mike Kelly		299-7876
7	FRED DUNCAN	DAMES & MOORE DAMES & MOORE	299-7835
8	Tim Christie	EG&G	966-8641
9	SCOTT HOWELL	EG&G	966-8748
10	FRAZER LOCKHART	DOE/RFFO	966-7846
11	Tim Howell	DOE/RFFO	966-2027
12	BONNIE LAVELLE	EPA	294-1067
13	Ed Mast	EG&G	966-8589
14	MURT Muenchow	DOE/RFFO	966-2184
15	Diana Niedzwiecki	CDPHE	692-2651
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