IN THE MATTER OF
THE *PROFESSIONAL GOVERNANCE ACT*, S.B.C. 2018, c. 47

and

IN THE MATTER OF MAHMOUD MAHMOUD, P.Eng

DETERMINATION OF THE DISCIPLINE COMMITTEE

Date and Place of Hearing:	January 9-12, 2024
Panel of the Discipline Committee:	Frank Denton, P.Eng., Chair Jaswinder Bansal, P.Eng. Mike Racich
Counsel for Engineers and Geoscientists BC:	David G. Volk Megaila Rose, A/S
Counsel for the Registrant:	John J. McIntyre
Counsel for the Panel of the Discipline Committee:	Tonie Beharrell

Background

1. This panel of the Discipline Committee (the "Panel") of the Association of the Professional Engineers and Geoscientists of the Province of British Columbia doing business as Engineers and Geoscientists BC ("EGBC") was convened to hear a citation (the "Citation') issued to Dr. Mahmoud Mahmoud, P.Eng. (the "Respondent") pursuant to section 75 of the *Professional Governance Act*, SBC 2018, c 47 (the "PGA").

2. The Citation is dated September 1, 2023 and sets out the allegations against the Respondent. It says he was responsible for the geotechnical investigation and design required for approval to develop two properties on [redacted], Sechelt, BC, [redacted] (the "Properties") and acted contrary to the *Engineers and Geoscientists Act*, RSBC 1996, c 116 (the "EGA") (now repealed). The particulars are:

    1. You demonstrated unprofessional conduct contrary to the EGA when, in a May 23, 2019 "Preliminary Test Pit Investigation Report" pertaining to [redacted] which you signed and sealed (the "May 2019 Report"), you stated that provided the engineering recommendations set out in the report were implemented, construction of the new single-family residential development could be undertaken as proposed in circumstances:

        a. where you lacked adequate knowledge about the subsurface conditions at [redacted] to support that statement; and

        b. your engineering recommendations to prevent internal erosion and associated settlements that could cause damage did not adequately address the risks of internal erosion and associated settlements.

    2. You demonstrated unprofessional conduct contrary to the EGA when, in an October 28, 2019 "Report on Summary of Available Borehole Data" pertaining to [redacted] which you signed and sealed (the "October 2019 Report"), you stated that it was reasonable to conclude that a sinkhole will not occur in [redacted] in circumstances where you lacked adequate knowledge about the subsurface conditions at [redacted] to support that statement.

    3. Contrary to section 20(9) of the EGA, you provided unsealed copies of the following reports to your clients:

        a. the May 2019 Report;

b. a June 17, 2019 “Preliminary Test Pit Investigation Report” pertaining to [redacted] (the “June 2019 Report”); and

c. the October 2019 Report.

3. The location of the Properties is identified on the map below. They are adjacent to a subdivision referred to as [redacted]. Development of that subdivision commenced around 2004. The subdivision was subject to a number of sinkhole events, and in early 2019 Thurber, which was providing engineering advice to the District of Sechelt (the “District”) at that time, recommended that the site be closed. The Properties, although not part of the subdivision, were affected by this recommendation.

4. For the reasons set out below, the Panel dismisses Allegations 1 and 2 above but finds EGBC has proven Allegation 3 to the requisite standard.

Regulatory Framework

5. On February 5, 2021, the EGA was repealed and replaced by the PGA. Although the Citation was issued under the PGA, the conduct at issue occurred when the EGA was in force. In accordance with sections 35 and 36 of the *Interpretation Act*, RSBC 1996, c 238, the substantive provisions of the EGA apply to this proceeding. This includes the EGA’s charging and penalty provisions: see *Re: Bruce Joseph Gernon, P.Eng* (October 5, 2023); *Re: Alireza (Danyal) Bahrami*, *P.Eng.* (May 2, 2022).

6. Section 33(1) of the EGA authorizes the Discipline Committee to make determinations about a respondent’s conduct:

> 33 (1) After an inquiry under section 32, the discipline committee may determine that the member…
>
> (b) has contravened this Act or the bylaws or the code of ethics of the association, or
>
> (c) has demonstrated incompetence, negligence or unprofessional conduct.

Legal Principles

Burden and Standard of Proof

7. EGBC has the burden of proof. The standard of proof is a "balance of probabilities": *F.H. v McDougall*, 2008 SCC 53. *R. v Schoenborn*, 2010 BCSC 220, has a helpful explanation of what this means:

> A party who has the burden of proof on an issue, on the balance of probabilities, must convince the court that what they assert is more probable than not, and that the balance is tipped in his or her favour. The evidence must be more convincing than the evidence on the other side. The person with the burden must show that what they assert is more probable than not (*F.H. v. McDougall*, 2008 SCC 53). If the evidence on an issue was evenly balanced so that the court is unable to say where the balance of probabilities lies, then the person who has the burden of proving it would have failed to do so. All of the evidence produced on that issue must be considered, no matter who has produced that evidence. In order to find that something has been proven on the balance of probabilities, it is not necessary for the jury or the trier of fact to be sure, but simply to find that the event to be proven is more probable than not or more likely than not.

Interpretation of the Citation

8. EGBC is not required to prove the charge precisely as worded in the Citation. Rather, it must establish the allegations essential to a finding of unprofessional conduct or negligence. For example, in *Ratsoy v Architectural Institute of British Columbia*, 1980 CanLII 662, an architect was alleged to have violated a zoning bylaw but was found by the discipline committee to have violated a building bylaw. The notice received by the petitioner was adequate to "alert him both to the nature of the factual allegations made against him and the provisions of the Act and by-laws which he was alleged, and ultimately found, to have breached."

Unprofessional Conduct

9. Unprofessional conduct does not require proof of dishonourable, disgraceful blatant or cavalier conduct: *Salway v Assn. of Professional Engineers and Geoscientists of British Columbia*, 2010 BCCA 94, at para 32. Panels decide the appropriate standards of professionalism for members of the profession:

> …. Reasonableness requires courts to give deference to a professional body's interpretation of its own professional standards so long as it is justified, transparent and intelligible. The pre-*Dunsmuir* decisions relied on by the respondent, including *Reddoch*, no longer set the standard for professional misconduct as conduct that is dishonourable, disgraceful, blatant or cavalier. Rather, it is the disciplinary body of the professional organization that sets the professional standards for that organization. So long as its decision is within the range of reasonable outcomes—i.e., it is justified, transparent and intelligible—it is not for courts to substitute their view of whether a member's conduct amounts to professional misconduct.
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> *Salway v Assn. of Professional Engineers and Geoscientists of British Columbia*, 2010 BCCA 94, at para 32.

10. The EGA has no definition of "unprofessional conduct." However, past decisions of the Discipline Committee have consistently applied the following definition:

> Hence, unprofessional conduct is that which does not meet the standard expected through application of the Code of Ethics. The Panel accepts the submission of the Association, based on *Law Society of British Columbia v. Martin*, 2005 LSBC 16, that professional misconduct is established when there is a marked departure from the standard to be expected of a competent professional, and that minor or inadvertent failure to comply with professional standards does not constitute unprofessional conduct.
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> *Re: Ian Foreman, P.Geo* (August 25, 2015), at para 94. See also e.g. *Re: Gernon*, at para 14; *Re: Eric Chrysanthous, P.Eng.* (May 17, 2017); *Re: Laura Fidel, P.Eng.* (July 12, 2021).

11. As the threshold for unprofessional conduct is a marked departure from the standard expected of a competent professional, a minor, or inadvertent failure to comply with professional standards will not amount to unprofessional conduct.

12. In assessing whether conduct is unprofessional, we must use our judgment and expertise, be guided by the Code of Ethics, and focus on what is expected of a

professional person in the circumstances. Engineering standards should be considered, but are not determinative: *Re: Gernon*, at para 16.

The Code of Ethics

13. The Code of Ethics can inform whether a member engaged in unprofessional conduct. Provisions in the Code of Ethics should be given their ordinary meaning and the Panel must rely on its experience when assessing whether the Respondent has violated any Principles: *Re: Foreman*, at paras 20, 22.

14. In this proceeding, EGBC relies on Principles 3 and 7 of the Code of Ethics (2019).

15. EGBC submits Principle 3 is key to the Panel's assessment of the standard expected of an engineer in the Respondent's position. It required members to provide an opinion on a professional subject only when it was founded on adequate knowledge and honest conviction. "Adequate knowledge" implies a threshold level of knowledge and understanding. "Honest conviction" implies a level of certainty assessed objectively.

16. The Panel agrees Principle 3 is relevant to determining whether the Respondent's conduct was unprofessional contrary to the *EGA*.

17. The Panel finds Principle 7 is not relevant to the Citation. In 2019, Principle 7 required members conduct themselves with fairness, courtesy and good faith towards clients, colleagues and others, give credit where it was due and accept, as well as give, honest and fair professional comment. There is nothing in Allegations 1 and 2 alleging the Respondent showed unprofessional conduct contrary to the EGA because of his interactions with other engineers. Although EGBC says Principal 7 is relevant because the Respondent ignored advice from other engineers, this issue is addressed by Principle 3 in respect of the question of whether the Respondent had adequate knowledge.

Guidelines

18. For Allegation 3, the panel relies on EGBC's Quality Management Guide to the Standard for the Authentication of Documents (the "EGBC QM Guidelines").

19. Guidelines of a professional's regulatory body can help show the expected standard of conduct. Proof that the Respondent did not comply with the EGBC QM Guidelines does not necessarily establish negligence or unprofessional conduct, but it may be strong evidence of negligence or unprofessional conduct.

British Columbia Building Code, 2018

20. With respect to Allegations 1 and 2, EGBC also relies on section 4.2.4.2 of the British Columbia Building Code 2018 (the "Building Code"), which says:

> 1) A subsurface investigation shall be carried out to the depth and extent to which the building or excavation will significantly change the stress in the soil or rock or such a depth and extent as to provide all the necessary information for the design and construction of the excavation or the foundations.

21. Building Code requirements can inform a determination of unprofessional conduct if the work done requires compliance with the Building Code: see e.g. *Re: Bharami*, 2022 BCEG 5.

22. The Panel concludes section 4.2.4.2 is relevant to the extent it informs our determination of whether the Respondent had adequate knowledge for his opinion.

Section 20(9) of the EGA

23. With respect to Allegation 3, section 20(9) requires, among other things, a member seal estimates, specifications, reports, documents, plans or things that have been prepared and delivered by the member in the member's professional capacity.

Evidence and Findings

The Respondent

24. The Respondent is a geotechnical engineer operating his own company, Global Earth Solutions Geotech Inc. ("GES"). He has a Ph.D. in geotechnical engineering. After running Golder's engineering department in its Calgary office for more than 15 years, he moved to Vancouver in 2003 and started GES. He has experience with sinkholes worldwide, including in karst formations and glacial deposits, and has worked on residential developments for the last 15 years.

25. The Respondent had some early involvement with the [redacted] development, and specifically did some slope stability analysis for [redacted] in 2005. His resulting recommendation for boreholes was never implemented. His 2005 report indicated he saw four sinkholes at this time.

26. In 2017, the Respondent was involved in a subdivision development on Lot 109 [also identified in the map], which is adjacent to [redacted]. GES provided geotechnical services for the permitting process. At Lot 109, GES did a series of test pits down to 5 m. While working on Lot 109, the Respondent visited [redacted] several times.

[redacted]

27. Within the District, [redacted] ("Concordia") developed Phase 1 of a larger subdivision called [redacted]. Phase 1 of [redacted] development is called [redacted].

28. In 2012, Concordia hired Golder Associates Ltd. ("Golder") to do a geotechnical investigation and assessment of [redacted]. Golder issued a November 15, 2012 report.

29. In 2012, the District hired Thurber for a geophysical investigation of [redacted]. On April 5, 2013, Thurber completed its report characterizing the sites' geological, hydrogeological and groundwater conditions (the "Thurber 2013 Report").

30. In 2015, the District hired Thurber to review two sinkholes in [redacted] and assess the implications for geotechnical hazards within the overall site including ground loss and sinkholes and provide preliminary recommendations to the District to address existing and future geotechnical hazards (the "Thurber 2015 Report"). This was an update of the Thurber 2013 Report.

31. David Tara was the Review Principal on the Thurber 2015 Report, which says, in parts:

    a. In 2015, compared to 2013, groundwater levels at [redacted] were particularly higher all along [redacted], including by as much as 3 m at Lot 28 on the corner of [redacted] and [redacted].

b. A March 9, 2015 field review report ("FRR") documented ponded water in a borrow area to the south of [redacted] (on the Phase 2 lands) that had the potential to exacerbate the groundwater situation. The FRR also says water flowing in the [redacted] ditch appeared to infiltrate into the soil at the base of the ditch before arriving at the storm water inlet at the intersection of [redacted] and [redacted].

c. Thurber understood the flow of groundwater to be the probable driving force behind the redistribution (erosion) of soil resulting in sinkhole formation observed across [redacted] since construction.

d. Given the position of the spring in 2015 (at Lot 3 of [redacted]) and the sinkholes on [redacted] (near the intersection with [redacted]) and Lot 29, it appears there was a fairly linear, north-south, process occurring with an increase in hydraulic gradient.

e. The gradients had increased substantially across the development since 2013. The higher hydraulic gradients would increase the potential for migration of material and resulting problems.

f. The actual hydraulic gradients were expected to vary at local scale, resulting in some localized gradients being higher than those calculated from observations at large scale.

g. Thurber did not know the critical gradient at which movement of soil particles would be initiated but concluded it was likely that critical exit hydraulic gradients were potentially exceeded across a significant portion of the development. Therefore, piping erosion could occur if there was a suitable pathway for soil migration. Piping erosion can create voids leading to a sinkhole.

h. There was evidence of loosened soil to substantial depths on Lot 28, just across [redacted] to the north of Lot 29. The lower sand

zone in the subsurface of Lot 28 was at approximately between 20 and 25 m above sea level.

i. The sinkholes on [redacted] were mostly the result of a loss or movement of material in the lower sand zone.

j. The sinkholes on Lot 29 and [redacted] in 2012 may be symptoms of a more widespread issue oriented roughly north-south and so further investigation should be considered before developing Lot 28 and assessing development potential on Lot 27.

k. Thurber recommended a period of monitoring and observation during which no further development be permitted within the [redacted] development.

32. In 2017, Concordia hired Golder to do a geotechnical investigation and assessment of the area where Concordia planned to develop Phase 2 of [redacted]. After its investigation, Golder prepared a July 13, 2017 report (the "Golder Phase 2 Report").

33. On February 6, 2019, Thurber produced a geotechnical report in response to the December 25, 2018 sinkhole (the "Thurber Feb 2019 Report"). The objective was to see if [redacted] was undermined. The Thurber Feb 2019 Report says, in part, as follows:

a. Thurber recommends the District no longer allow occupancy of the public and private properties and buildings in the [redacted] development.

b. The Thurber 2015 Report recommendations for groundwater management and active investigations of sinkholes hazards and repairs were not implemented.

c. The Christmas sinkhole, taken with other sinkholes in 2017 and 2018 are symptomatic of ongoing deterioration of subsurface conditions at [redacted] and show the sinkhole hazard increasing with time and not confined to locations where sinkholes had already appeared.

d. There is a very high probability of at least one sinkhole collapse each year based on the site's recent history.

e. The extent of lower sand level erosion is unknown but it is very unlikely that its limit coincided with the [redacted] development boundary. The subsurface erosion process is observed expanding relatively horizontally upslope (away from the water) at approximately 20 m elevation above sea level.

f. Golder drilled sonic test holes (see the Golder 2017 Phase 2 Report), one of which (BH17-01) was adjacent to the north boundary of [redacted]. While the test holes did not find signs of the sinkhole formation process, the holes did not reach elevation 20 to 25 m and so it is possible the subsurface erosion process was present but not detected. As the test holes were 100 m apart, it is possible the sinkhole formation process is active between their locations. The test holes Thurber drilled in 2013 on Lot 28 were 4 m apart and subsurface conditions ranged from void to loosened zone to intact material.

g. Based on its understanding of the sinkhole development process on the Phase 1 site and the occurrence of the Christmas 2018 sinkhole, Thurber interprets the erosion process as being active on at least some portions of the Phase 2 property.

h. Thurber identifies a "Sinkhole Management Area" within which it recommends no development with occupied structures without a detailed investigation and assessment of the potential for subsurface erosion and sinkholes. This area covers Phase 1 and Phase 2 of [redacted], and [redacted].

34. Thurber's rationale for including [redacted] in the Sinkhole Management Area was because of their location upgradient of the sinkholes on the [redacted] property. It was also in part because the Properties were unoccupied and Mr. Tara wanted to

protect the Owners from the difficulties associated with sinkholes if they were to develop the Properties.

35. The borrow pit in Phase 2 of [redacted] shows a substantial layer of a competent till cap with a clean sand layer underneath it.

Development of [redacted]

36. The Properties are adjacent to [redacted] to the east of Phase 2 of [redacted].

37. The owners of [redacted] are [redacted]. [redacted] owns [redacted]. In this decision, [redacted] and [redacted] are collectively called the "Owners."

38. On July 25, 2017, Golder, at [redacted] request, produced a geotechnical investigation of a proposed development on [redacted] (the "Golder 2017 [redacted] Report"). The purpose was to determine the subsurface soil and groundwater conditions and assess the feasibility of, and potential geotechnical constraints to, a residential development. Golder dug test pits and concluded the subsurface material provides adequate bearing to support a single family house. The Golder 2017 [redacted] Report does not provide assurances in relation to Building Code requirements for geotechnical design and field review. The Respondent acknowledged he did not pay attention to this fact when considering the Golder test pit data.

39. In about February 2019, the Owners hired the Respondent because they wanted to develop the Properties. At this time, the Respondent was not aware of the Thurber 2017 Report. He proposed a test pit investigation.

40. In March 2019, the Respondent's strategy was to do test pits on the Properties as a first step. He did not discuss any type of investigation program other than test pits with the Owners because, unless he is concerned about a deep deposit, or logistics make it unfeasible, he considers test pits the most appropriate method for a preliminary investigation of conditions. The Respondent wanted to carry out his own assessment of whether there might be a risk of voids and not just accept Thurber's opinion. A decision about whether to drill boreholes would be taken after considering the findings of the test pit investigation.

41. On March 5, 2019, the District asked Thurber to recommend whether it should allow access for a geotechnical investigation of the Properties. Thurber said the results of such an investigation would be useful to the District if the methods and depth of investigation were appropriate. Caleb Scott (an Engineer in Training with Thurber at the time of the 2015 Thurber report, and later a Professional Engineer with Thurber) and Mr. Tara recommended the Owners submit a proposed comprehensive investigation plan to the District and subject it to a geotechnical peer review and comment process.

42. On March 12, 2019, the Respondent wrote to the District confirming the Owners had hired GES and said he wanted to do a test pit investigation program for [redacted] on March 18 and 19. He proposed five test pits on each Lot and disagreed with Thurber's recommendation for a comprehensive and peer reviewed investigation.

43. On March 13, 2019, Mr. Scott wrote to the District recommending it provide the Respondent with four Thurber Reports (2015, 2017 and two from 2019). He referred to discussions in these reports about sinkholes in [redacted], including one on [redacted] east of Lot 28, (2005), one south of [redacted] adjacent to Lot 28 (2007) and one on [redacted] adjacent to Lot 28 (2012). The extent of the loosened ground conditions associated with subsurface seepage erosion at these locations was unconfirmed. In 2015, test holes on Lot 28 adjacent to the 2012 sinkhole found loosened ground conditions extending to about 20 m above sea level, which Thurber interpreted as related to the seepage erosion problem. This elevation appeared significant because there was a similar pattern observed in Thurber's 2015 and December 2018 sinkhole investigations. The 20 m elevation was also similar to the elevation of the groundwater spring on Lot 3, to the north of Lot 28. The email also said there can be a very dense soil "cap" above a developing sinkhole.

44. The email noted that the elevation of [redacted] ranged from about elevation 38 to 63 m and test pits are typically limited to 6 m. Therefore, conventional test pits would not likely extend to the depth of potential seepage erosion. Unless the test pits found bedrock or voids, they would not be deep enough to reach the loose sand layer and the results would, therefore, be inconclusive.

45. In Thurber's opinion, to confirm seepage erosion was not present, a drilling investigation was required with tight hole spacing and extending to adequate depth.

46. Mr. Tara thought the Respondent's proposed test pit program for the Properties was not adequate because the pits would be relatively shallow and so would not show whether there was a problem at the site unless they hit a void.

47. The Respondent never had any direct communications with Thurber about his test pit proposal.

48. On March 14, 2019, after being provided with Thurber's March 13th email and Thurber's 2015, 2017 and two 2019 reports, the Respondent asked the District if he could proceed with test pits as the first stage of the geotechnical investigation so he could obtain his own independent assessment of the subsurface conditions at the Properties. The Respondent said it was his professional opinion to proceed with a test pit investigation for ground truthing purposes. By ground truthing, the Respondent meant scanning the site for indications of whether there were any signs of concern. He acknowledged the geological cap conditions might require boreholes later.

49. The District wrote the Respondent on March 14, 2019 and told him it was up to him to professionally assess the conditions and determine if the investigation would proceed as he proposed.

50. GES dug five test pits on each of [redacted] in March 2019.

51. The Respondent prepared the May 2019 Report based on his test pit investigation of [redacted]. It has recommendations and is dated May 23, 2019. He sealed it on May 28, 2019. He only gave an unsealed copy to the Owners.

52. The Respondent concludes the site has a zone (Zone 1) of very dense, sandy glacial till with gravel and cobbles to a depth of more than 3 m. In some areas, there is a zone (Zone 2) of sand fill, with a thickness of about 1 to 1.7 m, on top of Zone 1. The Respondent recommended a single borehole near the proposed house location to a depth of about 12 m. He admitted this would not have reached the depth of the layer Thurber was concerned about. Part of his intention with the borehole was to make

sure there was a thick enough Zone 1 deposit to put piles to support the house if there was unconsolidated Zone 2 material at the surface.

53. The May 2019 Report refers to internal erosion at the [redacted] development and said there was a possibility of internal erosion occurring within the shallow sand fill and mixed till areas on [redacted]. The Respondent made several recommendations to prevent internal erosion and associated settlements, including piles through any sand fill zone embedded in the sandy glacial till deposits, floor slabs on top of the piles, and a drainage system and using crushed gravel or other suitable engineered fill. Based on his understanding of the depth of the 2005 sinkholes in [redacted], he was not concerned about internal erosion in a deeper layer.

54. The Respondent did not review the Golder 2017 Phase 2 Report before preparing his May 2019 Report because he did not think it was warranted. This means he did not consider the results from Golder's BH17-01 even though it was next to [redacted]'s northern boundary near where [redacted] was at that time planning to build his house.

55. The Respondent testified that BH17-01 showed that the deep layer Thurber was concerned about was "petering out." Thus, even if he had seen it when preparing his May 2019 Report, there was nothing that would have concerned him about potential sinkholes. His evidence on this point was consistent with his October 2019 Report, which does consider the Golder 2017 Phase 2 Report data.

56. The Respondent initially testified that he did not read any of the Thurber reports (2015, 2017 and two in 2019) before preparing his May 2019 Report, but he later amended his evidence to say he had read a Thurber report from January 2019.

57. On April 23, 2019, the Respondent signed and sealed an Assurance of Professional Design and Commitment for Field Review for a single-family residential development on [redacted] (the "Letter of Assurance"). The Letter of Assurance says the temporary and permanent geotechnical documents in support of the building application comply with the Building Code. The Respondent undertook to be responsible for field reviews of the geotechnical components during construction.

58. At the beginning of June, GES received estimates for one 12 m borehole (auger and sonic). These ranged from about $5,300 to $8,500. The Respondent gave these estimates to [redacted].

59. The Respondent prepared the June 2019 Report with results of the test pit investigation of [redacted]. It has recommendations and is dated June 17, 2019. He sealed it on June 28, 2019. He only gave an unsealed copy to the Owners.

60. The June 2019 Report concludes [redacted] has a sandy glacial till deposit with gravels and cobbles with a thickness more than 3 m and sand fill with about a thickness of 1.5 to 2.7 m. [redacted] has a higher slope than [redacted] and the Respondent did not find any perched groundwater conditions. The subsoil conditions were much better than for [redacted]. Based on these factors, the Respondent concluded he did not require a borehole for [redacted].

61. The Owners arranged to meet with the District on August 28, 2019. The Respondent attended as did the Owners' architect. There is no evidence that Mr. Tara was invited or knew about the meeting.

62. In early September 2019, the District asked Mr. Tara to review the results of the Respondent's test pit investigation and meet with the Owners. Mr. Tara declined to do so, reiterating Thurber's position on the Sinkhole Management Area and recommending no development until the mechanisms causing sinkhole formation were properly understood and the hazard properly mitigated. He also referred to Thurber's March 13, 2019 email that said conventional tests pits would likely not extend to the depth of potential seepage erosion and so the results would be inconclusive unless they showed bedrock or voids. Mr. Tara saw limited value in a peer review based on the information in the test pit reports since it was highly unlikely the pits extended to the depth of potential seepage erosion. Given all of this, Mr. Tara saw limited value in a meeting with GES to discuss test pits results.

63. The Respondent used Thurber and Golder borehole data from [redacted] (Phases 1 and 2) to prepare his October 2019 Report summarizing these data. It does not have any recommendations and is dated October 28, 2019. The Respondent sealed it on November 4, 2019. He only gave an unsealed copy to the Owners.

64. The October 2019 Report says it is reasonable to conclude a sinkhole will not occur at the Properties for the following reasons:

    a. Near [redacted], the lower sand layer is eroded and the hydraulic gradient and ground slope are high and the infrastructures, draining system, construction and excavations have contributed to the occurrence of sinkholes.

    b. Based on Golder's boreholes, designated BH17-01 and BH17-02, the lower sand unit of concern to Thurber is not expected to be under [redacted] so the likelihood of soil erosion and piping is low to very low.

    c. The ground slope in [redacted] is almost two times steeper than in [redacted] so the probability of springs is less than for [redacted].

    d. The 2017 Golder boreholes show the average hydraulic gradient across [redacted] is 0.084, which is 50% less than the hydraulic gradient in [redacted] (~0.17) in the Thurber 2015 Report (i.e. a safety factor of 2). The Respondent applied the 0.17 gradient as Thurber's "criteria" for sinkhole development.

    e. The hydraulic gradient inferred from [redacted] to the ocean is preferentially passing through [redacted] because of the steeper slope along that path.

    f. Soil migration can be sufficiently controlled by proper geotechnical design such as intercepting drains and incorporating a raft foundations system extending beyond the limits of the proposed building footprint.

65. The Respondent inferred from the historical Golder and Thurber data, and the topography between [redacted] and the ocean, that the flow of water causing sinkholes at [redacted] were along a north-south swath from [redacted] through to the

Phase 2 borrow area to the south and this groundwater flow would continue along its historical path and not move east towards the Properties.

66. The Respondent's representation of the stratigraphy of BH12-05 in the October 2019 Report shows a layer of concern for erosion between 23 and 32 m above sea level. This is at the south end of Lot 28 in [redacted], which is close to the north end of [redacted].

67. The October 2019 Report does not include all the borehole data from Thurber.

68. At the time of the October 2019 Report, GES still planned to drill a borehole on [redacted] as recommended in the May 2019 Report.

69. The Respondent said that while the plan submitted to the District put the proposed house in the northwest corner of [redacted], [redacted] had a different preferred location in mind further to the south.

70. On December 13, 2019, Mr. Tara produced a report for the District, which had asked Thurber to review GES's work on the Properties (the "Tara Report"). The Panel accepted the Tara Report as Mr. Tara's expert report in these proceedings and it is summarized in the "Expert Evidence" section further below.

71. In February 2020, after reviewing the Tara Report, the Respondent sent [redacted] an email stating:

    a. Thurber wanted a deep and tightly spaced borehole investigation using SPTs and DCPTs, with the depth and spacing to be determined.

    b. Thurber agreed with GES's proposed deep piles and structural slab foundation solution.

    c. Thurber agreed with GES's perimeter drain mitigation measure but wanted it lined.

    d. Thurber was concerned about the possible extension of voids from [redacted] onto [redacted] and would not accept anything short of an effective borehole investigation program.

72. The Respondent then recommended [redacted] work with the District and Thurber to develop a borehole investigation program that Thurber would be comfortable signing off on and suggested some possible ways to collaborate with the District or owners of Lot 109 to reduce costs.

73. The Owners did not follow the Respondent's recommendation to work with Thurber on a borehole program. Thurber was never presented with a borehole program for [redacted].

74. Although the Respondent claimed Mr. Tara never explained what spacing and depth of boreholes Thurber required, by January 2021, the Respondent understood it required a minimum of three boreholes on [redacted] to a depth of 20 m from surface.

Evidence in response to Allegation 3

75. The Respondent said his normal practice was to seal every report in which he makes recommendations. However, in 2019, he believed the May, June or October 2019 Reports (the "Reports") did not have to be sealed because at that time EGBC QM Guidelines said one must not seal preliminary reports and his Reports were preliminary (May and June 2019 Reports) or only a summary of available data without recommendations (October 2019 Report).

76. He said he sealed the Reports after giving unsealed versions to the Owners because he anticipated the District might say they wanted sealed copies and, if that was the case, he wanted the dates of sealing to be close to the dates of the Reports.

77. The Respondent admits the Reports were to be relied on and that he knew they would be required by the District for the Owners' permitting application.

Expert evidence

78. EGBC called two expert witnesses: David Tara and Dr. Ernest Naesgaard. Mr. Tara also testified as a fact witness and his factual evidence is incorporated above.

79. The Respondent called Matt Kokan, P.Eng. as an expert witness.

80. The parties agreed the three witnesses were qualified to give opinion evidence on geotechnical engineering and the Panel accepted all three as expert witnesses on this subject.

David Tara, M.Sc.A, P.Eng.

81. Mr. Tara has a bachelor's in applied science and civil engineering and a master's in applied science focused on geotechnical engineering. He has 37 years of geotechnical experience with a wide variety of civil engineering projects and has worked with Thurber for many years where he was a partner from 2002 to 2020 and its President from 2015 to 2020.

82. As described above, Mr. Tara prepared the Tara Report after the District asked Thurber to review GES's geotechnical work on the Properties. The Tara Report is Mr. Tara's expert report in this proceeding.

83. The Tara Report reviews the Respondent's May and October 2019 Reports and concludes:

    a. The test pits on [redacted] and the 2017 Golder boreholes on neighbouring properties did not extend deep enough to provide conclusive screening for the existence or absence of subsurface erosion extending from [redacted].

    b. Screening reliably for subsurface erosion and undermining at [redacted] required SPT or DCPT blow counts measuring penetration resistance at regular intervals.

    c. Test pits are conventional for a routine residential development project but considering the proximity of the Properties to the sinkholes at [redacted], a much more extensive investigation was required to support an assessment of the sinkhole hazard.

    d. Using the average hydraulic gradient in the October 2019 Report (calculated using the 2017 Golder borehole data) it would be very difficult, if not impossible, to establish the sinkhole hazard because the critical exit gradient may be locally exceeded.

e. The Respondent did not consider that there is loosened ground and a pathway relatively close to [redacted].

f. Thurber disagrees with the October 2019 Report's conclusion that the lower sand unit identified at [redacted] was not present below [redacted].

g. The May and October 2019 Reports do not confirm the absence of a sinkhole hazard.

84. Mr. Tara said the only way to safely develop the Properties would be if the erosion risk was properly addressed because even if borehole drilling was done in close spacing, and no seepage erosion was found, it was quite possible that the problem would later migrate onto [redacted].

Dr. Ernest Naesgaard, Ph.D. P.Eng, FEC

85. Dr. Naesgaard produced an expert report (the "Naesgaard Report"), which was admitted into evidence. He has a graduate degree in geological engineering, a master's degree in civil engineering (geotechnical) and extensive experience working on commercial foundations, including those used for dams and bridges, and in areas subject to soil piping.

86. In Dr. Naesgaard's opinion, Thurber's piping erosion scenario as the key cause for the erosion and sinkholes in [redacted] (Phase 1 of [redacted]) is plausible and likely correct. This scenario has a sand layer at elevation 20 to 25 m above sea level that is eroding and causing piping upslope. His expert opinion is based on his acceptance of this scenario.

87. According to Dr. Naesgaard, for an engineer designing a subsurface investigation program for a typical residential project on the Sunshine Coast there are several key considerations as follows:

a. An engineer should estimate the ground and access conditions of a site and then develop a plan to get the information needed to the depth desired in a reasonably economical manner.

b. Sometimes an investigation is in stages, particularly if the first attempt indicates a lack of information or if site conditions are different than expected. For example, if a test pit shows soil that is not suitable, then one drills holes or does a seismic investigation.

c. The depth of the investigation should satisfy the requirements in section 4.2.4.2 of the Building Code.

d. For [redacted], if there was no piping hazard present, three to five test pits into the very dense solids near the proposed structure is reasonable.

88. About the key considerations for an engineer in the Respondent's position when designing a subsurface investigation for the Properties, Dr. Naesgaard says:

a. If Thurber's conclusions are correct (piping is ongoing and may propagate to other locations, including to the Properties), then even if deep boreholes on adjacent properties show no evidence of piping, the problem may develop in the future and so there is no site investigation that will address section 4.2.4.2 of the Building Code.

b. The best action for the Respondent would have been to tell the Owners he could not help them and withdraw from the project.

c. A possible alternative would have been to locate the buildings on the Properties as far to the southeast as possible but this would be largely based on judgment and the risk would be hard to quantify. To support this option, Dr. Naesgaard suggests at least one deep borehole near the proposed house down to near elevation 0 with samples and piezometers in the hole and flow net modelling. If this showed no indication of voids or loose soil at depth, then section 4.2.4.2 would be met.

d. Although Dr. Naesgaard would not recommend the above alternative, if another engineer proposed this, he would not fault them.

e. The Respondent's test pits were not deep enough to show if potential piping existed under [redacted].

89. Regarding the May 2019 Report in respect of [redacted], Dr. Naesgaard says:

a. The Respondent had conflicting prior data about the sinkhole hazard, had no logical argument to conclude the risk of sinkholes was low and the subsurface investigation was inadequate to conclude the residential development could proceed.

b. The proposed location of the house at the northwest corner of [redacted] is closest to the known area of piping and so in an area of unacceptable risk.

c. The recommendations in the May 2019 Report were not adequate to address the potential internal erosion problems and potential associated settlements and sinkhole problem. The Respondent appears to have concluded internal erosion at [redacted] was in 1 to 1.7 m surficial deposits and his recommendations were based on his failure to conceive of a deep-seated internal erosion problem.

90. Dr. Naesgaard acknowledged the Respondent's borehole recommendation for [redacted] was reasonable. An engineer gives technical recommendations that are also economical and thus would be prudent about where and how many deep boreholes to put in.

91. About the June 2019 Report in respect of [redacted], Dr. Naesgaard found that it was not unreasonable to assume that the risk of sinkholes at the proposed house location was low, and the recommendations to prevent differential settlement were adequate to address the risk.

92. With respect to the October 2019 Report, Dr. Naesgaard concludes:

a. The information and analysis were not sufficient to conclude a sinkhole would not occur. The Respondent did not appear to consider deep piping erosion could cause a sinkhole.

b. The Respondent based his conclusion in part on the average groundwater gradient however, it is the gradient at the head of the "soil pipe" that is important and it could be much higher than a gradient averaged between the two Golder boreholes.

c. The Respondent's recommendation to control and manage soil migration using a drainage system would have had little effect on deep piping erosion.

d. The Golder boreholes were very probably not deep enough to extend to the lower sand layer, and so did not support the Respondent's conclusion that sinkhole development was not expected. Also, the boreholes had soils that could be susceptible to piping erosion.

e. The Respondent's reference to the flatter ground slope to support his conclusion that sinkholes were unlikely does not account for the possibility of deep piping erosion.

93. Dr. Naesgaard was not aware of any research about how far a pipe might extend. Although it was impossible to say whether piping at [redacted] extended to [redacted], it was possible that piping could occur under [redacted].

94. Dr. Naesgaard said springs are a water source that might cause a sinkhole or a void space and the weight (load) of a wood frame house causes an almost negligible effect below ground.

95. In response to questions from the Panel, Dr. Naesgaard said:

a. The likelihood of the sand layer extending under Phase 2 of [redacted] at the same elevation where Golder did their test holes is quite likely.

b. At the north end of [redacted] there might be 20 m of material on top of the sand layer and maybe 30 m or more at the south end of the Lot.

c. If there was piping underground 20 m from the surface, then initially nothing would happen. If the pipe was a 1 m hole and inactive, it would probably never get to the surface. But if the hole was washed

out, then after some time it is not impossible that a void could eventually get to the surface, especially if the groundwater flows vertically into the pipe.

d. At the southeast side of [redacted], piping got to the surface at a slightly lower elevation than the Properties.

e. For piping to proceed 50 m upstream it would probably take decades unless it was disturbed in some way. However, if the groundwater regime is changed (e.g. disturbed by an extreme rainfall event or loss of forest cover), then you could get 50 m of piping within weeks.

Matt Kokan, M.A.Sc., P.Eng

96. The Respondent called Matt Kokan as an expert to respond to the Naesgaard Report. Mr. Kokan has a bachelor's in geotechnical engineering and an M.A.Sc. in civil engineering. He has been the sole principal of GeoPacific since the mid-2000s and is experienced in geotechnical investigations for single family developments. In 2015, he was retained as an expert in litigation about the [redacted] development. The Panel accepted Mr. Kokan's expert report into evidence.

97. Regarding the Naesgaard Report's conclusions about the May 2019 and June 2019 Reports, Mr. Kokan disagreed with the assumption that Thurber's risk assessment for the Properties was correct. Based on his observations, he concludes the risk of sinkhole development from the processes occurring at [redacted] is negligible because the sinkholes on the east side of [redacted] were small, near curbs and manholes, backfilled and fully stabilized by 2015. He is convinced the processes causing these sinkholes were not the same as the large ones further to the west in the development.

98. Mr. Kokan concludes it was reasonable for the Respondent to not consider internal erosion and associated settlements in his design considerations because there was not a significant risk of these occurring and he disagrees with Dr. Naesgaard's conclusion that the best course of action for the Respondent would have been to withdraw his services.

99. With respect to Dr. Naesgaard's opinion on the October 2019 Report, it may theoretically be correct but it oversimplifies the problem and does not consider the context of the proposed development. No rational conclusions about exit hydraulic gradients could be made with the data likely to be available. Mr. Kokan concludes, as there are no down gradient soil exposures that could cause significant exit gradients to develop, the opportunity for sink hole development under the Properties does not exist.

100. Mr. Kokan testified the depth of glacial till on [redacted] was well over 10 m and the unstable soils were right near the surface. If the glacial till is at significant depth and the depth of excavation or intrusion does not encroach, then it is not reasonable to think they are a risk.

101. Mr. Kokan said the Respondent's geotechnical investigation was appropriate. In Sechelt where there are no drilling contractors in the area, if someone wanted to buy a property and wanted a general indication about whether there are any concerns, they would do a test pit investigation first. If the results indicated soils near the surface were not suitable for supporting a single family home, then they might try drilling deeper to see if there was a deeper layer suitable for supporting a building or they might do a geophysical investigation. An investigation must consider the engineer's local experience, what equipment can readily be used to investigate and what the project can afford.

102. At the hearing, EGBC objected to Mr. Kokan's testimony as a fact witness as well as an expert. The Panel heard his evidence but we do not rely on it as fact evidence.

103. EGBC asks the Panel to not admit Mr. Kokan's evidence, or in the alternative, give it no weight.

104. We admit Mr. Kokan's report and testimony. His evidence was relevant and its probative value was not outweighed by its prejudicial effect : *R. v Mohan*, [1994] 2 SCR 9, at pp 20-21; *Re: Fidel*. It was also necessary, like Mr. Tara's and Dr. Naesgaard's expert evidence, to assist our determination of the Respondent's conduct and Mr. Kokan was a properly qualified expert.

105. However, we give Mr. Kokan's evidence less weight than Mr. Tara's or Dr. Naesgaard's. His report does not set out his factual assumptions, the documents he reviewed, or a sufficient engineering basis for his conclusion about the mechanism of sinkhole development in different areas of [redacted], particularly in respect of his views about the sinkholes at the eastern end. The Panel is essentially asked to trust his opinion without enough information about the basis for it, which undermines the reliability of his evidence. Also, as EGBC submits, the lack of specifics underlying Mr. Kokan's opinion deprived EGBC of a reasonable opportunity to challenge his evidence.

Credibility

106. EGBC urges us to favour the evidence of Mr. Tara over Dr. Mahmoud.

107. In assessing fact witness testimony, the Panel applies the guidance in *Faryna v Chorny*, [1952] 2 DLR 354, at p 357, and we consider whether evidence was in harmony with the preponderance of the probabilities which a practical and informed person would readily recognize as reasonable in the circumstances.

108. There are the two aspects of credibility: honesty (also called credibility) and reliability. Reliability is equated with the witness's ability to observe, recall, and recount events accurately. Honesty (also sometimes called credibility) refers to a witness's sincerity: *R. v G.F.*, 2021 SCC 20, at para 82; see also *R. v Taylor*, 2010 ONCJ 396, at paras 58-59.

109. Based on our assessment of a witness's credibility, we can accept all, some or none of their evidence (see *R. v R.E.M.*, 2008 SCC 51, at para 65).

110. The Panel finds the fact witnesses, Dr. Mahmoud and Mr. Tara, were both honest. Mr. Tara was also reliable. There were no inconsistencies in his evidence and it was corroborated by the documentary evidence. While Dr. Mahmoud was also generally a reliable witness, he was inconsistent about, or unable to recall, when he had reviewed some of the engineering reports, whether he understood what Thurber wanted in the design of a borehole investigation and whether Thurber was invited to

the August 28, 2019 meeting. Therefore, our findings in relation to these areas are grounded in the exhibits and Mr. Tara's evidence.

Analysis

Positions of the parties

111. Allegation 1 alleges the Respondent did not have adequate knowledge about the subsurface conditions at the Properties to make his conclusions and recommendations in the May 2019 Report. EGBC says his conduct was unprofessional because:

a. He did not address Thurber's prior conclusions or say anything about if or why he took the position that the evidence did not support Thurber's theory that the lower sand layer extended to [redacted].

b. He ignored Thurber's advice about an acceptable geotechnical investigation for the Properties, including having it peer reviewed.

c. He ignored Golder's 2017 Phase 2 Report.

d. The circumstances showed the situation at the Properties was not a typical project where conventional methods (i.e. test pits) could be presumed sufficient.

e. The expert evidence of Mr. Tara and Dr. Naesgaard shows the Respondent did not consider the potential for deep-seated erosion under the Properties.

f. The Respondent had inadequate information about the potential internal erosion problem.

112. EGBC further alleges the May 2019 Report recommendations to prevent internal erosion and associated settlements were inadequate because they did not address the risk of deep-seated erosion.

113. Allegation 2 says the Respondent lacked adequate knowledge to say in the October 2019 Report that it was reasonable to conclude a sinkhole would not occur on the Properties. EGBC says his conduct was unprofessional because:

a. He wrongly claimed Thurber had not justified its position.

b. He ignored a significant amount of Thurber borehole data

c. The average hydraulic gradient between two widely spaced monitoring points from 2017 was not a reliable indicator of the possibility of sinkholes.

d. He did not closely examine the soil descriptions at the bottom of BH17-01 and BH17-02, which indicated erodible sand deposits at depth.

e. He relied on a large-scale contour map to conclude water would not pass through or by the Properties.

f. He ignored a contour map in the Thurber 2015 Report indicating a watercourse next to [redacted] adjacent to [redacted].

g. There was no evidence to support his conclusion that the lower sand layer was not expected at depth below the Properties.

114. Finally, EGBC submits the Respondent breached section 20(9) of the EGA when he delivered unsealed versions of the Reports to the Owners (Allegation 3).

115. The Respondent says EGBC has not met its burden of proof.

116. With respect to Allegations 1 and 2, the Respondent says he had adequate knowledge for his conclusions about sinkholes on the Properties based on: (1) his extensive experience with sinkholes, [redacted] development, and Lot 109 (next to [redacted]); (2) his recommendation for a single, 12m deep, borehole next to the proposed house site on [redacted]; (3) the Golder 2017 [redacted] Report; (4) the results of his test pit investigation of [redacted]; (5) the 2012 and 2017 Golder borehole data for [redacted]; (6) he has not observed a watercourse in the area between the southeast point of [redacted] and the northwest corner of [redacted] or within [redacted]

[redacted]; and (7) Thurber's refusal to tell him what it considered would be an effective borehole program.

117. The Respondent submits nothing he saw in prior investigations or knew from his experience with [redacted] and Lot 109 indicated a deep zone of erosion under the Properties. He disagrees with Thurber's conclusion about the mechanism for sinkhole development at [redacted].

118. He further says his recommendations to prevent sinkholes on [redacted] were reasonable given his conclusion about the likelihood of sinkholes there.

119. The Respondent denies the EGBC QM Guidelines required him to seal the Reports as alleged in Allegation 3.

Determinations

Allegations 1 and 2

120. The critical question for Allegations 1 and 2 is whether the Respondent had adequate knowledge (i.e. sufficient information) to conclude that sinkholes would not occur on [redacted], and that, therefore, a single-family house could be built on [redacted], provided the engineering recommendations in the May 2019 Report were implemented.

121. We conclude another professional engineer using best practices may well have determined it appropriate to drill a borehole, or boreholes, to 20 m geodetic depth to establish if there was a silty sand layer under [redacted] and, if it existed, to determine its configuration and depth.

122. The Thurber 2015 Report, Thurber Feb 2019 Report and Tara Report support our conclusion and the Respondent had access to the first two of these reports when he prepared his May 2019 and October 2019 Reports.

123. Further, although a consideration in analysis, the Respondent's reliance on the average hydraulic gradient was misplaced. The Panel agrees with Mr. Tara and Dr. Naesgaard that the specific gradient at the point of erosion is the relevant factor and the average hydraulic gradient is a dubious indicator of whether there was potential

for sinkholes. This is even more the case when the average gradient is calculated based on historical data from only two boreholes, which were drilled about 200 m apart and located where groundwater fluctuates seasonally.

124. The Respondent's assertion that he could not have done more to acquire sufficient information because Thurber did not tell him what it considered an effective borehole program is unsupported by his own evidence. By at least January 2021, he had concluded Thurber would require at least three boreholes to 20 m.

125. Nevertheless, the Panel finds another competent professional might have made similar recommendations to those made by the Respondent.

126. First, Golder, like the Respondent, decided a test pit investigation was sufficient for [redacted] and came to the same conclusions as the Respondent, namely, that the subsurface material was adequate to support a single-family house. The Respondent reviewed the Golder 2017 [redacted] Report before preparing his May 2019 and October 2019 Reports.

127. Second, there was no evidence of any sinkholes, watercourses, or springs on [redacted].

128. Third, although the Respondent admitted he could have but did not review the Golder 2017 Phase 2 Report before preparing the May 2019 Report, that report did not show there was likely a significant silty sand layer of concern at depth under the Properties. At best, Dr. Naesgaard and Mr. Tara said soils at the bottom of BH17-01 and BH17-02 were <u>potentially</u> erodible.

129. Fourth, the test pit data for the Properties, the Golder 2017 borehole data and the borrow pit area indicated a thick cap of dense, sandy glacial till and the Respondent recommended drilling a borehole to a depth of 12 m on [redacted], which would have alerted an engineer about internal erosion at least to this depth. Also, Dr. Naesgaard said the load of a wood frame house causes an almost negligible effect on the subsurface. Thus, in the circumstances the risk of catastrophic failure was low.

130. Fifth, the construction of a single-family residence, with the drainage system stipulated by the Respondent, was unlikely to result in any significant change to the hydraulic gradient at depth.

131. Sixth, Dr. Naesgaard agreed that drilling a borehole to a depth of 12m, in the location of the proposed house, was a reasonable recommendation.

132. Accordingly, the Panel concludes that the Respondent's actions in this case did not constitute "a marked departure from the standard to be expected of a competent professional" (underlining added) and, therefore, did not meet the threshold for a finding of unprofessional conduct: *Re: Ian Foreman, P.Geo* (August 25, 2015), at para 94; *Re: Gernon*, at para 14; *Re: Chrysanthous*; *Re: Fidel*.

Allegation 3

133. The Panel concludes EGBC has proven Allegation 3. The Respondent breached section 20(9) of the EGA because he did not seal the May 2019 Report, the June 2019 Report or the October 2019 Report before providing them to his clients.

134. The Respondent admits he did not seal the Reports.

135. While the Respondent said his Reports were "preliminary," they were not preliminary. The word preliminary in the Reports' title refers to the test pit investigation. The Reports were not for information only and contain the Respondent's geotechnical conclusions and recommendations about [redacted].

136. The EGBC QM Guidelines, section 6.2.5 required sealing of documents that would be relied on for tendering, permitting, construction, implementation, use or other reliance. An engineer's seal should be considered a "mark of reliance," which is an indication that others can rely on the fact that opinions, judgments or designs in sealed documents are provided by an EGBC professional held to high standards of knowledge, skill and ethical conduct: EGBC QM Guidelines (2018), section 6.1.

137. The Respondent admits he knew the Reports would be relied on, including by [redacted]'s lender and the District. In fact, this is why the District required sealed copies of his Reports for the Owners' permitting application.

Summary

138. In summary, the Panel concludes:

a. EGBC has not proven the allegations in paragraphs 1 and 2 of the Citation on a balance of probabilities.

b. EGBC has proven the allegations in paragraph 3 of the Citation on a balance of probabilities.

Penalty and Costs

139. The Panel must next determine the sanctions which should be imposed upon the Respondent and whether, and in what amount, costs are payable.

140. We request written submissions on the appropriate sanctions and costs in accordance with the following schedule:

a. Counsel for EGBC must provide their submissions to the Respondent and the Panel by no later than August 9, 2024;

b. Counsel for the Respondent must provide his submissions to EGBC and the Panel by no later than August 30, 2024**;** and

c. Counsel for EGBC provides must provide any reply submissions to the Respondent and the Panel by no later than September 6, 2024.

141. All submissions may be delivered by email to the other party and to Tonie Beharrell, independent legal counsel to the Panel.

Dated: July 18, 2024

<original signed by>
Frank Denton, P.Eng., Chair

<original signed by>
Jaswinder Bansal, P.Eng.

<original signed by>
Mike Racich