



Environmental Appeal Board

APPEAL NO. 99-HEA-04

In the matter of an appeal under section 8 of the *Health Act*, R.S.B.C. 1996, c.179.

BETWEEN: Abdul M. Mousa **APPELLANT**

AND: Environmental Health Officer **RESPONDENT**

BEFORE: A Panel of the Environmental Appeal Board
Jane Luke, Panel Chair
Sheila Bull, Member
Don Cummings, Member

DATE OF HEARING: May 25 and June 18, 1999
concluded in writing July 23, 1999

PLACE OF HEARING: Vancouver, B.C. and Surrey, B.C.

APPEARING: For the Appellant: Abdul M. Mousa
For the Respondent: Steven Chan

APPEAL

This is an appeal by Abdul M. Mousa of a January 28, 1999, decision of R.B. Sears, Environmental Health Officer ("EHO") with the Simon Fraser Health Region (the "SFHR"). The EHO refused to issue a permit for the repair of Mr. Mousa's pre-1985 sewage disposal system because the existing wooden septic tank is substandard in size and design, and the water table is less than four feet below the ground surface.

The Environmental Appeal Board has the authority to hear this appeal under section 11 of the *Environment Management Act* and section 8(4) of the *Health Act*. The Environmental Appeal Board, or a panel of it, after hearing all the evidence, may decide to vary, rescind or confirm the decision of the EHO.

The Appellant seeks an order rescinding the decision of the EHO.

BACKGROUND

The property at issue in this appeal is located in the southern area of the City of Burnaby in a flat, low-lying area known as the Big Bend. The municipal address is 7872 Willard Street, and the legal description is Lot 20, Block 4, Plan 1034, District Lot 173, 4600-6223 (the "Property"). The Property is located at the northwest corner of Willard Street (running generally east/west) and 10th Avenue (running generally north/south).

The Property is within the Fraser River floodplain, and is virtually flat, although the land rises in elevation immediately north of the property. The water table in the area is high – particularly during the winter – but dykes and pumps protect the area from flooding. Properties in the Big Bend area typically have peat soils and high seasonal water tables. Big Bend is one of the few areas left in Burnaby that is not serviced by sanitary sewers. The city has indicated that it has no plans to extend the sanitary sewers to the area within the next five years.

Sewage disposal from the Property is by means of a pre-1985 on-site conventional septic tank system. The Greater Vancouver Regional District (“GVRD”) provides water to the Property.

The Appellant is a joint owner of the Property, on which is located a single, two-story house that the parties agree has been converted into what is now effectively a duplex. The house is rented out to two families.

On August 19 and October 2, 1997, the SFHR received health complaints from the tenants in the duplex on the Property. The tenants believed that their problems were related to either the Property’s septic system or its water supply. In response to the complaints, the EHO visited the property, but found no problems with either the water supply or the conventional septic tank system. During his visit, the EHO tested the sewage system by injecting dye into the tank, and found its performance to be satisfactory.

On January 27, 1998, another tenant complained to the SFHR about sewage odours. On January 28, 1998, the EHO re-tested the sewage system. He again injected dye into the septic tank, but this time found that it was malfunctioning, as the dye was discharging into a drainage ditch alongside Willard Street. In addition, the EHO found that part of the absorption field had collapsed and the drainage pipe was exposed. Another test of the system conducted with the Appellant present on February 18, 1998, also failed.

On February 23, 1998, the EHO wrote to the Appellant advising him that the Property was, “found to be in non-compliance with the *Sewage Disposal Regulation*.” He ordered the Appellant to:

1. Submit an Application to Construct or Repair a Sewage Disposal System before **March 31, 1998**, including certified engineering plans and an engineer’s stamp for any percolation rates, and
2. Stop the flow of sewage into the failed sewage disposal field and provide a temporary method of sewage removal which will be satisfactory to this department before **March 31, 1998**.

On March 23, 1998, the Appellant wrote to the EHO advising him that he had repaired a malfunctioning toilet in the house, as well as the roof drainage and property drainage systems. In light of these repairs, the Appellant asked for the system to be re-tested.

On March 26, 1998, the EHO conducted another test of the septic system (the "March 26 test"). The test involved pouring dye into the septic tank and flushing the system with water for a period of twenty minutes. Based on the results of the March 26 test, the EHO deemed the system to have failed again. The EHO verbally extended to April 30, 1998, the Appellant's deadline to comply with the February 23 directive.

On April 6, 1998, the Appellant made application to replace only the absorption field, but not the septic tank – an effort he states was an attempt to "meet the EHO halfway." In the application, the Appellant made the following statements about the Property and the house on the Property:

- the house is a single family dwelling;
- the number of bedrooms total four;
- the estimated sewage flow is 375 gallons per day;
- the total length of drainage pipe is 350 feet;
- the type of drainage pipe is PVC;
- the inside diameter of the drainage pipe is three inches;
- the separation of the Property from 10th Avenue is equal to, or greater than, 15 feet;
- the depth to groundwater in two test holes is 12 and 18 inches, and
- the average percolation rate is 13.5 minutes per inch (as determined by the Appellant).

In his April 6 application, the Appellant did not specify the volume of the wooden septic tank on the Property.

By letter to the EHO dated April 15, 1998, the Appellant asserted that there exists "black fine grain soil" to a depth of two feet on the Property. The Appellant claimed that although the water table on the Property was high, fine grain black soil has more of a "scouring effect" than would four feet of a more permeable coarse grain soil lying above the water table. Thus, the Appellant concluded that the requirement for four feet of soil above the water table was not applicable to the Property, and asked the EHO to provide him with scientific studies showing otherwise.

On April 17, 1998, the EHO conducted a site inspection and observed the groundwater table in the test holes used in the April 6, 1998, application to be at 19 inches at test hole #1 and 17 inches in test hole #2.

On April 17, 1998, the EHO returned the Appellant's application requesting more information. The EHO also confirmed that the date for permanently capping all sanitary discharge pipes and ceasing all discharges of domestic sewage had been extended from March 31 to April 30, 1998.

On April 28, 1998, the Appellant wrote to the EHO asserting that he was not receiving information in a timely manner, and requesting a further extension of the deadline. On April 29, 1998, the EHO agreed to extend the deadline to May 15, 1998.

On April 30, 1998, the EHO rejected the Appellant's April 6 application because it did not comply with the following sections of the *Sewage Disposal Regulation*, B.C. Reg. 411/85 (the "*Regulation*"):

Schedule 2

Conventional Septic Tank Systems

1. Septic tank systems are limited to lots where an impervious layer of soil or bedrock, or the groundwater table, is greater than 1.2 m (4 ft.) below the ground before it has been artificially disturbed by placement of fill, excavation or otherwise.

...

3. A septic tank shall be water tight and constructed of concrete or other corrosive-resistant material. A medical health officer or public health inspector may require a water test.

...

13. The minimum liquid capacity of a septic tank for a single family dwelling shall be

...

(c) 4 bedroom dwelling – 3409/ (750 imperial gal.).

On May 1, 1998, the Appellant wrote to the EHO questioning the requirement for such a large septic tank based on sewage flow data he had obtained from the GVRD and the City of New Westminster. In his letter, the Appellant stated that the house did not have four bedrooms, but two. He maintained that the actual sewage flow based on the intended occupancy of the house should be 269 gallons per day, and not 750 gallons per day as set out in the *Regulation*. This, he stated, removed "the capacity of the septic tank as a factor" in consideration of his application.

The Appellant also referred to his letter dated April 15, 1998, in which he requested scientific evidence to refute his claim that two feet of dense soil has a higher scouring effect than four feet of coarse grained soil. Without such evidence, he

claimed, "it would be unreasonable to put me through a hardship just to enforce the wording of a regulation." He went on to say, "my repair proposal will satisfy the objectives of the *Regulation* that sewage does not reach the surface of the land or discharge into a surface body of fresh water."

On May 5, 1998, the EHO, taking into account the Appellant's revision from four to two bedrooms, again rejected the Appellant's April 6 application on the grounds that it did not comply with sections 1 and 3 of Schedule 2 of the *Regulation* as discussed above.

Sometime during May 1998, the Appellant constructed a replacement absorption field without having first obtained a permit to do so.

On June 17, 1998, Tim Shum, Director of the SFHR, wrote to the Appellant. Mr. Shum stated that neither the Ministry of Health ("MOH") nor the SFHR has a standard procedure for conducting a dye test on a septic system because of the variable factors such as weather conditions, soil conditions, water tables, hydraulic loading, and slope of land.

In the same letter, Mr. Shum pointed out that the Appellant had contravened the *Regulation* by constructing a sewage disposal system without a permit. He urged the Appellant to meet with the SFHR staff to determine whether he had complied with the directive to discontinue the flow of sewage. He also warned the Appellant that any further delay on his part would leave the SFHR, "with no other alternative but to proceed with appropriate enforcement action(s)."

Mr. Shum also wrote, "the [SFHR] does not allow any deviations from the minimum 4 feet soil depth to groundwater table requirement."

On June 22, 1998, the Appellant wrote to the President of the SFHR expressing his concerns about the lack of a standard procedure for conducting dye tests. He complained that for the purposes of the March 26 test, the EHO had surcharged the septic system by continuously running water through the tank, and that this procedure did not reflect normal loading. Further, he complained that the [EHO] had used the tip of his boot to squeeze the soil over a previously identified weak [sic] spot (the one tile was caved in and partially exposed) to force water to rise to the surface."

The Appellant also questioned the requirement for a minimum of 1.2 metres of soil above the groundwater table. He pointed out that most jurisdictions require only 24 inches, and that historically the requirement in British Columbia had been 18 inches.

Finally, in defending his installation of a new absorption field without a permit, the Appellant claimed that he had constructed a new drainage ditch along the northern boundary of the Property to intercept seepage and thereby lower the groundwater table. The Appellant stated that these repairs were not intended to violate the *Regulation*, but were motivated by the Appellant's belief that his repair proposal

satisfied the intent of the *Act* and *Regulation*. Moreover, the Appellant claimed that a replacement absorption field had to be available should his proposal be approved and his failed system immediately shut down. He claimed that he would incur financial hardship if he had to vacate his tenants until a new field was constructed.

On July 20, 1998, the Appellant submitted a revised Application to Construct or Repair a Sewage Disposal System, showing the newly constructed absorption field. In the application, the Appellant made the following changes to his April 6, 1998, application:

- the number of bedrooms was reduced from four to three (in his May 1, 1998, letter he had indicated that there were just two bedrooms);
- the estimated sewage flow was reduced from 375 gallons per day to 269 gallons per day;
- the volume of the septic tank was shown to measure approximately 540 gallons (4 feet by 5 feet by 52 inches deep);
- the total length of drainage pipe was reduced from 350 feet to 250 feet;
- the inside diameter of the pipe was increased from three inches to four inches;
- the separation from 10th Avenue was increased from equal to, or greater than, 15 feet, to 36 feet;
- the depth to groundwater in the two test holes was increased from 12 and 18 inches to greater than three feet in both test holes;
- the average percolation rate remained the same at 13.5 minutes per inch, and
- the distance of the proposed disposal field from water lines was shown to be more than 50 feet.

On July 27 and September 3, 1998, the SFHR carried out site inspections of the Property.

On October 8, 1998, the Appellant wrote to the EHO advising him that the drainage ditch alongside the northern boundary of the property had been extended, further improving the drainage of his property.

On November 10, 1998, the EHO wrote to the Appellant advising him that his application of July 20, 1998:

was found unacceptable as it fails to demonstrate that sewage will be adequately treated and disposed of in a manner which will not pose a

health hazard. In general, the proposed disposal field area is located in an area with peat soils with a year round high water table and in close proximity to existing drainage courses.

The EHO wrote that the application contravened sections 1 and 3 of Schedule 2 of the *Regulation* discussed above – namely that the depth to groundwater is less than 1.2 metres (four feet), and the septic tank is substandard in size and design. The Appellant's proposed absorption field also contravened section 18(c) of Schedule 2 of the *Regulation* which requires that absorption fields shall be located not less than 3 metres (10 feet) from an interceptor drain.

The EHO included two additional reasons for rejecting the application:

1. The proposed setbacks for the disposal field from the 10th Avenue watercourse and the Willard Street ditch were inadequate to safeguard the receiving environment from the sewage effluent.
2. The septic tank and disposal field appeared to be under-designed for the number of bedrooms in the duplex.

The EHO advised the Appellant to retain the assistance of a qualified engineer familiar with on-site sewage design, and resubmit a new application to address the identified constraints.

On December 15, 1998, the Appellant wrote in response to the EHO's November 10, 1998, letter to state that the EHO's inclusion of the two additional issues "clouds the matter." He indicated that he was prepared to replace a "5-10 ft long section of the southern discharge pipe by a non-perforated section" to satisfy section 18(c) of Schedule 2 of the *Regulation*. He also argued that neither the *Act* nor the *Regulation* addresses the issue of appropriate setbacks from 10th Avenue and Willard Street.

On that day, the Appellant also submitted a third Application to Construct or Repair a Sewage Disposal System. In this application, the Appellant made the following revisions to his July 20, 1998, application:

- the total length of drainage pipe was increased from 250 feet to 290 feet, and
- the distance of the proposed disposal field from water lines increased from more than 50 feet to approximately 70 feet.

By letter dated January 28, 1999, the EHO once again rejected the Appellant's application. Upon reviewing the application pursuant to section 7(2) of the *Regulation* (which pertains to pre-1985 septic systems), the EHO found that the application failed to address the treatment and disposal concerns posed by the existing wooden septic tank, and the water table which is less than 4 feet below the ground surface.

The EHO also attached a letter from a regional public health engineer, Mr. Don Miller, in which Mr. Miller laid out three primary concerns about sewage disposal on the Property. Mr. Miller stated that secondary treatment of the sewage is required because the groundwater table is high and "the sensitivity of the site for breakout [into the 10th Avenue ditch] is increased." Mr. Miller also advised that the existing wooden septic tank must be replaced, and that the absorption field must be raised above the groundwater table.

On February 22, 1999, the Appellant appealed the EHO's January 28, 1998, decision to the Board. On March 24, 1999, the Appellant wrote to advise the EHO that he would not be permitted on the Property to conduct soil tests in the future.

RELEVANT LEGISLATION

In addition to sections 1, 3, 13 and 18 of Schedule 2 of the *Regulation*, set out above, sections 3(1) and 7(2) of the *Regulation* are relevant to this appeal:

Permits to construct systems

- 3** (1) No person shall construct, install, alter or repair a sewage disposal system or cause it to be constructed, installed, altered or repaired unless he holds a permit issued under this section or section 3.01.

Alternate methods

- 7** (2) Where a sewage disposal system, constructed or installed prior to December 20, 1985 is in need of repair or alteration and the appropriate work cannot reasonably be effected in accordance with this regulation, the medical health officer or public health inspector may issue a permit to repair or alter under section 3 if the sewage disposal system, when repaired or altered in accordance with the conditions contained in the permit, will not constitute a health hazard.

ISSUES

The primary issue raised in this appeal is whether the proposed sewage disposal system when repaired will constitute a health hazard. In addition, the Appellant has raised the issues of whether the March 26 dye test was fair.

At the outset of the appeal hearing, the Appellant also questioned whether the Environmental Appeal Board has an inherent bias towards development projects. The Panel will address this question of bias first.

DISCUSSION AND ANALYSIS

- 1. Whether the Environmental Appeal Board has an inherent bias towards development projects.**

At the hearing, the Appellant suggested that:

any one who has any little development project feels his case prejudiced when facing environmentalists. Also, there is an impression that referring a health issue to an “environmental” board by [itself] prejudices the case, especially that the referral was recommended by Mr. Chan [who is appearing for the Respondent]....

However, the Appellant offered no specific evidence to suggest that there is a reasonable apprehension of bias on the part of any members of this Panel.

The test for bias is set out in *Committee for Justice and Liberty v. National Energy Board*, [1978]1S.C.R.369, at p. 394:

[w]hat would an informed person, viewing the matter realistically and practically – and having thought the matter through – conclude. Would he think that it is more likely than not that [the decision-maker], whether or not unconsciously, would not decide fairly.

The standards for the reasonable apprehension of bias may vary depending on the context and the type of function performed by the tribunal involved. The context is that the Environmental Appeal Board is an independent tribunal that is required to hear appeals from six provincial statutes, one of which is the *Health Act*.

The role and function of the Board is set out in section 8(5) of the *Health Act* and section 11 of the *Environmental Management Act*. The purpose of the Environmental Appeal Board is to provide a neutral, independent forum to hear appeals from administrative decisions made by certain government agencies. Powers of decision are conferred upon the Board to provide an expeditious and fair method of resolving a variety of matters. The members are appointed by Order in Council to the Environmental Appeal Board. The Panel hearing an appeal has no prior knowledge of the appeal, except as it is able to discern from the materials supplied by the parties to the appeal.

The members of the Board represent diverse business and technical experience, and have a variety of perspectives.

Although he asserts that the referral of a health issue to an “environmental board” will prejudice his case, the Appellant has not submitted evidence to suggest a reasonable apprehension of bias exists. Without any such evidence, the Panel rejects the Appellant’s allegation of bias.

2. Whether the dye test of March 26, 1998 was fair.

The Appellant maintains that the EHO did not conduct the March 26 dye test fairly.

The Appellant submits that neither the SFHR nor MOH has an established procedure for carrying out dye tests. The Appellant argues that had the dye been simply flushed into the system, without overloading the system with a continuous flow of

water, dye would not have surfaced on the property or in the ditch alongside Willard Street.

Rather, the Appellant claims the test was conducted:

... by pouring an amount of the dye into a sump which collects sewage from the basement after which it is pumped to the septic tank which is located a few feet away. Water was added by connecting a garden hose from the laundry tub to the sump. Although the test was being done during the season when the groundwater table was high and the house was fully occupied and hence the septic system was already carrying its full load.... [The Inspector] opened the faucet FULL BLAST and kept it running [for a period of 25 minutes].

In a letter dated April 29, 1998, to the Appellant, the EHO claimed dye was introduced into the system and water run into it for a period of ten minutes. In his testimony, he corrected this to twenty minutes. The EHO's evidence was that the actual volume of water flushed into the system was in the range of 85 to 90 imperial gallons. This, he claims, is a very small amount when compared to what the system must accommodate.

The EHO testified that upon completion of the test, dye was visible on the surface of the ground from a distance of ten feet. He also testified that several feet of distribution pipe had collapsed.

Mr. Shum, of the SFHR, in his June 17, 1998, letter admitted that neither the SFHR nor MOH has a standard procedure for conducting a dye test on a septic system. The reasons for this, according to Mr. Shum, are the varying factors such as weather conditions, soil conditions, water tables, hydraulic loading, slope of the land – all of which must be taken into consideration on a case-by-case basis.

The Panel accepts the EHO's evidence that the actual volume of water flushed into the system was in the range of 85 to 90 imperial gallons. If the test had been run for 25 minutes, as the Appellant claims, the volume of water would be approximately 125 imperial gallons (based on a five gallon per minute flow commonly attributed to a garden hose). The parties agree that the house is a duplex with two bathrooms. Based on this, the Panel finds that it is reasonable to assume that each bathroom has a bathtub, and that both tubs could be drained simultaneously. Conventional bathtubs hold approximately 35 imperial gallons, and, therefore, if both drained simultaneously, approximately 70 imperial gallons could be flushed into the sewage disposal system. It is also reasonable to assume a margin of safety is built into the flows set out in the *Regulation* – good engineering practice would dictate such a requirement.

The Panel finds that the test volume, being less than double the combined volume of two bathtubs, should be well within that margin of safety and not unfairly overload the system. Consequently, the Panel does not accept the Appellant's argument that the March 26 test was unfair based on the amount of water that was

flushed through the system. The Panel also accepts that the presence of dye in the effluent during the March 26 test is a strong indicator that untreated effluent is escaping into the environment.

The Appellant also says that the EHO "forced the failure" of the system by using the toe of his boot to squeeze the soil around the end of the partially exposed tile where it joins another. The Appellant says, "of course this caused some water to appear above it." On the balance of probabilities, without any evidence other than the testimony offered during the course of this appeal, the Panel accepts the EHO's claim that the March 26 test failed under a normal load scenario. The Panel finds the EHO did not force the effluent to surface.

3. Whether the sewage disposal system when repaired will constitute a health hazard.

The issue before the Panel is the application of section 7(2) of the Sewage Disposal Regulations to an application for repairs to a sewage disposal system. The parties state the sewage disposal system was constructed or installed prior to 1985 and is now in need of repair. Section 7(2) allows the EHO to issue a permit to repair or alter a sewage disposal system, constructed or installed prior to 1985, where the repairs can not meet the requirements of the Regulations, if the resulting repaired system will not constitute a health hazard.

The Appellant submits that the EHO improperly exercised his discretion in refusing to issue the Appellant a permit to repair according to the terms outlined in his permit application. In particular, the Appellant says the EHO improperly required the depth to the groundwater table meet the 4-foot (1.2 metre) requirement as set out in section 1 of Schedule 2 of the Regulation.

The Appellant notes that the proposed new septic field meets the requirements of the *Regulation* regarding length of drainage pipe, diameter of pipe, and design of trench. He says that the proposed new field also meets the requirements regarding the separations to all objects in the vicinity, adding that there are no neighbours in the immediate vicinity of the septic field. The Appellant also says that there are no concerns regarding risk of contamination to any source of domestic water because all houses in Burnaby are supplied with water by the GVRD.

The Appellant maintains that the groundwater level has dropped since he installed the interceptor ditch along the north side of the property. In his July 20, 1998, application and his December 18, 1998, application for a permit, he shows the depth to the water table as being greater than three feet, rather than 12 inches to 18 inches as stated in his April 6, 1998, application.

The Appellant submits that the septic tank on the Property, which he does not propose to replace, is still in good condition, although it does not meet today's standards that are more stringent than those which applied when the tank was constructed.

The Appellant notes that the EHO has suggested that appropriate repair of the system would involve the installation of a package sewage treatment plant plus a raised-mound septic field. The Appellant estimates that the capital cost associated with such repairs is about \$20,000. Coupled with the associated loss in rent, the total cost of the new septic system as envisioned by the EHO would be upwards of \$25,000.

The Appellant says that this cost is unreasonable given that the house on the Property is old, its assessed value is only \$15,000, and its remaining useful life is only about five years. He also points out that hook-up to the municipal sewer is expected to be possible within about five years. The Appellant notes that even if a connection to the municipal sewer system does not become possible within the next five years, and it therefore becomes necessary to use a septic system for the new house (which he expects will be built by that time), the septic system for that new house would have to be brand new to accommodate the demands of the new house.

The EHO says that his decision to reject the Appellant's application was made after careful consideration of all of the relevant factors.

First, the EHO submits that the Appellant's application proposed to retain the existing wooden septic tank. The EHO notes that the existing wooden septic tank is questionable in age, design, water tightness, and for safety considerations. Moreover, he points out that the stated capacity of 540 gallons is less than the 600-gallon capacity required in the *Regulation* for a 3 bedroom single family dwelling. The EHO also points out that the dwelling in question is being rented out to two families with combined flows which would exceed that of a 3 bedroom single family dwelling.

Second, the EHO notes that the Appellant's application proposed to install 290 feet of new conventional sewage absorption field dug directly into the peat soils for the full depth of the trench. The EHO argues that peat soils are not ideal soils into which to install sewage disposal systems due to slow percolation rates, poor weight bearing characteristics, and the presence of very high water tables. The EHO expresses concern that the installation of the conventional absorption field into native peat soils will put the bottom of the trench directly into the winter water table. He notes that it is critical that there be adequate vertical separation between the bottom of the absorption sewage trench or bed, and the water table, for effective bacteria and virus removal.

The EHO points out that the presence of a high water table was acknowledged by the Appellant's observation test hole description, dated April 6, 1998, which indicated groundwater at 12 inches from the ground surface in observation hole #1, and 18 inches from the surface in observation hole #2. A site inspection of the Property by the EHO on April 17, 1998, determined the water table to be 19 inches from the surface in observation hole #1, and 17 inches in hole #2.

The EHO also expresses some doubt that the interceptor ditch installed along the north end of the Property has lowered the water table in the relevant area to greater than 36 inches. The EHO says that public health officials have been unable to confirm the effect of the ditch on the depth to the winter water table, but notes generally that drainage ditches on flat sites such as this have limited success in lowering the water table without providing a breakout point in the process. The EHO adds that monitoring of the site has been difficult as the Appellant has restricted access to the Property.

In addition, the EHO expresses concern about the protection of surface waters that flow on the sides of the Property.

The EHO notes that other sewage disposal systems in the immediate vicinity of the Property have utilized alternate systems such as package treatment plants with raised mounds where similar soil conditions, slow percolation rates, and high water tables have been identified.

The EHO points out the City of Burnaby in a letter dated March 22, 1999, stated “[a]t the present time, the City has not identified the replacement program as a priority within the next five year program.”

On review of all of the evidence, the Panel is satisfied that the proposed system will not protect the public health as is required under section 7 (2) of the *Regulation*. Specifically, the Panel finds that the existing wooden septic tank does not meet present standards and is substandard in capacity. The capacity is linked to the number of bedrooms, and the Panel notes the Appellant has listed in his applications for permits the number of bedrooms as four, two, and three. It is undersized for a three-bedroom house. Additionally, due its age and construction, it is not unlikely that the tank leaks.

The Panel is also concerned that the proposed absorption field will not effectively remove contaminants such as coliphage virus and coliform bacteria prior to their introduction into the water table. The Panel notes that there is some uncertainty from the evidence about the true separation of the absorption field from the water table. The Appellant has submitted that the depth to the water table is 12 inches and 18 inches in the two observation holes he dug for his April 6, 1998, application for a permit. He submitted that he subsequently constructed an interceptor drain along the north end of the property that has lowered the water table to greater than 36 inches in the relevant areas.

The EHO advises that the bottom of the trench of the proposed absorption field will be in direct contact with the water table. Additionally, the Appellant has refused to allow the EHO onto his property to confirm the existing depth to the water table. The Panel accepts that a minimum depth of unsaturated soil is necessary to treat the effluent. In this case, the Panel is not convinced that a groundwater table that may be as high as 12 inches below the ground surface is adequate to treat the effluent prior to its introduction into the water table. The Panel accepts that horizontal flow of untreated sewage will occur, posing a health hazard should it

break out in a roadside ditch. The Panel is concerned whether the proposed system will protect surface waters that flow on the sides of the property. The Appellant argued that the quality of water in the ditches was so poor, that it is unsafe even without seepage of untreated sewage from his septic field. The EHO has stated in the written closing submissions the "protection of surface waters in residential areas is paramount to prevent the exposure of children and animals to viral or bacterial pathogens." The Panel notes that on January 28, 1998, the EHO observed a break out in a roadside ditch. The Panel finds that the possibility of discharge of improperly treated effluent into surface waters in an urban centre is sufficient to warrant concern about the health hazard.

The Panel recognizes that "what is called for is a balancing of probabilities and a scale of protection reasonably related to the nature of the threat." (see *Christina Lake Development Ltd. v. British Columbia (Ministry of Health, Director)* (1996), 19 B.C.L.R. (3d) 47 (BCCA)) In this case, the Panel is satisfied, on a balance of probabilities, that the evidence shows that the sewage disposal system, repaired as outlined in the December 18, 1998, application, will constitute a health hazard.

DECISION

In making its decision, the Panel of the Environmental Appeal Board has carefully considered all relevant documents and all evidence and arguments made during the hearing, whether or not they have been specifically reiterated here.

On the evidence presented, the Panel upholds the EHO's decision to reject of the Appellant's application for a permit to repair a pre-1985 sewage disposal system.

Don Cummings, Panel Member
Environmental Appeal Board

October 14, 1999