U.S. EPA Water Quality Data in Support of Enforcement Actions Against Kanawha Valley Chemical Industry Dischargers 1974-84

Richard Kuntz
Bollinger, Ruberry & Garvey

Although environmental problems traceable to the chemical industry in the Kanawha Valley have assumed a high profile in recent years, an examination of data available to and the enforcement response of the U.S. Environmental Protection Agency demonstrates that the agency was slow to confront the challenges posed by discharges from the valley industry. For example, in 1974 EPA released its first National Water Quality Inventory.[1] Although that report contained detailed effluent data, listed by discharger, from most of the then-known industrial "hot spots" of the chemical industry, such as the Gulf Coast and Houston Ship Channel areas of Texas and Louisiana,[2] the New Jersey corridor,[3] the Buffalo-Niagra Falls, New York, area[4] and the Tennessee and Cumberland River basins in Tennessee,[5] data on the Kanawha Valley chemical industry was limited to a listing of the following plants, with no discharge data[6] given, as was the case for the aforementioned areas:

Name
E I DuPont-Belle Plant
Fike Chemicals Incorporation
FMC Corporation-Inorganic Chemical Division
FMC Corporation-American Viscose Division
FMC Corporation-American Viscose Division*
Allied Corporation-Industrial Chemical Division
Monsanto Company-Nitro Plant
Union Carbide Corporation-Chem Dry
Union Carbide Corporation-Institute Plant
Union Carbide Corporation-Ferro-alloys[7]

* This facility actually discharged into the Little Kanawha River.

Similarly, in parallel with the lack of water quality data made available to the public, enforcement compilation reports from that era show a lack of actions taken against valley dischargers, when compared with chemical facilities in other areas. This can be seen by examining EPA's third national Enforcement Progress Report covering the period December 1974-75.[8] That report discusses enforcement actions taken, e.g., against two chemical plants in Ohio[9] and several each in Tennessee, Louisiana, New York, and New Jersey,[10] but none in the Valley. The 1976 report shows that an increased enforcement effort against dischargers from the chemical industry in other locales was not matched by actions taken with respect to the valley, where no enforcement actions were reported.[11] Whether this lack of attention to the valley during the early phase reflects inconsistent efforts between the regional offices of EPA (Region III with offices in Philadelphia has jurisdiction over the Kanawha Valley), traditional attitudes towards the Appalachian region, or other factors, is beyond the scope of this paper.[12]

When we move ahead to the next period in which substantial data are available, we note a profound shift, with the release of a report reflecting an extensive environmental monitoring effort in the valley. In 1984, EPA released an *Overview of Environmental Pollution in the Kanawha Valley*.[13] The contrast with the earlier period can be gleaned simply by comparing the list of discharges in the 1984 report and the summary data provided for each, with the table above from the 1974 report:

As can be immediately seen, over twice as many facilities were inventoried in 1984 as in 1974, with much more detailed information provided for each. Moreover, the 1984 report documented on-going source control programs to reduce the volume and toxicity of discharges.

Although not made available to the public in the 1974 report, more detailed studies had been made of environmental conditions in the valley.[14] In 1972, plant inspections and effluent sampling were conducted at 40 industrial facilities, presumably including the chemical industry, by U.S. EPA's National Field Investigation Center. These inspections provided basic information on processes, raw materials, products, wastewater treatment and control practices, and effluent character-

Summary of Industrial Wastewater Discharges(1984)

Facility Name	City	Flow (mgd)	Organic Toxic Pollutants (lb/day)	Heavy Metals (lb/day)
Allied Chemical	Nitro	0.1	<1	<1
Avtex Fibers	Nitro	0.8	0	2
Chemical Leaman Tank Lines	Institute	0.01	<1	<1
Coastal Tank Lines	Nitro	0.005	1	<1
Diamond Shamrock	Belle	0.1	1	3
Dupont	Belle	62	2	3
Elkem Metals	Alloy	109	0	7
FMC	Nitro	2.5	0	2
FMC	S. Charleston	50	12	4
Fike Chemicals/CST	Nitro	0.02	6	1
Kincaid Enterprises (Chemical Formulators)	Nitro	0.05	<1	1
Mason & Dixon Tank Lines	St. Albans	0.003	1	<1
Monsanto	Nitro	7.5	2	3
Union Carbide	Institute	126	118	2
Union Carbide-Technical Center	S. Charleston	1.4	0	0
Union Carbide	S. Charleston	113	5	88

istics. Data on toxic substances in the effluents were usually limited to heavy metals. No organic analyses were performed.[15]

In 1975, effluent samples collected by EPA Region III from major wastewater discharges from chemical plants in the valley were analyzed for organic compounds by the National Enforcement Investigations Center (NEIC). Limited data on toxic substances in these effluents were developed in this study.[16]

Reconnaissance inspections of major wastewater discharges in the valley were made by Region III staff in the 1975-77 period. Trip reports of these inspections provided data on pollution control practices and process changes. But there is no indication of enforcement actions resulting from this data collection and source characterization effort.

In February 1977, a large spill of toxic carbon tetrachloride occurred in the Kanawha River, so a partial evaluation of the FMC Corporation plant at South Charleston was conducted as the result of the release. This prompted an EPA sampling survey of the river and selected industrial effluents. Organic analyses of these samples provided an inventory of toxic organic chemicals present in the river.[17]

Data on wastewater treatment practices at eight major industrial facilities were compiled by an EPA contractor in 1977 as part of an area-wide water pollution control planning study.

During 1977-1979, NEIC conducted a series of plant inspections and monitoring studies at major sources of pollution in the valley. These studies were multimedia and included evaluations of processes, pollution control practices (air, water, solid waste, and hazardous materials), and effluent characteristics. Preliminary to this series of plant studies (1977), NEIC conducted a compilation and evaluation of available data on the substances in the Kanawha Valley. Aerial photographs of all major sources of pollution in the valley were taken. This study identified major sources of toxic substances and made recommendations for the subsequent plan inspections. The study report, published in February 1978,[18] formed a main basis for the effort, which finally resulted in the 1984 report discussed above, much greater awareness, and action that followed.

Detailed plant inspections and monitoring surveys were conducted at Fike Chemicals, Inc., Coastal Tank Lines, Inc. and the Cooperative Sewage Treatment (CST), Inc. facilities in Nitro in late 1977. As a result of these inspections, major enforcement actions were initiated against Fike Chemicals and CST.

Reconnaissance inspections were conducted in 1977 at Chemical Formulators, Inc. (now Kincaid Enterprises), FMC Corporation, Monsanto Company in Nitro, and DuPont in Belle. No sampling was performed, but detailed information on processes and pollution control practices was obtained.

As can be seen, pollution from chemical facilities in the Kanawha Valley, while long recognized as a problem, was slow to attract the concerted attention of the federal regulatory authority and there is no indication in the literature that this inattention was from deference to a vigorous state enforcement effort. Based on the detailed analysis resulting from the 1984 survey, however, programs were put in place that resulted in the vastly improved environmental conditions prevailing in the valley today.

Notes

1. *National Water Quality Inventory 1974 Report to the Congress*, Office of Water Planning and Standards EPA-440/9-74-001, Volume II (Washington D. C., 1974).

2. Ibid, at E-9 and E-13-14.

3. Ibid, at E-11.

4.Ibid.

5. Ibid, at E-15.

6. Data presented for the other areas included flow rate in millions of gallons per day and average pollutant loading, expressed in pound/day for five pollutants, that EPA characterized as "principal."

7. Ibid, at E-15 & E-34.

8. *EPA Enforcement A Progress Report*, U.S. EPA (Washington D.C., 1976).

9. Ibid, p. 77.

10. Ibid, at Appendix C, *infra.*

11. *EPA Enforcement A Progress Report*, U.S. EPA (Washington D.C., 1977), pp. 161-205.

12. See Mintz, *Enforcement at the EPA: High Stakes and Hard Choices* (Austin: University of Texas Press, 1995).

13. U.S. EPA Office of Enforcement and Compliance Monitoring, National Enforcement Investigations Center, Denver Colorado (August 1984). This report also included information on air and hazardous waste land disposal problems in the valley, which are not the subject of this paper because there is little previous data with which a historical comparison may be made.

14. See Ibid, no.14, pp. III-3-5.

15. *Report of Industrial Investigations, Major Industrial Facilities, Kanawha Valley, West Virginia*, U.S. EPA National Field Investigations Center (Cincinnati, Ohio, 1972).

16. National Enforcement Investigations Center archival files in Denver, Colorado, 1975, cited in ibid. no. 14.

17. *Carbon Tetrachloride Survey*, U.S. EPA Office of Water Supply (Cincinnati, Ohio March 31, 1977).

18. *A Summary of Toxic Substances Information for the Kanawha Valley, West Virginia,* EPA-330/1-77-013 (Denver, Colorado, 1978).

Virginia Humanities Council Fellowship dealing with the implications of the Freon ban for the DuPont Corporation.

Richard M. Kuntz–Earning a B.A. degree in Philosophy at West Virginia University in 1972, Mr. Kuntz received a J.D. at the George Washington University Law School in 1984. He worked for the U.S. Environmental Protection Agency from 1974 to 1985 in the areas of water and air pollution enforcement and toxics regulation. Currently, he is a partner in the Chicago firm Bollinger, Ruberry and Garvey, where he practices environmental and insurance coverage law. He has published more than fifty articles on environmental and insurance coverage law.

Cassandra Bolyard Whyte–Earning her doctorate degree from West Virginia University in 1975, Dr. Whyte has spent approximately thirty-one years teaching and handling administrative duties at several institutions of higher learning, including Davis and Elkins College, Oregon State University, and Marshall University. Dr. Whyte has published on several topics, including education, counseling, career and workforce development. She is a member of several professional organizations and received a Distinguished Educational Research Award while at Oregon State University. She is currently Vice President for Administrative Affairs at West Virginia State College.

Robert Baptista–Born in New Jersey, Dr. Baptista earned a Ph.D. degree in chemistry from Stevens Institute of Technology and later held various assignments for Bayer Corporation, including Vice President of Manufacturing. He joined the Chemical Alliance Zone as Executive Director in 2002, where he works with industry, academic, and state development groups to attract new investment and to create jobs in the region.

John G. Taylor–Born in Manchester, England, Dr. Taylor earned his B.S. degree in chemistry in 1976 from the University of Manchester Institute of Science and Technology and his Ph.D. in inorganic chemistry from Auburn University in 1981. He joined Union Carbide in 1989. His current assignment with Dow Chemical is as an analytical chemist, specializing in ion chromatography.

Arthur E. Marcinkowsky–Dr. Marcinkowsky earned his Ph.D. in physical chemistry from Rensselaer Polytechnic in 1961, and was employed by Union Carbide for thirty-one years at Montreal, the Oak Ridge National Laboratory, and the Tech Center in South Charleston. Presently retired, he is a registered professional engineer and councilor for the Kanawha Valley Section of the American Chemical Society.