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Re: **PCHB No. 18-042**
108TH STREET POINT HOMEOWNERS ASSOCIATION and KINGS RIDGE HOMEOWNERS ASSOCIATION v. SNOHOMISH HEALTH DISTRICT and GO EAST WOODWASTE LANDFILL

Dear Parties:

Enclosed is the Findings of Fact, Conclusions of Law, and Order of the Pollution Control Hearings Board in this matter. Thank you for your time and advocacy.

This is a FINAL ORDER for purposes of appeal to Superior Court within 30 days. *See* Administrative Procedures Act (RCW 34.05.542) and RCW 43.21B.180. While you must serve the Board and all the parties, it is not necessary to name the Board as a party to perfect judicial review. Pursuant to RCW 34.05.566(3), the Agency will charge non-indigent parties the reasonable cost of copies to pay for the cost of the documentary record to the Court in the event of an appeal to Superior Court.

You are being given the following notice as required by RCW 34.05.461(3): Any party may file a petition for reconsideration with the Board. A petition for reconsideration must be filed with the Board and served on all parties within ten days of mailing of the final decision. WAC 371-08-550.

If you have any questions, please feel free to contact the staff at the Environmental and Land Use Hearings Office at 360-664-9160.

Sincerely,

Carolina Sun-Widrow, Presiding
Administrative Appeals Judge

CSW/le/P18-042
Encl.

CERTIFICATION

On this day, I forwarded a true and accurate copy of the documents to which this certificate is affixed via United States Postal Service postage prepaid or via delivery through State Consolidated Mail Services to the attorneys of record herein.

I certify under penalty of perjury under the laws of the state of Washington that the foregoing is true and correct.

DATED 6/5/19, at Tumwater, WA.

Morgan Pitt

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

108TH STREET POINT HOMEOWNERS ASSOCIATION and KINGS RIDGE HOMEOWNERS ASSOCIATION, Appellants, v. SNOHOMISH HEALTH DISTRICT and GO EAST WOODWASTE LANDFILL, Respondents.	PCHB No. 18-042 FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

INTRODUCTION

Appellants 108th Street Point Homeowners Association and Kings Ridge Homeowners Association (Homeowners) filed an appeal with the Pollution Control Hearings Board (Board) challenging Solid Waste Facility Permit # SW-027 (permit), which authorized closure of the Go East Woodwaste Landfill facility according to the approved Go East Landfill Closure Plan (closure plan). The Snohomish Health District (Health District) issued the permit to applicant P&GE LLC (P&GE), the owner of the landfill facility.

The Board considering the matter was comprised of Board Chair Kay M. Brown, and Members Joan M. Marchioro and Neil L. Wise. The Board conducted a hearing on February 26-28, 2019, with Administrative Appeals Judge Carolina Sun-Widrow presiding for the Board. Attorney David A. Bricklin represented the Homeowners. Attorney Peter C. Ojala represented the Health District. Attorneys Duana T. Koloušková and Dean Williams represented P&GE.

The parties agreed to the following legal issues governing this case as established in the Prehearing Order:

1. Does the Landfill Closure Plan comply with the requirements of the Washington Administrative Code?

2. Does the Landfill Closure Plan violate the Snohomish County Hearing Examiner's Decision of December 8, 2017, by failing to include a test pit observation plan for subsurface investigation of all areas to be excavated within the proposed residential development?

3. Does the Landfill Closure Plan lack sufficient design detail and clarity to render sufficient confidence for approval?

4. Whether some or all of the Appellants' issues and/or claims are barred by res judicata (issue preclusion and/or claim preclusion)?

5. Whether some or all of the Appellants' issues and/or claims are barred by their failure to exhaust administrative remedies and/or appeal Ecology's June 1, 2018 decision to the PCHB?

6. Whether Appellants' issues should be dismissed in part or in whole for failure to demonstrate any violation of applicable regulatory authority?

7. Does the record before the PCHB and/or Snohomish County Health District sufficiently support that the permit by the Snohomish Health District was and is properly issued?

8. Does the PCHB have jurisdiction over the issues raised by Appellant?

Prehearing Order at 4.

Prior to hearing, the Homeowners moved for partial summary judgment on Issue 1 relating to the setback requirement in Chapter 173-350 WAC. P&GE moved for summary judgment on Issues 1, 2, 3, 4, 6, and 7. The Health District joined in P&GE's motion.

The Board denied the Homeowners' summary judgment motion on Issue 1 as to the setback requirement, and granted summary judgment on the same issue to the Respondents. The Board also denied the rest of the Respondents' motion for summary judgment, and dismissed Issue 2 for lack of jurisdiction. *108th St. Point Homeowners Ass'n v. Snohomish Health Dist.*, PCHB No. 18-042 (Feb. 13, 2019). Issues 1, 3, 5, 6, 7, and 8 proceeded to hearing.

The Board received the sworn testimony of witnesses, prehearing briefs, and written closing arguments.[1] The Board also admitted exhibits, and heard the arguments presented. Having considered the record, the Board enters the following Findings of Fact, Conclusions of Law, and Order affirming the administrative order.

FINDINGS OF FACT

1.

This case concerns the closure of the Go East Woodwaste Landfill facility in Everett, Washington. The landfill is categorized as a limited purpose landfill under regulations governing solid waste handling standards. Ch. 173-350 WAC. Limited purpose landfills are defined primarily as landfills that are not allowed to receive municipal solid waste or hazardous waste, but may receive or have received segregated industrial waste, construction, demolition and land

[1] The Homeowners move to strike a sentence in the Health District's written closing argument that quotes from the declaration of Jeremy Davis, one of the Homeowners' expert witnesses. The declaration had been submitted in support of the Homeowners' motion for summary judgment. The Homeowners argue, without citation to authority, that the Board should strike the quote because it was submitted as part of summary judgment, and was not introduced at the evidentiary hearing. The Health District opposes the motion to strike. The Board finds that the quote sought to be stricken is part of closing argument, and is cumulative to Mr. Davis' testimony at hearing. The Board accords the sentence the appropriate weight under the circumstances and denies the motion to strike.

clearing debris, wood waste, certain type of ash and dredged material. WAC 173-350-100(1) (2017) ("Limited purpose landfill").[2]

2.

The landfill site is approximately 40 acres in size, with the landfill itself encompassing approximately 9.6 acres in the northern half of the site. The site is surrounded by open space tracts and residential developments, including those represented by the Homeowners. Ex. R-PGE-1, pp. 000020-21, 000023.

3.

The site has a long history dating back to 1969, when it was first used for sand excavation. During ensuing years, ownership of the property changed, and the site was permitted as a solid waste landfill accepting wood, mineral, and concrete solid materials. However, a truckload of unpermitted metal debris was also accepted. During the 1970s, some of the debris accepted at the landfill caused fire or smoldering conditions. As a result, landfill operations ceased. East Testimony; Ex. R-PGE-1, p. 000021.

4.

In 1979, Go East Corporation (Go East) purchased the site and resumed landfill operations after extinguishing the smoldering debris. Go East accepted mostly woodwaste and a small amount of demolition debris. Go East had an engineer on site to inspect debris hauled in

[2] The applicable solid waste handling standards regulations are those that were in effect at the time the Health District reviewed the landfill closure permit application and issued the challenged closure permit. *Champagne v. Thurston County*, 163 Wn.2d 69, 79, 178 P.3d 936 (2008) (newly amended administrative regulations generally apply prospectively). Thus, the regulations in the 2017 Washington Administrative Code (WAC) govern, rather than the amended regulations that became effective on September 1, 2018.

and oversee construction of landfill cells. All access roads to the landfill were fenced. East Testimony. In 1983, Go East ceased accepting waste and began the process to close the landfill by capping the landfill with a two-foot layer of dirt. However, fire broke out in the northwest area of the landfill, which suspended the remaining closure process. Since then, the landfill footprint has been fostering the growth of trees, shrubs, and grass. Ex. R-PGE-1, pp. 000022-23.

Overview of Project

5.

In 2010, P&GE sought to close the landfill, rezone the site, and subdivide it into residential lots (Bakerview plat). To close the landfill, P&GE was required to develop the closure plan that is challenged here.[3] Overall, the project entails work in three phases: landfill closure phase, preliminary plat phase, and postclosure phase. The landfill closure phase, which is the phase mainly at issue, will involve clearing, grading, and excavation of the site, construction of two soil cover systems, relocation of a stream, construction of a stormwater detention/treatment pond and associated conveyance systems, construction of a perimeter gas vent trench system, and installation of groundwater monitoring wells and gas monitors. Exs. R-PGE-1, pp. 000060-63, R-PGE-1I, p. 000664.

6.

The closure plan calls for excavating, relocating, and covering waste in three areas: an irregular-shaped perimeter area of the landfill (wedge area); the central plateau (cover system 1); and the stormwater detention pond (cover system 2). Exs. R-PGE-1, pp. 000031-34, 000040, R-

[3] "Closure plan" means a written plan developed by an owner or operator of a landfill facility detailing how a facility is to close at the end of its active life. WAC 173-350-100.

PGE-1D, p. 0000569. Earlier versions of the closure plan contemplated excavating, grading, and covering a third area (cover system 3) in the steep northeast slope, but this version was eventually abandoned after further geotechnical review. Ex. SHD-Ex. 12a, p. 00311-312.

7.

Among the many permits that P&GE is required to obtain for the project are two Land Disturbing Activity (LDA) permits from Snohomish County. Ex. SHD-Ex. 11, p. 00291. Bruce Straughn, the Health District's environmental health acting director, testified that the permit and closure plan requirements are tied to the development of the Bakerview plat by way of the two LDA permits. *Id.*; Straughn Testimony. He testified that Snohomish County would issue the first LDA permit prior to the start of initial site clearing and grading required for closure of the landfill. The second LDA permit allowing work for subdivision construction (grading lots, installing roads and utilities) would not be issued until after closure activities have been completed and approved by the Health District. Mr. Straughn testified that the two-phase LDA permit process ensures that closure activities are properly completed because the economic incentive to comply with the closure permit is built into the process. Ex. R-PGE-1, pp. 000060-63; Straughn Testimony; Arndt Testimony. At the time of hearing, Snohomish County had not issued either LDA permit for the project.

8.

Most of the proposed excavation will occur in the wedge area, where approximately 52,000 cubic yards of soil and waste materials will be excavated and placed on the top of the remaining landfill on the central plateau. Excavated waste material and soil will be screened and

tested, and the excavated areas will be backfilled with structural fill and compacted to accommodate future land development. Exs. R-PGE-1I, p. 000664, R-PGE-2, p. 000784. After waste relocation, compaction, and grading, the reduced landfill footprint will be covered. Ex. R-PGE-1, p. 000040-42. As a result of relocating the waste, the landfill footprint will be reduced from 9.6 acres to approximately 6.4 acres. Ex. R-PGE-1I, p. 000664.

9.

Once landfill closure construction is completed, P&GE must obtain the second LDA permit to begin plat construction. Straughn Testimony; Ex. R-PGE-1, p. 000063. After plat construction, the landfill postclosure phase begins. Postclosure activities involve monitoring various components including the groundwater wells and surface water locations, gas probes, stormwater detention pond, and the top and slopes of the closed landfill. Ex. R-PGE-1, p. 000064; Stern Testimony; Davis Testimony; Shuri Testimony.

Procedure

10.

P&GE applied for the permits required for the rezone, subdivision, and landfill closure. Notice of Appeal, App. D in Board case file. Snohomish County had jurisdiction over the rezone and subdivision request, and the Health District had jurisdiction over the closure permit. Straughn Testimony; SHD-Ex.01, pp. 00006-9. The Health District conditionally approved P&GE's landfill closure plan in February 2012 and January 2014. Since the subdivision and landfill closure requests require review under the State Environmental Policy Act (SEPA), ch. 43.21C RCW, Snohomish County and the Health District agreed that Snohomish County would

act as the lead agency conducting SEPA review for both actions. *Id.* Snohomish County issued a Mitigated Determination of Non-Significance (MDNS) in August 2014.

11.

The Homeowners appealed the MDNS decision to the county hearing examiner, arguing that the MDNS was erroneously issued because the project will have probable, significant adverse environmental impacts that have not been adequately disclosed, analyzed, or mitigated. After a seven-day open record hearing, the hearing examiner reversed the MDNS decision and remanded the project for further review, including review of the landfill closure plan by a third party expert. *108th St. Point Homeowners Ass'n*, PCHB No. 18-042, p. 5 (Order on Motions). The Health District retained Golder Associates and Geotech Engineers for the third party review. Although P&GE paid for the third party review, it did not control the outcome of the review. Ex. SHD-Ex.01, p. 00015. The additional review resulted in P&GE developing a new landfill closure plan and a revised subdivision. P&GE submitted those documents to Snohomish County for SEPA review. Order on Motions, p. 5.

12.

In 2017, Snohomish County issued a MDNS on P&GE's new closure plan and revised subdivision. The Homeowners appealed the 2017 MDNS to the county hearing examiner. The hearing examiner ultimately issued a decision upholding the MDNS and approving the subdivision and rezone. The Health District generally approved the new closure plan. The hearing examiner found and concluded that, as mitigated, the landfill closure will not likely cause significant adverse environmental impacts under SEPA. *Id.*, p. 6.

13.

Peter Christiansen, Section Manager for the Department of Ecology's (Ecology) Solid Waste Management Program in its Northwest Regional Office, and Mr. Straughn, testified to the respective roles of Ecology and the Health District in the landfill closure process. Mr. Christiansen and Mr. Straughn both supervised the respective staff directly involved with the project and generally oversaw review of P&GE's closure application. Christiansen Testimony; Straughn Testimony.[4] The Health District reviews a landfill closure application for completeness and relies heavily on Ecology's review of such applications due to the agency's expertise. Straughn Testimony; Christiansen Testimony; Exs. SHD-Ex.01, p. 6, SHD-Ex.08. The Health District gives serious consideration to Ecology's views in the review process and will not issue a closure permit until after Ecology concurs with the closure plan. Ex. SHD-Ex.01, pp. 9-10, 12. The Health District also evaluates the closure plan for compliance with the Snohomish Health District Sanitary Code. *Id.*, pp. 10-11. Ecology remains involved during the landfill closure construction phase, participating in onsite inspections with local health district personnel. Christiansen Testimony.

14.

Ecology's ongoing review of P&GE's closure application, closure plan, and permit has been comprehensive and detailed, with its engineers and hydrogeologists evaluating and

[4] Mr. Straughn became the Health District's environmental health acting director around January 2019 when the director, Kevin Plemel, went on leave. Mr. Plemel testified before the Snohomish County Hearing Examiner in September 2017 during the Homeowners' SEPA appeal of the closure plan and subdivision. As Mr. Plemel was unavailable to testify at the hearing, the Board admitted into the record the transcript of his testimony before the Hearing Examiner. *See* Ex. SHD-01; Straughn Testimony.

commenting on every aspect of the permit and closure plan, including its many revisions. Exs. A-29, R-PGE-1L, pp. 000698-712, 000736-748, SHD-Ex.01, p. 7, SHD-Ex. 11. As stated, the Health District also retained Golder Associates to perform a third party review of traffic, air, and noise impacts from landfill closure constructions activities, as well as the ability of the proposed cover systems to protect surface water, groundwater, and control landfill gas. Shuri Testimony; Ex. R-PGE-1M. Almost all of Ecology's and the third party's technical review, comments, and suggested changes for identified deficiencies were incorporated into the final closure plan by P&GE. *See, e.g.*, Exs. SHD-Ex.01, p. 20, SHD-Ex.03, SHD-Ex.03a – SHD-Ex.03e, SHD-ex.04, SHD-Ex. 11, Ex. SHD-Ex. 12a; Shuri Testimony; Christiansen Testimony.

15.

The Health District issued the permit on May 11, 2018. Ex. R-PGE-3. The permit was specifically conditioned on the landfill closing in accordance with the approved closure plan last revised in January 2018. *Id.*, p. 000804. On June 1, 2018, Ecology issued a letter approving the closure permit.[5] Ex. SHD-Ex.07. The Homeowners appealed the closure permit and closure plan.

Compliance with Limited Purpose Landfill Regulations

16.

The Homeowners claim that the closure plan and/or permit violate several limited purpose landfill regulations. As stated in the Board's Order on Motions, the enumerated

[5] Jurisdictional health departments such as the Health District must file all issued permits, including the closure permit here, with the appropriate Ecology regional office. No solid waste permit will be considered valid unless reviewed by Ecology. WAC 173-350-400(10); -710(2)(c).

subsections in WAC 173-350-400 are logically sequenced to track the "life" of a limited purpose landfill, setting forth requirements and considerations that must be addressed at each stage of a landfill's creation, location selection, design, operation, closure, and post-closure. WAC 173-350-400(1)-(10). The main requirement applicable at this closure stage provides in relevant part that:

> **(a) . . . The facility, or any portion thereof, shall close in a manner that:**
>
> (i) Minimizes the need for further maintenance;
> **(ii) Controls, minimizes, or eliminates threats to human health and the environment from post-closure escape of solid waste constituents, leachate, landfill gases, contaminated runoff, or waste decomposition products to the ground, groundwater, surface water, and the atmosphere; and**
> (iii) Prepares the facility, or any portion thereof, for the post-closure period.
> (b) The owner or operator shall commence implementation of the closure plan . . . within thirty days after receipt of the final volume of waste and/or attaining the final landfill elevation . . .
> (c) The owner or operator shall not accept waste, including inert wastes, for disposal or for use in closure except as identified in the closure plan approved by the jurisdictional health department.
> **(d) The owner or operator shall develop, keep, and abide by a closure plan approved by the jurisdictional health department as part of the permitting process. At a minimum, the closure plan shall include the following information:**
> (i) A description of the final closure cover, designed in accordance with subsection (3)(e) of this section, the methods and procedures to be used to install the closure cover, sources of borrow material for the closure cover, and a schedule or description of the time required for completing closure activities;
> (ii) Projected time intervals at which sequential partial closure and final closure are to be implemented;
> (iii) A description of the activities and procedures that will be used to ensure compliance with (a) through (g) of this subsection; and
> (iv) Identify closure cost estimates and projected fund withdrawal intervals for the associated closure costs, from the approved financial assurance instrument.
> **(e) The owner or operator shall submit final engineering closure plans, in accordance with the approved closure plan and all approved amendments,**

for review, comment, and approval by the jurisdictional health department . . .

WAC 173-350-400(6) (emphasis added).[6]

17.

The Homeowners mainly argue that the closure plan and permit fail to control, minimize, or eliminate threats to human health and the environment from postclosure escape of solid waste constituents, leachate, landfill gases, contaminated runoff, or waste decomposition products as required by WAC 173-350-400(6)(a)(ii). They presented expert testimony that the closure plan and permit lacked details regarding how to control escape of the above listed landfill byproducts, and how to address noise impacts. Specifically, the Homeowners argue that the regulation governing the content of a limited purpose landfill permit application, WAC 173-350-400(9), required the submission of engineering and construction plans of sufficient detail to enable the Board to determine whether the closure plan and permit comply with applicable regulations.[7]

18.

Respondents disagree, arguing that WAC 173-350-400(6) establishes a sequential closure process whereby a closure plan is developed and approved, after which "final engineering closure plans, *in accordance with the approved closure plan and all approved amendments*," are submitted for the Health District's review. WAC 173-350-400(6)(d), -400(6)(e) (emphasis

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[6] The parties do not dispute that other applicable closure requirements include WAC 173-350-400(3)(e) (final closure system design), WAC 173-350-400(7) (postclosure), WAC 173-350-400(8) (financial assurance), WAC 173-350-500 (groundwater monitoring), and WAC 173-350-600 (financial assurance). These regulations are discussed below in context of the Homeowners' challenge to each aspect of the closure plan governed by the regulations.

[7] Subsection (9) of WAC 173-350-400 addresses content requirements for all permits. One of the requirements is that permit applications contain "[e]ngineering reports/plans and specifications that address the design standards of subsection (3) [of WAC 173-350-400]." WAC 173-350-400(9).

added). After the landfill closure is completed and the various certifications and recordings filed, the post-closure period begins. WAC 173-350-400(6)(f)-(h). Respondents contend that requiring detailed engineering plans and specifications at the initial permit application stage turns the closure sequence in WAC 173-350-400(6) on its head, renders WAC 173-350-400(6)(e) meaningless, and would present financial and time disincentive for landfill owners and operators.

19.

Experts who testified on behalf of all parties agreed that the engineering plans in the closure plan were not complete at the time of the hearing. However, the Respondents' experts testified that the closure plan contained sufficient information for approval and to proceed to the next stage of preparing final engineering plans consistent with the sequence in WAC 173-350-400(6)(d). Arndt Testimony; Metcalfe Testimony; Shuri Testimony; Christiansen Testimony.

20.

Ecology does not require the closure plan to include engineering plans and reports at the level of detail sought by the Homeowners. Ecology views the closure plan as a "conceptual document" created with an end goal, and requires applicants like P&GE to later submit detailed plans, specifications, and a construction quality assurance plan to the Health District before beginning closure construction. Christiansen Testimony; Ex. A-19, p. 1; Ex. A-29, pp. 1-3; *see also*, R-PGE-1L, pp. 000698-99. Construction does not start until the Health District has approved those detailed plans after ongoing review with Ecology. Straughn Testimony; Ex. R-PGE-3, p. 4. As the agency charged with promulgating and administering the landfill

regulations, the Board gives great weight to Ecology's interpretation of its own regulations. *Port of Seattle v. Pollution Control Hrg's Board*, 151 Wn.2d 568, 593-94, 90 P.3d 659 (2004).

21.

The Board finds and concludes that the closure sequence set out in WAC 173-350-400(6) controls, and that the permit application content requirements in WAC 173-350-400(9)(c) do not require engineering and construction plan details claimed to be lacking here. The permit application content requirements applies to all limited purpose landfill permits in general, while WAC 173-350-400(6) addresses the more specific closure plan and process at issue in this case. *W. Plaza, LLC v. Tison*, 184 Wn.2d 702, 712, 364 P.3d 76 (2015) (general statutory provision normally yields to a more specific provision); *Mader v. Health Care Auth.*, 149 Wn.2d 458, 472, 70 P.3d 931 (2003) (rules of statutory construction apply to interpretation of regulations).

22.

In support of their claim that the closure plan and/or the closure permit violate the applicable limited purpose landfill regulations, the Homeowners presented the expert testimony of Kent Wiken, Katie Saltanovitz, Jeremy Davis, and Ginny Stern. Mr. Wiken, Ms. Saltanovitz, and Mr. Davis are all licensed, professional engineers with experience in landfill design, permitting, construction, closure, and postclosure. Exs. A-50, A-51, A-53; Wiken Testimony; Saltanovitz Testimony; Davis Testimony. Ms. Stern is a licensed hydrologist and hydrogeologist with experience in assessing and protecting groundwater and drinking water supplies. Ex. A-52; Stern Testimony.

23.

The Health District responded with testimony from its environmental health acting director, Mr. Straughn, and Frank Shuri. Mr. Straughn has a B.A. in Microbiology and has worked for almost 30 years at the Health District. Straughn Testimony. Mr. Shuri is a professional, licensed civil engineer and geologist, and also a principal in Golder Associates, which was retained by the Health District to conduct third party review of the closure plan. Shuri Testimony; Ex. SHD-Ex.02.

24.

P&GE presented testimony from Mr. Christiansen with Ecology's Solid Waste Program, and Gary East, co-owner of P&GE. East Testimony. P&GE also presented expert testimony from Gary Arndt, Robert Metcalfe, Curtis Koger, and Jon Sondergaard. Mr. Arndt and Mr. Metcalfe are licensed, professional civil engineers with experience in landfill closures and particular expertise on geosynthetics used for cover systems. Ex. R-PGE-23, R-PGE-24. Mr. Koger is a professional, licensed geologist and hydrogeologist with expertise in characterizing hydrogeologic conditions. Ex. R-PGE-22. Mr. Sondergaard is a professional, licensed geologist with experience in groundwater monitoring. Ex. R-PGE-21.

1. Waste Characterization

25.

A limited purpose landfill final closure design performance standard requires that they "be closed in accordance with a design that: . . . (A) Prevents exposure of waste[.]" WAC 173-350-400(3)(e)(i)(A). As stated previously, pertinent regulations also require that landfill

facilities close in a matter that "[c]ontrols, minimizes, or eliminates threats . . . from post-closure escape of solid waste constituents, leachate, landfill gases, contaminated runoff, or waste decomposition products." WAC 173-350-400(6)(a)(ii). The Homeowners claim that the closure plan and permit do not meet these requirements because they fail to adequately characterize the waste, and that excavating and relocating the waste will expose it to construction workers.

26.

As to inadequate waste characterization, the Homeowners argue that the boundaries of the buried waste has only been approximated, and that the depth of the landfill has only been determined in a few locations. *See, e.g.*, Ex. A-35 (Summary of Test Pit Information from Go East LFCP (01/2018) App. A); Ex. R-PGE-1A, p. 000118 ("Approximate Location of Test Pit by HWA"); Ex. R-PGE-1D, p. 000569 (Legend: "Approximate Location of Test Pit (AES Inc. or HWA)"). The Respondents disagree, pointing to the numerous pit explorations, and the results from groundwater and surface water sampling, and gas probe readings. They also contend that the closure plan adequately addresses waste characterization and sampling during closure construction.

27.

Although sections of the closure plan addressing waste characterization and exposure contain approximated boundaries of buried waste, locations of test pit explorations, and depths of parts of the landfill, the Board does not find that such approximation violates the regulatory provisions discussed above. P&GE performed 65 test pit explorations with depths up to 25 feet to inventory the type of waste found at different depths. The test pit logs did not reveal any

waste that was unanticipated given the history of the landfill. Exs. R-PGE-1, pp. 000024, 000036; R-PGE-1A, pp. 000124-204; R-PGE-1L, p. 000728.

28.

The Homeowners also claim that the absence of test pits in the northeast slope area constitutes inadequate waste characterization that precludes compliance with closure performance standards on preventing waste exposure and controlling landfill pollution. Contrary to the Homeowners contention, the evidence presented established that the steep northeast slope area will not be excavated, is stable and well vegetated, and will remain so after closure construction. Ex. A-11a, Fig. 4; Shuri Testimony; Arndt Testimony; Metcalfe Testimony; *see infra*, FF 39. Moreover, water quality test results from a spring at the toe of the northeast slope did not indicate that contaminants were discharging as a result of landfill waste buried beneath the slope, *see infra*, FF 55, 57. The Board finds and concludes that lack of test pits in the northeast area does not violate closure performance standards.

29.

Finally, information gaps as to the precise location and nature of the waste are alleviated by the closure plan's and permit's detailed processes to sample the soil before excavation and to inspect excavated waste from the wedge area. The closure plan states that "prior to construction," excavated materials from the wedge area will be sampled and analyzed for specified contaminants at the rate of one sample for every 500 cubic yards for the first 2,500

cubic yards, then one sample taken approximately every 2,500 cubic yards thereafter.[8] The latter sampling rate may be exceeded if the onsite asbestos certified professional observes characteristics indicating a possible different source of excavated materials, and if soil or field testing indicates high levels of contaminants. Shuri Testimony; Exs. R-PGE-1 pp. 000037-38, R-PGE-1I, pp. 000665-666.[9] The testing results will be compared to contaminant values specified in the closure plan, and P&GE will implement special handling and disposal if testing results exceed the specified contaminant values. Ex. R-PGE-1 p. 000037 (Table G.4); Shuri Testimony. Mr. Arndt described the closure plan's soil sampling and waste screening provisions as robust. Arndt Testimony. Mr. Shuri and Mr. Straughn opined that the closure plan's soil sampling and screening procedures were enforceable and sufficient to ensure worker safety because sampling parameters, procedures, and contaminant values are established. Straughn Testimony; Shuri Testimony.

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[8] There is some inconsistency in the closure plan as to whether this specific sampling is required. *Compare* Ex. R-PGE-1, p. 000034 ("No screening of the landfill material is planned unless it is directed by the [Health District] or the onsite professional) *with* Ex. R-PGE-1, p. 000037 ("As previously discussed prior to construction, materials proposed to be relocated from the wedge area will be tested for contamination . . . and pH levels."); Wiken Testimony. However, the permit contains a soil sampling condition, and Mr. Straughn testified that if there is a conflict between a provision in the closure plan and the permit, the more stringent and specific sampling requirement in the permit would apply. Straughn Testimony. In addition, P&GE's offer of the following "more specific" condition as an amendment to the closure permit seems consistent with the closure plan's soil testing:

> Soil samples from the wedge area will be taken and tested with a chemical analysis prior to relocating waste. If contaminants are found, the permit holder will clean up the contaminants per Ecology regulations.

Applicant P&GE's Closing Brief at 15.

[9] The closure plan also provides that this onsite professional will generally oversee waste screening during excavation, visually inspect excavated materials for debris likely to contain asbestos, and perform testing for lead paint in excavated paint boards. Ex. R-PGE-1, p. 000035.

30.

The permit contains the condition that if contaminated soils are found either through sampling or observation by the certified asbestos professional on site, P&GE must remove the contamination, determine the extent of the contaminated area, and confirm via sampling that all contaminated materials have been removed. Any other contaminant that may be released to the air during closure construction activities would be addressed through the permit condition requiring P&GE to follow Puget Sound Clean Air Agency regulations. R-PGE-3, p. 000805. The permit also authorizes the Health District to take samples in order to confirm that all contaminated materials have been removed. *Id.*; Straughn Testimony. The Board finds and concludes that the closure plan adequately provides for soil sampling before and during closure construction to determine the presence of dangerous waste constituents. The Board also finds and concludes that the closure plan adequately assessed the extent and type of buried and excavated waste, and that the overall design and manner of the landfill closure assures compliance with the discussed applicable regulations.

2. Cover Systems

Veneer Stability/Settlement

31.

The Homeowners argue that there is a risk that proposed cover systems 1 and 2 (central plateau and stormwater detention pond, respectively) could become unstable and result in slides or depressions on the covers, thereby violating several of the final closure design performance

standards. *See* WAC 173-350-400(3)(e)(i)(E)-(F), (H) (address anticipated settlement, provide sufficient stability, and minimize need for postclosure maintenance).[10]

32.

The cover systems consist of layers of materials placed on top of the landfill. Cover system 1 encompasses approximately four acres and includes the entire plateau area. Its first layer will be soil fill material with a depth of up to ten feet, compacted to achieve proposed grades. This is followed by the subgrade layer consisting of a minimum of six inches of foundation material to serve as a flat surface for the geomembrane layer placed above. The geomembrane layer will consist of a minimum 40-mil LLDPE (linear low density polyethylene) liner, commonly used for capping landfills and lining ponds to prevent stormwater infiltration and gas migration. A geotextile cushion will be placed directly above the geomembrane liner. Above the geomembrane layer will be a two foot soil layer, with the upper 12 inches or more consisting of organic soils to support plant growth. Exs. R-PGE-1, pp. 000041-42; R-PGE-1E; Shuri Testimony; Wiken Testimony; Arndt Testimony; Metcalfe Testimony.

33.

Cover system 2 will encompass the entire stormwater detention pond area and conveyance ditches, an area of approximately 0.7 acres. The layers of cover system 2 are similar to cover system 1, except that a second, upper geomembrane liner with a geotextile protective layer will be added above the lower geomembrane liner, with 12 inches of onsite sands in

[10] The closure design performance standards are: prevent exposure of waste, minimize infiltration, prevent erosion, sustain native vegetation, address anticipated settlement, provide sufficient stability and mechanical strength, minimize need for post-closure maintenance, collect and remove landfill gas, and meet clean air act requirements of Ecology or local air pollution control authorities. WAC 173-350-400(3)(e)(i)(A)-(J).

between the two liners serving as a drainage layer. The second liner will provide additional protection against stormwater infiltration. Ex. R-PGE-1, p. 000042-43.

34.

There is no dispute that the proposed cover systems satisfy the presumptive final closure cover design in WAC 173-350-400(3)(e)(ii). However, the Homeowners presented the testimony of Mr. Wiken, who calculated cover stability and testified concerning the risk of the soil layer above the geomembrane layer sliding off on the 3H:1V (33 percent) or steeper slopes due to inadequate drainage layer.[11] Mr. Wiken explained the risk is present because the closure plan and closure permit do not require permeability testing for onsite soils proposed to be used for the soil layer. He testified that such testing would ensure that the soil layer above the geomembrane has sufficient permeability to prevent it from sliding off. Wiken Testimony; Ex. R-PGE-25.

35.

Respondents' witnesses agreed that a well-draining soil layer above the geomembrane liner would prevent sliding and veneer instability, and that the closure plan and permit do not require either a soil permeability analysis or a geocomposite drainage net to achieve a well-draining soil layer. Shuri Testimony; Arndt Testimony; Metcalfe Testimony. However, they all testified that the proposed cover systems were typical of many landfills like the one at issue, and

[11] Mr. Wiken's calculations yielded a factor of safety of 0.95. Ex. R-PGE-25. A factor of safety over 1.0 is considered safe. Wiken Testimony. However, Mr. Arndt disagreed with Mr. Wiken's calculations, explaining that they contained several conservative assumptions such as the absence of a drainage layer and a worst case rainfall event scenario. Ex. R-PGE-25; Arndt Testimony. Mr. Metcalfe also performed his own factor of safety calculation, and like Mr. Arndt, arrived at a factor of safety higher than Mr. Wiken's calculations. Metcalfe Testimony.

that as more detailed engineering plans are developed, a soil permeability analysis or geocomposite drainage net could be added. *Id.* This is consistent with the regulation to provide more details in final engineering plan for further review by the Health District.[12] WAC 173-350-400(6)(e); Arndt Testimony.

36.

The evidence established the presence of other factors lessening the risk of slides and settlement on the cover systems. Most of the area encompassed by the cover systems is or will be fairly flat after grading. Ex. R-PGE-1D, pp. 000569-570. The closure plan requires a LLDPE geomembrane liner, whose textured and high strain capacity properties will help prevent slides and accommodate differential settlement over time without breaking. Exs. R-PGE-1, pp. 000031-32, R-PGE-1E; Shuri Testimony; Metcalfe Testimony. Compaction on the cover system areas, and specifically dynamic compaction[13] of the stormwater detention pond area, will further reduce settlement. Ex. R-PGE-1, pp. 000043-44; Shuri Testimony. The postclosure monitoring requirement of quarterly cover inspections for signs of settlement and erosion will also lessen the risk of large scale slides from veneer instability. Ex. R-PGE-1F, pp. 000598, 000602; Shuri Testimony. The Board finds and concludes that the weight of the evidence demonstrates that the

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[12] The Board notes that P&GE's offer of the following "more specific" condition as an amendment to the closure permit further ensures veneer stability:

> Final design will confirm permeability of using local sands, or alternatively replace the current material specified with a geo-composite grid material to ensure adequate drainage above the geomembrane.

Applicant P&GE's Closing Brief at 15.

[13] Dynamic compaction is a method used to increase the density of soil by repeatedly dropping a heavy weight on the ground. Static force compaction uses the weight of the machine only to compress and increase soil density.

closure plan and permit comply with closure design performance standards addressing veneer stability. *See* WAC 173-350-400(3)(e)(i)(E)-(F), (H).

Northeast slope cover and global stability

37.

The Homeowners contend that a closure cover is required over the entire landfill footprint and that by not requiring a closure cover on the landfill's northeast steep slope, the closure plan and permit violate the following regulations: the final closure performance standards in WAC 173-350-400(3)(e)(i)(A)-(J); the "presumptive final closure cover" in WAC 173-350-400(3)(e)(ii); and the "alternative final closure cover" option allowed "when the nature of the waste, the disposal facility or other factors are incompatible with the presumptive final closure cover system." WAC 350-400(3)(e)(ii). Wiken Testimony. The Homeowners further argue that the absence of a cover and risk of a large scale slide on the northeast slope violate closure design performance standards of preventing waste exposure, minimizing infiltration, preventing erosion, sustaining vegetation, providing sufficient stability, and controlling runoff. WAC 173-350-400(3)(e)(i)(A)-(D), (F)-(G).

38.

The Board disagrees that the absence of a closure cover on the steep, northeast slope of the landfill violates the regulations cited by the Homeowners. The Board notes that the regulations do not include a definition of the term "cover." Considering in particular the first four performance standards that a closure system design must satisfy, WAC 173-350-400(3)(e)(i)(A)-(D), the Board finds and concludes that the present, stable and well vegetated

state of the northeast slope constitutes an alternative final cover. Ex. R-PGE-1A, p. 000090. In so deciding, the Board gives weight to Ecology's determination that leaving the northeast slope in its current state complies with applicable regulations. Ex. SHD-Ex. 07; *Port of Seattle*, 151 Wn.2d at 595.[14]

39.

Although Respondents' witnesses all agreed that constructing a cover on the northeast slope was feasible, they all testified that leaving the slope uncovered, but removing exposed waste as required by the closure plan, would also comply with the regulations. Respondents' witnesses, all landfill engineers who visited the site, opined that the topography of the northeast slope, examination of the trees on the slope, nature of the waste deposited, the landfill's history, relative small area of the slope within overall landfill, and the slope's stable state despite recent earthquakes and severe snowstorms, were factors that weighed in favor of leaving the slope in its vegetated cover instead of clearing the slope, regrading it, and installing a closure cover to sustain the current state of native vegetation. Arndt Testimony; Metcalfe Testimony; Shuri Testimony. Their opinion was consistent with the recommendation of the independent geotechnical reviewer, which Ecology accepted in approving the permit. *See infra* note 14. Mr.

[14] Ecology expressed concern about the original proposed cover system 3 on the northeast slope consisting of clearing vegetation, grading, and adding layers of compacted soil and vegetative soil. Exs. A-19, p. 001208; SHD.Exs. 11, p. 00296, R-PGE-1G, p. 000612. Ecology noted it would be challenging to construct cover system 3 on the regraded slope and advised that it should be evaluated by a contracted geotechnical engineer since Ecology did not have such expertise. Exs. A-19, p. 001208, SHD-Ex.14, p. 00296. GeoEngineers, subsequently retained by Snohomish County to independently review cover system 3 and other geotechnical issues, recommended against it. Exs. R-PGE-18, SHD-Ex.14, p. 00296, SHD-Ex.18b. P&GE's geotechnical engineer, Sondergaard Geoscience, PLLC, also concurred with the recommendation of leaving the northeast slope undisturbed. Ex. SHD-Ex. 18a. Given these recommendations, Ecology agreed with P&GE's later proposal to leave the northeast slope undisturbed, and only suggested removing surface debris from the slope and installing a fence at the top. Exs. A-28, pp. A-001441-1442, SHD-Ex.12a, p. 00311-312.

Arndt and Mr. Metcalfe also testified that they had either worked on or seen landfills closed with an existing vegetated cover under the regulations at issue. Arndt Testimony; Metcalfe Testimony.

40.

Mr. Wiken also testified regarding his concern that the weight of the relocated waste to the cover system 1 area, and the dynamic compaction at the stormwater detention pond area and the stormwater outlet pipe route, could make the northeast slope unstable. However, Mr. Shuri and Mr. Metcalfe opined generally that the compaction of the relocated waste will result in a denser and stable area under cover system 1, and that the amount and placement of fill in that area will not induce instability on the northeast slope. Metcalfe Testimony; Shuri Testimony; Ex. R-PGE-1M, p. 000758. Moreover, any dynamic compaction impacts to the stability of the northeast slope are lessened since the stormwater detention pond area is not near the top of the northeast slope, and the stretch of the pipe route that is near the slope is only 15 feet wide. Ex. R-PGE-2, pp. 000783, 000786 (detail 6).

41.

The Board finds and concludes that the Homeowners have not met their burden of demonstrating that closure activities near the top of the northeast slope will trigger slope instability in violation of applicable closure design performance standards. WAC 173-350-400(3)(e)(i)(A)-(D), (F)-(G) (prevent exposure of waste, minimize infiltration, prevent erosion, control run-off, sustain vegetation, provide sufficient stability).

3. Landfill Gas

42.

Landfills produce methane and other gases when waste decomposes. Methane at higher concentrations may cause explosions; thus landfills must have systems to control methane. Ex. R-PGE-1, p. 000053; Davis Testimony. The Homeowners contend that the closure plan and permit do not ensure an adequate landfill gas control system, thereby violating the following: (1) closure performance standards of providing for collection and removal of methane and other gases generated in the landfill, and complying with air pollution control requirements, and (2) the requirement of closing landfills in a manner that controls or minimizes escape of landfill gas. WAC 173-350-400(3)(e)(i)(I), (J); -400(6)(a)(ii).

43.

To control landfill gas, the closure permit requires P&GE "to control explosive gases to ensure that concentrations of methane do not exceed standards set forth in WAC 173-350-400(4)(b)(v)." Ex. R-PGE-3, p. 000805. Exceedances must be reported immediately to the Health District and require implementing gas control measures. *Id.* The closure plan's gas control system was designed to control the minimal gas levels measured and to mitigate for any increased gas released from covering the landfill. Exs. R-PGE-1, pp. 000053-54, R-PGE-1A, pp. 000115-118, R-PGE-1H, p. 000622, A-47. Gas levels were measured on two separate days using ten gas probe monitors in or around the landfill perimeter. Perimeter gas probe readings showed low to nonexistent levels, with higher levels from probes placed at the center of the landfill. Ex. R-PGE-1, p. 000053.

44.

The landfill gas control system includes a gravel filled methane vent trench around most of the covered landfill perimeter. The vent trench will extend down to undisturbed native soil (15-20 feet deep). Mr. Shuri testified that as gas escapes up and hits the geomembrane cover, it will migrate horizontally through the geomembrane subgrade sand layer to the perimeter vent trench and safely escape into the air at the four manhole structures placed about every 300 feet along the trench. Shuri Testimony. Specifically, the gas will escape at the manhole structures via vent piping extending at least 100 feet into the interior of the landfill (away from future homes) and ten feet above ground. Exs. R-PGE-1, p. 000054, R-PGE-1D, p. 000569, R-PGE-1M, p. 000762. Additionally, the vent trench system will have piping infrastructure installed that could convert to a forced air active gas venting system if necessary. *Id.*

45.

Gas monitors will be installed in the manhole structures to provide continuous monitoring and readouts for six months during the first year following closure. If methane concentration levels exceed regulatory limits, blowers can be installed to actively remove gas to acceptable levels. Exs. R-PGE-1, pp. 000054, 000116, R-PGE-1H, p. 000623. In addition, the postclosure monitoring plan calls for quarterly portable gas monitoring at 12 locations along the gas vent trench, and any future homes built within 1,000 feet of the landfill will be required to have gas vapor barriers and gas ventilation. Ex. R-PGE-1H, pp. 000623-25, 000652-660.

46.

The Homeowners presented the testimony of Jeremy Davis, a landfill gas control expert, who disputed the accuracy of the low to nonexistent background gas probe measurements. Mr. Davis was also concerned that the gas vent trench did not circumvent the entire landfill perimeter (excludes steep northeast slope area), was not deep enough thereby allowing gas to escape, and it only passively manages gas escape instead of actively controlling gas source and pressure. Davis Testimony; Ex. A-33c.

47.

The Respondents' landfill engineers stated that the low gas probe measurements were consistent with the age of the landfill (over 30 years) and type of debris accepted (mostly woodwaste). They explained that the wood waste accepted releases less gas than municipal solid waste, and emits gas for 15-30 years. Shuri Testimony; Arndt Testimony; Ex. R-PGE-1M, p. 000762. Although they acknowledged that excavating and reburying the waste will generate more gas, they also stated that the geomembrane cover will reduce infiltration and decrease the rate of waste decomposition and resulting gas production. *Id.* All of the expert witnesses agreed that an independent gas source control could be installed later or designed during final engineering if needed. Mr. Wiken specifically testified during rebuttal that, as the closure plan is implemented, there is nothing in the plan or permit to preclude such system from being constructed. Wiken Testimony.

48.

Considering the totality of the evidence, the Board finds and concludes that the closure plan and permit's landfill gas control system complies with applicable regulations, which only require landfills to be designed and closed in a manner that provides for collecting and removing methane and other landfill gas, and that meets air pollution control regulations. The Board is persuaded that gas emissions from the landfill will be minimal given the age and type of debris accepted by the landfill. Concerns that gas will laterally migrate below the trench are alleviated by the proposed robust gas monitoring systems, and the ability for active gas extraction equipment to be installed at the landfill if needed.[15] Finally, homes proposed to be built near the landfill perimeter will have residential mitigation measures as discussed above. Although Mr. Davis critiqued certain aspects of gas mitigation measures, such as vapor barriers for future homes not being of sufficient thickness, the closure plan is a conceptual document with further details or alternative designs added during final engineering plans. Exs. R-PGE-1H, p. 000623, A-33d; Davis Testimony.

[15] PG&E's offer of the following "more specific" condition as an amendment to the closure permit further minimizes gas escape:

> Final design will confirm the proposed 6-inch sand layer under the geomembrane is adequate to convey the landfill gas to the gravel trench and prevent buildup of gas and pressure, or alternatively thicken that cushion and/or gas wells will be added as determined appropriate by a qualified engineer.

Applicant P&GE's Closing Brief at 15.

4. Noise/Vibration

49.

The Homeowners also argue that the closure plan did not address vibration and dust impacts to existing homes from dynamic compaction of the proposed stormwater detention pond and outlet pipe. Wiken Testimony. To the contrary, the Board finds that the closure plan contains detailed dust control measures, including watering, covering exposed landfill material at night with plastic sheeting, limiting vehicle speed onsite, and curtailing earthwork operations during dry, windy conditions. Ex. R-PGE-1, p. 000013-14. Moreover, the closure permit requires P&GE to follow air regulations and permitting requirements set by the Puget Sound Clean Air Agency. Ex. R-PGE-3, p. 000804. The Board also finds that vibration impacts would be minimal given that the existing home nearest the planned outlet pipe route is over 100 feet away according to the map scale, and the area to be compacted is 15 feet wide. Ex. R-PGE-1D, p. 000569.

50.

The Homeowners contend that the closure plan did not adequately address noise impacts by omitting decibel level triggers. Considering the closure plan's noise impact analysis and the fact that closure performance standards do not contain any reference to noise impacts, the Board finds and concludes that the closure plan sufficiently addresses noise impacts from closure construction to protect the health of both workers and nearby residences. The noise impact analysis considered projected decibel levels from construction activities, distance and number of residences, and Snohomish County noise standards to conclude that there is no threat to human

health. Ex. R-PGE-1M, p. 000770. The closure plan provides for a noise control plan that will contain noise control measures such as measuring noise levels at the property boundary, using quieter equipment, limiting use of back up beepers, and positioning equipment noise source away from property boundary. Ex. R-PGE-1, p. 000013-14.[16]

5. Groundwater/Leachate

51.

The Homeowners also raised issues with the adequacy of the closure plan and permit to protect groundwater. Groundwater below or adjacent to closed landfills becomes contaminated when upgradient groundwater or surface water infiltrates into waste, comes in contact with any contaminants present in the waste, leaches the contaminants, and the contaminated groundwater flows out of the landfill. Shuri Testimony; Ex. R-PGE-1M, p. 000758. The landfill regulations pertaining to groundwater require minimizing generation and escape of leachate. During the postclosure phase, the regulations require monitoring of groundwater, surface water, and leachate according to groundwater monitoring rules and an approved monitoring plan. WAC 173-350-400(3)(e)(i)(B); -400(6)(a)(ii), -400(7)(a)(ii), -500.

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[16] PG&E's offer of the following "more specific" condition as an amendment to the closure permit further limits noise impacts:

> Construction will conform to Snohomish Health District and Snohomish County regulations regarding air and noise pollution.

Applicant P&GE's Closing Brief at 15.

52.

The groundwater monitoring system design regulations require installing monitoring wells at appropriate locations and depths based on site characterization to achieve early detection of groundwater contaminants discharged from the landfill. These include upgradient wells to obtain background groundwater quality unaffected by landfill contaminants, and downgradient or compliance wells to represent groundwater quality at the point of compliance (location to determine whether groundwater quality standards are met). WAC 173-350-500(a)-(b).

53.

The closure plan's hydrogeology report contains the groundwater quality results from samples taken on three occasions (August 2009, February 2011, and April 2011) from three monitoring wells (MW-1, MW-2, MW-3) and two springs (SP-1, SP-2).[17] Ex. R-PGE-1B, pp. 000222-225, 000237. The results showed that samples for upgradient, background wells MW-1 and MW-3 exceeded standards for arsenic, chromium, iron, and manganese, which indicate that the natural quality of the groundwater in the area does not meet groundwater quality standards. Monitoring results from SP-1, collected from groundwater that discharges from directly beneath the landfill, indicate that the landfill has little impact on groundwater quality with the possible exception of semivolatile organic compounds detected in the sample. Ex. R-PGE-1B, p. 000227. Surface water samples were also taken in August 2009 from the two springs, and the results were

[17] Four monitoring wells were installed but MW-4 was dry. Groundwater is discharged through one of the springs, SP-1, located downgradient from the landfill. SP-1 daylights at the toe of the northeast slope from beneath the landfill debris. Ex. R-PGE-1B, p. 000222.

consistent with numerous past surface water sampling results generally showing no violations of surface water quality standards. R-PGE-1B, p. 000233.

54.

The Homeowners' primary contention is that the closure plan's approach to control leachate and protect groundwater is inadequate because it is based on improper site characterization. The Homeowners presented evidence of alleged leachate observed seeping from the toe of the northeast slope during a site visit, and the testimony of its groundwater expert, Ms. Stern, disputing the accuracy of some of the groundwater monitoring well results.

55.

As to the claimed leachate observed and photographed by Mr. Wiken and Mr. Davis during their site visit, the Respondents' experts testified that the oil sheen and orange colored water could be naturally occurring from iron bacteria and organic decomposition. Ex. A-11, p. 9;Straughn Testimony; Arndt Testimony; Metcalfe Testimony; Sondergaard Testimony. Mr. Straughn testified that he has often seen such water in Snohomish County, and that the Health District does not further investigate it regardless of where it is emitted from. Straughn Testimony. Mr. Sondergaard took a water sample a few feet from the alleged leachate, and the results did not reveal contaminants. Sondergaard Testimony. Considering the weight of the evidence, the Board finds that the Homeowners have not met their burden of proving that the oil sheen and orange colored water is leachate from the landfill and thus, evidence of improper site characterization.

56.

Ms. Stern opined that P&GE's failure to measure groundwater more frequently and at different times of the year could mean greater groundwater contact with the bottom of the waste pile and that more landfill leachate is being discharged. She also opined that the closure plan's hydrogeology report lacked sufficient information to properly characterize groundwater flow paths, and questioned whether wells MW-1 and MW-3 were located upgradient from the landfill waste. Ms. Stern claimed these shortcomings prevented an adequate characterization of background groundwater conditions as required by the landfill groundwater regulations.

57.

In contrast, Respondents' hydrogeologist and geologist experts, Mr. Koger and Mr. Sondergaard, testified that the closure plan's groundwater characterization and groundwater monitoring plan was adequate, and that MW-1 and MW-3 were located upgradient of the landfill. Koger Testimony; Sondergaard Testimony. Numerous test pit results near MW-1 and MW-3 revealed no waste, further demonstrating that they are upgradient. Koger Testimony; Ex. R-PGE-1B, pp. 000252, 000263, 000275-282. Mr. Koger and Mr. Sondergaard both testified that water discharging from the spring located at the toe of the northeast slope would be the best indicator of contaminant discharge from the landfill as it discharges from the base of the landfill. Koger Testimony; Sondergaard Testimony; Ex. R-PGE-1B, pp. 000223-225, 000227, 000235. It is undisputed that the results of water sample testing from SP-1 did not reveal contaminants exceeding Washington State Surface Water Quality Standards, ch. WAC 173-201A. Sondergaard Testimony; Ex. R-PGE-1B, pp. 000227, 000233.

58.

The Board finds and concludes that the closure plan's site characterization and postclosure groundwater monitoring meets the groundwater monitoring system design rules and the closure performance standard of minimizing generation and escape of leachate. In so determining, the Board gives weight to Ecology's conclusion that the closure plan's geology and hydrogeology characterization was adequate, and that the proposed groundwater monitoring system meets applicable rules. Ex. A-19, p. 001205-1206; *Port of Seattle*, 151 Wn.2d at 595. Ecology made its determination knowing that the bottom of the landfill waste is in contact with groundwater. Ex. A-19, p. 001205.

59.

The Board also finds that groundwater contamination risks will be alleviated by the proposed downgradient monitoring wells, MW-5 and MW-6, which will provide quarterly and more direct groundwater quality results. Exs. R-PGE-1M, p. 000759, R-PGE-1H, p. 000626. If results show exceedances of groundwater quality standards, the Health District can require more monitoring wells during the closure and postclosure phases. Sondergaard Testimony. Moreover, proposed grading will divert stormwater away from the landfill area, and the geomembrane cover systems and stormwater detention pond will decrease infiltration and improve groundwater quality. Shuri Testimony; Ex. A-19, p. 001205.

6. Stormwater

60.

The Homeowners identified deficiencies in the way the closure plan addresses stormwater management that they allege violate closure regulations. *See* WAC 173-350-400(3)(e)(i)(G) (prevent erosion, provide for management of run-on and runoff); -400(6)(a)(ii) (closing landfill in a manner that controls or minimizes escape of contaminated runoff). They presented the testimony of Ms. Saltanovitz, landfill stormwater control systems expert, who stated her concern of a heightened risk of runoff from steep slopes and/or uncovered landfill areas. Ex. A-33a. She also testified to the closure plan's lack of detail on how to control erosion during the closure construction phase and how the stormwater detention pond will be built. Saltanovitz Testimony.

61.

The closure plan provides for management of run-on and runoff in several ways. It diverts an existing stream (Stream 1) away from the landfill, grades the area around the landfill to prevent water running into the landfill, grades the cover system 1 area to channel stormwater to the detention pond, and provides for a conveyance system of an outlet pipe, catch basin, surface channels. Diversion berms will collect stormwater into the stormwater detention pond for discharge to the north of the landfill. Exs. R-PGE-1, pp. 000031-32, 000045-50, R-PGE-1D, p. 000569; Shuri Testimony. The closure plan and its construction quality assurance plan appendix provide the construction sequence for all closure activities, including construction of

the stormwater detention pond and other stormwater control features. Exs. R-PGE-1, pp.000060-64, R-PGE-1K.

62.

In addition to the stormwater flow control features above, the closure plan also addresses erosion and sedimentation control. During waste excavation and relocation, the closure plan provides for a temporary sediment pond in the same area as the proposed stormwater detention pond. P&GE has obtained coverage under the Construction Stormwater General Permit (CSGP) from Ecology. As required by the CSGP, P&GE will develop a stormwater pollution prevention plan pursuant to Ecology's Stormwater Management Manual for Western Washington and implement best management practices specified in the manual to prevent erosion and sedimentation. Exs. R-PGE-1, p. 000051, R-PGE-8. Furthermore, the closure permit is specifically conditioned on P&GE not discharging pollutants into waters of the State in violation of the federal Clean Water Act, state Water Pollution Control Act and implementing regulations, and the National Pollutant Discharge Elimination System (NPDES) administered by Ecology. The CSGP is an NPDES permit. Ex. R-PGE-3, p. 000805.

63.

Both Ms. Saltanovitz and Mr. Straughn testified that Snohomish County is the entity with jurisdiction to regulate the project's stormwater discharges through the LDA permits needed to develop the Bakerview plat. Straughn Testimony; Saltanovitz Testimony. Mr. Straughn testified that the Health District relies on the county to regulate landfill stormwater discharge through other permits, e.g. the LDA permits. Straughn Testimony.

64.

The Board finds and concludes that the provisions to control and manage stormwater run-on and runoff and prevent erosion and sedimentation in the closure plan and permit comply with the regulations at issue. The Board further finds that the county and other agencies with jurisdiction to regulate stormwater discharges have issued or will issue other required permits that will further ensure that stormwater run-on and runoff will not threaten human health and environment. The Health District appropriately relies on these agencies to determine the adequacy of the landfill's stormwater control systems. *Cf. The Puyallup Tribe of Indians v. City of Tacoma*, SHB No. 16-002, p. 42-43 (July 18, 2016).

7. Post Closure/Financial Assurance

65.

The Homeowners contend that the closure plan and permit fail to meet the financial assurance requirements for postclosure activities. The financial assurance regulations at issue require landfill owners or operators "to establish a financial assurance mechanism in accordance with WAC 173-350-600 that will accumulate funds equal to the closure and post-closure cost estimates over the life of the landfill." WAC 173-350-400(8)(b). In turn, WAC 173-350-600 generally requires certain specified financial instruments to fund closure and postclosure activities (including use of surety bond), and a written postclosure cost estimate of those activities. The cost estimate must be reviewed annually during the postclosure period and submitted to the Health District for approval. WAC 173-350-600(6)(c). The cost estimate must be adjusted annually and also submitted for Health District approval if factors affecting the cost

estimate have changed. *Id.* The closure permit also contains the required cost estimate adjustment directive. Ex. R-PGE-3, p. 000806.

66.

The Board finds and concludes that the closure plan satisfies all of the requirements above. Ex. R-PGE-1, p. 000064-67. It contains a postclosure operation plan that addresses operation, maintenance, inspection, monitoring, and repairs during the estimated 20-year postclosure period. The plan sets out the required actions, frequency, and timing for maintaining the landfill cap and monitoring for surface water, groundwater/leachate, and methane gas venting systems. Ex. R-PGE-1F, p. 000597-98. The plan also complies with the financial assurance requirements of WAC 173-350-400(8), -600(3)(c), and -600(5) by providing for a surety bond to fund postclosure activities, and a written cost estimate for postclosure activities. Ex. R-PGE-1F, p. 000600-601.

67.

The postclosure operation plan states that funding for postclosure activities will come from the associated Bakerview plat development. Once the plat is built, ongoing postclosure maintenance, monitoring, and repair will be transferred to a homeowners' association, which will own the closed landfill and open space tracts. Ex. R-PGE-1F, p. 000600.

68.

The Homeowners are concerned about shifting postclosure financial responsibility to a future homeowners' association that may not be financially capable of carrying out postclosure activities. Mr. Wiken opined that the postclosure operation plan's allotment of $26,000 for

annual monitoring and a $25,000 repair fund are inadequate, especially when a failed landfill cover could cost half a million dollars or more to repair. Wiken Testimony.

69.

Mr. Arndt, on the other hand, opined that the postclosure cost estimate was reasonable given the age and type of landfill at issue. Given the Board's determination that the closure plan and permit comply with the applicable postclosure regulations, and the Health District's continuous involvement in reviewing annual postclosure cost estimates, the Board finds and concludes that the closure plan and permit comply with the postclosure financial assurance regulations, notwithstanding the possibility of cover system failure.

70.

Any Conclusion of Law deemed to be a Finding of Fact is hereby adopted as such.

Based upon the foregoing Findings of Fact, the Board enters the following:

CONCLUSIONS OF LAW

Board Jurisdiction/Scope of Appeal (Issues 5, 8)

1.

The Board is an administrative agency and may exercise only the powers expressly granted to it by statute or necessarily implied from the power granted. *Rosemere Neighborhood Ass'n v. Clark County*, 170 Wn. App. 859, 873, 290 P.3d 142 (2012). The Board has jurisdiction to hear and decide appeals from decisions of local health departments granting or denying solid waste permits issued under ch. 70.95 RCW, including appeals by Ecology. RCW 43.21B.110(1)(e); WAC 371-08-315(2)(e). The scope and standard of review for this appeal are

de novo. WAC 371-08-485(1). The Homeowners have the burden of proving that the closure permit violates applicable regulations. WAC 371-08-485(3).

2.

Issue 8 questions whether the Board has jurisdiction over issues raised by the Homeowners. The Board has ruled that the statutory grant of jurisdiction under RCW 43.21B.110(1)(e) to the Board over appeals from decisions of local health department includes appeals by third parties such as the Homeowners. *See, e.g., Org. to Preserve Agricultural Lands v. Adams County Health Dist.*, PCHB No. 97-088, pp. 2-3 (Sept. 26, 1997); *Weyerhaeuser v. Tacoma-Pierce Co. Health Dept.*, PCHB No. 99-067, pp. 9-12 (Sept. 23, 1999). The Board therefore has jurisdiction over the Homeowners' appeal.

3.

Among other issues raised by the Respondents, Issue 5 asks whether some or all of the Homeowners' claims are barred by their failure to exhaust administrative remedies and/or appeal Ecology's June 1, 2018, letter decision to the Board. As noted in Finding of Fact #15, Ecology's letter stated that the closure permit and closure plan conformed with applicable law and the comprehensive solid waste management plan. The Health District did not file a dispositive motion on this issue, but instead argued in its prehearing brief and written closing argument that the Homeowners failed to exhaust administrative remedies or did not perfect their appeal by not appealing Ecology's letter decision. The Health District further argues that the Homeowners' failure to appeal the letter decision precludes them "from challenging anything within the scope of" the letter. Snohomish Health District's Pre-Hearing Brief at 12.

4.

The Board disagrees that failure to challenge Ecology's letter decision bars the Homeowners' issues and claims. Because the Board has jurisdiction over the Homeowners' appeal of the closure plan and permit, the Homeowners' issues challenging them are squarely before the Board. Moreover, contrary to the Health District's claim, the Board would not have had jurisdiction over an appeal of Ecology's letter decision under RCW 43.21B.110(1)(i). That statute grants the Board jurisdiction to hear and decide appeals from "[a]ny other decision by [Ecology] . . . which pursuant to law must be decided as an adjudicative proceeding under chapter 34.05 RCW [APA]." RCW 43.21B.110(i). "Adjudicative proceeding" under the APA is defined in relevant part as a "proceeding before an agency in which an opportunity for hearing before that agency is required by statute or constitutional right before or after the entry of an *order* by the agency." RCW 34.05.010(1) (emphasis added).[18] The Health District provides no authority that Ecology's letter decision is an "order," or that Ecology was required to provide for a hearing before or after issuing the letter. Issues 5 and 8 are therefore dismissed.

Compliance with Regulations (Issues 1, 3, 6, and 7)

5.

Issues 1, 3, 6, and 7 all challenge the closure plan and/or the permit as violating limited purpose landfill regulations. The applicable regulations in this case are mainly those relating to final closure system design in WAC 173-350-400(3)(e), closure requirements in WAC 173-350-

[18] The APA defines "order" as "a written statement of particular applicability that finally determines the legal rights, duties, privileges, immunities, or other legal interests of a specific person or persons." RCW 34.05.010(11)(a).

400(6), postclosure requirements in WAC 173-350-400(7), and financial assurance requirements in WAC 173-350-400(8).

6.

As stated, WAC 173-350-400(3)(e)(i) sets out performance standards that a closure system design must address. The performance standards are broadly stated and only require that the closure system design prevent, minimize, and address specified contaminants, or provide for mechanisms that prevent their release to the environment. WAC 173-350-400(3)(e)(i)(A)-(J). Based on the evidence presented, the Board concludes that the closure plan and permit address each of the performance standards with sufficient detail and clarity at this stage of the closure process. As discussed in the Findings of Fact, the closure plan addresses each potential path of release for landfill waste, contaminated groundwater and surface water, and landfill gas, and describes systems or activities that will prevent or minimize release of contamination. FF 21, 25-64.

7.

The relevant closure requirements in WAC 173-350-400(6) are in subsection (a) and (d) and (e). Subsection (a) provides that landfills "shall close in a manner that:"

> (i) Minimizes the need for further maintenance;
> (ii) Controls, minimizes, or eliminates threats to human health and the environment from post-closure escape of solid waste constituents, leachate, landfill gases, contaminated runoff, or waste decomposition products to the ground, groundwater, surface water, and the atmosphere; and
> (iii) Prepares the facility, or any portion thereof, for the post-closure period.

As discussed in the Findings of Fact, the closure plan and permit achieves all three objectives. Testimony of the Respondents' experts supports the Board's conclusion that the closure plan sufficiently described the activities and procedures to address the three objectives. FF 25-64.

8.

Subsection (d) of WAC 173-350-400(6) focuses on the information that a closure plan must include: (i) description of the final closure cover, installation methods, source of cover material, and a schedule for completing closure activities, (ii) projected time intervals to implement closure, (iii) description of activities and procedures that will be used to ensure compliance with subsection (a) through (g),[19] and (iv) closure cost estimates and projected fund withdrawals for closure costs. Subsection (e) requires the landfill owner to submit, for Health District review and approval, final engineering closure plans "in accordance with the approved closure plan and all approved amendments." WAC 173-350-400(6)(d). Testimony of Respondents' experts and the plain meaning of subsection (d) support the Board's conclusion that final, more detailed engineering plans are developed after the approval of a closure plan. FF 19-21. Based on the record, the Board concludes that the closure plan contains sufficient detail to comply with WAC 173-350-400(6)(d) and proceed to the final engineering plan phase where more refined engineering and construction details are required under WAC 173-350-400(e). FF 25-69.

[19] The rest of WAC 173-350-400(6) subsections mostly relate to procedural aspects of the closure plan that are not at issue here.

9.

The Board also concludes that the closure plan and permit comply with the postclosure and financial assurance requirements in WAC 173-350-400(7) and -400(8), respectively. FF 65-69.

10.

Considering the whole record, the Board concludes that the Homeowners have not met their burden to prove that either the closure plan or permit violate applicable landfill closure regulations.

11.

Any Finding of Fact deemed a Conclusion of Law is hereby adopted as such.

Having so found and concluded, the Board enters the following:

ORDER

The Snohomish Health District's Solid Waste Facility Permit # SW-027 authorizing closure of the Go East Woodwaste Landfill facility according to the approved Go East Landfill Closure Plan is REMANDED to the Snohomish Health District to be reissued with the conditions offered by P&GE LLC.

SO ORDERED this 5th day of June 2019.

POLLUTION CONTROL HEARINGS BOARD

KAY M. BROWN, Board Chair

JOAN M. MARCHIORO, Member

NEIL L. WISE, Member

CAROLINA SUN-WIDROW, Presiding
Administrative Appeals Judge