From: "Alice Carson" <acarson1967@comcast.net>
To: "'John Hickman'" <JBH@nrc.gov>, <jmp@nrc.gov>
Date: 03/27/2007 8:14:38 AM
Subject: Response to Question Concerning Resident Farmer Well

John and Jon,

Attached is our response to your question concerning the required pumping rate associated with the resident farmer well. Our basis for the required pumping rate was provided in the Groundwater Compliance Plan. The attached document provides the results of evalautions that demonstrate that the difference in H-3 concentration in the pumped water is small for the case in which irrigation water is included and the case in which it is not. If you have any additional question or wish to discuss this further, please give me a call at (301) 916-3995.

Alice Carson

CC: "'Joe Bourassa'" <Bourassa@CYAPCO.com>, "'Greg Babineau'" <babineau@yankeerowe.com>, "'Gerard P. Van Noordennen'" <VanNoordennen@CYAPCO.com>

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Subject:	Response to Question Concerning Resident Farmer Well
Creation Date	03/27/2007 8:13:43 AM
From:	"Alice Carson" <acarson1967@comcast.net>
Created By:	acarson1967@comcast.net

Recipients

nrc.gov
OWGWPO04.HQGWDO01
JBH (John Hickman)

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TWGWPO03.HQGWDO01
JMP (Jon Peckenpaugh)

CYAPCO.com
VanNoordennen CC ('Gerard P. Van Noordennen')
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yankeerowe.com
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Post Office	**Route**
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Files	**Size**	**Date & Time**
MESSAGE	582	03/27/2007 8:13:43 AM
GW Farmer Well Question.pdf	9157	
Mime.822	15791	

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ReplyRequested:	No
Return Notification:	None
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Security:	Standard

Junk Mail Handling Evaluation Results
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Groundwater Resident Farmer Well Question from March 26, 2007

LTP Section 5.6.3.2.4 states, "The data collected from the monitoring wells, across multiple aquifers, will be used to ensure that the concentration of well water available, based upon the well supply requirements assumed in Section 6 for the resident farmer, is below the EPA MCLs (e.g., 20,000 pCi/l for H-3)."

The resident farmer well is determined by the individual water needs related to the resident farmer scenario. Section 6 of the License Termination Plan and the Groundwater Compliance Plan for License Termination at YNPS provide the values for these individual water needs:

- **Household use**. Assumed use of 374 m^3/yr or 0.188 gpm
- **Livestock use.** Assumed use of 76.7 m^3/yr or 0.039 gpm
- **Irrigation of vegetable plot.** Assumed use of 870 m^3/yr or 0.437 gpm
- **Irrigation of pasture land.** Assumed use of 0 m^3/y or 0 gpm
- **Drinking water.** Assumed 1.9 m^3/yr or 0.001 gpm

The total of these components was a requirement of 0.67 gpm.

One of the objectives of the Final Groundwater Condition Report (submitted on February 15, 2007) was to demonstrate compliance with the requirement in LTP Section 5.6.3.2.4. Section 6.9.4 of the Final Groundwater Condition Report discusses the resident farmer well scenario. Using the aquifers with the maximum concentrations of H-3 (all in the MW-107 series of wells) to comprise the 0.67 gpm pumping rate, the average concentration of H-3 in the well is 8150 pCi/L for April 2007. Also discussed in this section of the report were the results of an evaluation that was performed for lower yields to be supplied by this well to determine the impacts on the projected concentration of H-3 in this well. If these same aquifers are pumped at a lower rate of 0.2 gpm (corresponding to approximately the household and drinking water uses only), the average concentration in the well would be 8160 pCi/L in April 2007. Using the fate and transport model included in the Final Groundwater Condition Report, these concentrations are expected to decrease to 5100 pCi/L for the 0.67 gpm case and to 5350 pCi/L for the 0.2 gpm case in April 2009. Thus, in either case, the average concentration of the water extracted from the resident farmer's well is well below the EPA's MCL for H-3 of 20,000 pCi/L.