MANKO | GOLD | KATCHER | FOX LLP

AN ENVIRONMENTAL AND ENERGY LAW PRACTICE

Diana A. Silva
484-430-2347
dsilva@mankogold.com

Admitted in PA and NJ

401 CITY AVENUE, SUITE 901
BALA CYNWYD, PA 19004
TEL: 484-430-5700
FAX: 484-430-5711
WWW.MANKOGOLD.COM

A LIMITED LIABILITY PARTNERSHIP
FORMED IN PENNSYLVANIA

Partner responsible:
John F. Gullace (NJ)
Brenda H. Gotanda (HI)

August 14, 2020

via Electronic Filing
Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, Filing Room
Harrisburg, PA 17120

Re: Meghan Flynn, et al. v. Sunoco Pipeline L.P.,
Consolidated Docket Nos. C-2018-3006116

Dear Secretary Chiavetta:

Enclosed for filing with the Pennsylvania Public Utility Commission is Sunoco Pipeline, L.P.'s Motion in Limine to Limit Testimony of Rosemary Fuller.

Very truly yours,

Diana A. Silva

Diana A. Silva
For MANKO, GOLD, KATCHER & FOX, LLP

DAS/bad/11842.019
Enclosure
cc: All Counsel and Pro Se Parties on attached Service List

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

MEGHAN FLYNN et al.	:	Docket Nos.	C-2018-3006116 (consolidated)
	:		P-2018-3006117
MELISSA DIBERNARDINO	:	Docket No.	C-2018-3005025 (consolidated)
REBECCA BRITTON	:	Docket No.	C-2019-3006898 (consolidated)
LAURA OBENSKI	:	Docket No.	C-2019-3006905 (consolidated)
ANDOVER HOMEOWNER'S ASSOCIATION, INC.	:	Docket No.	C-2018-3003605 (consolidated)
	:		
v.	:		
	:		
SUNOCO PIPELINE L.P.			

NOTICE TO PLEAD

Pursuant to 52 Pa. Code §§ 5.403 and 5.243(e), you are hereby notified that, if you do not file a written response to the enclosed Motion in Limine to Limit Testimony of Rosemary Fuller within twenty (20) days from service of this notice, a decision may be rendered against you. Any Response to the Motion in Limine to Limit Testimony of Rosemary Fuller must be filed with the Secretary of the Pennsylvania Public Utility Commission, with a copy served to counsel for Sunoco Pipeline, L.P., and where applicable, the Administrative Law Judge presiding over the issue.

File with:

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, Second Floor
Harrisburg, PA 17120

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

MEGHAN FLYNN et al.	:	Docket Nos.	C-2018-3006116 (consolidated)
	:		P-2018-3006117
MELISSA DIBERNARDINO	:	Docket No.	C-2018-3005025 (consolidated)
REBECCA BRITTON	:	Docket No.	C-2019-3006898 (consolidated)
LAURA OBENSKI	:	Docket No.	C-2019-3006905 (consolidated)
ANDOVER HOMEOWNER'S ASSOCIATION, INC.	:	Docket No.	C-2018-3003605 (consolidated)
	:		
v.	:		
	:		
SUNOCO PIPELINE L.P.			

SUNOCO PIPELINE L.P.'S
MOTION IN LIMINE TO LIMIT TESTIMONY OF ROSEMARY FULLER

In accordance with 52 Pa. Code §§ 5.403 and 5.243(e), Sunoco Pipeline L.P. ("SPLP"), by its undersigned counsel, requests that the Commission limit the testimony of Complainant Rosemary Fuller, and avers as follows.

I. INTRODUCTION

1. Rosemary Fuller is a Complainant in this action together with the six other residents in Chester and Delaware counties, collectively referred to herein as the "Flynn Complainants."

2. Pursuant to Your Honor's June 6, 2019 procedural order and August 2, 2019 prehearing order, each Flynn Complainant, including Ms. Fuller, was given the opportunity to present direct testimony during the lay witness in-person hearing that took place on October 23-24, 2019, which continued on November 20, 2019.

3. Instead of providing live testimony, as many of the other Flynn Complainants did, on October 24, 2019 Ms. Fuller chose to submit prewritten testimony in the form of a statement

that was handed to counsel during the lay witness in-person hearing, and also sponsor certain related exhibits. *See* N.T. 1420:13-1441:21. A copy of Ms. Fuller's direct written testimony that was identified and introduced into the record as "Fuller Statement No. 1, is attached as Exhibit "A."

4. Because it had only received the prewritten statement at the hearing, SPLP reserved the right to cross-examine Ms. Fuller during the ultimate hearing on the merits in this case, which is currently scheduled to begin on September 29, 2020. N.T. 1422:3-18.

5. Despite lacking any scientific, technical, or other specialized education, knowledge, or experience, Ms. Fuller attempts to provide several statements and opinions that are solely within the province of a duly-qualified expert, including theories of alleged impacts to her private water supply, and attempted analyses of the geological formations where her home is located. *See* Ex. A at 9-10. Ms. Fuller also attempts to testify about evacuation plans, risk assessments, and the potential consequences of a pipeline failure. *See id.* at 12-18. Each of these topics are exclusively within the realm of a properly qualified expert witness, and require several different types of scientific, technical, or other specialized knowledge and experience, which Ms. Fuller lacks. As such, Ms. Fuller's testimony on these matters should be excluded under Pennsylvania Rule of Evidence 701.

6. Likewise, on July 15, 2020, Ms. Fuller submitted surrebuttal written testimony in response to the testimony of SPLP's expert hydrogeologist, Richard King, P.G. Mr. King provided written rebuttal testimony in response to Ms. Fuller's allegations regarding her private water supply and to contradict the direct written testimony Fuller submitted during the October

24, 2019 lay witness in-person hearing. A copy of the public version[1] of Richard King's rebuttal testimony is attached as Exhibit "B." A copy of Ms. Fuller's surrebuttal testimony and surrebuttal exhibit Fuller-1 is attached as Exhibit "C."

7. The majority of Ms. Fuller's surrebuttal testimony is an improper attempt to introduce expert testimony regarding matters which Ms. Fuller is not qualified – which she in fact admits. *See* Ex. C at 2:12-16. While Ms. Fuller asserts that her testimony is "limited to demonstrable facts that do not require a scientific or technical background to understand," her testimony is clearly beyond the limited scope of a lay witness. *Id.* Thus, like her direct testimony, the portions of Ms. Fuller's surrebuttal testimony that attempt to contradict the expert testimony of Richard King are not proper grounds for lay witness testimony and must therefore be excluded.

8. Moreover, nearly the entire scope of Ms. Fuller's surrebuttal testimony concerns her personal concerns regarding alleged impacts to her water well. This issue is not even mentioned or otherwise identified in the Flynn Complainants' Second Amended Complaint, nor is this an issue for which the Flynn Complainants seek any form of relief through this action, but rather, it is a matter within the scope of the regulatory authority of the PADEP. For that reason, SPLP previously objected to discovery regarding Ms. Fuller's water well issues, which were included in Flynn Complainants' Interrogatories, Set 2, Nos. 23-43. Following a Motion to Compel, Your Honor overruled SPLP's objections and allowed discovery on these issues. *See* Order Granting in Part and Denying in Party Flynn Complainants' Amended Motion to Compel Responses to Complainants' Interrogatories and Document Requests (Set 2), at 10-16 (Jan. 3,

[1] In accordance with the Amended Protective Order entered in this case, a confidential/highly confidential version of Mr. King's rebuttal testimony was also submitted directly to Your Honor, as well as to those counsel and expert witnesses who executed a copy of the non-disclosure agreement.

2020). Despite allowing discovery on these topics, the Flynn Complainants did not retain any expert witness on the topic of hydrogeology or any other matter at issue for the alleged water supply concerns presented by Ms. Fuller.

9. Furthermore, Ms. Fuller's surrebuttal testimony also improperly attempts to belatedly inject entirely new issues into the case regarding alleged human health concerns from alleged exposure to bentonite, silica, and quartz in products that are utilized in horizontal directional drilling ("HDD") process. *See* Ex. 3 at 6:20-8:31. While this is also an improper attempt at presenting expert testimony for which Ms. Fuller is not qualified, this is an entirely new set of allegations that is wholly outside the scope of this proceeding. These issues are not even remotely referenced in the Flynn Complainants Second Amended Complainant. Nor were any concerns regarding any potential human health impacts of alleged exposure to bentonite, silica, quartz, or other materials used in the HDD process was presented in the Flynn Complainants' case-in-chief. Ms. Fuller's testimony on these matters must therefore be excluded in accordance with 52 Pa. Code § 5.243(e).

10. Because Ms. Fuller has no qualified expertise, her testimony must be limited to her personal knowledge as a lay person. Statements and opinions in her direct and surrebuttal testimony that require expertise must be excluded and stricken. Further, Ms. Fuller's testimony regarding alleged health concerns from the products used in the HDD process is also improper unqualified attempted expert testimony, and nevertheless also injects an entirely new issue into the case, which is not permissible under 52 Pa. Code §5.243(e).

II. Legal Standards

A. Standard for Motion in Limine

11. Under 52 Pa. Code § 5.403, ALJs are vested with the responsibility and authority to control the scope of the evidence admitted to the record and should eliminate proposed

evidence and testimony that is either inadmissible or relate to matters that are outside the scope matters raised in the complaint:

> (a) The presiding officer shall have all necessary authority to control the receipt of evidence, including the following:
>
> (1) ***Ruling on the admissibility of evidence.***
>
> (2) ***Confining the evidence to the issues in the proceeding*** and impose, where appropriate:
>
> (i) Limitations on the number of witnesses to be heard.
>
> (ii) Limitations of time and scope for direct and cross examinations.
>
> (iii) Limitations on the production of further evidence.
>
> (iv) Other necessary limitations.
>
> (b) The presiding officer will actively employ these powers to direct and focus the proceedings consistent with due process.
>
> . . .

52 Pa. Code § 5.403 (emphasis added).

12. It is well settled under the Commission's Rules and Regulations that the presiding ALJ has the authority to control the receipt of evidence in a proceeding. 52 Pa. Code § 5.403; *See also PA PUC v. Penn Estates Utilities, Inc*., Dkt. No. R-00005031 et al., Opinion and Order (Order entered Feb. 9, 2001) ("This authority includes disposition of the admissibility of evidence as well as imposition of limitations on the scope of evidence to be presented on issues raised in a proceeding. As factfinder, the ALJ determines the direction and focus of a proceeding, consistent with due process").

13. ALJs have utilized the authority granted by Section 5.403 to exclude evidence or testimony that is inadmissible, improper, or outside the scope of the issues in the proceeding. *See, e.g., Pa. PUC v. PPL Electric Utilities Corporation,* Dkt. Nos. R-2015-2469275, et al. (ALJ Colwell Sixth Prehearing Order issued July 14, 2015) (granting a motion in limine to exclude testimony on issues that were not properly within the scope of the proceeding); Pa. P.U.C. v.

Phila. Gas Works, Dkt. No. M-00021612, 2002 WL 32063825 (Opinion an Order Dec. 19, 2002) (affirming ALJ's grant of motion in limine to strike witness statement and certain exhibits in entirety); *Re Structural Separation of Bell Atlantic-Pennsylvania, Inc. Retail and Wholesale Operations*, Dkt. No. M-00001353, 2000 Pa. PUC LEXIS 59 at *7-9 (Final Order entered September 28, 2000) (affirming the decision of the Administrative Law Judge in that case to exclude certain evidence as "beyond the scope of the proceeding").

B. Lay Witness Testimony is Limited to Direct Personal Knowledge

14. Lay witness testimony is generally limited to facts within a witness's direct knowledge. A lay opinion on matters that necessarily require scientific, technical, or specialized knowledge and experience is not competent evidence to support a finding of fact. Pa. R.E 701(c) ("If a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is ... not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.").

15. In contrast, Pennsylvania Rule of Evidence 702 sets forth the standard for the qualification of expert witnesses and provides that:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:
>
> (a) the expert's scientific, technical, or other specialized knowledge is beyond that possessed by the average layperson;
>
> (b) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; and
>
> (c) the expert's methodology is generally accepted in the relevant field.

Pa. R.E. 702. *See also Randall v. PECO Energy Co.*, Dkt. No. C-2016-2537666, 2019 WL 2250792, at *43 (Pa. P.U.C. May 9, 2019), *citing Gibson v. WCAB*, 580 Pa. 470, 485-86, (Pa.

2004) (holding, in part, that notwithstanding the statutory maxim of 2 Pa. C.S. § 505, which mandates a relaxation of the strict rules of evidence in agency hearings and proceedings, the "evidentiary Rules 602, 701, and 702 are applicable to agency proceedings in general…").

16. Although the Pennsylvania Rules of Evidence are not strictly adhered to by the Commission, the Pennsylvania Supreme Court has nevertheless recognized that any relaxation of the rules of evidence in administrative settings cannot permit lay witnesses to testify to technical matters "without personal knowledge or specialized training." *Gibson v. W.C.A.B.*, 861 A.2d 938, 947 (Pa. 2004) (holding Rules of Evidence 602 (personal knowledge), 701 (opinion testimony by lay witnesses) and 702 (testimony by expert witnesses) generally applicable in agency proceedings); *Nancy Manes v. PECO Energy Co.*, Dkt. No. C-20015803, 2002 WL 34559041, at *1 (May 9, 2002) (the Commission abides by the Pennsylvania Supreme Court's standard "that a person qualifies as an expert witness if, through education, occupation or practical experience, the witness has a reasonable pretension to specialized knowledge on the matter at issue.").

17. Accordingly, the Commission has consistently found that a lay witness is not qualified to testify or offer exhibits related to any issues outside of his or her direct personal knowledge. *See e.g.*, *Lamagna v. Pa. Elec. Co.*, Dkt. No. C-2017-2608014, 2018 WL 6124353, at *20 (Oct. 30, 2018) (lay witness was "not qualified to testify or offer exhibits related to health and safety issues outside of her direct personal knowledge.").

18. Moreover, to the extent a lay witness offers references to reports or conclusions of others, these may not be considered as substantial evidence necessary to satisfy a complainants' burden of proof, because a lay witness cannot rely on such information in reaching a conclusion

– rather, that is the exclusive role of a qualified expert witness. *Compare* Pa. R.E. 701 *with* Pa. R.E. 703.

19. While a fact finder may weigh the opinion testimony of a qualified expert, any opinion testimony of an unqualified lay witness must be excluded and should not be given any evidentiary weight. *Gibson v. W.C.A.B.*, 861 A.2d 938, 947 (Pa. 2004); *Miller v. Brass Rail Tavern, Inc.*, 664 A.2d 525, 528 (Pa. 1995).

20. Accordingly, the Commission has consistently found that lay witness testimony on technical issues such as health, safety, and the probability of structural failure necessarily **"*require expert evidence to be persuasive enough to support the proposing party's burden of proof.*"** *Application of PPL Elec. Utilities Corp.*, Dkt. No. A-2009-2082652, 2010 WL 637063, at *11 (Jan. 14, 2010) (emphasis added); *Pickford v. Pub. Util. Comm'n*, 4 A.3d 707, 715 (Pa. Cmwlth. 2010) (ALJ "properly disregarded" testimony from 13 lay witnesses related to concerns and personal opinions about damage to pipes, lead leaching, toxicity to fish and home filtration expenses because "the nature of these opinions … was scientific and required an expert."); *Lamagna v. Pa. Elec. Co.*, Dkt. No. C-2017-2608014, 2018 WL 6124353, at *20 (Oct. 30, 2018) (finding that lay witness testimony and exhibits regarding technical health and safety issues "carry no evidentiary weight and … were properly objected to and excluded.").

21. Moreover, even when a lay witness has some level of knowledge in a related subject, this does not make him or her qualified as an expert on specialized and technical matters such as geology, pipeline construction, pipeline safety, water contamination, or emergency response, and such unqualified testimony is not credible evidence. *See Amended Petition of State Senator Andrew E. Dinniman for Interim Emergency Relief*, Dkt. No. P-2018-301453 *et al.* (Opinion and Order, June 14, 2018) (acknowledging lack of expert testimony regarding technical

geological concerns, thereby necessarily rejecting testimony of lay witness on geological issues without regard for lay witness's purportedly related education and experience.); *see also*, Joint Statement of Commissioners Coleman and Kennard, *Amended Petition of State Senator Andrew E. Dinniman for Interim Emergency Relief*, Dkt. No. P-2018-301453 *et al.* (June 14, 2018) (acknowledging "no credible evidence of record to indicate that a clear and present danger exists with respect to the construction activities on ME2 and ME2X in West Whiteland Township" when hearing transcript was "devoid of any expert witness testimony that, to a reasonable degree of scientific certainty, there is a credible and immediate harm with the construction of these lines.").

22. Indeed, in a similar context in the *Baker* case that also related to the Mariner East pipelines, Your Honor sustained an objection and did not allow a lay witness to testify or otherwise introduce documents from PHMSA, because the witness was not a qualified expert, but rather was only a lay witness. *See Baker v. Sunoco Pipeline L.P.*, Dkt. C-2018-3004294, N.T. 165:6-25 (sustaining objection for lay witness Kim Van Fleet).

C. Standard Prohibiting Introduction of New Issues or Evidence Outside a Party's Case-in-Chief.

23. Under 52 Pa. Code § 5.243(e), a party cannot introduce evidence during the rebuttal stage of the proceedings that was not included in the party's case in chief:

> (e) A party will not be permitted to introduce evidence during a rebuttal phase which:
> (1) Is repetitive.
> (2) ***Should have been included in the party's case-in-chief***.
> (3) ***Substantially varies from the party's case-in-chief.***

52 Pa. Code § 5.243(e) (emphasis added).

24. The Commission, in its 2006 Order adopting revisions to Chapters 1, 3, and 5 of the Pennsylvania Code, noted that Section 5.243(e) "reinforces a party's right to prevent the

inappropriate or abuse of presentation rights." *Final Rulemaking for the Revision of Chapters 1, 3, and 5 of Title 52 of the Pennsylvania Code Pertaining to Practice and Procedure Before the Commission*, Dkt. No. L-00020156 (Order Entered Jan. 4, 2006).

25. The Commission has repeatedly affirmed an ALJ's right to limit, strike, or disregard evidence that violates Section 5.243(e), when the evidence should have been included in a party's case-in-chief.

26. For example, in *Pa. P.U.C. v. Total Env. Solutions, Inc. – Treasure Lake Water Div.*, Dkt. No. R-00072493, et al., 103 Pa. P.U.C. 110, 2008 WL 4145507 (July 30, 2008), the Commission upheld an ALJ's ruling under Section 5.243(e), where the ALJ determined that "it would therefore not be equitable to permit it [the party] to have a second chance to present direct testimony, or to allow it to supplement inadequate direct testimony during the rebuttal phase of this case." *See id.* at *43. The ALJ noted that "[t]he clear purpose of [52 Pa. Code § 5.243(e)] is to avoid trial by ambush and the prevention of surprise can only be achieved if the parties are confined to the scope of their direct case." *Id.* at *44 (citing *Public Utility Commission v. UGI Utilities, Inc.*, 1994 Pa. PUC LEXIS 138, *85).

III. ARGUMENT

A. Fuller is a lay witness who cannot provide testimony or introduce documentary evidence regarding subjects that are solely within the province of a properly qualified expert witness.

27. Ms. Fuller does not have any scientific, technical, or other specialized training or experience related to hydrogeology, lab sample analysis, water well issues, risk assessment, consequence analysis, or emergency response matters, and therefore cannot provide testimony on these topics in accordance with Pennsylvania Rule of Evidence 701.

28. Indeed, in her direct testimony she lists her educational background and work experience, which is limited to general business administration. *See* Ex. A at 1. Ms. Fuller has a

bachelor's degree in modern languages and politics, and a master's degree in business administration, and her work experience appears to be likewise limited to general business matters. *See id.* Ms. Fuller does not have any specialized education, training, or experience as a geologist or hydrogeologist, she has no experience with lab techniques for the analysis of water samples, no experience with risk assessment or consequence analysis, and no experience in the field of emergency response.

29. Despite Ms. Fuller's lack of any scientific, technical, educational, or other knowledge or experience on these topics, Ms. Fuller's direct testimony attempts to explain alleged impacts to her private water supply, and she attempts to provide opinions and analyses regarding geological formations where her home is located. *See* Ex. A at 9-10.

30. In her direct testimony, Ms. Fuller also attempts to testify about evacuation plans, risk assessments, and potential consequences of a pipeline failure, and she provides generalized assertions and opinions regarding: what would happen in the event of a pipeline leak or failure (*see id.* at 11-13); what local first responders, including Delaware County Emergency Services Director Timothy Boyce, would do in response to a pipeline leak or failure (*see id.* at 12); assertions that Sunoco's Supervisor Control and Acquisition (SCADA) and Computation Pipeline Monitoring systems doe not work effectively (*see id.* at 12-13); attempts to present a list of PHMSA reports for incidents related to Sunoco pipelines in Chester County and selectively summarizes what she claims the reports state (*id.*at 13-16); provides her opinion on what she believes to be appropriate evacuation plains (*id.* at 17-18); and attempts to provide an opinion regarding a hypothetical rupture of a pipeline near Granite Farm Estates (*id.* at 17-18).

31. Ms. Fuller is not competent to testify or provide any opinions on any of these subjects, and her testimony on these issues must therefore be excluded in accordance with Pennsylvania Rule of Evidence 701.

32. In fact, during the October 24, 2019 lay witness in-person hearing, Ms. Fuller attempted to sponsor certain exhibits referenced or otherwise attached to her written direct testimony. *See* N.T. N.T. 1423:23-1441:21. SPLP objected to the admission of certain of those exhibits on the basis that Ms. Fuller is not a properly qualified expert witness – as she has no specialized knowledge, training, or experience – and as such, has no basis to introduce technical or scientific information into the record of this case. *See e.g.*, N.T. 1427:4-1436:23 (exhibits Fuller-05, Fuller-08, Fuller-09, and Fuller-10 not admitted).

33. For example, Your Honor sustained SPLP's objection and did not allow Ms. Fuller to introduce Fuller Exhibit 05, which was a print out of a website from United States Geological Service regarding bacteria and E. Coli in water, on the basis that it was a scientific document that was not the proper grounds for lay witness testimony. N.T. 1427:9-21.

34. Likewise, Your Honor sustained SPLP's objection to the introduction of Fuller Exhibit 09, which was a compilation of partial and incomplete copies of laboratory results for water samples from Ms. Fuller's residential well, on the basis that Ms. Fuller was not competent to testify about the lab sample results, which are scientific information that is a matter for expert testimony. N.T. 1429:9-1430:9. In fact Ms. Fuller's counsel agreed that she was not competent to explain the lab sampling. N.T. 1429:15-19.

35. But remarkably, despite these limitations, Ms. Fuller spends the majority of her surrebuttal testimony disagreeing with hydrogeologist Richard King's expert conclusions, and attempts to assert alleged "facts" to demonstrate why she does not agree with his expert opinions,

while also claiming that Mr. King's conclusions are inaccurate or that Mr. King mischaracterizes the data that he evaluated. *See generally* Ex. C.

36. Ms. Fuller then attempts interpret documents attached to Mr. King's expert testimony, and to also to introduce additional laboratory sampling reports attached to Fuller's surrebuttal testimony. These are the same types of documents that Your Honor has already determined are beyond the limited scope of a lay witness, and therefore properly excluded during Ms. Fuller's proffer of such documents at the October 24, 2019 lay witness in-person hearing. *Compare* Fuller-09 (excerpts from lab results that were not admitted) *with* Surrebuttal Fuller-01 (lab report), and imbedded excerpts in Ex. C, at 3:11-16 (excerpts of lab reports).

37. And Ms. Fuller's lack of knowledge, training, and expertise is highlighted by her attempt to interpret the lab reports. For example, Ms. Fuller attempts to discern the meaning of "major concentration" listed in certain lab reports and explain that this somehow undercuts Mr. King's expert analysis and proves he is incorrect – without Ms. Fuller having any training, experience, or knowledge of how that lab analysis is performed, or what the indication of "major" means in the context of that lab report. *See* Ex. C at 2:40-4:10.

38. As SPLP will explain in rejoinder testimony, and which will be more fully expanded upon during the hearing – the lab reports that Ms. Fuller attempts to analyze and interpret, without any training or experience – are x-ray diffraction samples that correlate to the potential presence or absence of minerals, including bentonite, that may be present in a water sample. These lab reports **do not** reflect the total amount of any mineral that may be present in a water sample, but rather, are an assessment of the concentrated and dried-out total suspended solids extracted from a water sample. As the report itself explains, a "major concentration" of a given mineral that appears in the sampling is merely a comparison of that mineral to the rest of

the minerals present in the dried out material on the laboratory sampling surface – the concentration of bentonite in the solid sample that is analyzed does not identify how much bentonite, or any other mineral, may have been present in the water sample itself:

> Major concentrations denote phases that are estimated to make up more than 20% of the material by weight, minor concentrations estimate concentrations in the material between 20% and 5% by weight and trace concentration estimates a phases present in the sample at concentrations less than 5% by weight.

Ex. C, at Fuller Surrebuttal Ex. 1, pg. 4. This lab report simply does not, as Ms. Fuller alleges, define a "major concentration" "as greater than 20% of the water being sampled." Ex. C. at 3:1; *see also* Ex. C. 5:27, 5:43 (same). Regardless, Ms. Fuller has no expertise to provide this testimony in any event, as she has no scientific or technical knowledge or experience in the fields of hydrogeology or laboratory analysis of water samples.

39. Ms. Fuller also disagrees with Mr. King's expert conclusions regarding various water sampling events that occurred over time at Fuller's property, and again attempts to make improper conclusions regarding these sampling events without any knowledge, experience, or expertise that is necessary to do so. *See* Ex. C at 4:17-5:35.

40. Ms. Fuller challenges Mr. King's expert conclusions regarding potential sources of bentonite from weathered bedrock. Ex. C. 5:38-6:3. Again, Ms. Fuller is not a geologist or hydrogeologist and has no technical, scientific, or other expertise that make her competent to testify on this subject.

41. Ms. Fuller also claims that Mr. King's analysis of geological data, including fracture trace analyses is incorrect, and attempts to perform her own analysis of the geological data and mapping that Mr. King presented in his testimony. Ex. C. 9:37-9. Ms. Fuller also claims that SPLP's construction activity has caused additional "sinkholes" and hypothesizes that these "sinkholes" could expand and create the risk of damage to the pipelines in the area. Ex. C.

10:10-23. Again, Ms. Fuller is not a geologist and has no technical or scientific experience or training in geology, nor is she competent to testify on these issues.

42. Ms. Fuller also attempts to make various legal conclusions in her surrebuttal testimony, including the scope of the Pennsylvania Clean Streams Law and whether it was violated. *See* Ex. C at 4:36-43 (attempting to define what statute means by a "water of the Commonwealth); 6:5-12 9 (attempting to correlate maple syrup and soy sauce as pollutants). Ms. Fuller also attempts to assert that SPLP has not compiled with various PADEP permit requirements. Ex. C. at 11:27-12:12. Ms. Fuller made similar statements in her original direct testimony, claiming that there were violations of the American Disabilities Act (Ex. A at 19), and that certain allegations demonstrated a violation of PHMSA regulations (Ex. A at 20-21).

43. Legal conclusions or interpretation of statutes and regulatory provisions are not proper grounds for either lay opinions or expert opinion, but rather are within the sole province of the court or administrative tribunal. *See e.g.*, *Waters v. State Employees' Retirement Bd.*, 955 A.2d 466, 471 n.7 (Pa. Commw. Ct. 2008) (citing *United States v. Leo*, 941 F.2d 181, 196-97 (3d. Cir. 1991) ("an expert witness may not be offered to testify 'as to the governing law' or 'what the law required. . . . The law is evidence of itself, and it is up to the courts, not a witness, to draw conclusions as to its meaning.'"). Thus, a "witness may not ordinarily testify as to whether he believes a party's actions constitute a violation of the ordinance." *Browne v. Dep't of Transp.*,843 A.2d 429, 433-34 (Pa. Commw. Ct. 2004).

44. Because Ms. Fuller has no knowledge, training, or experience in the fields of hydrogeology, lab sample analysis, water well issues, risk assessment, consequence analysis, or emergency response matters, under Pennsylvania Rule of Evidence 701 and 52 Pa. Code § 5.403, Your Honor should exclude Ms. Fuller's testimony on these topics and limit the scope of her

testimony to only those matters of fact within her personal knowledge and experience as a layperson.

B. Fuller's surrebuttal testimony attempts to introduce an entirely new issue into this case, which to the extent relevant, should have been addressed in the Flynn Complainants' case-in-chief by a qualified expert.

45. In her surrebuttal testimony, Ms. Fuller attempts to introduce evidence regarding her alleged concerns regarding the potential human health effects from exposure to bentonite, silica, quartz, or other materials contained in products utilized in HDD operations. *See* Ex. C at 6:20-8:31.

46. Alleged concerns regarding the toxicity and human health effects of bentonite, silica, or quartz – or lack thereof – is completely outside the scope of this proceeding. Indeed, this alleged issue is not even mentioned in the Flynn Complainants' Second Amended Complainant. Nor were any concerns regarding any potential human health impacts of alleged exposure to bentonite, silica, quartz, or other materials used in the HDD process presented in the Flynn Complainant's case-in-chief. And Flynn Complainants offer no expert witness on this newly-introduced topic.

47. First, as noted above, Ms. Fuller is not an expert witness, she is a lay person. She has no knowledge, training, or experience regarding toxicology, risk assessment, or any other field that is relevant to providing an opinion regarding the potential health hazards of bentonite, silica, quartz, or any other substance used in the HDD process. *See* Pa. R.E. 701. Ms. Fuller's testimony on this topic should therefore be excluded on that basis alone.

48. But even if Ms. Fuller's testimony could seen to be only lay witness testimony – which it is not – it is entirely irrelevant to the issues underlying the Flynn Complainants' case in general, and also irrelevant to Ms. Fuller's claims specifically. Ms. Fuller claims that she recently "discovered" what brand of bentonite a drilling company Michel's is using at an HDD

site "near" her that she drove by. As Ms. Fuller states, "I was driving past St. Simon and Jude Church and school when I saw pallets of Cetco Super Gel-X at the construction site on June 30, 2020 at 12:50 p.m.," and then Ms. Fuller claims to have "went onto Michel's website" where the company listed various brands of bentonite that use for HDD construction. *See* Ex. C at 6:14-34.

49. The HDD location that Ms. Fuller allegedly drove by at the St. Simon and Jude church and school is located at 6 Cavanaugh Ct, West Chester, PA, in Chester County. Ms. Fuller lives at 226 Valley Road, Media, PA, in Delaware County – approximately 6 miles away from the St. Simon and Jude Church and School. *See* Ex. A at 1. The closest HDD to her home is HDD # S3-0591 (PA-DE-0046.0000-RD), know as the Valley Road HDD, which has been shutdown and not in active construction for several months. *See* Ex. B, King Rebuttal Testimony. Ms. Fuller presents no evidence of what products were actually being used at the HDD near her home, nor any evidence that the products she observed during her drive-by of St. Simon and Jude work location in a different county, over six-miles away from her home, have any connection to the HDD operations near her home.

50. And even if Ms. Fuller's testimony on the alleged toxicity of bentonite, silica, quartz, or any other product used in the HDD process was competent testimony of an expert toxicologist or risk assessor – which is it is not – or relevant to the Flynn Complainants' case – which it is not – these issues are wholly outside the scope of the Flynn Complainants' direct testimony and case in-chief.

51. In this proceeding, Your Honor has already invoked 52 Pa. Code § 5.243(e) and restricted the Flynn Complainants' attempt to elicit testimony or introduce documents that would have injected new issues into this case that are outside the scope of the Complaint.

52. In response to SPLP's Omnibus Motion for Adherence to Regulations and the Procedural Rules Order, Your Honor granted that motion, and specifically directed that "all parties shall comply with the provisions of 52 Pa. Code §5.243(e) which prohibits the introduction of evidence during rebuttal which should have been included in the party's case-in-chief or which substantially varies from the party's case-in-chief, unless the party is introducing evidence in support of a proposed settlement." Order Granting Sunoco Pipeline L.P.'s Omnibus Motion, ¶ 4 (Feb. 11, 2020).

53. Likewise, in response to SPLP's Objection to the Flynn Complainants' Notice of Deposition for Matthew Gordon, Your Honor sustained SPLP's objections, which included, *inter alia*, that the Flynn Complainants sought discovery that was outside the scope of the matters alleged in the Complaint, and directed Flynn Complainants to provide a more narrow and specific scope of inquiry to SPLP. *See* Interim Order (entered Feb. 13, 2020); *see also* Sunoco Pipeline L.P. Objection to Flynn Complainants' Notice of Deposition and Production of Documents for Matthew Gordon (filed Feb. 12, 2020), at 3.

54. During the deposition of Mr. Gordon, Your Honor affirmed the decision in your February 11, 2020 Omnibus Order, and again ruled that the Flynn Complainants could not question Mr. Gordon or attempt to introduce DEP Consent Orders and other related documents that would have the effect of improperly supplementing the Flynn Complainants' direct case. *See* SPLP's Answer Opposing Flynn Complainants' Motion for Leave to Submit Additional Evidence, at Attachment A (Excerpt of Deposition Transcript, N.T. 120:3-8 (upholding SPLP's objection to introduction of documents), N.T. 121:24-25 (declining to reconsider ruling)).

55. Ignoring this admonishment yet again, Flynn Complainants filed a Motion For Leave to Submit Additional Evidence that attempted to introduce those same documents and

expand the scope of their case-in-chief, and also served a set of Requests for Admissions to SPLP that sought to introduce the exact same documents and information. After SPLP objected, the Flynn Complaints served a corresponding Motion to Determine Sufficiency of Sunoco Pipeline, L.P.'s Objections and Answer to Request for Admission. Your Honor denied both of the Flynn Complaint's motions, and found that SPLP's position was justified:

> Additionally, the Admissions are an attempt to introduce evidence after Complainants' direct case and they expand the scope of the proceeding. The scope of discovery is limited to relevant issues in the case as narrowed by the scope of Complainants' direct testimony. . . . SPLP will not be compelled to answer these Admissions pertaining to DEP's COA's because they are not relevant to the issues in the instant case and exceed the scope of the Complainants' direct case before the Commission. . . . Additionally, Flynn Complainants' Motion for Leave to File Supplemental Testimony and Exhibits will be denied.

Order (entered May 28, 2020), at 2-3.

56. Ms. Fuller's testimony on concerns regarding the alleged potential human health effects of materials utilized in HDD construction is yet another attempt by the Flynn Complainants to inject new collateral issues in this case, now, at the very late hour of submission of surrebuttal testimony. This testimony is improper and should be excluded under 52 Pa. Code § 5.243(e), as it was not an issue presented in the Flynn Complainants' case-in-chief.

57. Thus, Ms. Fuller's testimony on concerns regarding alleged potential human health effects of exposure to bentonite, silica, quartz, or any other material utilized in HDD construction should be excluded for three reasons: (1) as improper lay witness testimony on a matter that requires expert testimony; (2) as irrelevant to the underlying issues in the case; and, (3) because it improperly expands the scope of Flynn Complainants' case-in-chief.

58. To the extent that this testimony is allowed to be introduced at the hearing, which Your Honor should not allow, SPLP must be provided the opportunity to present expert testimony in rebuttal to Ms. Fuller's testimony.

59. As such, pending Your Honor's ruling on this Motion, to preserve its rights SPLP will prepare and submit a rejoinder testimony outline on this topic from a properly-qualified expert witness to allow SPLP to present responsive testimony during the hearing, if necessary.

IV. CONCLUSION

WHEREFORE, Sunoco Pipeline, L.P. respectfully requests that Your Honor:

(1) Grant this Motion in Limine;

(2) Strike the testimony of Rosemary Fuller appearing in her direct testimony at: page 3 (partial); page 6 (partial); page 9 (partial); page 10 (partial); page 11 (partial); page 12 (partial), pages 13-15; page 16 (partial); page 17; page 18 (partial); page 19 (partial); page 20 (partial); and page 21 (partial). The testimony proposed to be stricken is reflected on the redline/strikethrough version of Ms. Fuller's direct testimony, attached as "Exhibit D";

(3) Strike the testimony of Rosemary Fuller appearing in her surrebuttal testimony at: page 2 line 40 through page 8 line 32; page 8 line 42 through page 9 line 7; page 9 line 27 through page 10 line 23; and page 11 line 27 through page 12 line 12. The testimony proposed to be stricken is reflected on the redline/strikethrough version of Ms. Fuller's surrebuttal testimony, attached as "Exhibit E";

(4) Strike the proposed exhibit appended to Ms. Fuller's surrebuttal testimony as Fuller surrebuttal Exhibit-1; and

(5) Otherwise limit Ms. Fuller's testimony to issues within her personal knowledge.

Respectfully submitted,

/s/ Thomas J. Sniscak
Thomas J. Sniscak, Esq. (PA ID No. 33891)
Whitney E. Snyder, Esq. (PA ID No. 316625)
Hawke, McKeon & Sniscak LLP
100 North Tenth Street
Harrisburg, PA 17101
Tel: (717) 236-1300
tjsniscak@hmslegal.com
kjmckeon@hmslegal.com
wesnyder@hmslegal.com

/s/ Robert D. Fox
Robert D. Fox, Esq. (PA ID No. 44322)
Neil S. Witkes, Esq. (PA ID No. 37653)
Diana A. Silva, Esq. (PA ID No. 311083)
MANKO, GOLD, KATCHER & FOX, LLP
401 City Avenue, Suite 901
Bala Cynwyd, PA 19004
Tel: (484) 430-5700
rfox@mankogold.com
nwitkes@mankogold.com
dsilva@mankogold.com

Attorneys for Respondent Sunoco Pipeline L.P.

Dated: August 14, 2020

EXHIBIT A

Testimony for the PUC

I. Background

Name: Rosemary F. R. Fuller

Address: 226 Valley Road, Media, PA 19063

Family: Husband Gordon, 2 children Cameron (26) and Stephanie (21)

Education:

- BA (Hons) from the University of West London (Ealing College) in Modern Languages and South American Politics (1982)
- MBA from the University of Edinburgh (1987)

Career Experience:

1982 – Freight Forwarder with Simar Freight, Poole, Dorset UK

1983- 1984 Management Consultant with Metra Proudfoot, Brussels, Belgium

1984-1986 Signode GmbH, Dinslaken Germany

1988-1996 Financial Adviser, Allied Dunbar, Edinburgh

2008-present Rental Property Owner/Manager

Non-profit volunteer work:

Government relations advocacy work for JDRF (Juvenile Diabetes Research Foundation)

II. Objectives

The goal of my testimony is to share my concerns about the location and siting of the Mariner East pipelines, the risk they pose for my family and community, the lack of a credible and workable Emergency Plan, the concerns about integrity maintenance issues and the lack of transparency and information regarding the pipelines. I would like to show that living within the blast zone of Mariner East presents us with a clear and present danger of catastrophic proportions.

III. Proximity to Mariner East Pipelines

We have lived at 226 Valley Road, Media, PA, since 2003.

ME2, ME2X and the 82-yr old 12" Point Breeze to Montello, which was repurposed to transport highly volatile natural gas liquids, are all 150 ft away from the front of our property along Valley Road. The 88-yr old Mariner East 1, also repurposed to transport highly volatile natural gas liquids, is approx. 1100 ft behind our property along New Darlington Road. In total, therefore, we have 4 highly volatile NGL pipelines around our property. The nearest Mariner East valve stations are at Granite Farms Estates (less than a mile away), Glenwood Elementary School (a mile away) and Duffers Tavern (just over 2 miles away). We are surrounded by a deer fence and have electric gates as the entry/exit point at the front of our property on Valley Road. There is no "uphill" on our property and we don't have a windsock to determine the direction of the wind.

Our Story

In 2015 we were approached by Sunoco and asked to sign a permanent easement as shown in **Fuller exhibit 1**, giving Sunoco Pipeline a stretch of land running along the entire front of our property along Valley Road. The Percheron Field Services agent, who also happened to be a notary public, told us very clearly that "there would be no risk and we would never even know they were there". Subsequently this statement proved to be untrue. After the results of two independent risk assessments we now know there is a huge risk with highly volatile natural gas pipelines. As far as "not knowing they are there" is concerned, we have had to witness our beautiful, quiet, and residential Valley Road being turned into a massive, dirty, noisy, potholed, construction site with a constant flow of water trucks, hazardous waste trucks, diggers, construction vehicles, workers vehicles, geologists, flaggers, not just for a week or a month but for years now since construction began in 2017. Again, we were never informed that this would happen. We bought this property, our home, for many reasons and one was the location. Mariner East construction has changed our environment beyond all recognition. We have had to suffer the dirt, the noise, the drilling fluid spills into the Rocky Run Creek and down Valley Road. Flooding where we had none before. We have had, at any one time, approximately half a dozen pipeline construction sites along this road with the pipelines stretching out along the side of the road. We've had helicopters and airplanes flying low over our property. Our local park, Sleighton Park, has been cordoned off with a huge construction wall surrounding an ME2 and 2X pipeline HDD entry/exit point – right where children play, where our local sports teams are supposed to play their games, where I can no longer take my dogs in a circuitous route but have to walk back and forth because they took that whole section of the park away from us back in

2017. It's a daily and ugly reminder for years now of what's going on and what they didn't tell us would happen when we signed the permanent easement in 2015.

Sleighton Park, is just a half a mile away from our home and also the location of two recent sink holes as reported by StateImpact in **Fuller exhibit 20** that occurred on September 13 and October 17, just last Thursday. In each case the sinkhole, right next to the HDD entry/exit drill hole, exposed a section of the old 12" Point Breeze to Montello which has leaked several times along here when it was transporting gasoline. Last year it was repurposed to transport highly volatile natural gas liquids. This is the park where I walk my dogs every day. The park where children play every day. Now I feel nervous about walking there in case a third one appears and this whole area becomes another Lisa Drive, just one sinkhole after another. Now I'm even wondering whether the geophysical analysis over the length of the profile for Valley Road Crossing S3-0591 HDD was ever carried out, as required by the DEP. John Hohenstein's letter to Matthew Gordon dated 12/5/2018 confirms this requirement in order to minimize the risk of Inadvertent Returns and impacts to public and private water supplies. We have suffered both.

When my husband asked the Percheron field agent "You mean they're inert liquids?" she responded "yes". We signed the document in good faith as, no doubt, many other residents have done along the 350-mile route of the Mariner East project. We obviously now wish, knowing what we do, that we had never signed that document but am then reminded of her statement "we don't have to ask you for this but we're trying to be a good neighbor". Public utility certification gives Sunoco the power to exercise eminent domain. We never really had a choice.

Initially we were never told that the purpose of these new pipelines or the repurposing of the old ones would be for highly volatile natural gas liquids, how dangerous they were or what we should look for or do in the event of a leak or rupture. The bottom of the permanent easement document mentions a whole list of possible products starting with oil, oil products, crude petroleum, etc. I don't understand why the Percheron representative was not as specific about the product that ME2 and ME2X would be transporting when she presented us with the permanent easement to sign as Sunoco was in their permit application to the DEP where they clearly stated it was for natural gas liquids.

Sunoco information leaflets only started to appear once the whole issue of lack of public awareness came up. Even then, we were never informed what our emergency plan would be. Nobody from Sunoco has ever been to our property to tell us what to do in the event of a leak or rupture.

If you go on a cruise one of the first things you go through is the evacuation drill so that, in the event of an incident, you know exactly what to do. When you board an aircraft the cabin crew go through the safety drill, showing passengers how to stay safe during the flight, where the exit doors are and how to evacuate the aircraft in the case of an emergency. Students in schools take part in regular fire drills and practice evacuation. Why is there nothing more informative than "run uphill, upwind" from Sunoco in the event of a leak that could potentially produce an explosion of catastrophic proportions?

We didn't receive any information about the repurposing of ME1 which lies behind us along New Darlington Road, approx. 1600 ft from our property line. This is an old pipeline, installed in 1931, only 8 inches in diameter, and now repurposed for a totally different product at much higher pressure and with the flow in the opposite direction. In September 2014 PHMSA issued an advisory bulletin to alert operators of hazardous liquid and gas transmission pipelines of the potential significant impact flow reversals, product changes and conversion to service may have on the integrity of a pipeline. Failures on natural gas transmission and hazardous liquid pipelines have occurred after these operational changes. The fact that both the old ME1 and 12" Point Breeze to Montello have undergone these changes make us very nervous. We live so close to both of them.

One of the old pipes Sunoco used for the "workaround" is the 12" Point Breeze to Montello which runs along Valley Road 150 ft past our house. This pipe is old (installed in 1937) and corroded and has leaked multiple times in Edgmont Township just along the road from us – namely in 1988, 1992 and on Valley Road in 2015 as the **Fuller Exhibit 14** accident report shows. All these leaks were discovered by residents seeing and smelling the product being transported in the pipe which, at that time, was gasoline. All those leaks were NOT detected by Sunoco's leak detection equipment. Now the product in the pipe has been replaced with odorless and colorless highly volatile natural gas liquids through high consequence areas. We no longer have the ability to see or smell a leak when Sunoco's leak detection equipment fails as it did in the previous examples. In other words, we have now been placed at much higher risk.

This old 12" Point Breeze to Montello or, the GRE as it is also referred to, is the very same pipe that Administrator Elliott referred to as "compromised" in his letter to the West Whiteland Board of Supervisors on Sept. 4, 2018 as shown in **Fuller Exhibit 16**. This is the repurposed pipe that runs along Valley Road and in front of our property. This is the very same pipe that leaked 33,000 gallons of petroleum into Darby Creek in June of 2018. On the final page of the letter in Point 6, Administrator Elliott states that "the compromised section … will continue to transport refined products". When I asked Ian Woods, lead Community Liaison for PHMSA to define "compromised" he stated that it meant corroded. Why would a corroded pipe continue to transport refined products? Surely that is unsafe?

What should be of great concern is that despite the leak detection equipment being operational and functional at the time, it failed to detect this leak. Notification came once again from the public noticing a petroleum odor on June 19. On June 16 a private citizen had noticed a sheen on Darby Creek. It took until June 26 for Sunoco to confirm that the source of the leak was the Point Breeze to Montello pipe. One whole week.

Despite undergoing inspections with in-line tools in 2016, despite Sunoco spending $30 million in 2016 to upgrade the 12-inch line, the fact is that this pipeline still failed in a high consequence area in 2018. If this had been a week-long natural gas liquids leak instead of gasoline the consequences would have been very different and far more serious. Sunoco's claim to go "above and beyond" is clearly not guaranteeing the safety of its infrastructure.

Once construction of Mariner East 2 began in 2017 more and more articles started to appear in the news about the Mariner East 2 pipeline. Gradually stories came out about damage to private wells from punctured aquifers, water contamination, inadvertent returns, drilling fluid spills, contamination to wetlands and rivers, the list goes on. Sunoco racked up more than 800 state and federal permit violations and fines for Mariner East have now exceeded $13 million.

I became extremely concerned. I started to do some serious research and spoke with people in the industry. They all told me the same thing. That natural gas liquids shouldn't be brought through densely populated high consequence areas and that the HDD was more than likely going to damage my well. I was devastated. The integrity of our well and maintaining the purity of our water was paramount to the health and safety of my family. I have two members of my family with seriously compromised immune systems. We were never informed this might happen when we signed the permanent easement agreement.

I started receiving Horizontal Directional Drilling Reevaluation Reports from the DEP early 2018. Residents were invited to submit comments. February 1st, 2018 I submitted our first comments to Karen Yordy of the DEP as shown in **Fuller Exhibit 2**. I shared my concerns and asked for answers. I received none. The only thing that was addressed was the incorrect distance of my well to the proposed HDD which Sunoco had measured as 490 ft away when it was, in fact, 150 ft away.

Despite all my concerns I expressed about HDD drilling and the impending damage to our well if the HDD went ahead, despite all my written response comments to each Sunoco Horizontal

Directional Drilling Reevaluation Report to the DEP, despite my letter to Karen Yordy of the DEP, my letter to Mr. John Hohenstein, P.E. of the DEP as shown in **Fuller exhibit 3**, my third set of Reevaluation Report comments in **Fuller exhibit 4** (comment No. 6), the HDD went ahead along Valley Road for ME2 and ME2X.

In July of this year, as predicted, our private water well, our sole source of water, suffered major contamination and we had E Coli and fecal coliform introduced into our internal drinking water system. The test results are shown in **Fuller Exhibit 9.** My daughter sadly became very sick and had to go to the gastroenterology department of our local hospital. We still have no idea what the "undetermined" contaminant is.

I let it be known at the beginning of this project, before the HDD, that two members of my family have seriously compromised immune systems. I asked for a solution to this problem before HDD began because any risk of contamination could be fatal for both. The United States Geological Survey clearly states on page 3 of **Fuller exhibit 5** that consumption of water contaminated with E Coli and fecal coliform may cause death in those with weakened immune systems such as my husband who has stage 4 incurable cancer or my son, who has a life-threatening incurable auto-immune disease. I received no response from either Sunoco or the DEP about my concerns regarding contamination. Now, after contaminating our well, after making our daughter sick, after Sunoco knowingly put my family at risk, they are offering the solution they could have offered us at the beginning which is putting us onto Aqua.

Fuller Exhibit 6 shows that Sunoco made this offer of public water connection to all landowners with private wells within 450 ft of the HDD in Jackson Township, Cambria County. Why were we on Valley Road in Middletown Township not made the same offer? In SPLP's May 21, 2018, response to the DEP (**Fuller exhibit 7),** Points 7 and 28 state that, in accordance with its Chapter 105 permit, Sunoco must provide long-term replacement potable water to the satisfaction of affected water supply owners. They have not done that. This same document also shows that a fracture line passes straight through our property crossing the HDD. This put us at higher risk of well damage and Sunoco knew that from the beginning.

Sunoco's Water Supply Assessment, Preparedness, Prevention and Contingency Plan (**Fuller Exhibit 8**) outlines the risks HDD poses to private groundwater wells and the risks of inadvertent returns. Point 5.2.1 under "Potential HDD Impacts" clearly states that "While the path of least resistance is typically the bore hole itself, it may instead be an existing fracture …When this happens … drilling fluid could enter the groundwater table that could be used by private groundwater wells." It is unconscionable to think that Sunoco was prepared to take a risk with my family's health or rather, lives, that I wasn't prepared to take. This is a total disregard of foreseeable consequences and reckless endangerment of life and totally disproves what Sunoco says about "putting safety first" and "being a good neighbor".

As I started to hear about negative impacts from the Mariner East pipeline project, I also learned that construction had apparently gone ahead without any independent risk assessments having been carried out. The only risk assessment that had been conducted was apparently by Sunoco but no-one was allowed to see it. We had been placed in danger but didn't know how anything

would impact us or what to do in a negative impact situation. All these facts had been kept from us when we signed that Permanent Easement.

For instance, we weren't told that, unlike other pipeline products, these natural gas liquids had no color or odor. When they leak, there are two possibilities. Either the gas escaping from the leak is immediately ignited or they form a ground hugging vapor cloud that can spread along the ground for up to a mile. Any leak immediately becomes an ignition source for any static or electrical spark. This means you cannot have a vehicle driving along the road anywhere near the leak, you cannot use a car to escape, or use your cell phone to call for help, etc. We have cars coming along Valley Road all the time. There's nothing to stop a car pulling out of a cul de sac on Valley Road even if both ends of the road are closed off. What's to stop cars driving into a leak and causing an explosion of catastrophic proportions? Nothing at all. As I found out more, there were only more questions and more concerns.

What was the emergency plan for this? There really is none. Middletown Township has an 82-page Emergency Operations Plan shown in **Fuller Exhibit 17** which I read from front to back. It had nothing to offer me for a highly volatile natural gas liquid leak incident. I met with our Township manager at the time and our zoning officer. They couldn't help me either. I met with Representative Chris Quinn. He couldn't help me either. There was and still is no credible or workable plan in place for us.

I started to speak out at public meetings – Delaware County Council, Middletown Township, Edgmont Township, concerned citizens meetings, etc.- joining other residents calling for

independent risk assessments to be carried out so that we, the residents along the line, understood what danger we had been placed in and, if possible, find out what to do in the event of a leak. This shouldn't have been our responsibility. This should have been the responsibility of our public officials, the regulatory agencies, our Governor and Sunoco. All those overseeing this construction project should have made sure this was available for the public. In the absence of anything for us, we had to initiate this ourselves, for the safety of our families and our communities.

Eventually two independent risk assessments were carried out and the dangers of these NGL pipelines became clear. I was shocked at how this had been allowed to happen. I went to meet with Delaware County Emergency Services Director, Timothy Boyce. He agreed with me that there wasn't much they could do during a leak … they can't bring in fire engines, ambulances, police or EMT's anywhere near a natural gas liquid leak or vapor cloud because it could asphyxiate or cause a catastrophic explosion. He told me the best scenario in the case of a leak would be if it ignited immediately thereby preventing a vapor cloud from spreading. But this is a case of hoping for the best and not preparing for the worst.

Delaware County Emergency Services Director also told me that the situation with the NGL pipelines would be safer if there was an early warning system along the route of the pipeline to indicate a leak or problem. He mentioned discussing this with Chester County Emergency Services. Why isn't there such a system in place? Sunoco's Supervisory Control and Acquisition (SCADA)-based system doesn't work effectively. This system is supposed to assist with alarms, alerts and volume calculations. Although the SCADA system was operational and

fully functional at the time of the April 2015 leak of the old, corroded 12" Point Breeze to Montello on Valley Road where I live, it did not assist with the detection or confirmation of the leak (**Exhibit Fuller 14, page 5**). Neither did Sunoco's Computational Pipeline Monitoring (CPM) System. It, too, was operational and fully functional at the time of the 2015 gasoline leak on Valley Road and did not assist in the detection of confirmation of the leak. The same applies to the 33,500-gallon leak in Darby Creek last year. The leaks were, in fact, detected by local residents in both cases. They could see and smell the gasoline. This would not be the case in the event of an HVL leak. These highly volatile natural gas liquids have no odor or color.

So, if Sunoco's SCADA and CPM systems are ineffective and if the product has no odor or color … how is a leak to be detected and how are we protected from danger? I started looking at the history of other leaks, accidents and incidents near me over the last few years on the PHMSA database. Again, I was shocked. I found a long list of leaks, accidents and incidents near me where these so-called leak detection systems (i.e. the SCADA-based system and the CPM system) only worked in one or two cases:

Fuller Exhibit 11 is a screenshot of PHMSA's NPMS Public Viewer showing Sunoco Pipeline and Pipeline Facility Accidents/Incidents near me in Delaware County, approximately 8 miles down to Marcus Hook and 12 miles across to Darby Creek. By going onto the PHMSA analytics dashboard I was able to pull up the individual accident reports for each accident near me. Exhibit 12 is a snapshot of only some of the accidents. I started at 2002 and this is what I found:

1. Valley Road, very near me, April 10, 2015, Incident Report No. 20150163, gasoline leak due to corrosion on the old 12" Point Breeze to Montello pipeline. The leak detection systems, both SCADA and CPM, failed. It was under cathodic protection at the time.
2. Incident Report No. 20040090, March 19, 2004, leak due to corrosion. No leak detection equipment. This was at Lima, just a mile from me. The leak was detected by the smell of petroleum in the sewer line.
3. Incident Report No. 20020422, November 16, 2002, cause material, weld, equipment failure at Marcus Hook. Gasoline leak. No leak detection equipment.
4. Incident Report No. 20133006, December 16, 2012, cause material, weld, equipment failure. Marcus Hook. High consequence area. Leak detection failed.
5. Incident Report No. 20090152, May 8, 2009, NRC Report No. 905083, cause material, weld, equipment failure. Aston. HCA. Gasoline odors detected by passing motorists.
6. Incident Report No. 20160192, Aston Twin Oaks Valve Station, May 27, 2016, HVL or other flammable commodity, cause material, weld, equipment failure. HCA. Leak detection system failed.
7. Incident Report No. 20150095, Aston Twin Oaks Pump Station, 2015, leak, cause connection failure. HCA. Leak detection system failed.
8. Incident Report No. 20150145, AGAIN Aston Twin Oaks Pump Station, NRC. Report No. 1111777, product overflow, cause material/weld/equipment failure. HCA. Leak detection system failed.
9. Incident Report No. 20170040, Aston Valve Station, a leak due to a crack. HCA. Leak detection system failed.

10. Incident Report No. 2013, August 19, 2013, Marcus Hook. Refined and/or petroleum leak due to corrosion. HCA. Discovered by operator not leak detection system.
11. Incident Report No. 20030412, October 29, 2003, Aston, Marcus Hook tank. Gasoline leak due to corrosion. No leak detection system.
12. Incident Report No. 20100193, August 5, 2010, NRC Report No. 950024, refined and/or petroleum leak due to material/weld/equipment failure. This report is missing from the PHMSA analytics dashboard.
13. Incident Report No. 20110401, September 26, 2011, NRC Report No. 990838. Marcus Hook Tank Farm. Refined and/or petroleum leak due to cracked valve. No leak detection system in place.
14. Darby Creek Area, Report No. 20020438, February 21, 2002, NRC Report No. 594688, mixed petroleum products, leak due to corrosion on the 12" Point Breeze to Montello. Odors detected by property owner. No leak detection equipment.
15. Darby Creek, Report No. 201802015, NRC Report No. 1215816, June 16, 2018, over 33,500 gallons of gasoline leaked into the Creek. It took 7 days to determine the source of the leak. It was discovered by a private citizen not the leak detection equipment, caused by a crack in the pipe. **Fuller Exhibit 15** is the accident report. This is again the same 12" Point Breeze to Montello pipe that runs in front of our home, filled with HVL's, that leaked gasoline on Valley Road in 2015 (undetected) and in West Whiteland Township, Chester County spilling 70,000 gallons in 1987. It was constructed in 1937. This was an HCA. Leak detection system failed.

16. Incident Report No. 20110080, February 8, 2011, Darby Township near the John Heinz National Wildlife Refuge, NRC Report 967232, crude oil spill due to corrosion. SCADA and CPM systems failed to detect the leak although both were operational and functional.
17. Incident Report No. 20030077, February 5, 2003, Darby Creek Tank Farm. Crude oil spill due to corrosion. No leak detection equipment.
18. Darby Creek Tank Farm. Incident Report No. 20050373, November 23, 2005, NRC Report No. 780385, bass river crude oil spill due to incorrect operation.
19. Darby Creek Tank Farm. Incident Report No. 20170036, January 10, 2017, cause of incident corrosion. HCA. Leak detection system failed.
20. Darby Creek Tank Farm. Incident Report No. 20120268, August 19, 2012 Crude oil spill due to corrosion. HCA. Leak detection system failed.
21. Darby Creek Tank Farm. Crude oil leak from crack in valve. Incident Report 20150098-21025. Occurred March 2, 2015. HCA. Leak detection system failed.

This is a snapshot of an abysmal record of accidents and equipment failure which can be found on PHMSA's NPMS Public viewer as shown in **Exhibit 12.** I have many more examples – too numerous to mention here. I haven't even touched on Chester County but kept it to my county. These are all high consequence areas near me and near Philadelphia and the sheer number of accidents and equipment failure cannot guarantee public safety whether Sunoco promises to go "above and beyond" or not. "Above and beyond" is obviously not good enough. Existing regulations should be revised and stepped up in order to keep us safe. The facts and the statistics show that the current level of accidents is too high and our safety cannot be guaranteed.

The failure of Sunoco's SCADA and CPM leak detection systems must be addressed.

Delaware County Emergency Services Director told me that a generic evacuation plan is unworkable. Evacuation plans for something like a highly volatile natural gas liquid leak or rupture should be site-specific. For instance, what you would need for Glenwood School would be totally different to what you would need at the Granite Farms Estate location which caters to the elderly. Based on the risk assessment, **exhibit 10** shows what a rupture at Granite Farms Estates would look like:

This shows the flammable cloud from a rupture of the 20-inch line at the entrance to Granite Farms, assuming a gentle wind blowing to the northwest. The dimensions of the cloud are taken

from the Delaware County G2 risk assessment. This would envelope Glenwood Elementary School, Lima Fire Company, Riddle Hospital, Riddle Village, the Granite Run Mall, the Middletown Township Building and Middletown Library along with a multitude of homes, businesses and other public facilities.

There is only one access road, so the ensuing "jet fire" would block the only escape route for Granite Farms survivors for hours, and would prevent would-be rescuers from getting in.

If the breeze were to the northeast, the cloud would envelope the Fair Acres Geriatric Center, the Lima Estates retirement community, the juvenile detention center, and the county's 911 emergency center.

If the breeze were to the east, the cloud would envelope the fire station and Riddle Hospital.

The risk assessments show that the more pipes you have, the greater your risk. We have the 3 NGL pipelines in front of us and the ME1 behind so that immediately quadruples our risk with no credible or workable emergency plan in place.

I thought the "run upwind, uphill for half a mile" emergency plan was a joke until I saw it in Sunoco's flyer. I thought about my husband after his total knee replacement surgery, or my mother when she was staying with us at the end of her life, or the lady I met at the West Whiteland meeting whose sister is totally paralyzed after being hit by a drunk driver and whose husband now has Parkinson's. How would any of these people run uphill. And we don't even

have an uphill. What about the ill and infirm in all the care facilities along the route of the pipeline? How are they supposed to run uphill? There is clearly no consideration of the needs of those who cannot run upwind and uphill for half a mile. According the 1990 American Disabilities Act (**Fuller Exhibit 18**) there is a requirement for local authorities to include the disabled in their Emergency Operating Plans. Neglecting to do this is in violation of the American Disabilities Act. This is a non-discrimination law. Until the disabled are included in a credible, workable Emergency Plan for natural gas liquid leaks or ruptures this project must be halted immediately.

How do we move forward with this? Lawmakers must immediately address the gaps in existing law that have prevented the executive and independent agencies charged with protecting public health, safety and the environment from doing their job. The inability of these agencies to be able to do that has placed the general public in an extremely vulnerable and dangerous position.

During a February 21, 2019 quarterly earnings conference call, Energy Transfer's chief executive, Kelcy Warren, admitted "We've made mistakes and we are correcting those mistakes and will not make those mistakes again". He acknowledged the problems the Mariner East project has faced in Pennsylvania. However, the mistakes are continuing. In June we had the 33,500-gallon undetected leak in Darby Creek. In April a sinkhole opened up at the State Police Barracks close by on Route 1, Middletown Township. Then two more sinkholes a half a mile from us at our local park - one in September and one just last Thursday, October 17. Since July our family has suffered well and water contamination which has made us sick, drilling fluid

spills and inadvertent returns (**exhibit 19**) along Valley Road. Sunoco has become a repeat offender and we don't feel safe.

In his August 2nd, 2018 quarterly earnings conference call Kelcy Warren joked that "A monkey could make money in this business right now." This is hardly the mission statement of a public utility. Don't get me wrong. I have nothing against companies making a profit and passing that on to their shareholders, but not at the expense of people's health, safety and property.

Sunoco's accident history, failure of its leak detection equipment, construction failures, delays, willful and egregious violations not just to precious wetlands but also to people's water sources and fines totaling over $13 million show that this company cannot be allowed to continue. To allow it to do so is placing a vulnerable population at risk.

This project must be halted until these reforms are carried out and people are guaranteed a safe and healthy environment.

As Sunoco is a public utility it is subject to Title 49, Part 195 of the Code of Federal Regulations. It is required to design, construct, operate and maintain its facilities in a manner that provides for the safety of everyone, including the citizens of Middletown Township. I argue that, based on the above facts regarding lack of a credible, workable, non-discriminatory Emergency Plan that provides for every member of our community, the sheer number of leaks, accidents, equipment failure, failure of detection systems and the lack of physical indications to detect a leak, Sunoco's design, construction, operation and maintenance of its facilities does not provide for

the safety of everyone and therefore does not comply with Title 49, Part 195 of the Code of Federal Regulations.

When I spoke with a public official within the PUC on the phone last year, I discussed all this with him. I expressed how concerned I was for my family's safety and the danger this project presented to the whole community. I have done everything in my power to find the answers I need to make us feel safe. I have researched, met with legislators, public officials, County Council members, Township Council members, Emergency Services Directors, scientists, pipeline specialists, etc. It only seemed like the more I discovered and researched, the worse the situation became. I asked him what he would do if he was in my position. His answer was "file a formal complaint".

So that is what we are doing today. In summary, this court and the people in it are our last resort. On behalf of everybody impacted to date and who will be severely at risk in the future I beg you to use the powers bestowed upon you to send a message to Sunoco/Energy Transfer that in Pennsylvania people's lives matter more than profits and increasing the bank balances of billionaires. When this country was created, it was created as an experiment of how government of the people, by the people and for the people would be of paramount importance and that includes our lives and the quality of the environment that we share rather than the profits of multinational organizations.

Thank you for your time and consideration today.

EXHIBIT B

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

MEGHAN FLYNN et al.	:	Docket Nos.	C-2018-3006116 (consolidated)
	:		P-2018-3006117
MELISSA DIBERNARDINO	:	Docket No.	C-2018-3005025 (consolidated)
REBECCA BRITTON	:	Docket No.	C-2019-3006898 (consolidated)
LAURA OBENSKI	:	Docket No.	C-2019-3006905 (consolidated)
ANDOVER HOMEOWNER'S ASSOCIATION, INC.	:	Docket No.	C-2018-3003605 (consolidated)

v.

SUNOCO PIPELINE L.P.

REBUTTAL TESTIMONY

OF RICHARD KING, P.G.

ON BEHALF OF SUNOCO PIPELINE, L.P.

CONTAINS CONFIDENTIAL/HIGHLY CONFIDENTIAL INFORMATION

Dated: June 15, 2020

Q. What is your full name and by whom are you employed?

A. My name is Richard King. I am President and Principal of Applied Testing & Geosciences, LLC, (ATG) which is a consulting and inspection company. With a staff of 20 to 25 inspectors, scientists and engineers the company has completed numerous projects regarding groundwater quality, groundwater contamination and impacts to groundwater related to industrial activities, civil construction works, and landfill facilities throughout the eastern United States, Canada, Asia and Europe. The company is lead by Dr. Craig Joss P.E., Richard King P.G. and Florin Gheorghiu P.G.

Q. What are your responsibilities in that position?

A. As President and Principal of Applied Testing & Geosciences, LLC., I am responsible for the application of geologic and engineering principles to groundwater contamination, water resources, environmental, mining and geotechnical problem solving. I have been responsible for the development and completion of hundreds of projects including siting studies and testing of private, industrial and municipal water supply wells, planning and completion of small site investigations to large-scale multidisciplinary complex studies for groundwater contamination and remedial design. My expertise has been developed on a broad range of environmental projects involving assessment and remedial design and implementation for contaminated sites under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the federal Resource Conservation and Recovery Act (RCRA), the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and other federal and state environmental programs. My clients include private companies, industrial entities, commercial enterprises, and government agencies.

Q. Can you describe your educational background?

A. I received my Bachelor of Science in Engineering Geology and Geotechnics with Honors from Portsmouth University in the United Kingdom in 1972. I am a registered professional geologist in the Commonwealth of Pennsylvania. I was also previously a registered Professional Engineer in Ontario, Canada. Following graduation, I worked for companies such as Wimpey Central Laboratories in the UK, Golder Associates in Canada and the USA, and Rust Environment and Infrastructure before forming the companies that lead to the formation of Applied Testing & Geosciences, LLC. During that time, I was fortunate to have received guidance and training from several recognized professionals in the field of engineering, geology and hydrogeology including Prof. John Cherry, Dr. Evert Hoek, Dr. Trevor Carter, Prof. David G. Price and Ian Higginbottom P.E. Starting as a Junior Engineer I developed the skills to progress to be a Principal in charge of environmental studies for the Golder Associates Philadelphia office. Following a period of several years as Northeast region technical manager for Rust Environment and Infrastructure, in 1996 I started King Geosciences Inc. which merged with a firm led by Dr. Craig Joss to form the predecessor company to ATG. I have attached my CV as exhibit SPLP RK-1.

Q. Can you briefly describe your relevant professional experience?

A. I have fifty years of experience in applying geologic and engineering principles to groundwater water resources (private, municipal and industrial supplies), groundwater impact evaluations to water supplies, environmental contamination projects and design of remedial systems, mining, and geotechnical matters. My work has included groundwater resource evaluations and hydrogeological studies in the United States, Canada, Europe, the Caribbean, and Asia. Of particular relevance to this case, I have gained considerable experience with groundwater

flow in fractured rock via numerous tunnel projects, including the Channel tunnel (also known as the Chunnel beneath the English Channel connecting England and France), tunnels under Lake Ontario, the Atlantic Ocean, and the North Sea, as well as groundwater inflow studies for mining projects in fractured igneous, metamorphic and sedimentary rocks. Additionally, I have worked on hundreds of projects in Pennsylvania, New Jersey, Delaware, Maryland, New York and Virginia related to groundwater supply, contamination and water quality.

Q. Have you ever been qualified to testify as an expert geology and hydrogeology?

A. Yes, I have been approved as an expert in geology and hydrogeology expert by the Pennsylvania Environmental Hearing Board and in cases before the Pennsylvania Court of Common Pleas. I have also been retained as an expert witness in twelve cases that did not proceed to a hearing or trial, but in which I prepared and provided expert reports and related testimony.

Q. Have you reviewed the written testimony of Rosemary Fuller in this proceeding?

A. Yes.

Q. What is the purpose of your testimony?

A. To provide my conclusions regarding the allegation of contamination of the Fuller residence well by activities related to the Mariner East 2/2X pipeline construction.

In summary my conclusions are as follows:

- The allegation that pipeline construction caused “In July of this year, as predicted, our private water well, our sole source of water, suffered major contamination and we had E Coli and fecal coliform introduced into our internal drinking water system.” is incorrect.

Though minute amounts of bentonite were detected in the water from the Fuller residence well, this material would not be classified as a contaminant. Subsequent testing results did not detect bentonite. The minute amount of bentonite detected in the water at the Fuller residence well is not considered to be contamination under any applicable environmental regulatory standard and cannot be construed as "major contamination" as Fuller has alleged in her testimony.

- The allegation that the well has been impacted by an "unknown contaminant" is also not correct. Based on the x-ray diffraction testing, it is my opinion that the "unidentified contaminant" is very likely to be a naturally occurring mineral of the amphibole family and was detected in several of the water samples taken at the Fuller property. The bedrock in the region around the property is an amphibolite gneiss. This detection of a naturally occurring mineral of the amphibole family is from the bedrock in which the Fuller residence well is located, and therefore is not a contaminant, unknown or otherwise.
- A detailed geophysical survey of the entire horizontal directional drilling (HDD) pipeline alignment near the Fuller residence found no evidence of a fracture system in the location where a fracture trace was originally interpreted based only on inspection of high-level aerial photographs. The geophysical investigation was specifically designed to provide information for completion of the HDD and to confirm the fracture features that were based only on interpretation of high-level aerial photographs. A further examination of detailed topographic contours and Light Detection and Ranging (LIDAR) maps also failed to find any evidence of the fracture feature.
- The occurrence of E. Coli and fecal coliform presence in one sample taken in July 2019 at the kitchen tap in the Fuller residence is not related to the pipeline construction. Nor is it

likely that the sampling team caused the contamination as their sampling procedures are specifically designed to prevent such an event by the use of clean latex gloves for each sample acquisition.

Q. What is your opinion regarding Fuller's claims regarding SPLP's construction activities at HDD #S3-0591 (PA-DE-0046.0000-RD), also known as the Valley Road HDD, and the alleged impacts on her private water well?

A. Fuller alleges several impacts to her well and internal water supply system and asserts five primary allegations that the Mariner East pipeline construction and HDD 591 caused the impact to her water supply. These allegations are:

1. In July of 2019 the water supply well suffered "major contamination." (Fuller Testimony at page 9.)
2. An undetermined contaminant has impacted the water supply well. (Fuller Testimony at page 9.)
3. A fracture line passes straight through the Fuller property crossing the HDD. This put the Fullers at higher risk of well damage and Sunoco knew that from the beginning. (Fuller Testimony at page 10.)
4. E. Coli and fecal coliform were introduced into the internal drinking water system (*see* test results Fuller Exhibit 9.) (Fuller Testimony at page 9.)
5. It is unclear whether a "geophysical analysis over the length of the profile for Valley Road Crossing S3-0592 HDD was ever carried out, as required by the DEP." (Fuller Testimony at page 4.)

I will address each of these allegations below.

Q. What is your response to Allegation 1. - In July of 2019 the water supply well suffered major contamination?

A. Figure 1 (See exhibit SPLP RK-2) shows the location of the property at 226 Valley Road. Figure 2 (See exhibit SPLP RK-3) provides a site plan that shows the location of the water supply well, the house, Valley Road and the approximate locations for two septic systems (one not currently used). Figure 2 (See exhibit SPLP RK-3) also portrays the approximate location of a postulated "fracture trace" across the property.

The water supply system at the Fuller residence comprises:

1. A water supply well that is reported to be 150 feet deep, cased through about 30 to 40 feet of overburden and completed in the underlying bedrock. Fuller told Groundwater & Environmental Services, Inc. (GES) (SPLP's water supply sampling consultant and field professional geologists for the Mariner East pipeline project in Delaware County), that the well casing (the annular space between the overburden and the casing) was not grouted. As shown on Figure 3 (See exhibit SPLP RK-4), the bedrock through the region is composed of Proterozoic to Early Paleozoic Baltimore Gneiss. This subgroup contains felsic and intermediate to mafic amphibolite facies gneiss rock types (Blackmer 2005).
2. A pump and associated piping that coveys the water from the well into the basement of the house.
3. After the piping enters the house a pH treatment system injects a metered solution of potassium hydroxide (potash) into the water to increases the pH from acidic conditions (test values at the well head were 5.89 S.U. 6.03 S.U. and 6.12 S.U) to near neutral conditions (test values post pH treatment were 6.52 S.U., 6.54 S.U., 6.65 S.U. and 6.6 S.U.).

4. Following pH adjustment, the water flows through a particulate filter and an Ultraviolet light treatment system (installed on August 2, 2019). The water is then distributed though out the house.

When the well pump is operated the water pressure in the well decreases causing water in the surrounding bedrock to flow towards the well predominantly through fractures in the bedrock. These fractures were developed by multiple periods of tectonic activity in the Middle Silurian period (430 million years ago) through the Early Devonian period (400 million years ago) (Bosbyshell et al Ref).

Though the homeowner reported a decrease in water pressure on July 1, 2019, the yield of the well (i.e. how many gallons per minute the well produces when pumped) has been quite constant during the preconstruction through post complaint period. The well yield was checked several times by the GES sampling team. GES (GES Bryan L. Emilius, PG, LSRP October 21, 2019) reported that the well yield as:

- August 31, 2017 - 5 gpm (pre-construction);
- April 8, 2019 - 4 gpm (pre-construction);
- July 1, 2019 – 5 gpm (at time of complaint); and,
- July 19, 2019 – 4 gpm (post complaint).

The perceived decrease in water pressure may be related to lack of maintenance of the filter system. GES reported that on July 19, 2019 the 5 micron filter was dark grey in color whereas a new filter is white, indicating that there was a build-up of sediment within the filter which would restrict the flow of water through the system.

Between August 31, 2017 and October 10, 2019 eight (8) samples of water were taken from the water supply system at the Fuller residence and submitted for analysis to Pace

Laboratories, a laboratory certified to conduct water analysis in the Commonwealth of Pennsylvania. Table 1 (Exhibit SPLP RK-5) presents all the results obtained by the sampling and analytical program from August 31, 2017 through October 10, 2019.

Fuller alleges that "major contamination" occurred in the water supply as a result of use of HDD to construct the pipeline (Fuller Testimony at page 9). The nature of the alleged "major contamination" is not identified other than a reference to an unspecified "contaminant".

The HDD construction involved drilling a borehole from a surface location about 1400 feet southeast of the Fuller well to a location about 2800 feet northwest of the Fuller well. The HDD is located for the most part beneath Valley Road. Except for the entrance and exit sections of the HDD, the borehole was between 90 feet and 188 feet below the ground surface and completed within the bedrock which lies beneath a mantle of sandy silty and clayey soils developed from the weathering of the bedrock over geological time. During the drilling process bedrock at the front of the borehole is cut and broken into fragments by the drill bit and conveyed to the entry point of the borehole suspended in a drilling mud that is pumped through the drill string (pipe) to push and rotate the drill bit. The drilling mud is comprised predominantly of sodium bentonite (bentonite) clay suspended in water. As necessary by construction conditions, small quantities of additives can be used to modify the properties of the bentonite drill mud (e.g. to thicken the mud). The viscosity of the bentonite/water slurry allows the rock cuttings to be suspended in the slurry and transported to surface. The drilling mud and suspended rock particles are flushed back down the borehole to the entry point at the south end of the HDD.

Bentonite is a clay mineral, typically montmorillonite, and adsorbs water and swells considerably when wet. When added to sufficient water the resulting mixture is fluid, like ketchup,

while being pumped but solidifies to a thick gel when stationary (thixotropic). The largest deposits of bentonite are derived from the weathering of volcanic ash. Bentonite is chemically stable.

Bentonite is used in grout for sealing water supply wells and groundwater quality monitoring wells, and in the construction industry for sealing and grouting. Bentonite is also used as a skin care product (mud packs, clay masks). Bentonite is used for decolorizing various mineral, vegetable, and animal oils. It is also used for clarifying wine, liquor, cider, beer, mead, and vinegar. Bentonite is used in a variety of pet care items such as cat litter. It is also used to absorb oils and grease. Bentonite it is also used as a base for many dermatologic formulas and is being studied for use in battlefield wound dressings.

In summary, bentonite is not recognized as a contaminant under any applicable environmental regulatory standard, and is used extensively in medications, food stuffs and cosmetics.

The drill cuttings from the HDD process are naturally occurring rock materials (Amphibolite Gneiss) that form the bedrock below the land surface. No other materials are introduced into the borehole other than the drilling mud and the only materials that were present in the HDD were fresh water, drilling mud and rock cuttings. The drilling process does not cause the build up of pressure in the borehole as the drilling fluid is free to return to the entry point of the borehole and discharge to drill mud retention basins. As the drill mud is thixotropic by design, the mud does not travel easily through small fracture system and hence tends to remain within the borehole. There were no reported losses of drilling mud (i.e. loss of return/loss of circulation) during completion of either the 16” HDD or the in-progress construction of the 20” HDD at this location.

Bentonite was detected in the water sample taken on July 1, 2019 at the pressure tank spigot (post pH adjustment) and in the well sample taken on July 19, 2019 (See exhibit SPLP RK-5 Table 1). It was not detected in the two other samples taken that day at the pressure tank spigot or the kitchen sink. The analysis of bentonite was completed by RJ Lee group a subcontractor to Pace Analytical using X-ray diffraction (XRD) methods. The procedure involves extracting the suspended solids from the water sample and using X-ray diffraction methods to identify the materials in the solid. The analysis for total suspended solids (TSS) indicated a concentration of <2.5 mg/L on July 1, 2019 at the pressure tank spigot, and 4.3 mg/L from the well on July 19, 2019. The method detection limit for the TSS analysis is 2.5 mg/L. These TSS values are very low, consequently, the amount of bentonite in the actual solids that were extracted from the sample would be extremely low, in the order of one part per million.

This amount of bentonite cannot be construed in anyway as "major contamination" as Fuller suggests in her testimony. If indeed the bentonite that was detected was related to the HDD work, it was not detected in a subsequent sample taken on October 11, 2019 from the well, indicating that the occurrence of bentonite in the well was a short-term event and decreased to undetectable levels quickly.

The source of the bentonite (montmorillonite) is also in question. The following description of the Baltimore Gneiss is published in GM10 Bedrock Geologic Map of The Piedmont of Delaware and the Adjacent Pennsylvania, Schenck, W.S., Plank, M.O., and Srogi, L., 2000.

> "Granitic gneiss with swirling leucosomes and irregular biotite-rich restite layers is the dominant lithology and constitutes approximately 75 to 80 percent of the exposed rocks. The remaining 20 to 25 percent comprises **hornblende-biotite gneiss**, amphibolite with or without pyroxene, and pegmatite. Granitic gneiss is composed of quartz, plagioclase,

biotite, and microcline. Minor and accessory minerals are garnet, muscovite, magnetite, ilmenite, sphene, apatite, and zircon. The **hornblende gneiss** contains plagioclase, quartz, hornblende, and biotite with/without orthopyroxene. Accessory minerals are garnet, muscovite, clinozoisite, perthitic orthoclase, **iron-titanium oxides**, sphene, and apatite. Amphibolites are composed of subequal amounts of hornblende and plagioclase with minor quartz, biotite, clinopyroxene, and orthopyroxene." (emphasis added).

The Abstract from W. F. Cole And C. J. Lancucki 1976 Clays and Clay Minerals, Vol. 24, pp. 79 83, discussed:

"Well developed smectite "crystals" up to 10 mm long, which probably are pseudomorphic after titaniferous hornblende phenocrysts, are present in a weathered dike in a Melbourne clay pit. The pseudomorphs contain 77 per cent of montmorillonite as determined by X-ray powder diffraction, differential thermal analysis, thermo-gravimetric and chemical analysis. The pseudo-hexagonal shape of the pseuodomorphs probably reflects the original crystal habit of the hornblende. The mechanism of alteration of an amphibole to a smectite is discussed."

Clearly it is possible for hornblende to weather to montmorillonite (bentonite). The Baltimore gneiss contains abundant hornblende and iron-titanium oxides. Hence the origin of the miniscule amount of bentonite detected in the Fuller well need not be the bentonite used in the drilling mud for the HDD. The occurrence of the short-term occurrence of the bentonite may be related to the way the well is pumped rather than the influence of the HDD construction work.

Q. What is your response to Allegation 2. – An undetermined contaminant has impacted the water supply well?

The following note was included in the report regarding the sample taken from the well on October 10, 2019

> "Note: Bentonite/montmorillonite was not detected. An unidentifiable phase is present in sample. Bentonite/montmorillonite peak is located in the 5.8 2°Θ region whereas the unidentified peak is located around the 10.5 2°Θ region. The unidentified peak is not Bentonite/montmorillonite."

This appears to be the basis for Fuller's allegation that "An undetermined contaminant has impacted the water supply well." (Fuller Testimony at page 9.)

The X-ray analyses also reported the presence of Quartz, Mica/Illite, Feldspar, Chlorite group and Monoclinic Amphibole. These are all minerals that would be expected in the overburden soils and bedrock beneath the area of the Fuller residence. Figure 4 has been created to allow comparison of the results of the analyses. (See exhibit SPLP RK-6) Monoclinic Amphibole was reported by the laboratory in two samples taken on July 19, 2019, the well and the pressure tank spigot samples. The main peak for Monoclinic Amphibole is located at about the 10.6 position on the x axis of the X-ray diffraction pattern. The kitchen tap sample diffraction pattern was reported as having an unidentifiable peak reported at the 10.6 position of the X axis of the X-ray diffraction pattern. This is the same peak position as the Monoclinic Amphibole results. Similarly, an unidentifiable peak was reported in the October 10, 2019 sample taken from the well with a peak at the 10.6 position on the x axis. Examination of the July 1, 2019 sample results shows a very small peak at that position as well.

This comparison of the x-ray diffraction results over time reflects that the "undetermined contaminant" is naturally occurring Monoclinic Amphibole. The entire area of the Fuller residence

is underlain by a mafic amphibolite facies of the Baltimore gneiss bedrock (Blackmer, 2005) and the overburden soils overlying the bedrock were derived from these rocks. Amphibole minerals are therefore ubiquitous in the bedrock into which the well was drilled and likely in the overburden material which developed by weathering the bedrock over geologic time. Therefore, it is my opinion that it is very likely the alleged "undetermined contaminant" is a naturally occurring mineral, most likely one or more of the hornblende minerals. The fact that the Fuller's well casing was not grouted to seal off the annular space between the well casing and the overburden, provides a potential pathway for soil and upper sections of the weathered bedrock to enter the well, particularly if the well is over pumped. Indeed, GES reported that during the September 23, 2019 sampling event, Fuller explained that the well was pumped continuously for several hours to fill the swimming pool at the residence. Given that the water table is within the overburden at a depth of about 18 feet, continuous pumping from the well for prolonged periods of time would draw this water level down and exacerbate movement of unconsolidated overburden and fine rock fragments into the well bore.

In addition, to determine if any changes in the groundwater chemistry were apparent over the course of the sampling program, Piper and Stiff diagrams were completed. Piper and Stiff diagrams consist of two triangular shaped diagrams representing Cation (Na+, K+, Ca2+, Mg2+) and Anion (Cl-, HCO3-+CO3-, SO42-) species percentage concentrations, and a diamond shaped diagram representing percentage concentrations of both species.

Stiff diagrams are plotted on four horizontal lines scaled in milli-equivalent per liter (meq/l) to the left and right of zero at the center of the lines. Anions are plotted to the right and cations are plotted to the left of the zero line. Connecting the plotted points on the lines results in a

polygon, the shape of which graphically represents the chemical composition of the water samples in terms of the major Anions and Cations.

It should be noted that dilution does not affect the shape of the Stiff diagrams, only the size of the polygon. These plots enable the comparison of results from sample points and can provide indications of changes in the chemistry at sample points. If wells are impacted by water containing different chemistry the Piper plot positions and the Stiff diagram shapes will change systematically.

Figure 5 (Exhibit SPLP RK-7) provides Piper and stiff diagrams for the samples taken from the Fuller residence well. The Piper and Stiff plots are changed slightly by the recognizable increase in Potassium caused by the potash treatment unit. Otherwise the plot positions and Stiff diagram shapes are remarkably consistent. There are no indications whatsoever of "major contamination" in the Fuller well as is alleged. The plot positions on the Piper diagram are consistent (other than as a shift caused by the potash) and the Stiff Diagrams all have the same shape and size (other than as change caused by the potash).

Q. What is your response to Allegation 3 – "A fracture line passes straight through our property crossing the HDD. This put us at higher risk of well damage and Sunoco knew that from the beginning"?

A. As part of the investigation of the geologic conditions for the HDD borehole, pairs of high altitude overlapping aerial photographs taken in 1939 were viewed through a stereoscope to provide a perceived three-dimensional image. By scrutinizing such images for changes in topographic slopes, tonal changes, stream alignments etc. geologic features beneath the ground surface can be interpreted. This form of reconnaissance mapping is termed photogeological

mapping. Features interpreted from this work may indicate areas where the bedrock is more fractured. These features are called fracture traces. One of these interpreted features, based on tonal changes in the photographs, was portrayed as crossing the 226 Valley Road property. Figures 2, 6 and 7 show the approximate location of this interpreted line. (Exhibits SPLP RK-3, SPLP RK-8, and SPLP RK-9)

Photogeological interpretation can provide a preliminary, rapid review of potential conditions along road and pipeline routes and guidance in where to complete specific investigations with boreholes and geophysical surveys. To provide more detailed specific information about subsurface conditions in this section of the pipeline route, three boreholes were completed and a continuous high-resolution geophysical investigation undertaken along the entire length of the HDD 591 section of the pipeline route. The company used for the geophysical survey, Advanced Geological Services, specializes in geophysical investigations.

The 4,250 foot geophysical survey was completed between February 28, 2019 and March 15, 2019 and used seismic refraction and multichannel analysis of seismic waves (MASW) to determine variations in seismic velocities along the HDD alignment and with depth.

Seismic velocities of the bedrock are determined by the rock material, the degree of fracturing and the degree of weathering which can result in chemical changes in the rock material. Areas of bedrock with higher degrees of fracturing or with fractures that are open usually have lower seismic velocities than less fractured bedrock. Weathering can be enhanced by the degree of fracturing, as such, a fractured bedrock zone would tend to increase the depth of weathering which would show up in the seismic data as an area of deeper low velocity materials. As shown on Figure 3 (Exhibit SPLP RK-4), the entire area of HDD 591 is underlain by metamorphic amphibolite gneiss (the Baltimore Gneiss). The boreholes completed along the HDD 591

alignment confirmed the presence of gneiss bedrock. Figure 6 (Exhibit SPLP RK-8) presents the seismic velocity profile along the HDD 591 alignment and indicates the locations where the fracture traces interpreted from the aerial photographs cross the alignment. The geophysical survey did not find any indications of increased fracturing or deeper overburden soils at the location of the "fracture trace" previously interpreted to cross the Fuller residence property. The seismic profile did locate two low velocity zones (LVZ), one located approximately 2000 feet north of 226 Valley Road and another located approximately 1000 feet south of 226 Valley Road. The northern LVZ correlates with a topographic valley trending northeast -southwest across the HDD alignment. No obvious topographic features were noted for the southern LVZ.

To further examine the potential for a fracture trace to cross the Fuller residence property, I examined the 1939 aerial photographs used for the previously interpreted fracture trace analysis using a stereoscope and by digitally enhancing the contrast on the photographs. I also examined the topographic contours and LIDAR imagery downloaded from the PASDA Pennsylvania Imagery Navigator web site (https://maps.psiee.psu.edu/ImageryNavigator). Figures 7 and 8 present these images (Exhibit SPLP RK-9 and SPLP RK-10). To enhance any slope changes that might indicate the presence of a fracture trace, I vertically exaggerated the topographic contour map by a factor of five.

I could not discern or recognize any topographic or drainage features or tonal changes that could be interpolated or extrapolated to cross the Fuller residence property. I did note a topographic slope break to the northwest of the property (see Figures 7 and 8, Exhibit SPLP RK-9 and SPLP RK-10), that, if extended southeast would cross the property – but none of the imagery or the trend of the topographic contours indicated that such an extension was valid or warranted.

Moreover, the subsequent geophysical investigation in the area of HDD 591 confirms the absence of a fracture trace crossing the HDD 591 and the Fuller property.

Based on my review of the aerial photographs, topography maps, LIDAR imagery and the detailed direct evidence of the geophysical data I conclude to a reasonable degree of scientific certainty that the evidence does not support the presence of a fracture trace across the Fuller residence property.

Q. What is your response to Allegation 4 – "E Coli and fecal coliform were introduced into the internal drinking water system (see test results Table XX - Fuller Exhibit 9"?

A. Table 1 (Exhibit SPLP RK-5) presents all the results obtained by the sampling and analytical program from August 31, 2017 and October 10, 2019. This data indicates that Fecal Coliform, E. Coli, and Total Coliform results at the kitchen tap on July 19, 2019 were 8.4, 16.1 and 224.7 respectively (all units col/100ml: Colonies per 100 milliliters). E. Coli and fecal coliforms were not detected in any other samples taken before or after the July 19, 2019 sampling event- including, notably, at the location of the well source/head itself. The well head, which is located outside the home, would be the first point in the well system where any contaminant would be detected if it was a contaminant that was introduced into the well system by the HDD construction process or some other impact to the groundwater from which the well draws water. Nor was E. Coli or fecal coliform present in the next sampling point in the well system, the pressure tank located inside the home where the water is drawn into the home from the well. Rather, the only location where coliforms were detected was the kitchen tap.

It is my opinion, to a reasonable degree of scientific certainty, that the E. Coli and fecal coliform were not introduced into the internal drinking water system either by the HDD

construction process or by the sampling event itself. First, the HDD construction work or process does not involve or generate anything related to E. Coli or fecal coliform. Second, no E. Coli or fecal coliform was detected in the well source itself, or in the next sampling point inside the home, the pressure tank spigot. Third, the procedures used by GES to take samples from the well, spigots, and kitchen tap are specifically designed to reduce the potential for introducing contamination from outside the system being tested to the samples. Samplers are required to wear fresh latex gloves prior to obtaining a sample at each sampling point and handle laboratory cleaned bottleware carefully. The normal tap sampling procedure requires the sampler to don new latex gloves prior to approaching the tap and then turn the tap on with a gloved hand and catch the sample in a sample bottle as water exits the tap nozzle. At no time should the samplers hands or bottles touch the nozzle of the tap, the interior of the sample bottle or the interior of the bottle cap. This process makes the sampler the least likely candidate for introducing E. Coli or fecal coliform contamination in the pipework. Given that no E. Coli and fecal coliform were detected in the well source outside the home or at the pressure tank spigot (the first location where the water enters from the well into the home), it is my opinion to a reasonable degree of scientific certainty that the most likely candidate for the occurrence of these parameters is at the kitchen tap nozzle itself, which is unrelated to HDD construction activities or the GES sampling event in July 2019. Kitchen tap nozzles, aerator screens and tap swivels are all known causes of bacterial contamination (USEPA Region 8, Quick Guide To Drinking Water Sample Collection 2016).

Q. Q. What is your response to Allegation 5 – It is unclear whether a "geophysical analysis over the length of the profile for Valley Road Crossing S3-0592 HDD was ever carried out, as required by the DEP"?

A. SPLP has performed both geotechnical and geophysical analyses of HDD 591, which include completion of three borings along the pipeline alignment and two borings at the entrance and exit points of the HDD 0591. A 4,250 foot geophysical survey was completed between February 28, 2019 and March 15, 2019 and used seismic refraction and multichannel analysis of seismic waves (MASW) to determine variations in seismic velocities along the HDD alignment.

Coupled with the lack of changes in groundwater chemistry at the well between the Preconstruction period (August 2017) to after the construction period (October 2019) it is my professional opinion that the postulated "fracture line" does not exist. As such there is no "higher risk" associated with the pipeline construction.

Q. Does this conclude your testimony?

A. Yes, but I reserve my right to supplement this testimony based on any surrebuttal testimony produced by Complainants and Complainant-Aligned Intervenors.

Exhibit SPLP RK-1

Experience Summary

Richard King, President and Principal of Applied Testing & Geosciences, LLC., has forty years of experience in the application of geologic and engineering principles to groundwater contamination, water resources, environmental, mining and geotechnical problem solving. He has been responsible for the development and completion of hundreds of projects from small site investigations to large-scale multi-disciplinary complex studies with major capital investment. Groundwater resource evaluations and hydrogeological studies have been completed in the USA, Canada, Europe, the Caribbean, and Asia.

Expertise has been developed on a broad range of environmental projects involving assessment and remedial design and implementation for contaminated sites under CERCLA, RCRA, Act 2 and other state-lead programs. Negotiation of Post Closure Plans and modifications to monitoring plans has provided cost reductions of millions of dollars for several clients.

Successful landfill permit applications have been completed in many northeastern states, particularly Pennsylvania, for expansions and greenfield developments. Mr. King is responsible for the development of ongoing assessment programs for numerous landfill sites in New Jersey, Pennsylvania, Maryland, New York and Virginia to determine if groundwater has been impacted by the facilities and if so, what are the likely causes and remedial options.

Projects in open pit and underground mines include: groundwater inflow assessments and prediction for pumping system design and environmental impact statements, stability assessment, analysis and monitoring of slope stability (with high walls up to 1200 feet), reserves and minability studies, mine dewatering for open pits, mine shafts, and various mine layouts. Grouting and backfilling experience includes investigation, design and implementation of coal mine workings and shaft backfilling, numerous dam foundations (large and small) cutoff walls, mine water inflow abatement, foundation grouting, tube-a-manchette cutoff wall design and construction. Tunneling projects involving soft ground and rock tunnels in sedimentary, igneous and metamorphic rocks including predictive geology studies, stress, strain and liner behavior research projects and water inflow evaluations.

In the geotechnical field, experience has been developed on rock slope stability assessments, road foundation and alignment studies, bridge and tunnel projects and design and implementation of rock and soil stabilization measures to preserve nationally important historic monuments.

Mineral and resource projects include reserves assessments for aggregates, limestone, roadstone, gypsum and coal reserves in North America, the Caribbean and Europe. Over 1,000 sq miles of geological mapping projects in bedrock and Quaternary sediments have been completed. Mr. King acts as technical advisor to several consulting companies in the United States, Canada and the United Kingdom and provides Expert Witness reviews and testimony on environmental litigation cases.

Credentials

B.Sc., Hons (Engineering Geology and Geotechnics), Portsmouth University, 1972
Registered Professional Geologist, PA
Professional Engineer, Ontario, Canada (lapsed)
Member of the Canadian Institute of Mining and Metallurgy (lapsed)

Key Projects

Hydrogeology and Permitting Experience for Landfill Sites

Project Manager and Technical Manager for:

- Greenridge Reclamation Landfill Expansion Permit Application
- Greenridge Reclamation Landfill Environmental Assessment
- Greenridge Reclamation Landfill Expansion Permit Modification
- Greenridge Reclamation Landfill Gas monitoring program
- Y&S Landfill Expansion Permit Application
- Y&S Landfill Evaluation of abandoned coal works
- MAWS Valley Landfill Expansion Permit Application
- Lake View Landfill - Environmental Assessment
- Lake View Landfill – Major Permit Modification
- Lake View Landfill – Expansion Permit
- Mountain View Landfill Expansion Permit Application
- Northwest Sanitary Landfill Expansion Permit Application
- Northwest Sanitary Landfill Environmental Assessment
- GROWS 80 Acre East and 80 Acre West Landfill Expansion Permit Applications
- GROWS Landfill Northeast and Southwest Development Area Permit Applications
- GROWS Groundwater Assessments
- GROWS Landfill Groundwater Quality Assessment
- GROWS Landfill Hughes Phase IV Permit Application
- GROWS Landfill Tidal Impact Study
- GROWS and Tullytown Landfills - Regional Geologic Study
- Harmony Grove Groundwater Assessments
- Harmony Grove Groundwater Extraction System Assessments
- Lyncott Landfill RCRA Facility Groundwater Assessment
- Lyncott Landfill Post-Closure Assessment (Act 2)
- Milton Grove Site Reconnaissance
- Modern Landfill Groundwater Model
- Modern Landfill / Pennsylvania Department of Environmental Protection v Local Citizens Group, Expert Witness
- Modern Landfill Enhanced Permeability Concept Development, Groundwater Modeling and Proposal
- Modern Landfill Expansion Permit 21 Acre, 17 acre and Southwest Overview and Northwest Landfill Overview
- Modern Landfill Groundwater Assessments
- Modern Landfill Groundwater Extraction System Assessments
- Modern Landfill Environmental Monitoring Program
- Pottstown Landfill Conceptual Hydrogeology Studies
- Pottstown Landfill Groundwater Assessments
- Pottstown Landfill Groundwater Remediation System Operation and Maintenance
- River Road Landfill Environmental Monitoring Program Preparation
- Slusser Property Assessment for Landfill Development / Coal Mine Impacts
- Sunny Farms Groundwater Quality Assessments
- Sunny Farms Trash Delineation
- Tullytown Landfill (TRRF) Greenfield Permit Application
- TRRF Landfill Southwest Expansion Permit Application
- TRRF Leachate to Surface Water Impact Assessment
- TRRF Landfill Gas Management System
- Warner-Cedar Hollow, Landfill Permit Application
- WMX v ECO Corp Expert Testimony and deposition for $650 million lawsuit

- Berks Landfill Superfund Site Work Plan
- Elizabethtown Landfill Superfund Site Phase II
- Elizabethtown Landfill Superfund Site RI Work Plan
- Fairless Hills Landfill Feasibility Study

Environmental Assessment and Remediation

- Project and technical manager for several CERCLA and RCRA sites through Work Plan Preparation, Remedial Investigation and Design in Coastal Plain and fractured rock environments in New Jersey, Pennsylvania, Massachusetts and New York. Contaminants included DNAPLs, chlorinated solvents, petroleum constituents and metals.

- Remedial designs for remediation of BTEX LNAPL, TCE DNAPL and dissolved phase groundwater contamination in New Jersey, New York, Pennsylvania, Massachusetts, Maryland, Virginia, Canada, and United Kingdom.

- Senior Consultant to RUST for during negotiation of Consent Order for Bethlehem Steel Sparrows Point Facility RFI, Maryland.

- Project and technical manager responsible for detailed review and of RI/FS for Idaho National Engineering Laboratory TAN Facility - TCE DNAPL and radionuclide groundwater plumes in multiple porosity rock media.

- Responsible for development of Alternate Remedial Plans and negotiation with agencies for RCRA and CERCLA sites in Pennsylvania for major international waste management company.

- Remedial Investigation, Design, Corrective Actions implementation and closure for TCE DNAPL site in central Pennsylvania under Act 2.

- Ongoing annual reviews of groundwater conditions at CERCLA, RCRA and other remedial sites to provide guidance for operation, maintenance and monitoring of remedial systems in Pennsylvania, New Jersey, and New York.

- Development of GIS for major litigation case involving Superfund site in New Jersey and completion of graphics support for technical position paper for mediation and litigation. Completed GIS for major petroleum spill in fractured rock beneath suburban development in fractured rock in Pennsylvania.

- Responsible for operation and maintenance of groundwater control system in fractured rock to remediate leachate impacted groundwater. Enhancement of groundwater extraction system in low permeability Triassic bedrock using focused hydrofracturing and flushing.

- Design, installation and negotiation of optimized of groundwater monitoring systems in fractured rock and soils at residual waste landfills and demolition waste landfills. Total savings to clients in excess of $7 million.

- Groundwater resource assessments for local municipalities in Pennsylvania.

- Senior technical consultant for RUST, Golder Associates and other consulting groups for landfill expansions, hydrogeologic and remedial action projects.

- Assessment and remedial design for contaminated sites under CERCLA, RCRA and state-lead programs in karst and carbonate environments. Projects involved contamination by arsenic, lithium, chlorinated solvents, BTEX, PCBs, DNAPLs and metals.

- Technical Manager for Allied Chemical Aerospace Division Easton Plant TCE and BTEX plume remediation.

- Technical manager for remedial investigation (RFI), selection of corrective measures (CMS) and Corrective Measure design for Bell Aerospace Textron Defense systems Wheatfield Plant, Niagara Falls, New York for chlorinated solvents, DNAPL and PAH plumes in overburden and fractured bedrock.

- Project Manager for General Electric Defense Division DNAPL and LNAPL projects in Pittsfield, Massachusetts.

- Evaluation of fate and transport of leachate constituents in glacial materials and coastal plain sediments. Project and technical manager for several groundwater flow and fate and transport models to evaluate the extent of contamination and development of cost effective control measures and natural attenuation remedies.

Litigation Experience - Expert Witness

- Completed Expert Witness Report that showed clients site was not responsible for PCE and TCE contamination that was impacting regional potable water supply wells. NJDEP dropped case against client NJDEP V Concord Chemical, Camden, NJ

- Factual Witness on behalf of Defendant in Bluebell PA, Gasoline Spill Litigation. Ball, et. al. v. Bayard Pump & Tank Co., Inc. et. al.

- Expert Witness for Municipal Authority Plaintiff on Pennsauken Landfill Cost Allocation. Pennsauken Solid Waste Management Authority Plaintiffs v. NJDEP et al. Pennsauken, NJ..

- Technical Expert for Client on Newtown Creek CERCLA Site issues, Brooklyn, New York

- Technical Expert for potential law suite regarding likely sources of MTBE and TCE at site in Marmora, NJ.. Provided expert review of other consultants work and showed clients site was clearly not the origin of MTBE in the deep groundwater at the gasoline station. The most likely source was shown to be another gasoline station located nearby. Marmora, NJ.

- Technical expert for review of Draft Amendment to ROD for Whitmoyer Superfund Site involving Arsenic and chlorinated solvents in soils and fractured carbonate bedrock.

- Technical expert in hydrogeology for $650 million law suite WMX v EcoCorp plaintiffs. Completed rebuttal against plaintiffs' position regarding geology hydrogeology and groundwater chemistry at G.R.O.W.S. Landfill.

- Technical expert regarding assessment of travel time of gasoline products in fractured rock James Wack, et al. V Sico Corp et al.

- Technical Expert regarding the location of a diesel fuel spill.. W.N.Stevenson et al. v Oslou Corp.

- Technical hydrogeology expert and witness for case involving groundwater flow in structurally complex fractured rock environment. Case came before Pennsylvania Environmental Hearing Board. Plaintiffs v Waste Management Inc., Modern Landfill.

- Technical Expert regarding likely source and age of PCE beneath old industrial buildings Bogota NJ.

- Technical Expert regarding PCE contamination and costs for investigation and remediation New Providence, NJ.

- Technical Expert regarding likely source of PCE and TCE at site. Fairfield, NJ

Groundwater Resource Studies

- Water supply well location and Permitting Tullytown Resource Recovery Facility, PA;
- Location, assessment and design of groundwater supplies for all major tourist developments Playa Grande, Dominican Republic;
- Investigation and assessment of groundwater resources Rio San Juan, Dominican Republic;
- Groundwater resource evaluation, Wallace Twp, PA;
- La Mine Doyon supply well installation review, Quebec, Canada;
- Water supply well impact review Reading PA;
- Zone II assessment study Plainville Landfill, MA;
- Groundwater inflow studies, numerous mines in Quebec, Ontario, Nova Scotia, Northwest Territories, Canada.
- Completion of DRBC reports for groundwater extraction and control system, Pottstown, PA
- Location, installation and permitting of groundwater supply well, Annapolis, MD.

Geological Engineering

- Reserves assessment for Quarry Acquisition, VA

- Technical consultant to Golder Associates Inc and URS Greiner for core reorientation and rock mass assessment at I33/I78 1860 foot span bridge at abutments and pier foundation areas in karst geology.

- Rock core reorientation, training and structural geology/geotechnical rock stability interpretation for major new highway project in central Pennsylvania.
- Senior Project Engineer for I-287 extension in North New Jersey involving rock slopes up to 250 feet high.

- Experience in instrumentation, aerial photo-interpretation and site investigation for numerous projects including Duffin Creek tunnel, Neebing-McIntyre tunnel and Caledonia Dam.

- Design and Site Engineer for tube-a-manchette alluvial grout curtain construction for control of radium contamination and acid drainage from uranium tailings basin.

- Seconded to Geological Survey, Ministry of Natural Resources, Ontario, Canada as Party Leader, responsible for Pleistocene mapping projects including detailed 1:50,000 scale mapping of over 1,000 square miles of Northern Ontario in the New Liskeard and Englehart areas.

- Experience in wide range of site investigation and design programs including Stirling Castle, Edinburgh Castle and Wallace Memorial rock slope stabilization projects.

- Assessment of hydrogeological conditions for Channel Tunnel.

- Site investigation for several major power station tunnels including supervision of offshore drill platforms, detailed soil and rock sampling, borehole logging and in-hole testing programs.
- Senior Site Engineer in Puerto Plata, Dominican Republic responsible for all aspects of site work and report preparation for several tourism development areas including foundation investigations, earthquake liquefaction potential analysis; engineering geology surveys, geological mapping,

hydrogeology surveys and water resources evaluations in karst terrain for North Coast Tourism development projects.

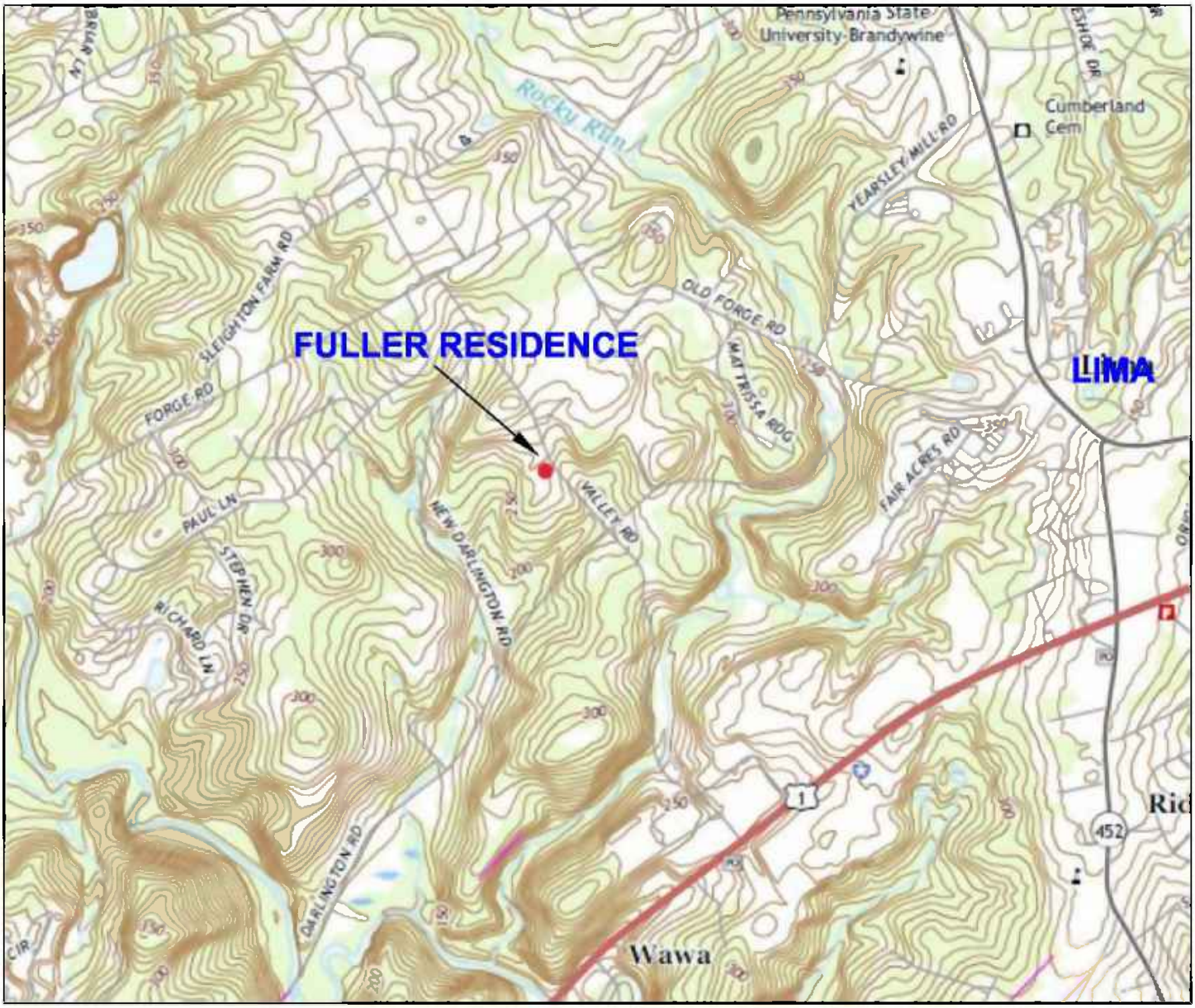
- Completion of geophysical surveys of fractured rock and foundation conditions for major road upgrade through Scottish highlands for North Sea oil development.

Managerial Responsibilities

- Member of Principals Review Board of 2500 staff, 50 office international geotechnical, environmental and mining consulting group.
- Startup, development and management of 35 staff Environmental Group for Golder Associates in Philadelphia Region.
- Manager of Rust Environmental and Infrastructure environmental group, Barrington, New Jersey and technical review of Northeast Region office projects.
- President of Applied Testing & Geosciences LLC.

Exhibit SPLP RK-2

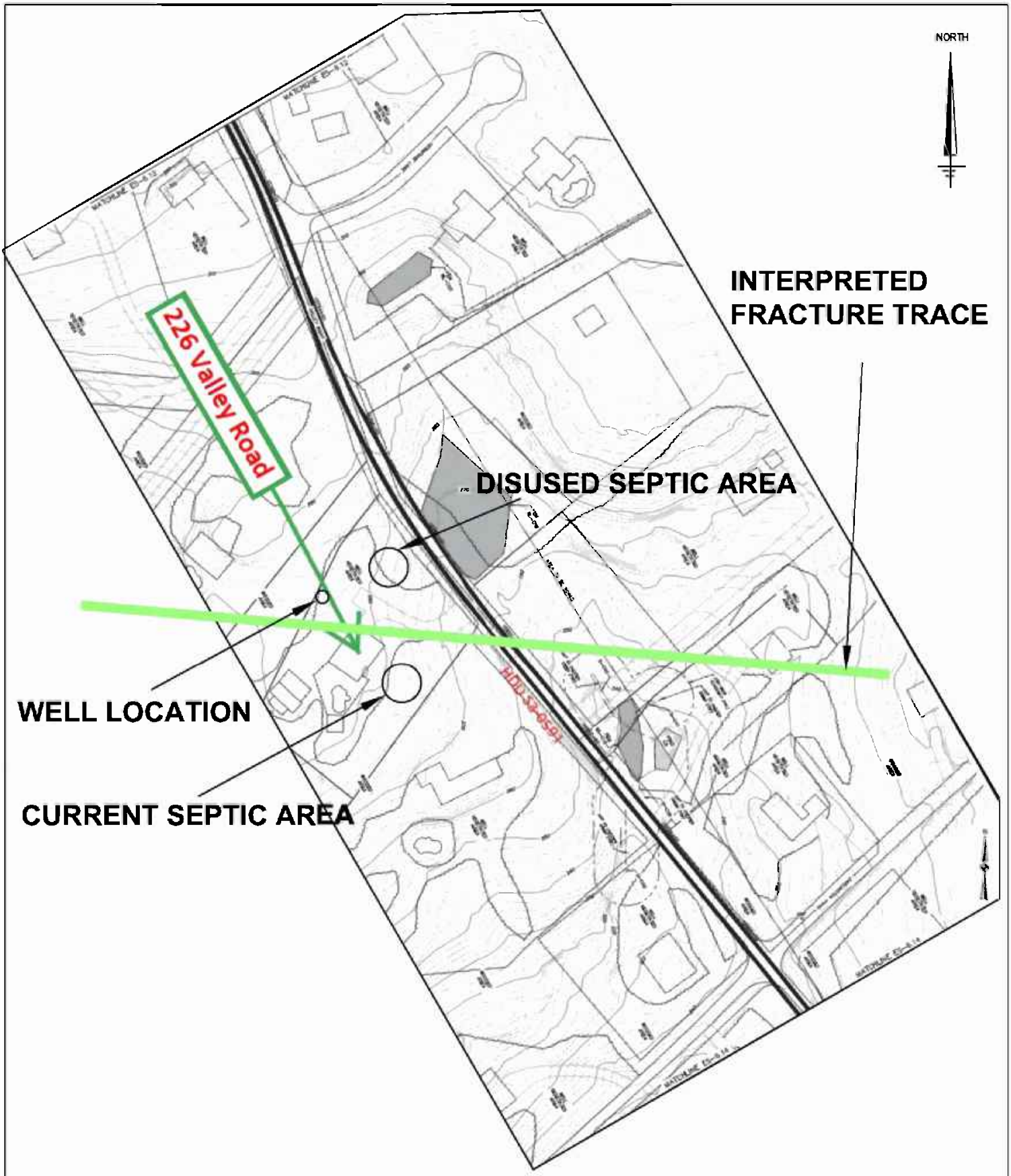
NORTH



REF: USGS NTS Map 1:24000 MEDIA, PA 2016

APPLIED TESTING & GEOSCIENCES LLC	CLIENT: SUNOCO PIPELINE L.P.	TITLE: SITE LOCATION MAP	
	PROJECT: FLYNN ET. AL.	DATE: 06/02/2020 SCALE: NOT TO SCALE	FIGURE 1 SPLP RK-2

Exhibit SPLP RK-3



REF: Map from GES PG Assessment of Well Complaint Fuller– 226 Valley Rd. Media PA. Oct, 21, 2019

APPLIED TESTING & GEOSCIENCES LLC	CLIENT: SUNOCO PIPELINE L.P.	TITLE: SITE PLAN	
	PROJECT: FLYNN ET. AL.	DATE: 08/02/2020 SCALE: NOT TO SCALE	FIGURE 2 SPLP RK-3

Exhibit SPLP RK-4

Geology

Bedrock in the area of HDD S3-0591 is comprised of crystalline, Precambrian- to Early Paleozoic-**aged weathered Baltimore Gneiss (Blackmer, 2005, see Figure 3 – Geologic Map HDD S3-0591** Area below).

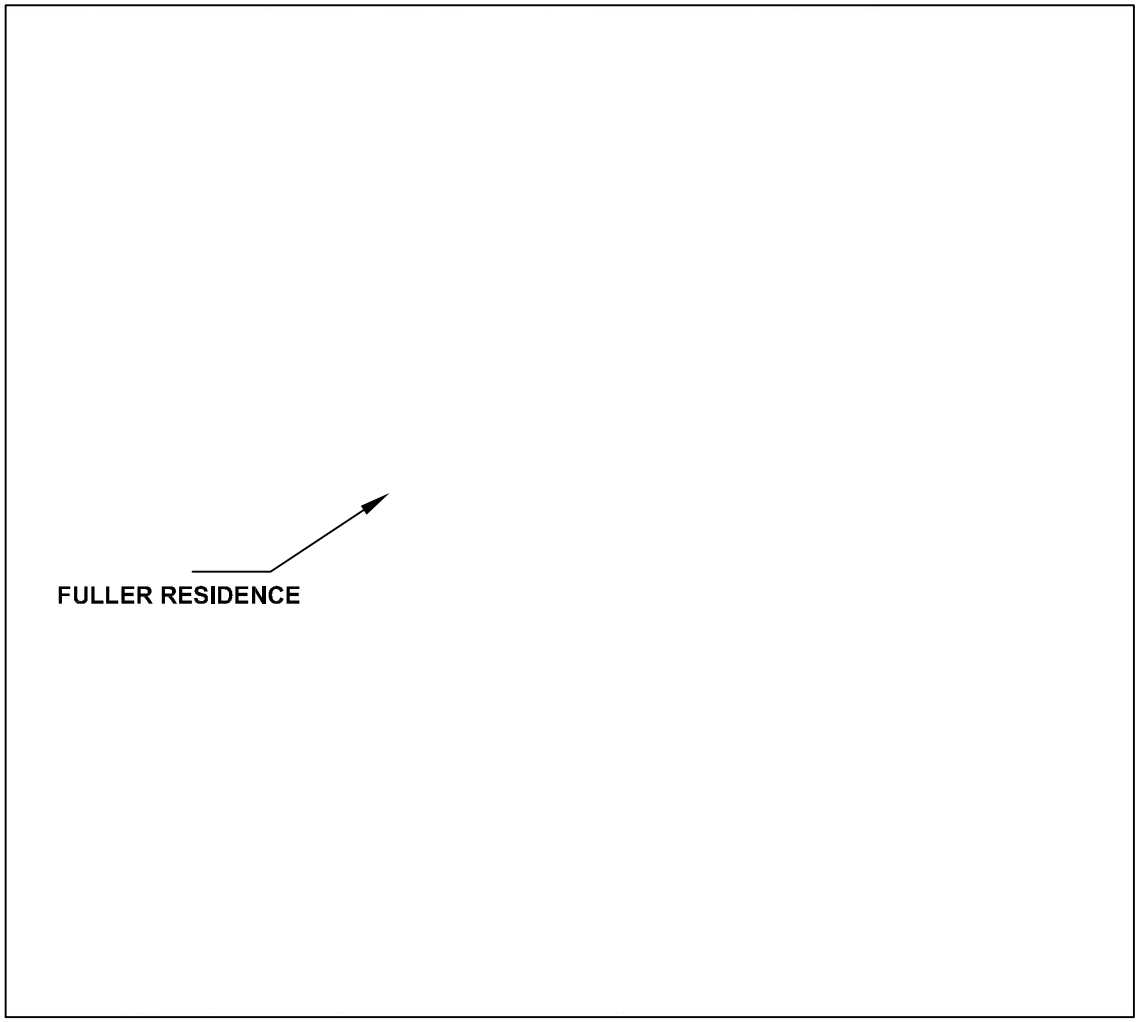


Figure 3 – Geologic Map HDD S3-0591 Area (modified from Blackmer, 2005)

The HDD profile alignment rests on the Proterozoic- to Early Paleozoic-age Baltimore Gneiss subgroup of heterogeneous felsic and intermediate to mafic amphibolite facies gneiss (Blackmer, 2005). Secondary lithology is a mafic gneiss comprised of hornblende plagioclase-amphibole and garnets.

REF: Map from GES PG Asessment of Well Complaint Fuller– 226 Valley Rd. Media PA. Oct, 21, 2019

APPLIED TESTING & GEOSCIENCES LLC	CLIENT: SUNOCO PIPELINE L.P.	TITLE: REGIONAL GEOLOGY	
	PROJECT: FLYNN ET. AL.	DATE: 06/02/2020 SCALE: NOT TO SCALE	FIGURE 3 SPLP RK-4

CONFIDENTIAL/HIGHLY CONFIDENTIAL INFORMATION

Exhibit SPLP RK-5

[redacted]

CONFIDENTIAL/HIGHLY CONFIDENTIAL INFORMATION

Exhibit SPLP RK-6

CONFIDENTIAL/HIGHLY CONFIDENTIAL INFORMATION

REF: X-Ray Analysis Reports Pace Laboratories and R J Lee Group

APPLIED TESTING & GEOSCIENCES LLC

CLIENT: SUNOCO PIPELINE I.P.

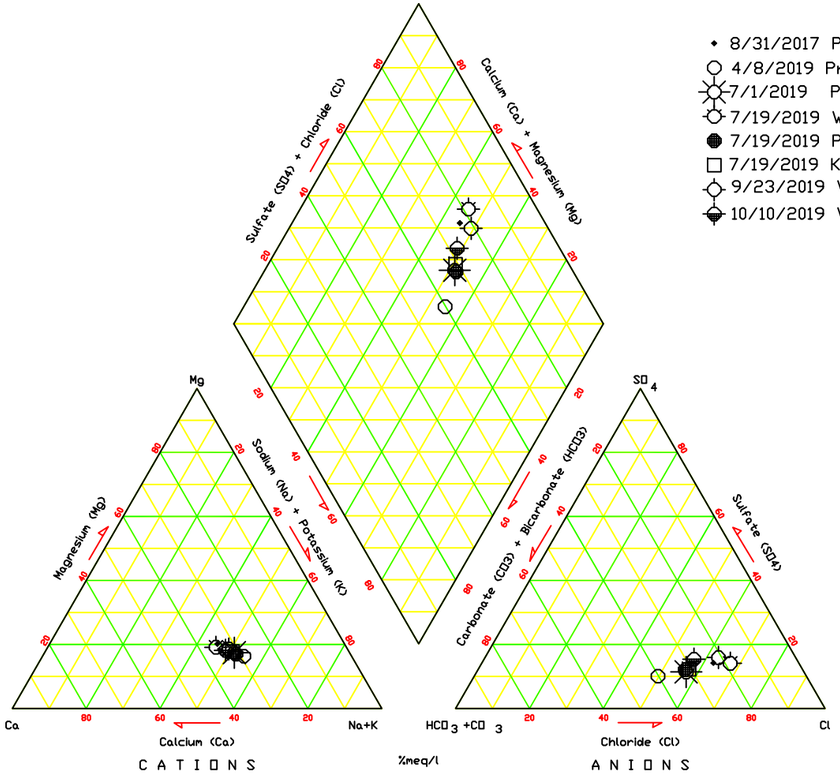
PROJECT: FLYNN ET. AL.

TITLE: X-RAY Sample Analysis

SCALE: NA DATE: DATE: FIGURE: SPLP RK-6 4

Exhibit SPLP RK-7

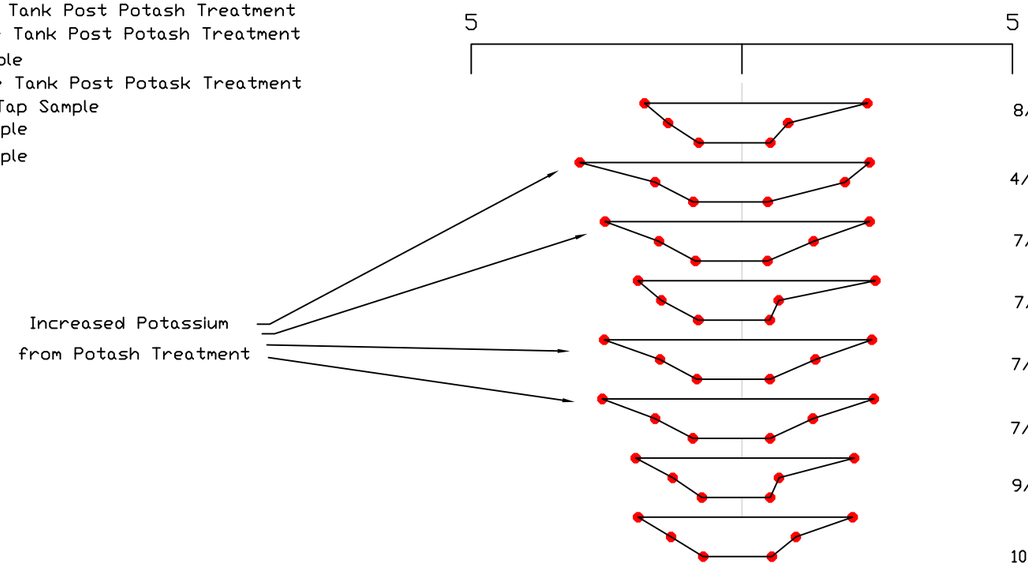
PIPER DIAGRAM



- 8/31/2017 Pressure Tank Post Potash Treatment
- 4/8/2019 Pressure Tank Post Potash Treatment
- 7/1/2019 Pressure Tank Post Potash Treatment
- 7/19/2019 Well Sample
- 7/19/2019 Pressure Tank Post Potask Treatment
- 7/19/2019 Kitchen Tap Sample
- 9/23/2019 Well Sample
- 10/10/2019 Well Sample

STIFF DIAGRAMS

Cations meq/l Anions



- 8/31/2017 Pressure Tank Post Potash Treatmen
- 4/8/2019 Pressure Tank Post Potash Treatment
- 7/1/2019 Pressure Tank Post Potash Treatmen
- 7/19/2019 Well Sample
- 7/19/2019 Pressure Tank Post Potask Treatmen
- 7/19/2019 Kitchen Tap Sample
- 9/23/2019 Well Sample
- 10/10/2019 Well Sample

APPLIED TESTING & GEOSCIENCES LLC

CLIENT: SUNOCO PIPELINE I.P.

PROJECT: FLYNN ET. AL.

TITLE: PIPER AND STIFF DIAGRAMS

SCALE: NA DATE: 06/03/2020 FIGURE: SPLP RK-7 5

CONFIDENTIAL/HIGHLY CONFIDENTIAL INFORMATION

Exhibit SPLP RK-8

Exhibit SPLP RK-9

Sources of Inserts :
GOOGLE Earth Imagery
https://maps.psiee.psu.edu/ImageryNavigator
GES

APPLIED TESTING & GEOSCIENCES LLC

CLIENT: SUNOCO PIPELINE L.P.

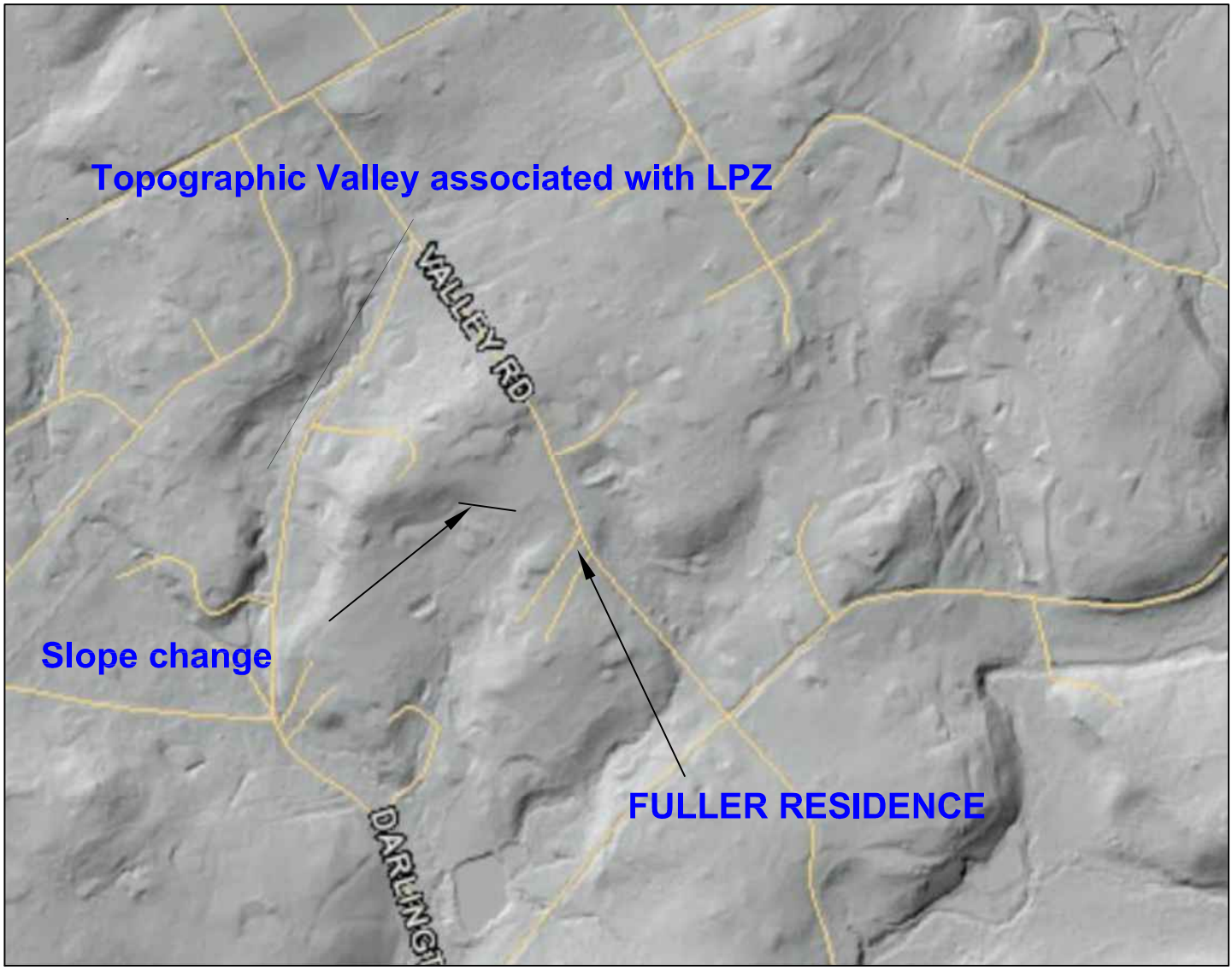
PROJECT: FLYNN ET. AL.

TITLE: Fracture Trace Review

SCALE: NA | DATE:06/01/2020 | FIGURE: SPLP RK-9: 7

Exhibit SPLP RK-10

NORTH



https: //maps.psiee.psu.edu/ImageryNavigator

APPLIED TESTING & GEOSCIENCES LLC	CLIENT: SUNOCO PIPELINE L.P.	TITLE: LIDAR MAP	
	TITLE: FLYNN ET. AL.	DATE: 06/02/2020 SCALE: NOT TO SCALE	FIGURE 8 SPLP RK-10

EXHIBIT C

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

MEGHAN FLYNN	:	
ROSEMARY FULLER	:	
MICHAEL WALSH	:	
NANCY HARKINS	:	
GERALD MCMULLEN	:	DOCKET NOS. C-2018-3006116
CAROLINE HUGHES and	:	P-2018-3006117
MELISSA HAINES,	:	
Complainants	:	
v.	:	
	:	
SUNOCO PIPELINE L.P.,	:	
Respondent	:	

SURREBUTTAL TESTIMONY OF ROSEMARY FULLER ON BEHALF OF FLYNN COMPLAINANTS

Michael S. Bomstein, Esq.
Pinnola & Bomstein
PA ID No. 21328
Email: mbomstein@gmail.com
Suite 2126 Land Title Building
100 South Broad Street
Philadelphia, PA 19110
Tel.: (215) 592-8383

Attorney for Complainants

Q. Have you had an opportunity to review the June 15, 2020 written Rebuttal Testimony of Richard King, P.G. on behalf of his client Sunoco Pipeline L.P.?

A. Yes, I have.

Q. What is the purpose of your testimony?

A. To correct Mr. King's incorrect and false conclusions about our well contamination related to the Mariner East 2/2X pipeline construction and to explain how our well, our water, our home and our health has been impacted by this contamination.

Q. Do you understand that you may not express scientific or technical opinions in your testimony?

A. Yes, I do. My testimony is limited to demonstrable facts that do not require a scientific or technical background to understand.

Q. I draw your attention to Page 3, line 18. Richard King refers to your "allegation" of contamination. Do you take issue with his use of the word "allegation" here?

A. Yes, I do. If your home has clean water and then after intense drilling activity in your yard it turns brown and smelly and it stays that way, you don't need to be a scientist to know that your water's been contaminated. Contamination has an ordinary meaning that everyone except Mr. King seems to understand. What the contents of the smelly brown solution are is a separate question. I'm told there are reported cases that support what I'm saying such as *Graham v. Harleysville Ins. Co.*, 429 Pa. Super. 444 , 632 A. 2d 939 (1993)

Q. At some point did Sunoco engage a firm to perform tests on your water supply?

A. Yes, it did. Sunoco retained Pace Labs and they subcontracted the solids testing to R. J. Lee Group.

Q. How do you know that?

A. They sent people to our property who conducted tests while I was there. Later, I saw some of the reports. So that's how I know.

Q. Page 4, line 1, King alleges that your July bentonite contamination was "minute" and Page 11, line 18, that it was "miniscule". Do you agree with those descriptions?

A. No. First of all it is absolutely misleading. Mr. King makes it seems that in July, 2019, there was one set of tests and one report. In fact, there were samplings on two different dates and a report for each date. And each report found that there was a major concentration,

defined as greater than 20% of the water being sampled. So for July, the reports say the exact opposite of what Mr. King says in his testimony.

Q Then let's start with the report itself. Please identify the report.

A. This is the report from Sunoco's sub-sub contractor, R J. Lee Group. It's dated July 15, 2019 and I've marked it as Surrebuttal Exhibit Fuller – 1.

Q Is the excerpt below taken from the report?

A. Yes, it is:

Client Sample No.: 07012019-642-02
RJ Lee Group Sample No.: 001

Phase*	Approximate Composition**	Estimated Concentration†
Quartz	SiO_2	Trace
Montmorillonite/Bentonite	$(Na,Ca)_{0.3}(Al,Mg)_2Si_4O_{10}(OH)_2 \cdot nH_2O$	Major
Mica/Illite	$K(Al,Mg,Fe)_2(AlSi_3O_{10})(F,OH)_2$	Trace
Feldspar	$NaAlSi_3O_8$	Minor

*Amorphous content, crystalline phases present at trace levels and phases that are not currently part of the ICDD PDF 4+ database may remain unidentified.
**Compositions are approximate and represent an idealized formula for that structure, not including possible elemental substitutions into that crystal structure.
+Estimated concentration is based off of the dried solid material.

Q. Does this excerpt identify the estimated concentration of bentonite in your well from samples taken July 1 and July 19, 2019?

A. Yes, it does. It says so under "estimated concentration".

Q So, if Mr. King is saying the concentration is miniscule is he accurately characterizing the report?

A. No, it's clear he is mischaracterizing the report's findings as to the estimated bentonite concentration.

Q. Do you know from your own personal knowledge what would be a major concentration of bentonite?

A. No, I would not but, fortunately, the R.J. Lee Report cover letter tells us what it means by major concentration.

Q. Would you quote from the cover letter where it defines a major concentration?

A. Certainly. Here is the quote: **"Major concentrations denote phases that are estimated to make up more than 20% of the material by weight".**

Q. So, major concentration means more than 20% of the material by weight. Did the report state how much more than 20% the bentonite concentration is in you drinking water?

A. No, not at all. For all I know it could be 21% or 61%. The report does not give us a clue.

Q. Page 4, line 2, and Page 10, line 14, King states that subsequent testing results did not detect bentonite. Is this correct?

A. No.

Q. Mr. King on page 10 in lines 12 – 16 makes the following statement:

> This amount of bentonite cannot be construed anyway [s] as "major contamination' as Fuller suggests in her testimony. If indeed the bentonite that was detected was related to the HDD work, it was not detected in a subsequent sample take on October 11, 2019 from the well, indicating that the occurrence of bentonite in the well was a short-term event and decreased to undetectable levels quickly.

Q. Do you have a problem with his conclusion that the presence of bentonite in the well must have been a "short-term" event?

A. A very big problem. Once again, context is missing. He has failed to mention a number of important pieces of data. This is convenient if you are set on reaching a certain conclusion. To start with, if the entire world is not already aware of it, Sunoco has let anyone interested in finding out that Bentonite is being used as a drilling fluid in construction of the Mariner East pipelines. The company's own website advertises this fact: https://marinerpipelinefacts.com/construction/overview/

Under the Clean Streams Law, "waters of the Commonwealth" include the aquifer under my back yard. 35 P.S. § 691.1. So, the law prohibits certain discharges into my water supply. Contamination of my water supply is covered under the definition of "pollution. 35 P.S. § 691.1. Leaving behind Bentonite and other substances that were not in my family's water prior to drilling pollution. It was perfectly obvious that the use of Bentonite in Sunoco's drilling activities on my property had the potential to pollute my water supply. It is not my point here to discuss whether or not the company violated the Clean Streams Law. The point is simply that anyone testing for contamination on my

property was aware that there was a reasonable prospect that Bentonite might be found in our water system.

With this as context, what Mr. King has left out of his testimony was that Sunoco dispatched investigators to test our water system on at least six (6) occasions. For example, on August 31, 2017, investigators sampled our water but only looked for analytes, chemical constituents; they did not look for solids, such as Bentonite. Why did they not test for that and why was this not mentioned by Mr. King? On April 1, 2019, they were out again. Once more, they did not look for solids, such as Bentonite. Why did they not test for that and why was this not mentioned by Mr. King? On September 23, 2019, the same story.

The first time Sunoco tested for Bentonite was when they came out on July 2, 2019. Thus, even though they knew there was likely a Bentonite issue, from at least August 31, 2017 until July 2, 2019 – a period of almost two years – Sunoco ignored this problem. The significance of this omission is this: On July 2, 2019 the test results disclosed that more than 20% of the water in samples drawn was contaminated with Bentonite. Assuming that was not a fluke, at least two years passed in which my family was drinking Sunoco-contaminated water and Sunoco and Mr. King do not believe this is important enough to put in his rebuttal testimony.

As regards King's statement that this was a "short-term event," he reaches this conclusion without regard to the presence of Bentonite in our water supply from August, 2017 to July, 2019. He ignores the fact that tests were done in September, 2019 that could have disclosed Bentonite but Sunoco chose not to look for it. Then, having ignored these important facts, he looks at exactly three data points to draw the conclusion that the presence of more than 20% of Bentonite in our water was short-term. Two of the three analyses showed major concentrations. One showed only a trace. He picked the analysis he liked and drew his own conclusion.

His analysis is also flawed because he assumes that the later findings must reflect the actual conditions. For all he knows a later analysis in December, 2019 would have showed a major concentration again. This is flawed science and you don't need to be a scientist to know that you can't discern a trend based on so few data points. This kind of reasoning is obviously flawed and cannot be considered seriously in this proceeding.

Q. Page 10, line 17, King questions the source of the bentonite. Do you believe it could be naturally-occurring?

A. Let's start with what he actually says about this and also look at the data that support his statement. Once again, pseudoscience reigns in Mr. King's testimony. His premise: more than 20% Bentonite in water is miniscule. His science: "It is possible for hornblende to weather to montmorillionite (bentonite)."(Testimony at 11, line 16.) Needless to say, he offers no data to explain how a finding of major concentrations on two separate dates in July, 2019 could have "weathered" into bentonite. Further, he

identifies no scientific studies to support his "weathering" claims. This is palpable nonsense. There is no evidence in this proceeding to suggest that bentonite was present in our water system prior to the time Sunoco began drilling.

Q. Page 9, line 10, King asserts that "bentonite is not recognized as a contaminant under any applicable environmental regulatory standard. Do you agree with this statement?

A. The statement is meaningless. You can take at face value that bentonite is not specifically identified as a contaminant, but neither are maple syrup or soy sauce. If a trucking company dumped 100,000 gallons of either one into Pennsylvania waters, is King suggesting that is not contamination or pollution?

Q. I understand you recently discovered which Bentonite Michels is using at an HDD site near you?

A. Yes, I was driving past St. Simon and Jude Church and school when I saw the pallets of Cetco Super Gel-X at the construction site on June 30, 2020, at 12:50 pm.

Q. What did you discover about this particular brand of bentonite?

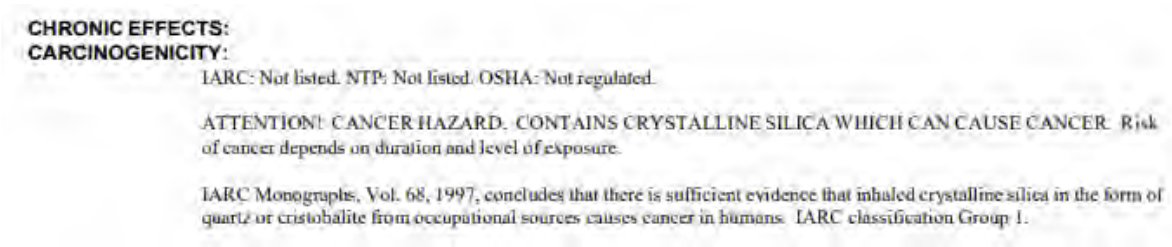
A. I discovered that it was highly carcinogenic to humans and carries a "Danger" label.

Q. How did you discover this?

A. I went onto Michels website. Michels, Sunoco's contractors for the HDD, have a Contingency Plan For Inadvertent Release of Non-Hazardous Drilling Fluid: https://puc.sd.gov/commission/dockets/HydrocarbonPipeline/2014/HP14-002/contingency.pdf
It states that "Michels has access to several different brands of bentonite. The selection of which brand to use is typically based on price, availability and proximity to the proposed drill site. The following brands all have similar characteristics providing the same results as listed above. Potential Bentonite Brands - Max Gel • Super-Gel X • Bara-Kade. The Safety Data Sheets for each are:

1. Max Gel - http://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/IndustryResources/InformationalResources/HDD_Saftey_Data_Sheets/M-I_MAX%20GEL_MSDS.PDF
2. Cetco Super Gel-X - https://www.mineralstech.com/docs/default-source/performance-materials-documents/cetco/drilling-products/sds/sds---us/sds-us---super-gel-x.pdf?sfvrsn=25cc0ad3_8
3. Bara-Kade - http://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/IndustryResources/InformationalResources/HDD_Saftey_Data_Sheets/BENTONITE%20Performance%20Minerals_BARA-KADE_SDS.pdf

The Max Gel website noted above contains the following cancer warning:



CHRONIC EFFECTS:
CARCINOGENICITY:

IARC: Not listed. NTP: Not listed. OSHA: Not regulated.

ATTENTION! CANCER HAZARD. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure.

IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC classification Group 1.

Q. Does this concern you?

A. Yes, of course. Our Quartz and has now become potentially carcinogenic contamination. The Safety Data Sheets for these bentonite products warns "Danger", "May Cause Cancer", "Health Hazard: Carcinogenicity". "Routinely wash work clothing and protective equipment to remove contaminants". "Warning: This product can expose you to Quartz (S1O2) which is known to cause cancer".

Q. Are you concerned that your "major concentration" of quartz may be harmful to your health?

A. Yes, very concerned. The Toxilogical Information of the Cetco Super Gel-X bentonite Safety Data Sheet for Quartz (S102) (CAS 14808-60-7) includes:

- **IARC Monographs. Overall evaluation of Carcinogenicity:** Quartz (S102) (CAS 14808-60-7) – 1 Carcinogenic to humans

- **OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053):** Quartz (S102) (CAS 14808-60-7) – Cancer, lung effects, immune system effects, kidney effects

- **U.S. National Toxicology Program (NTP) Report on Carcinogens:** Quartz (S102) (CAS 14808-60-7) – Known to be Human Carcinogen

- **U.S. Federal Regulations: This product is a "Hazardous Chemical"** as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

Q. During HDD drilling activities did you ever see any Sunoco workers wearing PPE?

A. Yes, I did.

Q. Were you ever warned about the dangers of inhaling any of the dust near any construction sites?

A. No, we weren't. For all of us who were near to HDD sites while these products were being used, we have something to worry about. We were not offered protective equipment. Every day I walked my dogs at the HDD drill site at Sleighton Park, the site of 4 sinkholes. I have no idea what my level of exposure to the carcinogenic dust was or how harmful it has been to me or my family. We were never informed, warned or protected. Some homes along the pipeline route are literally a few feet away from this construction and the HDD activities.

Q. Do you have other concerns about how this might have impacted your health or the health or your family?

A. Yes, I do. These carcinogens like Quartz and Crystalline Silica in my water present another problem. One potential source of human exposure to environmental pollutants is through chemically contaminated domestic tap water. The most obvious route of exposure to contaminants is by ingestion. However, dermal and inhalation exposure may also occur within the home. Several studies have shown that showering increases the likelihood that an organic compound will be volatilized, resulting in human exposure through the skin or by inhalation (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2874882/?report=reader). Showering produces respirable droplets that may serve to deposit pollutants within the respiratory tract. My family and I have been showering in this water containing crystalline silica every day for over a year since we were contaminated with HDD drilling fluid.

Q. Did anything else, apart from the carcinogenicity of some of the products in the Cetco Super Gel-X bentonite mix, bother you about this bentonite mix?

A. Yes, the fact that it contains a proprietary Trade Secret substance and we don't know what that is (page 3 of Cetco Super Gel-X SDS) - http://www.cetco.com/docs/default-source/performance-materials-documents/cetco/drilling-products/sds/sds---canada-english/sds-canada---super-gel-x.pdf?sfvrsn=628af566_2

Q. Page 6, lines 9-17 Richard King states that "Fuller told Groundwater & Environmental Services, Inc … that the well casing (the annular space between the overburden and the casing) was not grouted." Did you make that statement to GES?

A. No, I did not. I have no idea what that even means. We were not involved in the construction of our well. We simply took it over from the previous owners of our property.

Q. Page 13, line 6, King once again states "The fact that the Fuller's well casing was not grouted to seal off the annular space between the well casing and the overburden, provides a potential pathway for soil and upper sections of the weathered bedrock

to enter the well, particularly if the well is over-pumped." Would you like to comment on this statement?

A. Yes, I would. I again repeat that I have never made a statement to anyone about the construction or the grouting of our well. I have no knowledge of any of this. We do not over-pump our well and what he means by that is unclear because he uses words like "potential pathway" and offers no data that in fact it was a pathway. This is sheer, unscientific speculation.

Q. Page 13, lines 9-11, King goes on to state that 'GES reported that during the September 23, 2019 sampling event, Fuller explained that the well was pumped continuously for several hours to fill the swimming pool at the residence". Would you like to comment on this?

A. Yes, I would. If ever we need to top up our pool it is only an inch or two of water. We do not pump our well continuously for hours to top up the pool. And if we had, there would not have been a problem since we have always had a good yield until the HDD in July last year. Richard King confirmed that himself in his statement on our yield on Page 7, lines 9-17.

We have lived in our home with the same well for 17 years. We have never, until now, had a problem with the quantity or quality of our water. This can be verified by our well company. Basically, Mr. King is hoping to suggest that we caused our own problem, even though the problem did not exist until Sunoco began drilling. His theory falls flat because, if correct, we would have had bentonite issues a long, long time ago. We did not have such a problem and he offers no evidence that we did.

Q. Page 14, line 11. King again states there are no indications whatsoever of "major contamination" in the Fuller well as is alleged. What is your response to that?

A. I have already addressed the issue of major concentration. I used the term "major contamination" - a different term – in a commonsense, non-scientific way. My family and I believe that our significant poor water quality, damage to our plumbing system and adverse health issues are the result of major contamination. Nothing in King's report denies what I have described in terms of poor water quality, plumbing damage and adverse health.

Q. Page 17, line 3, King concludes that "to a reasonable degree of scientific certainty … the evidence does not support the presence of a fracture trace across the Fuller residence property". How would you respond to that?

A. I understand from this statement that apparently the photogeological mapping that Sunoco submitted to the DEP for the permit was, in fact, incorrect, as was the measurement of our well from the proposed HDD which Sunoco measured as 490 ft

away when it is, in fact, only 150 ft away. This simple measurement was later corrected by Sunoco.

With regards to our property and the originally interpreted fracture line, I would argue that no geotechnical boring was installed in the immediate vicinity of our property and therefore no conclusion can be reached about the exact location of any fracture trace line or fissure even though King noted a topographic slope break to the northwest of the property (see Figures 7 & 8, Exhibit SPLP RK-9 and SPLP RK-10) that, if extended southeast would cross the property. Concluding to "a reasonable degree of certainty" is not sufficient to make a definitive fact-based conclusion.

Q. Are you aware of any recurring sinkholes in an area that has already suffered sinkholes followed by geophysical testing?

A. Yes, Lincoln Highway (Business Route 1) in Exton, the same area as Lisa Drive where families had to permanently abandon their homes due to sinkholes. Since the close of hearings in this case last November, there have been more sinkholes. In the past few weeks alone, Sunoco's work there has caused 7 or 8 sinkholes. This is an extremely dangerous situation that must be taken very seriously. Any of these sinkholes could expand further, removing the ground supporting one or more of the active NGL pipelines – the Mariner East 1, the GRE, or the nearby Enterprise pipeline, also carrying highly volatile natural gas liquids. If there were a rupture, we know from the risk assessments that a huge flammable cloud would form within minutes without any opportunity for warnings or evacuations. This too often recurring situation gives us all nightmares.

Q. Page 7, line 18, Richard King makes an assumption that the perceived decrease in water pressure may be related to lack of maintenance of the filter system and that there was a build-up of sediment within the filter which would restrict the flow of water through the system, causing the decrease in water pressure that prompted the call to the DEP. What are your thoughts about this?

A. Our well company regularly monitors our equipment. We regularly change the filters. We did notice a build-up of sediment in our system and in our toilet tanks immediately following contamination. We showed this to our Right of Way agent, to GES who took pictures and samples, to our well company who stated they had never seen this before. I sent pictures and video footage of toilet tank mechanisms jamming, water running continuously through the system (and therefore into our septic) to GES, Percheron Field Services and the DEP. Sunoco sent in a plumbing consultant who inspected our entire property and took samples. We never heard back from Sunoco about his report and we were told his samples were "unusable" but never given any explanation.

Q. Has the sediment from the bentonite/ contamination become a problem for you?

A. We have suffered serious sediment contamination in our entire plumbing system since we were negatively impacted last year. I called in Master Plumbers from Philadelphia who stated there was no point doing anything until we were on public water. He also had never seen this amount of sediment in a toilet tank before. When our well company inspected the filter it had only recently been changed. The amount of sediment in the

filter was excessive and it had only just been replaced the week before. We change the filter every month now whereas it used to be approximately every five to six months before HDD activities.

Q. Did you know you were at high risk of well water contamination due to the HDD?

A. Yes, we had discussed the situation with an industry friend which is why I submitted all my HDD Reevaluation Report to the DEP, asking for answers and protection. https://www.dep.pa.gov/Business/ProgramIntegration/Pennsylvania-Pipeline-Portal/Pages/HDD-Reevaluation-Reports.aspx

Q. Did you know from Sunoco's Water Supply Plan that you were at risk of well contamination?

A. No, none of these were ever pointed out to me. It was only after our well was contaminated that I read Section 5.0 Risk Assessment "Additional risks to private and public water supplies may result from the activities associated with the HDD method of pipeline installation, specifically, the use of drilling fluids during the drill process".

Q. Did you know that you were supposed to stop using your well during HDD activities? See page 19, halfway down: http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/HDD_Reevaluation_Reports/Sunoco_Response/Sunoco%27s%20Response%20to%20DEP%20-%205-21-18%20-%20Valley%20Road%20Crossing.pdf

A. No, we were never told that.

Q. In Sunoco's Pennsylvania Pipeline Project Operations Plan, it clearly states on Page 16: "If any impact to a private water supply attributable to pipeline construction is identified after post-construction sampling, SPLP will restore or replace the impacted water supply to the satisfaction of the private water supply owner". It's been a year now since your well was impacted and that you've been living on bottled water. Do you feel Sunoco has complied with this requirement? http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Summary_of_Order/Para%209%20-%20Exhibit%20E%20-%20Operations%20Plan.pdf

A. No, I don't. At the end of the day, you have to accept a resolution that is satisfactory to Sunoco, not to the private water supply owner, as all the plans state.

Q And there are requirements of the permits with regards to private water supplies, correct?

A. Yes. The permit conditions include the protection of private water supplies that may be impacted by Chapter 105 activities to ensure drinking water such as ours are protected from pipeline construction activities.

DEP permit No. E23-524 also states (page 4, "Special Conditions: Water Supplies":

A. 1. "If the project results in a pollution event which may impact any public or private water supplies, the permittee shall immediately notify the Department and the potentially affected public or private water supplies of the pollution event"
B. In the event the permittee's work causes adverse impacts to a public or private water supply source, the permittee shall immediately notify the Department and implement a contingency plan, to the satisfaction of the public and private water supply owners that addresses all adverse impacts imposed on the public and private water supply as a result of the pollution event, including the restoration or replacement of the impacted water supply".

http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Permits/E23-%20524%20-%20Delaware%20County/PPP%20E23-524.pdf

Q. Do you feel the regulatory system, the processes and Sunoco have let you down?

A. Yes, I do. Very much so. In Domenic Rocco's Testimony in the Joint Hearing on Pipeline Safety, Senate Environmental Resources and Energy and Consumer Protection & Professional Licensure Committees (http://pasenategop.com/consumer/wp-content/uploads/2018/03/dep.pdf), March 20, 2018, he stated "The Department (DEP) reiterates that there is a need for a more comprehensive and effective approach to private well protection and regulation." I couldn't agree more. The well owners along the 350-mile route of Mariner East 2 have been a vulnerable, under-protected and under-represented group of people. Article 1, Section 27 of the Pennsylvania Constitution states that "The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic value of the environment". Sadly, in the greedy pay-to-play game for gas and oil in the State of Pennsylvania, this "right" of the citizens has not been upheld and has subsequently become irrelevant and meaningless.

Q. Have you finished your testimony?

A. Yes, I have, but I reserve my right to supplement this testimony based on responses produced by SPLP and any other additional information that may develop.

COMPLAINANTS OFFER SURREBUTTAL EXHIBIT FULLER – 1 INTO EVIDENCE

SURREBUTTAL EXHIBIT FULLER - 1

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

July 15, 2019

Ms. Holly Smoker
Groundwater & Environmental Services, Inc.
1500 Sycamore Road
Suite 340
Montoursville, PA 17754

RE: Project: 07012019-642-02
Pace Project No.: 30311960

Dear Ms. Smoker:
Enclosed are the analytical results for sample(s) received by the laboratory on July 02, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

The sample was subcontracted to RJ Lee Group, Inc., 350 Hochberg Road, Monroeville, PA 15146 for XRD analysis. The results of this analysis are reported on the RJ Lee Group, Inc. data tables.

Revision 1 - This report replaces the July 10, 2019 report. This project was revised on July 12, 2019 to include a revised RJ Lee report. (Greensburg, PA)

Revision 2 - This report replaces the July 12, 2019 report. This project was revised on July 15, 2019 to include a revised RJ Lee report. (Greensburg, PA)

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

Rachel D Christner

Rachel Christner
rachel.christner@pacelabs.com
724-850-5611
Project Manager

Enclosures

cc: Mr. Ryan Bidelspach, Groundwater & Environmental Services, Inc.
Mr. David Demko, GES (Exton)
Ms. Stephanie Grillo, Groundwater & Environmental Services, Inc.

LABORATORY REPORT-Rev02
Revised to add estimated concentration description

Pace Analytical Services
1638 Roseytown Road, Suites 2, 3, & 4
Greensburg, PA 15601
ATTENTION: Rachel Christner
Telephone: 724-850-5611

Revised Report Date:	July 15, 2019
Samples Received:	July 2, 2019
RJ Lee Group Job No.:	PA020720190016
Client Job No.:	GES Project # 0205254-1116-160-xx Org 1402
Purchase Order No.:	00046339

ANALYSIS: X-ray diffraction (XRD) for crystalline phases
METHOD: Qualitative Phase Identification and Expansive Clay Determination

The as-received sample was filtered to remove the solids. The dried solids were hydrated in water and pipetted onto zero-background holders in order to preferentially orient the platy minerals and exaggerate the (00ℓ) basal spacing. The slide was allowed to air dry at room temperature. After drying, the sample was scanned on a PANalytical X'Pert Pro diffractometer using copper radiation. The sample was next placed in a desiccator filled with ethylene glycol. This step serves to expand any potential swelling clays. After removal from the desiccator, the sample was again scanned by XRD. The various scans were overlaid, the reflections were examined and the evolution of each was compared to the USGS Clay Mineral Identification Flow Diagram to determine which mineral each peak corresponds to. Results are presented below.

A portion of the dried sample was scanned on a PANalytical X'Pert Pro diffractometer using copper radiation and standard run parameters. The resulting diffraction pattern was then search-matched with PANalytical X'Pert HighScore software against phases in the ICDD PDF4+ database. Concentrations presented below are estimated based on peak intensities of identified crystalline phases only. Major concentrations denote phases that are estimated to make up more than 20% of the material by weight, minor concentrations estimate concentrations in the material between 20% and 5% by weight and trace concentration estimates a phases present in the sample at concentrations less than 5% by weight. Estimations may vary, as factors such as preferred orientation and the ability of each material to diffract x-rays, as well as phased concentration will affect peak intensities. Additionally, amorphous material may not necessarily be detected by XRD. In certain cases where amorphous material is present in major concentrations, its presence is evidenced by a broad hump in the background signal of an XRD scan, however minor concentrations of amorphous material may be present in a material with no evidence in the scan. Further, XRD is generally accepted to have a detection limit of approximately a few weight percent, depending on phase. It is possible that trace phases are present in the sample that remain unidentified.

Client Sample No.: 07012019-642-02
RJ Lee Group Sample No.: 001

Phase*	Approximate Composition**	Estimated Concentration+
Quartz	SiO_2	Trace
Montmorillonite/Bentonite	$(Na,Ca)_{0.3}(Al,Mg)_2Si_4O_{10}(OH)_2 \cdot nH_2O$	Major
Mica/Illite	$K(Al,Mg,Fe)_2(AlSi_3O_{10})(F,OH)_2$	Trace
Feldspar	$NaAlSi_3O_8$	Minor

***Amorphous content, crystalline phases present at trace levels and phases that are not currently part of the ICDD PDF 4+ database may remain unidentified.**
****Compositions are approximate and represent an idealized formula for that structure, not including possible elemental substitutions into that crystal structure.**
+Estimated concentration is based off of the dried solid material.

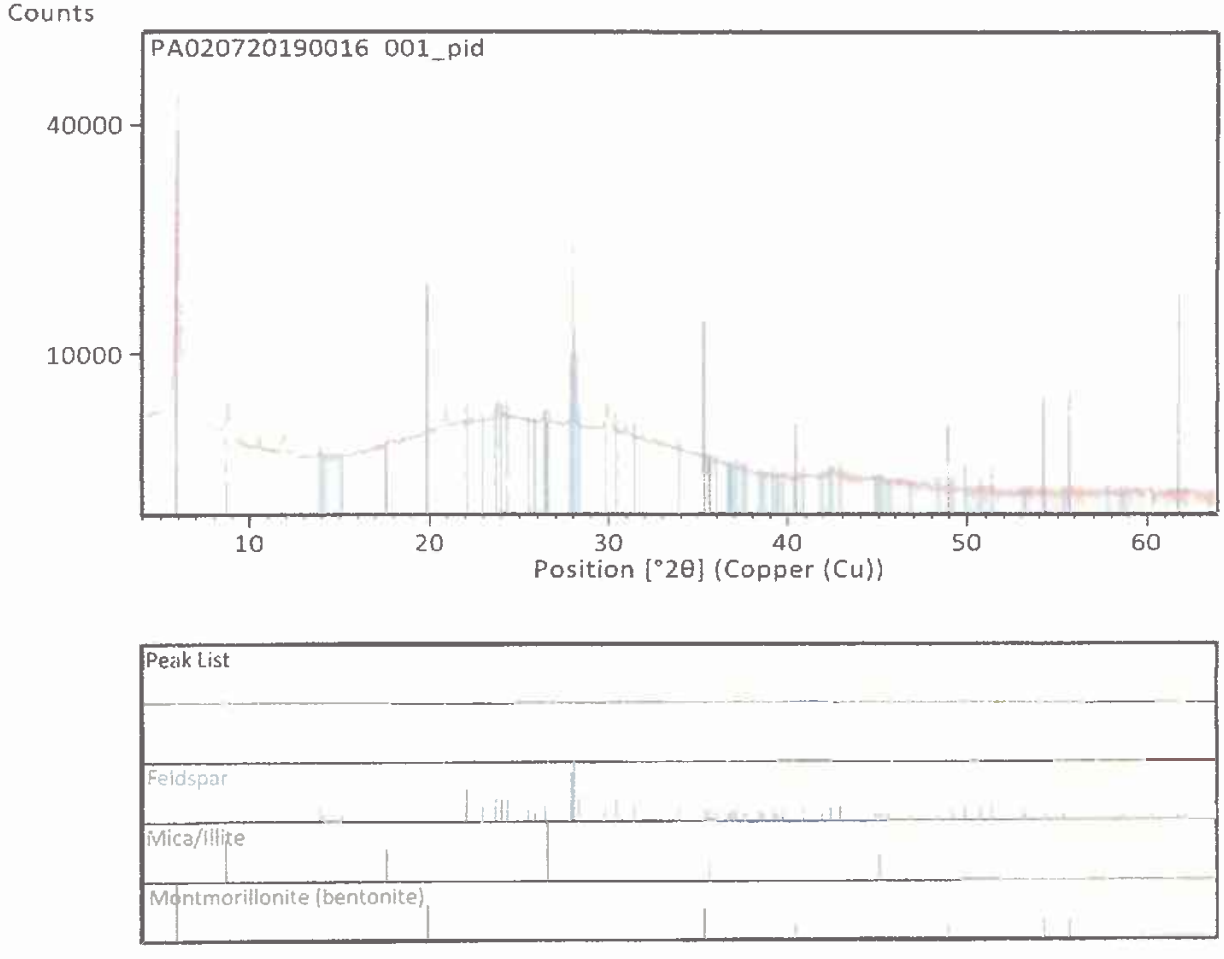


Figure 1 –X-ray diffraction pattern of as-received specimen *"07012019-642-02"*, with position (degrees 2Θ) along the x-axis and intensity (counts) along the y-axis (top). Corresponding legend denoting phase matches (bottom).

EXHIBIT D

Testimony for the PUC

I. Background

Name: Rosemary F. R. Fuller

Address: 226 Valley Road, Media, PA 19063

Family: Husband Gordon, 2 children Cameron (26) and Stephanie (21)

Education:

- BA (Hons) from the University of West London (Ealing College) in Modern Languages and South American Politics (1982)
- MBA from the University of Edinburgh (1987)

Career Experience:

1982 – Freight Forwarder with Simar Freight, Poole, Dorset UK

1983- 1984 Management Consultant with Metra Proudfoot, Brussels, Belgium

1984-1986 Signode GmbH, Dinslaken Germany

1988-1996 Financial Adviser, Allied Dunbar, Edinburgh

2008-present Rental Property Owner/Manager

Non-profit volunteer work:

Government relations advocacy work for JDRF (Juvenile Diabetes Research Foundation)

II. Objectives

The goal of my testimony is to share my concerns about the location and siting of the Mariner East pipelines, the risk they pose for my family and community, the lack of a credible and workable Emergency Plan, the concerns about integrity maintenance issues and the lack of transparency and information regarding the pipelines. I would like to show that living within the blast zone of Mariner East presents us with a clear and present danger of catastrophic proportions.

III. Proximity to Mariner East Pipelines

We have lived at 226 Valley Road, Media, PA, since 2003.

ME2, ME2X and the 82-yr old 12" Point Breeze to Montello, which was repurposed to transport highly volatile natural gas liquids, are all 150 ft away from the front of our property along Valley Road. The 88-yr old Mariner East 1, also repurposed to transport highly volatile natural gas liquids, is approx. 1100 ft behind our property along New Darlington Road. In total, therefore, we have 4 highly volatile NGL pipelines around our property. The nearest Mariner East valve stations are at Granite Farms Estates (less than a mile away), Glenwood Elementary School (a mile away) and Duffers Tavern (just over 2 miles away). We are surrounded by a deer fence and have electric gates as the entry/exit point at the front of our property on Valley Road. There is no "uphill" on our property and we don't have a windsock to determine the direction of the wind.

Our Story

In 2015 we were approached by Sunoco and asked to sign a permanent easement as shown in **Fuller exhibit 1**, giving Sunoco Pipeline a stretch of land running along the entire front of our property along Valley Road. The Percheron Field Services agent, who also happened to be a notary public, told us very clearly that "there would be no risk and we would never even know they were there". Subsequently this statement proved to be untrue. ~~After the results of two independent risk assessments we now know there is a huge risk with highly volatile natural gas pipelines.~~ As far as "not knowing they are there" is concerned, we have had to witness our beautiful, quiet, and residential Valley Road being turned into a massive, dirty, noisy, potholed, construction site with a constant flow of water trucks, hazardous waste trucks, diggers, construction vehicles, workers vehicles, geologists, flaggers, not just for a week or a month but for years now since construction began in 2017. Again, we were never informed that this would happen. We bought this property, our home, for many reasons and one was the location. Mariner East construction has changed our environment beyond all recognition. We have had to suffer the dirt, the noise, the drilling fluid spills into the Rocky Run Creek and down Valley Road. Flooding where we had none before. We have had, at any one time, approximately half a dozen pipeline construction sites along this road with the pipelines stretching out along the side of the road. We've had helicopters and airplanes flying low over our property. Our local park, Sleighton Park, has been cordoned off with a huge construction wall surrounding an ME2 and 2X pipeline HDD entry/exit point – right where children play, where our local sports teams are supposed to play their games, where I can no longer take my dogs in a circuitous route but have to walk back and forth because they took that whole section of the park away from us back in

2017. It's a daily and ugly reminder for years now of what's going on and what they didn't tell us would happen when we signed the permanent easement in 2015.

Sleighton Park, is just a half a mile away from our home and also the location of two recent sink holes as reported by StateImpact in **Fuller exhibit 20** that occurred on September 13 and October 17, just last Thursday. In each case the sinkhole, right next to the HDD entry/exit drill hole, exposed a section of the old 12" Point Breeze to Montello which has leaked several times along here when it was transporting gasoline. Last year it was repurposed to transport highly volatile natural gas liquids. This is the park where I walk my dogs every day. The park where children play every day. Now I feel nervous about walking there in case a third one appears and this whole area becomes another Lisa Drive, just one sinkhole after another. Now I'm even wondering whether the geophysical analysis over the length of the profile for Valley Road Crossing S3-0591 HDD was ever carried out, as required by the DEP. John Hohenstein's letter to Matthew Gordon dated 12/5/2018 confirms this requirement in order to minimize the risk of Inadvertent Returns and impacts to public and private water supplies. We have suffered both.

When my husband asked the Percheron field agent "You mean they're inert liquids?" she responded "yes". We signed the document in good faith as, no doubt, many other residents have done along the 350-mile route of the Mariner East project. We obviously now wish, knowing what we do, that we had never signed that document but am then reminded of her statement "we don't have to ask you for this but we're trying to be a good neighbor". Public utility certification gives Sunoco the power to exercise eminent domain. We never really had a choice.

Initially we were never told that the purpose of these new pipelines or the repurposing of the old ones would be for highly volatile natural gas liquids, how dangerous they were or what we should look for or do in the event of a leak or rupture. The bottom of the permanent easement document mentions a whole list of possible products starting with oil, oil products, crude petroleum, etc. I don't understand why the Percheron representative was not as specific about the product that ME2 and ME2X would be transporting when she presented us with the permanent easement to sign as Sunoco was in their permit application to the DEP where they clearly stated it was for natural gas liquids.

Sunoco information leaflets only started to appear once the whole issue of lack of public awareness came up. Even then, we were never informed what our emergency plan would be. Nobody from Sunoco has ever been to our property to tell us what to do in the event of a leak or rupture.

If you go on a cruise one of the first things you go through is the evacuation drill so that, in the event of an incident, you know exactly what to do. When you board an aircraft the cabin crew go through the safety drill, showing passengers how to stay safe during the flight, where the exit doors are and how to evacuate the aircraft in the case of an emergency. Students in schools take part in regular fire drills and practice evacuation. Why is there nothing more informative than "run uphill, upwind" from Sunoco in the event of a leak that could potentially produce an explosion of catastrophic proportions?

We didn't receive any information about the repurposing of ME1 which lies behind us along New Darlington Road, approx. 1600 ft from our property line. This is an old pipeline, installed in 1931, only 8 inches in diameter, and now repurposed for a totally different product at much higher pressure and with the flow in the opposite direction. ~~In September 2014 PHMSA issued an advisory bulletin to alert operators of hazardous liquid and gas transmission pipelines of the potential significant impact flow reversals, product changes and conversion to service may have on the integrity of a pipeline~~. Failures on natural gas transmission and hazardous liquid pipelines have occurred after these operational changes. The fact that both the old ME1 and 12" Point Breeze to Montello have undergone these changes make us very nervous. We live so close to both of them.

One of the old pipes Sunoco used for the "workaround" is the 12" Point Breeze to Montello which runs along Valley Road 150 ft past our house. This pipe is old (installed in 1937) and corroded and has leaked multiple times in Edgmont Township just along the road from us – namely in 1988, 1992 and on Valley Road in 2015 as the **Fuller Exhibit 14** accident report shows. All these leaks were discovered by residents seeing and smelling the product being transported in the pipe which, at that time, was gasoline. All those leaks were NOT detected by Sunoco's leak detection equipment. Now the product in the pipe has been replaced with odorless and colorless highly volatile natural gas liquids through high consequence areas. We no longer have the ability to see or smell a leak when Sunoco's leak detection equipment fails as it did in the previous examples. In other words, we have now been placed at much higher risk.

This old 12" Point Breeze to Montello or, the GRE as it is also referred to, is the very same pipe that Administrator Elliott referred to as "compromised" in his letter to the West Whiteland Board of Supervisors on Sept. 4, 2018 as shown in **Fuller Exhibit 16**. This is the repurposed pipe that runs along Valley Road and in front of our property. This is the very same pipe that leaked 33,000 gallons of petroleum into Darby Creek in June of 2018. On the final page of the letter in Point 6, Administrator Elliott states that "the compromised section … will continue to transport refined products". When I asked Ian Woods, lead Community Liaison for PHMSA to define "compromised" he stated that it meant corroded. Why would a corroded pipe continue to transport refined products? Surely that is unsafe?

What should be of great concern is that despite the leak detection equipment being operational and functional at the time, it failed to detect this leak. Notification came once again from the public noticing a petroleum odor on June 19. On June 16 a private citizen had noticed a sheen on Darby Creek. It took until June 26 for Sunoco to confirm that the source of the leak was the Point Breeze to Montello pipe. One whole week.

Despite undergoing inspections with in-line tools in 2016, despite Sunoco spending $30 million in 2016 to upgrade the 12-inch line, the fact is that this pipeline still failed in a high consequence area in 2018. If this had been a week-long natural gas liquids leak instead of gasoline the consequences would have been very different and far more serious. Sunoco's claim to go "above and beyond" is clearly not guaranteeing the safety of its infrastructure.

Once construction of Mariner East 2 began in 2017 more and more articles started to appear in the news about the Mariner East 2 pipeline. Gradually stories came out about damage to private wells from punctured aquifers, water contamination, inadvertent returns, drilling fluid spills, contamination to wetlands and rivers, the list goes on. Sunoco racked up more than 800 state and federal permit violations and fines for Mariner East have now exceeded $13 million.

I became extremely concerned. I started to do some serious research and spoke with people in the industry. They all told me the same thing. That natural gas liquids shouldn't be brought through densely populated high consequence areas and that the HDD was more than likely going to damage my well. I was devastated. The integrity of our well and maintaining the purity of our water was paramount to the health and safety of my family. I have two members of my family with seriously compromised immune systems. We were never informed this might happen when we signed the permanent easement agreement.

I started receiving Horizontal Directional Drilling Reevaluation Reports from the DEP early 2018. Residents were invited to submit comments. February 1st, 2018 I submitted our first comments to Karen Yordy of the DEP as shown in **Fuller Exhibit 2**. I shared my concerns and asked for answers. I received none. The only thing that was addressed was the incorrect distance of my well to the proposed HDD which Sunoco had measured as 490 ft away when it was, in fact, 150 ft away.

Despite all my concerns I expressed about HDD drilling and the impending damage to our well if the HDD went ahead, despite all my written response comments to each Sunoco Horizontal

Directional Drilling Reevaluation Report to the DEP, despite my letter to Karen Yordy of the DEP, my letter to Mr. John Hohenstein, P.E. of the DEP as shown in **Fuller exhibit 3**, my third set of Reevaluation Report comments in **Fuller exhibit 4** (comment No. 6), the HDD went ahead along Valley Road for ME2 and ME2X.

~~In July of this year, as predicted, our private water well, our sole source of water, suffered major contamination and we had E Coli and fecal coliform introduced into our internal drinking water system. The test results are shown in **Fuller Exhibit 9.**~~ My daughter sadly became very sick and had to go to the gastroenterology department of our local hospital. ~~We still have no idea what the "undetermined" contaminant is.~~

I let it be known at the beginning of this project, before the HDD, that two members of my family have seriously compromised immune systems. I asked for a solution to this problem before HDD began because any risk of contamination could be fatal for both. ~~The United States Geological Survey clearly states on page 3 of **Fuller exhibit 5** that consumption of water contaminated with E Coli and fecal coliform may cause death in those with weakened immune systems such as my husband who has stage 4 incurable cancer or my son, who has a life-threatening incurable auto-immune disease.~~ I received no response from either Sunoco or the DEP about my concerns regarding contamination. Now, after contaminating our well, after making our daughter sick, after Sunoco knowingly put my family at risk, they are offering the solution they could have offered us at the beginning which is putting us onto Aqua.

Fuller Exhibit 6 shows that Sunoco made this offer of public water connection to all landowners with private wells within 450 ft of the HDD in Jackson Township, Cambria County. Why were we on Valley Road in Middletown Township not made the same offer? In SPLP's May 21, 2018, response to the DEP (**Fuller exhibit 7),** Points 7 and 28 state that, in accordance with its Chapter 105 permit, Sunoco must provide long-term replacement potable water to the satisfaction of affected water supply owners. They have not done that. T~~his same document also shows that a fracture line passes straight through our property crossing the HDD. This put us at higher risk of well damage and Sunoco knew that from the beginning.~~

Sunoco's Water Supply Assessment, Preparedness, Prevention and Contingency Plan (**Fuller Exhibit 8**) outlines the risks HDD poses to private groundwater wells and the risks of inadvertent returns. Point 5.2.1 under "Potential HDD Impacts" clearly states that "While the path of least resistance is typically the bore hole itself, it may instead be an existing fracture …When this happens … drilling fluid could enter the groundwater table that could be used by private groundwater wells." It is unconscionable to think that Sunoco was prepared to take a risk with my family's health or rather, lives, that I wasn't prepared to take. This is a total disregard of foreseeable consequences and reckless endangerment of life and totally disproves what Sunoco says about "putting safety first" and "being a good neighbor".

As I started to hear about negative impacts from the Mariner East pipeline project, I also learned that construction had apparently gone ahead without any independent risk assessments having been carried out. The only risk assessment that had been conducted was apparently by Sunoco but no-one was allowed to see it. We had been placed in danger but didn't know how anything

would impact us or what to do in a negative impact situation. All these facts had been kept from us when we signed that Permanent Easement.

~~For instance, we weren't told that, unlike other pipeline products, these natural gas liquids had no color or odor. When they leak, there are two possibilities. Either the gas escaping from the leak is immediately ignited or they form a ground hugging vapor cloud that can spread along the ground for up to a mile. Any leak immediately becomes an ignition source for any static or electrical spark. This means you cannot have a vehicle driving along the road anywhere near the leak, you cannot use a car to escape, or use your cell phone to call for help, etc.~~ We have cars coming along Valley Road all the time. There's nothing to stop a car pulling out of a cul de sac on Valley Road even if both ends of the road are closed off. What's to stop cars driving into a leak and causing an explosion of catastrophic proportions? Nothing at all. As I found out more, there were only more questions and more concerns.

What was the emergency plan for this? There really is none. Middletown Township has an 82-page Emergency Operations Plan shown in **Fuller Exhibit 17** which I read from front to back. It had nothing to offer me for a highly volatile natural gas liquid leak incident. I met with our Township manager at the time and our zoning officer. They couldn't help me either. I met with Representative Chris Quinn. He couldn't help me either. There was and still is no credible or workable plan in place for us.

I started to speak out at public meetings – Delaware County Council, Middletown Township, Edgmont Township, concerned citizens meetings, etc.- joining other residents calling for

independent risk assessments to be carried out so that we, the residents along the line, understood what danger we had been placed in and, if possible, find out what to do in the event of a leak. This shouldn't have been our responsibility. This should have been the responsibility of our public officials, the regulatory agencies, our Governor and Sunoco. All those overseeing this construction project should have made sure this was available for the public. In the absence of anything for us, we had to initiate this ourselves, for the safety of our families and our communities.

Eventually two independent risk assessments were carried out and the dangers of these NGL pipelines became clear. I was shocked at how this had been allowed to happen. I went to meet with Delaware County Emergency Services Director, Timothy Boyce. He agreed with me that there wasn't much they could do during a leak … they can't bring in fire engines, ambulances, police or EMT's anywhere near a natural gas liquid leak or vapor cloud because it could asphyxiate or cause a catastrophic explosion. He told me the best scenario in the case of a leak would be if it ignited immediately thereby preventing a vapor cloud from spreading. But this is a case of hoping for the best and not preparing for the worst.

Delaware County Emergency Services Director also told me that the situation with the NGL pipelines would be safer if there was an early warning system along the route of the pipeline to indicate a leak or problem. He mentioned discussing this with Chester County Emergency Services. Why isn't there such a system in place? ~~Sunoco's Supervisory Control and Acquisition (SCADA)-based system doesn't work effectively. This system is supposed to assist with alarms, alerts and volume calculations. Although the SCADA system was operational and~~

fully functional at the time of the April 2015 leak of the old, corroded 12" Point Breeze to Montello on Valley Road where I live, it did not assist with the detection or confirmation of the leak (**Exhibit Fuller 14, page 5**). Neither did Sunoco's Computational Pipeline Monitoring (CPM) System. It, too, was operational and fully functional at the time of the 2015 gasoline leak on Valley Road and did not assist in the detection of confirmation of the leak. The same applies to the 33,500-gallon leak in Darby Creek last year. The leaks were, in fact, detected by local residents in both cases. They could see and smell the gasoline. This would not be the case in the event of an HVL leak. These highly volatile natural gas liquids have no odor or color.

So, if Sunoco's SCADA and CPM systems are ineffective and if the product has no odor or color … how is a leak to be detected and how are we protected from danger? I started looking at the history of other leaks, accidents and incidents near me over the last few years on the PHMSA database. Again, I was shocked. I found a long list of leaks, accidents and incidents near me where these so-called leak detection systems (i.e. the SCADA-based system and the CPM system) only worked in one or two cases:

Fuller Exhibit 11 is a screenshot of PHMSA's NPMS Public Viewer showing Sunoco Pipeline and Pipeline Facility Accidents/Incidents near me in Delaware County, approximately 8 miles down to Marcus Hook and 12 miles across to Darby Creek. By going onto the PHMSA analytics dashboard I was able to pull up the individual accident reports for each accident near me. Exhibit 12 is a snapshot of only some of the accidents. I started at 2002 and this is what I found:

1. Valley Road, very near me, April 10, 2015, Incident Report No. 20150163, gasoline leak due to corrosion on the old 12" Point Breeze to Montello pipeline. The leak detection systems, both SCADA and CPM, failed. It was under cathodic protection at the time.
2. Incident Report No. 20040090, March 19, 2004, leak due to corrosion. No leak detection equipment. This was at Lima, just a mile from me. The leak was detected by the smell of petroleum in the sewer line.
3. Incident Report No. 20020422, November 16, 2002, cause material, weld, equipment failure at Marcus Hook. Gasoline leak. No leak detection equipment.
4. Incident Report No. 20133006, December 16, 2012, cause material, weld, equipment failure. Marcus Hook. High consequence area. Leak detection failed.
5. Incident Report No. 20090152, May 8, 2009, NRC Report No. 905083, cause material, weld, equipment failure. Aston. HCA. Gasoline odors detected by passing motorists.
6. Incident Report No. 20160192, Aston Twin Oaks Valve Station, May 27, 2016, HVL or other flammable commodity, cause material, weld, equipment failure. HCA. Leak detection system failed.
7. Incident Report No. 20150095, Aston Twin Oaks Pump Station, 2015, leak, cause connection failure. HCA. Leak detection system failed.
8. Incident Report No. 20150145, AGAIN Aston Twin Oaks Pump Station, NRC. Report No. 1111777, product overflow, cause material/weld/equipment failure. HCA. Leak detection system failed.
9. Incident Report No. 20170040, Aston Valve Station, a leak due to a crack. HCA. Leak detection system failed.

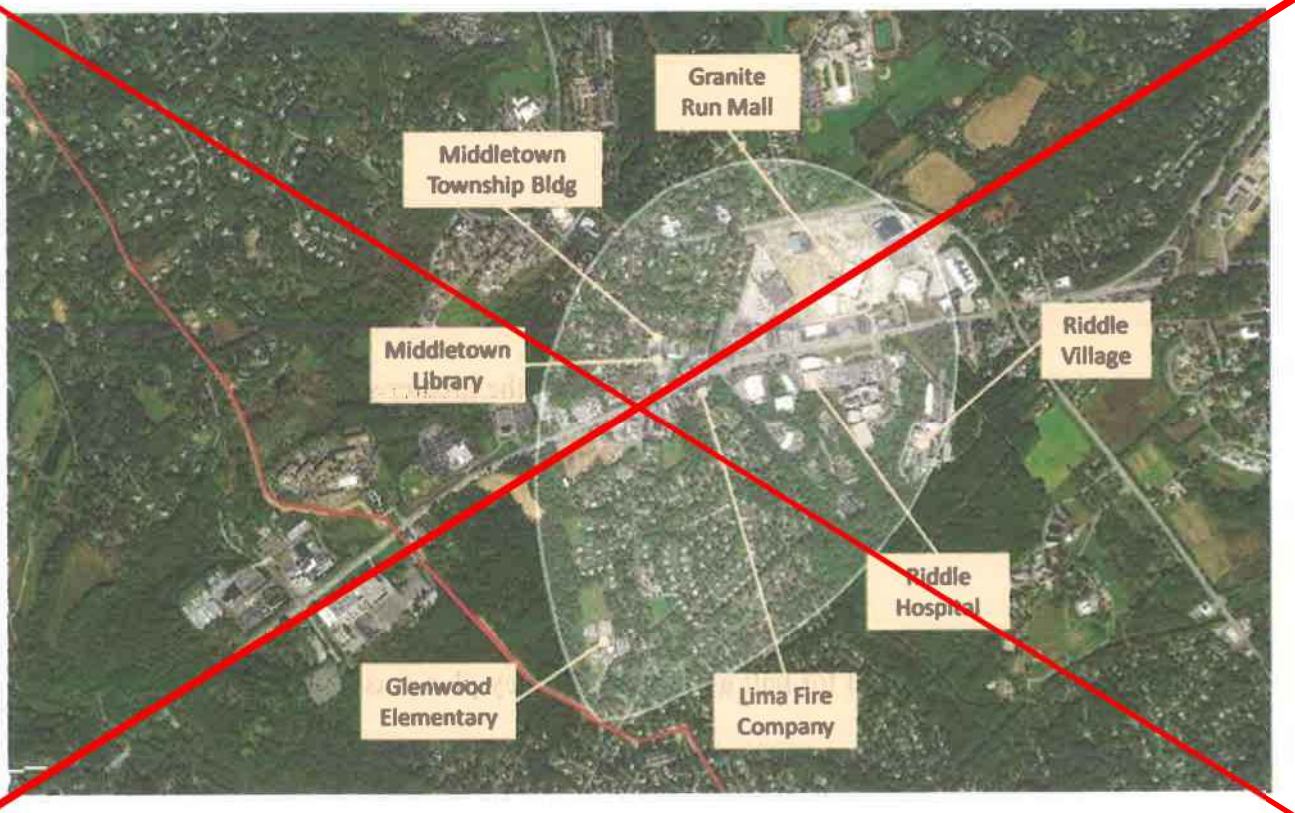
10. Incident Report No. 2013, August 19, 2013, Marcus Hook. Refined and/or petroleum leak due to corrosion. HCA. Discovered by operator not leak detection system.
11. Incident Report No. 20030412, October 29, 2003, Aston, Marcus Hook tank. Gasoline leak due to corrosion. No leak detection system.
12. Incident Report No. 20100193, August 5, 2010, NRC Report No. 950024, refined and/or petroleum leak due to material/weld/equipment failure. This report is missing from the PHMSA analytics dashboard.
13. Incident Report No. 20110401, September 26, 2011, NRC Report No. 990838. Marcus Hook Tank Farm. Refined and/or petroleum leak due to cracked valve. No leak detection system in place.
14. Darby Creek Area, Report No. 20020438, February 21, 2002, NRC Report No. 594688, mixed petroleum products, leak due to corrosion on the 12" Point Breeze to Montello. Odors detected by property owner. No leak detection equipment.
15. Darby Creek, Report No. 201802015, NRC Report No. 1215816, June 16, 2018, over 33,500 gallons of gasoline leaked into the Creek. It took 7 days to determine the source of the leak. It was discovered by a private citizen not the leak detection equipment, caused by a crack in the pipe. **Fuller Exhibit 15** is the accident report. This is again the same 12" Point Breeze to Montello pipe that runs in front of our home, filled with HVL's, that leaked gasoline on Valley Road in 2015 (undetected) and in West Whiteland Township, Chester County spilling 70,000 gallons in 1987. It was constructed in 1937. This was an HCA. Leak detection system failed.

16. Incident Report No. 20110080, February 8, 2011, Darby Township near the John Heinz National Wildlife Refuge, NRC Report 967232, crude oil spill due to corrosion. SCADA and CPM systems failed to detect the leak although both were operational and functional.
17. Incident Report No. 20030077, February 5, 2003, Darby Creek Tank Farm. Crude oil spill due to corrosion. No leak detection equipment.
18. Darby Creek Tank Farm. Incident Report No. 20050373, November 23, 2005, NRC Report No. 780385, bass river crude oil spill due to incorrect operation.
19. Darby Creek Tank Farm. Incident Report No. 20170036, January 10, 2017, cause of incident corrosion. HCA. Leak detection system failed.
20. Darby Creek Tank Farm. Incident Report No. 20120268, August 19, 2012 Crude oil spill due to corrosion. HCA. Leak detection system failed.
21. Darby Creek Tank Farm. Crude oil leak from crack in valve. Incident Report 20150098-21025. Occurred March 2, 2015. HCA. Leak detection system failed.

This is a snapshot of an abysmal record of accidents and equipment failure which can be found on PHMSA's NPMS Public viewer as shown in **Exhibit 12.** I have many more examples – too numerous to mention here. I haven't even touched on Chester County but kept it to my county. These are all high consequence areas near me and near Philadelphia and the sheer number of accidents and equipment failure cannot guarantee public safety whether Sunoco promises to go "above and beyond" or not. "Above and beyond" is obviously not good enough. Existing regulations should be revised and stepped up in order to keep us safe. The facts and the statistics show that the current level of accidents is too high and our safety cannot be guaranteed.

The failure of Sunoco's SCADA and CPM leak detection systems must be addressed.

Delaware County Emergency Services Director told me that a generic evacuation plan is unworkable. Evacuation plans for something like a highly volatile natural gas liquid leak or rupture should be site-specific. For instance, what you would need for Glenwood School would be totally different to what you would need at the Granite Farms Estate location which caters to the elderly. Based on the risk assessment, **exhibit 10** shows what a rupture at Granite Farms Estates would look like:



This shows the flammable cloud from a rupture of the 20-inch line at the entrance to Granite Farms, assuming a gentle wind blowing to the northwest. The dimensions of the cloud are taken

~~from the Delaware County G2 risk assessment. This would envelope Glenwood Elementary School, Lima Fire Company, Riddle Hospital, Riddle Village, the Granite Run Mall, the Middletown Township Building and Middletown Library along with a multitude of homes, businesses and other public facilities.~~

~~There is only one access road, so the ensuing "jet fire" would block the only escape route for Granite Farms survivors for hours, and would prevent would-be rescuers from getting in.~~

~~If the breeze were to the northeast, the cloud would envelope the Fair Acres Geriatric Center, the Lima Estates retirement community, the juvenile detention center, and the county's 911 emergency center.~~

~~If the breeze were to the east, the cloud would envelope the fire station and Riddle Hospital.~~

~~The risk assessments show that the more pipes you have, the greater your risk. We have the 3 NGL pipelines in front of us and the ME1 behind so that immediately quadruples our risk with no credible or workable emergency plan in place.~~

I thought the "run upwind, uphill for half a mile" emergency plan was a joke until I saw it in Sunoco's flyer. I thought about my husband after his total knee replacement surgery, or my mother when she was staying with us at the end of her life, or the lady I met at the West Whiteland meeting whose sister is totally paralyzed after being hit by a drunk driver and whose husband now has Parkinson's. How would any of these people run uphill. And we don't even

have an uphill. What about the ill and infirm in all the care facilities along the route of the pipeline? How are they supposed to run uphill? There is clearly no consideration of the needs of those who cannot run upwind and uphill for half a mile. According the 1990 American Disabilities Act (**Fuller Exhibit 18**) there is a requirement for local authorities to include the disabled in their Emergency Operating Plans. ~~Neglecting to do this is in violation of the American Disabilities Act. This is a non-discrimination law.~~ Until the disabled are included in a credible, workable Emergency Plan for natural gas liquid leaks or ruptures this project must be halted immediately.

How do we move forward with this? Lawmakers must immediately address the gaps in existing law that have prevented the executive and independent agencies charged with protecting public health, safety and the environment from doing their job. The inability of these agencies to be able to do that has placed the general public in an extremely vulnerable and dangerous position.

During a February 21, 2019 quarterly earnings conference call, Energy Transfer's chief executive, Kelcy Warren, admitted "We've made mistakes and we are correcting those mistakes and will not make those mistakes again". He acknowledged the problems the Mariner East project has faced in Pennsylvania. However, the mistakes are continuing. In June we had the 33,500-gallon undetected leak in Darby Creek. In April a sinkhole opened up at the State Police Barracks close by on Route 1, Middletown Township. Then two more sinkholes a half a mile from us at our local park - one in September and one just last Thursday, October 17. ~~Since July our family has suffered well and water contamination which has made us sick,~~ drilling fluid

spills and inadvertent returns (**exhibit 19**) along Valley Road. Sunoco has become a repeat offender and we don't feel safe.

In his August 2nd, 2018 quarterly earnings conference call Kelcy Warren joked that "A monkey could make money in this business right now." This is hardly the mission statement of a public utility. Don't get me wrong. I have nothing against companies making a profit and passing that on to their shareholders, but not at the expense of people's health, safety and property.

Sunoco's accident history, failure of its leak detection equipment, construction failures, delays, willful and egregious violations not just to precious wetlands but also to people's water sources and fines totaling over $13 million show that this company cannot be allowed to continue. To allow it to do so is placing a vulnerable population at risk.

This project must be halted until these reforms are carried out and people are guaranteed a safe and healthy environment.

~~As Sunoco is a public utility it is subject to Title 49, Part 195 of the Code of Federal Regulations. It is required to design, construct, operate and maintain its facilities in a manner that provides for the safety of everyone, including the citizens of Middletown Township. I argue that, based on the above facts regarding lack of a credible, workable, non-discriminatory Emergency Plan that provides for every member of our community, the sheer number of leaks, accidents, equipment failure, failure of detection systems and the lack of physical indications to detect a leak, Sunoco's design, construction, operation and maintenance of its facilities does not provide for~~

~~the safety of everyone and therefore does not comply with Title 49, Part 195 of the Code of Federal Regulations~~.

When I spoke with a public official within the PUC on the phone last year, I discussed all this with him. I expressed how concerned I was for my family's safety and the danger this project presented to the whole community. I have done everything in my power to find the answers I need to make us feel safe. I have researched, met with legislators, public officials, County Council members, Township Council members, Emergency Services Directors, scientists, pipeline specialists, etc. It only seemed like the more I discovered and researched, the worse the situation became. I asked him what he would do if he was in my position. His answer was "file a formal complaint".

So that is what we are doing today. In summary, this court and the people in it are our last resort. On behalf of everybody impacted to date and who will be severely at risk in the future I beg you to use the powers bestowed upon you to send a message to Sunoco/Energy Transfer that in Pennsylvania people's lives matter more than profits and increasing the bank balances of billionaires. When this country was created, it was created as an experiment of how government of the people, by the people and for the people would be of paramount importance and that includes our lives and the quality of the environment that we share rather than the profits of multinational organizations.

Thank you for your time and consideration today.