BRITISH COLUMBIA

# Environmental Appeal Board

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## APPEAL NO. 2002-HEA-005

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

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| **BETWEEN:** | Daryl Youlden | **APPELLANT** |
| **AND:** | Environmental Health Officer | **RESPONDENT** |
| **BEFORE:** | A Panel of the Environmental Appeal Board<br>Alan Andison, Chair | |
| **DATE OF HEARING:** | September 24, 2002 | |
| **PLACE OF HEARING:** | Victoria, B.C. | |
| **APPEARING:** | For the Appellant: Daryl Youlden<br>For the Respondent: Glen Smith | |

### APPEAL

This is an appeal against the February 14, 2002, decision of Gerald Acorn, an Environmental Health Officer (the "EHO") with the Central Vancouver Island Health Region, Vancouver Island Health Authority, to reject an application for a permit to construct a sewage disposal system on Lot 3, Section 8, Range 3, Plan 8313, Cowichan District (2047 Cowichan Bay Road).

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 Board, or a panel of the Board, may vary, rescind, or confirm the decision of the EHO.

The Appellant seeks an order for the issuance of a sewage disposal permit.

### BACKGROUND

The subject property is located on Cowichan Bay, which is on the east coast of Vancouver Island, B.C. The property is rectangular in shape, approximately 90 feet by 300 feet, slopes towards the ocean, and has homes on either side of it. The property is bounded by Cowichan Bay Road along the south side, and Cowichan Bay along the north side. The property slopes down steeply (greater than 30 percent slope) from Cowichan Bay Road, and then becomes relatively flat as it extends

towards the shore of Cowichan Bay. A domestic well is located on the southern portion of the property, near the proposed house site.

CQ Enterprises Ltd. owns the property and the adjacent Lot 4, east of the property. Mr. Youlden is one of the principals of CQ Enterprises Ltd. He proposes to build a three-bedroom home on the property.

On August 13, 2001, Mr. Youlden filed an application for a permit to construct a conventional septic tank system on the property. The proposed system would consist of a septic tank with approximately 225 feet of pipe to distribute effluent to the disposal field. The disposal field is to be located on the lower, flat portion of the property. In preparing the permit application, Mr. Youlden had a contractor dig several test holes on the property. Mr. Youlden then picked two of the test holes, and recorded his observations of the depth of soil above the water table or an impermeable layer.

The permit application states that there are over 4 feet of soil at the proposed site of the disposal field, and that the depth to the water table is less than 4 feet (37 inches) in one test hole. However, at the hearing before the Panel, Mr. Youlden acknowledged that he found 4 feet of suitable soil in one test, and only 33 inches of suitable soil in a second test hole. The application also indicated that the proposed disposal field would be 100 feet from the well on the property, and 110 feet from a well on a neighbouring property.

Between mid-August 2001 and mid-January 2002, the EHO visited the property a number of times and noted his observations of the soil depth and the water level in the test holes.

On February 14, 2002, the EHO rejected the permit application. In his rejection letter he states:

> I conducted an investigation over the past several months for the proposed sewage disposal system… My findings are as follows:
>
> 1) There is insufficient depth of soil available to construct a sewage disposal system. You have indicated that there was over four feet.
>
> 2) During the wet season there was high water in the test pits and percolation holes. The water ranged from eleven inches to eighteen inches from the surface.
>
> 3) There is insufficient area to construct a sewage disposal system.
>
> 4) The distance from the high water mark and the proposed sewage disposal field is not sufficient to protect public health. In this case I believe that a setback of one hundred feet is required.
>
> In view of the above constraints I have no alternative but to reject your application.

The decision to reject the application was appealed to the Board on March 1, 2002.

## ISSUE

The only issue is whether the EHO's refusal to issue a permit is reasonable in the circumstances.

## RELEVANT LEGISLATION

The *Sewage Disposal Regulation*, B.C. Reg. 411/85 (the "*Regulation*"), sets out the general permitting sections.

### 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…

(3) No permit shall be issued under this section

(a) in the case of construction or installation, until site investigation tests set out in or required by Schedule 1 have been carried out to the satisfaction of the medical health officer or public health inspector, and either of them is satisfied that, having regard to the provisions of that schedule, the construction, installation and ultimate use of the system will not contravene the Act or this regulation, and

…

### Standards for systems

**6** Subject to section 7, no sewage disposal system constructed after the date of this regulation which involves the use of…a package treatment plant is permitted unless the system conforms with the standards of construction, capacity, design, installation, location, absorption, operation and use set out

(a) for conventional septic tank systems, in Schedule 2,

…

### Alternate methods

**7** (1) Where a medical health officer or public health inspector is satisfied that it is impossible for a person to comply with

(a) in the case of a conventional septic tank system, sections 1, 16 or 22 of Schedule 2,

…

but that the person can comply with all other provisions of the appropriate schedule, he may issue a permit to construct under section 3, containing conditions that he considers appropriate to meet the omitted standards having regard to safeguarding public health.

**Schedule 2**

**Conventional Septic Tank Systems**

**1** Septic tank systems are limited to lots where an impervious layer of soil or bedrock, or the ground water 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.

...

**18** An absorption field shall be located not less than

(a) 3 m [10 ft.] from a building,

(b) 3 m [10 ft.] from a parcel boundary,

(c) 3 m [10 ft.] from an interceptor drain,

(d) 30.5 m [100 ft.] from a source of domestic water,

(e) 30 m [100 ft.] from the high water mark, and

...

High water mark is defined in section 1(1) of the *Regulation*:

**"high water mark"** means a point on the shoreline which corresponds

(a) for a controlled lake, to the highest water level within the normal operating range for that lake, and

(b) for any other body of nontidal water, to the average highest water level calculated from measurements taken over a sufficient number of years to enable a fair and reasonable estimate;

**Jurisdiction of local board**

**8** A local board has jurisdiction to control discharges of effluent to tidal water, and may, with the approval of the Provincial health officer, by order

(a) fix or set minimum distances which must exist between high water mark and any part of a sewage disposal system, and

(b) prohibit discharges to tidal water in circumstances where discharge may constitute a health hazard.

## DISCUSSION AND ANALYSIS

### Whether the EHO's refusal to issue a permit is reasonable in the circumstances.

In addressing this issue, the Panel has considered a number of sub-issues that were raised by the parties.

*Depth of native soil and depth to ground water table*

Initially, Mr. Youlden argued that there is at least 48 inches of suitable soil in the area of the proposed absorption field. However, during the hearing, Mr. Youlden acknowledged that, with the permit application he submitted to the EHO, he included a written statement of his observations of two holes dug in the area of the proposed disposal field. He agreed that, according to his observations dated August 11, 2001, one test hole had 48 inches of suitable soil, but the second test hole had only 33 inches of suitable soil and showed a depth of 37 inches to the water table.

With respect to the water table, Mr. Youlden submits that his permit application should be assessed based on normal winter site conditions, and that the water table observed on his property during winter 2001 was unusually high for two reasons. First, he submits that the water levels observed in the test holes on the property during winter 2001 were affected by surface water that was being diverted onto the property from Lot 2, on the west side of the property. Mr. Youlden testified that his neighbour had installed a culvert to divert water from Lot 2 onto his property, and this was a factor when the EHO visited the property during winter 2001. Mr. Youlden stated that the culvert was redirected after January 2002, and water is no longer being diverted onto his property. Second, Mr. Youlden submits that water levels where extremely high in local rivers during winter 2001. Mr. Youlden testified that the Koksilah River is immediately adjacent to his property, and is tidal in that area. He stated that flow levels in the nearby Cowichan River were over 200 centimetres above average in mid-December 2001, and twice the average level in November 2001. He submits that extremely high water levels in the Koksilah River during that time may have raised the water table on his property.

In addition, Mr. Youlden submits that some of the test holes on his property were dry in August 2001, and in January and February 2002.

In support of those submissions, Mr. Youlden provided numerous photographs of the property, including a photograph showing a culvert directing water onto the property. He also provided copies of Environment Canada records of water levels in the Cowichan River for the periods November 17 to 30, December 16 to 29, and January 5 to 18, 2001. Additionally, Mr. Youlden submitted an undated letter from John Cardy of Aardvark backhoe services. In that letter, Mr. Cardy states that he

has been to the property on two occasions in January and February 2002, and in both cases the test holes "appeared to be dry."

The EHO submits that a permit for a conventional septic tank system cannot be issued in this case because the property has inadequate depth of suitable soil above the water table or impermeable layer. The EHO testified that he visited the property on numerous occasions between mid-August 2001 and mid-January 2002.

The EHO visited the property on August 15, 2001, after receiving the permit application. He stated that there were 5 test holes and 2 percolation holes on the property. At that time, he advised Mr. Youlden to clean out the test holes, as grass was growing on some of the sides of the test holes and soil had fallen into some of them. The EHO stated that he observed water at depths of 44 and 36 inches in two holes, and one test hole showed clay to the surface. He stated that one test hole in the middle of the field area had 4 feet of soil.

The EHO visited the property on November 15, 2001. One percolation hole was full of water, and one had water at a depth of 18 inches. Three of the test holes contained water at depths of 15 inches, 20 inches, and 27 inches.

On November 19, 2001, the EHO observed that one percolation hole was full of water, and the other had 16 inches of water. Two test holes did not contain water, and three contained water at depths of 17 inches, 19 inches, and 21 inches. He also noted that one of the dry test holes was dug into a mound of gravel, which would not be a suitable site for building a disposal field.

On November 30, 2001, the EHO observed water at depths of 10 inches and 11 inches in the percolation holes, and 11 inches and 18 inches in two test holes. On December 6, 2001, the EHO recorded water at depths of 20 inches and 26 inches in two test holes. On December 20, 2001, he recorded water at depths of 20 inches and 30 inches in two test holes.

Finally, on January 8, 2002, the EHO recorded water at depths of 11 inches and 14 inches in the percolation holes, and at depths of 15 inches, 17 inches, and 17 inches in three test holes.

The EHO also testified that he considered a minimum 100-foot setback between the disposal field and the high water mark on Cowichan Bay to be necessary due to the risk of effluent breakout. He stated that potential infiltration from the Koksilah River is also cause for concern, as it could lead to an effluent breakout.

Section 1 in Schedule 2 of the *Regulation* provides that conventional septic tank systems "are limited to lots where an impervious layer of soil or bedrock, or the ground water 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." However, the EHO has discretion under section 7(1)(a) of the *Regulation* to issue a permit for a septic tank system where the site has less than 4 feet suitable soil, if the EHO is satisfied that the system will adequately safeguard public health. In this case, the proposal does not comply with section 1 in Schedule 2 of the *Regulation* because

the depth to ground water is less than 1.2 m (4 ft.). Therefore, the proposed system may be evaluated under section 7(1)(a) of the *Regulation* as an alternate system.

The Ministry of Health's *On-Site Sewage Disposal Policy* (the "Policy") states as follows in Chapter 6.1:

> To meet the requirements of a proposed alternate system, the natural soil on the site must be acceptable and to a depth considered adequate to attenuate the effluent and thus prevent ground/perched water contamination and/or result in the creation of a health hazard.
>
> Historically, the soil depth requirement in British Columbia has been established as 18 inches. Recent technical information indicates that this requirement may not be sufficient.
>
> (A.) Consideration should be given to <u>increasing</u> this depth when one or more of the following conditions are encountered:
>
> - heavy rainfall (coastal conditions)...
> - potential breakout points,
> - small lots (less than 2 acres)…
> - high hydraulic loading…

At least three of these conditions are found at the property; namely, heavy rainfall due to its coastal location, a potential breakout point along the shore of Cowichan Bay, and the lot is less than 2 acres in size. In addition, high hydraulic loading may be a factor if the water table on the property is subject to infiltration from the Koksilah River. Consequently, the Panel finds that consideration should be given to increasing the suggested minimum of 18 inches of soil above the water table.

Based on the evidence presented by the Appellant, the Panel finds that the ground water table observed in winter 2001 may have been affected by the diversion of water from Lot 2. However, there is insufficient information to determine the degree to which the water table was affected by the additional surface water flowing onto the property from Lot 2. The Panel also finds that there is insufficient information to determine whether, or to what degree, the water table on the property is affected by infiltration from the Koksilah River. The Panel notes that an investigation of the hydrogeology on the property, and further observation of the test holes now that the culvert has been redirected, may be of assistance in resolving these uncertainties.

Nevertheless, for the purposes of this appeal, the Panel must make a decision based on the information presented by the parties. Based on the evidence presented by the EHO with respect to the winter water table levels on the property, the Panel finds that the depth of soil above the water table is not adequate in this

case, and the proposed system would cause an unreasonable hazard to public health. Specifically, the Panel finds that there is insufficient depth of unsaturated soil to attenuate the effluent and prevent ground water contamination or effluent breakout. On several occasions during the period from mid-November 2001 to early January 2002, the EHO observed less than 18 inches of unsaturated soil on the property, indicating that the system does not meet the Policy's minimum soil depth guideline for an alternate sewage disposal system. Consequently, the Panel is not satisfied that the proposed septic tank system would adequately treat the sewage through biological methods.

For these reasons, the Panel finds that the proposed septic tank system would not provide adequate protection of public health from the risk of effluent breakout and/or ground water contamination.

*Setback from Cowichan Bay*

Mr. Youlden testified that the proposed absorption field would be at least 100 feet from the high water mark of Cowichan Bay. However, he suggested that he may be able to relocate the proposed field in more suitable soils if he did not have to meet the 100-foot setback from the high water mark. In support of his suggestion to relocate the field closer to Cowichan Bay, Mr. Youlden stated that many neighbouring properties have absorption fields located less than 100 feet from the shoreline, and he has never known those systems to cause contamination in Cowichan Bay. Mr. Youlden submits, therefore, that the system would not contaminate Cowichan Bay. Further, he testified that Cowichan Bay is closed to shellfish harvesting.

The EHO submits that there is no mandatory setback requirement for tidal water bodies, and, therefore, he has discretion to determine the appropriate setback from Cowichan Bay in this case. In this regard, Glen Smith, Senior EHO for the Vancouver Island Health Authority, testified that the local health board passed a resolution in 1993 requiring a mandatory 100-foot setback from the high tide mark. However, he stated that this resolution is viewed as non-binding because it appears that the resolution was never approved by the Provincial health officer, as required under section 8 of the *Regulation*.

Nevertheless, the EHO testified that he would require a minimum setback of 100 feet from Cowichan Bay in this case, given the site conditions.

The Panel agrees with the EHO that there is no mandatory requirement for a 100-foot setback from Cowichan Bay. First, the 100 foot setback from a "high water mark" prescribed in section 18(e), Schedule 2 of the *Regulation*, does not apply to tidal bodies of water because the definition of "high water mark" found in section 1(1) of the *Regulation* only refers to controlled lakes and other bodies of "non-tidal water." Since Cowichan Bay is a tidal body of water, it is not captured by section 18(e) of Schedule 2. Second, the Panel accepts Mr. Smith's testimony that the 1993 resolution of the local health board with regard to a 100-foot setback is not binding. Therefore, the Panel finds that the EHO has discretion to determine the appropriate setback in this case.

However, given the Panel's findings with respect to the high winter water table on the property, and the uncertainty regarding the effects of the neighbour's culvert and possible infiltration from the nearby river, the Panel makes no finding as to what setback would be required to adequately protect public health in this case.

*Other considerations*

Mr. Youlden testified that an elected representative of the Cowichan Regional District advised him that the municipal sewer system would be extended past his property in the next two years. Mr. Youlden stated that he wrote to the Cowichan Regional District to express his interest in connecting to the municipal sewer system. He stated, however, that he was subsequently advised by the Cowichan Regional District's engineering staff that it is uncertain when or if the municipal system will be extended to his area, because of the high costs and technical difficulties associated with pumping the sewage from that area.

Mr. Youlden also testified that he considered connecting to the municipal water system, rather than relying on the well on the property, to allow him greater flexibility in locating the absorption field. He stated that he decided against connecting to the municipal water supply because it would cost about $5,000 to do so, and his well is clean.

These submissions are not relevant to the Panel's assessment of the merits of the proposed system. However, the Panel notes that Mr. Youlden may wish to reconsider these options given that the Panel cannot grant a permit for the system proposed in his application.

## 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.

For the reasons provided above, the Panel confirms the EHO's decision to deny the permit. Accordingly, the appeal is dismissed.

Alan Andison, Chair
Environmental Appeal Board

October 15, 2002