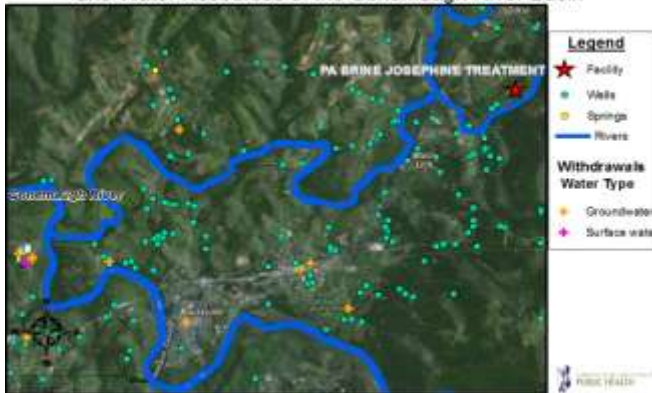


Hart Resources PA Brine Josephine Treatment Facility and Water Resources of the Conemaugh River Basin



Senate Committee on Environment and Public Works and its Subcommittee on Water and Wildlife

Joint Hearing “Natural Gas Drilling, Public Health and Environmental Impacts”

Testimony of Conrad Daniel Volz, DrPH, MPH
 Graduate Faculty; Graduate School of Public Health, University of Pittsburgh
 Director & Principal Investigator, Center for Healthy Environments and Communities (CHEC); Assistant Professor of Law (Secondary Appointment)

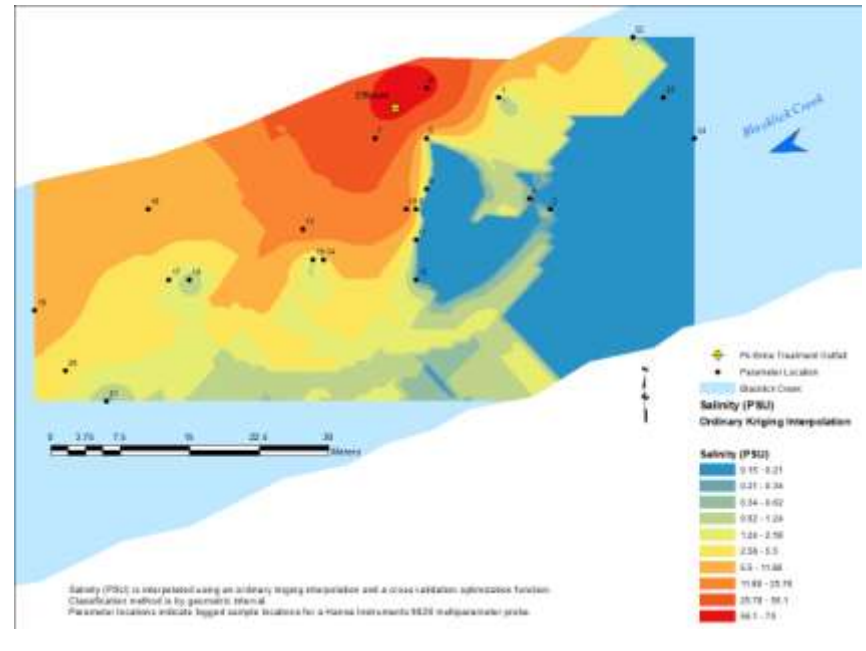
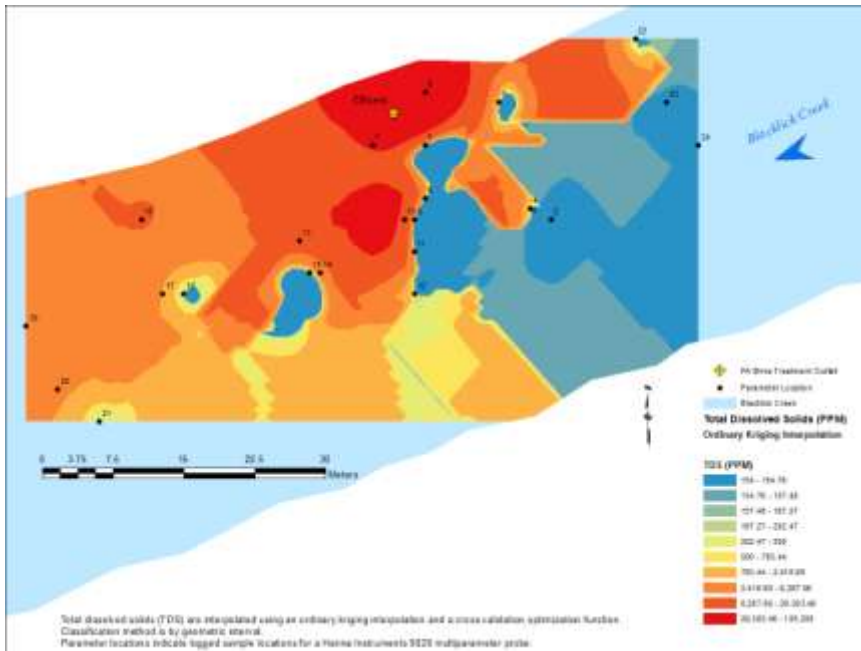
<http://www.chec.pitt.edu>

<http://www.fractracker.org>



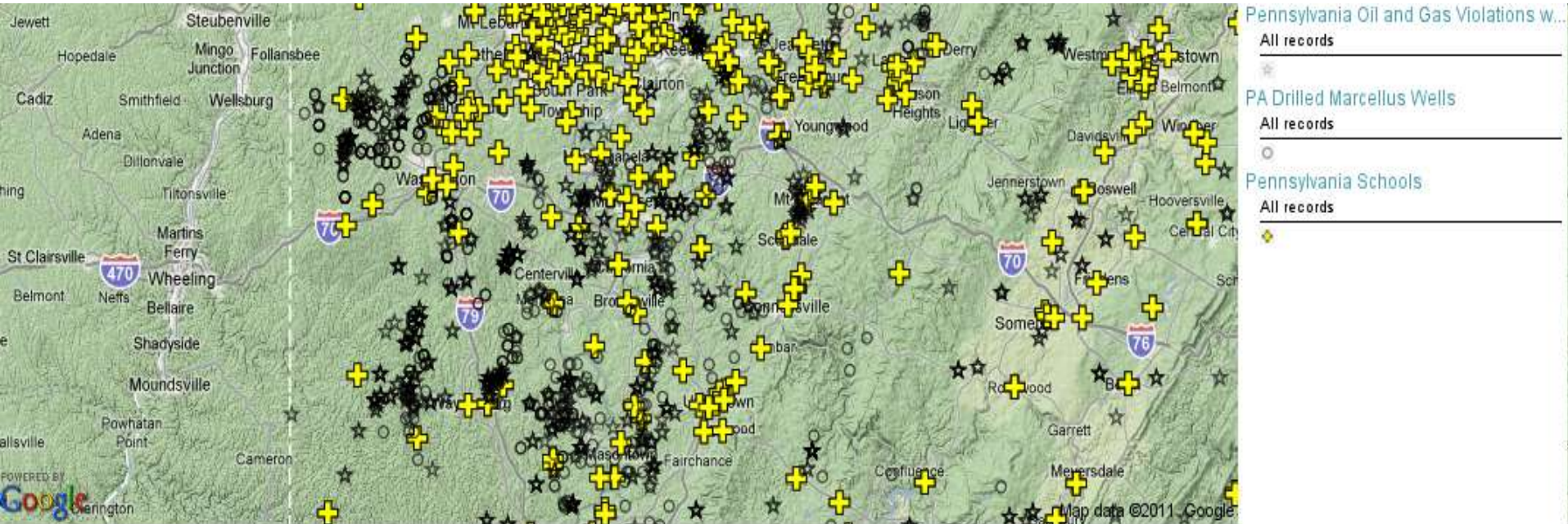
UNIVERSITY OF PITTSBURGH • GRADUATE SCHOOL OF
PUBLIC HEALTH

PBT-Josephine Facility Outfall on Blacklick Creek and Kriging Interpolation of Instream Total Dissolved Solids and Salinity



View South of Pittsburgh, PA

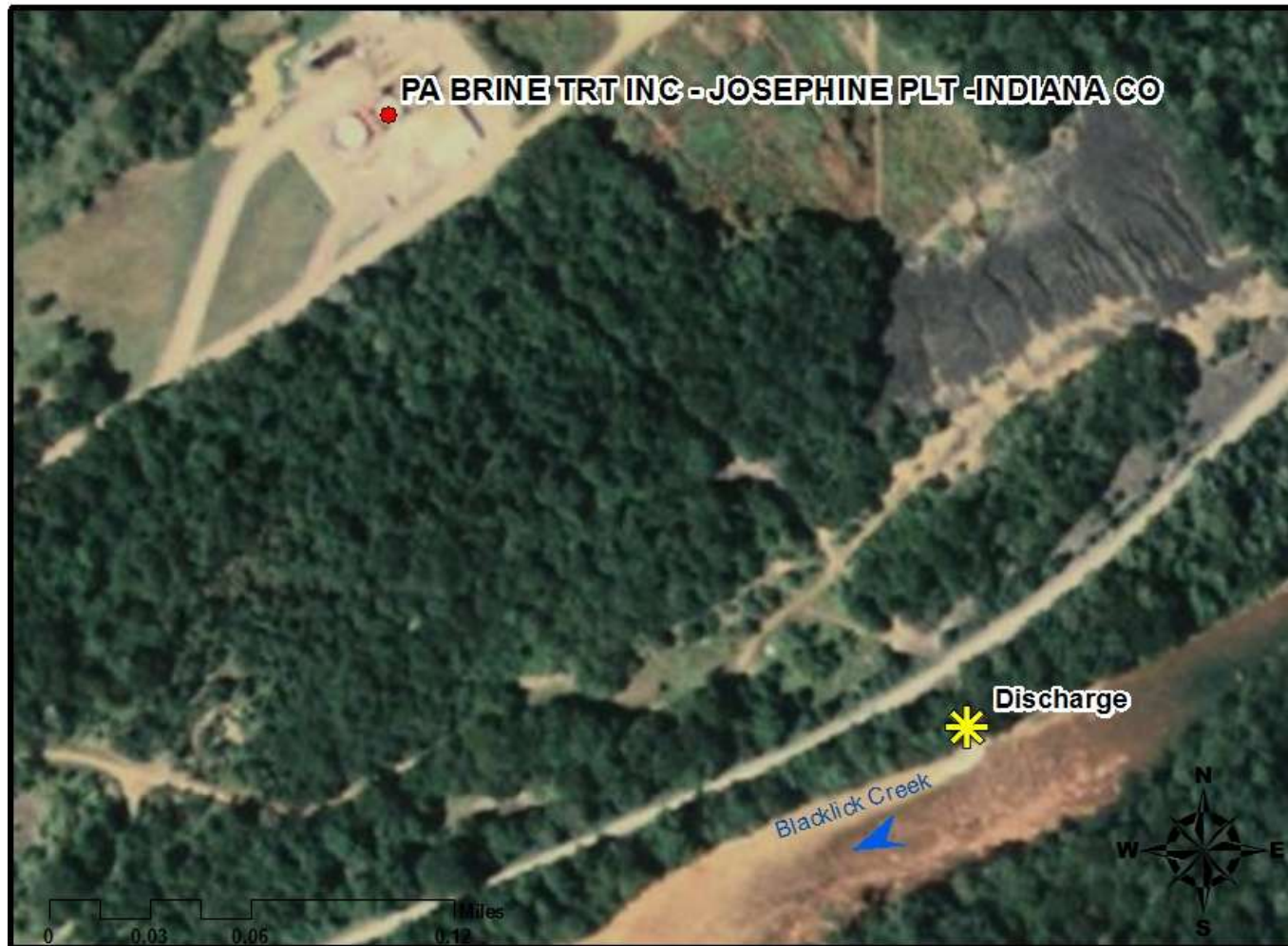
Proximity of Schools to Marcellus Wells and Marcellus Violations



2010 Oil and Gas Act Citations by Well Type Issued by the PA DEP

Violation Description	Non Marcellus	Marcellus	Unknown Formation	Grand Total
Failure to minimize accelerated erosion, implement E&S plan, maintain E&S controls. Failure to stabilize site until total site restoration under OGA Sec 206(c)(d)	88	111	97	296
Failure to plug a well upon abandonment	85	8	161	254
Discharge of polluttional material to waters of Commonwealth.	58	105	85	248
O&G Act 223-General. Used only when a specific O&G Act code cannot be used	20	138	13	171
Failure to install, in a permanent manner, the permit number on a completed well	25	29	76	130
Clean Streams Law-General. Used only when a specific CLS code cannot be used	8	106	12	126
Failure to properly store, transport, process or dispose of a residual waste.	15	68	43	126
Failure to maintain 2' freeboard in an impoundment	33	58	11	102
Failure to submit well record within 30 days of completion of drilling	83	2	14	99
Impoundment not structurally sound, impermeable, 3rd party protected, greater than 20" of seasonal high ground water table	12	58	9	79

Hart Resources PA Brine Josephine Facility



Legend

- Facility

Data obtained from the PADEP at:
https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/DataExports/ExportWasteData.aspx?PERIOD_ID=2010-2

Dept. of Environmental and Occupational Health,
Center for Healthy Environments and Communities,
Graduate School of Public Health,
University of Pittsburgh

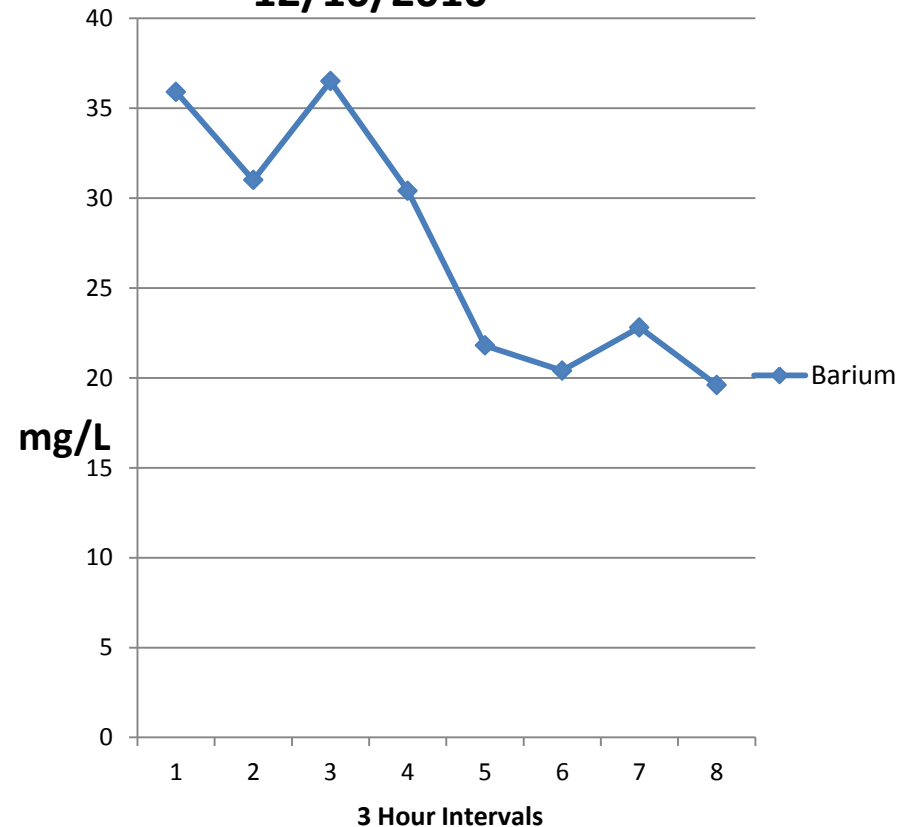


Barium in PBT-Josephine Effluent

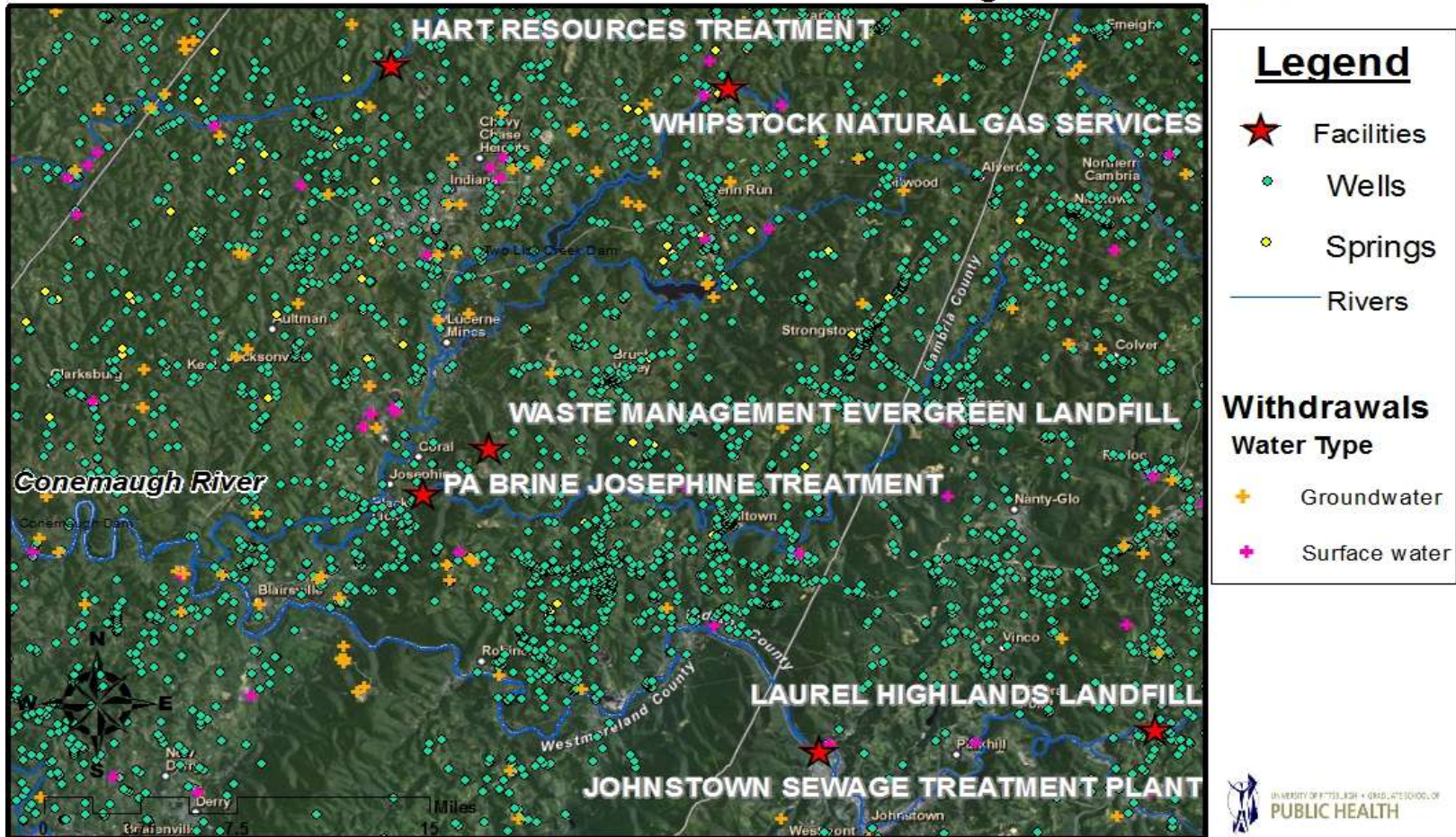
[Mean] = 27.30 mg/L; [Max.] = 37 mg/L

- [Mean Ba] $\approx 14 \times$ (MCL) of Ba in drinking water of 2 ppm.
- The Ba ATSDR MRL's oral intermediate/chronic exposure are .2 mg/kg/day. Derived MRLs for barium in drinking are 6.89, 5.77, and 3.04 (mg/L/day) for adult men, adult women, and children, respectively (renal).
- [Mean Ba] is 3.96, 4.73, and 8.98 X the derived drinking water MRL's for intermediate and chronic exposures for adult men, women, and children, respectively.
- EPA Ba CMC of 21 ppm exceeded; EPACCC for barium in water is 4.1 ppm, 6.66X [Mean Ba].

PA Brine Treatment Josephine
12/10/2010



Facilities Accepting Natural Gas Solid Wastes and Waste Water and Water Resources of the Conemaugh River Basin

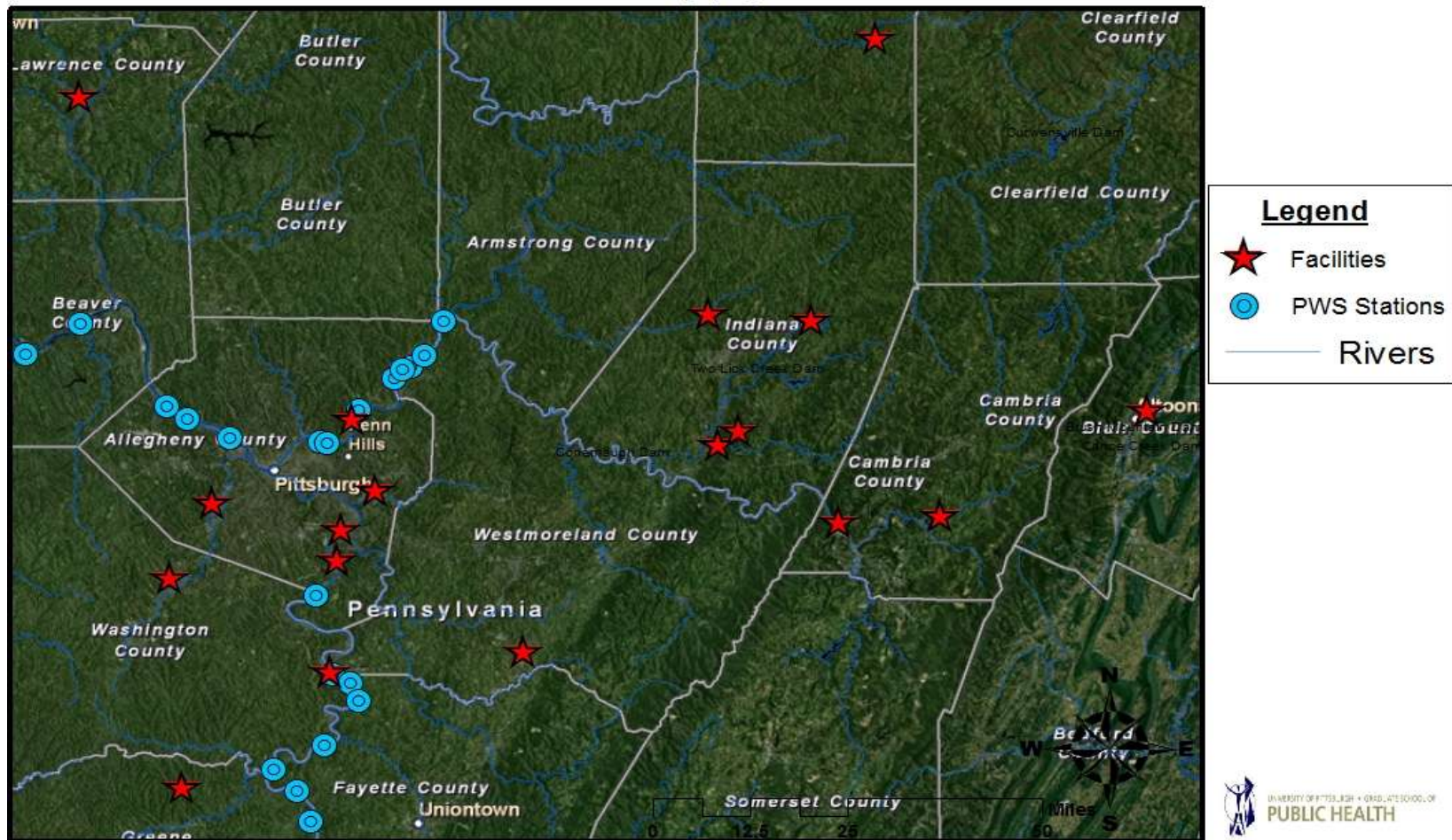


Data obtained from the PADEP at:
https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/DataExports/ExportWasteData.aspx?PERIOD_ID=2010-2

Dept. of Environmental and Occupational Health,
 Center for Healthy Environments and Communities,
 Graduate School of Public Health,
 University of Pittsburgh



Facilities Accepting Natural Gas Solid Wastes and Wastewater and Public Water Supply Withdrawal Stations



Data obtained from the PADEP at:
https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/DataExports/ExportWasteData.aspx?PERIOD_ID=2010-2,
www.PASDA.PSU.EDU

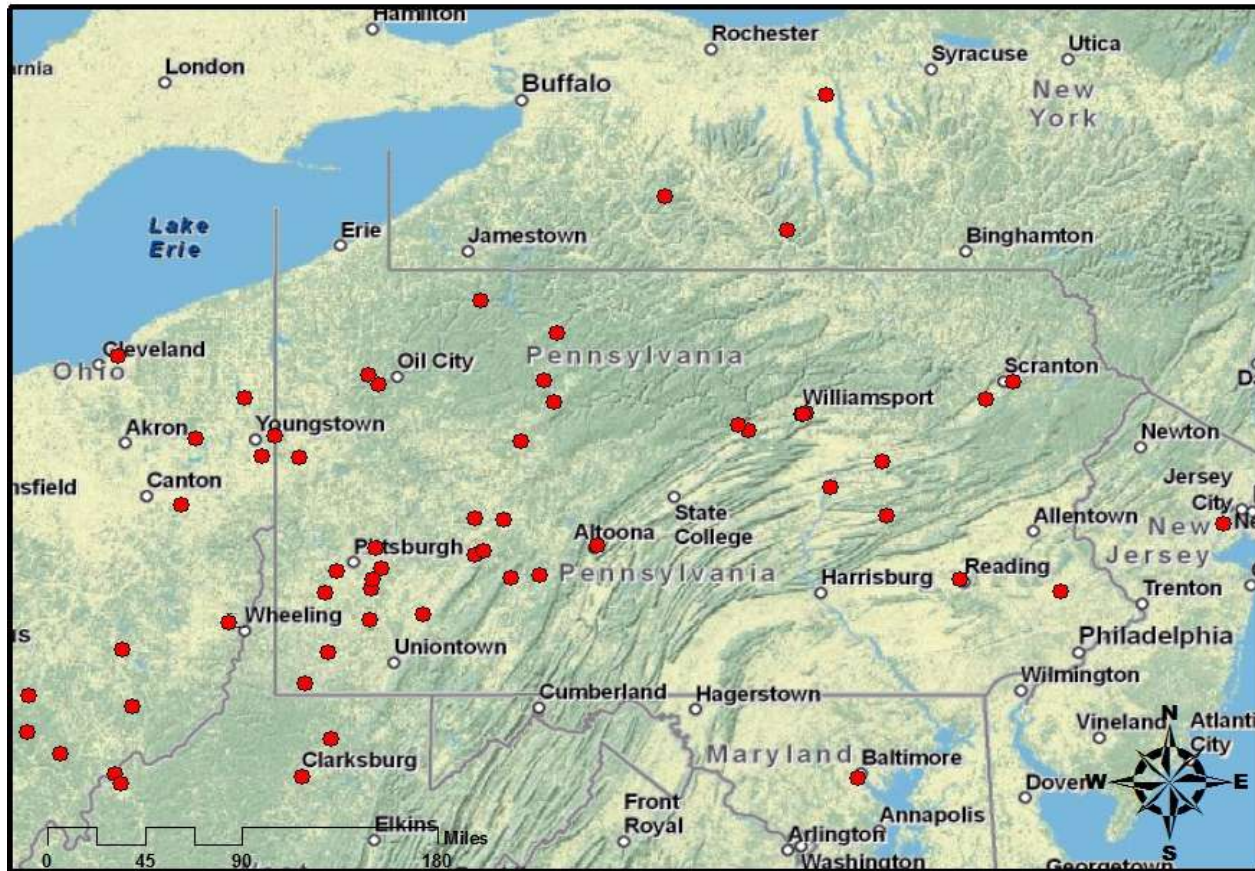
Dept. of Environmental and Occupational Health,
 Center for Healthy Environments and Communities,
 Graduate School of Public Health,
 University of Pittsburgh



Volz, C.D. et al., 2011 <http://www.chec.pitt.edu>
<http://www.fractracker.org>



Facilities Accepting Natural Gas Wastewater MD, NY, NJ, OH, WV & PA



Legend

● Facilities

Data obtained from the PADEP at:
https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/DataExports/ExportWasteData.aspx?PERIOD_ID=2010-2

Dept. of Environmental and Occupational Health,
 Center for Healthy Environments and Communities,
 Graduate School of Public Health,
 University of Pittsburgh

