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# Kaiser-Hill Company MEMORANDUM

TO: Laurie Peterson Wright/RMRS  
FROM: Stephen Hahn/Kaiser Hill  
DATE: July 17, 1995  
SUBJECT: Comments Concerning OU7 PAM

Following are some comments on the conceptual design presented in the *Modified Proposed Action Memorandum Passive Seep Collection and Treatment Operable Unit Number 7 Present Landfill (IHSS114) and Inactive Hazardous Waste Storage Area (IHSS 203)* dated July 1995. We discussed most of these comments in a meeting on July 12; and I visited the site and had additional conversations with Tom Lindsay after the meeting. We agreed at the meeting to issue the PAM "as is. However, RMRS agreed to respond to my comments by modifying the final design.

1) I am concerned that the subsurface drainage pipes, as proposed, will collect less than 100 percent of the seepage. Whenever the seepage flow rate is very high, i.e., exceeds the hydraulic capacity of the treatment system which is designed for "average flows," it is likely that new seeps will emerge at unintended/undesirable areas in the vicinity of the treatment units. Whenever the seepage flow rate is very low, it is possible that the influent pipe to the concrete manhole (Elevation 5923.0) will run dry.

A potential solution to this problem would be to equip the concrete manhole with a spillway or a "bypass" designed to safely channel flows that exceed the hydraulic capacity of the treatment system around the facilities and into the pond. To achieve greater capture during low flow conditions, I suggest you consider replacing the pipes and drainage material with a collection box that is sealed to the underlying bedrock (I understand bedrock is only about two feet deep). Alternatively, I suggest you install a cutoff wall across the stream valley. This cutoff wall should also be sealed around/beneath the concrete manhole.

2) I understand that the proposed outfall pipe (elevation 5919.8) will be located below the spillway of the pond. This implies that the proposed system will not function properly when the pond is full. In fact, the treatment unit itself may become submerged when the pond is full.

A potential solution would be to install a pumped leachate collection and treatment system. This, in turn, would allow you to elevate the treatment unit above the maximum expected pond elevation. Alternatively, the operational controls will need to be implemented for the dam/pond.

3) I am concerned that the carbon treatment system may not function as intended because of one or more of the following: a) metals exceeding ARARs may not be removed, b) potential for clogging due to solids content of the influent, c) potential for fouling due to bacterial growth, and d) minimal hydraulic head available. I also understand that the carbon bed was sized to provide adequate detention time for "average" flow conditions. This implies that breakthrough could occur during high flow conditions, and discharges to the pond could exceed ARARs.

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A more reliable solution would be to truck the collected leachate to the onsite treatment plant. If you elect to continue with the design of carbon units installed at the seep, then I suggest you involve appropriate technical experts to review all design calculations. I also suggest that you design flexible system, the capacity of which can conveniently expanded in the event original design assumptions are do not pan out.

4) The PAM does not address the subject of how frequently the carbon will have to be changed. Furthermore, I believe it will be very difficult to change out the carbon because of ESH&Q concerns (confined space entry), if the carbon is configured as shown Section B-B of the PAM.

I suggest using a design based on using pre-packaged canisters that can easily be removed and replaced .

5) I am concerned that "haybales" won't provide adequate structural support (or durability) for an HDPE liner and riprap layer. Also, riprap could puncture the liner.

I suggest using an earthen berm or sandbags in lieu of haybales.

6) The PAM doesn't address monitoring requirements.

Even if the regulators do not require monitoring, monitoring will be needed for operational reasons

7) The natural soil in the vicinity of the proposed treatment unit is soft and wet and may not be capable of supporting pipes/hydraulic structures and two feet of soil fill, as currently proposed.

The design should include appropriate foundation preparation, such as excavation and replacement of unsuitable natural soils. If the fill can be eliminated or minimized, then do so. If the purpose of the fill is to provide pedestrian access to the treatment unit, then I suggest using a lightweight fill material, such as woodchips

cc: Ed Mast/RMRS  
Tim Hedahl/Kaiser Hill  
Tom Lindsay/RMRS