



COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD

NANCY KING

v.

COMMONWEALTH OF PENNSYLVANIA,
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

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EHB Docket No. 2021-059-B

Issued: May 16, 2024

ADJUDICATION

By Steven C. Beckman, Chief Judge and Chairperson

Synopsis

The Board finds that appellant has not met her burden of proving by a preponderance of the evidence that a mine subsidence induced landslide caused the damage to her property or that the Department erred when it concluded that mine subsidence was not the cause of the alleged damage and denied her claim.

Background

Dr. Nancy King (“Dr. King”) owns property located at 35 Orchard Lane, Monongahela, PA 15063, Carroll Township, Washington County (the “Property”). On November 4, 2020, Dr. King filed a Mine Subsidence Insurance Fund Damage Claim Notice (the “2020 Claim”) with the Fund alleging damage to the house and attached garage located on the Property. The alleged damages in the 2020 Claim included cracks throughout the interior and exterior of the house, a twisted right house wall, the displacement of a basement window and damage to the floors and walls of the garage. By letter dated May 3, 2021, the Department of Environmental Protection (the “Department”) denied the 2020 Claim (“Denial Letter”), concluding the alleged damage was not covered by her insurance because the damage was not caused by mine subsidence.

Dr. King appealed the Denial Letter to the Environmental Hearing Board (“the Board”) on June 11, 2021. Over the course of discovery which was extended several times throughout the proceeding at the request of the parties, the Department filed two motions to compel. The Department filed three motions in limine, asking the Board to exclude: 1) the testimony of Brian Pfister and a report that he authored; 2) photographs that were not included in Dr. King’s pre-hearing memorandum and; 3) the technical report of Dr. Yi Luo (“the Luo Report”). The Board denied the Department’s motions pertaining to Brian Pfister and the Luo Report without prejudice to the Department’s right to raise the issues addressed in the motions at the hearing and permitted the introduction of segments of the Luo Report insofar as Dr. King’s expert relied on it in arriving at his own expert opinion. The Board granted the Department’s second motion, limiting Dr. King to introducing into evidence only photographs that were attached to her pre-hearing memorandum. On October 11, 2023, a one-day hearing was held in the Board’s Hearing Room in Pittsburgh. Dr. King filed her post-hearing brief on January 2, 2024; the Department filed its post-hearing brief on February 23, 2024 and; Dr. King submitted a reply letter in place of a brief on March 15, 2024, that concluded the briefing in this matter which is now ripe for decision.

FINDINGS OF FACT

Parties

1. On behalf of the Insurance Board, the Department administers the Coal and Clay Mine Subsidence Insurance (“MSI”) Fund Law, Act of August 23, 1961, P.L. 1068, *as amended*, 52 P.S. §§ 3201 – 3226 (“MSI Fund Law”), and the rules and regulations promulgated thereunder, 25 Pa. Code Chapter 401, and acts on behalf of the Coal and Clay MSI Fund (“Fund”). (Joint Stipulation of Facts No. (“Jt. Stip.”) 1).

2. Dr. King owns the real property located at 35 Orchard Lane, Monongahela, PA 15063, Carroll Township, Washington County, which includes a residential house with an attached garage (“Structure” or “King Structure”) that was added after original construction. (Jt. Stip. 2).

Underground Mining Activities and Subsidence

3. The Property is located between the Maple Creek Mine and the abandoned Dunkirk Mine. (Jt. Stip. 17; Transcripts of Hearing Testimony Page No. (“T.”) 172).

4. Union Coal and Coke Company’s Dunkirk Mine conducted room and pillar mining operations in the Pittsburgh coal seam at a vertical depth of cover of approximately 380 feet. (Jt. Stip.10; T. 172).

5. The Dunkirk Mine was closed and abandoned around 1920. (Jt. Stip. 12; T. 171).

6. It is unknown if the Dunkirk Mine is flooded. (T. 76).

7. No mine subsidence insurance claims have been submitted or supported with respect to the Dunkirk Mine. (T. 77, 217, 225).

8. Maple Creek Mining, Inc ’s Maple Creek Mine conducted room and pillar mining operations with partial coal extraction in the Pittsburgh coal seam at a vertical depth of cover of approximately 380 feet. Solid coal pillars were left in place to support the surface. (Jt. Stip. 3).

9. The Maple Creek Mine is adjacent to the Dunkirk Mine. (T. 76).

10. The Maple Creek Mine is being pumped of water. (T. 186).

11. Pothole subsidence, otherwise known as sinkhole subsidence, is a type of localized mine subsidence. (T. 46, 47, 157, 161).

12. The diameter of sinkhole subsidence is generally 15 feet or less. (T. 161).

13. Sinkhole subsidence generally occurs when there is 50 feet or less of cover from the coal seam to the surface. (T. 161).

14. Trough subsidence is broad and is configured in a circular or elliptical depression that forms on the surface. (T. 158).

15. The size of a subsidence trough is directly related to the depth of cover. (T. 158).

16. The diameter of a trough is typically one and a half the depth of the cover but can be as large as five times the depth of cover. (T. 158).

17. In the event of trough subsidence, surface features such as houses, fences and sidewalks, show a common pattern of movement towards the center of the trough. (T. 159).

18. Utilities, such as water, gas and sewer lines, are often impacted by trough subsidence. (T. 159).

19. Ground cracks, soil separation, and structures displaced out of level often occur in the event of trough subsidence. (T. 160).

20. Trough subsidence generally occurs when there is 50 feet or more of cover from the coal seam to the surface. (T. 158).

21. The Dunkirk Mine is most likely to experience a trough-type subsidence event. (T. 55, 158).

King Property and Structure

22. The house on the Property was built in 1948; the attached garage and patio were added in approximately 1961. (T. 118-19).

23. No coal extraction occurred below the King Structure and the entire Property is underlain by solid coal. (Jt. Stip. 16; T. 172).

24. The depth to the Pittsburgh coal seam under the Property (cover) is approximately 380 feet. (Jt. Stip. 14; T. 172).

25. The closest room and pillar mining in the Maple Creek Mine is approximately 175 feet west of the King Structure. (Jt. Stip. 4).

26. The closest room and pillar mining in the Dunkirk Mine is approximately 80 feet east of the King Structure. (Jt. Stip. 15; T. 172).

27. The backyard of the Property is comprised of a hill with an approximate slope of 4:1, meaning that it drops one foot vertically for every four feet horizontal. (T. 37-38).

28. At approximately three-quarters down the backyard slope, there is a flattened area running perpendicular to the slope that is generally uniform in shape (“the Rolling Feature”). (T. 32, 200; Ex. C-10h and K-2).

29. The neighboring property to the right of Dr. King’s Property contains a similar feature to the Rolling Feature. (T. 200; Exs. C-13, C-14).

30. There is a fence near the bottom of the slope of Dr. King’s backyard. (T. 198; Exs. C-10h and K-2).

31. The fence was installed at some time between 2019 and 2021. (T. 199).

32. There is an area with trees growing downslope or toward the rear of the fence at the end of the backyard. (T. 199; Ex. C-10h).

The Subsidence Claims

33. The mine subsidence insurance program was established in the early 1960s and provides homeowners the opportunity to obtain insurance to protect their structures from mine subsidence. (T. 144).

34. In 2017, the Fund issued an MSI policy for the Structure. (T. 154).

35. The Fund insuring agreement sets forth the policy coverage for the Structure and defines “mine subsidence” as “the movement of the ground surface as a result of the collapse of underground coal or clay mine workings.” (Jt. Stip. 24, 26).

36. On June 28, 2019, the Department received a Subsidence Damage Claim Form dated June 24, 2019 from Cecelia Tonecha (“Ms. Tonecha”), who is Dr. King’s late mother and predecessor in title of the Property. (Jt. Stip. 5).

37. On July 29, 2019, after completing an investigation under the Bituminous Mine Subsidence and Land Conservation Act, 52 P.S. §§ 1406.1—1406.21, and the regulations promulgated thereunder, the Department denied Ms. Tonecha’s claim. (Jt. Stip. 6).

38. On August 29, 2019, Ms. Tonecha appealed the denial of her claim to the Board at EHB Docket No. 2019-104-B. During the pendency of the appeal, Ms. Tonecha passed away, and Dr. King, as Successor in Interest, was substituted as the appellant. (Jt. Stip. 7).

39. Because the experts identified by each of the parties concluded that Maple Creek Mining Inc’s mining did not cause the damage to Dr. King’s Structure, the parties executed a Settlement Agreement whereby Dr. King would withdraw her appeal at EHB Docket No 2019-104-B and would pursue a claim pursuant to the MSI Fund Law. (Jt. Stip. 8).

40. By Order dated October 28, 2020, the Board terminated the appeal and marked EHB Docket No. 2019-104-B as settled. (Jt. Stip. 9).

41. On or about November 4, 2020, Dr. King filed her 2020 Claim with the Fund. (Jt. Stip. 19).

42. Dr. King noticed the damages to the Structure over an eight-month timespan beginning in the middle of 2018. (T. 166; Ex. C-4).

43. The damages listed on the 2020 Claim include: damage to garage floors and walls, cracks in basement walls, cracks in guard walls on deck, twisted right house wall, displacement of basement window, cracks above back door, cracks in interior walls and ceiling, and landslide in back. (T. 166-67; Ex. C-4).

44. No nearby landowners have filed mine subsidence insurance claims. (T. 212).

45. The Department concluded that the damages set forth in the 2020 Claim were not covered by the terms of the Fund insuring agreement because the claimed damages were not caused by mine subsidence from the Dunkirk Mine. (Jt. Stip. 21).

46. In a letter dated May 3, 2021, the Department informed Dr. King that her 2020 Claim had been denied. (Jt. Stip. 22).

Dr. King

47. Dr. King moved into the house on the Property in 1953 when she was a few months old. (T. 118).

48. Dr. King played and went sledding in the backyard of the Property as a child. (T. 120).

49. Dr. King mowed the yard at the Property growing up. (T. 120).

50. The bulge (also referenced as the Rolling Feature) was not present in the backyard of the Property when Dr. King was a child. (T. 121).

51. Dr. King attended graduate school starting in 2000 and took a break from mowing the yard at the Property at that time. (T. 121).

52. Dr. King resumed mowing the yard at the Property in 2007/2008 at which point she noticed the big hump (Rolling Feature) in the backyard. (T. 122).

53. Dr. King has observed wide cracks in dirt near the house running perpendicular to the slope of the yard. (T. 127-129).

54. Dr. King first noticed the cracks in her yard around her house in 2018 and they have reappeared in her yard every summer since that time. (T. 129, 133).

The Department's Investigation

55. Michael T. Bodnar, P.E. ("Mr. Bodnar") was one of the Department staff that conducted the investigation of Ms. Tonecha's subsidence claim and of Dr. King's 2020 Claim. (T. 152-153).

56. Mr. Bodnar has been a licensed Professional Engineer in the Commonwealth of Pennsylvania since 2006. (T. 143; Ex. C-1).

57. Mr. Bodnar is employed as a Mining Engineer Consultant with the Department's Bureau of District Mining Operations, Mine Subsidence Section in the California District Mining Office. (T. 141-142; Ex. C-1).

58. Mr. Bodnar has been employed by the Department for twenty-three (23) years, and the bulk of his time with the Department involved mine subsidence. (T. 144; Ex. C-1).

59. Mr. Bodnar either conducted or supervised more than 700 mine subsidence investigations, all of which generated accompanying reports. (T. 150, 247-249).

60. Mr. Bodnar has observed more than 200 structures that have been damaged by mine subsidence. (T. 150, 247-249).

61. The Board accepted Mr. Bodnar as an expert witness in mine subsidence, the effects of mine subsidence and civil engineering. (T. 152-153).

62. Mr. Bodnar has been to the King Structure three times: June 2019, July 2019, and March 2021. (T. 173, 196).

63. Prior to conducting a site visit in a mine subsidence investigation, Mr. Bodnar reviews the damage claim notice, other subsidence events or investigations in the area, if any, information on the structure from previous visits, and available mapping information including mine maps. (T. 162).

64. During the course of a site visit, Mr. Bodnar speaks with the homeowners, obtains background information about the structure and damages, and has the homeowner show him the damages they are concerned about. (T. 163).

65. During the investigation of a structure, the Department photographs any observed damages and checks for levelness and plumbness of the interior and exterior of the home with a four-foot carpenter level and/or laser level. (T. 163-164).

66. Mr. Bodnar looks for differential settlement, ground cracks, soil separation, and any suspicious damages that could be indicative of mine subsidence during a site visit. (T. 164).

67. The Department considers adjacent properties in its investigations by searching for visible damages on the exteriors and measuring their levelness by using a laser level. (T. 164).

68. On March 1, 2021, Mr. Bodnar, along with other Department staff, conducted a site visit in the course of investigating the 2020 Claim. (Jt. Stip. 20).

69. Prior to March 1, 2021 site visit to the Property, Mr. Bodnar reviewed Dr. King's 2020 Claim, other claims of subsidence and investigation within the area, the previous information provided in Ms. Tonecha's claim, and mapping, including aerial mapping, USGS topographic mapping, a portion of the final mine map from Maple Creek Mine and an overlaid map that included a portion of the mine map from the Dunkirk mine. (T. 165, 167-170; Exs. C-5, C-6, C-7, and C-8).

70. Dr. King showed Mr. Bodnar the damages at the site visit and photographs were taken of the damages. (T. 178).

71. During the site visit, the Department used a four-foot carpenter's level on the first floor and the basement to measure the Structure's interior for levelness and plumbness. (T. 178-179).

72. The measurements show that some of the Structure's walls are plumb and some are out of plumb and some floors are level and some are out of level. (T. 178). The I-beam, the Structure's main support beam, is level. (T. 179).

73. The measurements indicated there is no pattern of movement that exists inside the Structure. (178-179).

74. The Department took measurements of the interior of the garage which showed there was no pattern of movement within the garage. (T. 179).

75. The front of the Structure is approximately one-half inch lower than the rear of it. (T. 184).

76. The King Structure is generally level and does not exhibit signs of a pattern of movement. (T. 185; Ex. C-9).

77. Mr. Bodnar observed dark staining on the exterior garage walls which he considered indicative of water flowing from the patio down along the foundation walls to the ground. (T. 192-194; Exs. C-10b and C-10d).

78. The Department measured the top of the footings of the garage which showed the tops sit between 12 and 18 inches below the ground surface. (T. 193).

79. The garage's shallow footings and the walls resting on those footings are susceptible to movement from frost heave or from soil drying. (T. 194).

80. Mr. Bodnar did not observe any physical evidence of a landslide in the backyard behind the Structure. (T. 198).

81. Mr. Bodnar observed that the trees growing off the edge of the backyard of the Property beyond the fence did not appear to be either tilted or bowed which he would have expected to see if there was a landslide. (T. 199, 201-202; Ex. C-10i).

82. The Department took laser level measurements of the exterior of the Structure and of 33 Orchard Lane (the house to the left of the Structure), 39 Orchard Lane (the house directly to the right of the Structure), and 47 Orchard Lane (the house that is two houses down to the right of the Structure). (T. 181, 206-210; Exs. C-9, C-10j, C-10k, and C-10l).

83. The houses adjacent to the Structure that the Department took laser level measurements of were generally level and did not show a pattern of movement. (T. 209-211, 217; Ex. C-9).

84. Mr. Bodnar did not observe any impacts from mine subsidence to the adjacent houses or to associated roads, sidewalks, driveways, or utilities such as water lines. (T. 212).

85. Mr. Bodnar did not observe any evidence of a landslide at any of the adjacent properties. (T. 212).

Landslide Characteristics and Observations

86. Typical landslides have a circular configuration with a head scarp at the top and a toe bulge at the base. (T. 32, 34-35).

87. The head scarp, situated at the top of a landslide, consists of displaced soil that has moved both horizontally and vertically downward. (T. 37, 161).

88. Generally, at the head scarp, bare earth is exposed where material has moved and vegetative areas are adjacent to the bare area. (T. 161-162). The head scarp usually has a near vertical open soil that appears like a cut slope in a bank. (T. 37).

89. A landslide typically has a heave of material at its base, known as a toe bulge. (T. 161). A toe bulge is formed by the landslide pushing the soil upward. (T. 34).

90. Tension cracks are indicators of a landslide and are formed when the soil separates due to it moving laterally. (T. 34). Tension cracks can fill up over time. (T. 34, 239).

91. Hummocky or uneven ground is consistent with the occurrence of a landslide. (T. 34).

92. Intermediate cracks, scarps, and/or heaves within the material that has moved on a slope are characteristics of landslides. (T. 161).

93. Landslides can cause trees to grow in a tilted or bowed fashion. (T. 40, 201-202).

94. The risk of a landslide is a relationship between the slope and the internal friction of the soil. (T. 38).

95. If a slope has strong soil, the steeper the slope can be without a landslide occurring. If a slope has weak soil, the flatter the slope can be for a landslide to occur. (T. 38).

96. Mine subsidence can initiate a landslide. (T. 21).

97. It is rare for mine subsidence to cause a landslide that affects a structure. (T. 83).

98. Most landslides are caused by excessive precipitation. (T. 86).

Fact Witness Brian Pfister

99. Brian Pfister (“Mr. Pfister”) is a licensed public insurance adjuster with 16 years of experience and represents the insured against the insurer. (T. 96-97).

100. In the course of his job duties, Mr. Pfister inspects homes for damages and, to a certain extent, must make conclusions surrounding the cause of the damages. (T. 97).

101. Insurance policies generally exclude coverage for damages caused by earth movement so insurers will deny claims for that type of damage. (T. 97-98).

102. Earth movement can cause cracks to form in a house but things other than land movement can also cause cracks. (T. 103, 106).

103. Mr. Pfister acknowledged that he is not an engineer and is not educated in determining why earth may have moved. (T. 98).

104. Mr. Pfister inspected the King Structure on July 1, 2022 and March 27, 2023 and took photographs of the cracking throughout the interior and exterior of the King Structure. (T. 99-100, 104; Ex. K-7).

105. Mr. Pfister observed new cracking as well as worsening/widening of many of the cracks between his inspection on July 1, 2022 and his follow-up inspection on March 27, 2023. (T. 107-116).

Expert Witness Burton Holt, P.E.

106. Burton Holt, P.E. (Mr. Holt) is a geotechnical engineer who is the technical operations manager of Ackenheil Engineers. (T. 13-14; Ex. K-1).

107. Mr. Holt is a licensed professional engineer in both Pennsylvania and West Virginia. (T. 14; Ex. K-1).

108. A geotechnical engineer evaluates how structures will interact with the ground and provide recommendations based on those evaluations. (T. 14).

109. Mr. Holt has 30 years of mine subsidence experience in the Pittsburgh area which involves evaluating how subsidence may impact a new structure and whether damage to an existing structure was caused by mine subsidence or another ground event. (T. 14-15).

110. Mr. Holt has evaluated approximately 50 structures for mine subsidence damage. (T. 15).

111. The Board accepted Mr. Holt as an expert witness in geotechnical engineering with experience in evaluating mine subsidence. (T. 17, 26).

112. On February 24, 2023, Mr. Holt conducted a site visit at the King Property to investigate the cause of the damage to the Structure. (T. 26).

113. Prior to the site visit, Mr. Holt reviewed the Luo Report and the information contained in the Department's Denial Letter. (T. 28, 63).

114. Mr. Holt inspected the exterior of the Structure and the outside of the Property down to the fence at the bottom of Dr. King's backyard. Mr. Holt did not inspect the interior of the Structure. (T. 26-27).

115. Mr. Holt observed split blocks and stair step cracking of the concrete block walls of the Structure. (T. 27).

116. Lateral soil movement can cause cracks in the walls of a structure's foundation. (T. 31).

117. Earthquakes, excess moisture and landslides can cause lateral soil movement. (T. 32).

118. Mr. Holt observed the Rolling Feature during his site visit. (T. 32-33).

119. Mr. Holt did not observe a head scarp during his site visit. (T. 37).

120. Mr. Holt observed uneven soils/hummocky ground during the site visit. (T. 34, 40).

121. Mr. Holt did not observe any tension cracks during the site visit. (T. 34).

122. Mr. Holt observed trees that were straight and trees that were slightly bowed during his site visit. (T. 40).

123. Mr. Holt did not observe any wet spots, springs, or erosion on the Property during his site visit. (T. 39).

124. Mr. Holt did not collect any soil samples or perform any soil tests of the Property's soil. (T. 66-67).

DISCUSSION

Legal Standard

Under our rules, Dr. King bears the burden of proof. *See* 25 Pa. Code § 1021.122(c); *Rohanna v. DEP and Emerald Contura, LLC*, 2019 EHB 193, 209. In order to prevail on her appeal, Dr. King must show by a preponderance of the evidence that the Department acted unreasonably or contrary to the law, that its decision is not supported by the facts, or that its actions are inconsistent with the Department's obligations under the Pennsylvania Constitution. *Center for Coalfield Justice v. DEP*, 2017 EHB 799, 822; *Brockway Borough Mun. Auth. v. DEP*, 2015 EHB 221, 236, *aff'd*, 131 A.3d 578 (Pa. Cmwlth. 2016); *Solebury School v. DEP*, 2014 EHB 482, 519; *Gadinski v. DEP*, 2013 EHB 246, 269. The Board defines "preponderance of the evidence" to mean that "the evidence in favor of the proposition must be greater than that opposed to it." *Telegraphis v. DEP*, 2021 EHB 279, 288; *Clancy v. DEP*, 2013 EHB 554, 572. Hence, Dr. King's evidence challenging the Department's denial of her 2020 Claim must be greater than the evidence supporting the Department's determination that the damage to the Structure was not caused by

mine subsidence. *Stocker v. DEP*, 2022 EHB at 364; *Morrison v. DEP*, 2021 EHB 211, 218; *Del. Riverkeeper Network v. DEP*, 2018 EHB 447, 473. It must be sufficient to satisfy an unprejudiced mind as to the existence of the factual scenario sought to be established. *United Refining Company v. DEP*, 2016 EHB 442, 449. The Board's review is de novo, and we can admit and consider evidence that was not before the Department when it made its initial decision, including evidence developed since the filing of the appeal. *United Refining, supra.*; see also *Smedley v. DEP*, 2001 EHB 131; *Warren Sand & Gravel v. Dep't of Env'tl. Res.* 341 A.2d 556 (Pa. Cmwlth. 1975).

Analysis

The primary issue the Board must decide in this case is whether Dr. King has met her burden and demonstrated by a preponderance of the evidence that the Department erroneously denied her 2020 Claim based on its conclusion that the claimed damages to the Structure were not a result of mine subsidence and, therefore, were not covered under her mine subsidence insurance. The parties are generally in agreement as to the existence of the identified damages to the Structure but fundamentally disagree as to the cause of the damages. Unlike most mine subsidence claims before the Board where the appellants assert that their damages were directly caused by mine subsidence, Dr. King argues that the damages to her Structure were indirectly caused by mine subsidence. Specifically, she asserts that a landslide that was triggered by localized mine subsidence damaged the Structure. The Department argues that there is no evidence of mine subsidence, localized or otherwise, at or near the Property. The Department also disputes Dr. King's assertion that a landslide took place on the Property and that the alleged landslide was caused by mine subsidence resulting in the damages observed at the Structure.

The Damages

Dr. King's house was built in 1948 and an attached garage with a rooftop patio/deck was added in approximately 1961. The house is brick and has a cement block foundation. The attached garage is constructed of cement block and has a concrete patio/deck on top surrounded by a brick guard wall. On the Claim Notice, Dr. King described the damages as follows: "Damage to garage floors and walls; cracks in basement walls; cracks in guard walls on deck; twisted right house wall; displacement of basement window; cracks above back door; cracks in interior walls and ceiling; landslide in back." (Ex. C-4). Dr. King first noticed damage to the Structure in the spring or summer of 2018. She testified that the garage window was split, her patio door became difficult to open, a crack had formed in the brick exterior outside of the patio, and cracks appeared in the interior walls.

The Board heard limited testimony from Mr. Pfister, an insurance adjuster, who visited the King Structure on at least two occasions and presented photographs he took during those visits. The photos included depictions of cracks running throughout the walls and ceilings inside the Structure, separating bricks and cracked mortar between bricks on the exterior, and cracked blocks in the basement. Mr. Pfister testified that inspecting homes for damages is a part of his work and that to a certain extent he must make conclusions as to what caused those damages. He believed that the damage that he observed at the King Structure was due to earth movement, explaining that cracks which occur within the first year of a home being built are attributable to the home settling, but cracking that occurs beyond that timeframe indicates that the earth has moved underneath of it. Mr. Pfister did not testify as to what caused the earth movement and stated that he was not an engineer and had not been educated in determining what may have caused any earth movement at the Property. Mr. Pfister also testified that he observed both new cracks and the widening or

worsening of many of the existing cracks between his inspection in July 2022 and his follow-up inspection nine months later in March 2023.

Dr King’s expert witness, Mr. Holt, a geotechnical engineer, provided testimony regarding the damages he observed at the King Structure. Mr. Holt inspected the exterior of the King Structure and the yard at the Property on February 24, 2023 but did not inspect the interior of the Structure. He testified that the main damage he observed on the exterior of the structure was “stair step cracking of the concrete block walls of the structure, and gaps in those stair step cracks.” (T. 27). He explained that stairstep cracking is when the cracks follow the mortar between the blocks and, that in severe cases, the block itself could also crack, which he observed at the King Structure. In addition to his own observations, Mr. Holt reviewed the photographs contained in the Luo Report¹ which depicted distress to the foundation of the King Structure and showed damage inside the Structure. While Mr. Holt did not go inside of the King Structure, he stated that the main focus of his work involves observing a building’s foundation and the soils surrounding it. Mr. Holt stated that the damage he observed during his site visit and in the photos within the Luo Report were “consistent with lateral movement of the soils that are supporting the foundation of the structure.” (T. 31).

The Department’s witness, Mr. Bodnar provided limited testimony concerning the damages to the Structure. He testified that Dr. King showed him the damages inside and outside the Structure. He observed deterioration and spalling of the brick wall above the garage and of the patio/deck located on top of the garage. He also noted cracking of various portions of brick work

¹ The Luo Report was authored by Dr. King’s prior expert, Dr. Luo, who unfortunately passed away prior to the hearing. Mr. Holt testified that he had reviewed the Luo Report and relied on photographs within it to inform his expert opinion. The Board did not admit the Luo Report in its entirety and limited its admission to the segments that Mr. Holt testified to.

and that there had been repairs to the garage floor along with replacement of some of the blocks in the foundation walls. The photographs put into evidence by the Department are consistent with the damages testified to by Mr. Bodnar. While the Department's testimony seems to acknowledge that there are damages to the Structure, the Department did not explicitly address what it believed caused the damages. Most of the Department's evidence regarding the Structure's damages largely focused on showing that they were not the direct result of mine subsidence. At several points in his testimony, while discussing photographs of the garage and patio/deck area, Mr. Bodnar pointed out water stains on those portions of the Structure and stated that the staining appeared to be the result of water flowing down the foundation walls and onto ground adjacent to the garage. (T. 192-194). Mr. Bodnar identified what he considered to be shallow footings of the garage and testified that the shallow footings make the garage susceptible to movement from frost heave or from soil drying. He also described a water discharge runoff in the rear yard from an interior sump pump for a French drain that discharged multiple times while he was on the Property. He stated that surface runoff can saturate soils and weaken them. Taken altogether, the Department appears to attribute at least some of the observed damage to general deterioration due to age, direct water damage and saturated soils that are sufficiently weakened so that they fail to adequately support the house and garage. It also is worth noting that the Department did not offer much, if any evidence, contradicting Mr. Holt's testimony that the Structure's damages are consistent with the type of damages that would result from lateral earth movement.

Overall, as we said, we do not think that there is any real dispute among the parties as to the fact that the Structure shows some damage. The pictures and testimony satisfactorily evidence that there are cracks on the interior walls and ceilings of the house, cracks in the basement and foundation walls, as well as in the bricks that make up the exterior walls of the house and garage.

We find that the damages testified to during the hearing were generally consistent with the damages to the Structure set forth by Dr. King in her 2020 Claim. We also do not think that there is any real dispute about the damages resulting at least in part from the weakening of the supporting soils and/or movement of the soils beneath and surrounding the Structure. Both Mr. Holt and Mr. Pfister attributed the damages to earth movement and the Department's testimony does not significantly challenge that conclusion and partially supports the likelihood that at least some of the damages are the result of soil instability.

Causation

The central issue is of course what caused the soil movement/instability that resulted in the damages to the Structure set forth in the 2020 Claim. Dr. King's expert, Mr. Holt, concluded that a mine subsidence event triggered a landslide that damaged the King Structure. He arrived at his conclusion largely by working backwards from the observed damages, eliminating other possibilities and finding what he identified as evidence of a landslide on the Property. He then attributes the cause of the landslide to mine subsidence in the Dunkirk Mine. The Department argues that there is no evidence of a landslide occurring on the Property and there is also no evidence of mine subsidence in the Dunkirk Mine that could have triggered the alleged landslide.

Mr. Holt testified that there are three things that cause soils to move laterally: "an earthquake, a piping caused by a spring or some kind of excessive moisture, or a landslide;[...]" (T. 32). After ruling out an earthquake and excessive moisture as the cause for soil movement, and upon observing what he considered physical evidence that a landslide had occurred at the Property, Mr. Holt ultimately determined that a landslide caused the soil to move laterally, thereby causing the damage to the Structure. During his site visit, Mr. Holt observed the Rolling Feature in the backyard of the Property, which he described as "a flattened area of the slope" and concluded

the Rolling Feature was evidence of a landslide. (T. 32). He explained that a landslide has a circular configuration, consisting of a head scarp at the top of the landslide and a toe bulge at the base. Mr. Holt testified that a toe bulge is formed at the base of a slide plain where the landslide pushes soil upwards, causing material to bulge at the bottom, and that the Rolling Feature he observed in Dr. King's backyard was "consistent with a toe bulge from a shallow landslide." (T. 32-33).

During his testimony Mr. Holt also discussed several other indicators of a landslide: uneven/hummocky ground, tension cracks, bowed trees, and, as mentioned above, a head scarp. While inspecting the Property, Mr. Holt observed uneven ground and hummocky soil that he described as being consistent with a landslide. He also stated that he did not see open tension cracks which can occur when soil separates due to tension caused by lateral movement but went on to explain that tension cracks "tend to fill up over time." (T. 34). Additionally, Mr. Holt testified that during his site visit he observed some trees not on the Property that exhibited signs of bowing but that there were also adjacent trees that were straight. Because the presence of both straight and bowed trees provided contradictory evidence, Mr. Holt considered his observations surrounding the trees as a net-neutral and did not attribute this information any significance in arriving at his conclusion that a landslide occurred. Finally, Mr. Holt did not see a head scarp but testified that he believed the head of the landslide was located underneath the King Structure and therefore it could not be seen.

In contrast to the testimony of Mr. Holt, Mr. Bodnar testified that he did not see any physical evidence of a landslide at the Property. In support of his position, he testified that he had previously investigated a few claims involving landslides that were alleged to have been triggered by mine subsidence and that he had viewed numerous slips or landslides over longwall mining

areas. Some of the features Mr. Bodnar said were characteristic of landslides line up well with those identified by Mr. Holt. Both agree that there is typically a noticeable scarp or soil displacement at the top of a landslide as well as a toe bulge at the bottom of a landslide. Additionally, both experts identified tension cracks/intermediate cracks within displaced material, as well as bowed trees as further evidence that a landslide took place. Mr. Bodnar simply did not observe any of those characteristics present in Dr. King's yard or the surrounding areas.

Mr. Holt's conclusion that there was a landslide at the Property is not supported by a preponderance of the evidence. The first step in his conclusion that a landslide caused the lateral soil movement is the elimination of the two other possibilities he identified as causes of soil movement, earthquakes and excessive moisture. Neither party put forth any evidence of an earthquake, so we think that possibility is reasonably eliminated but we are not convinced that Mr. Holt adequately considered excessive moisture as a possible cause and reasonably ruled it out. He claimed to have ruled out the possibility of excess moisture as a cause for soil movement because he did not observe any wet spots, springs, or erosion during his one visit to the Property. He did not interview Dr. King to garner information regarding moisture conditions at the Property beyond the day he inspected the Property. Mr. Holt did not collect any soil samples or perform any soil testing which could have provided more conclusive/accurate results of the soils hydrology, instead of purely relying on one-time observations. In contrast, the Department presented un rebutted evidence in support of the assertion that the Property may in fact have issues with excess moisture. For instance, Mr. Bodnar testified that there is uncontrolled runoff from the patio which flows down the foundation and into the backyard. He also observed a sump pump in the Structure's basement that he testified discharged water into the backyard several times during his investigation. The Department also presented photographs that depicted dark staining that began

at the patio above the garage and traveled down the garage wall to the ground. (Exs. C-10b, C-10d, C-10e). Mr. Bodnar testified the dark marks were indicative of water staining due to runoff from the patio. He also noted that the foundation of the garage was shallow which would make it susceptible to frost heave and changing moisture conditions. Considering the evidence presented, we are not convinced that excessive moisture should have been eliminated as a possible cause of the soil movement/instability that resulted in the damages.

Even if we were to accept Mr. Holt's position that excessive moisture was not a factor in the damages, the evidence he presented in support of his landslide theory is not convincing. It relies heavily on his conclusion that the Rolling Feature he observed in Dr. King's yard is the toe bulge of a landslide. In the photographs and testimony presented regarding the Rolling Feature, it appeared to be a generally flat area with a uniform character. Mr. Holt testified that he concluded, at least in part, that the Rolling Feature was a toe bulge because he believed it was not manmade. He conceded that the Rolling Feature's appearance could suggest it was a road, but he ultimately concluded it was not manmade because he did not see any evidence that the Rolling Feature extended beyond Dr. King's Property. Alternatively, Mr. Bodnar disputed that the Rolling Feature was a toe bulge and testified that he believed it was manmade because of its uniform shape, along with the fact that it sits perpendicular to the slope, and because there is a similar rolling feature in the neighbor's backyard. (T. 200). The Department also offered three exhibits contradicting Mr. Holt's testimony that show the backyard neighboring the King Property contains a physical attribute similar to the Rolling Feature as it appears flattened, runs perpendicular to the slope, and is generally uniform in shape. (See Exs. C-13 and C-14). This evidence disputes the basis on which Mr. Holt concluded the feature could not have been manmade and that it was a toe bulge.

The other physical evidence of a landslide is also not compelling. Both experts in this case testified that they did not see the head scarp of the alleged landslide. Mr. Holt argued that he believed the head of landslide was situated underneath the King Structure, thereby making it impossible to view. Mr. Holt acknowledged that he did not observe any tension cracks that would be indicative of a landslide but again, dismissed their absence by saying that they generally fill up over time. Dr. King did testify that she observed some soil cracking near the structure but stated that the cracking reappeared on an annual basis which would appear to be inconsistent with tension cracks from a landslide. The presence or absence of bowed trees was also discussed, and Mr. Holt noted that he observed some trees not on the Property that exhibited signs of bowing but that there were also adjacent trees that were straight. Mr. Holt did not provide any photographs supporting his observation of at least some bowed trees. The Department, in contrast, presented a photograph of a line of trees just downhill from the Rolling Feature beyond the fence that were not bowed. The only other physical evidence mentioned by Mr. Holt was the presence of uneven ground and hummocky soil. Again, we did not see any photographic evidence of these ground conditions and in conjunction with the lack of other physical evidence, we find the testimony on this point insufficient to support the landslide theory.

In addition to the general lack of physical evidence supporting the landslide theory, we also note that there appears to be a timing issue concerning when the alleged landslide occurred relative to when Dr. King noticed damages to the Structure. Dr. King first observed the Rolling Feature in the backyard in either 2007 or 2008. Additionally, on cross-examination, the Department presented Mr. Holt with aerial images of the Property from Google Earth from 2008, 2015, and 2016. Mr. Holt acknowledged that the Rolling Feature was present in all three images. Mr. Bodnar testified that based on his observations of landslides, the observable physical characteristics of the

landslide such as the head scarp, the toe bulge and intermediate cracks typically appeared suddenly. If the Rolling Feature is in fact a toe bulge, it follows then that the landslide, at the latest, occurred in 2008 as is evidenced by Dr. King's testimony and the Google Earth images. However, Dr. King did not observe damages to the Structure until 2018. Therefore, the damages, that were first observed in 2018, did not occur until at least 10 years after the alleged landslide. This seems unlikely to us although we did not receive any evidence or testimony addressing this discrepancy. Mr. Holt was neither asked about nor offered an opinion as to when the landslide occurred.² No evidence was introduced concerning whether damages resulting from a landslide can arise years after its occurrence. The lack of any testimony explaining how a landslide that took place no later than 2008 caused damage to the Structure that reportedly began in 2018 fails to support Dr. King's claim and further undercuts Mr. Holt's argument that the Rolling Feature is a toe bulge created by the alleged landslide. When looking at all the evidence and testimony, we find that the preponderance of the evidence does not support the conclusion that a landslide took place on the Property.

Mine Subsidence

Even if Dr. King had been able to prove a landslide occurred on her Property, she still would not prevail on her claim because she failed to produce sufficient evidence linking the alleged landslide to mine subsidence. Both the Maple Creek Mine and the Dunkirk Mine are in the vicinity of the King Structure. Both mines conducted room and pillar mining operations in the Pittsburgh coal seam and both have a vertical depth of cover of 380 feet. The Maple Creek Mine is adjacent

² In its post-hearing brief, the Department asserts that Mr. Holt concluded that "a mine subsidence-induced landslide occurred in 2018[...]" This is a mischaracterization of Mr. Holt's testimony. While he acknowledged that the damages to the Structure were not observed until 2018, he did not testify as to the year he believed the landslide occurred.

to the Dunkirk Mine and is approximately 175 feet west of the Structure. The Dunkirk mine was closed and abandoned around 1920 and is approximately 80 feet east of the Structure. Dr. King's Property is situated between the Maple Creek Mine and the Dunkirk Mine. The Property was not undermined and is underlain by solid coal.

Prior to the current appeal, Dr. King's mother and predecessor in title of the Property, Cecelia Tonecha, filed a subsidence damage claim form in June 2019 which was denied by the Department. Ms. Tonecha appealed the denial to the Board at EHB Docket No. 2019-104-B. During the appeal, Ms. Tonecha passed away and Dr. King, as Successor in Interest, was substituted as the appellant. After the experts identified by each of the parties concluded that subsidence from the Maple Creek Mine did not damage the Structure, Dr. King withdrew the former appeal and pursued the 2020 Claim under the MSI Policy. In this matter, Dr. King does not argue that the subsidence took place in the Maple Creek Mine but instead asserts that a subsidence event occurred in the Dunkirk Mine.

Mr. Holt concluded that mine subsidence triggered the alleged landslide. He arrived at this conclusion by ruling out other possibilities that could have initiated a landslide and because the Dunkirk Mine is within 80 feet of the King Structure. Subsidence can take several forms including trough subsidence which is broad and is configured in a circular or elliptical depression that forms on the surface. Because Mr. Holt did not see evidence that trough subsidence had taken place and since damage was limited to the King Structure, he concluded that pothole subsidence, a more localized type of subsidence, had occurred. Although he did not provide any direct evidence of subsidence in the Dunkirk Mine, he offered a theory that the alleged subsidence was attributable to a partial roof fall and pillar collapse. Mr. Holt described the details of his subsidence theory as follows:

The kinds of subsidence what would lead to a localized subsidence event, like my opinion that occurred here, would be that a portion of the room started to collapse, the rock right above the room collapsed, the pillars was weakened over time and collapsed, the pillar that is between the mine and King collapsed to some extent, and that that collapsing rock at some point just continues to propagate up to the – not to the surface, but to the top of the rock that is below the soil on her slope.

That collapses, which removes the support from the soil, removes the soil support, causing the soil to move.

(T. 52).

We do not find support for Mr. Holt's theory that a roof fall or pillar failure took place in the Dunkirk Mine resulting in a localized subsidence. Mr. Holt's testimony describing the sequence of roof fall and pillar failure consisted entirely of conjecture on his part. He offered little testimony about what could have potentially caused a roof fall or pillar failure in the Dunkirk Mine other than stating that given the type of sedimentary rock that exists in the region, all mines, which includes the Dunkirk Mine, would eventually subside. He stated that both ventilation and flooding are factors that impact a mine's deterioration rate but also said that flooding is not essential for subsidence to occur. While those statements may be true, Mr. Holt failed to present any evidence pertaining to the particular conditions of the Dunkirk Mine. He provided no testimony about the Dunkirk Mine's ventilation, state of deterioration, or pillar integrity and also admitted that he did not know whether the Dunkirk Mine was flooded even though he testified that flooding exacerbates the rate of a mine's deterioration. Further, he did not identify in his expert report where the pillar collapse occurred and conceded on cross examination that he did not know. The only evidence he offered in support of a subsidence occurrence was indirect, reasoning that the alleged landslide was proof in of itself of mine subsidence. He reasoned that because a landslide was the only possible explanation that could account for the lateral soil movement (since he ruled out earthquakes and excess moisture as causes) and because the Property's slope was gentle and

therefore at a low-risk for a landslide, a triggering event was required to set a landslide into motion, and concluded that mine subsidence acted as the necessary trigger. Not only do we find this theory tenuous on its own, but we have already found that the evidence does not support the occurrence of a landslide and therefore the alleged landslide cannot support a finding of pillar collapse in the Dunkirk Mine. Overall, we find Mr. Holt's assertion that a partial pillar collapse caused localized subsidence highly speculative.

In contrast to Mr. Holt's speculative theory about mine subsidence triggering a landslide, the Department presented testimony from Mr. Bodnar who has extensive experience with mine subsidence claims and investigations. Mr. Bodnar disputed Mr. Holt's assertion that pothole subsidence occurred in the Dunkirk Mine. He testified that pothole or sinkhole subsidence generally occurs when there is 50 feet or less of cover and that when a mine's cover is greater than 50 feet, any subsidence would generally be trough type subsidence. The depth of cover in the Dunkirk Mine is 380 feet, well in excess of the typical cover depth for pothole subsidence. Further, Mr. Holt agreed with Mr. Bodnar, and testified that trough subsidence was the most likely type of subsidence to occur at the Dunkirk Mine because of its depth of cover. Mr. Holt did not offer any testimony or evidence contradicting Mr. Bodnar's claim that pothole subsidence is very unlikely to occur at depths of cover that are greater than 50 feet.

Additionally, the record demonstrates that the Department carried out a thorough investigation of Dr. King's 2020 Claim and found no direct evidence of mine subsidence at the Property or in the immediate surrounding area. Prior to the March 1, 2021 site visit, Mr. Bodnar, along with other Department staff, reviewed the 2020 Claim, various sources of mapping of the Property and of the surrounding mine, and the information the Department acquired on the previous claim for the King Structure. Mr. Bodnar observed the inside damages of the Structure

and determined the cracks did not exhibit a common pattern of movement. A carpenter level and laser level were used on the inside and the outside of the Structure, respectively, to measure its levelness. The Structure was mostly level with the front of the house sitting approximately one half of an inch lower than the back of it. The laser level was also used to measure the levelness of three other homes, two of which were on either side of the King Structure. All three were found to be mostly level. The Department photographed the damages and documented the conditions of the Property including the Rolling Feature in the backyard. Mr. Bodnar did not observe any of the tell-tale signs that subsidence occurred such as an elliptical depression on the ground, a common pattern of displacement of surface features, damaged utilities or impacts on other buildings within the vicinity of the King Structure. Mr. Bodnar walked the neighborhood to inspect for any of these signs and observed none. We find Mr. Bodnar's testimony credible and that his conclusion that mine subsidence did not take place either at the Property or in the immediate neighborhood, is well supported by the evidence.

Conclusion

Dr. King bears the burden of proof to show by a preponderance of the evidence that the Department erred in finding that mine subsidence was not the cause of the damages set out in her 2020 Claim. Upon consideration of the testimony and evidence presented in this matter, we hold that Dr. King has failed to meet her burden and her appeal should be dismissed.

CONCLUSIONS OF LAW

1. Dr. King bears the burden of proof in this appeal. 25 Pa. Code § 1021.122(a).
2. In order to meet her burden of proof, Dr. King must show by a preponderance of the evidence that the Department erred when it determined that mine subsidence was not the cause of the damages to the Structure.

3. The preponderance of the evidence standard requires that the evidence in favor of the proposition is greater than the evidence opposed to it and that the evidence is sufficient to satisfy an unprejudiced mind as to the existence of the factual scenario sought to be established. *United Refining Company v. DEP*, 2016 EHB 442, 449.

4. Dr. King failed to show by a preponderance of the evidence that the Department erred in determining that mine subsidence was not the cause of the damages to the Structure at the Property alleged in her 2020 Claim.

5. The Mine Subsidence Insurance Fund Insuring Agreement (“Insuring Agreement”) sets forth the coverage for Dr. King’s Mine Subsidence Policy and only covers loss to the King Structure when the loss is caused by mine subsidence.

6. The Insuring Agreement defines “mine subsidence” as “the movement of the ground surface as a result of the collapse of underground coal or clay mine workings.”

7. The Department properly denied Dr. King’s 2020 Claim as the damages to her Structure were not caused by mine subsidence and were therefore outside the coverage of the Insuring Agreement.



COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD

NANCY KING

v.

COMMONWEALTH OF PENNSYLVANIA,
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

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:
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EHB Docket No. 2021-059-B

ORDER

AND NOW, this 16th day of May, 2024, it is hereby ORDERED that the Appellant’s appeal is dismissed.

ENVIRONMENTAL HEARING BOARD

s/ Steven C. Beckman

STEVEN C. BECKMAN
Chief Judge and Chairperson

s/ Bernard A. Labuskes, Jr.

BERNARD A. LABUSKES, JR.
Judge

s/ Sarah L. Clark

SARAH L. CLARK
Judge

s/ MaryAnne Wesdock

MARYANNE WESDOCK
Judge

s/ Paul J. Bruder, Jr.

PAUL J. BRUDER, JR.
Judge

DATED: May 16, 2024

c: DEP, General Law Division:
Attention: Maria Tolentino



(via electronic mail)

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