

Update on the Remediation of the Sydney Tar Ponds: Potential Health Effects of Offsite Odor Problems

G. Fred Lee, PhD, PE, AAEE BCEE

G. Fred Lee & Associates
El Macero, CA 95618 USA

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On November 21, 2009, “The Cape Breton Post” of Sydney, Nova Scotia, Canada printed a letter to the editor from Marlene Kane that addressed concerns about health hazards associated with emissions from the Sydney Tar Ponds. The text of that letter, and my comments on the issue, directed to D. Ouellette, a concerned citizen with whom I have had contact, follow.

Tar Pond Emissions a Health Hazard

*Letter to the Editor of The Cape Breton Post
Sydney, Nova Scotia, Canada
Saturday, November 21, 2009
by Marlene Kane, Sydney*

On Aug. 26 I wrote to Kevin MacDonald of the Sydney Tar Ponds Agency to report very strong odours coming from the tar ponds area that day and on many occasions before that. I asked how the agency planned to deal with these airborne contaminants that are affecting the public, even before the work of mixing the tar ponds sludge with cement powder had begun.

Two months later, on Oct. 27, I was advised that a response had been placed on the Glad You Asked section of STPA’s website. This much delayed response didn’t answer my question. I didn’t ask for a description of the multi-million-dollar air monitoring system and how it should work in theory. I asked how STPA planned to deal with the fact that it’s not working and residents are already being exposed to fugitive emissions from the tar ponds site.

Whatever theoretical approaches STPA may have for suppressing contaminant releases into our air and for detecting them once there, these are not working in practice. Besides noticeably strong odours, clouds of dust have been observed leaving the site on many occasions, and the air monitors picked up very little. This situation will only get worse now that contractors have started the solidification and stabilization part of the coverup project.

STPA relies on real-time air monitoring to alert officials when project activities are causing contaminant emissions which exceed the criteria they’ve put in place. What this simply means is we are constantly being exposed to toxic emissions from this hazardous waste site as work crews muck around in it and drain it of water, but these emissions are at levels the government and consultants have deemed acceptable to our health. The work is halted or adjusted only when those levels exceed STPA’s criteria – providing the air monitors detect the problem to begin with, that is. Regrettably, these air monitors are the community’s only protection. They are falling short in many ways and are failing to alert us of the problems at the time they happen.

There have been many examples over the years when real-time monitors failed to detect exceedances of toxic contaminants in the air we breathe from activities on site. A recent example we know about was the failure of real-time monitors to detect an exceedance of benzo(a)pyrene, an odourless, carcinogenic PAH compound. Instead, this exceedance was detected along Intercolonial Street, on a different kind of monitor called a stationary monitor.

Unfortunately, even though STPA tells us in its August 2009 newsletter that it provides 24-hour-a-day ambient air monitoring at these stationary monitors, it doesn’t. The stationary monitors

operate for only a 24-hour period every sixth day, and the results, which must be analyzed in a lab, aren't known for at least a week. By the time STPA got around to putting a notice in the Cape Breton Post to advise readers of this exceedance, three weeks had passed by. How useless is that?

The real-time monitors are useless because they failed to detect this problem at the time, and the stationary monitors are useless because they operate once only every six days and the results take too long to reach the community. As well, there are only two stationary monitors located around the whole perimeter of the tar ponds and both are located along the west side, between Prince Street and the harbour. If the wind is not blowing towards those monitors on that sixth day, they won't detect a problem. The exceedance of benzo(a)pyrene could have gone on for days and we would never have known. And since this carcinogen is odourless, we wouldn't even smell it.

I've also asked STPA why the stationary monitor on Intercolonial Street, the one located by the residential area closest to the tar ponds site, is not measuring three important types of airborne contaminants (PM10, PM2.5 and VOCs) that are being measured at the Alexandra Street station, the station farthest from the site. These contaminants have been intentionally excluded from the most important monitoring station.

I asked that question in 2008 and again on June 29 this year, along with a few other air monitoring questions, all of which STPA is refusing to answer. I can't even check for myself to see whether STPA has rectified this deficiency because the stationary monitoring reports are five months late in being posted to the website.

By STPA's own admission, fugitive emissions from this site will increase once the tar ponds sludge is mixed up for hours at a time using backhoes in an attempt to homogenize the sludge before adding cement. Then it will be mixed again while cement powder is added to the sludge during the solidification and stabilization process, with higher emissions due to heat produced in this chemical reaction. All this is in the open air while residents are living, working, shopping and playing around this site. This will go on for years and we will still be left with a highly contaminated site. Not one molecule of contamination will be cleaned up.

So while the STPA touts its elaborate monitoring plan and methods for suppressing dust and odours, these aren't working. Despite all the bells and whistles STPA tells us are in place, contaminants are still affecting residents of this community. The only way this ridiculous project should proceed is under enclosures, with negative pressure and air filtration to better protect the surrounding community. The project's design engineer has done a number of solidification and stabilization jobs under cover in urban areas, so this should present no problem.

If STPA and governments can afford to blow \$8.5 million on a building that will be decommissioned in five years, and hundreds of millions on a cleanup that cleans up nothing, they can surely afford better protection for the residents.

Marlene Kane, Sydney

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November 21, 2009

Debbie Ouellette:

I would add to Marlene Kane's discussion of problems with the remediation of the Tar Ponds by noting that even if STPA had prescribed adequate monitoring in accord with today's standards, it would still not mean that there would be no health hazard associated with volatile and dust emissions from the remediation effort at the Tar Ponds. The fact that odors are detected off-site

in residential areas should be of concern since it shows that volatile and other emissions are being transported to the residential areas and could readily be a health hazard to those exposed to the odors.

While odorous chemicals are often characterized as a “nuisance,” it has been well-established that they can, and do in-fact, have adverse health impacts on some individuals. Further, many chemicals that are not odorous, but are hazardous, that can be released from hazardous chemical sites like the Sydney Tar Ponds when the area is disturbed, such as during remediation as being practiced by the STPA. Thus, the absence of odors does not mean that there are no airborne health hazards. However, the presence of odors from a site like the Sydney Tar Ponds is a good indication of potential health hazards. Remediation at sites like the Sydney Tar Ponds areas should be conducted under a dome, and exhaust air should be cleaned prior to release to the environment to control offsite odours and other hazardous chemicals.

I have discussed information on health effects of odors in a number of my reviews, including:

Lee, G. F., and Jones-Lee, A., “Association between Hazardous Chemical Sites and Illness,” Report of G. Fred Lee & Associates, El Macero, CA, January (2007).  
<http://www.gfredlee.com/Landfills/HazChemSites-Illness.pdf>

Lee, G. F., "Comments on Psychological Impact of Offensive Odors," Report of G. Fred Lee & Associates, El Macero, CA, July (2007).  
<http://www.gfredlee.com/Landfills/OdorImpacts.pdf>

Lee, G. F., and Jones-Lee, A., “Flawed Technology of Subtitle D Landfilling of Municipal Solid Waste,” Report of G. Fred Lee & Associates, El Macero, CA, December (2004). Updated September (2009).  
<http://www.gfredlee.com/Landfills/SubtitleDFlawedTechnPap.pdf>

The “Flawed Technology” review cited above contains a summary of information on impacts of odours on health (see page 39). While the context of that discussion is landfills and other hazardous chemical sites, the information is equally applicable to the Sydney Tar Ponds remediation situation.

Thanks to your efforts I have continued to follow the development of STPA’s efforts to remediate the Sydney Tar Ponds hazard chemical site. In 2006, with support from the Sierra Club of Canada, I conducted a review of the STPA-proposed approach for remediation of the Tar Ponds sediments. I commented on the unreliability of the proposed cement-based solidification/stabilization approach to effectively and reliably prevent further contamination of the estuary and bay by hazardous chemicals currently present in the Tar Ponds sediments. My papers and reports on these issues are available as downloadable files from our website [[www.gfredlee.com](http://www.gfredlee.com)] and include:

Lee, G.F., and Jones-Lee, A., "TCLP Not Reliable for Evaluation of Potential Public Health and Environmental Hazards of PCBs or Other Chemicals in Wastes: Unreliability of Cement-Based Solidification/Stabilization of Wastes," Report of G. Fred Lee & Associates, El Macero, CA, September (2009).  
[http://www.gfredlee.com/Landfills/TCLP\\_Solidification.pdf](http://www.gfredlee.com/Landfills/TCLP_Solidification.pdf)

Lee, G. F. and Jones-Lee, A., "Progress toward Remediation of the Sydney Tar Ponds: A Major Canadian PCB/PAH 'Superfund' Site," *Journal Remediation* 17(1):111-119 (2006).

<http://www.gfredlee.com/Landfills/STP-Remediation-pap.pdf>

Lee, G. F., "Unreliable/Inadequate Information on the Efficacy of Solidification/Stabilization of Sydney Tar Pond Sediments," Report of G. Fred Lee & Associates, El Macero, CA, February (2007).

<http://www.gfredlee.com/Landfills/SydneyTPSedSolidif.pdf>

Lee, G. F., "Comments on Joint Review Panel Environmental Assessment Report - Sydney Tar Ponds and Coke Ovens Sites Remediation Project," Report of G. Fred Lee & Associates, El Macero, CA, July (2006). <http://www.gfredlee.com/Landfills/STPAES-Comments.pdf>

Lee, G. F., "Assessment of the Adequacy & Reliability of the STPA Proposed Approach for Remediation of the Sydney Tar Ponds' Sediments," Presentation to the Sydney Tar Ponds and Coke Ovens Sites Remediation Project Joint Review Panel, Sydney, Nova Scotia, CANADA, PowerPoint Slides; G. Fred Lee & Associates, El Macero, CA, May 15 (2006).

<http://www.gfredlee.com/Landfills/SydneyTarPondsPowerPt.pdf>

Lee, G. F., "Comments on, 'Remediation of Sydney Tar Ponds and Coke Ovens Sites Environmental Impact Statement, Sydney, Nova Scotia,' dated December 2005," Report of G. Fred Lee & Associates, El Macero, CA, USA, May 15 (2006).

<http://www.gfredlee.com/Landfills/SydneyTarPondsReport.pdf>

It is unfortunate that the STPA has proceeded with its original plan for remediation of the Tar Ponds and has ignored the issues of the unreliability of information developed by STPA upon which it is based. As I indicated in my previous comments and above, the approach proposed and now being implemented will ultimately fail to prevent continued pollution of the estuary and the bay by hazardous chemicals which will ultimately require re-remediation of the Tar Ponds polluted sediments.

G. Fred Lee, PhD, PE, AAEE BCCE  
President of G. Fred Lee & Associates  
El Macero, California  
[gfredlee@aol.com](mailto:gfredlee@aol.com)  
[www.gfredlee.com](http://www.gfredlee.com)