

General



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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APR 02 1997

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Mr. Neil Weber
Bureau Chief
DOE Oversight Bureau
2044A Galisteo Street
Santa Fe, NM 87505

DOE OVERSIGHT BUREAU

Dear Mr. Weber:

Ms. Maria Martinez and Mr. Jeffrey Yurk of EPA Region 6's risk assessment staff, together with NMED's Mr. Ralph Ford-Schmid and Mr. Bruce Swanton coordinated efforts resulted in an Ecological Risk Assessment Workshop presented to NMED staff on March 13 and 14, 1997. Representatives from the Department of Energy, Los Alamos National Laboratories, and Sandia National Laboratories were also present at the workshop. The EPA was very pleased to aid in addressing risk assessment issues facing NMED.

The enclosures accompanying this correspondence are discussion notes (*Workshop Notes* and *Workshop Discussion Notes*) and a summary of the workshop evaluation responses (*Workshop Evaluation Summary*). In general, the notes document that the NMED staff continues to seek answers to major technical issues dealing with ecological risk assessment. The workshop evaluation contained comments that expressed continued interest in receiving technical assistance on risk assessment issues. The EPA is committed to provide this assistance to NMED upon your request.

The Region 6 risk assessment staff continues to be prepared to provide future training or technical assistance to your technical staff to fulfill the goals of risk management decisions and risk communication. We appreciate the opportunity to assist NMED.

If you have any comments please contact me at (214) 655-6785 or have your staff contact Maria Martinez, of my staff, at (214) 665-2230.

Sincerely yours,

David Neleigh
David Neleigh, Section Chief
New Mexico/Federal Facilities
Section

cc: Ralph Ford-Schmid (NMED)
Bruce Swanton (NMED)



12995

Tech Docs:

***Ecological Risk Assessment Workshop
Holiday Inn - Santa Fe, New Mexico
March 13 & 14, 1997***

Workshop Notes

Workshop Participants' Goals/Objectives Not Fully Accomplished:

1) Learn about the process.

The remaining portion of the objective dealt with the question on how to address threatened and endangered species. The ecological risk assessment process includes the protection of threatened and endangered species by including such species in the food web development, determination of ecological relevance by ecological function or feeding guild.

Eutrophic conditions (i.e., overloading of nutrients in the environment) are not numerically addressed in the process presented in the workshop, however, the evaluation of the state of the environment can be a part of the assessment.

Risk Management - what individuals are included and is there available training? Risk managers are all the (non-risk assessor) individuals that are part of the decision making process. Risk assessors are not included as risk managers because risk assessors give recommendations based on the technical and regulatory aspects of the risk assessment process and are not considered decision makers.

5) Radioactive Ecological Risk Assessment.

The issue was discussed and the participants compiled the following information:

- Some toxicity benchmarks exist although they have not been thoroughly reviewed by anyone at NMED or EPA Region 6.
- This remains a technical concern for NMED.
- Regulatory authority aspects of this issue remain to be fully determined.
- This is a multi-program issue.
- There is some available information although NMED and EPA Region 6 have not fully evaluated all information.
- Main question for some participants is how the assessment of potential effects may affect the final decision?

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Workshop Notes

Workshop Participants' Goals/Objectives Not Fully Accomplished (contd.):

- 7) **Data quality objective, learn about process and how to do it better.**

Need more communication between regulators and regulated facilities. Need to know what items need to be submitted or a check list of what needs to be done. Need to know who the stakeholders are for natural resources.

- 11) **Oil & gas facilities.**

Could use ecological risk assessment as a tool under alternative standards.

***Ecological Risk Assessment Workshop
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Workshop Notes

Workshop Participants' Goals/Objectives:

- 1) **Get to know process. Does conservative equal protection? How determine if clean up is required?**
- 2) **Where (in Superfund) does risk assessment fit? When to do one?**
- 3) **Learn how to review/prepare ecological risk assessments?**
- 4) **Increase understanding of process (RCRA perspective). Learn if doing right and what it means.**
- 5) **Learn radiological risk assessment.**
- 6) **Learn about new ecological guidelines and changes to process.**
- 7) **Learn about data quality objectives. Learn how to make it more efficient. Learn how to do job better (Sandia perspective).**
- 8) **Ecological risk assessment is evolving. Want to learn about the reliability of ecological risk assessment.**
- 9) **Get a general introduction.**
- 10) **Get an education on rules/regulations for ecological risk assessment. Environmental restoration/ what /why need to do ecological risk assessment? When does it apply?**
- 11) **From an oil & gas facilities perspective, learn how ecological risk assessment could be applied to alternative/abatement standards.**
- 12) **Learn about the limitation of ecological risk assessment.**
- 13) **From a RCRA perspective (e.g., Cannon AFB, playa lake) learn if need to remedy low levels of contamination. If there is potential risk what to do.**
- 14) **From a surface water perspective, learn how bioaccumulation and biomagnification (e.g., mercury) could be included in the process.**

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Workshop Notes

Workshop Participants' Goals/Objectives (contd.):

- 15) Learn ecological risk assessment from a supervisory level.
- 16) Usually deal with human health risk assessment. Want to learn how ecological risk assessment compares to standard-based clean ups.
- 17) From a UST RBCA perspective, learn the initial screening process.
- 18) Obtain a broader view of ecological risk assessment (RBCA perspective).
- 19) Learn the boundary conditions (how far to go) of ecological risk assessment. Learn the principal criteria for ecological risk assessment.
- 20) Learn what needs to be delivered to the regulators (LANL perspective).

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Workshop Notes

Playa Lake Discussion:

- **This is a multiprogram policy issue: NPDES (wastewater) permit issuance.
RCRA Solid Waste Management Unit closure issue.**

- **Applicable NMED standards: Site qualifies as waters with the potential to provide
wildlife habitat and livestock watering and as such
there are numeric and narrative water standards that
apply.**

- **Playa Lakes could be considered "wetlands" that dry out in the summer.**

- **There is a potential for ground water recharge.**

- **They are excellent for duck and wading birds.**

- **Known to have high total dissolved solids and brine water.**

- **This specific site is a permanent site with continuous source of water from wastewater
treatment plant effluent.**

- **This specific site has landfills upgradient from it.**

- **Some playa lakes have catch basins associated with it.**

- **Some technical issues observed in the document titled: Open Items from Teleconference with USACE, Cannon AFB, EPA, NMED and Woodward-Clyde Draft Phase II RFI Reports for Appendix II and III SWMU's (dated: 3/29/96)**
 - **Why are human health screening values being used in an ecological risk assessment? How do these values preclude the addressing of background risk in the risk assessment?**
 - **Why was the mallard duck chosen as the measurement endpoint?**
 - **How was the list of chemicals narrowed to pesticides? What is the suspected source?**
 - **Has the lack of presence of threatened or endangered birds (and other potential receptors) been determined in consultation with the proper authorities?**
 - **Has the absence of fish been verified?**
 - **Do not have knowledge of information contained in report referenced as WCC February 1994.**
 - **Sediment water quality criteria do not address bioconcentration.**
 - **The toxicity endpoint for the benchmarks presented were not included in the report.**
 - **The hazard quotient for food and sediment are presented separately.**
 - **Input values need to be verified.**
 - **Food intake rate was assumed to be 20 percent and sediment intake rate was assumed to be 2 percent. These values need to be verified.**
 - **Bioconcentration factors used may not be the most protective.**
 - **The added value of the additional risk calculation for dieldrin sediment concentration on page 3 was not fully understood. Additionally, the use of certain assumptions such as a screening level of 0.1 ug/L or a value of 10 for total organic carbon was also not fully understood.**
 - **The statement that the assessment was based on the reasonable maximum exposure is not fully understood since the screening assessment should be based on conservative assumptions not reasonable maximum exposure.**

- **Some technical issues observed with the document titled: Open Items from Teleconference with USACE, Cannon AFB, EPA, NMED and Woodward-Clyde Draft Phase II RFI Reports for Appendix II and III SWMU's (dated: 3/29/96) (contd.):**
 - **The qualifying statements on the home range are not pertinent to the screening assessment.**
 - **It is not clear how a modification of the HI of 1.1 to 0.011 was accomplished.**
 - **The statement that the potential for adverse health effects to waterfowl may likely be pertinent to an individual rather than a population as a whole is not substantiated by the information provided in the document.**
 - **Metal concentrations reported in the 1992 metals sediment table are based on wet weight, these need to be based on dry weight basis.**
 - **Discrete sample concentrations and their locations were not presented for the organic chemicals.**

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Workshop Discussion Notes

Data Quality Objectives:

Evaluate existing data to determine data quality and useability.

- 1) **Detection Limits**
 - Compare to toxicity reference values
 - Evaluate based on recommended methods (e.g., SW846 for RCRA)
 - Determine what non-detect means in existing data

- 2) **Location of Samples**
 - Site Characterization for nature and extent of contamination
 - Determination of hot spots/analytical anomalies

- 3) **Number of Samples**
 - Size versus coverage
 - Location
 - Statistical versus reasonable

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Workshop Evaluation Summary

Comments:

- 1) Level of understanding has improved, however, until some experience has been attained, confidence and approach are still not high.
- 2) I still remain suspect of data thrown out. Again experience will have to supplement in this question.
- 3) References - need to familiarize myself
- 4) I don't know if I need more assistance.
- 5) Jeff's proposed draft ecorisk assessment for combination facilities will be an asset.
- 6) Good sources of additional info provided. Good listing of process steps.
- 7) How to address bioconcentrators in terrestrial systems that potentially can impact surface water systems. When to NFA and when to clean up.
- 8) Data base availability. NMED and EPA need to meet to determine minimum acceptable criteria for eco risk methodologies.
- 9) Continued dialog - meet to develop {acceptable criteria for eco risk}.
- 10) I now have a much better understanding of how to perform a screening assessment to determine if a baseline assessment is required.
- 11) A workshop on conducting baseline ecological risk assessment would be very helpful.
- 12) Further workshop/discussion meetings, assistance with review of ecological risk assessment analysis plans and report for my project {EPA assistance needed}.
- 13) I have a list of questions to ask when looking/reviewing an ecological risk assessment now. I didn't have that before, I have a much better understanding of dose calculations and what references are necessary to use. I really appreciate you pointing out the difference between screening and a baseline risk assessment. This is what I have been struggling with for a long time.

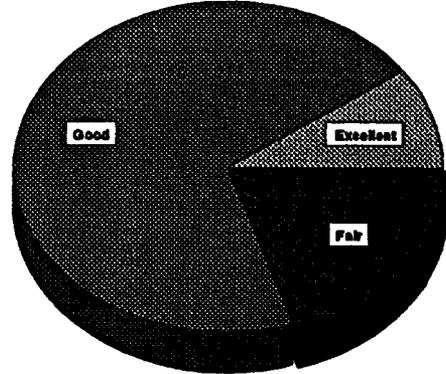
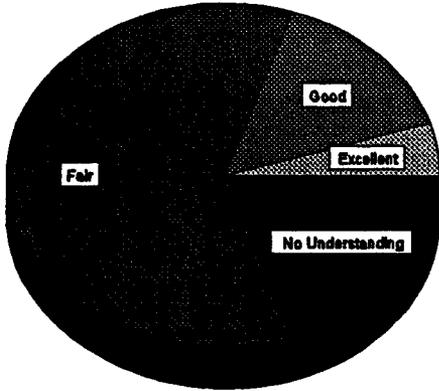
- 14) I think I can review a screening process well enough but I'm worried that I might not know enough to evaluate a baseline risk assessment. I still don't understand how to assess ecological risk due to RAD. Can you calculate an HI for site with several radionuclides?
- 15) I'm still uncertain about how to evaluate background risks. How does it fit into an ecological risk assessment? Do you always need to know background risk?
- 16) This is far superior to the week long class presented by CERCLA/Superfund.
- 17) The practical nature, i.e., example calculations made it clear what the important parts of eco risk. Also it make it clear which parts of eco risk make a large difference in the conclusion.
- 18) It seems that the facility that I work on is highly qualified and experienced versus the qualifications and experience at NMED. Also training on risk management is lacking within NMED.
- 19) Further education opportunities that help to standardize eco risk approaches between facilities and regulators {EPA assistance needed}.
- 20) Only attend second morning. As always, instruction was instructive and responsive to participant needs. Discussion of Cannon sewage lagoon closure {playa lake} pertinent to document I am currently reviewing.
- 21) Clearly there are many technical assumptions which need to be verified for every risk assessment submitted. Finding technical information in support of these assumptions will take time.
- 22) Narrative comments required for uncertainties. Need continued research to quantify more of these uncertainties. Relying on numeric criteria will not yield a true picture of the risk, and impact to "ecosystem health". Bio-criteria (site-specific toxicity testing) need to be considered.
- 23) Risk Assessment technical information sources. Does EPA have a risk assessment-specific bibliographic database? Other general technical bibliographies?
- 24) Copies of EPA risk assessment publications, including new Superfund RA procedures (USFWS/NMESFO).
- 25) Curb the tendency to speak acronyms (NFA, TSCA); it really loses folks.
- 26) Programmatic ERA approach to threatened or endangered species could help streamline regulations applicable to federal sties. Establish EPA-recommended benchmark (TRVs) that are updated annually, for all handbook species, and media.

- 27) Expand AQUIRE to include metals that are environmentally relevant (AsO_3 , organic Cd, etc.). Fund studies establishing toxicity mechanisms for toxic compounds. Fund additional soil ingestion studies for wildlife. Bring MAP to New Mexico. More research on BAF, BCFs. Fund research on radionuclide toxicity threshold and mechanisms in wildlife.
- 28) Call, lets chat! Fund research suggested in #5. Train risk managers to understand wildlife laws, like the migratory bird treaty act, end. species act, and discuss with DOI.
- 29) Good materials, excellent, knowledgeable presenters.
- 30) Would still need EPA's guidance document which would serve as a reference for our staff evaluating eco risk - similar to the RAGS for human health risk.
- 31) More training for human health and eco risk management etc.
- 32) I am already doing ERA using EPA methods.
- 33) Lack of understand by regulators of technical, ecological issues. Lack of understanding by eco risk assessors about the difficulties of why the risk methods are not accepted.
{Remaining concerns}
- 34) Assist in review of specific eco risk documents.
- 35) I am still unclear on the tiered approach on site, screening, baseline risk assessment.
- 36) I would like to gather more information on how to summarize the major risk conclusions and the level of comfort the risk manager may place int eh conclusions.
- 37) I would like to attend another risk assessment training class - Level II.
- 38) {Specific concerns} Radiological and hazard
- 39) give us copies of all your references and documentation. I think getting info will be a bit of a problem.
- 40) I don't feel completely comfortable with implementation but have a better grasp and would be able to discuss intelligently.
- 41) I would like to do a complete ecorisk screening and maybe a BRA as practice - several trophic levels, etc.
- 42) Perhaps a work workshop to do a complete BRA.
- 43) On the calculations - student can use corrected to take home. The example case we did in

class may not be a good reference because we copied things wrong or misunderstood the procedure.

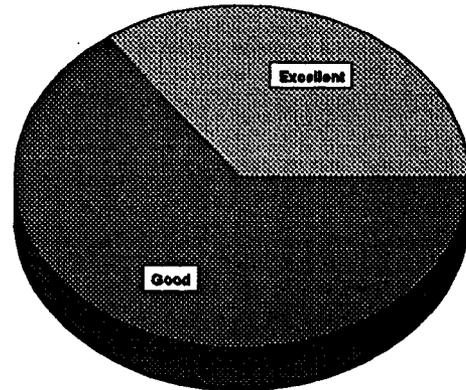
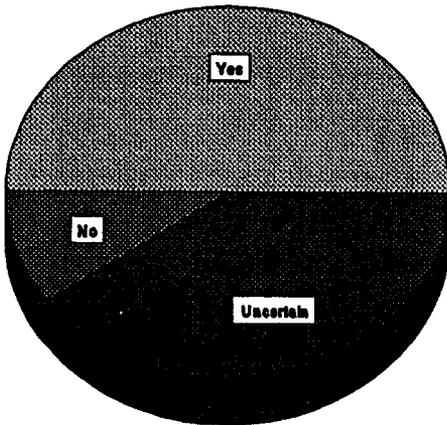
- 44) More examples of each different habitats and degree of contaminants (hand out will be O.K.).
- 45) Need continued training to feel comfortable with reviewing eco RA's.
- 46) Uncomfortable with the level of uncertainty in the process and the lack of direct info on ecological effects.
- 47) Need additional exposure to sources at reference data, and the reliability of various references.
- 48) Conduct additional workshop to reinforce the process and value of certain data.
- 49) {Specific concerns} Lack of experience and risk management's involvement in the process is not clearly defined as part of the organization. They need training also.
- 50) A database (basic) which can be used to deal with some of the equations.
- 51) Provide risk management course for NM, database if available, basic chemical lists on what to look for on risk assessment, develop a web page that Region 6 can use to update on eco risk issues.
- 52) Since this was an introduction only, and my first exposure to the subject, I don't feel that I can perform an ERA myself - but my understanding is improved.
- 53) To help in making a educated look and understanding the pitfalls to look for in reports at the screening level; also to understand what should be addressed in a screened versus baseline assessment.
- 54) May need additional assistance in getting this implementation process underway, we will let you know.
- 55) It's too complex a subject to get that good a handle on in a day and a half.
- 56) I need more toxicology and biology expertise.
- 57) KILL RCRIS KILL RCRIS KILL RCRIS
- 58) I now have a better understanding of where to start, but 1 ½ days is obviously not enough time to get a real understanding of the subject.

NMED Ecological Risk Assessment Workshop Evaluation Summary



Risk Assessment Knowledge Prior to Workshop

Risk Assessment Knowledge After Workshop



Concerns About Risk Assessment

Materials/Presentations Quality

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**Ecological Risk Assessment Workshop
Holiday Inn
Santa Fe, New Mexico**

Day Two ONE
March 14, 1997
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**Ecological Risk Assessment Workshop
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13

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<u>Name</u>	<u>Organization</u>	<u>Phone Number/Fax Number</u>
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