

**chamberlain, kathryn, NMENV**

**From:** Mark S. Thacker [mthacker@lanl.gov]  
**Sent:** Wednesday, March 01, 2006 5:30 PM  
**To:** chamberlain, kathryn, NMENV  
**Cc:** 'Woodworth, Lance A.'  
**Subject:** Information and informal request  
**Attachments:** MDA T BH 06\_hits\_8 5X11.pdf

Katie,

In the original MDA T Work Plan submitted in February 2004, borehole (BH) 6 was located at the southwest corner of the shaft field between absorption bed #1 and the shafts. This borehole was subsequently moved to its current location to allow for a safety buffer from the shafts. The original investigation goals for this borehole were to collect core samples and to measure moisture contents adjacent to the shafts. The current location of BH6 is approximately 20 ft from the shafts and from the historic moisture profile. The present location would not allow spatially compatible moisture data.

Nature and extent of the retrievable waste storage area (RWSA) contamination has been defined vertically and laterally during the 1996-1997 drilling campaign. The attached figure (MDA T BH 06\_hits\_8.5X11.pdf) shows the detected radionuclide results from the 1996-1997 boreholes as well as the planned 2006 boreholes. The current drilling investigation includes boreholes to the north (BH8, BH2, BH4) and south (BH7, BH1) of the absorption bed 1 and 3 respectively. Samples for moisture content have been collected from BH1 and will be collected from BH2 when it is drilled in mid-March. Analytical data from these 5 boreholes will constrain nature and extent of contaminants associated with absorption beds and the western shaft field.

From 1945-1952, approximately 14 million gallons of water were discharged to the absorption beds and from 1953-1967 4.3 million gallons were discharged to the absorption beds. This continuous discharge created a temporary zone of saturation, in fact, standing water was observed in monitoring wells at the southwest corner of the shafts in 1967 (Kennedy memo, 1967). Since 1967, discharges to the absorption beds have ceased.

In 1978 boreholes were drilled in absorption bed 1 and 2 (100 ft total depth (TD)). No saturated conditions were encountered. In 1996 and 1997 boreholes were drilled in absorption beds 1 (150 ft TD) and 3 (70 ft TD) and in the RWSA (50 ft TD) again no saturated conditions were noted. In 2006 boreholes 1 and 7 were drilled south of absorption bed 1 and no saturated conditions were encountered.

Because the zone of saturation, observed in 1967 is no longer present and because BH6 has been effectively moved out of this former zone, the original objectives of this borehole (moisture profile comparisons) cannot be met and we request a deviation from the approved work plan to remove it from the borehole list. Nature and extent of contamination can be fully characterized from the 1996-97 boreholes and the current boreholes outside of the absorption beds.

Please call with any questions.

Mark

Mark S. Thacker



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LANL ENV-ECR  
(505) 665-5342  
cell (505) 699-1963  
mthacker@LANL.gov