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NAS WHITING FIELD  
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RESTORATION ADVISORY BOARD MEETING MINUTES 15 AUGUST 1996 NAS WHITING  
FIELD FL  
8/15/1996  
RESTORATION ADVISORY BOARD

**NAS WHITING FIELD  
RESTORATION ADVISORY BOARD MEETING, 15 AUGUST 1996  
MEETING SUMMARY**

**RAB Members attending:**

Anita Breeding	Pat Durbin, Navy Co-Chair
Ken Brooks	Logan Fink, Community Co-Chair
Jim Cason	Sam Vickers
Craig Benedikt	

**Navy Representatives:**

CDR Guy Miller, NAS Whiting Field  
Jim Holland, NAS Whiting Field

**Others:**

Marland Dulaney, ABB Environmental Services (ABB-ES)  
Terry Hansen, ABB-ES  
Gerry Walker, ABB-ES

Pat Durbin opened the meeting at 5:30 PM by welcoming the RAB members and others in attendance. She then reviewed the meeting agenda and introduced Dr. Marland Dulaney. Dulaney holds a doctorate in Clinical Pharmacology and Toxicology, is a board-certified toxicologist with ten years experience in toxicology and risk assessment, and has authored sixty publications on these subjects.

**Human Health Risk Assessment:**

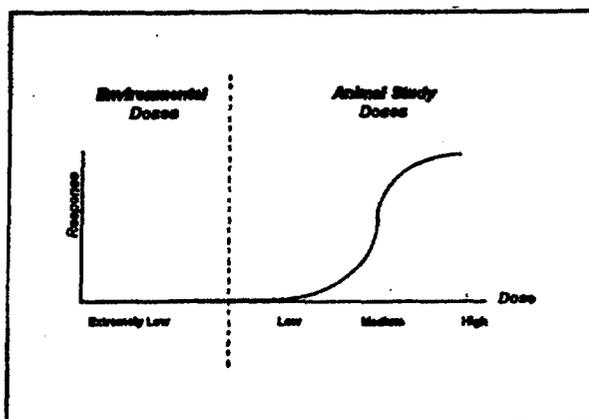
Dr. Dulaney began his presentation with an overview of the processes involved in conducting a human health risk assessment and provided definitions and examples of commonly used terms. The power point presentation was duplicated in a handout given to the attendees and is summarized as follows:

A risk assessment is a regulatory study of potential risks to humans and the environment from environmental chemical exposures. A regulatory study is a process required by environmental law, conducted according to regulatory requirements and scientific methods, that is used primarily as a decision making tool. It does not measure true (actuarial) risk. Risk assessment is generally overly conservative and protective. The justification for this conservative approach is that it is more prudent to be overly protective and wrong than not to be protective enough and be wrong. He explained how the risk assessment is conducted to be both protective and meaningful.

Risk assessments incorporate principles of toxicology, medicine, and industrial hygiene, regulatory oversight and guidance, and past experience. Calculating risk is a multi-step process involving exposure (dose) and toxicity. Risk can be expressed as  $\text{risk} = \text{dose} \times \text{toxicity}$ . The four steps in risk assessment are: **Hazard Identification, Exposure Assessment, Toxicity Assessment, and Risk Characterization**. Risk assessment begins with hazard identification - what is out there. This information, gathered from the collection and analysis of soil, water, and other environmental samples, compares background (not-site related) data to site

specific data. Hazard identification looks at whether the chemicals identified can move or change, data usability, and uncertainty. It focuses on the chemicals that present the greatest potential risk, are moving to other media, and are changed by bacteria or other processes. Whiting Field (WF) is currently half way through the hazard identification phase of its risk assessment.

**Exposure Assessment- who could be exposed.** This has three parts: Characterizing the site, identifying the potentially exposed human population, and identifying the exposure routes. Taken into consideration are: current and future land use, the number and location of people ( receptors) closest to the site, and potential exposure pathways. Pathways can be direct or indirect through exposure to soil or water, absorption through skin, breathing the air, or the ingestion of fish or plants. The dose (exposure) for the most susceptible receptor is obtained from USEPA reference tables. **Toxicity Assessment- what would it do.** Information on the toxicity of chemicals is obtained from two sources - human and animal studies. Exposure data on humans, in general, has come from volunteer experiments, accidents, or workplace exposures. Human studies review information collected over long periods of time: hospital or industrial monitoring reports, death certificates, or anecdotal evidence. An example cited was the recent study dealing with lead exposure in school age children. In comparison, animal studies are well controlled, are of different lengths, use rodents or other animals, and use high doses until an effect is achieved. In some cases, the dose required to achieve the effects seen in the animal studies (lethality, cancer, or reproductive problems) would not occur with normal or even extreme usage in humans. The most conservative data is used to add a measure of protection. An example where an effect not seen in animals was found in humans was the use of diethylstilbesterol (DES) by women and the effect it had on their female offspring. **Risk characterization-what are the risks.** Risk is calculated using dose - response curves obtained from toxicity assessments (mostly done on animals). Response is defined as the risk of a toxic exposure. As seen in the figure below, the response to environmental doses is extremely low.



Dr. Dulaney proceeded to discuss the different type of dose response curves and risks associated with known cancer-causing agents and noncarcinogens. He stated that there were nine known carcinogens. Examples were given which included asbestos and benzene. In summary, Dr. Dulaney stated that risk assessment has certain limitations, it does not provide absolute risk determinations but instead provides "worst-case" risks. All risk assessments are reviewed by the USEPA and the State of Florida. They reflect the current state of risk assessment practices and are constantly being refined to be less conservative while remaining protective of human health and the environment.

Dr. Dulaney was asked several questions: was he aware of any relationships between the increase in female breast cancer rates in women who worked at WF; was he familiar with the unusual brain tumors found in several children in the Pace area; and the status of the health risk assessment at WF. In response, he stated that many factors are involved in dealing with cancer studies, and the age group of the population must be taken into consideration in the type of cancer seen. He was not familiar with the cases in Pace but would look into it and see if he could provide more information at a later date. Dr. Dulaney stated that he would be willing to continue this discussion on health risk assessments at another RAB meeting if the group was interested.

Terry Hansen stated that 50 % of the known receptors and several chemicals had been identified at WF, and estimated completion of the Health Risk Assessment by February 1997.

**Site Status Report / Field Work Update:**

Gerry Walker discussed the progress made in monitoring well installation and groundwater sampling. He presented two maps to show the contamination plume under investigation and the location of the monitoring wells. Including the additional wells installed in the industrial area and perimeter road sites there will be 204 monitor wells on the base. For the next two to three months ABB-ES will be sampling the deep wells, averaging 2-3 wells per day. Mr. Walker then presented a short video on groundwater sampling techniques and equipment. Following the video RAB members and attendees had an opportunity to handle sampling equipment brought by ABB-ES and discuss sampling protocol.

Mrs. Durbin then asked for comments / approval of the 2 May 96 minutes noting that Mr. Breeding's name will be corrected from Garret to Garnet in future minutes. The minutes were approved and the meeting adjourned at 7:30 PM.

The next RAB meeting is scheduled for November 14 , 5:30 PM, at the Pensacola Junior College, Milton Campus, Natural Resources Studies, Building 4900, Room 4902. The tentative agenda includesll be presentations on groundwater flow using the USGS model, Clear Creek sampling results, and a field work update.