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LETTER REGARDING REGULATOR REVIEW AND COMMENTS TO THE DRAFT REMEDIAL INVESTIGATION REPORT FOR OPERABLE UNIT 2 (OU 2) MCCOY ANNEX LANDFILL WITH ATTACHMENT NTC ORLANDO FL
4/1/1999
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

09.01.02.0013
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Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

April 1, 1999

Mr. Wayne Hansel
Code 18B7
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-0068

RE: Draft Remedial Investigation Report for Operable Unit 2, McCoy Annex Landfill, Naval Training Center, Orlando, Florida

Dear Mr. Hansel:

I have completed my review of the Draft Remedial Investigation Report for Operable Unit 2, McCoy Annex Landfill, dated January 1999 (received January 12, 1999). I have the following comments, as well as the attached comments from the Department's contracted risk assessors, that should be addressed:

(1) Vertical groundwater flow through the uppermost confining clay layer of the Hawthorn Group should be discussed in more detail in the report. There is an apparent 30 to 35 foot hydraulic head drop through this layer. Also, cone penetrometer testing data located in the Remedial Investigation Technical Report (Brown & Root, 1998) would be useful in this report to identify areas where DNAPLs could pool, thicknesses of the confining clay layer and site lithology.

(2) The soil organic vapor survey results located in the Remedial Investigation Technical Report (Brown & Root, 1998) would be useful in this report to correlate with soil sample analyticals and to identify potential hot spots or source areas that may be impacting groundwater. Also, the results of the methane gas survey were not located in the report.

(3) In section 5.2.6, it appears that total chromium was inadvertently grouped with calcium, magnesium, potassium and sodium as being abundant in natural soils, having low toxicity and having no residential soil cleanup target level (SCTL). This should be corrected.

(4) The report states that landfill wastes reportedly included low-level radiological waste (from Air Force operations). As this reviewer is not very knowledgeable about what that type of

waste would be composed of, I feel it would be useful to describe the specific radioactive elements that might be found in such wastes, their breakdown products and half-lives. It would also be useful to include in the report information on the specific radioactive elements that are naturally occurring and the ratios in which they are found.

(5) It appears that geochemical processes within the landfill are leaching metals from waste material and the aquifer matrix to groundwater. A section of the report should be devoted to these processes with reference to field data collected during groundwater sampling (pH, turbidity, dissolved oxygen, oxidation-reduction potential, conductivity, etc.) and laboratory analytical data. It may be useful to conduct a modelling exercise to determine why metals are apparently leaching to groundwater at extremely elevated concentrations and why surface water in the canals and ponds at the site have greatly reduced metals concentrations in comparison.

(6) It was stated in the report that the FDEP's GCTL for gross beta radiation in groundwater is 50 pCi/L. This is incorrect. Florida's primary standard for beta radiation is 4 mrems/year. If there is a conversion from mrems/year to pCi/L, the calculations should be provided in the report.

(7) It is stated in section 8.1 that the southern extension of the canal that runs along the eastern perimeter of the southern, wooded portion of the landfill did not exist when the landfill was in operation. The date this canal was constructed should be provided in the report.

(8) Please note that the Department is in the process of rulemaking for Chapter 62-777, Florida Administrative Code. Some groundwater cleanup target levels (GCTLs), soil cleanup target levels (SCTLs) and surface water cleanup target levels (SWCTLs) may change. The latest cleanup target levels being proposed may be found on the internet at:

http://www.ifas.ufl.edu/~jkt/index.htm

(9) Surface water contaminant concentrations are compared to the federal Ambient Water Quality Criteria in the ecological risk assessement portion of the report. Florida's Surface Water Quality Standards and SWCTLs should also be used for screening level purposes to determine COPCs.

(10) Surface soil and groundwater inorganic concentrations are compared to background concentrations. This report should provide details on how these background concentrations were calculated and where the background samples were collected from.

If I can be of any further assistance with this matter, please contact me at (850)488-3693.

Sincerely,

David P. Grabka
Remedial Project Manager

cc: Lt. Gary Whipple, NTC Orlando
Barbara Nwokike, Navy SouthDiv
Nancy Rodriguez, USEPA Region 4
Richard Allen, HLA, Jacksonville
Steve McCoy, Brown & Root, Oak Ridge
Robin Manning, Bechtel, Oak Ridge
Bill Bostwick, FDEP Central District

TJB TB JJC JJC ESN ESN

UNIVERSITY OF FLORIDA

Center for Environmental & Human Toxicology

P.O. Box 110885
Gainesville, Florida 32611-0885
Tel.: (352) 392-4700, ext. 5500
Fax: (352) 392-4707

March 10, 1999

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

Dear Ms. Mora-Applegate:

At your request, we have reviewed the Draft Remedial Investigation (RI) report for Operable Unit 2 (OU2), McCoy Annex Landfill, Naval Training Center, Orlando, Florida. The draft RI, which includes human health and ecological risk assessments, was prepared by Tetra Tech NUS, Inc. (TTN) and is dated January 9, 1999. We have the following comments based on our review of the document.

Human Health Risk Assessment

Section 6.1 Data Evaluation

On page 6-3, TTN describes the use of relative potency factors for the various carcinogenic polycyclic aromatic hydrocarbons (cPAHs) to determine a cPAH concentration in benzo(a)pyrene equivalents (BEQs) at each sampling location. As we indicated to you in a letter dated January 5, 1999, there is a potential problem with the manner in which "non-detect" values were handled by TNN in calculating the EPC for BEQs. For samples without detectable cPAHs, TNN assigned a cPAH concentration value in BEQs based on one-half the detection limit of BaP only, the other cPAHs were essentially ignored in deriving the half-detection-limit cPAH concentration for these samples. TTN has effectively addressed our concerns by using the maximum detected BEQ concentration instead of the 95% UCL of the BEQ concentrations as the EPC in the risk calculations for BEQs. However, the text on page 6-23 should be modified to incorporate our previous comments on the appropriate use of "non-detect" values.

Section 6.3.3.1 Exposure Quantification/Site Maintenance Workers

On page 6-23, TTN used an ingestion rate of 5 mg/day coupled with an exposure frequency of 50 days/year for receptor contact with sediment. Corresponding numbers used by TTN for soil ingestion rate and exposure frequency to soil were 50 mg/day and 250 days/year, respectively. Although the USEPA guidance (RAGS part A) suggests that the equation and the default values used for contact with sediment should be the same as those used for contact with soil, the exposure frequency of 50 days/year used by TTN is probably appropriate for a site maintenance worker on a golf course. However, it is certainly possible that such a receptor would have an incidental soil ingestion rate greater than 5 mg/day per exposure event for ball retrieval or other maintenance activities in the pond areas. We suggest the use of 50 mg/day for ingestion of sediment.

TTN used a fraction ingested (FI) of 0.1 instead of 1.0 for cPAHs in soil in the exposure equations because "the maximum concentration was not believed to be representative of the exposure concentration an the FI was reduced to provide a more realistic intake estimate." The same assumptions were made for adults and adolescent recreators. While we do not disagree in concept to a lowering of the FI parameter, the value of 0.1 may be a bit low in the absence of site-specific data to justify that number. We suggest that a FI value be chosen based on the size of the site in relation to the contaminated areas in question and taking into consideration the activity and use patterns in those contaminated areas. The data and assumptions upon which a FI value less than 1 are based should be carefully explained and justified.

Section 6.5.1.2 Carcinogenic Risks for Areas 1 and 2/3

On page 6-33, TTN discusses the incremental lifetime cancer risk (ILCR) estimates for the receptors evaluated, and compares these to the USEPA target risk range of 1E-04 to 1E-06 to determine if there is concern for potential cancer health effects to humans. FDEP generally requires the use of 1E-06 as acceptable risk for carcinogens. When this number is compared with the cancer risk estimates calculated for the receptors in Area 1, all except those for the adult and adolescent recreators exceed the FDEP target risk. Similarly, the ILCR estimates calculated for the receptors in area 2/3 are greater than the FDEP target risk of 1E-06 (page 6-40).

Ecological Risk Assessment

Section 7.1.3 Region 4 Screening Levels

On page 7-13, TTN indicated that the lowest value of surface soil screening levels among a variety of sources [Friday, 1998; Beyer, 1990; ORNL (Efroymson et al., 1997); the Netherlands (MHSP&E, 1994, etc.] was used to determine chemicals of potential concern. However, TTN did not indicate the source of screening numbers for individual chemicals presented in Table 7-7 (page 7-30). We suggest that the source of the numbers be included in the table, as this would facilitate the review process. In addition, the soil screening numbers for copper, DDE, DDT, and dieldrin in Table 7-7 are higher than those indicated for these chemicals in the new Dutch Soil Cleanup Levels list. There have been changes in the Dutch Soil Cleanup Levels since the Beyer publication. The new Dutch List can be found on the Internet at www.ContaminatedLAND.co.uk. Tetra Tech should use this updated list as a source for its soil screening values.

Section 7.4.2 Chemical Doses for Representative Receptors

In estimating chemical intake from food ingestion, TTN reported on page 7-23 that the input parameters used were obtained from USEPA's *Wildlife Exposure Factors Handbook* (WEFH, 1993). However, values of some of the inputs presented on Table 7-4 (page 7-24) do not match the numbers in WEFH. For example, a body weight of 0.021 kg for deer mice was used as surrogate for the Cotton mouse instead of using the numbers (28-51 g) reported for this species (WEFH 1993) in deriving a mean body weight. Assuming a mean body weight of 0.0395 kg, the revised food ingestion rate for the Cotton Mouse would be 0.0048 kg/day (0.0687 $Wt^{0.822}$, instead of 0.0029 kg/day presented in Table 7-4. The former number is more conservative and should be used in the risk equation. Similarly, the food ingestion rates for other species including the Great Blue Heron, American Woodcock, and Red fox, did not match the numbers presented in Table 7-4. Tetra Tech needs to explain why it did not use the numbers provided.

Other comments

The USEPA Region 4 screening level for arsenic in freshwater surface water is 90 µg/L and not 190 µg/L as indicated in Table 7-5. The HQ should also be adjusted to 0.2.

Although cancer risks to future residents (child and adult) are driven primarily by surface and groundwater (page 6-34), we understand that this site is to remain a golf course and deed restrictions will be enforced at the site.

We hope that these comments are helpful. Should you have any further questions, please do not hesitate to contact us.

Sincerely,

Florence M. Ndikum-Moffor, Ph.D.

Christopher J. Saranko, Ph.D.

Stephen M. Roberts, Ph.D.

cc: David Grabke