DEFENDERS OF SOIL, AIR, WOODS, WATERS AND WILDLIFE
THE IZAAK WALTON LEAGUE
OF AMERICA, INC.

CITIZEN · WATERSHED · MONITORS ·

WRI and DEP Data

Water Quality Concerns

Objective

- Understanding WRI and DEP
- Sampling Data
- Sampling Data Results

Water Quality Monitors

WRI

- The West Virginia Water Research Institute understands how essential clean water is to our way of life. They work to establish programs and new initiatives that help to develop new technologies, and inform policy, to keep our water protected. It is this dedication to clean water that was the catalyst for the comprehensive water quality monitoring and reporting program they call Three Rivers QUEST (3RQ).

DEP

- The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment. Their mission is to work as partners with individuals, organizations, governments and businesses to prevent pollution and restore our natural resources.

Sampling Data

- **Field pH**: A measure of the acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity
- **Lab EC:** In general, the term conductivity describes how easily electricity flows or moves through a solution. Electrical conductivity is a physical property of matter describing how easily electric current flows through a given material.

Sampling Data

- **Lab TDS:** Total Dissolved Solids (TDS) are solids in water that can pass through some filters. TDS is a measure of the amount of material dissolved in water. This material can include carbonate, bicarbonate, chloride, sulfate, phosphate, nitrate, calcium, magnesium, sodium, organic ions, and other ions.
- **Barium:** Barium is a silvery-white metal that can be found in the environment, where it exists naturally. It occurs combined with other chemicals, such as sulfur, carbon and oxygen.

Sampling Data

- **Bromide:** Bromide is a naturally occurring element that can be found in many inorganic substances. Humans however, have many years ago started the introduction of organic bromide in the environment. These are all compounds that are not natural and can cause serious harm to human health and the environment.
- **Chloride:** A highly irritating, greenish-yellow gaseous halogen, capable of combining with nearly all other elements, produced principally by electrolysis of sodium chloride and used widely to purify water, as a disinfectant and bleaching agent, and in the manufacture of many important compounds.

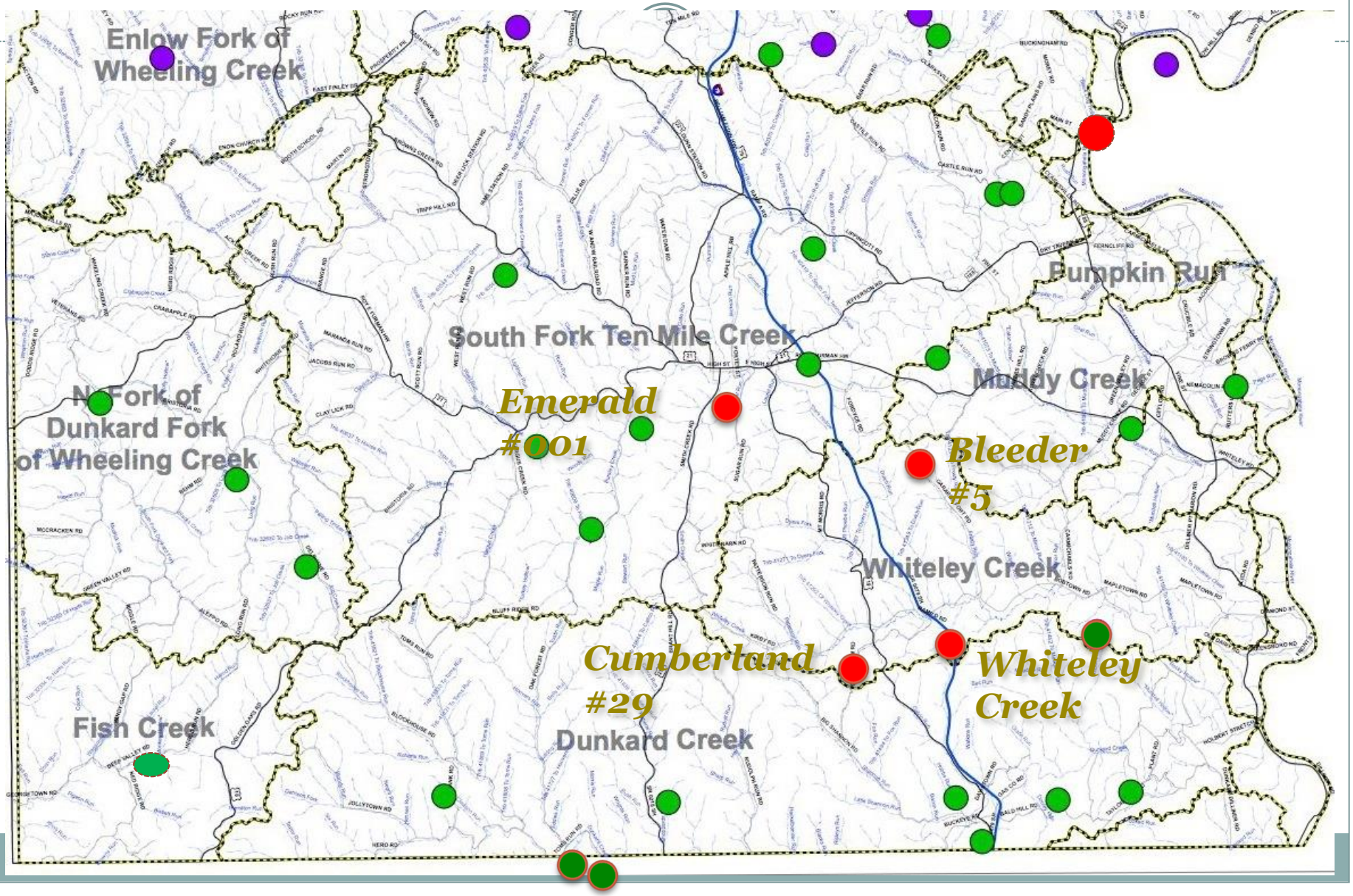
Sampling Data

- **Strontium:** Strontium is a soft, silver-yellow, alkaline-earth metal. In its physical and chemical properties it is similar to calcium and barium. Strontium reacts vigorously with water and quickly tarnishes in air, so it must be stored out of contact with air and water
- **Additional Chemicals:** WRI and DEP have tested for many other chemicals. The data points we are talking about are just a few of the critical ones.

Drinking Water Standards

pH	6.5 – 8.5
Total Dissolved Solids	500 mg/l
Chloride	250 mg/l
Electrical Conductivity	1,000µs
Trihalomethane	80 ppb
Bromide	No Standards ppb
Barium	2mg/l
Iron	.30mg/l
Alkalinity	30 – 500mg/l
Total Sulfate	250 mg/l
Total Manganese	0.050 Nitrates 10.0 mg/l
Strontium	No Standards

Greene County Hotspot Map

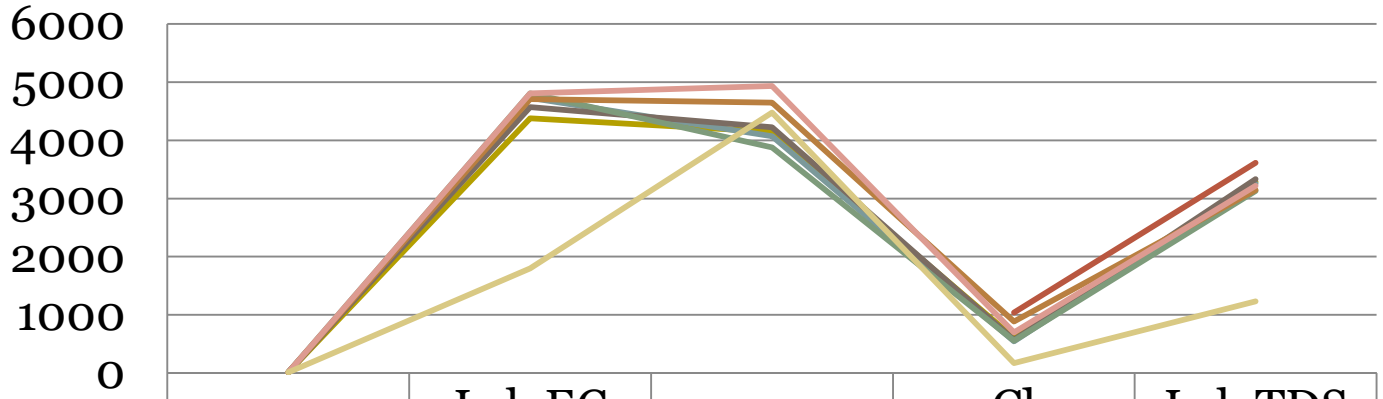


SMITH CREEK

001—TRIB B

WATER LINE

Smith Creek - 001 Trib B



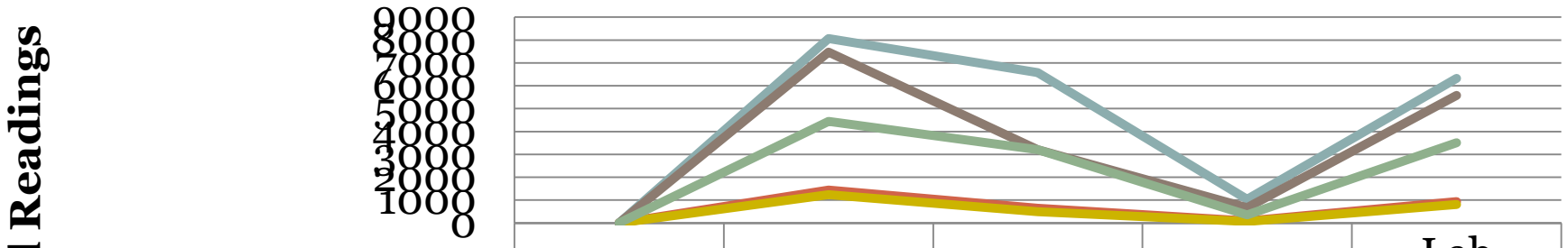
	Field pH	Lab EC (us/cm)	Br (ppb)	Cl (mg/l)	Lab TDS (mg/l)
	6.5 - 8.5	0 - 1000us	N/A	250 mg/l	500 mg/l
001-Trib B 10/7/2010	8.2			1037	3616
001-Trib B 6/2/2011	8.5	4380	4146	601	3286
001-Trib B 7/13/2011	8.4	4730	4072	545	3256
001-Trib B 8/16/2011	8	4570	4227	569	3334
001-Trib B 3/15/2012	8.4	4810	3876	554	3128
001-Trib B 7/3/2012	8.35	4710	4650	882.8	3146
001-Trib B 7/17/2012	8.5	4810	4935	695	3218
001-Trib B 11/5/2012	8.36	1797	4478	170.885	1230

WHITLEY CREEK

AT

KIRBY

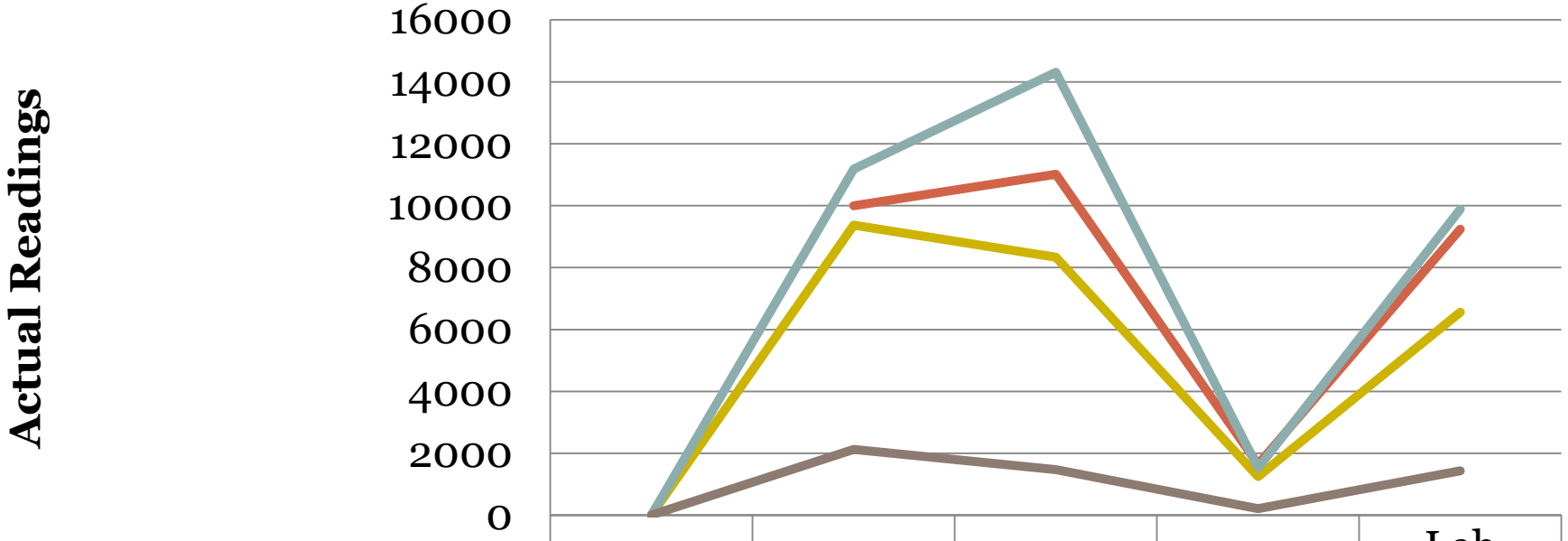
Whitley Creek @ Kirby



	Field pH	Lab EC (us/cm)	Br (ppb)	Cl (mg/l)	Lab TDS (mg/l)
	6.5 - 8.5	0 - 1000us	N/A	250 mg/l	500 mg/l
Whitely @ Kirby Creek 7/13/2011	8.3	1439	646	95	942
Whitely @ Kirby Creek 3/14/2012	8.3	1239	490	69	808
Whitely @ Kirby Creek 7/3/2012	8.27	8060	6570	1031.8	6318
Whitely @ Kirby Creek 7/17/2012	8.5	7470	3209	671	5580
Whitley @ Kirby Creek 11/5/2012	7.97	4440	3209	352.31	3508

MURDOCK RUN

Murdock Run



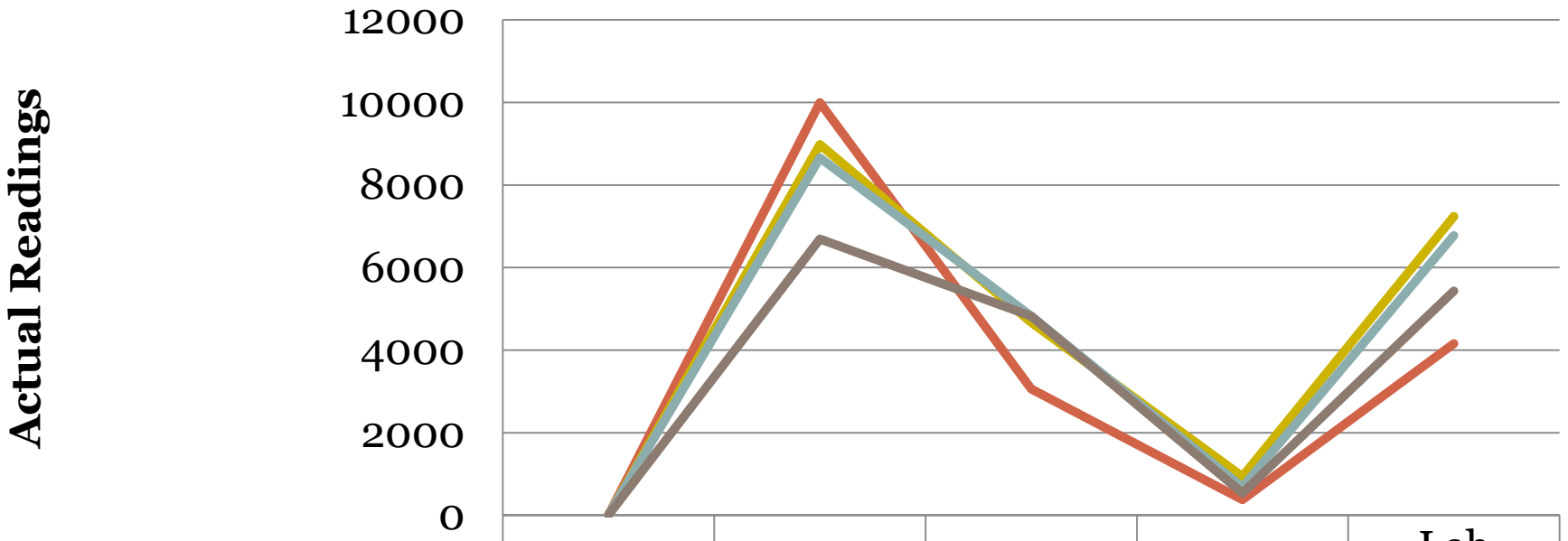
	Field pH 6.5 - 8.5	Lab EC (us/cm) 0 - 1000us	Br (ppb) N/A	Cl (mg/l) 250 mg/l	Lab TDS (mg/l) 500 mg/l
Murdock Run 8/16/2011		10000	11015	1639	9242
Murdock Run 3/15/2012	8.1	9370	8339	1252	6558
Murdock Run 7/3/2012	8.55	11180	14310	1532	9888
Murdock Run 11/5/2012	7.61	2130	1473	212.918	1440

CUMBERLAND MINE

029—TRIB A

OUTFALL No. 029

Cumberland Mine-029 Trib A

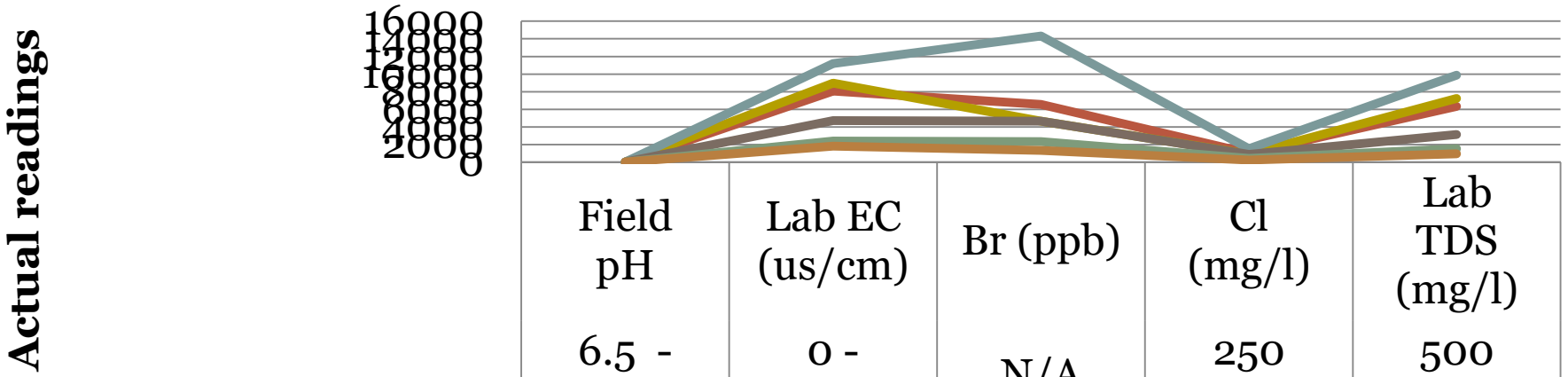


	Field pH	Lab EC (us/cm)	Br (ppb)	Cl (mg/l)	Lab TDS (mg/l)
	6.5 - 8.5	0 - 1000us	N/A	250 mg/l	500 mg/l
029-Trib A 8/29/2011	8.4	10000	3059	375	4160
029-Trib A 7/3/2012	8	8980	4670	934.5	7240
029-Trib A 7/17/2012	8.3	8660	4821	681	6774
029-Trib A 11/5/2012	8.35	6690	4821	535.55	5432

WRI

JULY 3, 2012

WRI Sampling Data
July 3,2012

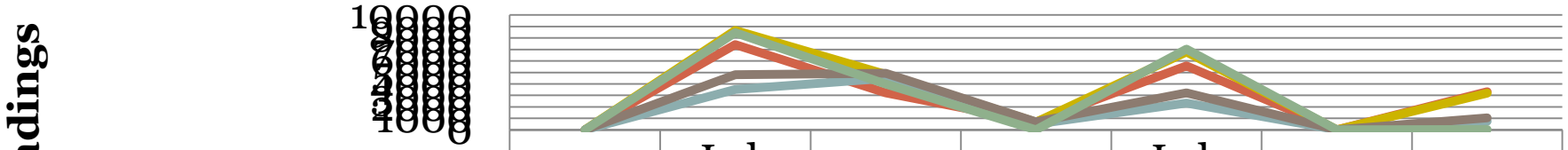


	Field pH	Lab EC (us/cm)	Br (ppb)	Cl (mg/l)	Lab TDS (mg/l)
	6.5 - 8.5	0 - 1000us	N/A	250 mg/l	500 mg/l
Whitley Creek @ Kirby Creek 7/3/2012	8.27	8060	6570	1031.8	6318
029 - Trib A 7/3/2012	8	8980	4670	934.5	7240
Murdock Run 7/3/2012	8.55	11180	14310	1532	9888
Smith Creek 7/3/2012	8.35	4710	4650	882.8	3146
Franklin Twsp Grimes Run B 7/3/2012	8.3	2400	2330	431.1	1540
East Bethlehem SW Bridge 7/3/2012	8.11	1832	1330	241.9	960

DEP

JULY 17, 2012

DEP Sampling Data
July 17,2012

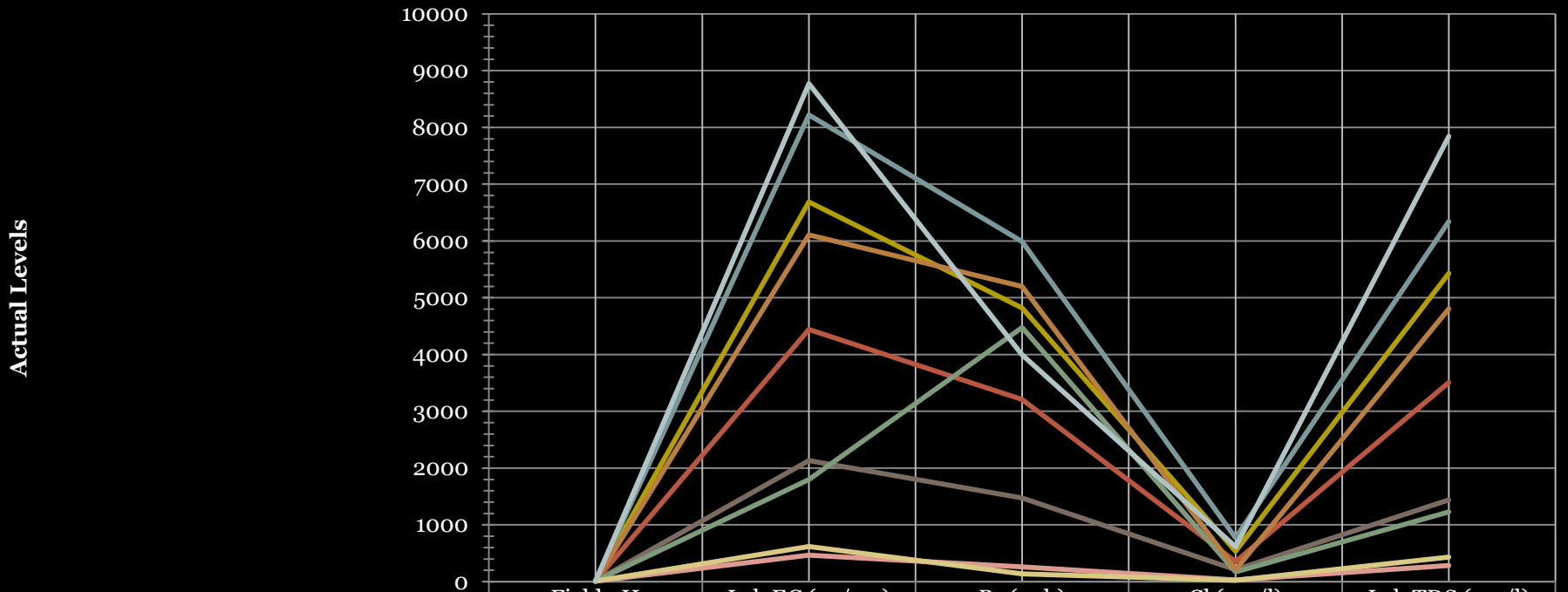


	Field pH	Lab EC (us/cm)	Br (ppb)	Cl (mg/l)	Lab TDS (mg/l)	Ba (mg/l)	Sr (ppb)
	6.5 - 8.5	0 - 1000 us	N/A	250 mg/l	500 mg/l	2 mg/l	N/A
Whitley Creek @ Kirby Creek 7/17/2012	8.5	7420	3209	671	5580	0.083	3313
029 - Trib A 7/17/2012	8.3	8660	4821	681	6774	0.016	3201
Smith Creek 7/17/2012	8.5	3530	4478	491	2328	0.052	736
UNT to Smith Creek 7/17/2012	8.5	4810	4935	695	3218	0.016	1051
East Bethlehem Trib C 7/17/2012	7.8	8470	3993	5.87	7018	0.061	37.94

WRI

NOVEMBER 12, 2012

WRI Sampling Data
November 5,2012



	Field pH 6.5 - 8.5	Lab EC (us/cm) 0 - 1000us	Br (ppb) N/A	Cl (mg/l) 250 mg/l	Lab TDS (mg/l) 500 mg/l
Whitley Creek @ Kirby Creek 11/5/2012	7.97	4440	3209	352.31	3508
029 - Trib A 11/5/2012	8.35	6690	4821	535.55	5432
014 - Trib B 11/5/2012	8.52	8220	5992	770.6	6344
Murdock Run 11/5/2012	7.61	2130	1473	212.918	1440
Smith Creek 11/5/2012	8.36	1797	4478	170.885	1230
001 - Trib B 11/5/2012	8.48	6110	5199	211.29	4808
Franklin Twsp Grimes Run B 11/5/2012	7.97	468	262	27.165	286
East Bethlehem SW Bridge 11/5/2012	7.91	618	139	25.712	430
East Bethlehem Trib C 11/5/2012	6.98	8770	3993	612.991	7840

CUMBERLAND MINE

OUTFALL-- 014

CAT
OUTFALL 014
Equalization Pond

EMERALD MINE

HILLSIDE PA-21

CLYDE MINE

DISCHARGE
INTO
TEN MILE CREEK

Clyde Mine Discharge into Ten-Mile Creek

Photo Outlay Record **Updated:**

Dec. 5, 2012

Clarksville, Pennsylvania

IS THIS OUR FUTURE?

CURRENT REALITY
IN

GREENE COUNTY

CARMICHAELS AREA
SCHOOL DISTRICT
DO NOT DRINK THE
WATER