



MICHIGAN
DEPARTMENT
OF PUBLIC
HEALTH

TO: Dave Martin

Martin

DATE: 04/05/90

FROM: Chuck Thomas

Chuck Thomas

SUBJECT: EPA Sample Analysis Results - Cedarville Area

Attached are two copies of analysis results for five samples an EPA contractor collected from private water supplies in Clark Township, Mackinac County. Also attached is a tabulation of the substances and respective concentrations detected in each sample. The analysis detected either or both bis(2-ethylhexyl)phthalate and di-n-octyl phthalate in all five samples. Phthalates are ubiquitous contaminants in many water quality monitoring samples. They are used in vacuum pumps and as plastizers in Tygon tubing, and water samples are easily contaminated with the substances during collection and analysis. We do not recommend follow-up sampling to confirm the presence of bis(2-ethylhexyl)phthalate and di-n-octyl phthalate.

Analysis detected pyrene in the Linderman sample at a concentration of 1.2 ppb and phenol in the Fisher sample at a concentration of 1.5 ppb. Pyrene is found in coal tar and has no specific use. Phenol is also obtained from coal tar and is used as a general disinfectant, as a manufacturing reagent for artificial resins, medical and industrial organic compounds, and as a reagent in chemical analysis. We recommend follow-up samples be collected at both the Linderman and Fisher water supplies to confirm the presence of pyrene and phenol. Both samples should be collected in the large, 500 ml, brown bottle. Request the laboratory to analyze on the XPA scan for the Linderman sample and on the XAC scan for the Fisher sample.

We note the EPA laboratory analysis detected elevated levels of arsenic in the Linderman and MDOT garage samples. In fact, the concentration of 60 ppb arsenic in the Linderman is above the MCL of 50 ppb. We recommend you collect a sample for analysis of arsenic in the acid-preserved metals bottle from both the Linderman and MDOT garage.

Please report the attached results to the water supply owners and arrange to resample the Linderman, Fisher, and MDOT garage water supplies. Thank you.

CT:di

Attachments

cc: W. Messenger (U. S. EPA)
✓ E. Olsen (DNR, Marquette)

ANALYTICAL RESULTS: EPA SAMPLED WELLS: CLARK TOWNSHIP, CEDARVILLE

SUBSTANCE DETECTED	LINDERMAN	KRICKOWSKI	FISHER	FOOTBALL PARK/STEELE AVE	MOOT SPACE
PYRENE	1.2 ppb (J)		15 ppb (D)		
PHENOL	2.9 ppb (J)	1.7 ppb (J)	20 ppb (J)	1.1 ppb (J)	2.2 ppb (J)
BIS (2-ETHYLHEXYL) PHTHALATE	1.3 ppb (J)	0.5 ppb (J)	0.8 ppb (J)		0.9 ppb (J)
DI-N-OCTYL PHTHALATE	344 ppb	166 ppb			
ALUMINIUM	60 ppb (4)	3.8 ppb (B*)		46 ppb (B, N)	20.07 ppb (B, N)
ARSENIC					2.1 ppb (B, N)
ANTIMONY					
BARIUM	58 ppb	2.6 ppb (B)	24.07 ppb (A)	30.07 ppb (B)	
CADMIUM	0.45 ppb (B)	0.34 ppb (B)		0.16 ppb (B)	
CALCIUM	32,200 ppb	45,600 ppb	43,900 ppb	49,100 ppb	13,760 ppb
COPPER		280 ppb			
CHROMIUM		8.1 ppb (B)			
IRON	25,000 ppb	625 ppb	1,940 ppb	132 ppb	3.6 ppb (B)
LEAD	6.4 ppb				1,660 ppb
MAGNESIUM	32,700 ppb	13,100 ppb	20,400 ppb	22,000 ppb	12,200 ppb
MANGANESE	453 ppb	150 ppb	37 ppb (B)	23 ppb	21.0 ppb
POTASSIUM	1756 ppb (B)	996 ppb (B, J)	2,576 ppb (4)	996 ppb (B, N)	276 ppb (B, N)
SODIUM	3440 ppb	8,910 ppb	5,200 ppb	5,480 ppb	2,140 ppb
THALLIUM	10 ppb (4)	1.5 ppb (B)			
URANIUM	5.34 ppb (N)	11 ppb			
ZINC		325 ppb (N)		423 ppb (N)	225 ppb (N)

Key to Symbols: 1) ppb = parts per billion or micrograms per liter
 2) J = indicates an estimated value, may be non-quantitative
 3) B = value is real, but is above instrument DL and below calibration range
 4) N = Spike recovery outside QC protocols indicating a possible activity problem. Spike may be biased high or low
 5) * = indicates values outside QC protocols indicating a possible problem.