From: Miller, David [David.Miller@lm.doe.gov]
Sent: Wednesday, November 19, 2008 11:30 AM
To: Ron Linton
Cc: Desormeau, Joe
Subject: RE: Durango vanadium COPC's question.

Ron,

Sections 2.3 and 2.4 in the GCAP are somewhat misleading (2.3) or incorrect (2.4).

In section 2.4, "vanadium" should have been "uranium." The rest of the discussion is correct.

Section 2.3 should probably be more complete in identifying constituents that were ultimately identified as COCs. This was based on both a consideration of risk and regulatory standards. It is true that in the mill tailings area most of the risk is contributed by uranium and manganese (only HQs > 1). Cadmium and vanadium are the 3rd and 4th risk contributors, though their risk contribution is very low. Cadmium is retained as a COC because of the exceedence of the UMTRA standard in one well. Vanadium is only mentioned because constituents with lower risks (molybdenum and selenium) are retained as COCs because they exceed UMTRA standards.
Vanadium is not a COC because of its insignificant risk contribution and because it does not have a standard (and can therefore not exceed one). This point does not come out in the discussion in section 2.3, though the SOWP (to which the GCAP refers) is more complete in its explanation. The SOWP does say that from a risk standpoint, vanadium could be eliminated (along with antimony, molybdenum, and selenium--though molybdenum and selenium were retained as COCs because they exceeded standards).

The discussion in section 2.7 (human health and environmental risks) of the GCAP is correct in identifying COCs and discussing risks (though it is more abbreviated than the discussion in the SOWP).

We will revise these sections in the final GCAP. If you need anything further, let me know.

Thanks,
David

-----Original Message-----
From: Ron Linton [mailto:Ron.Linton@nrc.gov]
Sent: Tuesday, November 18, 2008 9:21 AM
To: Miller, David
Cc: Desormeau, Joe
Subject: Durango vanadium COPC's question.

David/Joe:

I need some help answering to a few questions I haven't been able to figure out on my own. In Section 2.3 and 2.4 of the July 2003 PFGCAP, vanadium is discussed as a COPC identified by the 1995 baseline risk assessment. Vanadium is discussed as a major risk contributor for both the mill tailings area and the raffinate ponds area.

In section 2.3, the statement is made, "the major risk contributors at the mill tailing area are uranium and manganese and, to a lesser extent, cadmium and vanadium." According to the SOWP, section 6.1.3.1, uranium and manganese make up 85% of the total risks, cadmium contributes about 6 percent. The contribution from other contaminants that can be quantified (antimony, molybdenum, selenium, and vanadium) is less than 9 percent. Why is vanadium mentioned as a major risk contributor (even at a lesser extent)?

In Section 2.4, the statement is made, "the major risk contributor is selenium with a lesser contribution from manganese and vanadium." According to the January 2002 SOWP, Section 6.1.3.2, 87% of the non-carcinogenic risk is from selenium. Manganese, uranium, and selenium combined make up the remaining 99%, (meaning manganese and uranium would be 12%). I don't understand why the PFGCAP states, "the major risk contributor is selenium with a lesser contribution from manganese and vanadium" Should this read, "the major risk contributor is selenium with a lesser contribution from manganese and uranium? If the statement is correct as written, why is vanadium considered a major risk contributor?

To finish, in Section 2.7.1 of the PFGCAP, vanadium is not listed in Table 1 for either the mill tailings area or the raffinate ponds area as a COPC. If would seem that vanadium should be listed as a COPC based on the discussion as a "major" risk contributor, unless the discussion in the PFGCAP sections 2.3 and 2.4 are misstated.

Give me a call if you want to further discuss or point me to some discussion on the issue in one

of the DOE reports that I may have missed. Thanks in advance.

Ron C. Linton

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Subject: RE: Durango vanadium COPC's question.
Sent Date: 11/19/2008 11:29:23 AM
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From: Miller, David

Created By: David.Miller@lm.doe.gov

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