Clinton LF Fire issues

Steve Johnson to Anton Martig 07/28/2008 05:38 PM

Tony,

This comment is included in the text of the draft letter I renamed "Clinton Fire". I changed the text a bit to be more specific. I think it is appropriate to include it now. I do not think we need to second guess their gas extraction system. Let's just bring up the issue. I think it is a common and reasonable issue. I can beef it up with more background to make folks comfortable addressing such a topic, "out of the blue", but I don't think it will change the issue. It is definitely real and MSW landfills have trouble with methane. There is no getting around it and the application does not get into the specifics, according to IEPA.

Comment by SMJ on July 28, 2008. Expanded here...

I could not reach any R5 experts on MSW LF fire control. I attempted to contact D. Twickler, S. Mooney and P. Reutch. All are out for now. I reached Jim Sales, R-6 TSCA today, said he felt engineering countermeasures would need to be robust to offset obvious increase in risk. No specifics.

Detailed discussion with IEPA Engineering Analyst Syed Imran indicates that fire issues were not prominent in his assessment and the draft letter prepared by IEPA and sent July 2, 2008 to PDC Clinton (see attached) did not put fire control issues forward as significant. I think they should be more significant. It is my belief that fire control is significant because Landfill 2 and proposed landfill #3 according to IEPA will use leachate recirculation and will enhance methane generation and recovery. Methane recovery is required by the State.

Problems with methane recovery have caused landfill fires in the past but no detailed assessment is yet available for comparison. Imran noted that at Clinton #3 methane draw points were planned in the cap above the TSCA cell. I suspect that it would be a mistake to put methanogenic waste above the TSCA cell or at least foster generation there. In any case, the main problem would probably be in the main cell where most of the methane is generated. Imran and I agree fire hazards above a PCB cell should be relatively low because of local MSW waste thinness and would be even lower if the overlying waste had little or no methane generation capability. Ways to accomplish that might include not sprinkling leachate in that area. Eliminating the TSCA footprint from leachate recirculation would be a simple way to slow methane production around the TSCA cell.

I think answers for fire control lay in specifying methane extraction risk issues as discussed in new permits that call for emission controls. Such landfills include the massive Livingston Landfill servicing Chicago. USCOE manuals for landfill emission controls seem comprehensive and lists of references including EPA models are available in EM 1110-1-4016 dated 30 May, 2008.

There is a lot to consider with regard to such risks. I tried to find case histories in Illinois of errors in methane capture but I could not get the details. I think the quick answer is that the landfills do the best they can but there is nevertheless always a residual risk. They monitor for methane with subsurface probes to prevent excess build-up in gas pockets and take steps if a problem is found. Thermal monitoring could be done too...but heat build-up might come relatively late in the cycle of combustion..

Steve Johnson


ClintonFire.doc


IEPA engineering review Clinton #3.doc