BRITISH COLUMBIA

File: AR-14334

September 8, 1997

Nick Kootnikoff
S5 C49
RR1
Crescent Valley BC V0G 1H0

Dear Nick Kootnikoff:

Enclosed are results from water testing done on wells in the Krestova area. These have been tabulated and compared to drinking water standards currently in effect.

Also enclosed is an assessment of the results, along with recommendations, by the head of our Environmental Assessment Section. Another sample will be taken as soon as staff are available.

If you wish any further explanation about these results please contact me at 250-354-6355 in Nelson.

Yours truly,

T. Kin

Terri Kinrade
Pollution Prevention Officer

TK:mh

Attachment

Ministry of Environment, Lands and Parks

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BRITISH COLUMBIA

To: Terri Kinrade
Pollution Prevention Officer

Date: September 5, 1997

File: AR 14334

Re: Drinking Water Sample Results - Krestova

I have reviewed the analytical results of well water samples collected in May 1996 and May 1997. Based on my review I have the following comments:

- In all samples, water quality parameters measured meet provincial and federal drinking water standards with the exception of nitrate in one sample collected on May 1997 from the Jmio well. However, no other down-gradient well demonstrated this elevation in nitrate (e.g. the Community Hall well nitrate has not changed and is well within the drinking water limit of 10 mg/L).
- It is unlikely that sludge applied to Hatlen's land has impacted drinking water quality in the vicinity of the sludge application. I've based this conclusion on the fact that nitrate, a water quality parameter that would be expected to change in all potentially impacted wells, has not. The reason for the increase in nitrate in the Jmio drinking water well, is more likely related to activities such as fertilizer or manure application conducted in close proximity to that well.
- Since it is extremely difficult to draw firm conclusions on water quality with only two sample results, I strongly recommend that at least one additional set of samples be collected from drinking water wells in the area.
- There is no significant risk to humans at nitrate levels just over the drinking water standard. However, the Jmio well should re-sampled and checked one more time for nitrate concentrations to see if the result was "real" or lab error. If the nitrate level is over the drinking water standard then the Jmio's should be informed.

If you have any questions I'd be happy to discuss them with you. I will ensure that Garry is able to conduct the sampling sometime within the next few weeks.

Julia Beatty Spence, R.P.Bio.
Head, Environmental Assessment Section
Kootenay Region

JBS/

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Laboratory Results for Krestova Wells - May 2.. 1996 & May 21, 1997

Variable	Scientific Nomenclature	Drinking Water Standard* (mg/L)	1996 Kootnikoff Result (mg/L)	1997 Kootnikoff Result (mg/L)	1996 Jmio Result (mg/L)	1997 Jmio Result (mg/L)	1996 Comm. Hall (mg/L)	1997 Comm. Hall (mg/L)	1996 Hatlen Result (mg/L)
Color	Color CU	nc	2 TAC	<1 TAC	1 TAC	<1 TAC	<1 TAC	<1 TAC	<5.0 CU
Ammonia	NH3	nc	0.01	<.005	0.004	<.005	0.022	<.005	
Nitrite	NO2	1	<0.002	<0.002	<0.002	<0.002	0.016	0.003	0.016
Nitrate/Nitrite	NO2+ NO3	10	1.19	1.74	3.9	11.6	2.7	3.06	2.5
Total Nitrogen	TN	nc	2		3.9		4		
Orthophosphate	PO4	nc	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	
Total Inorganic Carbon	TIC	nc	8.6	11.2	10.5	16.3	10.9	11.8	
Total Organic Carbon	TOC	nc	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Fecal Coliform		0 CFU	0 CFU	0 CFU	0 CFU	0 CFU	0 CFU	0 CFU	
Total Arsenic	T - AS	0.05	0	<0.0005	0.0005	0.0005	0.0001	<0.0005	0.0001
Total Silver	T - Ag	nc	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Total Aluminum	T - Al	0.2	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.2
Total Boron	T - B	5	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.10
Total Barium	T - Ba	1	0.033	0.033	0.041	0.076	0.04	0.041	0.012
Total Berillium	T - Be	nc	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Total Calcium	T - Ca	nc	11.6	13.3	18	32.4	18.1	17.4	
Total Cadmium	T - Cd	0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Total Cobalt	T - Co	nc	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	
Total Chromium	T - Cr	0.05	<0.006	<0.006	0.008	0.006	<0.006	<0.006	<0.015
Total Copper	T - Cu	1	0.0015	0.0063	0.069	0.0119	0.055	0.506	0.017
Total Iron	T - Fe	0.3	0.031	0.008	0.022	0.016	0.084	0.289	<0.030
Total Potassium	T - K	nc	0.8	1	1	1.3	1	1.2	<2.0
Total Magnesium	T - Mg	100 - 500	2.4	2.8	3.9	6.9	3.1	3	3.93
Total Manganese	T - Mn	0.05	0.002	<.001	0.001	<.001	0.005	0.003	<0.005
Total Molybdenum	T - Mo	0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Total Sodium	T - Na	20 - 200	2.9	3.4	3.4	5.1	2.9	3.3	3.7
Total Nickel	T - Ni	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Total Phoshorus	T - P	10	0.043	0.014	0.02	0.017	0.019	0.018	
Total Lead	T - Pb	0.05	0.0021	0.0052	0.0032	0.0022	0.0055	0.0168	<0.001
Total Antimony	T - Sb	0.006	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	
Total Silicon	T - Si	nc	9.54	9.4	9.37	10.5	10.7	10	
Total Selenium	T - Se	10	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.01
Total Tin	T - Sn	nc	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	
Total Titanium	T - Ti	0.1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Total Vanadium	T - V	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Total Zinc	T - Zn	5	0.01	0.012	0.247	0.055	0.065	0.241	0.135

* The BC Drinking Water Qualiy Standard (MELP 1994)
or Canadian Drinking Water Standard (CCME 1987).
note "nc" means no criteria for variable