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We Didn't Start the Fire: The Current Outlook of the Bridgeton Landfill and Its Implications for Missourians

Kristina Youmaran

I. "WELCOME TO THE BRIDGETON LANDFILL"¹

At first glance, a passerby sees flowing green hills in the city of Bridgeton, located just outside of St. Louis, Missouri. However, underneath those seemingly innocent hills lay acres of trash deposited by businesses and individuals. With nowhere else to go, landfills have served the purpose of containing waste created by humans, all while trying to hide the ghastly image of mountains of trash.

In 2012, the Environmental Protection Agency ("EPA") reported that Americans generated approximately 251 million tons of trash.² To the average person, landfills seem like a reasonable solution to store away the garbage and if that waste is contained underground, the harm is minimal. However, the same passerby, with just an adjustment of his car window, may inhale a nauseating stench. Engineers have crafted ways to control landfill odors and help protect the environment from toxins present during the storage of solid waste.³ Waste within landfills contains gases, such as methane from decaying organic matter, which are not only unpleasant to smell but also combustible. The buildup of gases, such as methane, may cause fires both above and below ground.⁴

¹ BRIDGETON LANDFILL HOMEPAGE, <http://www.bridgetonlandfill.com/> (last visited Feb. 10, 2016).

² MUNICIPAL SOLID WASTE, http://www.epa.gov/sites/production/files/2015-09/documents/2012_msw_fs.pdf (last visited Feb. 10, 2016).

³ *Id.*

⁴ TriData Corporations, LANDFILL FIRES THEIR MAGNITUDE, CHARACTERISTICS, AND MITIGATION 1 (2002), *available at* <https://www.usfa.fema.gov/downloads/pdf/publications/fa-225.pdf>.

WE DIDN'T START THE FIRE

The Bridgeton Landfill, now closed to new waste, fell victim to one of these underground fires, which resulted in odor annoyances to the public. When visiting its eccentric website, virtual visitors are greeted with an aesthetically pleasing screen that reads “Welcome to Bridgeton Landfill. We are dedicated to this community and doing the right thing. See how we are committing considerable resources and innovative technologies to control odor and responsibly manage this site.”⁵ The fire gained negative publicity, which the owners at Bridgeton Landfill tried to fix or cover up by focusing on the positive actions taken to resolve the subsurface fire. However, an aesthetically pleasing website with an appearance of transparency, ignores some serious implications the subsurface fire has on local residents.

II. HISTORY OF LANDFILLS AND THE LANDFILL METHANE OUTREACH PROGRAM

Municipal Solid Waste Landfills (“MSWLF”) were created in order to establish a safer deposit for household waste⁶ when urban growth accelerated after World War II, producing increasing amounts of waste.⁷ Because previous methods of open landfills or burning waste were no longer a safe way to dispose of waste, in 1965, the U.S. Public Health Service (“USPHS”) passed the Solid Waste Disposal Act to initiate sanitary landfill practices.⁸ When the Environmental Protection Agency (“EPA”) was created in 1970, this responsibility shifted to it.⁹ The EPA continued to improve the sanitary waste efforts in the years to follow.¹⁰ By 1976, Congress enacted the Resource Conservation and Recovery Act (“RCRA”) to allow the EPA to set

⁵ BRIDGETON LANDFILL HOMEPAGE, <http://www.bridgetonlandfill.com/> (last visited Feb. 10, 2016).

⁶ MUNICIPAL SOLID WASTE, <http://www.epa.gov/epawaste/nonhaz/municipal/> (last visited Feb. 10, 2016).

⁷ H. Lanier Hickman Jr., *A Brief History of Solid Waste Management in the US During the Last 50 Years Part. 3: The Sanitary Landfill*, FORESTER DAILY NEWS (March 1, 2000), available at <http://foresternetwork.com/daily/waste/a-brief-history-of-solid-waste-management-in-the-us-1950-to-2000/> (last visited Feb. 10, 2016).

⁸ H. LANIER HICKMAN JR., A BRIEF HISTORY OF SOLID WASTE MANAGEMENT IN THE US DURING THE LAST 50 YEARS PART. 3: THE SANITARY LANDFILL (1999), available at http://www.mswmanagement.com/MSW/Articles/A_Brief_History_of_Solid_Waste_Management_in_the_US_4437.aspx.

⁹ *Id.*

¹⁰ *Id.*

better guidelines and criteria for sanitary landfills.¹¹ Now, MSWLFs are regulated under 40 C.F.R. Part 258 (Subtitle D of RCRA) and by state regulations that follow the federal regulation.¹² Despite these regulations, throughout the late twentieth century, the EPA remained relatively passive concerning enforcement of the criteria established by Subtitle D of the RCRA.¹³

The number of landfills appears to be on the decline, according to data released by the United States Fire Association.¹⁴ Data reveals there were about 8,000 legal landfills in 1988,¹⁵ but only 1,908 in 2009.¹⁶ This decrease is linked to stricter regulations and enforcement set forth by the EPA.¹⁷

One such effort was introduced in 1994,¹⁸ when the EPA established the Landfill Methane Outreach Program (“LMOP”), which aimed to reduce methane emissions from landfills by encouraging the conversion of landfill gas (“LFG”) into various facilities, homes, and machinery.¹⁹ When LFG is released within the landfill, the systems (wells and a blower/flare/vacuum system) set in place under LMOP extract, process, and treat it with a method aligned with its assigned use, such as replacing fossil fuels, generating electricity, or as a gas to run vehicles.²⁰ In order to complete this project, the EPA collaborated with “communities, landfill owners, utilities, power

¹¹ *Id.*

¹² LANDFILLS, <http://www.epa.gov/epawaste/nonhaz/municipal/landfill.htm> (last visited Feb. 10, 2016).

¹³ Hickman, *supra* note 7.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, MUNICIPAL SOLID WASTE IN THE UNITED STATES 169 (2009), *available at* <http://www.epa.gov/waste/nonhaz/municipal/pubs/msw2009rpt.pdf>.

¹⁷ Hickman, *supra* note 7.

¹⁸ AN OVERVIEW OF LANDFILL GAS ENERGY IN THE UNITED STATES, <http://www.epa.gov/outreach/lmop/documents/pdfs/overview.pdf> (last visited Feb. 10, 2016).

¹⁹ LANDFILL METHANE OUTREACH PROGRAM, <http://www.epa.gov/outreach/lmop/index.html> (last visited Feb. 10, 2016).

²⁰ LANDFILL METHANE OUTREACH PROGRAM, <http://www3.epa.gov/lmop/basic-info/index.html> (last visited Feb. 10, 2016).

marketers, states, project developers, tribes, and nonprofit organizations” and addressed finances, marketing, and project feasibility.²¹

Although established in 1994, LMOP was not implemented until 2013.²² In July 2014, the EPA released data reports from each of the states that outlined the status of each landfill and the project.²³ The EPA organized the landfill projects into the following categories: operational, construction, planned, shutdown, candidate, potential, and other.²⁴ Missouri currently has 37 sites that have an LFG collection system in place, with the Bridgeton Landfill listed as a “potential” site, despite currently having an LFG collection system in place.²⁵ The “potential” listing distinguishes sites that have incomplete data, are not accepting waste, or have been closed for more than five years.²⁶ However, such sites still qualify for LFG energy projects.²⁷

Legal Regulations

As previously mentioned, MSWLFs are regulated under 40 C.F.R. Part 258 (Subtitle D of RCRA) and by state regulations that implement the federal regulation.²⁸ The federal regulations set location restrictions, composite liners requirements, leachate collection and removal, operating practices, monitoring requirements, closure and post-closure care requirements, corrective action provisions, and financial aid.²⁹ Detailed documents can be found on the EPA’s online database.³⁰

²¹ *Id.*

²² LANDFILL METHANE OUTREACH PROGRAM, <http://www3.epa.gov/lmop/documents/pdfs/overview.pdf> (last visited Feb. 10, 2016).

²³ *See generally*, Landfill and Project Data (all statuses), Landfill Methane Outreach Program, United States Environmental Protection Agency, <http://www.epa.gov/outreach/lmop/projects-candidates/index.html#map-area> (last visited Feb. 10, 2016).

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

²⁸ LANDFILLS, <http://www.epa.gov/epawaste/nonhaz/municipal/landfill.htm> (last visited Feb. 10, 2016).

²⁹ *Id.*

³⁰ Environmental Protection Agency, *Information Resources*, ENVIRONMENTAL PROTECTION AGENCY (Apr. 15, 2015), <http://www3.epa.gov/epawaste/inforesources/>.

Missouri also enacted its own statutes to regulate landfills. Various statutes concern public health and public nuisances. For example, under the Revised Statutes of Missouri (“RSMo”), Section 260.210.1.(4), it is unlawful for any person to “store, collect, transport, process, or dispose of solid waste in violation of the rules, regulations or orders of the department or in such a manner as to create a public nuisance or adversely affect the public health.”³¹ On air quality, Missouri also specified under 10 CSR 80-3.010(13)(C) that the “burning of solid waste shall be prohibited,”³² and any burning practices exempted from this provision with a permit “shall be conducted in accordance with Chapter 643, RSMo, the corresponding rules, the terms conditions, or both, of the plans, permit, or both, and all local requirements.”³³

Further, in regards to gas control, 10 CSR 80-3.010(14)(C)2 requires that “[p]lans shall assess the need for gas control and indicate the location and design of any vents, barriers or other control measure to be provided.”³⁴ These designs for the gas control mechanism must also meet standards that require them to be chemically resistant and made to a certain strength and thickness in order to reduce chances of a collapse.³⁵

Another seemingly general, but important regulation, is 10 CSR 80-3.010(19)(A), which requires that “[t]he sanitary landfill shall be designed, constructed and operated in a manner so as to protect the health and safety of personnel and others associated with and affected by the operation.”³⁶ Although not explained in detail, the regulation generally requires the landfill to be designed in a way that is compatible with the surrounding area and operate in a way that controls dust exposure and extinguishes fires.

³¹ MO. REV. STAT. § 260.210.1.(4) (2015)

³² MO. CODE REGS. ANN. tit. 10, § 80-3.010(13)(C) (2015).

³³ *Id.*

³⁴ MO CODE REGS. ANN. tit. 10, § 80-3.010(14)(B)2 (2015).

³⁵ MO. CODE REGS. ANN. tit. 10, § 80-3.010(14)(C)2(A)-(E) (2015).

³⁶ MO. CODE REGS. ANN. tit. 10, § 80-3.010(19)(A) (2015).

History of the Bridgeton Landfill

The Bridgeton Landfill has been in operation since November 1985.³⁷ Between the North and South Quarries, the site covers 52 acres and extends approximately 240 feet underground.³⁸ Having grown over the course of approximately 30 years, its waste thickness currently reaches about 320 feet³⁹ with approximately 9,692,739 tons of waste.⁴⁰ In December 2004, the site stopped accepting new waste.⁴¹

A subsurface fire reported in the North Quarry area of the landfill in 1992 was not extinguished until 1995.⁴² Then in 2010, increased temperatures were once again reported, along with low methane counts and higher hydrogen and carbon monoxide concentrations.⁴³ This combination, which is typically indicative of an underground “smoldering event,” pushed the Solid Waste Management Program to take actions to prevent the underground fire from spreading.⁴⁴ These actions appeared to work until 2012, when the heat levels began to rise, along with complaints of odors from nearby businesses and residents.⁴⁵ Landfill fire experts confirmed the presence of a subsurface smoldering event in the landfill, and issued Bridgeton Landfill, LLC a notice of violation, citing Section 260.210.1(4) of the Revised Statutes of Missouri (“RSMo”), which “prohibits the storage or disposal of solid waste in any manner that creates a public nuisance or

³⁷ Solid Waste Management Program, *Site Background – Bridgeton Sanitary Landfill*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Nov. 14, 2015), <http://dnr.mo.gov/env/swmp/facilities/BridgetonSanitaryLandfill-Background.htm>.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ Landfill Methane Outreach Program, *Landfill and Project Data (all statuses)*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (Mar. 4, 2015), <http://www.epa.gov/outreach/lmop/projects-candidates/index.html#map-area> (follow “Landfill and project data (all statuses)” hyperlink; then click on “LMOP Databases” tab and scroll down to “Bridgeton Landfill”).

⁴¹ Solid Waste Management Program, *Site Background – Bridgeton Sanitary Landfill*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Nov. 14, 2015), <http://dnr.mo.gov/env/swmp/facilities/BridgetonSanitaryLandfill-Background.htm>.

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

adversely affects public health.”⁴⁶ The notice also set forth required actions to control the smoldering event and the migration of the methane gas.⁴⁷

By early 2013, Bridgeton Landfill installed a blower skid, 40 new gas-extraction wells, 14 temperature-monitoring probes, and a membrane liner with soil to reduce odor.⁴⁸ The company also began daily inspections to check for odor sources, temperature, and changes with settlement.⁴⁹ During this time, the Missouri Department of Natural Resources began its collection of air samples, and it eventually sent the Missouri Attorney General a referral letter urging his office to take actions with regard to the environmental laws that the landfill, which at this time was owned by Republic Services Inc., was violating.⁵⁰ A lawsuit by the Attorney General followed, along with a First Agreed Order of Preliminary Injunction.⁵¹ The Injunction ordered the owners of the landfill to complete a number of action items, including reimbursement of various monitoring costs and relocation of residents affected by the odor nuisance.⁵²

Progress continued with the landfill improvements initiative as new concrete pipes were installed to help with the odor release and the collection of gas and liquids, as well as the liners.⁵³ However, odors persisted to seep from the landfill through the end of 2013, due to the work being done on the site and freezing temperatures that caused equipment malfunctions.⁵⁴

⁴⁶ Larry Lehman, *Notice of Violation*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Jul. 23, 2012) <http://dnr.mo.gov/env/swmp/bridgeton/bridgetonnovandnovcoverltr7-23-12.pdf>.

⁴⁷ *Id.*

⁴⁸ Solid Waste Management Program, *Site Background – Bridgeton Sanitary Landfill*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Nov. 14, 2015) <http://dnr.mo.gov/env/swmp/facilities/BridgetonSanitaryLandfill-Background.htm>.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *First Agreed Order*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Nov. 14, 2015) <http://dnr.mo.gov/env/swmp/facilities/docs/firstagreedorder.pdf>.

⁵³ Solid Waste Management Program, *Site Background – Bridgeton Sanitary Landfill*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Nov. 14, 2015), <http://dnr.mo.gov/env/swmp/facilities/BridgetonSanitaryLandfill-Background.htm>.

⁵⁴ *Id.*

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As a result of the odors, attorney Ted Gianaris filed a class action suit on behalf of the residents in the Bridgeton area⁵⁵ living in the 400 homes closest to the landfill.⁵⁶ The complaint resulted in a settlement which received preliminary approval on April 17, 2014. The settlement stated that the odors caused a nuisance and as a result of the odors there was a loss in property value.⁵⁷ The settlement payed the class members about \$7 million in damages,⁵⁸ which averaged about \$12,750 per household.⁵⁹ If a household chose to collect, members could not file any additional nuisance claims in regards to property damage.⁶⁰ However, they would be able to file lawsuits in relation to future health issues as a result of the odors.⁶¹

Around the same time as the class action suit, Missouri Attorney General Chris Koster, began the proceedings to sue Bridgeton Landfill for environmental violations.⁶² By the beginning of 2014, Koster amended the First Agreed Order of Preliminary Injunction to allow for additional relief.⁶³ By February 2014, the odors continued near the landfill as mechanical issues

⁵⁵ Blythe Bernhard, *Bridgeton Landfill Owners to Pay Nearby Residents \$6.8 Million in Lawsuit Over Stink*, ST. LOUIS POST-DISPATCH (Apr. 18, 2014, 12:00am), http://www.stltoday.com/lifestyles/health-med-fit/health/bridgeton-landfill-owners-to-pay-nearby-residents-million-in-lawsuit/article_9d74a35a-4524-5a86-834c-db5e698271e3.html; see generally *Preliminary Approval Order* (Apr. 17, 2014) [http://mediad.publicbroadcasting.net/p/kwmu/files/201404/2014-04-](http://mediad.publicbroadcasting.net/p/kwmu/files/201404/2014-04-17_Preliminary_Approval_Order_-_signed.pdf)

17 Preliminary_Approval_Order_-_signed.pdf.

⁵⁶ Blythe Bernhard, *Bridgeton Landfill Owners to Pay Nearby Residents \$6.8 Million in Lawsuit Over Stink*, ST. LOUIS POST-DISPATCH (Apr. 18, 2014, 12:00am), http://www.stltoday.com/lifestyles/health-med-fit/health/bridgeton-landfill-owners-to-pay-nearby-residents-million-in-lawsuit/article_9d74a35a-4524-5a86-834c-db5e698271e3.html.

⁵⁷ *Residents Near Bridgeton Landfill to Receive Settlement for Noxious Odors Underground Fire*, Simmons Hanly Conroy Law Firm (Apr. 17, 2014), available at <http://www.simmonsfirm.com/news/item/residents-near-bridgeton-landfill-receive-settlement-noxious-odors-underground-fire/>.

⁵⁸ *Id.*

⁵⁹ Blythe Bernhard, *Bridgeton Landfill Owners to Pay Nearby Residents \$6.8 Million in Lawsuit Over Stink*, ST. LOUIS POST-DISPATCH (Apr. 18, 2014, 12:00am), http://www.stltoday.com/lifestyles/health-med-fit/health/bridgeton-landfill-owners-to-pay-nearby-residents-million-in-lawsuit/article_9d74a35a-4524-5a86-834c-db5e698271e3.html.

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ Solid Waste Management Program, *Site Background – Bridgeton Sanitary Landfill*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Nov. 14, 2015) <http://dnr.mo.gov/env/swmp/facilities/BridgetonSanitaryLandfill-Background.htm>.

occurred with the flare system.⁶⁴ The following month, a surface fire caused additional damage to the landfill's mechanical infrastructure, which in turn led to continuing odors.⁶⁵

In response, Koster sent a letter to the EPA stating that a year had passed since the Bridgeton Landfill owners were notified of the environmental law violations and that a majority of the concerns were still not resolved.⁶⁶ The letter also brought attention to the radioactive waste stored north of the landfill, which was at risk for being exposed to the smothering event underground.⁶⁷ In April 2014, Koster sent another letter to the EPA, indicating that testing showed there might be radioactive waste in the Bridgeton Landfill, and if further testing confirmed its presence, then immediate removal must occur.⁶⁸ Koster then released a Second Amendment to the First Agreed Order, which outlined the new action items including additional air testing, slope stability analysis, odor monitoring, and updates on current equipment.⁶⁹

This information became available on Missouri's Department of Natural Resources website and was reposted in the media.⁷⁰ In order to quickly respond to the legal orders and to public concern over the odors, the Bridgeton Landfill staff created an online "Bridgeton Order Concern Form," which allowed the staff to identify and react to new odors quickly.⁷¹ Reported

⁶⁴ Solid Waste Management Program, *Site Background – Bridgeton Sanitary Landfill*, MISSOURI DEPARTMENT OF NATURAL RESOURCES (Nov. 14, 2015) <http://dnr.mo.gov/env/swmp/facilities/BridgetonSanitaryLandfill-Background.htm>.

⁶⁵ *Id.*

⁶⁶ Letter from Attorney Gen. of Missouri Chris Koster to EPA Regional Administrator Karl Brooks (March 18, 2014), *available at* <http://dnr.mo.gov/env/swmp/facilities/docs/agltrtoeparad031814.pdf>.

⁶⁷ *Id.*

⁶⁸ Letter from Attorney Gen. of Missouri Chris Koster to EPA Regional Administrator Karl Brooks (Apr. 29, 2014), *available at* <http://dnr.mo.gov/env/swmp/facilities/docs/epahaulroads042914.pdf>.

⁶⁹ Second Amendment to First Agreed Order of Preliminary Injunction, *State of Missouri v. Republic Services, Inc., Et Al*, No. 13SL-CC01088 at 5-11, (June 18, 2014), *available at* <http://dnr.mo.gov/env/swmp/facilities/docs/061914filedsecondamendmenttofirstagreedorder.pdf>.

⁷⁰ Bridgeton Sanitary Landfill Facility Information, MISSOURI DEPT. OF NAT. RES., <http://dnr.mo.gov/bridgeton/> (last visited Apr. 15, 2015).

⁷¹ *Id.*

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odors declined in early March 2015, when a report was released that disclosed that out of 73 odor complaints submitted from 24 individuals, 50 percent of the complaints were made by only four individuals.⁷² The Bridgeton Landfill staff announced that of these complaints, only seven were related to the Bridgeton Landfill site.⁷³ This was a significant drop from April 2014 when the notification system was first implemented.⁷⁴ New reports of odors emerged in March 2015 on the southeast corner of the South Quarry, forcing the Bridgeton Landfill staff to fix a broken part of the EVOH (a type of barrier film) capping system.⁷⁵ On March 20, 2015, Bridgeton Landfill released another report, announcing that carbon monoxide levels were reportedly declining in certain gas wells, implying the subsurface fire was being managed and retained in the South Quarry.⁷⁶ The North Quarry, which housed the radioactive material, was not impacted.⁷⁷ Just over two weeks later, a report disclosed that 14 people had filed 36 new odor complaints, but an investigation concluded that none of the odors were related to the Bridgeton Landfill site.⁷⁸ The Bridgeton Landfill staff has been open and responsive as they take efforts to stop the fire and ease the general public's concern over any nuisances the odors caused by the fire.⁷⁹

⁷² Bridgeton Landfill LLC, *Actual Odor Occurrences Continues Steady Decline* (March 4, 2015) *available at* http://www.bridgetonlandfill.com/sites/default/files/docs/news_updates/Actual_Odor_Occurrences_Continue_Steady_Decline-030415.pdf.

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ BRIDGETON SANITARY LANDFILL FACILITY INFORMATION, <http://dnr.mo.gov/bridgeton/> (last visited Feb. 10, 2016).

⁷⁶ Bridgeton Landfill LLC, *CO Levels Continue to Drop in Neck Area Gas Wells* (March 20, 2015) *available at* http://www.bridgetonlandfill.com/sites/default/files/docs/news_updates/CO_Levels_Continue_to_Drop_in_Neck_Area_Gas_Wells-032015.pdf.

⁷⁷ *Id.*

⁷⁸ Bridgeton Landfill LLC, *Construction on Sewer Line Extension Now Complete* (Apr. 3, 2015) *available at* http://www.bridgetonlandfill.com/sites/default/files/docs/news_updates/Construction_on_Sewer_Line_Extension_Now_Complete-40315.pdf.

⁷⁹ Bridgeton Sanitary Landfill Facility Information, *supra* note 70.

The West Lake Landfill

North of the Bridgeton Landfill sits one of the oldest radioactive waste sites, the West Lake Landfill,⁸⁰ with around 143,000 cubic yards of waste.⁸¹ Its history began in 1942, when the University of Chicago created the Manhattan Project, the primary purpose of which was to purify uranium.⁸² This processing procedure created mass amounts of radioactive waste, which was stored throughout St. Louis and at the West Lake site.⁸³ It was not until 2008 that the radioactive waste site was “capped,” which entailed “piling five feet of dirt and rocks on top and implementing long-term monitoring for contamination.”⁸⁴ With the site only 1.5 miles away from the Missouri River and only 8 miles away from a drinking water reservoir, residents have voiced their concerns over possible contamination of St. Louis’ water supply.⁸⁵ The subsurface fire is currently plaguing the Bridgeton Landfill, and it is unknown what will happen if it reaches the West Lake Landfill. Even if the fire is contained, the waste at the West Lake Landfill continues to pose at least some risk to residents, whether it is contamination of the water supply or another fire that can disrupt the radioactive materials.

In February 2013, a resolution transferred rights for the West Lake Landfill to the Army Corps of Engineers’ Formerly Utilized Sites Remedial Actions Program (“FUSRAP”), which has a track record of clearing radioactive waste from other sites.⁸⁶ Legally, however, West Lake is under federal jurisdiction, which requires Congress to transfer those rights to FUSRAP.⁸⁷ With other government officials⁸⁸ in Missouri advocating for

⁸⁰ OFFICE OF EMERGENCY MGMT., ENVIRONMENTAL PROTECTION AGENCY, RADIOLOGICAL AND INFRARED SURVEY OF WEST LAKE LANDFILL BRIDGETON, MISSOURI 2 (2013), *available at* http://www3.epa.gov/region07/cleanup/west_lake_landfill/pdf/aspect_survey_report_may2013.pdf

⁸¹ Steven Hsieh, *St. Louis is Burning*, ROLLING STONE (May 10, 2013), <http://www.rollingstone.com/politics/news/st-louis-is-burning-20130510>.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

more nuclear reactors in the state, the West Lake Landfill will not receive the attention it should get.⁸⁹

The Water Pipeline Concern

The owners of the Bridgeton Landfill hope to build a pipeline that will move wastewater (“leachate”) to a sewage treatment plant, which has led residents to fear possible toxic contamination.⁹⁰ Tests have shown that although the leachate from the Bridgeton Landfill has no radioactive contaminants, the underground fire has increased the production of the leachate from the Bridgeton Landfill by around 50,000 gallons a day, and has also increased amounts of benzene, a known carcinogen.⁹¹

Residents also worry about this pipeline because recent events with the underground fire cast doubt on the Bridgeton Landfill owners’ ability to enforce regulations and monitoring efforts.⁹² Currently, the leachate is transported by truck, the safety of which is uncertain.⁹³ Yet, Bridgeton Landfill officials maintain that the “new leachate treatment plant meets all MSD[Material Safety Data]⁹⁴ standards,” pointing out that “an MSD spokesman says by the time the landfills’ waste hits the pipeline, it’s no different than any other industrial waste the sewer district already accepts.”⁹⁵ The pipeline must be inspected twice a day while under construction, and requires daily reporting and weekly leachate inspections.⁹⁶ Without additional study, it is difficult to know whether the underground fire is a valid reason for concern in the community, or if the pipeline is simply a more

⁸⁸ *Id.* These officials included McCaskill, Blunt, and Nixon.

⁸⁹ Hsieh, *supra* note 81.

⁹⁰ Veronique Lacapra, *St. Ann Officials Voice Concern About Bridgeton Landfill Wastewater Pipeline*, ST. LOUIS PUBLIC RADIO (Dec 30, 2014), <http://news.stlpublicradio.org/post/st-ann-officials-voice-concern-about-potential-risks-bridgeton-landfill-wastewater-pipeline>.

⁹¹ *Id.*

⁹² Grant Bissell, *New Pipeline Raises Concerns Near Bridgeton Landfill*, KSDK.COM (Feb 2, 2015), <http://www.ksdk.com/story/news/local/2015/02/02/new-pipeline-raises-concerns-near-bridgeton-landfill/22775727/>.

⁹³ *Id.*

⁹⁴ *Id.* “Material Safety Data”.

⁹⁵ *Id.*

⁹⁶ *Id.*

effective mode of transporting leachate. As of April 3, 2015, the pipeline was reported as complete and functioning.⁹⁷

Cases from Other States

Other states experiencing odor or leachate nuisance cases generally ruled that affected parties may collect monetary damages from private landfill owners. In one case, *Southeast Arkansas Landfill, Inc. v. State*,⁹⁸ Arkansas filed suit against a landfill owner in response to a number of odor complaints.⁹⁹ Although the cause of the odor and the basis for the complaint differ from Bridgeton Landfill's issues, it is relevant that the Supreme Court of Arkansas found that the landfill operator "fail[ed] to properly monitor and protect the State's groundwater, and...stor[ed] its waste stream in such a manner as to constitute a public nuisance."¹⁰⁰ The court granted judgment for the state because the odors were a nuisance in that they "unreasonably interfere[d] with the use and enjoyment of the lands of another and include[d] conduct on property which disturb[ed] the peaceful, quiet, and undisturbed use and enjoyment of nearby property."¹⁰¹

In a South Carolina case, *Babb v. Lee County Landfill SC, LLC*,¹⁰² a court also awarded residents actual, punitive, or compensatory damages, holding that residents could collect damages for the value of their homes because of the nuisance, because offensive odors constitute a nuisance.¹⁰³

Closer to home, in a Missouri case, *Frank v. Environmental Sanitation Management, Inc.*,¹⁰⁴ the Missouri Supreme Court ruled that leachate was a nuisance and that landowners could collect for any resulting

⁹⁷ *Construction on Sewer Line Extension Now Complete*, BRIDGETON LANDFILL LLC, (Apr. 3, 2015), http://www.bridgetonlandfill.com/sites/default/files/docs/news_updates/Construction_on_Sewer_Line_Extension_Now_Complete-40315.pdf.

⁹⁸ *Se. Ark. Landfill, Inc. v. State*, 858 S.W.2d 665 (1993).

⁹⁹ *Id.* at 666.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Babb v. Lee Cnty. Landfill SC, LLC*, 405 S.C. 129, 747 S.E.2d 468, 471 (2013).

¹⁰³ *Id.*

¹⁰⁴ *Frank v. Env'tl. Sanitation Mgmt., Inc.*, 687 S.W.2d 876 (Mo. 1985).

permanent damage.¹⁰⁵ The court found that an intentional act could be classified as a nuisance if the “defendant intentionally did an act which happened to interfere with plaintiff’s land.”¹⁰⁶ To satisfy this test, a jury has to find that:

(1) Plaintiff owned the damaged buildings, (2) defendant diverted the normal flow of water, (3) defendant allowed the deterioration of a drain near plaintiff’s land, (4) water collected on defendant’s land and was discharged on plaintiff’s land in unnatural volumes, (5) defendant used his land unreasonably, and (6) plaintiff was damaged as a direct result.¹⁰⁷

These instructions were extended to also include a situation where a “hog farm polluted the air and water on plaintiff’s property.”¹⁰⁸ The *Frank* court¹⁰⁹ found that “jury had sufficient evidence to conclude circumstances surrounding the construction of the landfill constituted a sufficiently intentional act to impose liability for a nuisance.”¹¹⁰

III. SO, WHAT NOW?

One of the primary concerns with the underground fire at the Bridgeton Landfill is what happens if the nearby radioactive materials are disturbed. Bridgeton Landfill officials continue to reassure the public that the fire is contained and will not disturb any radioactive materials.¹¹¹ However, in March 2014, Attorney General Koster wrote a letter to the EPA, which called for action on the radioactive waste in the West Lake site, specifically the creation of an isolation barrier.¹¹² The letter also referred to testing indicating that some of the radioactive material may be present within the

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*; see *The Law of Private Nuisance in Missouri*, 44 Mo.L.Rev. 20, 51 (1979).

¹⁰⁷ *Genova v. City of Kan. City*, 497 S.W.2d 555 (Mo. App. 1973).

¹⁰⁸ *Bower v. Hog Builders Inc.*, 461 S.W.2d 784 (Mo. 1970).

¹⁰⁹ *Frank v. Env'tl. Sanitation Mgmt., Inc.*, 687 S.W.2d 876 (Mo. banc 1985).

¹¹⁰ *Id.* at 882.

¹¹¹ BRIDGETON LANDFILL HOMEPAGE, <http://www.bridgetonlandfill.com/> (last visited Feb. 10, 2016).

¹¹² Letter from Attorney General Koster to the EPA, *available at* <http://www.dnr.mo.gov/env/swmp/facilities/docs/agltrtoeparad031814.pdf>.

northern limits of the Bridgeton Landfill.¹¹³ So, how does one handle conflicting claims? Only continued testing of the area can conclusively determine whether or not there is leakage of the radioactive material.

Even if the fire were to spread North and reach either the West Lake landfill or any radioactive materials alleged to be in the Bridgeton Landfill, a study for the EPA found that the waste will “not become more or less radioactive in the presence of heat...and... is not explosive and will not become explosive in the presence of heat.”¹¹⁴ Additionally, if the fire were to reach the radioactive waste, it “would create no long-term additional risks to people or the environment” and “[t]he heat...is not high enough to ignite...wastes or chemical compounds or to cause them to explode.”¹¹⁵

Analysis completed by another EPA office found that with additional heat, the cap on the waste might crack and release radioactive dust and radon gas into the air.¹¹⁶ This is especially worrisome because the cap is only examined once each year. Therefore, theoretically, residents of the area may be exposed to radon gas for months without realizing it.¹¹⁷

This leads to the second major concern: possible health effects from any gases released from the underground fire. In a recent development, the St. Louis County health chief announced that the City would begin a study on any possible health effects caused by the underground fire at Bridgeton Landfill.¹¹⁸ The study will involve residents who live within a two-mile vicinity of the landfill, and focus on allergies, asthma, and respiratory

¹¹³ *Id.*

¹¹⁴ ENGINEERING MANAGEMENT SUPPORT INC., EVALUATION OF POSSIBLE IMPACTS OF A POTENTIAL SUBSURFACE SMOLDERING EVENT ON THE RECORD OF DECISION – SELECTED REMEDY FOR OPERABLE UNIT-1 AT THE WEST LAKE LANDFILL 2 (2014), *available at* http://mediad.publicbroadcasting.net/p/kwmu/files/201403/2014-01-14_Republic_radiation_evaluation_for_EPA.pdf

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ Jacob Barker, *New St. Louis County Health Chief Promises to Study Bridgeton*, ST. LOUIS TODAY (March 19, 2015), *available at* http://www.stltoday.com/news/local/govt-and-politics/new-st-louis-county-health-chief-promises-to-study-bridgeton/article_b06bdacc-7e00-5e0c-8c27-9c1962d81bfd.html.

illnesses.¹¹⁹ The study, which is projected to take a mere six months to complete,¹²⁰ may lead to additional lawsuits at a later time.

While those studies continue, and the Bridgeton Landfill fire continues to diminish, steps for avoiding another fire should be the main priority. The owners at the Bridgeton Landfill have taken steps towards improving the infrastructure of the landfill to prevent the buildup of gases, which could spark another fire. Joining the LMOP in order to more effectively use the methane gas buildup at the site is also a step in the right direction. The U.S. Fire Administration promotes numerous prevention mechanisms, including more effective management, methane gas collection and flaring, and converting the gas to energy. Bridgeton Landfill's owners have undertaken only some of these measures.¹²¹

Because the case law regarding landfill fires in the United States centers around nuisance claims, increased attention should be given to the root cause of the nuisance claims, especially to how other countries and states have handled landfill fires in the aftermath of legal action. For example, in the 1990s, Hawaii had issues with fires that began on both legal and illegal landfills. Although the worst of the fires occurred in 1996,¹²² in 1998, an odor led to the discovery of an underground fire.¹²³ As with the Bridgeton Landfill, the fire was contained but continued to burn.¹²⁴ Afterwards, Hawaii officials began a health study on the effects of the gases released during landfill fires.¹²⁵

Danbury, Connecticut also found itself battling underground fires caused by "spontaneous combustion of decomposing waste" in 1996 and 1997 in the city's landfill.¹²⁶ Residents filed odor complains, along with lawsuits for "damages caused by exposure to hydrogen sulfide gas from the

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ *See generally* TRIDATA CORPORATIONS, *supra* note 4.

¹²² *Id.* at 23. This fire was above ground.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.* at 24.

smoke.”¹²⁷ In response to the complaints and lawsuit, officials built a forty foot high flare to burn the landfill gases, therefore reducing odors.¹²⁸

Other countries also are proactive in studying the effects of landfill fires. In Finland, a fire was ignited in an experimental landfill in order to test different extinguishment methods.¹²⁹ The results found that the best way “to suppress landfill fires is by digging out the burning material and cooling it with water, soil, or snow.”¹³⁰ The size of the Finland fire was smaller than that of the Bridgeton Landfill fire, but if the Bridgeton fire does not extinguish itself, this may be a viable solution.¹³¹

The case studies from Finland, Hawaii, and Connecticut show possible ways of dealing with Bridgeton Landfill’s underground fire, but do not necessarily provide concrete solutions. Case law is also not very helpful for Bridgeton Landfill officials because it shows that damages must be paid if the odors or leakage prove to be nuisances. The health and environmental effects of the underground fire are still being researched and developed, thus waging the question, what next? These types of fires occur infrequently, but remain potentially serious issues nonetheless.¹³² Presence of chemicals and other toxins created or released by the fire could have serious health concerns for those breathing or drinking it.¹³³ The exact next steps are unclear, except for continued research, payment of current damages, and additional monitoring.

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ *Id.* at 22.

¹³⁰ *Id.*; see *Landfill Fire in Delta Gets Provincial Emergency Funding*, BRITISH COLUMBIA MINISTRY OF ENVIRONMENT, LANDS, AND PARKS, Press Release 330-30:ELP99/00-340 (Nov. 30, 1999); See also TONY SPERLING, EXTINGUISHING THE DELTA SHAKE AND SHINGLE LANDFILL FIRE: CASE STUDY (Jan. 18, 2002), available at <http://www.landfillfire.com/delta1.html>.

¹³¹ TRIDATA CORPORATIONS, *supra* note 4, at 22.

¹³² *Id.* at 26.

¹³³ *Id.*

IV. CONCLUSION

The situation at Bridgeton Landfill is a relatively new one, and its full effects are currently unknown. To date, the owners of Bridgeton Landfill have kept up with court orders filed by the state to monitor and release data regarding the site.¹³⁴ In addition, damages have been paid to many residents through class action suits.¹³⁵ However, many questions remain. What are the environmental impacts of the fire? What health issues will local residents develop as a result of the gases released and possible leachate from higher temperatures? As the situation progresses, the Bridgeton Landfill owners may find themselves cashing out even more than they already have because of the fire. For now, all involved parties must wait, and enact measures to prevent another health and environmental incident at the Bridgeton Landfill.

Although waiting for measures to be enacted and health studies to be released on any potential health risks is the biggest next step for Missourians, another option may be to further explore the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”).¹³⁶ It may be possible for residents to take action under CERCLA in order to collect monetary damages caused by the underground fire, if it is determined that hazardous waste was released that would harm public health. Missourians in the affected area would be wise to take proactive steps by determining whether they qualify for these legal remedies and by urging state officials to enact policies to ensure another Bridgeton Landfill fire disaster does not occur again.

¹³⁴ BRIDGETON LANDFILL HOMEPAGE, <http://www.bridgetonlandfill.com/> (last visited Feb. 10, 2016).

¹³⁵ Blythe Bernhard, *Bridgeton Landfill Owners to Pay Nearby Residents \$6.8 Million in Lawsuit Over Stink*, ST. LOUIS TODAY (Apr. 18, 2014), available at http://www.stltoday.com/lifestyles/health-med-fit/health/bridgeton-landfill-owners-to-pay-nearby-residents-million-in-lawsuit/article_9d74a35a-4524-5a86-834c-db5e698271e3.html.

¹³⁶ CERCLA OVERVIEW, available at <http://www.epa.gov/enforcement/comprehensive-environmental-response-compensation-and-liability-act-cercla-and-federal#Summary>.