INTRODUCTION

We, the members of the Forty-Sixth Statewide Investigating Grand Jury, having received and reviewed evidence regarding allegations of violations of the Clean Streams Law and related laws, occurring in various counties in Pennsylvania, pursuant to Notice of Submission of Investigation Number 46, do hereby make the following findings of fact, conclusions, and recommendation of charges.

FINDINGS OF FACT

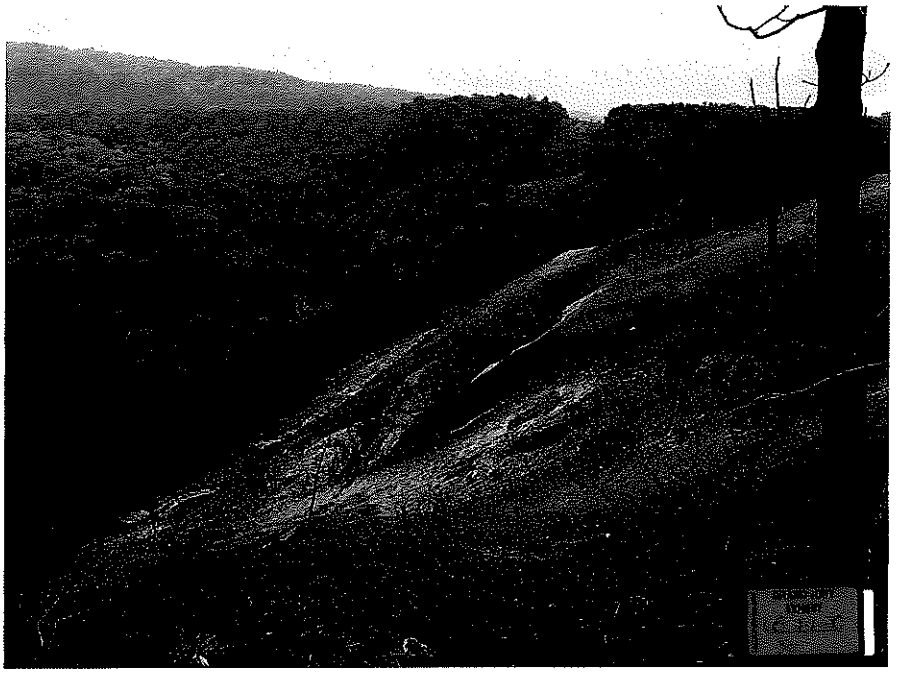
The Grand Jury conducted an investigation into the September 10, 2018 failure of a portion of the Revolution Pipeline in Center Township, Beaver County, resulting in pollution to Raccoon Creek and its unnamed tributaries. The Revolution Pipeline traverses southwestern Pennsylvania and was designed to transport natural gas. It was the project of ETC Northeast Pipeline, LLC ("ETC"), a wholly owned subsidiary of Energy Transfer, LP ("Energy Transfer"). During this 18-month investigation, the Grand Jury received testimony from numerous witnesses including landowners in the pipeline fracture area, current and former employees involved in the construction and oversight of the pipeline project, members of the Pennsylvania Department of Environmental Protection and the Beaver County Conservation District, as well as Special Agent Bruce Gearhart of the Pennsylvania Office of Attorney General Environmental Crimes Section. The Grand Jury also reviewed voluminous documents obtained through its investigative resources, including expert reports commissioned after the pipeline failure. Finally, the Grand Jury was educated on the statutes that the legislature enacted in order to protect the environment, as well as the regulations that set forth water quality standards and permitting requirements. These rules and laws are in place in order to safeguard our health, safety and welfare. As a result of this investigation, the Grand Jury determined that ETC/Energy Transfer

violated these rules and laws due to its failure to address the environmental hazards created by its operations on the Revolution Pipeline project.

September 10, 2018 Failure of the Revolution Pipeline

The Revolution Pipeline was pressure-tested on February 16, 2018 and considered to be mechanically completed on March 18, 2018. The unfinished portion of the project that remained was the restoration of the right-of-way. Testimony revealed that the process to put the pipeline into service began on August 27, 2018.

The Grand Jury heard testimony that on September 10, 2018, just before 5:00 a.m., a landslide occurred on the pipeline right-of-way, approximately one-half mile away from the intersection of Ivy Lane and Broadhead Road in Center Township, Beaver County, Pennsylvania. The landslide originated from unstable areas within the Revolution Pipeline limit of disturbance at that location. The limit of disturbance on a project is the area pre-determined by the permit that sets the boundaries of the project. All land disturbance must stay within that area. The landslide overtopped erosion control devices beyond the limits of disturbance and caused a discharge of sediment into Raccoon Creek. When the landslide occurred, a section of the Revolution Pipeline separated. Gas escaped from the pipeline and subsequently ignited. The resulting inferno caused devastation to the area that immediately surrounded it. The family whose home was closest to the fire was awakened by the sound of loud roaring, like a freight train and an "orange glow as bright as day". The family members were only able to escape their home with the clothes on their backs. Their home, barn and multiple vehicles were incinerated. Other residents in the area had to evacuate their homes, as well. Over two acres of mature trees burned into piles of ash, and six high-voltage transmission towers collapsed.



As the Grand Jury sat and listened to months of testimony and reviewed countless documents, it became increasingly clear that the failure to comply with environmental laws and permits were a contributing factor to the devastation that occurred on September 10, 2018. The Grand Jury heard testimony about landslides occurring along the Revolution Pipeline right-of-way in the months leading up to the catastrophic event. The Grand Jury learned how seemingly minor violations of permit conditions, such as failure to properly install a filter sock, or silt fence, had major cumulative repercussions.

The Company and the Commencement of the Revolution Pipeline Project

Energy Transfer, LP maintains a principal office located in Dallas, Texas. The company was formed in 1996 as a small intrastate natural gas pipeline operator and is now one of the largest and most diversified partnerships in the United States. Energy Transfer is the leading midstream provider in the country with more than 90,000 miles of pipeline traversing 38 states and Canada. Energy Transfer is a publically traded limited partnership with core operations that

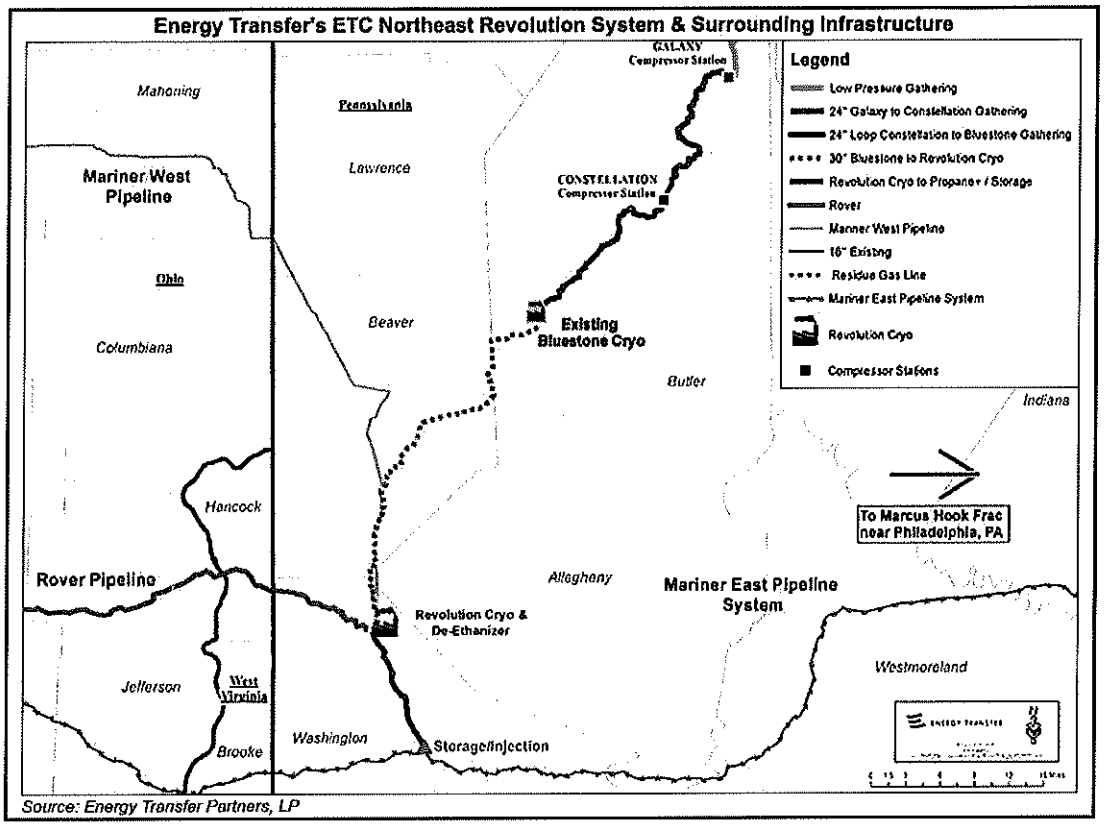
include transportation, storage and terminalling for natural gas, crude oil, natural gas liquids, refined products and liquid natural gas. Energy Transfer is valued at over 30 billion dollars with estimated assets exceeding 95 billion dollars.

The Grand Jury learned about the pipeline installation process from multiple witnesses from various backgrounds, including the industry and regulators. Witnesses stated that pipelines are utilized across the Commonwealth for a variety of purposes. They are classified by the type of product that they are carrying. One type is known as "gathering lines" which transport unprocessed natural gas from a well pad to either a compressor station or other facility to process the gas or to a transmission line. Transmission lines move the processed gas from that point to various distribution companies.

These various pipelines form a complex spider web underneath the ground. In order to install a new pipeline, a company must employ one of two methods: Trenching or drilling underground in a horizontal direction, commonly known as horizontal directional drilling ("HDD"). Trenching involves using earth moving equipment to dig out a trench from above the earth. Once the trench has been created, the section of pipe can be laid inside the trench and then covered with earth. The HDD method is often utilized when disturbance to the surface needs to be limited, such as crossing a road or a waterway. The HDD method goes underground without disturbing the surface.

The Revolution Pipeline is a 42-and-a-half mile, 24-inch pipeline that starts in Butler County and is routed through Beaver County and Allegheny County before ending at a gas processing plant in Washington County. Because of the size of the project, it was divided into two "spreads" for installation purposes, with each spread spanning a particular geographical region of southwestern Pennsylvania.

Each spread had its own primary construction contractor and environmental inspectors. Spread 1started in Butler County and ran south through Beaver County to the Ohio River. Spread 2 started at the Ohio River and ran south through Allegheny County to the Energy Transfer's gas processing facility in Washington County.



ETC sought water obstruction and encroachment permits, regulated under Chapter 105 of the Environmental Protection section of the Pennsylvania Code and erosion and sediment control permits regulated under Chapter 102of the Environmental Protection section of the Pennsylvania Code, specific to each county that the project would traverse in addition to a National Pollutant Discharge Elimination System permit for hydrostatic test water discharges. Prior to submitting an application for either permit, ETC completed a Notice of Intent form. The Grand Jury learned that a Notice of Intent form provides notice to the governing agencies of the intention to construct a project. The form requires a description of the project, the project location, and, in

the case of a pipeline project, whether the pipeline is a transmission line or a gathering line. Because the Revolution Pipeline was connecting a natural gas heater station to a cryogenic processing plant, there was a question within ETC as to how the Revolution Pipeline should be classified and, ultimately, where the permit application should be sent for review. ETC contacted the Pennsylvania Department of Environmental Protection ("DEP") for guidance. Based upon the description of the project provided by ETC, the DEP determined that the project should be classified as a transmission line.

Testimony revealed that the denotation of transmission pipeline versus gathering pipeline determines the particular program within the DEP where the subsequent permit applications for the pipeline would be reviewed. The Grand Jury learned that permit applications for natural gas pipelines that are classified as gathering lines are reviewed by the Oil and Gas Program within the DEP. Permits for natural gas pipelines that are classified as transmission lines are reviewed by the Waterways and Wetlands Program within the DEP. The definitions of what constitutes a gathering line versus a transmission line leaves room for interpretation. The Grand Jury heard testimony that, in general, gathering lines are the pipelines that carry the gas from the wells to a more central location and that transmission lines are the pipelines that carry the gas to a consumer or another facility.

The Grand Jury also heard testimony that the Waterways and Wetlands Program can delegate the review process of specific permits to county conservation districts. With respect to Beaver County, the Waterways and Wetland Program delegated the review to the Beaver County Conservation District ("BCCD"). The delegation was for permits submitted for projects within the county borders and the BCCD had authority to review earth disturbance permits under Chapter 102 and waterway and wetland encroachments under Chapter 105. In addition to

reviewing the permits, the delegation included the obligation to conduct inspections of the project once construction began to ensure that the projects are in compliance with the permits.

A permit is required under Chapter 102 when there is general earth disturbance associated with oil and gas exploration, production, processing or treatment operations or transmission facilities and the earth disturbance is five acres or greater. When reviewing an earth disturbance permit, a reviewer evaluates the erosion and sediment controls that are being suggested to prevent the disturbed earth from leaving the project site. With respect to the Revolution Pipeline permit, the BCCD looked at the erosion control devices that were submitted in the plans prepared by Environmental Solutions and Innovations, Inc. ("ESI") to see if they complied with the DEP standards for erosion control devices. The permits were also reviewed to determine whether the prescribed slope controls were adequate to prevent soil from leaving the work zone. The permit submitted by ESI was ultimately approved by the BCCD.

An additional permit is required under Chapter 105 whenever there are water obstructions or encroachment activities located in, along, across or projecting into a watercourse, floodway or body of water, including wetlands. The BCCD reviewed the permit application under Chapter 105 for the Revolution Pipeline project. The review process included an analysis of the proposed plan to ensure that waterways were not being changed in such a way that would be detrimental to the flow of the water or potentially cause damage such as flooding or polluting the stream with sediment. The Chapter 105 permit was also approved by the BCCD.

Because the Revolution Pipeline project was determined to be a transmission line based upon the description provided to the DEP, the Chapter 102 and Chapter 105 permit applications were submitted to the individual county conservation districts for the counties it traversed for review and ultimate approval. ETC submitted permit applications to the Beaver County

Conservation District for Phase I of the project in March 2016 and for Phase II of the project in August 2016. Phase I of the project was described as the HDD under the Ohio River. Phase II was described as the trenching and installation of the remainder of the pipeline.

Construction

Once all of the permits had been acquired, work across the project began. And so did problems along the right-of-way. Each of the two spreads had its own contractor and its own set of environmental inspectors. With respect to Spread 2, - - where the catastrophic failure occurred - - the contractor was Willbros Construction ("Willbros") and the environmental inspectors were from Whipperhill Compliance, LLC ("Whipperhill"). The pipeline fracture and fire were located at 1116+00 on Spread 2 of the pipeline project. The Grand Jury heard of construction challenges from the onset of the project due to steepness of the slopes, uncooperative weather, and the apparent inability to install and maintain erosion control devices in a manner that would prevent the slopes from moving. As part of pre-construction preparation, ETC commissioned a geohazard evaluation report. The Grand Jury learned that the report, prepared by Terracon, summarized a variety of geologic hazards that could occur during construction that were inherent to the general geography and topography of the pipeline path, including: Steep terrain, stream erosion, soil and rock formations that were inherently unstable, surface mine operation and mine spoil material as well as subsurface mine operations. The report was supposed to serve as a working document to help the contractors identify and mitigate potential geologic hazards along the pipeline path. The Grand Jury heard testimony that the Terracon report was sent to all contractors as part of the bid packet provided by ETC and that Willbros was aware of its contents. Despite the hazards identified in the Terracon report, however, no additional geological study was performed and no additional measures were taken

to address the potential of slope instability. In addition to the Terracon report addressing geohazards, the contractors were provided with an erosion and sedimentation control plan to follow. The erosion and sedimentation control plan was prepared by engineers at ESI and was submitted to, and approved by, the county conservation districts.

The erosion and sediment control plan is prepared to ensure that dirt and sediment stay within the pipeline right-of-way and do not exceed the boundaries of the permit. For a pipeline project, particular attention is paid as to how the surficial top layer of dirt is going to be moved based upon the earth disturbance that is going to occur along the pipeline corridor. ESI was provided with information about the pipeline route, corridor and general topography of the area by ETC. ESI then used the regulations outlined in the DEP Erosion and Sedimentation manual to develop the best management practices ("BMP") for the Revolution Pipeline corridor. The Grand Jury heard testimony that BMPs are types of controls that are specified for earth moving work and that the main goal for installation is to protect the waters of the Commonwealth. BMPs include controls such as silt fence, compost filter sock, water bars, and ground cover. The purpose of the BMPs was to prevent sediment from leaving the right-of-way.

A typical silt fence is composed of a synthetic piece of fabric stretched between wooden or metal posts. When installed properly, the fabric is buried under a layer of soil and acts as a barrier to sediment escaping the right-of way. A compost filter sock is a long tube filled with mulch or other composted material. The sock is then staked into the ground and used as a barrier to prevent sediment from leaving the right-of-way. The Grand Jury heard testimony describing water bars as "speed bumps" for water on the construction site. When a right-of-way is on a slope, a properly installed water bar breaks up the slope and slows down the movement of water along the right-of-way. When installed improperly, water bars can accelerate erosion and

undermine the stability of the slopes. Hay bales, while an approved BMP, were not recommended or approved for this project due to their lack of effectiveness at controlling sediment. The grand jury heard testimony that described ground cover as an important part of the post-construction storm water management plan. The right-of-way needed to be seeded and mulched to restore vegetation after construction was completed.

Inspections

- ***Beaver County Conservation District***

The Grand Jury heard testimony from Resource Conservationists ("RC") from the BCCD regarding permit review for the Revolution Pipeline project and oversight of the implementation of erosion and sedimentation control devices as delegated to them by the DEP. In addition to reviewing and approving permits and permit revisions, the RC went to the site of the pipeline construction to make sure that the permit was being followed. The Grand Jury learned that the RC would go to active portions of the site to conduct inspections approximately twice per month. Evidence of inadequate and improperly installed erosion control devices were apparent from the first inspection.

The first routine inspection of the Revolution Pipeline Project occurred on January 22, 2018. The RC noted multiple violations of the Clean Streams Law, including the failure to maintain effective erosion and sedimentation control BMPs, the discharging of sediment into waters of the Commonwealth and the potential for pollution to waters of the Commonwealth.

The RC went returned to the site on January 26, 2018 and met with an Environmental Inspector and a representative from Willbros. They walked down to the Raccoon Creek Crossing and observed that a stockpile had slipped down to the creek's edge, and some of it had entered the waterway. A stockpile is a pile of earth that has been excavated in preparation for

pipeline installation. The stockpile typically sits on right-of-way until it is needed for cover after the pipeline is installed. The RC again noted multiple violations of the Clean Streams Law in the inspection report and supplied photographic evidence of these violations.

On February 6, 2018, the RC conducted a follow-up routine inspection of the area. Again, the RC met with representatives from Willbros but was joined this time by representatives from the DEP, Energy Transfer, and the landowner from that particular location. Most of the stockpile slip had been removed, but there was still some left at the bottom of the slope. Multiple Clean Stream Law violations were noted on that date, including the failure to maintain effective erosion and sediment BMPs, discharging sediment into waters of the Commonwealth and potential for pollution to the waters of the Commonwealth. When the RC returned to inspect the site on February 29, 2018, it was noted that the creek flowed over its banks and into the workspace between the road and the creek. Part of a stockpile in that work area was washed away. It was also noted that another stockpile had slipped into the creek. It was noted on the inspection report that Clean Streams Law violations on that date included failure to maintain effective erosion and sediment BMPs, discharging sediment into waters of the Commonwealth and potential for pollution to the waters of the Commonwealth.

Inspections were also conducted by the RC on March 8, 2018 and March 15, 2018. The Grand Jury learned that there had been a slide in the area of Bunker Hill with part of the hill sliding into the creek. On the above dates, the RC was checking on the clean-up process and remediation of the slide. No Clean Streams Law violations were noted in those areas. During a routine inspection on May 3, 2018 the RC met with inspectors from the DEP. The RC observed and noted erosion and inadequate and non-maintained erosion control devices. The inadequate devices allowed for the run-off to reach a pipe that discharged into the waters of the

Commonwealth. Multiple Clean Streams Law violations were noted, including failure to implement and maintain erosion and sediment best management practices, failure to provide temporary stabilization, failure to comply with permit conditions and site conditions that presented the potential for pollution to waters of the Commonwealth.

On May 22, 2018 the RC met with one of the third-party environmental inspectors from Whipperhill on Spread 2 and they conducted an inspection together. The RC noted that much of the silt fence sediment had built up, and that erosion control devices were not installed correctly and had begun to deteriorate. Multiple Clean Streams Law violations were noted, including failure to implement and maintain erosion and sediment BPMs, failure to provide temporary stabilization, failure to comply with permit conditions and site conditions that presented the potential for pollution to waters of the Commonwealth.

On May 29, 2018 during a routine inspection, the RC noted that there was a landslide along the path of construction. It was noted that the stream was cloudy from the sediment that had entered as a result. Multiple Clean Streams Law violations were noted, including failure to implement and maintain erosion and sediment best management practices, failure to comply with permit conditions, discharging sediment into the waters of the Commonwealth and site conditions that presented the potential for pollution to waters of the Commonwealth.

The inspection reports that were completed by the RC were all sent to ETC to advise the company of the violations and to provide them with notice to fix the violations. The RC ultimately left the position in early July 2018. There were no additional inspections by BCCD between the RC's separation and September 10, 2018 when the catastrophic event occurred.

- ***Third- Party Environmental Inspectors***

The Grand Jury heard testimony that in addition to regulators from environmental agencies, there were third-party environmental inspectors ("EI") on sight. ETC hired Whipperhill to provide independent EIs for the Revolution Pipeline project. The duties of the Whipperhill EIs were to "observe and report" any environmental issues that may be occurring on the project. Willbros had a dedicated environmental construction crew working along the pipeline corridor. The environmental construction crew were responsible for the installation and maintenance of the erosion control devices. The Grand Jury heard from multiple witnesses who stated that the EIs were not permitted to direct the work of the contractors. The EIs noted deficiencies in a daily report and provided that daily report to a lead inspector. From there, the deficiencies that were noted would be placed on a "punch list" of items that crews were given to work on each day.

An overall theme of inadequate erosion control devices along with slip and slide issues along the right-of-way emerged. Some of the slides left the right-of-way and entered other properties. Some of the slides entered unnamed tributaries and Raccoon Creek. Many of the slide areas stayed on the punch list for months at a time without being fixed. The Grand Jury heard testimony and reviewed documents noting deficiencies in erosion control devices on a daily basis and selected several of the most severe on which to focus.

The Grand Jury reviewed dozens of daily inspection reports from the EIs that noted stabilization issues along multiple portions of the pipeline right-of-way, including that of the incident site. The majority of the erosion that was noted in the reports included gulleys, channeling, slips, run-off into streams and slides. The Grand Jury learned that the terms "slip" and "slides" are sometimes used interchangeably when describing the act of earth moving down a slope; however, in the industry vernacular, they refer to two different types of acts. A slip is

when a stockpile or another type of loose dirt or fill slides down a slope, typically due to some type of weather event. A landslide was described as the slope moving due to lack of stability.

Multiple witnesses testified about the impact that weather can have on a pipeline project. The Grand Jury learned how wet the winter, spring and summer of 2018 were from testimony and a review of reports. Each day, the EIs would note the daily weather conditions. The following notes were from an inspection performed on February 20, 2018:

> *Rainfall and snow melt causing very saturated and unstable soils. Notes that the ROW had not been restored or stabilized with temporary water bars or temporarily stabilized or winterized with broadcast mulching. Had to tell Willbros environmental crew that straw bale barriers alone are not acceptable ECDs. They can only be used to support acceptable controls such as silt fence or silt sock.*

Proper installation and maintenance of erosion control devices continued to be a problem on the site. Daily inspection reports frequently noted erosion control devices that had been overwhelmed, knocked over, in need of repair or incorrectly installed.

In an EI report dated April 25-26, 2018, it was noted that Willbros' environmental crew had been working on making repairs to erosion control devices and environmental disturbances caused by excessively wet conditions; however, the crew had limited man power and equipment resources and progress was slow. The EI noted that it was one of the wettest late winters on record and that ground conditions continued to be very wet and saturated. He also noted that significant additional erosion and slippage was identified on the right-of-way. Most of the erosion developed due to water bar failures and lack of temporary water bars or silt fence breakers. The EI also noted that previously identified and addressed slips had deteriorated.

The EIs memorialized -on more than one occasion that they had to remind the construction and environmental crews what qualified as an acceptable erosion control device. In

a May 2018 inspection report, it was noted that the crew was using long runs of silt fence - - that was causing channeling. Channelling occurs when water runs along the silt fence causing erosion of the ground surface and creating a path for the water to run along the side of the fence rather than blocking and slowing its flow. It was also noted that there were straw bales on site, despite the fact that they had previously been told that those were not adequate on their own. An additional incident was recorded about a crew approaching an inspector to inquire as to how many water bars needed to be installed. The crew was directed to retrieve and review their copy of the Erosion and Sedimentation Plan and were reminded that all water bars and erosion control devices needed to be installed pursuant to this plan.

On August 11, 2018, an EI noted that there were several sites where slip clean-up had not yet been completed and that repairs were ongoing. The EI wrote that there was still a large punch list of items that needed to be completed, and that permanent seeding success was very poor, with some sites not showing any signs of vegetation. Some of the tracts listed for repair, including the one at Highway 151 between 1494+79 and 1497, had been on the list for several months.

Each of the tracts where slides occurred were referenced in multiple ways. The first manner in which tracts were referenced was by their location along the pipeline - - their station number. For example, the location of 1494+79 is station 1494 plus 79 feet. The Grand Jury also heard that same location referred to by the closest cross-streets or streams. Station 1494+79 through 1497 was also referred to as the Highway 151 site. The third manner in which a site was referenced was by the name of the owner on whose property the slide had occurred. Site 1494+79 through 1497 was located on a property owned by Mark Iacono, and was also referred to as the Iacono tract.

The Grand Jury heard testimony and reviewed documents about a slip that occurred between 1494+79 and 1497 that made its way off of the right-of-way. The following is an excerpt from a daily EI report dated April 17, 2018:

> *Slip originated from stockpiled top soil near station 1496+00: Willbros installed super silt fence to contain the slip but the slip overwhelmed the super silt fence and slid into perennial stream 9-106. The disturbed ROW, travel lane and spoil pile were a result of anomally dig ups. Disturbed areas were winterized, and temporary ECD's were installed. Slip is off ROW on tract 212.02. Dig up areas and travel lane need restored.*

Highway 151

The Grand Jury also learned that a slip occurred at a site called Penny Hollow Road, 1215+00. An EI report from April 17, 2018 noted the following:

> *Major slip originating on the north side of the ditch line slipped down across the ROW then an additional 500 feet down slope off ROW, damaging trees and gouging out the land down to a perennial stream. At the perennial stream mud and trees flowed another 250 feet down stream. Mud and trees continue to slide down slope. There is another portion of the slip on the south and west side of the ditchline. This is mostly on Daniel Jones property tracts 177.00 & 177.01 , sediment and trees could be on other landowners as well. This stretch of ROW was rough graded and seeded but equipment bridges were still across streams.*

Penny Hollow Road

Additional slips occurred at the Backbone Road, 1631+00-1643 site. A daily EI report from April 18, 2018 described the slips as follows:

> *Multiple slips on the CIS and the GAS of perennial stream 9-36 at station 1641+90 continues to deteriorate. ROW in this section is very wet and saturated and on the CIS of the stream is an area just below the recent anomaly dig up that was never fully restored. Due to the time of year, wet soil conditions and steepness of the slope the crew rough graded back the travel lane and the dig up area installing temporary water bars and mulching with the intention of permanently stabilizing later in the year when the weather allows. In addition on the edge of the CIS of the stream on the east side of the ROW within an STWS site a slip re-occurred that was once repaired. ON the GAS of the stream, a slip originating on the east edge of the ROW slipping down to the stream. This stretch was restored but significant water bar repairs and re-grading.*

Backbone Road

The Grand Jury heard testimony and reviewed documents documenting a slip that occurred at the Clinton Frankfort Road, 1807+75 and 1809+00 location. A daily EI report from April 18, 2018 noted the following:

> *Since the recent heavy rain, run-off from the large fields upslope and ephemeral stream 9-126 which runs down the ROW caused severe erosion and slippage down to the stream. The water bar at top of the slope did not effectively control run-off and field drainage blew out the lower water bar and perimeter silt fence. Willbros repaired the upper silt fence breakers but still needs to install silt fence along the stream to further protect against sedimentation until repairs can be made.*

The Grand Jury also heard testimony and reviewed documents pertaining to the site where the landslide and pipeline fracture occurred on September 10, 2018. This site was referred to as 1116+00, Broadhead Road and Bunkerhill, and the Rosati tract. Erosion concerns and slips were noted in connection with that tract as early as April 2018. EIs noted on April 17, 2018 that the slipped areas between Broadhead and Bunkerhill Road had worsened:

> *GAS of Broadhead Road multiple slips between stations 1115+00 to 1120+00 on tract 162.01: Multiple slips along the steep side cut ROW along the power transmission line, have slip material off ROW and spread out through the forested area down to Raccoon*

Creek. Willbros installed temporary sedimentation controls down slope and temporary stabilized slip material with temporary seed and mulch below. In addition mud from the spoil pile on the upper side of the ROW is slipping across the ROW and following the previous slip channel damaging previously installed silt fence containment. This slip continues to deteriorate with additional slip material damaging temporary installed ECD's. The slip has the working area of the ROW cut and slipped past the ditch line and slip trough very steeply dropping off. This stretch of ROW was not restored.

Broadhead Road-Bunkerhill

Other inspection reports documented continuing challenges in restoration efforts along the hillside slopes in the area during the months that followed. On a daily report dated September 8-9, 2018, the EI commented that rain began on September 9, 2018 and continued through September 10, 2018 with a total accumulation of 5.3 inched of rainfall. The EI observed that most of the streams were flooded and too high to safely cross and that the right-of-way soils were saturated and inaccessible. The Grand Jury heard testimony from multiple witnesses and reviewed documents, including a report prepared by Dynamic Risk Assessment Services, Inc. ("Dynamic Risk"), that suggested that rain was factor that contributed to the landslide and fracture of the pipeline on September 10, 2018.

Post-Incident Report and Inspection

As a result of the pipeline failure, Energy Transfer hired Dynamic Risk on September 13, 2018 and commissioned a study to identify the contributing factors that lead to the pipeline failure. The Grand Jury reviewed the Dynamic Risk report in great detail, and heard testimony from the Executive Sponsor of the report. The investigation team who worked on the report was led by professional engineers, and had extensive expertise in pipeline integrity, operations and failure investigations. The Dynamic Risk report revealed that the direct cause of the pipeline failure was too much pressure placed on the ancillary axis of the pipeline as a result of ground movement. The report noted three contributory factors to the failure: 1) Heavy precipitation that preceded the incident saturated the hillside soils and impacted slope stability; 2) The failure site was a known, historically active landslide area, that had prior disruption from construction with no soil retention controls to mitigate earth movement affecting the pipe; and, 3) During construction, the pipeline was not consistently trenched into the bedrock of the slope.

The Grand Jury learned that the rainfall in the months preceding the landslide and pipeline failure were above average, but not record setting. The cumulative precipitation for the month of August 2018 was 7.05 inches, roughly twice the mean for August (3.42 inches). The cumulative precipitation for September 2018 was 5.81 inches, greater than the average of 3.48 inches.

The report indicated that the failure to address soil retention in the incident area was a contributing factor to the landslide and ultimate failure of the pipeline. The construction documents did not identify specifications that addressed side hill construction or the placement of false fills to restore site grades. The landslide occurred from within the false fill, or the backfill, that was used to restore the corridor to pre-construction grade. When the right-of-way was prepared along the hill, the fill was piled up into stockpiles. After the pipe was placed in the

trench, that same fill from the stockpiles was used to cover the pipe and re-grade the hill. The over- steepened nature of the slope, combined with the saturation of the fill that used for restoration, caused a segment of that fill to fail, sliding down the slope through previously disturbed soils and pushing on a portion of the pipeline that was not entrenched in bedrock.

The finding in the Dynamic Risk report stated as follows:

> *During construction between stations 1114+00 to 1123+50, the pipeline was not trenched consistently into the bedrock of the slope. The upstream portion of the failed pipe was in a rock trench while the downstream portion was not. The newly-placed pipeline fill-slope surrounding the downstream portion of the failed pipe did not provide the structural resistance necessary to prevent the unrestricted movement of the pipe during the land movement event.*

The report ruled out threats such as pipeline corrosions, welding defects and manufacturing defects, as well as incorrect operation.

After the pipeline failure, the DEP took oversight of the permits back from the Conservation Districts. The DEP conducted an inspection of the entire right-of-way and found that there were a very limited number of BPMs that would have stopped the slopes from movement. The DEP also observed evidence of soil movement in more than one location. It was noted that the improper installation of BMPs, and/or lack of BMPs was not limited to the incident site. The Grand Jury heard testimony and reviewed documents that revealed that improper installation of water bars was occurring. Clean-up reports indicated that the construction of some of the water bars was "pitiful, to put it mildly."

There should have been approximately 1,400 water bars installed along the right-of-way according to the ESI erosion and sedimentation control plan. The DEP review revealed that approximately 1,000 water bars had been installed and that approximately 2% of those water bars were installed to specified engineering standards.

Finally, we reviewed a Certification of Records from DEP to confirm that ETC never applied for or were granted a permit or an exemption to a permit pursuant to the Clean Streams Law to discharge any waste from any source at or near the Revolution pipeline construction that occurred in Beaver County, Pennsylvania into any waters of the Commonwealth, including Raccoon Creek and its unnamed tributaries.

Applicable Environmental Statutes

The Grand Jury learned much over the course of this investigation about the applicable statutes that govern the conduct that occurred. The relevant portions of the Clean Streams Law define "industrial waste" as any liquid or solid resulting from manufacturing or industry whether or not generally characterized as waste. "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.

The Grand Jury also reviewed the various statutory provisions within the Clean Streams Law that were pertinent to the investigation. Section 691.301 makes it a crime to discharge industrial waste into the waters of the Commonwealth. Section 691.401 prohibits the discharge of any substance resulting in pollution into any of the waters of the Commonwealth. Section 691.402 prohibits actions that are contrary to the terms or conditions of a permit issued by the Department of Environmental Protection. Section 691.611 makes it a crime to violate any provisions of the Clean Streams Law, or to fail to comply with any order, rule, regulation or permit of the DEP.

Due to ETC/Energy Transfer's failure to conduct proper oversight of the Revolution Pipeline project to ensure the proper installation and maintenance of erosion control devices,

pollution impacted the waters of the Commonwealth, namely Raccoon Creek and its unnamed tributaries, in violation of the Clean Streams Law.