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**Meeting Minutes**  
**Columbia River Comprehensive Impact Assessment**  
**Weekly Management Meeting**  
**January 30, 1990 - EESB Building, Snoqualmie Room, 1:00 - 4:00**

**Attendees(\*)/Distribution(#):**

Dick Biggerstaff, BHI*#	Larry Gadbois, EPA*#	Roger Ovink, BHI#
Michael Blanton, PNNL*#	Richard Gilbert, PNNL*#	Doug Palenshus, Ecology#
Charlie Brandt, PNNL*#	Stuart Harris, CTUIR*# Dave	Ralph Patt, Oregon*# Stan
Amoret Bunn, Dames & Moore*#	Holland, Ecology*#	Sobczyk, NPT#
Sandra Cannon, PNNL*#	Jay McConnaughey, WDFW*#	Bob Stewart, RL*#
Bob Casto, BHI*#	Terri Miley, PNNL*#	Dan Tano, RL*#
Paul Danielson, NPT*#	Dick Moos, BHI*#	Mike Thompson, RL#
Greg deBruler, HAB#	Nancy Myers, BHI*#	JR Wilkinson, CTUIR#
Kevin Clarke, RL#	Bruce Napier, PNNL*#	Thomas W. Woods, YIN*#
Roger Dirkes, PNNL*#	Lino G. Nicolli, YIN*#	Jerry Yokel, Ecology*#
Sue Finch, PNNL*#	Tara O'Neil*#	Admin Records-CRCIA#



**Summary of Discussions:**

Meeting minutes from the 12/5/95 weekly meeting were handed out. Comments from the Nez Perce Tribe on the "Contaminants of Concern" report and DOE responses were handed out and are attached to these minutes. At last weeks meeting, Stuart Harris brought in a copy of Deward Walker's publication, "Transport Factors in Fish: A Review and Evaluation of HEDR Project Columbia River Pathway Modeling and Dose Calculation Procedures". Sue Finch let the team know that she could obtain additional copies if any were needed. None were requested.

**Species of Concern Tier II Listing - Charlie Brandt**

Input on the species of concern tier II listing was received from Ecology, EPA, and the ERC team. Copies of their input is attached to these minutes. It was noted that the Nez Perce Tribe had identified tier II input at the same time as the tier I input. Remaining input from other team members is still needed. The Yakama Indian Nation representatives indicated they were having trouble providing the data needed as they do not release their knowledge of tribal foods and medicines.

The tier I list had a total of 129 species. The input received identifies 55 different species for the tier II list. The target for the tier II list was 30 with the expectation that it may have to go as high as 45. A consolidated final list will be distributed at next week's meeting. Both EPA and Ecology representatives expressed an interest in knowing if any of their candidates were removed and offered to provide additional input on which of their proposed Tier II species could be removed from the final list if needed. One way species could be eliminated is by selecting one of several species with similar life styles. For the riparian vegetation, there are currently 8 species identified. The available toxicological data does not allow for separation of impacts to differentiate effects on cattails verses rushes. Basically, the only distinction is between shallow versus deep rooted plants.

**Data Selection Process - Terri Miley**

Terri Miley made a presentation on the data selection process. Copies of the viewgraphs were handed out and are attached to these minutes. A summary of discussions is below.

- The data task staff are currently in the data gathering phase and will soon be getting into the data selection phase. There is not much time to decide how to use the data and develop a process for getting from all of the data down to the data that will be used by the human and eco tasks.
- The current media list includes surface water, sediment, groundwater, soil, external radiation, seeps and springs, and biota. The first three media are the primary media. We are currently looking for seeps and springs and biota data. Biota concentrations will be modeled based on surface water, sediment, and groundwater. There is not much seeps and springs data and it is not available for all locations. Groundwater may need to be used as a surrogate for the exposure calculations.
- For external radiation data, individual surveys will be collected but not mixed in with the large data base. They will be dealt with by hand.
- One use of the seeps and springs data is for the scenario of dermal exposure when standing in a seep. It was noted that the qualitative risk assessments (QRAs) for the 100 area did not assess risk in the seeps and springs as they did not have the subsistence scenario. The data for seeps and springs is being collected to look at the feasibility of using it. We would expect that the seeps and springs would be somewhere between the river and groundwater concentrations. If there is enough data, we may be able to analyze this.
- Terri Miley introduced Bob Casto from the BHI Hanford Environmental Information Systems (HEIS) group. Bob ran several queries to pull information from HEIS, looking at data for the last 6 years. Each count on the slide is a sampling event. Each sample may have many analyses. The sample owner is also identified. We did not see any data owners that we were not familiar with.
- The question was raised if there was any classified groundwater data. Bruce Napier replied that everything through the 1970s was declassified regarding groundwater contamination for use in the HEDR Project. Also, Mark Freshley looked through all the data during the HEDR Project. A qualified, "I don't think so" was given. An action was assigned to Terri Miley to check with Chris Bauman and Mark Freshley to verify if there is any classified groundwater data.
- Before providing data to the eco and human health tasks, the following boundary decisions need to be made: 1) areal extent for data aggregation, 2) temporal aspect of data, and 3) concentration distributions. The same data file will be provided to both eco and human health tasks.
- The areal extent for data aggregation is a defined area where all data in that area are called one location. These areas could be divided into segments based on interest. Once brackets are defined on each end of the river segment, then a decision is needed on how far from the river to go inland. There was much discussion on the validity of variable river segment lengths. A first cut at defining segments included the following: 1) first segment from Priest Rapids Dam to the B/C area, 2) next set of segments would bracket the reactor areas and divide areas between reactors into segments no more than one mile in length, 3) from last reactor to 300 area, the segments would be approximately two miles long, and 4) the last stretch south of 300 area to McNary Dam could go out to five mile segments. The segments would be considered one location for use in the scenarios as opposed to one data point being a location. All data in a given segment would be pulled together. An action was assigned to Terri Miley and Dave Holland to develop proposed segments and present the information at the 2/6/96 weekly

management meeting.

- A decision needs to be made on how far from the river is it appropriate to gather groundwater data. The plume map shown in viewgraph "Radiological Constituents in Groundwater, 1994" shows where radionuclides are. This could provide an influence on how to define locations. The next color viewgraph shows where wells are located on the Hanford site. The blue dots represent wells within ½ mile of the river (654 wells); the green dots represent wells within 1/4 mile of the river (464 wells); and the red dots represent wells within 500 feet of the river (170 wells). The red dots are primarily located near the reactor areas, the Hanford Townsite, and the 300 area. Not all of the wells are sampled regularly. The sampling is set up based on priorities and historical findings. We will be receiving information from the HEIS staff on what wells have recent data. A decision is needed today on the corridor width for collecting groundwater data. A decision is needed later on how to use the data and identify the segment areas. It was noted that if we are going to decide how far in to gather groundwater data, we need to know how fast the groundwater is traveling. An action was assigned to Larry Gadbois, Roger Dirkes, and Charlie Brandt to develop a decision rule to decide on the corridor width for gathering data. Later in the meeting an agreement was reached to collect groundwater data ½ mile from the river which canceled the action item.
- In FY96, the purpose is to determine if there is a short term risk that needs to be corrected. Future groundwater impacts and travel time of groundwater need to be a parking lot item.
- The question was asked, "Are we going to take near river drive point samples where groundwater does not exist?" Drive point data was recently obtained from B areas, and a couple points were obtained in the H and K areas. This information is not in HEIS yet but is available to this study. The data can be pulled and looked at but we would not want to mix the data with groundwater. This project will not be collecting new samples in FY96.
- An issue was raised whether the near river wells have data for the contaminants of concern. If not, we may need to go further inland to collect data. It is thought that the near river wells will contain data for the contaminants of concern.
- A decision is also needed today on the temporal aspect of the data. The current thought is to collect data from January 1, 1990 to present and fill data gaps with older data where it is available. It was noted that data for the last five years meets the data quality requirements on remediation decisions; there would need to be a caveat for any older data that is used to check the data quality. Agreement was reached to collect data from January 1, 1990 to present and fill data gaps with older data where it is available.
- The question was asked, "If there are different values for different years, which do you use?" For stochastic calculations, we need a distribution type and parameters are needed to characterize the distribution. These decisions are not needed today but will be needed. In addition to characterizing data over space, we need a reasonable maximum. There are outlier data in HEIS. Data owners can tell us where data points are not good. We can have data to support both stochastic variability and point values.

#### **Project Assumptions - Roger Dirkes**

Roger Dirkes handed out a two page summary of "CRCIA Agreements/Constraints/Limitations/ Assumptions." At last week's meeting concern was raised about the FY96 scope as to whether or not below McNary was part of the study area. As a result, Roger was assigned an action to document all agreements and assumptions reached to date. Two agreements have been noted in the meeting minutes

and are identified on the attachment. A summary of discussions is below.

- The existing signed agreement identifies the following: 1) existing conditions (including residual), 2) scoping level risk assessment to support IRM decisions, 3) the time period is FY96, and 4) the FY96 dollars available to PNNL are \$778K.
- Discussions over last several months at management team meetings indicate responsibility for specific activities as follows: 1) terrestrial risk assessment - ERC, 2) groundwater risk assessment - ERC, and 3) CRCIA - PNNL which includes the river and riparian zone.
- The most current schedule is dated 1/15/96 and was recently handed out at a management meeting. The assumption has been made that if input is not received at agreed to dates, then input can be provided in the draft review cycle. The preference is to get input during the meetings to incorporate into the documents.
- The geographic extent of FY96 focuses primarily on Priest Rapids to McNary Dam. The rationale for stopping at McNary Dam in FY96 includes the following: 1) scoping level with maximum impact in the Hanford Reach to McNary area, 2) historical monitoring results show levels below detection level below McNary Dam, 3) outside monitoring results (OR, WA) show low levels are present below McNary Dam, 4) availability (or lack thereof) of data, and 5) limited time and money. In several presentations at the CRCIA weekly management meetings by Charlie Brandt and Bruce Napier, the focus of FY96 work was discussed as being from Priest Rapids Dam to McNary Dam. It was explained that the study area was not cast in concrete. Roger offered two options for how to provide rationale for the FY96 study area to be Priest Rapids to McNary Dam. The team agreed to option 1 which is to include in the report a discussion of historical levels/trends in contaminant data over time showing levels typically higher upstream of McNary, including Hanford data, Oregon data, and Washington data where available. Option 2 is described in the attachment.

#### **Definition Effort for a "Comprehensive" Assessment - Thomas W. Woods**

Thomas Woods gave a presentation on the "Definition Effort for a "Comprehensive" Assessment". A copy of the viewgraphs is attached and a summary of discussions is presented below.

- Today is the first of a series of meetings on the "comprehensive" effort. Today's goal is to set the framework and a general approach for preparing the comprehensive section. I would like to get away from the laundry list approach and put a different perspective in place. We need to develop an overall reason for doing the study and determine what the results will be used for. Once consensus is reached on the purpose, we can move on to the next steps. The laundry lists that we all have in our minds will serve as a check list to make sure we have not left something out when we are done.
- The final comprehensive definition needs to be defined with so much credibility and obvious defensibility that it will be almost immoral to not fund the effort.
- We don't want to reinvent the wheel. Where tools and information already exist, let's take advantage of the available information. In some cases, current information may not be good enough, i.e., EPA risk assessment approach is currently insensitive to cultural damage or cultural elimination. We may need to challenge these conventional constraints.
- Available resources should not be a constraint in developing this definition.

- It's very important to capture the thoughts of PNNL, DOE, and BHI staff as they are working on this effort. They know what more could be done if time and budget were not a constraint. This needs to be a total team effort.
- A homework assignment was given to all team members to develop a suggested purpose, uses, and strawman answers for the comprehensive assessment definition effort
- Next week we will settle on the purpose and uses then develop milestones and a schedule.
- What do I mean by common perspective? When you look across time at a number of contaminants, eventually, everything will reach the river unless permanently isolated. The big peaks are coming later.
- It was suggested that the DQO/DQA process could be used to come to grips with what our goals are for this study.
- The question was asked, "How do we make transition from specific items to the complete package?" As we work through the process, the laundry list items should fall into place. If they don't, we can add it or if they don't fit, we may need to reevaluate the original purpose that is decided on.
- It was noted that while we don't want the comprehensive definition to be constrained by resources, we also need to face the fact that budgets are limited and everything will likely not be funded.
- The study cannot be done until we define what is going to be done. Need to know where we are going.
- When the document is complete, it should be specific and have an obvious set of actions that can be done, year by year, derived at from looking at total picture.

#### Comprehensive Chapter:

- More samples in drive points.
- Future impacts from groundwater.
- Travel time of groundwater.
- Groundwater data where out of high well density areas near the shoreline.
- More comprehensive data.

#### Agreements:

- Agreement was reached to collect groundwater data ½ mile from the river.
- Agreement was reached to collect data from January 1, 1990 to present and fill data gaps with older data where it is available (for the FY96 effort).
- The primary geographic focus area for FY96 work is from Priest Rapids to McNary Dam. A rationale will be provided justifying this area by including in the report a discussion of historical levels/trends in contaminant data over time showing levels typically higher upstream of McNary, including Hanford data, Oregon data, and Washington data where available.

**Action Items:**

<b>Action Description</b>	<b>Assigned To</b>	<b>Due Date</b>
Verify if there is any classified groundwater data.	Terri Miley	ASAP
Develop proposed river segments and make presentation at 2/6/96 meeting.	Terri Miley/Dave Holland	2/6/96
Develop a suggested purpose, uses, and strawman answers for the "comprehensive" assessment definition effort.	Project Team	2/6/96

**Date/Location of Next 2 Scheduled Meetings:**

- Tuesday, February 6, 1:00 - 4:00, ETB Building, Columbia River Room
- Tuesday, February 12, 1:00 - 4:00, ETB Building, Columbia River Room

**Attachments:**

- Comments from the Nez Perce Tribe on the Contaminants of Concern" report and DOE responses.
- Input received on the species of concern tier II listing from Ecology, EPA, and the ERC team.
- Presentation made by Terri Miley, "Data Selection Process." Note - color viewgraphs used at the meeting are in black and white for the handouts.
- January 30, 1996, CRCIA Agreements/Constraints/Limitations/Assumptions, prepared by Roger Dirkes.
- Presentation made by Thomas W. Woods, "Introduction - Definition Effort for a "Comprehensive" Assessment."

Prepared by SM Finch on 2/6/96



**Department of Energy**  
 Richland Operations Office  
 P.O. Box 550  
 Richland, Washington 99352

JAN 24 1996

Those on Attached List:

**DRAFT IDENTIFICATION OF CONTAMINANTS OF CONCERN: COLUMBIA RIVER COMPREHENSIVE IMPACT ASSESSMENT (CRCIA) REPORT, PNL-10400, UC-630, JANUARY 1995**

The U.S. Department of Energy (DOE), Richland Operations Office (RL), formally transmitted the subject document, dated January 11, 1996, for your review/comment. The package containing the report also contained an information packet, which included, among other documents, copies of comments and proposed responses from the earlier public review of the report. In mailing out this material, RL inadvertently left out a letter containing comments from the Nez Perce Tribe (NPT [Enclosure 1]) and an earlier RL response to those comments (Enclosure 2) in the information packet. The purpose of this letter is to correct that omission by forwarding Enclosures 1 and 2. Transmittal of the NPT comments at this time has been agreed-to by the NPT CRCIA representatives.

The note in RL's January 11, 1996, letter concerning the use of the earlier review comments/responses applies to the enclosed. That is, neither the earlier comments nor responses have been reviewed nor concurred on by the CRCIA Management Team, formed after the earlier review of the report. Thus, again, this information is being sent for your information only; please do not let it inhibit you from commenting, based on your professional expertise.

If you have any questions about this letter or the enclosed, please contact either Dr. William Funk or Dr. Kenneth Williamson, as specified in your contract.

Sincerely,

A handwritten signature in cursive script that reads "Robert K. Stewart".

Robert K. Stewart, Project Manager  
 Groundwater Project

GWP:RKS

Enclosures: As stated

cc w/o encls:  
 D. Biggerstaff, BHI  
 A. Bunn, Dames and Moore  
 P. Danielson, NPT  
 G. deBruler, HAB  
 R. Dirkes, PNL

S. Finch, PNL  
 L. Gadbois, EPA  
 S. Harris, CTUIR  
 D. Holland, Ecology  
 R. Patt, Oregon DOE  
 T. Woods, YIN

JAN 24 1996

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Addressees - Letter dated JAN 24 1966

Page 2 of 2

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# Nez Perce

ENVIRONMENTAL RESTORATION & WASTE MANAGEMENT  
P.O. BOX 365 • LAPWAI, IDAHO 83540-0365 • (208) 843-7375 / FAX: 843-7378

May 2, 1995

Ms. Julie K. Erickson, Director  
River Sites Restoration Division  
Department of Energy  
Richland Operations Office  
P.O. Box 550  
Richland, WA 99352

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RSD  
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Dear Ms. Erickson:

On April 11, K. Michael Thompson and Randy Brich, of your office, briefed us on the Preliminary Draft Conceptual Plan (PDCP) of the Columbia River Comprehensive Impact Assessment (CRCA), and the status of the ongoing hexavalent Chromium (Cr<sup>6+</sup>) study. Mr. Brich provided, in advance, the first draft of the PDCP (proposed by Paul Eslinger of PNL). The briefing was productive, and we are encouraged by such interaction. Tribal consultation, on our most important resource, the Columbia River, is of utmost concern to the Nez Perce People.

Our technical staff have prepared some comments on the PDCP and have included our most important issues regarding the Draft Contaminants of Concern. document. Mr. Thompson and Mr. Brich have responded to the prepared comments, but we would like to have written responses to our comments. We have added general comments that emerged after the meeting.

### COMMENTS:<sup>1</sup>

#### On Assumptions:

- The up-front assumption of \$1M for this project is inappropriate. The Plan should be developed first without the funding issue. The fate of the Columbia River is too important, such that good assessment *and investigations* could be jeopardized due to funding constraints. *It is very obvious that there is inadequate emphasis on protecting the Columbia River. The Nez Perce Tribe strongly recommends DOE give their highest priority to clean up the river. The Columbia River is the most important natural resource to the Nez Perce and other affected Tribes. The Nez Perce Tribe endorses the broadening of the assumptions, to include the issues as*

<sup>1</sup> Comments in Italics are new, and were not in the comments provided to Mr. Thompson and Mr. Brich during the briefing at our ERWM Office.

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Richland Operations Office

indicated in our comments for the Draft Contaminants of Concern document (Task #1).

- How many technical peer reviewers are to be selected? Each Tribe should be represented in the core membership of these reviewers. The technical fields mentioned are too limiting, and the minimum qualifications cannot be met by all of the affected Tribes. Are the Tribes subject to these technical reviewer qualification criteria? The Nez Perce were not involved in the process of developing the technical reviewer qualification criteria. *Do DOE personnel and contractors working on the CRCIA meet the peer review qualifications?*

**On Task #1: Documents:**

The screening process for the Contaminants of Concern document has some flaws:

- It only covers 100, 300 and 1100 Areas. There was an earlier commitment to address the entire downstream of the Columbia River. In the 200 Area, there are discharges of some contaminants with highest concentrations. *The Nez Perce Tribe ERWM recommends that the entire downstream be assessed. The limiting distance of 500 ft from the river criteria for the assessment is not acceptable to the Tribe.*
- There are contaminants that are toxic below detection limit levels and were dropped from the list. *ERWM strongly agrees with the US EPA comments on this issue.*
- The effects of contaminants in the vadose zone is not considered. *Again, ERWM recommends including the vadose zone irrespective of the 500 ft limit to the river.*
- Concentrations of contaminants are calculated after full river dilution. The contaminants are discharged into the river from localized areas. *Specific areas of the river will exhibit greater concentrations of contaminants than the intake for the City of Richland. ERWM endorses a broadening of the project on this issue. The possibility of contaminants being locally concentrated within Columbia River and its sediments should be thoroughly investigated.*
- The screening criteria did not look into potentiation effects or the interaction of contaminants.
- The EPA guidance document for humans was misused, particularly on the non-hazardous screening. PNL used the guidance document for both humans and the environment. *The Nez Perce Tribe recommends modification of the guidance document to include the environment, if there is no guidance document for both humans and the environment.*

**On Task #2: Assessment:**

The assessment should cover the entire downstream. On Assessment #3, climate and time of year should be considered. On Assessment #5, potentiation effects should be included.

**On Task #3: Public Involvement:**

The Nez Perce Tribe recommends the change to TRIBAL AND PUBLIC INVOLVEMENT.

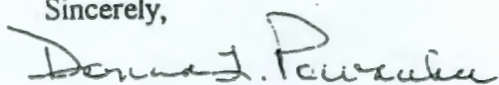
The Nez Perce Tribe is concerned about the initial Cr<sup>+6</sup> results at 100-H Area. A significant portion of the data (especially at the riverbank seepage) is beyond the chronic level of 11 ppb for fish. Although the drinking water criteria is 100 ppb, we require the chronic level of 11 ppb, because salmon is a dominant subsistence food of the affected Tribes. The Nez Perce Tribe recommends a more representative sampling not only at the 100-H Area but also at places where redds are significantly present.

The Nez Perce ERWM Office appreciates the opportunity to provide comments on PDCP, Draft Contaminants of Concern, status of CR<sup>+6</sup> investigation. We appreciate the additional sampling proposed for late summer or early fall this year. We would like to continue to receive appropriate documents and to be involved with the CRCLA Project.

We are currently working on DOE requests for assistance from us, as outlined by Mr. Thompson and Mr. Brich during their visit. We would like to formalize our request for extension of providing our nominee for the technical reviewer spot to June 14, 1995. This was the agreed date between our staffs.

If you wish to discuss Nez Perce ERWM's comment further, please contact Dr. Rico Cruz or Dr. Stanley M. Sobczyk at 208-843-7375 (v) and 208-843-7378 (f).

Sincerely,



Donna L. Powaukee  
ERWM Manager

In Concurrence:



Charles H. Hayes, Chairman

cc: John Wagoner, DOE-RL, Site Manager  
Kevin Clarke, DOE-RL, Indian Programs Manager  
D. Holland, Ecology, Nuclear Waste Program  
L. Gadbois, EPA, Hanford Project  
J.R. Wilkinson, CTUIR, Hanford Program Manager  
Russell Jim, YIN, ER/WM Manager



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**Department of Energy**

Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

**MAY 22 1995**

Ms. Donna Powaukee  
Nez Perce Tribe  
P.O. Box 365  
Lapwai, Idaho 83540-0365

Dear Ms. Powaukee:

RESPONSE TO THE NEZ PERCE TRIBE COMMENTS OF MAY 2, 1995, ON "PRELIMINARY DRAFT CONCEPTUAL PLAN" AND "IDENTIFICATION OF CONTAMINANTS OF CONCERN," PNL-10400, UC-630, DRAFT, JANUARY 1995

Attached are the U.S. Department of Energy, Richland Operations Office, responses to the subject comments. If you want to discuss this matter further or require additional information, please contact Mr. Randy Brich at (509) 376-9031.

Sincerely,

Julie K. Erickson, Director  
River Sites Restoration Division

RSD:RFB

Attachment

cc w/attach:  
S. Alexander, Ecology  
L. Gadbois, EPA  
D. Holland, Ecology  
R. Jim, YIN  
H. Rueben, NPT  
D. Sherwood, EPA  
J. Wilkinson, CTUIR

RESPONSE TO THE NEZ PERCE TRIBE COMMENTS OF MAY 2, 1995,  
ON "PRELIMINARY DRAFT CONCEPTUAL PLAN" AND  
"IDENTIFICATION OF CONTAMINANTS OF CONCERN,"  
PNL-10400, UC-630, DRAFT, JANUARY 1995

On Assumptions:

(1) The up-front assumption of \$1M for this project is inappropriate. The Plan should be developed first without the funding issue. The fate of the Columbia River is too important, such that good assessment and investigations could be jeopardized due to funding constraints. *It is very obvious that there is inadequate emphasis on protecting the Columbia River. The Nez Perce Tribe strongly recommends DOE give their highest priority to clean up the river. The Columbia River is the most important natural resource to the Nez Perce and other affected Tribes. The Nez Perce endorses the broadening of assumptions, to include the issues as indicated in our comments for the Draft Contaminants of Concern document (Task #1).*

Response: The CRCIA Project has a high priority with DOE in determining the current human and ecological risks from Hanford-derived contaminants in the Columbia River per Tri-Party Agreement Change Number M-13-93-06 dated January 25, 1994, titled "Cleanup Strategy Documents for the Columbia River and Hanford Groundwater," and agreed by all parties by signature of the respective Project Managers on May 10, 1995. Effective cleanup decisions regarding contaminants in the river environs cannot be made until those risks are evaluated. It is thought that an appropriate assessment of the current human and ecological risks in the river can be performed on the existing data per the Tri-Party at this level of funding.

(2) How many technical peer reviewers are to be selected? Each Tribe should be represented in the core membership of these reviewers. The technical fields mentioned are too limiting, and the minimum qualifications cannot be met by all of the affected Tribes. Are the Tribes subject to these technical reviewer qualification criteria? The Nez Perce were not involved in the process of developing the technical reviewer qualification criteria. *Do DOE personnel and contractors working on the CRCIA meet the peer review qualifications?*

Response: The total number of technical peer reviewers shall not exceed 10 nor be less than four. It is possible that not all reviewers will review all CRCIA documents. The three Tribes have been allowed to appoint one reviewer that collectively represents all three Tribes. This reviewer should satisfy the minimum technical qualifications. Primary DOE and contractor personnel working on the CRCIA either meet or exceed the technical qualifications for peer reviewers.

On Task #1: Documents:

The screening process for the Contaminants of Concern document has some flaws:

(1) It only covers the 100, 300 and 1100 Areas. There was an earlier commitment to address the entire downstream of the Columbia River. In the 200 Area, there are discharges of some contaminants with highest concentrations. *The Nez Perce Tribe ERWM recommends that the entire downstream be assessed. The limiting distance of 500 ft from the river criteria for the assessment is not acceptable to the Tribe.*

**Response:** The Draft Contaminants of Concern report utilized the maximum value of any contaminant measured since 1980 either in the river or near the river as an input parameter to a conservative screening calculation. Thus, the approach was not limited to any specific operable unit. We will modify the wording to make the wider focus obvious. This report was not a downriver assessment, instead it identifies contaminants that will be addressed in further assessments to determine the current risk in the Columbia River. The use of data within 500 ft of the river was to examine contaminants imminently close to entering the river as well as those already in the river.

(2) There are contaminants that are toxic below detection limit levels and were dropped from the list. *ERWM strongly agrees with the US EPA comments on this issue.*

**Response:** The detection limits typically used in data collection at Hanford over the last 15 years meet or exceed those established by EPA. Per Tri-Party Agreement Change Number M-13-93-06 dated January 25, 1994, titled "Cleanup Strategy Documents for the Columbia River and Hanford Groundwater," and agreed by all parties by signature of the respective Project Managers on May 10, 1995, the existing data will be used in the initial screening. Should you provide us with a list of the contaminants referred to in your comment, we will check them against the detection limits and toxicity values.

(3) The effects of contaminants in the vadose zone is not considered. *Again, ERWM recommends including the vadose zone irrespective of the 500 ft limit to the river.*

**Response:** The report utilized sampling data for contaminants in the soil (includes vadose zone) as well as the groundwater. Therefore, the vadose zone is represented in the screening calculations (see Section 4.3.4, page 4.9).

(4) Concentrations of contaminants are calculated after full river dilution. The contaminants are discharged into the river from localized areas. *Specific areas of the river will exhibit greater concentrations of contaminants than the intake for the City of Richland. ERWM endorses a broadening of the project on this issue. The possibility of contaminants being locally concentrated within the Columbia River and its sediments should be thoroughly investigated.*

**Response:** Additional screens, based on the existing data, will be developed to address concentrations in seeps and riparian zones before complete mixing in the river.

(5) The screening criteria did not look into potentiation effects or the interaction of contaminants.

**Response:** The limits on the conservative screens are set very low for each contaminant. If interactions do occur, they are not expected to increase the risk by even an order of magnitude, thus the eliminated contaminants are not expected to contribute significantly to risk.

(6) The EPA guidance document for humans was misused, particularly in the non-hazardous screening. PNL used the guidance documents document for both humans and the environment. *The Nez Perce recommends modification of the guidance document to include the environment, if there is no guidance document for both humans and the environment.*

**Response:** The EPA guidance document was misapplied in eliminating aluminum, calcium, iron, magnesium, potassium, and sodium from consideration in the ecological screens. These contaminants will be used in the ecological screens.

On Task #2: Assessment:

The assessment should cover the entire downstream. On Assessment #3, climate and time of year should be considered. On Assessment #5, potentiation effects should be included.

**Response:** The assessments will consider effects downriver as well as in the Hanford Reach. It has not yet been determined whether the data will support climate and time of year variations in Assessment #3. An attempt to collect and use data on potentiation effects will be made during conduct of Assessment #5.

On Task #3: Public Involvement:

The Nez Perce Tribe recommends the change to TRIBAL AND PUBLIC INVOLVEMENT.

**Response:** The wording will be modified as recommended.

On Initial Cr<sup>+6</sup> Results:

The Nez Perce Tribe is concerned about the initial Cr<sup>+6</sup> results at 100-H Area. A significant portion of the data (especially at the riverbank seepage) is beyond the chronic level of 11 ppb for fish. Although the drinking water criteria is 100 ppb, we require the chronic level of 11 ppb, because salmon is a dominant subsistence food of the affected Tribes. The Nez Perce Tribe recommends a more representative sampling not only at the 100-H Area but also at places where redds are significantly present.

**Response:** Additional sampling of Cr<sup>+6</sup> is planned for late summer 1995. The proposed sampling plan will be discussed with the Nez Perce Tribe prior to its implementation.

## DEPARTMENT OF ECOLOGY

January 30, 1996

TO: CRCIA Management Team

FROM: David Holland, Ecology and Jay McConnaughey, WDFW

SUBJECT: Tier II Recommendations for the CRCIA Species of Concern Document

Below is a list of species recommended jointly by Ecology and the WDFW to be included on the short-list (Tier II) of species of concern to be evaluated as part of the Columbia River Comprehensive Assessment, (CRCIA) ecological assessment interim report for FY96.

**State of Washington Tier II Preferred Recommendations****Plants (5)**

common cattail  
dense sedge  
periphyton  
reed canarygrass  
rushes

**Invertebrates (5)**

crayfish  
hyaella\*  
Mayfly  
snails/clams/mussels  
Ceriodaphnia\*

**Birds (9)**

American coot  
common snipe\*  
goose/mallard  
great blue heron\*  
California quail

red-winged blackbird  
belted kingfisher  
bald eagle  
Northern harrier

**Mammals (4)**

muskrat  
weasel  
coyote  
harvest mouse

**Amphibian(s) (1)**

bullfrog

**Reptile(s) (1)**

western garter snake

**Fishes (6)**

mountain sucker  
paiute sculpin  
mountain whitefish  
white sturgeon\*  
shiner  
salmon

\* indicates significant species that Ecology and WDFW believe are essential to the Tier II list.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 REGION 10 HANFORD PROJECT OFFICE  
 712 SWIFT BOULEVARD, SUITE 5  
 RICHLAND, WASHINGTON 99352

January 29, 1996

MEMORANDUM

SUBJECT: "Short-List" Species for Ecological Analysis, CRCIA

FROM: Larry Gadbois, EPA *LEG*  
 TO: CRCIA Management Team

For the ecological analysis portion of the Columbia River Comprehensive Impact Assessment (CRCIA) a list of about 30 species is desired for which an ecological assessment will be performed in FY96. Each of the CRCIA Team members has been requested to furnish a suggested list of species, from which the group would select 30 species. This memorandum contains suggestions from the U.S. Environmental Protection Agency (EPA) for 27 candidates for the final list of 30 species.

First, a discussion of a decision framework. There were 2 primary criteria: (1) representation of the food web, and (2) phylogenetic diversity. There were 3 secondary criteria: (1) available data, (2) hi-interest status, and (3) species known to be sensitive or have a high exposure life style. It is understood that final selection of the 30 species by the management team should be based on other factors as well.

Primary Producers:

**Macrophytes**

1. Reed Canary Grass
2. Tule

**Algae**

3. Periphyton

Herbivores:

**Zooplankton**

4. Daphnia magna (an amphipod)

**Benthic Macrofauna: Crustacean**

5. Gammarus sp. (an amphipod)

**Benthic Macrofauna: Insect**

6. (No species - specific preference. Should be a sensitive indicator.)

**Fish**

7. Lamprey - juvenile
8. Salmon (larva - juvenile)

**Amphibian**

9. Bullfrog - tadpole
10. Woodhouse's Toad - tadpole

Herbivores (continued):

- Bird**
- 11. Canada goose or Mallard
- Mollusk**
- 12. Columbia pebble snail
- Mammal**
- 13. Muskrat

Primary Carnivore:

- Fish**
- 14. Rainbow Trout
- 15. Channel Catfish or White Sturgeon
- Bird**
- 16. Swallow
- Amphibian**
- Bullfrog - adult
- Woodhouse's toad - adult

Omnivores/Scavengers

- Reptile**
- 17. Western Painted Turtle or Western Garter Snake
- Mammal**
- 18. Raccoon or Skunk
- Insect**
- 19.20. Two of the following: Stonefly, dragonfly, mayfly, caddis fly

Top Carnivores:

- Bird**
- 21. Osprey or Great Blue Heron or Belted Kingfisher
- 22. American White Pelican

Other species for phylogenetic diversity or high human interest:

- 23. Fern
- 24. Fungi
- 25. Duckweed (Lemna sp.)
- 26. Columbia Yellowcress
- 27. Bald Eagle

SPECIES OF CONCERN  
SHORT LIST FOR SCREENING ECOLOGICAL RISK ASSESSMENT  
COLUMBIA RIVER COMPREHENSIVE IMPACT ASSESSMENT

SUGGESTED SHORT LIST FROM THE ERC TEAM  
January 29, 1995

**PLANTS - RIPARIAN**

Black cottonwood  
Mulberry  
Reed canarygrass  
Willow

**PLANTS - MARSH**

Columbia yellowcress  
Water milfoil  
Periphyton

**BIRDS**

American coot  
Common snipe  
Diving duck (Bufflehead)  
Mallard  
Canada goose  
Great blue heron  
Cliff swallow  
Bald eagle

**MAMMALS**

Muskrat  
Beaver  
Raccoon  
Coyote  
Mule deer

**FISH**

Channel catfish  
Largescale sucker  
Carp  
White sturgeon  
Salmon spp.

**INVERTEBRATES - TERRESTRIAL**

none

**INVERTEBRATES - AQUATIC**

Crayfish  
Caddis flies  
Chironomids  
Snails/clams/mussels

**AMPHIBIANS**

Spadefoot toad

**REPTILES**

Western garter snake

## Data Selection Process

Terri Miley

January 30, 1996

### Goal

Select a method for representing the media concentrations that are required by the human health and ecological analyses

## Current Media List

- Surface Water
- Sediment
- Groundwater
- Soil (associated with outfall locations)
- External radiation (TLD data)
- Seeps and springs
- Biota

## Problem Boundaries

- Areal extent for data aggregation
- Temporal aspect of data
- Concentration distributions

## Defining Areal Extent

- Divide the study area into segments that bracket areas of interest
- Select a “corridor” from which to gather groundwater data

## Temporal Aspect

- Use last 5 years of data
- If possible, fill data gaps with older data

## Concentration Data Distributions

- For stochastic runs, a distribution type and necessary parameters are needed
- If a “maximum” concentration is desired, how should it be selected?

## Data Decisions Needed Today

- Segmentation of river
- Corridor width for GW data
- Temporal Aspect of Data
- Parameters needed to represent media concentrations

**Surface Water**

	1990	1991	1992	1993	1994	1995	1996	Total
HEISPROD	0	107	69	16	63	16	13	284
SESPMNT	226	235	280	305	568	565	60	2239
Total	226	342	349	321	631	581	73	2523

**Groundwater**

	1990	1991	1992	1993	1994	1995	1996	Total
HEISPROD	477	1047	1997	1500	987	1105	78	7191
PNLGW	3116	935	1013	839	812	687	28	7430
PNLQC	0	0	4	24	12	19	2	61
RCRAQC	0	232	547	492	202	252	9	1734
WHCRCRA	70	1432	4307	4430	4082	3680	168	18169
Total	3663	3646	7868	7285	6095	5743	285	34585

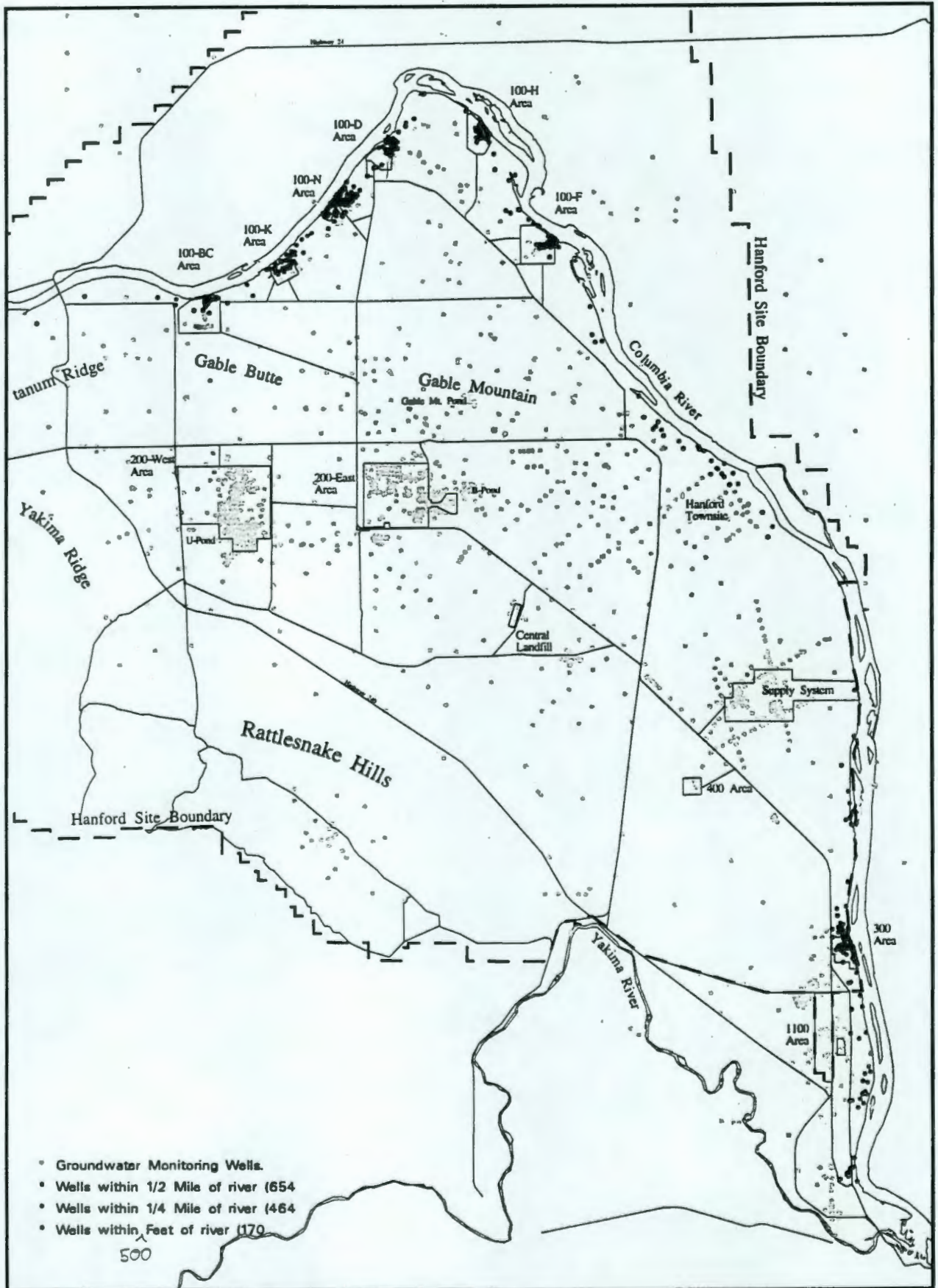
**Soil-Based**

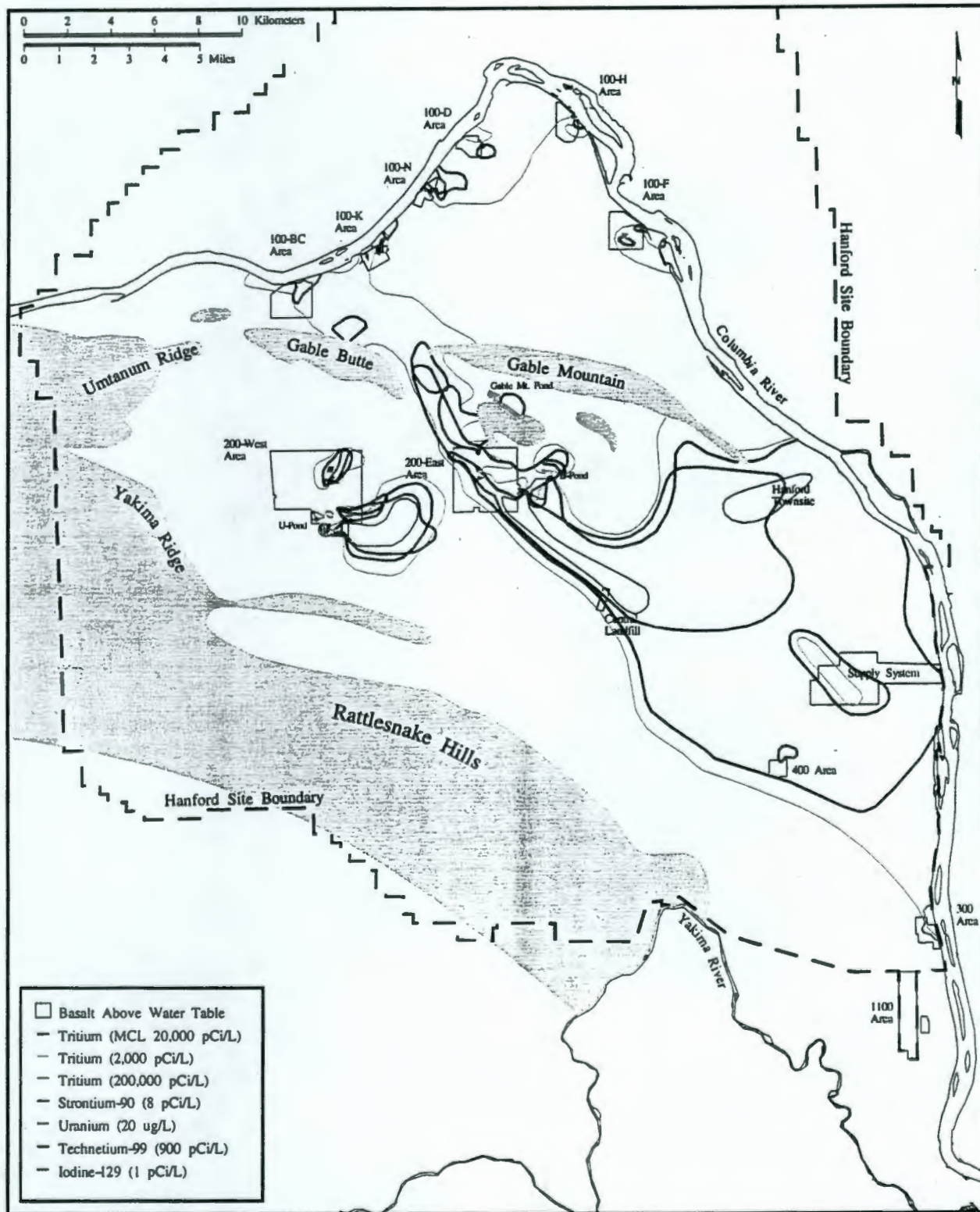
	1990	1991	1992	1993	1994	1995	1996	Total
HEISPROD	578	1320	1000	369	156	432	0	3855
PNLGW	0	0	62	0	0	0	0	62
PNLWELL	816	1705	33	62	1	0	0	2617
SESPMNT	24	42	21	50	52	24	0	213
Total	1418	3067	1116	481	209	456	0	6747

**Biota**

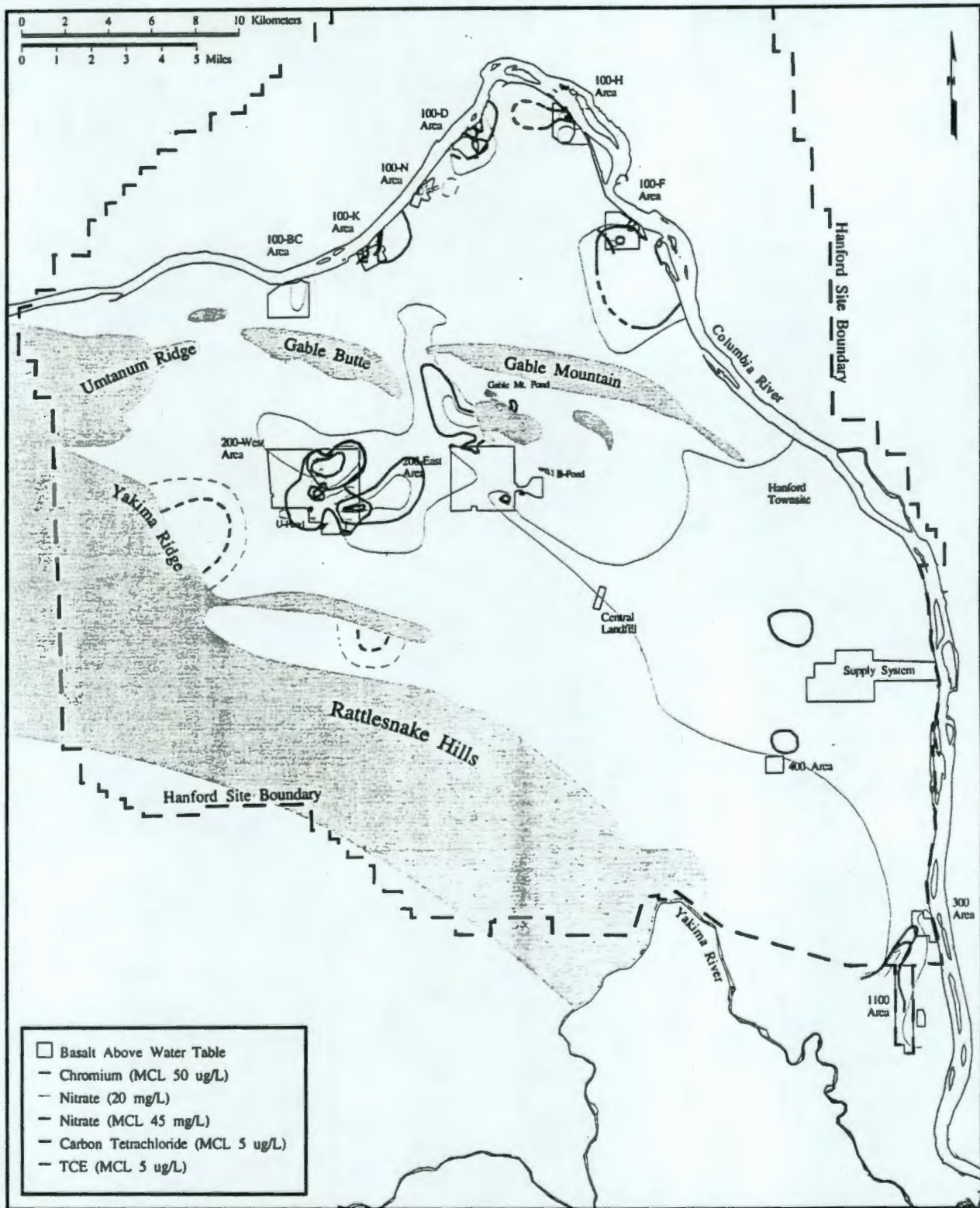
	1990	1991	1992	1993	1994	1995	1996	Total
HEISPROD	99	424	270	50	36	0	0	879
SESPMNT	497	344	273	193	311	113	1	1732
Total	596	768	543	243	347	113	1	2611

9613401.1222

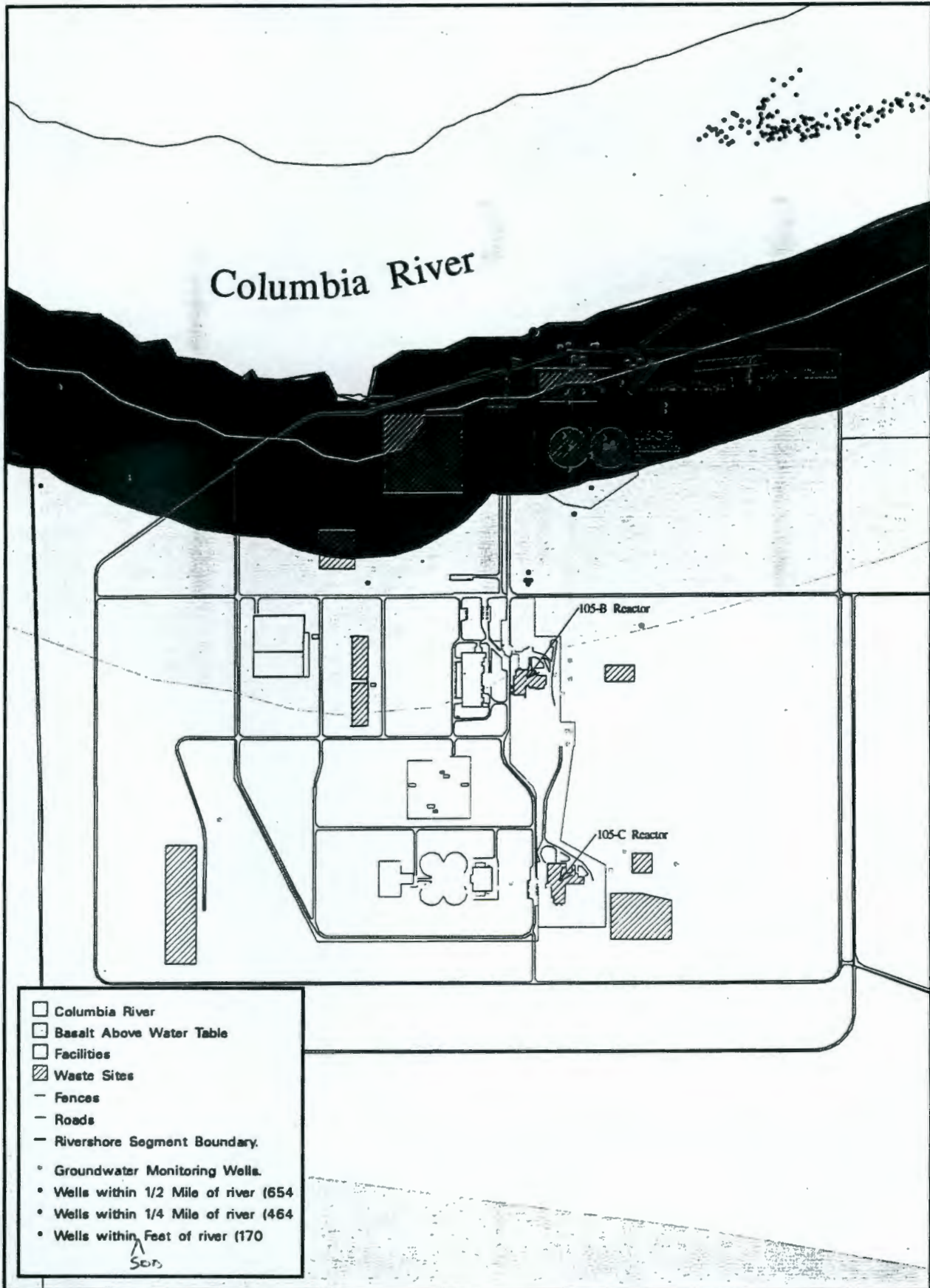




Radiological Constituents in Groundwater, 1994.



Hazardous Constituents in Groundwater, 1994.



January 30, 1996

CRCIA Agreements/Constraints/Limitations/Assumptions

Agreements (documented as such)

10/3/95: Agreed-to FY 1996 Work

Perform an assessment of Hanford-derived contaminants (existing conditions including residual contaminants from past operations) in a scoping level risk assessment to support IRM decisions.

Limited by the time and FY96 funds available for this effort.

10/17/95: Screening/scoping approach

Detailed study on a few receptors versus screening/scoping level study on more extensive list of receptors, focussed on sensitive, most likely to show impact receptors and/or those receptors of greatest concern.

Group agreed (listed as agreement in minutes) on latter -- scoping level study on longer list of receptors.

Constraints/Limitations/Assumptions

Per signed agreement:

- existing conditions (include residual)
- scoping level assessment to support IRM decisions
- time --> FY 1996 (1/15/96 schedule - or current version)
- dollars --> \$7

Per management team discussions:

- Terrestrial Risk Assessment --> ERC
- GW Risk Assessment --> ERC
- CRCIA --> PNNL
  - River (H2O, sediment, aquatic biota)
  - Riparian Zone
    - Biota (plant and animal - some overlap w/terrestrial)
    - Seepage (near river GW where data limited)

Constraints/Limitations/Assumptions - continued

- schedule (1/15/96 or current) establishes required critical dates for assessment inputs by management team. If late, must proceed per the schedule (will incorporate late input as possible) on critical path items. To do this we have to go with what we have received up to that point in time, implying that we may have to use PNNL inputs where nothing else is available. This still allows for feedback/input by team through 1) the draft document review process, and 2) the final draft review process.
- geographical extent of FY 96 scoping level effort focusses on Priest Rapids Dam to McNary Dam
  - scoping level --> maximum impact --> Hanford Reach to McNary
  - historical monitoring results --> levels <DL McNary down
  - outside monitoring results (OR, WA) --> low levels present
  - availability (or lack thereof) of data
  - time
  - \$\$
  
  - FY 96 WBS --> geographical extent to be determined
  - 11/21/95: Conceptual Exposure Model --> HS to McNary, need to include contaminants below McNary in parking lot identified by team.
  - 12/12/95: HH Scenarios --> FY96 focus HS to McNary, discussion relative to need to include discussion of trending patterns in contaminants downstream of McNary versus levels observed upstream.
  - 12/19/95: Ecosystem Conceptual Model --> focus 96 model HS to McNary
  
  - not cast in concrete -- need to resolve
  - suggest providing rationale for HS to McNary effort in FY 96 by: 1) include in report discussion of historical levels/trends in contaminant data over time showing levels typically higher upstream of McNary, including Hanford data, Oregon data, and Washington data where available. 2) comparison of current levels upstream with those found downstream (limited amount available)
  - perhaps follow-up discussion following assessment about results of risk above McNary relative to below based on contaminant inputs into models.

# *INTRODUCTION*

*DEFINITION EFFORT FOR A "COMPREHENSIVE" ASSESSMENT*

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- *TODAY'S OBJECTIVE:*
  - *Describe how we might proceed*
    - *Approach and next steps*
  - *Set the perspective*
  - *Raise questions (rhetorically)*

# INTRODUCTION

## DEFINITION EFFORT FOR A "COMPREHENSIVE" ASSESSMENT

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### ■ APPROACH:

- *Needs driven*
  - *Define study purpose and probable uses*
  - *Define components essential to purpose*
- *Avoid "laundry lists," issues, & accumulations of unstructured questions.*
- *Build credibility with mutually consistent, defensible rationale for the study*
  - *Challenge conventional constraints*
- *Avoid resource-constrained definition*

# INTRODUCTION

DEFINITION EFFORT FOR A "COMPREHENSIVE" ASSESSMENT

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## ■ NEXT STEPS:

- *Today: strive for common point-of-view*
  - *Homework: develop suggested purpose, uses, and strawman answers*
- *Next week: settle on purpose, uses and milestones / schedule*
  - *Homework: develop suggested perspective, scope, scenarios*
- *Following week: settle on scope, . . .*

# *INTRODUCTION*

## *DEFINITION EFFORT FOR A “COMPREHENSIVE” ASSESSMENT*

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- *What is meant by “perspective?”*
  - *What contaminant levels reach the river?*
    - *Composite of all source terms & release rates?*
  - *Across what time frame?*
  - *With what impacts?*
    - *To ecosystems, cultures?*
    - *How much of the river? With what river scenarios? Unchanged from today?*
  - *At what impact level is sustainability lost?*