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LETTER REGARDING MSE HAS REVIEWED THE INFORMATION PROVIDED BY THE U S
NAVY IN SUPPORT OF THEIR REQUEST TO DISCHAGE GROUNDWATER REMEDIATION
EFFLUENT FROM THE OLD CAMDEN COUNTY LANDFILL TO THE ST MARYS SANITARY
SEWER SYSTEM
10/29/1993
MAYES, SUDDERTH & ETHEREDGE, INC.



Mayes, Sudderth & Etheredge, Inc.

October 29, 1993

Mr. Michael G. Mahaney, P.E.
City Manager
City of St. Marys
418 Osborne Street
St. Marys, GA 31558

Engineers
Architects
Planners

3701 Towercrest Pkwy.
Suite 100
Atlanta, GA 30339-325
404-952-0011
FAX: 404-938-8842

RE: Old Camden County Landfill
Ground Water Contamination

31547.000
13.01.00.0061

Dear Mr. Mahaney:

MSE has reviewed the information provided by the US Navy in support of their request to discharge ground water remediation effluent from the Old Camden County landfill to the St. Marys Sanitary Sewer System. We do not believe that this would seriously compromise your ability to meet permit requirements, provided that the following criteria are met:

1. Hydraulic Loading

The Point Peter Plant is permitted to discharge an average flow of 0.8 million gallons per day (MGD). Review of flow data provided by the City for the period of July 1992 to June 1992 shows that the average flow was exceeded in July, 1992 (0.916 MGD) and was 0.786 MGD in February 1993. If the proposed discharge of 0.086 MGD is superimposed on the February 1993 flow, the combined discharge of 0.872 MGD would exceed the permitted limit.

It is our understanding that waste water can be pumped to either the Point Peter Plant or the Weed Street Plant. If the combined permitted capacities of these plants is adequate to treat and dispose of an addition 0.086 MGD during the peak monthly flow conditions, then there would be adequate hydraulic capacity. We recommend that you compare your total hydraulic capacity to the peak monthly flow with the addition of 0.086 MGD and assess your ability to manage the hydraulic balance between the two treatment plants. It may also be advantageous to control the discharge from the remediation system to arrive at the plant(s) during off-peak periods of the day.

2. Remediation Effluent Quality

If the discharge from the remediation system is below the maximum contaminant levels (MCL) for drinking water and has negligible concentrations of contaminants for which MCLs have not been established, the only anticipated impact to the treatment system would be hydraulic. We anticipate that ABB-ES and the US Navy will act in good faith to produce



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such an effluent. However, we recommend that the Navy provide the following quality controls to limit excessive discharges:

- a. Perform complete priority pollutant analyses on ground water samples. The documentation presented for the proposed pilot plant states that complete chemical characterizations were not performed. It is possible that there are additional, unidentified contaminants that would not be adequately removed by stripping. Additionally, conventional wastewater characterizations, parameters; such as BOD, COD, nitrogen, phosphorous, alkalinity, suspended solids and pH; should be assessed.
- b. Periodically sample and analyze ground water from monitoring wells. The quality of leachate from a landfill is expected to change with time. The documentation presented does not state that multiple rounds of ground water quality assessment were performed. Therefore, there is no basis to conclude that the characterization is representative of existing conditions or predictive of future conditions.
- c. Implement operating controls. During the 8 month operating period, the only proposed control is a weekly effluent sample with a one-week laboratory turn-around time. It is possible for an exceedance not to be discovered for two weeks. We recommend that some combination of on-site effluent retention and enhanced analytical frequency be implemented to allow confirmation of effluent quality prior to discharge.

Additionally, some type of rapid operational monitoring is recommended. This might consist of monitoring selected indicator parameters such as pH, specific conductivity and/or total organic carbon (TOC).

3. Establish a written agreement with the US Navy. The Navy proposes to discharge 0.086 MGD (60 gpm) of remediation effluent of drinking water quality for a pilot period of 45 to 60 days and for an operating period of 8 months. If the contaminant source is not isolated or removed, we suspect that the treatment will continue for decades rather than months. The Navy should make its intentions clear - Is the 8 month operating period an interim measure while a permanent disposal method is being implemented? Does the Navy intend to eliminate the source (install a slurry wall or equivalent) and treat only that contaminated ground water that has already escaped the landfill?

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An operating and monitoring plan, acceptable to the City, should be established to prevent discharges in excess of drinking water standards (or some other standard acceptable to the City). The Navy should commit to withholding discharges that do not meet the effluent limits.

4. **Cost Recovery - US EPA Regulations (40 CFR 35.925-11)** require that municipalities that received design or construction grants for publically owned treatment works (POTW) establish a program to cover the cost of operating and maintaining the system. The cost recovery must address both flow and mass loadings and prohibits volume discounts. We assume that your existing rate structure incorporates this requirement and would apply to the proposed discharge.
5. **Regulatory Agency Approval.** The Navy has presented the argument that the City would not be subject to RCRA OR CERCLA liability for accepting the effluent. We recommend that you solicit written concurrence from Georgia EPD. Also, we have contacted Ms. Mary Barcala of the Georgia EPD Municipal Wastewater Program regarding discharge permit requirements. Ms. Barcala is investigating additional monitoring compliance requirements that might be imposed on the City.

The treatability modeling performed for the Point Peter Plant has some minor inconsistencies such as use of 1.0 MGD as the design flow, CIS 1.2 - dichloroethane was not modeled, and calibration data are referred to but not presented (Did they perform calibration analyses at the Point Peter Plant?). If the Navy meets the proposed discharge limits (MCL), these concerns may not be significant.

In addition to the question that you directed to us, we offer the following observations:

1. **Air quality sampling points shown** appear to be along streets and property lines, rather than at structures. This may be appropriate to evaluate exposure from water use; however, we would expect that gases released from the soil would accumulate in basements and crawl spaces, and under floor slabs. It does not appear that this was assessed.
2. **Water from private wells** is reported to have been sampled and analyzed. Analytical results were not available in the data that we reviewed.
3. **Risk Assessment**

The risk assessment information available to us was limited to what appear to be slides from the Public Information Session of May 13, 1993. MSE did

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not review full texts of any supporting documents, nor do we profess to be experts in the field of risk assessment. However, we do not understand how the data presented supports the conclusion that no risk is presented to the residents of Crooked River Plantation Subdivision.

- a. **Exposure Duration.** The assessment exposure duration for adults was 30 years, while periods of 3 and 6 years were assessed for children. Is it reasonable to assume that adults living in a house for 30 years will be accompanied by their children for only 3 to 6 years? Is it customary to assess risks over a lifetime exposure (70 years) or for short duration?
- b. The lifetime carcinogenic (cancer) risks per 1,000,000 children exposed for 3 and 6 years are reportedly 88 and 180, respectively. A note on the slides states that "the USEPA suggest an acceptable risk range of 1 to 100 in a million people." The 6 years exposure risk of 180 clearly exceeds the range of 1 to 100. We do not have figures available for lifetime exposure.
- c. The reported total non-carcinogenic hazard index (HI) for children was reported to be 5.3 for both 3 and 6 year exposures. A note on the bottom of the slide states that "USEPA suggest if HI is greater than 1.0, further analysis is required." Again, we do not know what the effects of lifetime exposure would be.
- d. The argument is presented that exceeding the USEPA acceptable risk level is not a concern since the assessment assumptions were conservative. It is our experience that conservative assumptions are normally used to simplify an assessment using "worst case" conditions. If the worst case is acceptable, anything less severe is assumed to be acceptable. Where worst case conditions are not acceptable, refined analysis is required. It appears that either a refined analysis is appropriate or the community must be willing to accept the assessed level of risk.

We asked Ms. Madeline Kallan, the project remediation officer for Georgia EPD, if US EPA or Georgia EPD would review the risk assessment. Ms. Kellan stated that EPD did not have a risk assessment program and that EPA would not be involved since it is not a CERCLA (superfund) site. Apparently there will be no review by the regulators. We recommend that you discuss the risk assessment with the County Health Officer.

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4. A 4" and a 10" well are shown on the drawings. There is no mention in the data that we received of their purpose, if they are in use, screening depth, or water quality data from these wells. This is a potentially significant omission.
5. We understand that the Floridan Aquifer is the second aquifer underlying the site and is a source of potable water for much of South Georgia and Florida. The groundwater monitoring data that we reviewed did not include data from the Floridan Aquifer. The impact to your water supply does not appear to have been assessed.

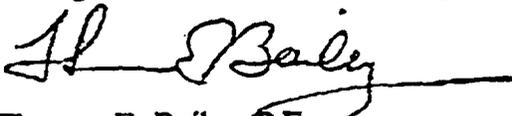
If you need further information or have any question, please contact Mr. Tom Holbrook at the above address or by telephone at 404/952-0011.

Sincerely,

MAYES, SUDDERTH & ETHEREDGE, INC.



Thomas H. Holbrook, Jr., P.E.
Manager, Environmental Planning



Thomas E. Bailey, P.E.
Manager, Environmental Engineering

TEB/THH:lc