INTRODUCTION

We, the members of the Forty-Third Statewide Investigating Grand Jury, having received evidence pertaining to violations of the Pennsylvania Solid Waste Management Act and Pennsylvania Clean Streams Law, occurring in Washington County, Pennsylvania, pursuant to Notice of Submission of Investigation No. 42, do hereby make the following findings of fact and recommendation of charges:

FINDINGS OF FACT

This presentment arises from a comprehensive and ongoing statewide investigation of numerous environmental crimes that have occurred during fracking operations in the Commonwealth of Pennsylvania. The presentment focuses on one of these offenses: the illegal discharge of over 2,000 gallons of gas well waste water, contaminated with various chemicals, into the waterways and onto neighboring property. The investigation has resulted in two other presentments recommending criminal charges. The Grand Jury further intends to issue a Report documenting bases for recommendations for legislative, executive, and administrative action.

The discharge in question here took place from the Brownlee well site onto the ground and into the waters of Buffalo Township, Washington County on January 28, 2018. We heard testimony from a number of witnesses, including employees of Range Resources–Appalachia LLC. (Range), Guardian OFS, LLC., Site Safe Solutions (Site Safe), Solid Oak/Heritage Environmental Services, LLC. (Solid Oak), Brownlee Trucking, Inc., Advantage Tank Line (ATL), and the Pennsylvania Department of Environmental Protection (DEP), in addition to Special Agent Jeffrey Pratt, Office of Attorney General, Environmental Crimes Section. We also reviewed many documents obtained through the investigative resources of the Grand Jury.

Finally, we were educated on the statutes that our legislature enacted in order to protect the environment, as well as the regulations promulgated by the Pennsylvania Department of Environmental Protection that set forth water quality standards and permitting requirements. These rules and laws are in place in order to guard our health, safety and welfare. As a result of our investigation, the Grand Jury determined that Range violated these rules and laws due to its failure to address the environmental hazards created by its operations at the Brownlee well site. The Grand Jury therefore recommends that criminal charges be filed against the corporation.

The Company

Range is a subsidiary of the Range Resources Corporation, with a principal office located at 3000 Town Center Boulevard in Canonsburg, Washington County. Range was originally formed in 1976 as Lomak Petroleum, Inc. The company is among the most active drillers in Pennsylvania, and has been a leader in the exploitation of the Marcellus Shale – a deep rock formation containing gas that must be accessed through "unconventional" drilling, or hydraulic fracturing ("fracking"). In 2004, Range drilled the first successful well in the Marcellus Shale: The Renz #1 in Washington County. By 2009 Range's net acreage in the Marcellus had grown to more than 1.3 million acres.

The Hydraulic Fracturing Process

The Grand Jury learned that unconventional drilling for natural gas has enabled the extraction of oil and gas from once unsuitable geological formations. In Pennsylvania, unconventional drilling has targeted the Marcellus and Utica Shale formations. The Marcellus Shale gas deposit stretches beneath 575 miles of West Virginia, Pennsylvania, Ohio and New York.

We were educated by multiple witnesses from various backgrounds, including academia, regulators, and industry, about the process of fracturing. They explained that the process of drilling and fracking a well takes place in several stages.

First, the well site is prepared by clearing and leveling the land and constructing the production infrastructure. This includes creating a well pad for the drilling rig and other equipment, building an access road to the well pad and (until recently) digging pits to hold fluids, soil and rock fragments – called drill cuttings – that are produced by the drilling process.

Once the site is prepared, drilling of the wells can begin. The drilling process requires large machinery to dig into the earth. Fluids and chemicals are poured into the drill hole – which is called a wellbore – to reduce friction and allow the drill cuttings to move up and out of the wellbore. After the hole is drilled, pipe is inserted to keep the wellbore stable. Then the drillers pump cement into any spaces remaining between the outside of the pipe and the walls of the hole. The cement secures the pipe in place.

When the drill gets down to an oil-bearing rock formation, the drill bit is gradually turned from vertical to horizontal. Drilling then continues horizontally, deep underground, for several thousand more feet.

Once the drilling is done, explosives are sent down the wellbore to perforate multiple holes in the rock. This is when the hydraulic fracturing process really begins. The gas sought in fracking operations does not flow freely underground, but is locked into solid rock formations called shale. Multiple fractures are created in the shale by pumping large amounts of fluid, at extremely high pressure, down the wellbore and into the perforations made by the explosives. The base fluid is water, but a variety of potentially dangerous chemical additives have to be mixed into the water to help release the gas trapped inside the shale. Once released, the gas flows up to the surface.

The hydraulic fracturing process requires incredibly large amounts of water – sometimes up to 15 million gallons of water for one well. Much of the water that is injected into the well is later forced back up to the surface by pressure. That waste water is filled with the chemicals that were added to it, but it also contains other compounds, such as chloride and strontium, that are picked up deep underground. Because this waste water is toxic, it must be collected, treated or disposed of in accordance with DEP regulations.

Rather than treat the waste water after each frack, operators often reuse or recycle it from one hydraulic fracturing site to the next. The waste water is commonly stored on a well site in above-ground storage tanks until it is needed for the next frack. We heard during testimony that each of these tanks has the capacity to hold 14,700 gallons of waste water. Valves on the tank can be opened to allow the waste water to be pumped into and out of the tank using a hose. There is also a door on each tank, called a manway, to allow workers to get inside the tanks to clean them between uses. The manway door is a hatch on the side of the tank large enough for an adult to enter and exit, and is secured with five wing nuts.

The Spill

Evidence presented to the Grand Jury established that in January 2018, a group of 20 storage tanks were at the Brownlee well site in anticipation of an upcoming frack. The tanks had been brought to the site several weeks before by Brownlee Trucking, and were set up at Range's direction. We heard through testimony from employees of Solid Oak that the 20 individual tanks were all connected to one another by a manifold system. The manifold system allowed the waste water to flow freely between the tanks, turning the 20 individual tanks into one large reservoir with a potential capacity of 294,000 gallons. All the storage tanks present at the Brownlee site were leased by Range and were placed there at Range's direction.

We also heard testimony that the tanks at the Brownlee well site were supposed to be protected by a backup, or "secondary containment" system. A liner was laid down under the storage tanks and was surrounded by low barriers made of thick, reinforced plastic. Essentially, the containment created a wading pool around the storage tanks in the event of a leak, spill or other failure to prevent the waste water from escaping any further. Site Safe was contracted by Range to construct the secondary containment around the storage tanks.

On January 28, 2018, in the early evening hours, Range started to "pre-fill" the 20 storage tanks at the Brownlee site with waste water brought from another site. Two trucks carrying waste water attached their hoses to the valves on the storage tanks and began pumping water into the storage tanks. A spotter contracted by Range was present to direct the truck traffic on the site. Once the two trucks were in position, the spotter went away to direct other trucks. When he returned, he noticed fracking water in the secondary containment around the storage tanks. The water was "swirling" and appeared to be rising. He went to find the Range representative in charge of the operation.

The Range representative testified that, after he was notified of the issue, he stepped into the secondary containment and saw that it was filled with water up to the level of his boots, approximately 12 inches. He went from tank to tank and found that one tank was leaking from the manway door. He observed that only one wing nut was holding the hatch closed, and that it was not tight. He began to turn the wing nuts by hand to close the door and sent the spotter to his trailer to get a wrench. Once the manway door was secured, however, the Range representative and the spotter noticed that a corner of the barrier surrounding the containment had not been properly secured. As a result, the pressure of the water pushed the barrier walls apart, allowing the waste water from the tank farm to spill down over the hillside. The Range representative and the spotter pushed the walls back together to stop further release.

Although several sub-contractors were on the scene, all worked for and took their directions from Range. Range did not require these workers to do any of the things that might have prevented this toxic spill. There was no contractual provision or standard operating procedure requiring anyone to inspect the tanks in advance, or to check the hatches to make sure they were

actually closed, or to monitor the waste water as it was being pumped out, or to ensure that the containment barriers were properly secured.

Range estimated the volume of the spill that escaped the containment to be approximately 2,163 gallons. A portion of that spill made its way entirely off the Brownlee site into an unnamed tributary to Buffalo Creek, and onto the property of an adjacent homeowner.

Victim Impact/Damage to Adjacent Property

A private citizen lives on a 70-acre parcel of land in Washington County that directly adjoins the Brownlee well site. The homeowner's property is approximately 700 feet downhill from the well pad. After the spill, Range left the homeowner a voicemail. When he played it back, he was struck by the fact that, despite the late hour of the call, it contained little information. Before the homeowner had the chance to return the call the morning after the spill, two representatives from Range came to his door. They were either unable or unwilling to quantify the amount of the fluid that escaped, or to tell him what was in it. When the homeowner asked about the substance flowing onto his property, he was falsely told it was just "brinewater, saltwater." He was given no additional information about any of the other harmful or hazardous chemicals in the waste water.

The homeowner and his family had previously been able to use a well on the property for drinking water. Concerned that the waste water would infiltrate their well, they were forced to begin hauling in filtered water on a daily basis. The waste water contaminated an area of the homeowner's property that was 257 feet long, 50 feet wide, and four feet deep. Range initially estimated that remediation would consist of the removal of only three or four trees and a couple of inches of topsoil. Ultimately, the remediation company brought in by Range removed over one hundred trees from the homeowner's property. It was also necessary to dig down between three

and four feet deep along the entire path of destruction, over 12,000 square feet. Removal of all the contaminated soil required more than three weeks of work. After the trees and soil were removed, the homeowner was left with an empty, ugly gully, almost one-third of an acre, in place of the woodlands that had previously existed. Over the course of several months, the homeowner inquired multiple times about getting his property regraded and planted. Only after the homeowner said he would contact the media did Range begin efforts to reclaim the area.

Remediation

In total, the discharge of waste water at the Brownlee well site necessitated the excavation and removal of approximately 1,472 tons of contaminated soil. Shortly after the spill, samples of affected tributaries of Buffalo Creek were analyzed. Laboratory results confirmed the water was polluted by elevated levels of aluminum, iron and chlorides – not just "brinewater" or "saltwater," as Range employees had falsely claimed – at the entry point as well as at a downstream sampling location. Repeated testing showed that the water pollution was present for several weeks after the spill occurred.

The DEP requires a permit to discharge waste water onto the ground or into the waters of the Commonwealth. Range never obtained such permits for the Brownlee well site or for the property owned by the neighboring homeowner.

Applicable Environmental Statutes and Regulations

We have learned much over the course of this investigation about the applicable statutes that govern the conduct exhibited by Range. The relevant portions of the Solid Waste Management Act define "disposal" to include spilling or leaking. "Residual waste" is any waste, solid or liquid, from industrial or mining operations. "Solid waste" also includes both solid and liquid materials.

We have also reviewed various statutory provisions within the Solid Waste Management Act that delineate criminal conduct that is relevant to our investigation. Section 6018.302(b) makes it a crime to fail to control runoff and discharges of residual waste, or to operate facilities in a manner that adversely affects or endangers public health, safety and welfare or the environment. Section 6018.610(1) makes it a crime to dump or deposit solid waste onto the ground or into the waters of the Commonwealth without a proper permit. Section 6018.610(2) makes it a crime to operate a solid waste storage facility without a proper permit. And Section 6018.610(4) makes it a crime to dispose of solid waste in any manner that adversely affects public health, safety and welfare.

We learned that the Clean Streams Law defines "industrial waste" as any liquid or solid resulting from manufacturing or industry. "Pollution" is any contamination of waters of the Commonwealth that is likely to render those waters harmful, detrimental, or injurious to public health, safety or welfare, or to legitimate beneficial use. "Waters of the Commonwealth" includes any rivers, streams, rivulets, lakes or springs containing surface or underground water.

We also reviewed the various statutory provisions within the Clean Streams Law that are pertinent to our investigation. Section 691.301 makes it a crime to discharge industrial waste into the waters of the Commonwealth. Section 691.307 prohibits the discharge of industrial waste, directly or indirectly, into any of the waters of the Commonwealth unless the discharge is authorized by DEP rules and regulations or permit. Section 691.611 makes it a crime to cause air or water pollution, to violate any provisions of the Clean Streams Law, or to fail to comply with any DEP rule, regulation or permit.

With respect to the regulations, we reviewed various provisions within the Pennsylvania Code that are relevant to our investigation. Section 92a.3 of Chapter 25 of the Pennsylvania Code

provides that the federal National Pollutant Discharge Elimination System ("NPDES") regulations are incorporated by reference to the extent that the provisions are applicable and not contrary to the law of Commonwealth, and Section 92a.1 provides that no person may discharge pollutants from a point source into surface waters except as authorized under an NPDES permit. Section 91.34 of Chapter 25 of the Pennsylvania Code provides that people engaged in an activity which includes the impoundment, production, processing, transportation, storage, use, application or disposal of pollutants shall take necessary measures to prevent the substances from directly or indirectly reaching waters of the this Commonwealth, through accident, carelessness, maliciousness, hazards of weather or from another cause.