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MEMORANDUM REGARDING UNIVERSITY OF FLORIDA COMMENTS ON RISK
ASSESSMENTS FOR GROUP 1 SOLID WASTE MANAGEMENT UNITS NS MAYPORT FL
9/27/1995
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Florida Department of Environmental Protection

Memorandum

Naval Station Mayport
Administrative Record
09.01.00.0104

TO: Jim Cason, Technical Review Section, BWC

THROUGH: Jim Crane, Technical Review Section, BWC *JJC*

FROM: ~~Ligia M. Applegate~~, Technical Review Section, BWC

DATE: September 27, 1995

SUBJECT: Risk Assessments Group I SWMUs
Mayport NAVSTA

Attached please find Dr. Stephen Roberts' (UF toxicologist on contract to FDEP) comments. Please make certain that they are addressed.



UNIVERSITY OF FLORIDA

Center for Environmental & Human Toxicology

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September 25, 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 at your request the Human Health Risk Assessments for Group I SWMUs, Mayport NAVSTA. Overall, the methodology employed to evaluate human health risks is sound. There are some weaknesses and omissions that warrant comment, however, and these are discussed below.

1. Direct contact with surficial soils under a future residential scenario was not included in the Human Health Risk Assessment (HHRA) (see Table 4-69). While it may indeed be unlikely that the landfill area would be used as a residential area, such events are not unheard of. What measures are available in terms of institutional controls to insure that residential development does not in fact occur in the future?
2. The conceptual site model includes inhalation of particulates, but not inhalation of chemicals volatilized from soil. This is not a major point, since there were no VOCs selected as COPCs for surficial soils. One VOC was identified as a COPC in subsurface soils (methylene chloride), and to be technically correct, inhalation of volatilized methylene probably should have been included in the risk calculations for the excavation worker. Again, this objection is raised purely on technical grounds – the low concentrations of methylene chloride in subsurface soils (26 ppb maximally) would not have contributed significantly to the overall risk for this exposure scenario.
3. Table 4-75 lists the hazard index for inhalation of particulates as 0. In fact, there was no quantitative evaluation of non-carcinogenic risk from inhalation of particulates due to the absence of EPA reference concentrations on IRIS. To list the hazard index as "0" mistakenly implies that there is no risk, and the text contributes to this error by statements such as, "The noncancer risks associated with surface soil ingestion, dermal contact, and inhalation of fugitive dust for current land use are all below an HI of 1 (adolescent trespasser, adult trespasser, and site maintenance worker)." (emphasis added). Rather than listing a HI of 0, the table and text should indicate that non-cancer risks from inhalation of particulates were not evaluated quantitatively. A qualitative assessment of the risks from inhalation of particulates should then be added (see also the comment below).
4. Cancer risks from inhalation of particulates were quantitated for fewer than 1 in 5 of the COPCs, and none of the COPCs were quantitatively evaluated for inhalation non-cancer risks. Arguably, the inhalation exposure pathway was not evaluated

quantitatively in any meaningful way in this risk assessment. A discussion of this obvious limitation in the risk assessment should be added to the uncertainty analysis.

5. Ingestion of groundwater is regarded as a complete exposure pathway for the future resident, but exposure and risks are calculated for adults only. Why wasn't ingestion of groundwater by a child resident included in the calculation of risks?

The predominant contributors to risk from exposure to surficial soils at this site are arsenic, beryllium, and benzo(a)pyrene. Arsenic does not appear to be a serious problem, since the highest concentration detected (1.2 ppm) was only modestly greater than the FDEP acceptable concentration for residential land use. The highest beryllium concentration (0.5 ppm) was less than the new beryllium cleanup goal, and the exposure point concentration of benzo(a)pyrene (0.2 ppm) was not too much greater than our acceptable concentration of 0.14 ppm, although the maximum detected concentration (3.9 ppm) was quite a bit higher. Groundwater contains several organic contaminants with maximum concentrations exceeding somewhat the Florida minimum criteria (see Table 4-78). The maximum concentration of manganese was approximately 100-times the Florida secondary standard of 50 ppb, and the 95% UCL concentration was nearly 7-times the risk-based RGO of 181 ppb (see table 4-78). Surface water and sediments do not appear to be significant human health concerns.

I hope that this information is useful. Should you have any questions regarding it, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen Roberts". The signature is written in a cursive, somewhat stylized font.

Stephen M. Roberts, Ph.D.