04.01-06/27/94-001139

(804) 322-4793

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CERTIFIED MAIL RETURN RECEIPT REQUESTED

United States Environmental Protection Agency,
Region IV
Attn: Ms. Gena Townsend
Waste Management Division
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: Pre-Final Design Report Operable Unit No. 2,
(Sites 6, 9, 82), MCB Camp Lejeune, North Carolina

Dear Ms. Townsend:

Enclosed please find responses to comments received dated May 25, 1994 on the referenced report. As stated in my letter of April 4, 1994, all comments received regarding the Pre-Final and Final Design Report will be addressed in the third submittal, referred to as the "Final Plans and Specifications". This submission will be equivalent to the FFA-termed "100% final construction drawings and specifications". Any questions concerning these responses should be directed to Ms. Linda Berry who may be reached at (804) 322-4793.

Sincerely,

L. A. BOUCHER, P.E.
Head
Installation Restoration Section
(South)
Environmental Programs Branch
Environmental Quality Division
By direction of the Commander

Enclosure

Copy to: (w/encl)
NC DEHNR (Mr. Patrick Watters)
MCB Camp Lejeune (Mr. Neal Paul)
Baker Environmental (Mr. Ray Wattras)

Blind copy to:
1823 (LGB) 2 copies w/encls)
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RESPONSES TO USEPA COMMENTS ON THE PRE-FINAL BASIS OF DESIGN REPORT OPERABLE UNIT NO. 2, SITES 6, 9, AND 82 MARINE CORPS BASE CAMP LEJEUNE NORTH CAROLINA

These responses to the comments are presented in the same order as they occur in USEPA's letter dated May 25, 1994:

Response to General Comment No. 1:

Refer to the response provided below for Specific Comment No. 1.

Response to General Comment No. 2:

Refer to the response provided below for Specific Comment No. 2.

Response to General Comment No. 3:

The startup and performance testing of the groundwater extraction system will be the responsibility of the remediation contractor. Baker will have the responsibility of reviewing the objectives and descriptions of the performance tests, and the procedures and relevance to the intentions required for the tests required by LANTDIV. This information will be provided in Remedial Action Work Plans to be prepared by the remediation contractor. Information which should be determined as a result of the performance test is listed below in Specific Comment No. 3.

Response to General Comment No. 4:

Refer to the response provided below for Specific Comment No. 7.

Response to Specific Comment No. 1:

Refer to the response provided below for Specific Comment No. 4.

Response to Specific Comment No. 2:

The calculations of the downgradient stagnation point (r_i), of the capture radius (r_c) and of the capture diameter (d_c) for the Castle Hayne well are:

$$r_i = 720Q/\pi^2 Ti = 720*150/\pi/\pi/55000/0.0046 = 43 \text{ ft}$$

and

$r_c = 720Q/\pi Ti = 720*150/\pi/55000/0.0046 = 136$ ft

and

$d_c = 2r_c = 2*136 = 272$ ft

for,

Q= 150 gallons per minute
discharge rate

T= 55000 gallons per day per foot of drawdown
transmissivity

i= 0.0046
regional gradient

Response to Specific Comment No. 3:

Please refer to the response for General Comment 3. Baker agrees that the minimum time for the discharge part of the test should be three days, or longer if required by field conditions apparent during the test. The recovery part of the test should be a minimum of one day. The calculated parameters should be, among others:

Primary Calculations:

transmissivity

storativity - specific yield

Secondary Calculations:

vertical and horizontal hydraulic conductivity

saturated thickness

steady-state radius of influence

interference planes with local production wells

dewatering profile of the cone of depression

probable shape of the capture figure

distance/drawdown predictions at varying discharges

compensation for the partial penetration of the discharge and observation wells into the saturated zone

Response to Specific Comment No. 4:

The size of the sanitary sewer force main has been increased from 1-inch to 2-inches (as shown on Drawings C-2 and C-7, revised 5/10/94). At a flowrate of 30 gallons per minute through a 2-inch diameter force main, the velocity in the pipe is approximately 2.9 feet per second.

Response to Specific Comment No. 5:

The detail for the cleanout has been revised on Drawing C-8 (revised 5/10/94).

Response to Specific Comment No. 6:

Overall building dimensions have been provided on Drawing C-9 (revised 5/10/94).

Response to Specific Comment No. 7:

The Type II extraction well will intercept the water table and have a design discharge of 5 gpm. This rate is within the capacity of 10-slot, 6-inch screen. For example, a 10-slot, 4-inch screen with one foot of saturated thickness would have a capacity of:

capacity = saturated thickness * capacity index * 0.31

1 * 25.5 * 0.31 = 7.9 gpm

This capacity is greater than the nominal discharge, despite having a smaller diameter and only one foot of exposure. The selection of a 10-slot and a sand pack graded to this slot size takes advantage of the excess capacity of the screen, compared to the nominal discharge, and allows a reduction in siltation of the extraction well through the smaller slot size.

The larger 20-slot screen, with a sand pack graded to this slot size, is specified for the Type III extraction well in the Castle Hayne Aquifer. The extraction well in the Castle Hayne will have a significantly greater discharge capacity (nominally, 150 gpm) and will intercept a layer of coarser material than found in the water table. The 20-slot screen and larger sand are more appropriate to this installation.

Response to Specific Comment No. 8:

The height of the wingwall, as shown on Detail K (Drawing C-8, revised 5/10/94), shows a 2:1 slope for the wingwalls, so that the height and depth of the endwall can be determined in the field, based on site conditions.

7

P 212 484 547

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