

## Wickham, Jerry, Env. Health

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**From:** Wickham, Jerry, Env. Health  
**Sent:** Wednesday, February 13, 2008 6:34 PM  
**To:** 'Erik Lervaag'  
**Cc:** Olivia Jacobs; Jim Jacobs  
**Subject:** RE: Lucasey Manufacturing Recovery Well Modification

Erik,

I do not have an objection to your second proposed modification to raise the top of the screen interval to 7 feet bgs.

Increasing the total depth of the well to 35 feet bgs is NOT acceptable. The potential for problems with long screen wells is large. If you believe there is some benefit to recovering product at that depth, it must be from a shorter screen well that targets the deeper interval only and does not create a potential for cross contamination.

Can you tell me more about the hypothesis that free product may be DNAPL? What is the mechanism for free product from Bunker fuel having a density greater than water?

Regards,  
Jerry Wickham  
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**From:** Erik Lervaag [<mailto:ELervaag@clearwatergroup.com>]  
**Sent:** Wednesday, February 06, 2008 9:11 AM  
**To:** Wickham, Jerry, Env. Health  
**Cc:** Olivia Jacobs; Jim Jacobs  
**Subject:** Lucasey Manufacturing Recovery Well Modification

Dear Mr Wickham,

I would like to introduce myself as a new project manager at Clearwater Group. I have taken over for Mathew Ryder-Smith who has left the company to return to school for an MBA. I am writing today in regard to Lucasey Manufacturing Corporation, SLIC Case R00002902.

The lawyers for the responsible party have retained an expert environmental consulting witness to review the approved workplans. After reviewing the September 4, 2007 correspondence, the expert witness has recommended some changes to recovery well RW-3, near soil boring SB-13. Therefore, Clearwater proposes the following changes:

1. Increase the total well depth from 25 feet bgs to 35 feet bgs. Free product in SB-13 was encountered down to 27.5 feet bgs. Because this is a very old site and bunker fuel was used here, there is some feeling that a portion of the free product may be DNAPL. Extending the depth will decrease the likelihood of missing the dense fraction of the free product.

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2. Free product was first encountered in SB-13 at 11 feet bgs. To insure any floating free product is captured, the expert witness would also like to raise the top of the screen to 7 feet bgs. This will accommodate the 2 foot cement seal, 3 foot bentonite seal and 1 foot of filter pack above the screen top while still minimizing chances of missing any floating free product.

No other modifications to the recovery wells are proposed. I have a modification to the recovery well installation workplan prepared to send to you if you concur with these changes. If you have any questions or need further information, please do not hesitate to call me at 510-307-9943 x 227.

Thank you,

Erik Lervaag