
From: Criswell, Robert
Sent: Friday, June 13, 2008 8:38 PM
To: 'Bill Keegan (Bill@SKBINC.com)'; 'Jim Kotsmith (jrkotsmith@mmm.com)'
Cc: Lynn, Michael; Silis, Ainars (MPCA); Wetzstein, Doug (MPCA)
Subject: Comments on Foth Environmental Infrastructure Report (3M Vault)
Attachments: Cover ltr 3M Vault comments.doc; SKB&3M comments.doc

Attached are the transmittal letter and comments on the referenced project. Each of you will receive a hard copy of these items in the mail but this is what is in the signed copy you will receive. Sorry I took so long. Have a great weekend. Bob

June 13, 2008

Mr. William Keegan, P.E.
Environmental Engineer
SKB Environmental, Inc.
251 Starkey Street
St. Paul, MN 55107

RE: 3M Waste Containment Cell (3M Vault)
SKB Environmental, Inc.
Foth Infrastructure and Environmental, LLC
April 2008

Dear Mr. Keegan:

Enclosed with this letter are the Minnesota Pollution Control Agency (MPCA) solid waste staff comments regarding the referenced report and related reissuance of Permit # SW-383. Please respond to these comments in a thorough manner by no later than June 23, 2008. SKB Environmental, Inc. (SKB) has suggested an August 1, 2008, date for commencement of construction of the 3M Waste Containment Cell (3M Vault). This timely turn around response to comments by SKB is necessary so that the MPCA can keep the permit reissuance and approval process moving forward. Without such a timely response it will be difficult to proceed with construction by the requested date of August 1, 2008.

The MPCA cannot overemphasize the importance of thoroughly addressing each of these comments. The public will feel a need to know that the facility design will be protective of the environment and the SKB facility. This project will be highly scrutinized and the MPCA, SKB, and the Minnesota Mining and Manufacturing staff at some level will all be held accountable regarding the integrity of the design of the 3M Vault by public, private and government officials and organizations.

As you are aware, during the public notice period of Permit SW-383, the MPCA plans to hold a public meeting where the public can address their concerns. Each of us will likely be asked to address these and many other comments prior to approval of the 3M Vault.

Mr. William Keegan, P.E.
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If you have any questions, please feel free to contact me a 651-296-8707.

Sincerely,

Robert Criswell
Environmental Engineer
Land and Water Quality Permits Section
Industrial Division

RC:ch

Enclosure

cc: John Domke, SKB Environmental, Inc (same as above)
James Kotsmith, P.E.; 3M Environmental Health and Safety Operations
Michael Lynn, Dakota County Environmental Services
Doug Wetzstein, MPCA, St. Paul
Ainars Silis, MPCA, St. Paul

ATTACHMENT 1

The Minnesota Pollution Control Agency (MPCA) staff is presently reviewing the reissuance permit application and offers the following comments on the Foth Infrastructure and Environmental, LLC. report (Foth Report) regarding the 3M Waste Containment Cell (Vault) dated April 2008 and the reissuance permit application dated November 2007.

1. Foth Report Reference (3.4) Liner Design: We agree with the importance of “engineered isolation” of Per-fluorocarbon (PFC) contaminated wastes. The SKB Environmental, Inc. (SKB) landfill is a valuable resource in the metropolitan area which must not be compromised by PFC waste seepage from the Vault to the general landfill. We believe the prudent way to accomplish that goal and do the right thing to assure the integrity of the Vault is to provide a double liner for the Vault with a sand drainage layer/leachate collection system between the two liners. Separating the liners in this manner will create a high level of assurance that the waste is remaining in the cell.

Inherent in the idea of “engineered isolation” is the ability to monitor the waste and the rate of leakage from the Vault. Under the proposed design the elevation separating the existing waste and the proposed Minnesota Mining and Manufacturing (3M) Vault vary from approximately 30 feet to 70 feet. With the degree of separation from the existing cell leachate collection system indicated in the Foth Report, it could be a considerable length of time before a leak was found and identification and characterization of the leak would be extremely difficult. With the present ubiquitous levels of background PFCs it is likely that a leak from the Vault might never be distinguished. The best way to assure an effective “engineered isolation” and related leachate monitoring is to employ a double liner system. Using a double liner system with leachate collection will create a high level of assurance that the waste is remaining in the Vault and will allow for reduced PFC monitoring throughout the landfill.

In our deliberations, the less desirable option using a geonet to provide solely for leachate collection was considered, but incorporating a double lined system makes for ease of monitoring, less disruption of the landfill in the event repairs are needed, and all but assures permanent isolation of the PFC contaminated soils.

2. Foth Report Reference (3.31) Accessibility to the Vault: How accessible will the 3M contaminated soils be after closure of the Vault. How much additional material do you believe will need to be placed over the 3M Vault to bring it up to grade? Do you expect to have additional vertical expansion of the existing cell over the Vault in the future. Can the existing cell be managed to minimize the amount of material so that the cell is reasonably accessible.

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3. Foth Report Reference (3.31) Slope Stability: Guidance for a slope stability factor suggests a factor of 1.5. The Foth Report indicates the stability factor for the slopes and for a caterpillar tractor operating on the sand layer over the slopes in the range of 1.3. Why do you think this will be adequate?
4. Foth Report Reference (3.32) Differential Settlement: The Foth Report should include estimates of the amount of settlement that could occur with the proposed waste loads and indicate any on going testing that was done to evaluate potential settlement of the layer below the liner prior to construction. The Foth Report should also evaluate whether the estimated settlement under load is acceptable given the physical properties of flexible membrane liners? If it is necessary to provide additional compaction please indicate how the necessary compaction levels were arrived at and what means was taken to compact the existing cell waste.
5. Bid Specifications: Although the reissuance Construction Quality Assurance (CQA) plan is fairly thorough there are some parts of it that are vague. The MPCA will need a copy of the final bid specifications for placement of liner, leachate collection, sand drainage layer, electrical leak location testing, liner construction (such as seam testing and placement pattern), miscellaneous testing, etc. prior to construction and SKB will need approval of the bid specifications prior to construction of the Vault.
6. Foth Report Reference (3.4.1) Electrical Leak Location Testing (ELLT): Please explain the rationale for conducting the electrical leak location testing in the manner prescribed in the Foth Report. Our experience is that ELLT should be performed after the protective sand drainage layer is in place. We recommend that you take a look at the specification that McCain and Associates developed for a project at the Xcel Energy Sherco site. The MPCA staff and McCain & Associates spent considerable time working out the details of the CQA for that portion of the project. This included a blind study that proved effective at locating some small perforations placed by the MPCA to evaluate the effectiveness of the ELLT. The design at Sherco included a two foot drainage layer and the test was conducted after the drainage layer was in place.
7. Foth Report Reference (3.4.1) Placement of Sand Drainage Layer: We are not familiar with the water paddle method of sand placement and were not able to review the referenced ASTM method mentioned in the Foth Report. Additionally the reissuance permit application CQA plan specifications appear to be for placing the material with a dozer. It is not clear if these specifications would apply to the water paddle methods described in the Foth Report. Please describe the water paddle method and explain why it is appropriate. The method of choice should be included in the Bid Specifications indicated above.

8. Waste Acceptance: Are there any contaminated soils from Oakdale, Woodbury or Cottage Grove that 3M or SKB has determined will not be placed at the SKB landfill. If so, what will be done with these soils? Will they be incinerated or sent out of state?
9. Waste Quality: Please indicate the range of PFC's expected in the soils from the 3M Oakdale, Woodbury and Cottage Grove sites that will be sent to SKB for disposal. What is the expected median value of PFC from each 3M site.
10. Foth Report Reference (4:2) Incoming PFC Waste: What kind of testing is planned for the PFC contaminated soils to verify waste quality.
11. Waste Acceptance Agreement: A copy of the 3M/SKB agreement regarding disposal of wastes in the Vault should be included with the reissuance application and addendum.
12. Foth Report Reference (5.1.2) Leachate Spills: Is the responsibility for leachate clean-up included in the waste acceptance agreement that SKB has with 3M.
13. Foth Report Reference (3.5.1) Leachate Generation: Is the leachate generation expected to vary much based on the 3M site that the contaminated soils are coming from. The MPCA staff is particularly interested in the slue or back-bay area river sediments at 3M Cottage Grove. Is the leachate quantity and quality expected to increase significantly when this waste is placed at the landfill. Will the river sediments need to be dewatered and sampled before they are sent to SKB. Will the soil pass the paint filter test? What does 3M intend to do with any effluent from this source?
14. Analytical Testing of Leachate: The monitoring plan for the facility should include PFC testing for the facility. The amount of testing will depend largely on the type and kind of design proposed for the Vault.
15. The Foth Report indicates leachate from the Vault will be disposed at the 3M facility. The MPCA solid waste staff understands that 3M intends to treat PFC's at the Cottage Grove facility using Granular Activated Carbon. The Foth Report, should address low level treat-ability data for leachate PFCs by the Granular Activated Carbon. The MPCA solid waste staff is aware that the water quality staff has requested this information from 3M before but has not yet obtained that information. We wish to clarify that the solid waste staff does not need PFC column test results to proceed with the approval of the Foth Report and permit reissuance but believes isotherm data will be sufficient for our evaluation of the Foth Report.

16. Foth Report Reference (5.1.1) Differential Settlement: How much differential settlement do you expect of the cap and liner systems? What would be considered acceptable settlement and what would give you concern. Under what conditions might you expect the liner, leachate and cap systems would require repair.
17. Contingency Action Plan: In the permit reissuance contingency action plan, if the leachate volume in the secondary leachate collection system in any cell exceeds 40 gallons per acre per day a series of steps will be taken. What is the basis of this action level? Why is the action level based on gallons/acre/day? By my recollection, action levels are usually based on X number of gallons per day. Do you plan to do analytical testing before or after this level is reached. What analytical parameters will you monitor as leachate levels increase, including PFCs. Does adding the PFC containing Vault require Foth to reevaluate this action level?
18. To date, the MPCA solid waste staff has not completed review of the monitoring, financial assurance, contingency action, closure and post-closure care documents contained in the reissuance application and will need to do this prior to public noticing a reissuance permit. It is necessary that the 3M Vault be incorporated into these documents for the reissuance of this permit. Financial assurance costs will likely vary for closure, contingency action and post-closure care depending on the type of liner choice for the Vault. Please make the necessary changes to the reissuance application and incorporate this information and related costs into your response to comments to facilitate the reissuance process.