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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

May 25, 1994

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

Ms. Linda Berry
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1823
Norfolk, Virginia 23511-6287

SUBJ: MCB Camp Lejeune - OU2
Pre-Final Design
Soil & Groundwater Remediation

Dear Ms. Berry:

The Environmental Protection Agency (EPA) has completed its review of the above subject document. Comments are enclosed.

If there are any questions or comments, please call me at (404) 347-3016 or voice mail (404) 347-3555, x-6459.

Sincerely,

Gena D. Townsend

Gena D. Townsend
Senior Project Manager

Enclosure

cc: Mr. Neal Paul, MCB Camp Lejeune
Mr. Patrick Watters, NCDEHNR

1.0 GENERAL COMMENTS

1. Provide support calculations for the 1-inch sanitary sewer forced main specified in the construction plans.

2. Provide the groundwater remediation stagnation point calculation in the discussion of groundwater extraction to support the extraction well design and layout.

3. Provide aquifer test methods for initial extraction wells and performance test methods for remaining extraction wells to adequately evaluate hydraulic parameter derivations such as conductivities, specific yield and aquifer conditions.

4. Discuss why different well screens and filter pack sands were specified for the Type II and Type III extraction wells shown on the construction plans.

2.0 SPECIFIC COMMENTS

The specific comments and issues identified during the review of the Pre-Final Design Report are listed on the following pages. The comments are listed in order of occurrence and are organized by section number, page number, paragraph number, construction plan sheet and figure number, as appropriate.

1. Section 3.2.2, Page 3-2, Paragraph 1:
The text states that the sanitary sewer service will require the installation of a grinder pump and sump, and that sanitary drainage from the groundwater treatment building will be discharged to a new sanitary sewer forced main. Specify the diameter of the sanitary sewer forced main and provide design calculations in the appendix to support the choice of diameter.

2. Section 5.3, Page 5-3, Paragraph 1:
The Pre-Final Design Report needs to provide the calculation that was apparently included in the reference "Keely and Chin [Tsang], 1983" and used to determine the stagnation point of downgradient radial influence (r_i) of the capture zone.

3. Page 5-4, Section 5.4, General:
The Pre-Final Design Report needs to provide the aquifer test methods to be applied to the two initial extraction wells and the performance test methods to be used on the remaining extraction wells. The aquifer test should be performed for a minimum of 72 hours or until the late time-drawdown data is observed. The longer period of time for performing the aquifer test is required so that the late time-drawdown data can be used to reliably and accurately

evaluate the horizontal and vertical hydraulic conductivities, specific yield, storativity and boundary conditions of the aquifer.

A step drawdown test should be performed first to determine the discharge rates for the groundwater extraction wells. The step drawdown test should include the number of discharge rates (steps) and time period for each step.

The Pre-Final Design Report also needs to provide the distances at which piezometers (observation wells) will be installed from the pumping well. A rule of thumb for siting observation wells is to install the observation wells at incremental distances from the extraction well of one and a half times the saturated thickness of the aquifer.

4. Construction Plans, Sheet C-6:
Note No. 1 on sheet C-6 states that the sanitary sewer forced main shall be 1-inch in diameter. This appears small and it cannot be verified without design calculations. Please provide these calculations in the appendix of the Pre-Final Design Report.

5. Construction Plans, Sheet C-8:
In the discharge line cleanout detail, the label for the 4-inch removable threaded plug is shown pointing at the existing grade instead of the plug. Please revise to show the label pointing at the correct location of the plug.

6. Construction Plans, Sheet C-9:
Provide the dimension of total width in the Groundwater Treatment Plant - General Arrangement plan view shown.

7. Construction Plans, Sheet C-10:
For the typical Type II Water Table Evacuation Well and Type III Castle Hayne Evacuation Well construction details, show the dimension from the top of screen to the bottom of the bentonite pellet layer.

In the same construction details, 0.010-inch wire wound well screen and Morey #1 sand or approved equivalent are specified for the Type II Water Table Evacuation Well; however, 0.020-inch wire wound well screen and Morey #2 sand or approved equivalent are specified for the Type III Castle Hayne Evacuation Well. Please explain why the differences are specified for the two well types.

8. Construction Plans, Sheet C-11:
In the endwall detail for the treatment plant discharge line, the lowest portion of the sloping wingwall is shown as being 21 inches high. Show the dimension for the highest portion of the wingwall.