



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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February 21, 2013

Eric Koltes
Environmental Partners, Inc.
295 NE Gilman Blvd., Suite 201
Issaquah, WA 98027

Re: Compressor Station TEE Bioassay protocol

Dear Eric:

In your January 16, 2013 email to the Department of Ecology (Ecology) you note some issues encountered in performing lettuce seedling bioassays using Early Seedling Growth Protocol for Soil Toxicity Screening (Method Document), Ecology Publication No. 96-324. You propose some modifications, including use of coarse silica sand in lieu of the artificial soil recommended in the Ecology method, and site soil/artificial soil mix ratios for your studies.

Ecology has previously approved use of Protocols for Short Term Toxicity Screening of Hazardous Waste Sites (EPA, 1988) as an alternative to the Ecology method cited above. This method specifies use of 'commercially available, 20-mesh washed silica sand...', essentially the material you propose. Ecology agrees that this is an acceptable choice. The dilution factors you propose, however, do not correspond to the standard factors set out in the EPA protocol, essentially 0.3 or 0.5. The dilution ratios you suggest do not correspond to either of these. Use of the 0.3 dilution factor would result in site soil test levels of 100%, 30%, 10%, 3% and 1%. Use of the 0.5 dilution factor would result in site soil test levels of 100%, 25%, 13%, 7%, 3% and 1%. Either of the dilution factors in the EPA guidance would be acceptable, and either would yield a more precise estimate of the level of contaminants causing toxic effects than the mix ratios you propose. Use of non-standard methods requires evaluation and justification not provided in your proposal, and which would significantly increase the cost of conducting the bioassay series. A more precise estimate of the level(s) of contamination likely to cause unacceptable toxic effects will also likely result in an overall reduction in volume of soil requiring remediation (compared to use of a less precise method, since imprecision would more than likely result in over-estimation of risk).

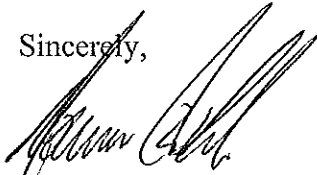
Ecology is in agreement that it would be acceptable to use coarse, washed silica sand for control and dilution samples. Ecology conditionally approves use of a serial dilution approach if one of the dilution factors in the EPA guidance is used (i.e. 0.3 or 0.5). If you have any questions about



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this opinion, or would like to discuss other alternatives, please feel free to contact me at (509) 454-7837 or by email at nope461@ecy.wa.gov.

Sincerely,



Norman D. (Norm) Peck
Toxics Cleanup Program, CRO

cc: Steve Teel, SWRO TCP
Dale Myers, NWRO TCP
Patti Carter, ERO TCP
Arthur Buchan, HQ TCP
Aaron Galer, Williams-Northwest Pipeline Company
Alan Hopkins, Portnoy Environmental, Inc.