



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

July 3, 2019

Allison Geiselbrecht, Principal
Floyd Snider
601 Union Street, Suite 600
Seattle, WA 98101

**RE: Ecology response to Practical Quantitation Limits Issue
June 11, 2019 Letter from Floyd Snider**

- **Site Name:** Smith-Kem Ellensburg Inc.
- **Site Address:** 200 South Railroad Avenue, Ellensburg
- **Facility Site ID No.:** 12832256
- **Cleanup Site ID No.:** 4257
- **Agreed Order:** DE 12908

Dear Allison,

Thank you for your letter dated June 11, 2019. The Department of Ecology (Ecology) confirms that Floyd Snider will sample for the nine analytes bolded in the groundwater comparison table. We have no objections to using ALS/CAS and TestAmerica/Eurofins.

Our expectation is that all 14 permanent monitoring wells are to be re-sampled. Ecology will sample the remainder of the wells if you choose to limit your sampling to only four wells. If this is the case, Ecology will require the PLPs to facilitate access as provided under the Agreed Order.

Regarding the soil media, I have compiled a comparison table for the soil analytes. The issue of elevated PQLs also exists for organochlorine analyses in the soil matrix. For soil, the target cleanup levels must be established at concentrations that prevent violations of cleanup levels for other media, WAC 173-340-700(6)(b).

Nine chlorinated contaminants of concern (COCs) yielded PQLs that are insufficient to compare to the Method B soil cleanup levels protective of groundwater. Thus, the full extent of soil contamination on the property and adjacent properties has not been defined based on the Model Toxics Control Act (MTCA) soil cleanup levels preventive of cross-media impact for the contaminants of concern.



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Although the PQL issue applies across the facility and adjacent properties, I note particular areas of concern that may be indicative of hotspot areas where contamination exceeds cleanup levels.

- AOPC 1 (near FS-05, FS-06, FS-19, FS-20)
- AOPC 2 (near FS-27, FS-28, FS-42)
- AOPC 3 (near FS-16, FS-23)
- AOPC 5 (near FS-12, FS-15, FS-29)
- The area north/south between AOPC 1 and AOPC 2 (e.g., near FS-02, FS-09, FS-22, FS-25)
- The area along the former ditch on the BNSF property (e.g., near MW-17, FS-26)
- Isolated(?) locations outside of an AOPC to include locations near FS-16, FS-18, FS-30, FS-32

This information should be reviewed in conjunction with the groundwater results to determine areas where soil resampling is required.

You can reach me at (509) 454-7836 if you have further questions.

Sincerely,



John Mefford
Cleanup Project Manager
Toxics Cleanup Program
Central Regional Office

JM:rl

Enclosure (2)

cc: Arthur Buchan, Toxics Cleanup Program, Policy & Technical Support
Koalani Kaulukukui-Barbee, Office of the Attorney General
Andrew King, Foster Pepper PLLC
Mary Monahan, Ecology, Toxics Cleanup Program, Central Regional Office
Jeff Gaarder, GHD
Andrea Wing, Shell Oil Products US

SOIL ANALYTES AND COMPARISON OF ASSOCIATED LIMITS OF QUANTITATION

8/10/2016 sampling date

soil from location: MW-16

Soil Analyte	SW 846 Method in PAL report	PQL expected according to Floyd Snider workplan	Multi-Residue Pesticide	Individual Analyte PQLs per the PAL Lab Certificate of Accreditation (Certificate no. L18-354)	Actual Detection Limit achieved by PAL	EPA Method used by Manchester Laboratory	Method Detection Limit achievable by Manchester Lab	Practical Quantitation Limit achievable by Manchester Lab	Method B soil CUL Direct Contact (most stringent: cancer or noncancer)	Method B soil CUL (Protective of Groundwater Vadose @ 13 degrees C or 25 degrees C (most stringent))	Method B soil CUL (Protective of Groundwater Saturated)
		mg/Kg	mg/Kg	mg/Kg	mg/Kg		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
ORGANOCHLORINATED PESTICIDES											
HCH-alpha (a-BHC)	EPA Method 8081B	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	EPA Method 8081B	0.00007	0.0005	0.16	0.00055	0.00028
HCH-beta (b-BHC)	EPA Method 8081B	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	EPA Method 8081B	0.00005	0.0005	0.56	0.0023	0.00012
HCH-delta (d-BHC)	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00006	0.0005			
Lindane (g-BHC)	EPA Method 8081B	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	EPA Method 8081B	0.00006	0.0005	0.24	0.0062	0.00033
Aldrin	EPA Method 8081B	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	EPA Method 8081B	0.00031	0.0005	0.059	0.0025	0.00013
Heptachlor	EPA Method 8081B	0.0067 ²	0.0067 ²	0.0067 ²	0.0067 ²	EPA Method 8081B	0.00031	0.0005	0.22	0.038	0.0019
Heptachlor Epoxide	EPA Method 8081B	0.0067 ²	0.0067 ²	0.0067 ²	0.0067 ²	EPA Method 8081B	0.00007	0.0005	0.11	0.08	0.004
Chlordane (technical)	EPA Method 8081B	0.033		0.033	0.033	EPA Method 8081B	NA*	0.0005	2.9	2.1	0.1
cis-Chlordane (cyclohexane or a-Chlordane)	EPA Method 8081B	0.017			0.0067	EPA Method 8081B	0.00008	0.00005			
trans-Chlordane (gamma chlordane)	EPA Method 8081B					EPA Method 8081B	0.00007	0.0005			
Dieldrin	EPA Method 8081B	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	0.0067 ^{1,2}	EPA Method 8081B	0.00006	0.0005	0.063	0.0028	0.00014
Endrin	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00009	0.0005	24	0.44	0.022
Endosulfan I (α-Endosulfan)	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00001	0.0005	480**	4.3**	0.223**
Endosulfan II (β-Endosulfan)	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00011	0.0005	480**	4.3**	0.223**
4,4'-DDD (p,p'-DDD)	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00006	0.0005	4.2	0.34	0.017
4,4'-DDE (p,p'-DDE)	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00032	0.0005	2.9	0.45	0.022
4,4'-DDT (p,p'-DDT)	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00023	0.0005	3	3.5	0.17
Hexachlorobenzene	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00032	0.0005	0.63	0.88	0.044
Methoxychlor	EPA Method 8081B	0.0067	0.0067	0.0067	0.0067	EPA Method 8081B	0.00013	0.0005	400	62	3.2
Toxaphene	EPA Method 8081B	0.13 ²			0.33 ^{1,2}	EPA Method 8081B	0.00085	0.005	0.91	1.5	0.076
CHLORINATED HERBICIDES											
2,4-D	EPA Method 8151 A	0.01		0.01	0.098 (varies)	EPA Method 8270E	0.0012	0.016	800		
2,4-DB	EPA Method 8151 A	0.01		0.01	0.01	EPA Method 8270E	0.0043	0.016	640		
2,4,5-TP	EPA Method 8151 A	0.01		0.01	0.01	EPA Method 8270E	0.0022	0.016			
2,4,5-T	EPA Method 8151 A	0.01		0.01	0.01	EPA Method 8270E	0.0038	0.016			
Dicamba	EPA Method 8151 A	0.01		0.01	0.01	EPA Method 8270E	0.0027	0.016	2400		
Dinoseb	EPA Method 8151 A	0.01		0.01	0.01	EPA Method 8270E	0.0028	0.016	80		
MCPA	EPA Method 8151 A	0.01		0.01	0.01	EPA Method 8270E	0.0022	0.016			
MCPP	EPA Method 8151 A	0.01		0.01	0.01	EPA Method 8270E	0.0025	0.016			
Pentachlorophenol (PCP)	EPA Method 8151 A	0.02 ^{1,2}		0.0067 ²	0.02 ^{1,2}	EPA Method 8270E	0.0014	0.016	2.5	0.016***	0.00088***
OTHER HALOGENATED PESTICIDES											
Atrazine	EPA Method 8270D	0.007	0.0067	0.0067	0.0067	EPA Method 8081 B	0.0017	0.005	4.3		
Simazine	EPA Method 8270D	0.0067	0.0067	0.0067	0.0067	EPA Method 8081 B	0.0013	0.005	8.3		

RED Exceeds expected PQL in Work Plan

BOLD PQL higher than soil CUL protective of groundwater.

¹ = exceeds PQL required to compare to vadose CUL; ² = exceeds PQL required to compare to saturated CUL

Highlighted yellow: resample and analyze

Highlighted orange: Most stringent CUL (saturated) attainable by MEL MDL but not MEL PQL.

Highlighted red: Most stringent CUL (saturated) not attainable by MEL

*Technical chlordane can only be done by ECD (not MS because of its multi-component nature).

**Cleanup values are shown for Endosulfan (CAS 115-29-7).

***pH dependent. The soil cleanup levels listed are pH = 6.8. At pH = 4.9, vadose is 0.185 mg/Kg; saturated is 0.0093 mg/Kg. At pH = 8.0, vadose is 0.0122; saturated is 0.00069.

SOIL AND GROUNDWATER ANALYTES WITH PQLS INSUFFICIENT TO COMPARE TO METHOD B SOIL CLEANUP LEVELS PROTECTIVE OF GROUNDWATER

ORGANOCHLORINATED PESTICIDES	
Soil	Groundwater
HCH-alpha (a-BHC)	HCH-alpha (a-BHC)
HCH-beta (b-BHC)	
Lindane (g-BHC)	Lindane (g-BHC)
Aldrin	Aldrin
Heptachlor	Heptachlor
Heptachlor Epoxide	Heptachlor Epoxide
	Chlordane (technical)
	cis-Chlordane (cyclohexane or a-Chlordane)
	trans-Chlordane (gamma chlordane)
Dieldrin	Dieldrin
	Hexachlorobenzene
Toxaphene	Toxaphene
CHLORINATED HERBICIDES	
Pentachlorophenol (PCP)	