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DISCRIMINATION IN THE MARCELLUS SHALE: THE DORMANT COMMERCE CLAUSE AND HYDRAULIC FRACTURING WASTE DISPOSAL

ERIC MICHEL*

INTRODUCTION

In recent years, natural gas has become a more prevalent source of energy for several sectors of the U.S. economy, and continues to be consumed at a greater rate than its production. In 2008, the United States had an estimated nearly 1,500 trillion cubic feet of "technically recoverable tight gas, shale gas, and coalbed methane" resources, a staggering amount of potential domestic energy. While estimates of precise amounts constantly fluctuate, natural gas production in 2010 reached its highest level in over thirty years, with the surge attributed to the growing increase in extraction from shale formations. The Department of Energy estimates that half of the natural gas consumed in the United States’ economy today was extracted from wells drilled within the last three and a half years.

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2. U.S. ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY REVIEW 97 (Oct. 2011) "Technically recoverable" gas refers to "resources ... that are producible using current technology without reference to the economic viability thereof." Id.
3. Expansion of exploration and drilling provides more comprehensive data on the amounts and recoverability of certain gas resources. For example, in 2011 the U.S. Energy Information Administration (“EIA”) estimated there were 827 trillion cubic feet of "technically recoverable unproved shale gas resources" when making projections on energy supply, demand, and prices through 2035. U.S. ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 79 (2011). In 2012 the EIA has dropped the estimate to 482 trillion cubic feet, with the decline largely attributed to smaller estimated reserves in the Marcellus Shale. U.S. ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2012 EARLY RELEASE OVERVIEW 9 (2012).
5. DOE Primer, supra note 1, at 4.
The recent explosion of natural gas drilling in the Marcellus Shale region has been accompanied by an explosion of news, research, and academic scholarship on the controversial extraction method known as hydraulic fracturing ("fracking"). These sources primarily discuss whether the actual practice of fracking—the high-pressure injection of chemicals into underground shale formations—poses a threat to underground sources of drinking water. Aside from these very real concerns, the prevalence of fracking has brought attention to an additional public health issue—how to handle, treat, and dispose of the millions of gallons of wastewater that results from the practice.

Pennsylvania is a prime example of a state where industry has jumped headfirst into the lucrative practice of fracking before full legislative consideration of its inevitable externalities. While Pennsylvania is one of the leaders in extracting natural gas via fracking, its current regulatory structure is inadequate to deal with the massive amounts of wastewater that fracking creates. The two primary methods of disposing this waste—treatment or permanent underground injection—are largely unavailable in Pennsylvania. Lacking an adequate internal method of wastewater disposal, Pennsylvania drillers have turned to an alternate source: Ohio.


7. Large-scale environmental studies have been initiated at both the state and federal level. See, e.g., U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF RESEARCH AND DEVELOPMENT, INVESTIGATION OF GROUND WATER CONTAMINATION NEAR PAVILLION, WYOMING (2011) (U.S. EPA’s investigation to determine the presence of ground water contamination as a result of hydraulic fracturing); NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT ON THE OIL, GAS AND SOLUTION MINING REGULATORY PROGRAM (2011) (New York state’s ongoing environmental impact study assessing the risks of high-volume hydraulic fracturing).


10. See infra Part II.
For example, in late 2011, the U.S. Energy Information Administration ("EIA") estimated that the southwest portion of Pennsylvania alone—adjacent to Ohio—produced nearly one billion cubic feet of natural gas per day (Bcf/d), an increase of over 300% since the beginning of 2010.11 According to reporting data on the Pennsylvania Department of Environmental Protection’s website,12 nearly 522,000 resulting barrels of “brine,” “frac fluids,” and “drilling fluids” were disposed through “injection disposal wells.” Of these barrels, 2,380 were disposed of in Pennsylvania, and 4,079 disposed of in West Virginia. The remaining 515,000 barrels went to Ohio, representing over 98% of the total Pennsylvania waste disposed through injection wells in 2011.13

Faced with a flood of out-of-state wastewater crossing its border, Ohio amended its own oil and gas laws to include a provision that imposes a two-tier disposal fee, with amounts based on the waste’s place of origin.14 Waste that originates in the state and is disposed of at an Ohio underground injection well is taxed at five cents per barrel, while waste that originates from out of state is subject to a tax of twenty cents per barrel.15 Ohio collected $1.45 million in taxes in 2011.16

Although one could argue this new provision furthers Ohio’s interest in protecting its environment and the health of its citizens and raises revenue for its regulatory program, the Supreme Court has frequently invalidated state laws that impose free-flow restrictions, higher fees, or outright bans on interstate waste on Constitutional grounds.17 While the Constitution does not explicitly prohibit states from enacting laws such as these, the Court has interpreted the Constitution’s affirmative grant of Congress’ power to regulate interstate commerce as exclusive, meaning that states have no authority to erect economic obstacles at their borders.18 A difference of a mere fifteen

11. EIA, supra note 9.
12. The Pennsylvania Department of Environmental Protection publishes statewide data of both the amount of oil and gas produced within the Marcellus Shale, as well as the amount of waste produced, every six months. It is available at https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/DataExports/DataExports.aspx (last visited June 30, 2012) (hereinafter “DEP Waste Database”). All figures, unless attributed otherwise, come from the author’s calculations derived from this data.
14. See OHIO REV. CODE ANN. § 1509.22(H)(1) (West 2012). See also discussion infra Part III.
15. Id.
17. See infra Part IV.
18. See id.
cents per barrel may seem trivial, particularly in the multi-billion dollar natural gas industry, but the Court has been hesitant to view this issue in shades of grey, particularly when the perceived obstruction to interstate commerce is explicit rather than incidental or unintended.19

This Note argues that although the safety of fracking as a whole is currently under rightful scrutiny, access to the safest or least harmful methods of waste disposal will be critical in protecting public health as long as fracking is allowed, particularly in the absence of a federal regulatory regime.20 Barriers to accessing the safest methods of waste disposal are incompatible with a national effort to retrieve natural gas as efficiently and safely as possible, particularly when those barriers are not erected for health and safety reasons.

Part I of this Note briefly explains the history and process of hydraulic fracturing, and how this method of extracting natural gas creates large amounts of "flowback water" that must be disposed of safely. Part II details the current available options for disposal of this wastewater byproduct, with particular emphasis on Pennsylvania's regulatory means for disposal. Part III examines Ohio's regulatory structure for fracking and its impact on the interstate waste market. Part IV then outlines the history and progression of the "dormant Commerce Clause" as applied to the interstate waste market. Finally, Part V determines whether Ohio has created an unconstitutional restriction on the free flow of fracking waste through interstate commerce, and based on Supreme Court precedent, ultimately answers that question in the affirmative.

I. HYDRAULIC FRACTURING AND FLOWBACK WATER

A. How Fracking Works

While fracking has attracted a significant amount of attention in recent years, commercial oil and gas operators have used hydraulic fracturing since 1949.21 In fact, oil and gas operators have used liquids, including nitroglycerin, in attempts to stimulate hard rock wells since the 1860s.22

19. See id.
20. See infra Part I.B.
21. Coastal Oil & Gas Corp. v. Garza Energy Trust, 268 S.W.3d 1, 7 (Tex. 2008).
22. Carl T. Montgomery & Michael B. Smith, Hydraulic Fracturing — History of an Enduring Technology, 62 J. OF PETROLEUM TECH. 26, 27 (Dec. 2010). Stanolind Oil conducted the first recognized experimental fracking treatment, injecting 1,000 gallons of thick napalm into a well in Grant
Hydraulic fracturing as a method of extracting natural gas has become a lucrative practice in recent years for numerous reasons. First, there are abundant natural gas resources within the United States, most notably the Marcellus Shale underlying vast segments of Pennsylvania, New York, Ohio, and West Virginia that is widely believed to hold trillions of cubic feet of natural gas.\textsuperscript{23} Immense amounts of natural gas also exist within Texas' Barnett Shale, the Haynesville/Bossier Shale on the Texas/Louisiana border, Michigan's Antrim Shale, the Fayetteville Shale beneath Arkansas/Oklahoma, and the New Albany Shale underlying much of Illinois and Indiana.\textsuperscript{24}

Second, natural gas burns more cleanly and efficiently than coal or oil.\textsuperscript{25} In fact, the burning of natural gas emits only approximately half the carbon dioxide as coal, with significantly fewer quantities of carbon monoxide, nitrogen oxide, sulfur dioxide, and particulate matter as well.\textsuperscript{26} Because of its status as the cleanest burning fossil fuel, natural gas is generally seen as an important contributor to reducing greenhouse gas emissions in the United States.\textsuperscript{27}

Third, recent technological advancements in the industry, namely horizontal drilling (described below), have made access to these previously untapped resources easier and more profitable.\textsuperscript{28} Although costlier than traditional vertical drilling, horizontal drilling allows the well driller to access greater reserves of natural gas.\textsuperscript{29}

When a well is fracked, it is initially drilled in the same manner as any typical drilling operation.\textsuperscript{30} Operators start by drilling wells vertically, but then turn the drill bit horizontally—sometimes extending over a mile—so that it laterally penetrates what the operator has

\textsuperscript{23} Compare, the U.S. EIA estimates supra note 2 with DANIEL J. SOEDER & WILLIAM M. KAPPEL, UNITED STATES GEOLOGICAL SERVICE, WATER RESOURCES AND NATURAL GAS PRODUCTION FROM THE MARCELLUS SHALE 3 (2009) (citing a 2008 estimate of 363 trillion cubic feet of recoverable natural gas within the Marcellus Shale).

\textsuperscript{24} David M. Kargbo, Ron G. Wilhelm & David J. Campbell, Natural Gas Plays in the Marcellus Shale: Challenges and Potential Opportunities, 44 ENVTL. SCI. & TECH. 5679 (2010). See also DOE Primer, supra note 1, at 17-24 (charting the size and estimated natural gas reserves in each of the aforementioned shales).

\textsuperscript{25} DOE Primer, supra note 1, at 5.

\textsuperscript{26} Id.

\textsuperscript{27} Id. at 5-6.


\textsuperscript{29} Id.

\textsuperscript{30} Hannah Wiseman, Regulatory Adaptation in Fractured Appalachia, 21 VILL. ENVTL. L.J. 229, 236 (2010).
deemed to be productive strata of shale containing oil or gas.31 By penetrating the shale formation horizontally rather than vertically, more of the strata is exposed and more gas can be recovered with a single drilling operation.32

The operator then pumps a fluid mixture down the well at a calculated pressure, which both expands natural fractures in the shale and creates new ones, exposing more surface area.33 Included in this mixture are chemical proppants, which prevent these fractures from closing and allow the gas to more productively return up the wellbore.34 Because the lateral/horizontal portion of the well can stretch for thousands of feet, it is generally not possible to maintain a high enough pressure to sufficiently fracture the shale formation with a single injection of fluids.35 Consequently, the fracturing process is repeated in several stages to ensure the shale in its entirety is sufficiently fractured, with each stage using different volumes of fracture fluids with calculated percentages of additives.36

B. Fracking Fluid and Flowback Water

The fluid used in the fracturing process consists of several million gallons of water, which makes up approximately 98% or more of the fluid’s composition.37 The immense quantities of water used in the fracturing process may be a deterrent in dry south and southwestern states, but the Marcellus Shale has plentiful water resources available, both at the surface and below ground.38 In Pennsylvania, for example, much of the water originates from local rivers, where it is withdrawn by drilling companies, trucked to their well sites, and stored on-site.39

32. DOE Primer, supra note 1, at 46-47.
33. Id. at 56.
34. Id.
35. Id. at 58.
36. Id.
37. Wiseman, supra note 30, at 238-39; DOE Primer, supra note 1, at 61, 64.
39. See Andrea Ramudo & Sean Murphy, Hydraulic Fracturing – Effects on Water Quality 4-6 (2010), http://www.cce.cornell.edu/EnergyClimateChange/NaturalGasDev/Documents/City%20and%20Regional%20Planning%20Student%20Papers/CRP5072_Water%20Quality%20Final%20Report.pdf (describing the authority of the Susquehanna River Basin Commission, which "was created
The remaining 1-2% of the concentration of fracking fluid consists of specially designed chemicals to enhance the fracking process.40 The precise chemical composition of fracking chemicals is proprietary, and therefore not generally disclosed.41 Typical additives in the fluids include sand, oils, gels, acids, alcohols, and various organic chemicals.42 These additives serve several purposes, including reducing friction, preventing microorganisms from impairing the natural gas, and preventing corrosion of metal pipes, among others.43

Several states have passed laws requiring drillers to disclose the contents of their fracking fluids before they are allowed to drill, although chemicals labeled “trade secrets” are generally exempted.44 Stricter state regulation of fracking fluids has become necessary due to the lack of federal oversight; as long as diesel fuel is not injected, the actual practice of fracking is currently exempt from federal regulation, including the disclosure of chemical constituents of fracking fluids.45

In June of 2009, the Fracturing Responsibility and Awareness of Chemicals Act (the “FRAC Act”) was first introduced to Congress.46 The bill seeks to remove this exemption, as well as require more strict disclosure of the chemicals used by the industry. As of this writing, the bill currently awaits committee action in both the House and Senate, with some states explicitly opposing federal oversight of fracking because they believe its regulation should be left to the individual states.47

to protect water quality, create flood mitigation projects, and regulate water withdrawals in the northern regions of the Marcellus Shale.

40. DOE Primer, supra note 1, at 61.
41. Kargbo, supra note 24, at 5681.
42. Marcellus Fact Sheet, supra note 38, at 7.
43. DOE Primer, supra note 1, at 61-63.
44. See, e.g., Ohio Rev. Code Ann. § 1509.10(A)(9)(a) (West 2012) (requiring drillers to disclose additives "intentionally added to facilitate the drilling of any portion of the well" but not including information designated as a "trade secret"); Wyo R. and Reg. OIL GEN Ch. 3 §§ 45(d), 45(f) (West 2012) (requiring well owners or operators to provide "the chemical additives, compounds, and concentrations" used in each stage of well stimulation, but allowing the driller to apply for a trade secret/proprietary information exemption); Ark Admin. Code 178.00.1-B-19(I)(3) (West 2012) (requiring any person who performs hydraulic fracturing within the state to disclose the fluids and additives used in those fluids to the state's Oil and Gas Commission, with a limited trade secret exception). Michigan also recently passed regulations requiring operators to publicly post Material Safety Data Sheets for the chemical additives used in drilling on the Department of Environmental Quality's website. See News Release, Michigan Department of Environmental Quality, Michigan Issues New Orders for Fracking, (May 25, 2011), http://www.michigan.gov/deq/0,1607,7-135--256844--,00.html.
45. See discussion of the Safe Drinking Water Act, infra Part II.A.
47. See, e.g., H.R. 6025, 2011 Leg. (Kan. 2011) (urging Congress to allow the Kansas Corporation Commission to regulate hydraulic fracturing without federal pre-emption); H.R. 3008, 62d
After the fracking treatment is completed, approximately 20 to 30% of the millions of gallons of water used returns to the surface, contaminated with the chemicals and proppants used in the fluid as well as various contaminants naturally present within the shale. This fluid can include high concentrations of salt and naturally occurring radioactive materials such as uranium, thorium, radium, and lead, as well as harmful compounds such as benzene.

This fluid, sometimes referred to as "flowback water" or "wastewater," is typically recovered in a matter of hours but can continue to surface for several weeks to months after the well has begun to produce natural gas. Once it returns to the surface, the flowback water is separated from the natural gas and then stored in steel tanks or trucks at the well site.

II. COLLECTION AND DISPOSAL OF FLOWBACK WATER

A. Available Options

There are a limited number of options for disposing of flowback water once it is collected at the well surface. As discussed below, possible methods of disposal include (1) injection into underground injection wells for permanent disposal, (2) discharging the flowback water to publicly owned treatment works ("POTWs") or commercial treatment plants, or (3) treating and recycling the flowback water for reuse in fracking operations.

1. Underground Injection and the Safe Drinking Water Act

The primary vehicle for disposing of flowback water is underground injection. At the federal level, the Safe Drinking Water Act ("SDWA") regulates any underground injection of flowback water to


51. DOE Primer, supra note 1, at 66.

52. Ramudo, supra note 39, at 9.

53. DOE Primer, supra note 1, at 68.
ensure that underground sources of drinking water are not endangered. The United States Environmental Protection Agency ("EPA") regulates this practice through its Underground Injection Control ("UIC") program created pursuant to Part C of the SDWA, and may delegate the authority to administer the UIC program to individual states.

The federal UIC program classifies wells into several different categories, but only Class II UIC wells may receive fracking fluids. Class II wells can receive fluids that are brought to the surface through oil or natural gas production, as well as other fluids that are injected underground, such as frac fluids, that are meant to enhance oil and gas production. These wells, however, cannot simply be drilled in any location; they require a porous and permeable underground formation to safely receive and store the injected fluids.

Notably, the definition of "underground injection" within the SDWA specifically excludes "the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations." Critics colloquially refer to this exemption as the "Halliburton Loophole." The actual practice of fracking a well, therefore, does not fall within SDWA jurisdiction—unless diesel fuel is used—but the disposal of wastewater via underground injection does.

Although underground injection is the widely preferred method of wastewater disposal, the practice is not without scrutiny. In 2011, a series of eleven earthquakes throughout the area near Youngstown, Ohio resulted in the closure of an underground injection well. State officials instituted a moratorium on injecting wastes within a five-mile radius of the well to allow scientists to analyze seismographic data. Local seismologists believe that the high-pressure injection of

54. The SWDA is found at 42 U.S.C.A. § 300f – 300j (West 2012).
55. See 40 C.F.R. § 144 (West 2012).
56. 42 U.S.C.A. § 300h-1.
57. See 40 C.F.R. § 144.6.
58. Id. at § 144.6(b).
60. DOE Primer, supra note 1, at 68.
62. See Powers, supra note 8, at 939 n.161.
63. DOE Primer, supra note 1, at 68.
64. Henry Fountain, Disposal Halted at Well After New Quake in Ohio, NEW YORK TIMES, January 1, 2012.
65. Id.
wastewater triggered an ancient fault line.66 A similar moratorium occurred in Arkansas in early 2011 after a series of seismic events took place near injection well activity.67

2. Wastewater Treatment and the Clean Water Act

The Clean Water Act ("CWA") prohibits any unauthorized discharge of pollutants into navigable waters of the United States.68 "Pollutant" includes, in relevant part, "chemical wastes," "radioactive materials," and "industrial... waste."69 Flowback water is specifically exempted from the definition of "pollutant," but only in circumstances where it is being re-injected into an active well or a disposal well.70 In these situations, flowback water is already regulated under the aforementioned SDWA, although flowback water being re-injected into an active well via hydraulic fracturing would be exempt from SDWA regulation under the aforementioned "Halliburton Loophole." In any other scenario, flowback water is considered a pollutant under the CWA and thus cannot be directly discharged into navigable waters without a permit.71

The most common way that wastewater falls under the jurisdiction of the CWA is through a public owned treatment works ("POTW"). POTWs are treatment plants that receive wastewater from residential, commercial, and industrial facilities and remove harmful contaminants so that the water may be safely discharged into a water body.72 Before an industrial user discharges waste to a POTW for treatment, the waste must comply with the CWA's National Pretreatment Program, which is

68. 33 U.S.C.A. § 1311(a), 1342(a) (West 2012) (authorizing discharges with a permit).
69. Id. at § 1362(6).
70. See id. at § 1362(6)(B) (exempting "water derived in association with oil or gas production and disposed of in a well, if the well used... for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources.").
71. See 33 U.S.C.A. § 1342. Persons may receive permits which authorize discharges of pollutants through the CWA's National Pollutant Discharge Elimination System ("NPDES"). These permits contain industry-specific, technology-based limits on concentrations of pollutants, as well as mandate monitoring and reporting requirements on the permit holder.
72. 33 U.S.C.A. § 1292(2). See also Streamlining the General Pretreatment Regulations for Existing and New Sources of Pollution, 70 FR 60134-36 (West 2012).
meant to ensure that pollutants do not interfere with the operation of a POTW or pass through the POTW untreated. POTWs develop their own pretreatment standards based on the federal regulations, and industrial dischargers must comply with these standards when sending waste to a POTW. In addition, water that is discharged from a POTW after treatment must comply with a National Pollutant Discharge Elimination System ("NPDES") permit as well, since this water is directly discharged into a navigable water.

3. Recycling of Flowback Water

An additional option that has become popular with both state regulatory agencies and the fracking industry is reusing or recycling flowback water in fracking operations. By recovering flowback water from one well and then reusing it as frac fluid in another well, drillers can greatly reduce costs and limit the amount of fresh water used in fracking operations. The current lack of federal oversight in the actual fracking process, however, may make this a less desirable option from an environmental standpoint. Wells that receive waste for permanent disposal are specifically designed by EPA standards under the SDWA to prevent contamination of underground drinking sources. A production well that reuses flowback water as frac fluid, however, would not be subject to these federal requirements, which could result in greater danger of underground contamination if the relevant state drilling regulations are inadequate. Additionally, recycling technologies are still new and can be costly for drillers; thus, permanent disposal likely will remain the more attractive option until recycling becomes more technologically and economically feasible.

B. Current Pennsylvania Laws and Regulations Concerning Flowback

The oil and gas laws and regulations in Pennsylvania require well operators to properly handle flowback water the moment it originates

73. See 40 C.F.R. § 403.2 (West 2012).
74. See 40 C.F.R. § 405-471 (listing specified standards for particular industrial dischargers).
75. 70 FR 60137 (West 2012).
76. 33 U.S.C.A. § 1342.
77. Wiseman, supra note 30, at 267-68.
78. Id.
79. See 42 U.S.C.A. § 300h(b) (West 2012).
80. See supra Part II.A.1 (stating that the actual practice of fracking is exempt from federal regulation).
81. Wiseman, supra note 30, at 268.
at the well site, as spills of flowback water can severely damage the environment due to its salty and potentially toxic content. Well operators must capture all substances produced from the well in a pit, tank, or series of both.\textsuperscript{82}

Well operators must report the types and volumes of the waste produced at the site, along with the names and addresses of the waste disposal facility and waste hauler who actually performed the disposal.\textsuperscript{83} Waste produced from the drilling, alteration, or operation of a well must be disposed of in a manner consistent with Pennsylvania's Clean Streams Law and Solid Waste Management Act.\textsuperscript{84} The Clean Streams Law allows discharges of pollutants into the waters of the state if the discharger obtains a permit or the discharge is specifically authorized,\textsuperscript{85} and Pennsylvania's oil and gas laws explicitly prohibit well owners from discharging their waste fluids onto the ground or into the state's waters without a such a permit or approval.\textsuperscript{86}

The Pennsylvania Department of Environmental Protection ("Department") authorizes discharge of fracking wastewater from POTWs if certain criteria are met,\textsuperscript{87} but in response to rising levels of bromide in the heavily fracked western portion of the state, the Department has called for all natural gas drilling operators to cease delivering fracking wastewater to POTWs.\textsuperscript{88} Recent statutory amendments require the Department to ensure that any facility that applies for an NPDES permit for treating and discharging oil and gas wastewater "is operated by a competent and qualified individual."\textsuperscript{89}

The decision to prohibit the disposal of produced water at POTWs greatly reduced the available options for the fracking industry's wastewater disposal within Pennsylvania's borders, as the state only has six Class II UIC wells that can receive waste from oil and gas opera-

\textsuperscript{82} 25 PA. CODE § 78.56(a) (West 2012). The tanks and pits must have "sufficient capacity to contain all pollutional substances and wastes which are used or produced during drilling, altering, completing, and plugging [of] the well." Pits must be impermeable and constructed with a synthetic liner of sufficient strength and thickness so as to be resistant to physical, chemical, or other failure during use. Id. § 78.56(a)(4)(i).

\textsuperscript{83} Id. § 78.65(3)(v).

\textsuperscript{84} Id. § 78.55.

\textsuperscript{85} 35 PA. STAT. ANN. § 691.202 (West 2012).

\textsuperscript{86} 25 PA. CODE § 78.57(a).

\textsuperscript{87} Id. § 95.10(b).


As previously stated, from January 2011 to June 2011, 515,000 barrels of "brine," "frac fluids," and "drilling fluids" produced in Pennsylvania were disposed of via injection well in Ohio. In the preceding six months—the final full reporting period before the Department's instruction to stop delivering to POTWs—approximately 351,000 barrels of the same fluids were disposed of via injection well in Ohio. Thus, in just six months, the total amount of fracking waste shipped to Ohio disposal wells jumped 68%.

III. OHIO AND SENATE BILLS 165 AND 315

The only approved methods for disposing of flowback water in the state of Ohio are (1) underground injection, (2) surface application for ice and dust control, (3) permitted methods of secondary recovery in oil and gas drilling, and (4) other methods specifically approved by the Ohio Department of Natural Resources ("ODNR"). Notably, Ohio does not allow for the disposal of flowback water by discharging it into water bodies, either directly or indirectly through POTWs. This is because the Ohio Environmental Protection Agency, which is the state entity responsible for issuing NPDES permits, refuses to issue such permits to POTWs seeking to receive flowback water because it believes that disposal is purely within the jurisdiction of ODNR, which regulates the state's underground injection control program and its Class II wells that receive flowback water.

In the months before the Ohio General Assembly passed Senate Bill 165 ("S.B. 165") in 2010, supporters of the bill within the Ohio oil and gas industry voiced concerns that increased amounts of Pennsyl-

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90. Niquette, supra note 13. EPA has not granted Pennsylvania the authority to administer its own UIC program under the SDWA, so the program is federally implemented. See 40 C.F.R. § 147.1951 (West 2012).
91. DEP Waste Database, supra note 12.
92. Id.
95. See 40 C.F.R. § 147.1800 (acknowledging that EPA has approved Ohio's program for Class II UIC wells). See also Niquette, supra note 13.
vania flowback water would begin to find their way across the border. On March 24, 2010, the Ohio General Assembly passed S.B. 165, a comprehensive overhaul of the state's oil and gas drilling laws. The bill was lauded as a collaborative effort between members of the Ohio Department of Natural Resources and the Ohio Oil and Gas Association to update the state's oil and gas regulatory program for the first time in nearly 25 years. In addition to the "protection of public health, safety, and the environment," as well as addressing persistent concerns over drilling in urban areas, one of the stated goals of the S.B. 165 overhaul was to "[i]ncrease revenue to the state regulatory program to sustainable, adequate levels through a variety of fees and assessments upon the regulated industry." The bill went into effect on June 30, 2010.

From a Constitutional perspective, the pertinent portion of S.B. 165 was its amendment of Section 1509.221 of the Ohio Revised Code, now found in Section 1509.22(H). Section 1509.22(H) imposes a fee of five cents per barrel on the owner of an Ohio Class II injection well for receiving waste that is "produced within the division of oil and gas resources management regulatory district in which the well is located or within an adjoining... district." If the received waste was not produced within such a district or an adjoining district, the fee is twenty cents per barrel. The amount of barrels upon which the fee can be levied is capped at 500,000 per calendar year, and well owners who receive over 500,000 total barrels are instructed to apply the twenty-cent fee to all applicable barrels first.

96. Spencer Hunt, Gas Wells' Leftovers May Wash into Ohio, THE COLUMBUS DISPATCH, January 10, 2010, http://www.dispatch.com/content/stories/local/2010/01/11/gas-wells-leftovers-may-end-up-here.html (last visited June 30, 2012) (quoting Tom Stewart, vice president of the Ohio Oil and Gas Association as saying, "I have a big problem... that (well) capacity isn't overloaded by out-of-state water," and Jack Shaner, lobbyist for the Ohio Environmental Council, as saying "We're looking at a wave of toxic brine headed into this state.").

97. 2010 Ohio Laws File 27 (Sub. S.B. 165) (hereinafter "Ohio Sub. S.B. 165").


99. Id.

100. See Ohio Sub. S.B. 165, supra note 97.


102. See OHIO REV. CODE ANN. § 1509.22(H)(1).

103. Id. § 1509.22(H)(1)(b). In either case, the well owner is instructed to collect the fee and forward it to the state, but may retain up to 3% for him or herself. Id. § 1509.22(H)(3).

104. Id. § 1509.22(H)(2).
The Ohio Legislative Service Commission ("LSC"), which "provides nonpartisan drafting, fiscal, research, training, and other legislative services to the General Assembly,"105 prepared a final analysis of S.B. 165 when it passed both houses of the General Assembly. The LSC had this to say about the fee provisions:

A constitutional issue may be raised with regard to the act's provisions that establish a two-tier injection well disposal fee on the disposal of waste from oil and gas operations . . . . If a court determines that the higher fee, which would be levied on waste generated out of state that is disposed of in this state, results in a differential treatment of in-state and out-of-state economic interests, it is conceivable that the court would hold that the higher fee violates the Commerce Clause of the United States Constitution.106

The remainder of this Note will focus on whether Ohio's fee provisions are in fact a violation of the Commerce Clause.

IV. INTERSTATE WASTE TRANSPORT AND THE COMMERCE CLAUSE

In 1787, Alexander Hamilton described the defects of the United States under the Articles of Confederation:

The interfering and unneighborly regulations of some States, contrary to the true spirit of the Union, have, in different instances, given just cause of umbrage and complaint to others, and it is to be feared that examples of this nature, if not restrained by a national control, would be multiplied and extended till they became not less serious sources of animosity and discord than injurious impediments to the intercourse between the different parts of the Confederacy.107

Article I, Section 8 of the Constitution, ratified just two years later, states that Congress shall have the power "to regulate Commerce . . . among the several States."108 Although the text of this clause only gives Congress an affirmative grant of regulatory power over the states, the Commerce Clause "has long been understood to have a 'negative' aspect that denies the States the power unjustifiably to discriminate against or burden the interstate flow of articles of commerce."109

This judicially crafted "dormant commerce clause" doctrine has several

106. LEGISLATIVE SERVICE COMMISSION, FINAL ANALYSIS OF SUB. S.B. 165, 60 (2010).
107. THE FEDERALIST No. 22 (Alexander Hamilton). See also Nat. Fed'n of Indep. Bus. v. Sebelius, 132 S.Ct. 2566 (2012) (Ginsburg, J., concurring) (slip op. at 13-14) (synthesizing founders' views that regulation of commerce under the Articles of Confederation "proved unworkable" because individual states "understandably focused on their own economic interests [and] often failed to take actions critical to the success of the Nation as a whole").
108. U.S. CONST. art. I, § 8, cl. 3.
justifications, such as historical preference for unimpeded trade between the states, as well as protecting out-of-state residents from being unfairly burdened by laws passed by other state legislatures in which they have no political representation.110

The Court in Hughes v. Oklahoma explained the rationale for this interpretation thusly:

The few simple words of the Commerce Clause—'The Congress shall have Power... To regulate Commerce... among the several States...'-reflected a central concern of the Framers that was an immediate reason for calling the Constitutional Convention: the conviction that in order to succeed, the new Union would have to avoid the tendencies toward economic Balkanization that had plagued relations among the Colonies and later among the States under the Articles of Confederation.111

And in H.P. Hood & Sons, Inc.:

This principle that our economic unit is the Nation, which alone has the gamut of powers necessary to control of the economy... has as its corollary that the states are not separable economic units.112

Constitutional restrictions on state power under this clause are not unlimited; states still retain broad authority under their general police powers to regulate matters of local concern—even if interstate commerce is affected—as long as there is no federal legislation to the contrary.113 However, a state must regulate local interests in such a way that it does not place itself in a position of economic isolation or arbitrarily discriminate against articles of commerce from outside its borders.114

Today, courts typically utilize a two-step analysis when determining whether a statutory or regulatory regime violates the dormant commerce clause.115 The initial step requires the court to determine whether the scheme in question facially discriminates against inter-

110. See, e.g., Robert R.M. Verchick, The Commerce Clause, Environmental Justice, and the Interstate Garbage Wars, 70 S. CAL. L. REV. 1239, 1250-51 (1997). See also H.P. Hood & Sons, Inc. v. DuMond, 336 U.S. 525, 539 (1949) ("Our system, fostered by the Commerce Clause, is that every farmer and every craftsman shall be encouraged to produce by the certainty that he will have free access to every market in the Nation, that no home embargoes will withhold his export, and no foreign state will by customs duties or regulations exclude them. Likewise, every consumer may look to the free competition from every producing area in the Nation to protect him from exploitation by any. Such was the vision of the Founders; such has been the doctrine of this Court which has given it reality.").


112. 336 U.S. at 537-38.


114. Id.

state commerce. "Discrimination" against interstate commerce is achieved if "differential treatment of in-state and out-of-state economic interests . . . benefits the former and burdens the latter." Laws that discriminate in such a manner are overwhelmingly struck down as per se constitutional violations, surviving only if the state demonstrates the law in question advances a legitimate local purpose that cannot be served by reasonable nondiscriminatory means.

Laws that are facially discriminatory but meet this lofty burden are deemed valid under the Constitution. Laws that are not facially discriminatory are then subject to the second stage of the analysis, which is a "much more flexible" balancing test, as first articulated in Pike v. Bruce Church, Inc. Under this balancing test, a law does not violate the dormant Commerce Clause if it (1) regulates even-handedly to protect a legitimate public interest, (2) its effects on interstate commerce are only incidental, and (3) the burden imposed on interstate commerce is clearly not excessive in relation to the local benefits being derived.

In examining the Commerce Clause and waste transport, the Supreme Court has held that garbage is indeed an article of commerce, "not so much the solid waste itself, but rather the service of processing and disposing of it." State regulation that affects the transportation and disposal of waste is therefore subject to the dormant Commerce Clause analysis outlined above. In several previous instances, states have made efforts to keep out-of-state garbage from entering their jurisdictions, consequently raising difficult Constitutional questions. A history of the Court's landmark decisions in this area, referred to as "the Garbage Wars," is detailed below.

120. Philadelphia, 437 U.S. at 624.
122. Id.
A. City of Philadelphia v. New Jersey: The Line is Drawn

The dispute in Philadelphia centered on a New Jersey statute prohibiting the importation of "any solid or liquid waste which originated or was collected outside the territorial limits of the State," with very limited exception. Operators of private landfills in New Jersey, as well as out of state operators who had contracted with these operators to dispose of their waste, alleged the import ban violated the Commerce Clause.

The Court focused its inquiry on whether the statute at issue was simply a measure of economic protectionism—likely per se invalid—or whether the statute could "fairly be viewed as a law directed to legitimate local concerns, with effects upon interstate commerce that are only incidental." The Court considered only the effect of the statute, not its purpose, stating that "whatever New Jersey's ultimate purpose, it may not be accomplished by discriminating against articles of commerce coming from outside the State unless there is some reason, apart from their origin, to treat them differently."

The Court ultimately held the statute was unconstitutional because, on its face, it imposed a ban on out-of-state commercial interests. New Jersey conceded that there was no basis to distinguish out-of-state waste once it reached their landfills, and thus the Court found there was no rational reason to ban the importation of one and not the other.

Before Philadelphia, the Court had recognized that states had the power to ban the importation of infectious materials that could spread disease and endanger public health; "quarantine laws" such as these "ha[d] not been considered forbidden protectionist measures, even though they were directed against out-of-state commerce." The Philadelphia majority, however, differentiated quarantine laws as restrictions on articles of commerce that inherently created a risk of con-

127. Id. at 619.
128. Id. at 624 (citing Pike v. Bruce Church, 397 U.S. 137, 142 (1970)).
129. Id. at 626-27. The stated purpose of the law was to protect the environment and public health from the rapid increase in volume of solid and liquid waste entering the state. The appellants contended the purpose of the law was a financial effort to extend the lives of New Jersey's landfills and avoid having to transport its waste to out-of-state locations.
130. Id. at 628.
131. Id. at 629.
132. Id. at 631 (Rehnquist, J., dissenting).
Traditional landfill waste, on the other hand, did not impose the same risk and could not be regulated as such. Thus, the Court essentially created a "Hobson's choice" for states and their municipal waste; they "must either prohibit all landfill operations,... [or] accept waste from every portion of the United States" to survive Constitutional scrutiny. In the aftermath of Philadelphia, states wishing to pass laws restricting the flow of out-of-state wastes entering their borders began to draft them more carefully to avoid this dilemma.

B. Fort Gratiot: Facial Discrimination without Reference to State Borders

Nearly fifteen years after Philadelphia, the Court was asked to determine the constitutional validity of waste import restrictions within Michigan's Solid Waste Management Act. This act prohibited owners of waste disposal sites from accepting solid waste that was not generated within the county where the disposal site was located unless explicitly authorized. The petitioner, a private landfill operator, argued that the statute was an impermissible discrimination against interstate commerce because it required his business to only accept local waste. Relying on Philadelphia, a lower court ruled the statute did not discriminate against interstate commerce on its face because the import restrictions equally applied to waste from other Michigan counties as well as waste from out-of-state.

The Supreme Court reversed because it found the import restrictions "authorize[d] each of the State's 83 counties to isolate itself from the national economy." It rejected the respondent's argument that the statute evenhandedly regulated in-state and out-of-state commerce and that its burden on interstate commerce was not clearly excessive in relation to its local benefits. In doing so, the Court relied in part on Brimmer v. Rebman, in which the Court struck down a

133. Id. at 628-29.
134. Id.
135. Id. at 631 (Rehnquist, J., dissenting).
136. Chuang, supra note 125, at 2417.
138. Id. at 357.
139. Id.
140. Id. at 357-58.
141. Id. at 361.
142. Id. (citing Pike v. Bruce Church, 397 U.S. 137, 142 (1970)).
143. 138 U.S. 78 (1891).
Virginia statute imposing additional fees on meat imported into the state that was slaughtered more than 100 miles from the place of sale. Even though the statute in that case burdened in-state and out-of-state meat producers similarly, it was still unconstitutional because "a burden imposed by a State upon interstate commerce is not to be sustained simply because the statute imposing it applies alike to the people of all the States." Thus, the Court showed a willingness to find a statutory scheme facially discriminatory against interstate commerce—even in the absence of explicit references to state borders—so long as the scheme based its discrimination on the waste's place of origin.146


The Court also decided two cases in the early 1990s that involved "tipping" fees that were unequally imposed on transporters of out-of-state waste. Decided on the same day as Fort Gratiot, the dispute in Chemical Waste Management v. Hunt centered on an Alabama statute that levied an additional $72 per ton on waste and substances disposed of within Alabama but originating from outside the state. The Alabama Supreme Court held this "tipping fee" did not violate the Commerce Clause because it did not "needlessly obstruct interstate trade or attempt to place Alabama in a position of economic isolation." Rather, it believed the state retained its "broad regulatory authority to protect the health and safety of its citizens," and the tipping fee served "legitimate local purposes that could not adequately be served by available nondiscriminatory alternatives."149

The United States Supreme Court reversed, holding that the additional fee was "an obvious effort to saddle those outside the State with most of the burden of slowing the flow of waste" into the state. The Court rejected the state's argument that the additional fee served a legitimate local purpose of protecting the health and safety of its citizens, ruling that the state had failed to meet necessary burden to justi-

144. *Fort Gratiot*, 504 U.S. at 361 (citing Brimmer v. Rebman, 138 U.S. 78 (1891)).
145. *Brimmer*, 138 U.S. at 82-83 (quoting Minnesota v. Barber, 136 U.S. 313, 326 (1890)).
146. *Fort Gratiot*, 504 U.S. at 361.
149. *Id.*
fy a facially discriminatory restriction. Staying true to its reasoning in Philadelphia, the Court found that Alabama did not provide a legitimate reason for only imposing the fee on out-of-state waste as opposed to intrastate waste, stating "there is absolutely no evidence ... that waste generated outside Alabama is more dangerous than waste generated in Alabama." 152

Two years later, the Court heard a similar case in which the Oregon Department of Environmental Quality approved a $2.25 per ton surcharge on out-of-state waste disposed of within Oregon, as opposed to the comparatively lower fee of $0.85 per ton for in-state waste. The Oregon Supreme Court held the out-of-state surcharge constitutional because it was based on the projected costs the State of Oregon would incur for disposing solid waste generated out of state. The fee was not, in the Oregon Supreme Court's view, "manifestly disproportionate to the services rendered," and therefore was not facially discriminatory despite the explicit reference to place of origin.

The United States Supreme Court again reversed, and again stuck to its reasoning in Philadelphia that the purpose or justification of a law—in this case, defraying the otherwise uncompensated costs to Oregon for disposing out-of-state waste—has no bearing on whether or not it facially discriminates against interstate commerce. Because the surcharge was indeed discriminatory on its face, Oregon had to show that the surcharge advanced a legitimate local purpose that could not be adequately served otherwise by nondiscriminatory alternatives. The Court invalidated the surcharge as unconstitutional, repeating the familiar refrain that the state could offer "no legitimate reason" to subject out-of-state waste a discriminatory surcharge.

151. Id. at 342.
152. Id. at 343-44.
154. Id. at 97-98 (deeming the surcharge as not facially discriminatory because of its express nexus to actual costs incurred by state and local government). See also id. at 109, n.1 (Rehnquist, C.J. dissenting) (listing the identified costs the Oregon's Environmental Quality Commission based the surcharge on, including state activities to improve waste management, increased environmental liability, lost disposal capacity, publicly supported infrastructure improvements, and nuisance impacts from transportation).
155. Id. at 97-98.
156. Id. at 100.
157. Id. at 100-01.
158. Id. at 108.
D. The Dormant Commerce Clause and the Roberts Court: United Haulers

The United States Supreme Court's most recent foray with the dormant Commerce Clause and interstate waste came in 2007, in a case where a local New York waste management authority required all waste to be brought to a state-created public facility, where it would be sorted and sent off for disposal.\textsuperscript{159} The facility collected "tipping fees" significantly higher than the open market to cover its costs.\textsuperscript{160} Waste haulers challenged this "flow control" ordinance as a violation of the Commerce Clause.\textsuperscript{161}

The facts closely mirrored \textit{C&A Carbone v. Town of Clarkstown}, a previous Supreme Court decision, concerning a "flow control" law which essentially required all of a municipality's solid waste to be first sent to a \textit{private} facility.\textsuperscript{162} However, the flow control in \textit{United Haulers} favored a public facility, which the majority found to be a "constitutionally significant" difference.\textsuperscript{163} The Court upheld the ordinance, reasoning that unlike private entities, government is responsible for protecting the health and safety of its citizens.\textsuperscript{164} Therefore, the Court held laws favoring local government via flow control, as opposed to laws favoring private in-state business, do not violate the dormant commerce clause.\textsuperscript{165}

The value of \textit{United Haulers} for purposes of this note is that it reveals the current status of dormant commerce clause jurisprudence should the issue reach the Court again in the near future. Chief Justice Roberts—replacing Justice Rehnquist, the most ardent supporter of states' authority to protect its environment and public health\textsuperscript{166}—

\begin{itemize}
\item \textsuperscript{159} United Haulers Ass'n v. Oneida-Herkimer Solid Waste Mgmt. Auth., 550 U.S. 330, 335-36 (2007).
\item \textsuperscript{160} Id. at 336.
\item \textsuperscript{161} Id. at 337.
\item \textsuperscript{162} 511 U.S. 383, 386-87 (1994). The purpose of the law was to guarantee a minimum flow of waste to the facility to amortize its costs, as the town planned to purchase the facility after five years of private operation. Even though the ordinance equally impacted other in-state garbage processors besides the favored one, the Court nonetheless found the ordinance discriminatory because it allowed only the favored operator to process waste within the town limits, and thus deprived out-of-state garbage processors access to the town's local demand. See id. at 387-91.
\item \textsuperscript{163} United Haulers, 550 U.S. at 334.
\item \textsuperscript{164} Id. at 342.
\item \textsuperscript{165} Id. at 345.
\item \textsuperscript{166} In each of the cases outlined in this Section where a statute was struck down on dormant Commerce Clause grounds, Justice Rehnquist filed a dissenting opinion. For a brief summary on the motifs consistently present in each dissent, see Cantrell, \textit{supra} note 115, at 161-62.
\end{itemize}
authored the majority opinion reaffirming the validity of the traditional two-step dormant Commerce Clause scrutiny, joined by Justices Ginsburg and Breyer in full.167 Justices Alito and Kennedy dissented, but on the grounds that the "state facility exception" was incompatible with traditional dormant Commerce Clause analysis.168 Only Justices Thomas and Scalia indicated disfavor, both concurring in the judgment but authoring opinions that the dormant Commerce Clause has no textual constitutional basis.169 Thus, even without opinions from Justices Sotomayor and Kagan, the current Roberts Court appears to have a five Justice majority that accepts the historical interpretation of the dormant commerce clause.

V. ANALYSIS: IS OHIO'S TWO-TIER DISPOSAL FEE CONSTITUTIONAL?

A. Section 1509.22 is Facially Discriminatory

Returning to the legislation in question, Section 1509.22 of the Ohio Revised Code provides, in pertinent part:

There is levied on the owner of an injection well who has been issued a permit [to operate an underground disposal injection well] the following fees:

(a) Five cents per barrel of each substance that is delivered to a well to be injected in the well when the substance is produced within the division of oil and gas resources management regulatory district in which the well is located or within an adjoining oil and gas resources management regulatory district;

(b) Twenty cents per barrel of each substance that is delivered to a well to be injected in the well when the substance is not produced within the division of oil and gas resources management regulatory

167. United Haulers, 550 U.S. at 333.
168. See id. at 371 (Alito, J., dissenting).
169. Justice Scalia expressed willingness to enforce the dormant Commerce Clause purely on stare decisis grounds in limited situations, but specifically refused to join the majority opinion's use of the Pike balancing test because the balancing of values should be left to Congress, not courts. Id. at 348-49 (Scalia, J., concurring). Despite joining the majority opinion in Carbone, Justice Thomas expressed a newfound desire to discard the Court's dormant Commerce Clause jurisprudence altogether, arguing it "has no basis in the Constitution and has proved unworkable in practice." Id. at 349 (Thomas, J., concurring).
170. As an initial matter, it is of no consequence that the statute imposes the discriminatory fee on in-state operators of injection wells, as opposed to the out-of-state haulers of waste. The Constitutional concern is with the arbitrary discriminatory treatment of the articles of commerce, not what entity the statute or regulation actually burdens. For example, the unconstitutional fee in Chemical Waste Management, Part IV.C supra, was levied on operators of an in-state facility. See 504 U.S. at 338-39 (1992). See also Camps Newfound/Owatonna, Inc. v. Town of Harrison, 520 U.S. 564, 580 (1997) (holding that there is "no analytic difference" under the dormant commerce clause between direct discriminatory burdens on out-of-state entities or indirect burdens imposed via tax on the in-state businesses they deal with).
district in which the well is located or within an adjoining oil and gas resources management regulatory district. 171

As previously stated, dormant Commerce Clause scrutiny begins with an initial determination of whether the statute facially discriminates against interstate commerce. 172 This inquiry is not meant to be a formalistic search for explicit barriers to interstate commerce, but rather should focus on the “practical operation of the statute, since the validity of state laws must be judged chiefly in terms of their probable effects.” 173

Section 1509.22 does not explicitly place higher fees on substances that originate outside of Ohio’s borders, but does so for waste that does not originate “within the division of oil and gas resources management regulatory district in which the well is located” or within an adjoining such regulatory district to the well in question. The term “division of oil and gas resources management regulatory district” is not defined within Ohio’s oil and gas regulations, but apparently the term refers to the regional offices of the Ohio Division of Mineral Resources Management. 174 The office divides the state into three sections: a North, South, and West region. These regions are all adjacent to one another; any region where waste originates must necessarily border the other two. Thus, the heavier fee imposed by Section 1509.22(H)(1)(b) does not impact any waste that originates within the state of Ohio. The statute therefore can—and should—be recognized as facially discriminatory against substances that originate outside the state’s borders. Under Supreme Court precedent, this finding would trigger a virtual per se finding of invalidity.

This conclusion is not affected by the subtle design of the facial discrimination, as opposed to explicit language referencing state borders. Aside from the fact that simple geography makes the phrase “division of oil and gas resources management regulatory district . . . [or] an adjoining oil and gas resources management regulatory district” interchangeable with “Ohio,” the Court has been adept in reading statu-

171. OHIO REV. CODE ANN. § 1509.22(H)(1) (emphasis added).
172. See Part IV, supra.
tory language and making common sense determinations on whether facial discrimination against interstate commerce exists.

For example, in Sporhase v. Nebraska, the Court held that a Nebraska law prohibiting the export of groundwater to any state that did not grant reciprocal rights served as an "explicit barrier to commerce" between Nebraska and Colorado, and thus the law facially discriminated against interstate commerce. Although the statute made no reference whatsoever to Colorado, the Court noted that Colorado law prohibited the export of groundwater, and as a result, the statute effectively served as a ban on trade with Colorado. Thus, the burden fell on Nebraska to demonstrate that its reciprocity provision served a legitimate local purpose, and the Court ultimately struck down the provision as an unconstitutional discrimination against interstate commerce.

Additionally, the statute in question in Fort Gratiot prohibited persons from accepting "solid waste... that is not generated in the county in which the disposal area is located" without explicit approval from the state. The state argued that the prohibition was not facially discriminatory towards interstate commerce because the utilization of county lines as the relevant borders meant in-state and out-of-state waste would be treated the same in many instances; the Court, however, found there was still no reason for Michigan to treat waste from within the county any differently than waste from outside the county.

B. No Legitimate Local Purpose Justifies Facial Discrimination

As explained earlier, a statute that is found discriminatory on its face will survive a per se finding of invalidity only if it (1) serves a legitimate local purpose, and (2) cannot be served as well by available nondiscriminatory means. While states do retain "broad regulatory authority to protect the health and safety of its citizens and the integrity of its natural resources" under the Commerce Clause, legitimate reasons for obstructing the flow of articles in interstate commerce

176. Id.
177. Id. at 957-58.
179. Id. at 361.
180. See Part IV, supra. See also Maine v. Taylor, 477 U.S. 131, 151 (1986).
“apart from their origin” must be shown. Ohio has advanced no legitimate local purpose for its two-tier disposal fee system that is permissibly attained through facial discrimination.

Possible local purposes that Ohio could offer to legitimize its two-tier disposal fee system include (1) raising revenue for its regulatory program, (2) protecting public health and safety amidst concerns of the rising amounts of out-of-state flowback water entering its borders, and (3) requiring that transporters of Pennsylvania waste pay their fair share for their access to the state’s valuable underground storage space. However, these purposes all should fail dormant commerce clause scrutiny. The first two—health concerns and revenue generation—provide no justification for treating in-state waste more favorably. As the Court in Philadelphia made abundantly clear, any legislative means accomplished through discrimination against out-of-state articles of commerce is prohibited unless there is some reason, apart from origin, to treat the articles differently. The third purpose—forcing Pennsylvania industry to pay its fair share and internalize the costs of its increasing reliance on Ohio well space—has also previously been rejected by courts as incompatible with the spirit of the Commerce Clause.

1. Revenue Generation and Public Health Concerns

One of the stated goals of S.B. 165’s overhaul of the Ohio oil and gas laws was to ensure the state regulatory program has “sustainable, adequate levels [of revenue] through a variety of fees and assessments upon the regulated industry.” However, “by itself... revenue generation is not a local interest that can justify discrimination against interstate commerce.” As the Court found in United Haulers, revenue generation is a “cognizable benefit for purposes of the Pike test,” but the Pike balancing test is only applicable where incidental burdens on

183. Niehaus Testimony, supra note 98. Notably, in an effort to raise even more revenue for the state regulatory program, the original version of S.B. 315 doubled the in-state fee to ten cents per barrel, but quintupled the out-of-state fee to one dollar per barrel. See S.B. 315, 129th Gen. Assemb., Reg. Sess. (Ohio 2012) (as introduced), 63-64, available at http://www.legislature.state.oh.us/BillText129/129_SB_315_IY.pdf. This rate increase was rejected by the Ohio Senate.
interstate commerce exist, and is not applicable to facially discriminatory provisions such as Ohio's two-tier disposal fee.

In terms of public health, Ohio has not, and almost certainly cannot, make a legitimate claim that it is imposing a higher fee on the disposal of out-of-state fracking waste because it is potentially more hazardous than waste originating from within. That argument derives from the Court's landmark decision in Maine v. Taylor, the lone Supreme Court decision where a facially discriminatory statute survived dormant Commerce Clause scrutiny.

In Maine v. Taylor, the defendant was indicted for violating a state statute prohibiting the importation of live bait from outside the state. The state argued the ban was a legitimate protection of Maine's fisheries from non-native invasive species that may be included with shipments of out-of-state baitfish. Specifically, the state contended certain types of parasites that were not naturally found within Maine but prevalent in out-of-state baitfish would threaten its indigenous fish population, and there was no possible way to sufficiently inspect shipments for these parasites due to their miniscule size and the large quantities of shipments.

The lower court held that the state had not sufficiently demonstrated any legitimate local purpose served by the ban that could not have been achieved equally without discriminating against interstate commerce. The Supreme Court, however, agreed with the state and reversed, holding that this ban was not a violation of the Commerce Clause because (1) it served a legitimate local purpose by protecting native fisheries, and (2) protecting them could not be achieved as well by available nondiscriminatory means.

Even if Ohio were to proffer evidence that the wastes are materially different (e.g., that the fracking industry in Pennsylvania utilizes different chemicals in its fracking fluid than in Ohio, and thus the out-of-state flowback water has a materially different chemical composition), Ohio law nonetheless still permits the disposal of the out-of-state

187. Id. at 132-33.
188. Id.
189. Id. at 141.
190. Id. at 144.
191. Id. at 151. In finding the import ban constitutional, the Court stated that scientifically accepted techniques for inspection of the baitfish for non-native parasites were minimal or non-existent, and the "abstract" possibility that these testing procedures would or could be developed in the future was not sufficient enough to be considered as legitimate alternative means. See id. at 146-47.
waste in its wells. It would be as if the state in *Maine v. Taylor*, in an effort to protect its native fisheries from foreign invasive species, allowed those invasive species into the state’s waters if a tax was paid. The increased revenue from the tax, unless specifically applied to mitigation efforts (obviously much more inefficient than an outright ban), does not combat the risk. Similarly, allowing out-of-state disposal at a higher price severely undermines any public health justification Ohio might advance.

2. “Fair Share” Rationale

Ohio could also argue that the heightened fee deters Pennsylvania’s industry from transporting mass quantities of fracking waste into Ohio, and thus compels Pennsylvania to fashion a more local solution to the waste problem created by its heavy fracking. Put another way, because Pennsylvania industry is so heavily utilizing disposal wells in Ohio, one could argue it is only fair for Ohio to be able to charge a premium price for access.192 After all, Ohio is providing a service to Pennsylvania that it cannot provide on its own.193 This free-market approach also justifies imposing the lower fee on Ohio’s waste, because with less local drilling the demand for disposing in-state waste is lower.

This “fair share” rationale assumes that states are individual economic units that may make use of a competitive free market in accessing their resources, as opposed to members of one unified economic entity as articulated in dormant commerce clause jurisprudence.194 Simply put, a state cannot punish another state or attempt to shift what it perceives as an unreasonable economic burden through discriminatory legislation.195 The Commerce Clause, as historically interpreted,

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192. Furthermore, in environmental regulation, the costs of producing goods or rendering services are typically expected to be borne by the parties who benefit most. Daniel A. Farber, *Adapting to Climate Change: Who Should Pay*, 23 J. LAND USE & ENVTL. L. 1, 26-28 (2007) (describing the “beneficiary pays” principle).


194. *See Part IV, supra.*

DISCRIMINATION IN THE MARCELLUS SHALE does not envision the supply and demand of competitive markets generating barriers between the states:

[T]he negative implications of the commerce clause derive principally from a political theory of union, not from an economic theory of free trade. The function of the clause is to ensure national solidarity, not economic efficiency. Although the Court's commerce clause opinions have often employed the language of economics, the decisions have not interpreted the Constitution as establishing the inviolability of the free market.196

While Pennsylvania's absence of an adequate in-state method of wastewater disposal is no doubt unsatisfying (particularly given the amount of fracking it permits), its industry still must be allowed unobstructed access to otherwise accommodating out-of-state disposal facilities in the interest of national unity. This is particularly true when national interests as important as domestic energy policy and environmental safety are potentially at stake.

Horizontal drilling in conjunction with hydraulic fracturing is a relatively young technological activity,197 and consequently nearly every facet of fracking, from drilling to disposal, involves some element of risk. A comparative risk analysis, however, would likely reveal that underground injection is one of the more preferable methods of fracking waste disposal, at least for the time being.198 Established underground injection practices are more likely to be able to safely accommodate growing amounts of potentially toxic fracking waste than treatment facilities unaccustomed to its unfamiliar chemical properties. In fact, the U.S. EPA recently announced its intention to develop federal standards for flowback water from natural gas extraction, citing the rising levels of domestic natural gas production and the amount of treatment plants nationwide not properly equipped to han-

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197. See Part I.A., supra.

198. As previously mentioned in Part I.A. supra, the author is aware of recent concern that underground injection can possibly trigger earthquakes if done carelessly or improperly. The need for more stringent seismological and geologic data for Class II wells in reaction to increased amount of injection activity could certainly impact this assessment. A recent study by the National Academy of Sciences concluded that, although the location of faults is currently not a standard prerequisite for siting disposal wells, there have only been a handful of “induced seismic events” linked to the operation of tens of thousands of active injection wells in the United States, and “the presence of a fault does not necessarily imply an increased potential for induced seismicity.” See Induced Seismicity Study, supra note 67, at 8.
dle the wastewater. These wastewater standards, which are expected to be proposed for public comment by 2014, will be based on "demonstrated, economically achievable technologies," and further demonstrate the need for accessible alternative disposal mechanisms in the interim.

Ohio's capacity for disposal activity in such close proximity to the abundant gas resources of the Marcellus Shale can also be seen as a valuable national resource. While Ohio's pore space not as apparent a national resource as timber or coal or corn derived from Iowa topsoil, it nevertheless plays an extremely important role in America's energy future.

Porous subsurface geologic formations are no longer simply viewed as holes in the ground. Disputes over how to allocate property rights in these spaces have gradually become more common across the country and settled by state courts and legislatures. In addition to waste disposal, this underground space is increasingly being considered for carbon capture and sequestration ("CCS"), which is a key technology in efforts to reduce greenhouse gas emissions and mitigate climate change. As subsurface land rights become more valuable—


200. Id.

201. Discriminatory legislation obstructing free access to these more obvious resources would clearly violate the Dormant Commerce Clause. See, e.g., H.P. Hood & Sons v. Du Mond, 336 U.S. 525, 538-39 (1949) ("We need only consider the consequences if each of the few states that produce copper, lead, high-grade iron ore, timber, cotton, oil or gas should decree that industries located in that state shall have priority. What fantastic rivalries and dislocations and reprisals would ensue if such practices were begun!")

202. See, e.g., MONT. CODE. ANN. § 82-11-180 (West 2011) (preserving the property rights of the surface estate owner in the subsurface); N.D. CENT. CODE ANN. §§ 47-31-02, 03 (West 2011) (granting the owner of the surface estate property rights in "pore space," defined as "a cavity or void, whether natural or artificially created, in a subsurface sedimentary stratum"); WYO. STAT. ANN. § 34-1-152 (West 2011) (defining "pore space" as any "subsurface space which can be used as storage space for carbon dioxide or other substances," and vesting the property rights in such space to the surface estate owner). See also Owen L. Anderson, Geologic CO₂ Sequestration: Who Owns the Pore Space?, 9 WYO. L. REV. 97, 99-109 (2009) (considering ownership issues of subsurface pore space in Texas).

in terms of personal wealth as well as America's future domestic energy and climate change mitigation policies—states should rightly be prohibited from adopting legislation that arbitrarily discriminates access. Such protectionism is reminiscent of the turn of the 20th century when state laws seeking to conserve natural resources were upheld on the theory that a state "owned" such resources and could choose whether or not it wanted to sell them. This "natural resources exception" likely has no vitality in the aftermath of Philadelphia and subsequent "Garbage Wars" decisions.

CONCLUSION

This Note has argued that as long as hydraulic fracturing is a prevalent method for extracting natural gas, it should be performed in the least harmful manner possible, from the first day of drilling to the disposal of the last barrel of waste. Many argue that the safest fracking is no fracking at all. This may ultimately prove to be correct. However, as long as a state tolerates the practice of fracking and the disposal of its waste within its borders, the Constitution prohibits placing discriminatory burdens on out-of-state drillers and haulers, absent a legitimate local purpose that cannot otherwise be served. There is both a great national economic interest in unrestricted commerce amongst the states, as well as great local interest in the proper disposal of the wastes created by fracking. States should be discouraged from attempting to individually profit in such situations at the expense of others.

This Note should not be interpreted as arguing that states must lay out welcome mats for the fracking industry. States retain broad authority under their general police power and regulatory authority to heavily supervise fracking and the disposal of its waste if they choose to do so. But once a state decides to allow these activities within its borders, it must treat similarly situated foreign waste on the same footing as its own. Ohio's two-tier disposal fee fails to do so, and thus is likely unconstitutional. A difference of fifteen cents per barrel may seem trivial, but the designation of out-of-state waste as distinctive, purely because of origin, is constitutionally improper. As historically intended and presently interpreted, the Commerce Clause prohibits inequitable treatment of articles of commerce, and is unconcerned

204. Verchick, supra note 110, at 1279.
205. Id. at 1279-80.
whether that treatment is a difference of mere pennies, outright prohibitions, or anything in between.