

Notable Exceedances in March 2018 Groundwater Data for Illinois

This document summarizes exceedances in groundwater measurement data near coal ash impoundments in Illinois. I attempted to find all of the exceedances, but this document should not be considered comprehensive but instead a starting point for investigation.

If you find an error, please contact me at arehn @ prairierivers.org

Limits

CCR Contaminant	Federal Drinking Water Standard (MCL)	US EPA Tap Water Regional Screening Level (RSL)	Illinois EPA Groundwater Class II Limit
Arsenic	10 ppb (0.01 mg/l)		0.2 mg/l
Selenium	50 ppb (0.05 mg/l)		
Radium 226 and 228, combined	5 pCi/L (picocurie per liter)		
Lead	15 ppb (not legally a MCL- an "action level")		0.1 mg/l
Cobalt	NA	6 ppb (0.006 mg/L)	1 mg/l
Lithium	NA	40 ppb (0.04 mg/l)	
Molybdenum (Moly)	NA	100 ppb	
Beryllium	0.004 mg/l		
Thallium	0.002 mg/l		0.02 mg/l
Antimony (Sb)	0.006 mg/l (6 ppb)		0.024 mg/l (24 ppb)
Barium	2 mg/l		2 mg/l
Boron			2 mg/l
Cadmium (Cd)	0.005 mg/l		0.05 mg/l
Chloride			200 mg/l
Chromium	0.1 mg/l		1 mg/l
Fluoride			4 mg/l
Mercury	0.002 mg/l		0.01 mg/l
Selenium	0.05 mg/l		0.05 mg/l
Sulfate			400 mg/l
TDS			1200 mg/l

Site by Site Exceedances

All entries followed by: (Well name of greatest exceedance, Regulation Limits Exceeded, Page # of source document)

Regulations:

IEPA - Illinois specific groundwater standard - Section 620 Class II

MCL - US EPA Maximum Contaminant Levels

MCL* - The MCL for Lead is not legally a MCL but an “action level”

RSL - US EPA Tap Water Regional Screening Level (RSL)

Dynegy

1. Baldwin

- a. Arsenic up to 15.3 ppb (MW-206, MCL, [Page 16](#))
- b. Boron up to 2580 ppb (MW-356, IEPA, [Page 12](#))
- c. Chloride up to 1,290,000 ppb (MW-370, IEPA, [Page 16](#))
- d. Lithium up to 178 ppb (MW-370, RSL, [Page 14](#))

2. Coffeen

- a. Arsenic up to 110 ppb (G215, MCL, [Page 24](#))
- b. Boron up to 17000 ppb (G405, IEPA, [Page 16](#))
- c. Cadmium up to 19 ppb (G401, MCL, [Page 21](#))
- d. Chromium up to 160 ppb (G401, MCL, [Page 21](#))
- e. Cobalt up to 360 ppb (G401, RSL, [Page 21](#))
- f. Lead up to 98 ppb (G401, MCL*, [Page 22](#))
- g. Lithium up to 160 ppb (G401, RSL, [Page 22](#))
- h. Sulfate up to 3,900,000 ppb (G401, IEPA, [Page 12](#))
- i. Thallium at 2.1 ppb (G271, MCL, [Page 18](#))

3. Duck Creek **Note that BA06 is considered upgradient by Dynegy, however, the well has the signature of coal ash contamination - elevated Boron. The groundwater could be impacted by coal ash not stored in the impoundments regulated by the CCR Rule.*

- a. Antimony at 12 ppb (G12S, MCL, [Page 24](#))
- b. Arsenic up to 74 ppb (G06S, MCL, [Page 19](#))
- c. Beryllium up to 13 ppb (G06S, MCL, [Page 19](#))
- d. Boron up to 3900 ppb (BA06, IEPA, [Page 14](#))
- e. Cadmium up to 9.9 ppb (G12S, MCL, [Page 22](#))
- f. Chromium up to 360 ppb (G06S, MCL, [Page 19](#))
- g. Cobalt up to 130 ppb (G06S, RSL, [Page 19](#))
- h. Lead up to 340 ppb (G06S, IEPA & MCL*, [Page 20](#))
- i. Lithium up to 410 ppb (G06S, RSL, [Page 20](#))

- j. Radium at 14.9 pCi/l (G06S, MCL, [Page 17](#))
 - k. Thallium at 12 ppb (G12S, MCL, [Page 24](#))
- 4. Edwards** **Note that AW-05 is considered upgradient by Dynegy, however, the wells has the signature of coal ash contamination - elevated Boron. The groundwater could be impacted by coal ash not stored in the impoundments regulated by the CCR Rule.*
- a. Arsenic up to 97 ppb (AW-10, MCL, [Page 24](#))
 - b. Barium up to 6300 ppb (AW-10, IEPA & MCL, [Page 24](#))
 - c. Beryllium up to 15 ppb (AW-10, MCL, [Page 24](#))
 - d. Boron up to 7900 ppb (AW-05, IEPA, [Page 18](#))
 - e. Chromium up to 450 ppb (AW-10, MCL, [Page 24](#))
 - f. Cobalt up to 250 ppb (AW-10, RSL, [Page 24](#))
 - g. Radium up to 7.71 pCi/l (AW-09, MCL, [Page 25](#))
 - h. Lead up to 270 ppb (AW-10, IEPA & MCL, [Page 25](#))
 - i. Lithium up to 850 ppb (AW-10, RSL, [Page 25](#))
 - j. Thallium up to 2.3 ppb (AW-10, MCL, [Page 26](#))
- 5. Hennepin**
- a. Arsenic up to 34.3 ppb (MW 24, MCL, [Page 21](#))
 - b. Boron up to 11000 ppb (MW 35, IEPA, [Page 16](#))
 - c. Lithium up to 130 ppb (18S, RSL, [Page 25](#))
 - d. Molybdenum up to 414 ppb (18S, RSL, [Page 25](#))
 - e. Selenium up to 117 ppb (18S, IEPA, [Page 26](#))
- 6. Joppa**
- a. Arsenic up to 65.1 ppb (G107, MCL, [Page 19](#))
 - b. Beryllium up to 11 ppb (G107, MCL, [Page 19](#))
 - c. Cobalt up to 95.2 ppb (G107, RSL, [Page 19](#))
 - d. Chromium up to 216 ppb (G107, MCL, [Page 19](#))
 - e. Lead up to 142 ppb (G107, IEPA & MCL*, [Page 20](#))
 - f. Lithium up to 72.9 ppb (G107, RSL, [Page 20](#))
- 7. Newton**
- a. Arsenic up to 130 ppb (G222, MCL, [Page 31](#))
 - b. Cobalt up to 36 ppb (G217D, RSL, [Page 28](#))
 - c. Lead up to 65 ppb (G217D, MCL, [Page 29](#))
 - d. Lithium up to 100 ppb (G217D, RSL, [Page 29](#))
 - e. Radium at 15.2 pCi/l (G217D, MCL, [Page 23](#))
- 8. Wood River** **Note that 25 and 31 are considered upgradient by Dynegy, however, the groundwater maps show flow reversals that would put those wells downstream part of the time.*
- a. Arsenic at 57.4 ppb (25, MCL, [Page 21](#)) *Marked as upgradient
 - b. Arsenic at 50.1 ppb (04, MCL, [Page 21](#))
 - c. Boron up to 69,600 ppb (39S, IEPA, [Page 12](#))
 - d. Lithium up to 171 ppb (31, RSL, [Page 22](#)) *Marked as upgradient
 - e. Lithium up to 58.6 ppb (40S, RSL, [Page 20](#))
 - f. Molybdenum up to 857 ppb (39S, RSL, [Page 20](#))

NRG Energy

9. Joliet 9 **Note that G45S is considered an upgradient well by NRG.*

- a. Arsenic up to 230 ppb (G47S, IEPA & MCL, [Page 27](#))
- b. Lithium up to 250 ppb (R08S, RSL, [Page 26](#))
- c. Molybdenum up to 1800 ppb (G46S, RSL, [Page 27](#))
- d. Radium up to 8.45 pCi/l (G45S, MCL, [Page 26](#))

10. Will County **Note that MW-05 and MW-06 are considered upgradient by NRG, however, the wells have the signature of coal ash contamination - elevated Boron. The groundwater could be impacted by coal ash not stored in the two impoundments regulated by the CCR Rule.*

- a. Arsenic up to 50 ppb (MW-10, MCL, [Page 26](#))
- b. Boron up to 6100 ppb (MW-05, IEPA, [Page 24](#))
- c. Molybdenum up to 140 ppb (MW-09, RSL, [Page 26](#))

11. Powerton

- a. Arsenic up to 500 ppb (MW-12, MCL & IEPA, [Page 39](#))
- b. Molybdenum up to 0.13 mg/l (MW-17, RCP, [Page 39](#))
- c. Radium at 8.27 pCi/l (MW-17, MCL, [Page 39](#))

12. Waukegan **Note that MW-14 and MW-09 are considered upgradient by NRG, however, the wells have the signature of coal ash contamination - elevated Boron. The groundwater could be impacted by coal ash not stored in the two impoundments regulated by the CCR Rule.*

- a. Arsenic up to 9300 ppb (MW-14, MCL & IEPA, [Page 26](#))
- b. Boron up to 35,000 ppb (MW-09, IEPA, [Page 24](#))
- c. Chromium up to 4800 ppb (MW-14, MCL, [Page 26](#))
- d. Lithium up to 130 ppb (MW-16, RSL, [Page 27](#))
- e. Molybdenum up to 630 ppb (MW-09, RSL, [Page 26](#))
- f. Selenium at 62 ppb (MW-04, MCL & IEPA, [Page 27](#))

Southern Illinois Power Cooperative

13. Marion

- a. Arsenic up to 49 ppb (MW-04, MCL, [Page 10](#))
- b. Cadmium at 6 ppb (MW-01, MCL, [Page 10](#))
- c. Selenium up to 200 ppb (MW-04, IEPA & MCL, [Page 10](#))
- d. Lead at 17 ppb (MW-04, MCL, [Page 10](#))

City, Water, Light and Power - Springfield

14. Dallman

- a. Boron up to 20,300 ppb (AP-1, IEPA, [Page 10](#))

- b. Did not post Appendix IV data. Every other coal ash owner in the state published the Appendix IV data.

Prairie State Generating Company

15. Prairie State

- a. Arsenic up to 136 ppb (G09D, MCL, Page 357)
- b. Barium at 2980 ppb (G09D, IEPA & MCL, Page 357)
- c. Beryllium at 10.5 ppb (G09D, MCL, Page 357)
- d. Cadmium at 11.1 ppb (G09D, MCL, Page 357)
- e. Cobalt up to 131 ppb (G09D, RSL, Page 357)
- f. Chromium at 286 ppb (G09D, MCL, Page 357)
- g. Lithium up to 185 ppb (G09D, RSL, Page 357)
- h. Lead up to 340 ppb (G09D, IEPA & MCL*, Page 357)
- i. Thallium up to 4.7 ppb (G09D, MCL, Page 357)