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NAS CECIL FIELD
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LETTER AND COMMENTS FROM UNIVERSITY OF FLORIDA REGARDING BASELINE RISK
ASSESSMENT FOR OPERABLE UNIT 8 (OU8) NAS CECIL FIELD FL
5/19/1995
UNIVERSITY OF FLORIDA



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May 19, 1995

Ligia Mora-Applegate
Bureau of Waste Cleanup
Florida Department of Environmental Protection
Room 471A, Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Ms. Mora-Applegate:

I have reviewed the Baseline Risk Assessment for Operable Unit 8, Naval Air Station Cecil Field, Jacksonville, Florida, prepared by ABB Environmental Services, Inc., and dated April, 1995. Overall, this is a very thorough human health and environmental baseline risk assessment. However, there are some aspects for which I have concern. These are outlined in the comments below:

1. pg 4-2: Data for the site were obtained during three sampling events – in 1991, 1993, and 1994. Not all of the data were used in the risk assessment, however (e.g., only groundwater data from 1991 were used). There is a general discussion on pg 3-14 about data quality evaluation, but I could not find a rationale why specific data sets were, or were not, chosen for use in the risk assessment. This should be clarified.
2. pg 4-5: FDEP cleanup criteria for soils based on the general worker are probably not good tools for screening subsurface soils concentrations, particularly if the intent is to include in the risk assessment a scenario involving direct contact with subsurface soils by workers during excavation. An excavation worker would be expected to have much greater soil contact than is assumed for a generic worker. As such, particularly for non-carcinogens, the general worker soil cleanup values would not be sufficiently conservative to serve as effective screening tools for excavation workers.
3. One criterion for exclusion as a COPC was a frequency of detection less than 5% and presence in only one media (see pg 4-5). It is important when using frequency of detection as a screening tool to insure that points of extensive, highly-localized contamination (“hot spots”) are not eliminated. That is why RAGS, Part A, states that a chemical can be eliminated if, “(1) it is detected infrequently in one or perhaps two environmental media, (2) it is not detected in any other sampled media or at high concentrations, and (3) there is no reason to believe that the chemical may be present.” [emphasis added]. A brief analysis to confirm that this screening criterion has not led to the elimination of hot spots would be a useful addition.
4. pg 4-8: According to current, informal guidance from USEPA Region IV, a 95% UCL should not be calculated if there are less than 10 samples. The maximum value should be used instead for the exposure point concentration. This is consistent with published guidance on this issue (*Supplemental Guidance to RAGS: Calculating the Concentration Term*, OSWER, USEPA, 1992).

5. Table 4-2: The manner in which exposure point concentrations will be derived and used is projected to result in an overestimation of risk because, "Sampling data are assumed to be representative of the exposures." If the sampling data are representative of the exposures, how would this lead to an overestimation of risk?

6. 7. The document states that RGOs are developed only for media with a risk > 10⁻⁴ (see pg 4-25). Conceptually, this approach does not serve the needs of Florida, whose risk objectives are somewhat different from those of the USEPA. In the case of this particular site, I don't think that it has created a problem. However, from a State perspective, as a general rule, RGOs should be developed whenever risk exceeds 10⁻⁶.

7. Table 4-4: Why weren't arsenic concentrations measured in soils?

8. Table 4-10: For exposure to contaminants in groundwater in a residential land use scenario, a child resident should have been included.

9. Table 4-20: Florida secondary standards and guidance concentrations should be listed as potential RGOs for this site.

10. Appendix M: The assumed exposure time and inhalation rates for adults lead to a daily inhalation rate that is less than USEPA guidance of 20 m³/day (please refer to *Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Parameters"*, USEPA, 1991). These should be replaced with a single inhalation rate assumption of 20 m³/day.

11. Appendix N:

- Quantitative expression of non-cancer risks from PAHs in soils is virtually non-existent, with toxicity values listed as ND ("No data available"). Since the PAHs comprise about 90% of the chemicals of potential concern for soils, the hazard index presented in the risk assessment (based on 10% of the COPCs) is arguably meaningless. It is unclear why there wasn't an attempt to better quantitate non-cancer risks from PAHs in soils. In describing the source(s) of dose-response information for the risk assessment, the document states that "If no USEPA dose-response value is identified, surrogate values from structurally similar compounds may be assigned." (pg 4-14). The surrogate approach can, and should have been, used for PAHs at this site. I recommend that the non-cancer risks from soils be recalculated using an appropriate surrogate RfD for PAHs.
- Cancer risks from inhalation of PAHs have been ignored also. While I doubt that this has led to a significant underestimation of risk, they should have been included for completeness, nonetheless.
- In Table N-2, the inhalation RfD for manganese was incorrectly derived from the RfC.
- Several of the equations in this Appendix have misplaced parentheses.
- The soil ingestion rate for an excavation worker (118 mg/day) is too low. A higher value (e.g. 480 mg/day per USEPA guidance) should be used instead.
- The dermal slope factor for beryllium has been miscalculated.
- The equation in Table N-18 (concentration from showering) doesn't agree with the formula in Appendix J (pg J-1). The calculations in this table couldn't be replicated.

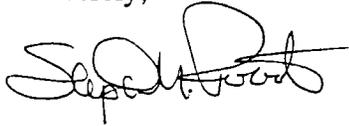
12. Modeling predicts that groundwater contaminants will be sufficiently diluted by the time they reach Rowell Creek such that no adverse ecological impacts will be realized (pg 6-82). Minimally, monitoring will be required to insure that groundwater contaminant

concentrations, when they reach this (or another) surface water body, comply with Florida surface water standards.

Overall, it is clear that the medium of primary concern for this site is groundwater. Benzo(a)pyrene is present in surface soils in concentrations that exceed slightly Florida soil cleanup goals, but soil remediation for this chemical is probably not warranted. I recommend that the RGOs selected for this site satisfy the Florida groundwater standards and minimum criteria, except in areas adjacent to surface water bodies, where surface water standards would be applicable.

If you have any questions regarding these comments, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen M. Roberts". The signature is fluid and cursive, with a large initial "S" and "R".

Stephen M. Roberts, Ph.D.