

SUBSURFACE GROUP LLC

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MEMORANDUM

To: Garth Mann, Sandy Mackie
From: Scott Bender
CC: Mark Buehrer, Troy Vassos
Date: October 9, 2007
RE: PRECIPITATION DATA FOR BRINNON, WASHINGTON

During the DEIS public presentation on September 25, 2007, Ms. Ellie Sather stated that the weather data being used for the Pleasant Harbor water balance calculations was wrong. She stated that precipitation measured in Brinnon was 30 percent less than used in our calculations. This would present a serious issue with the water supply strategy for the resort. This memo presents our understanding of the precipitation data.

We have examined three data sources:

- 1) The data used in the water balance calculated for the resort was from the QUILCENE 2 SW, WASHINGTON (456846) weather station. This station is currently operated by the Western Regional Climatic Center and has been in operation since June 1948. It is the closest long-term weather station to the site. The average total precipitation measured at this gage is 55.44 inches, and was used in the calculations. The data from this station were selected in part due to documented weather patterns in Hood Canal. These patterns indicate that precipitation rates increase as one moves from north to south down the canal; as such, the rainfall measured in Quilcene should be less than at Pleasant Harbor. This should be particularly true since Black Point juts from the main land mass and likely intercepts more weather. Given these patterns, the water balance calculations should be conservative as more water is available at the site than calculated. The weather information at the site may be found at the following link:

<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?waquic>

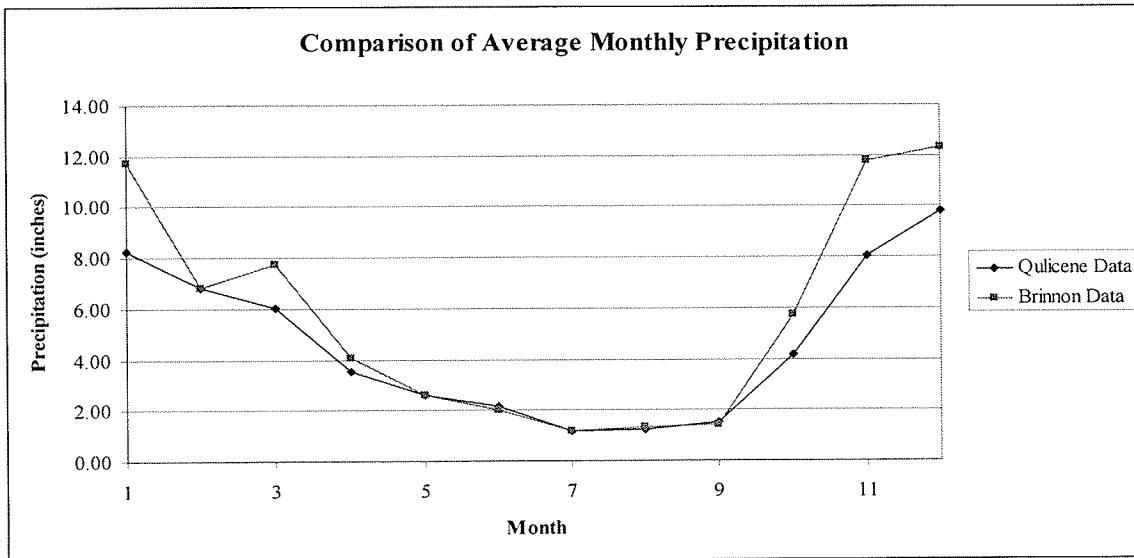
- 2) Sandy Mackie was provided with data which was reportedly used to support the statement regarding use of improper weather data. This link is provided below:

<http://www.idcide.com/weather/wa/brinnon.htm>

The average total precipitation presented at this link is 54.36 inches. You will note that the data source is the same Quilcene 2 SW gage as used in the calculations. The difference in the total average precipitation is because this source uses the average

measured between 1971 and 2000. There is no significant difference in the rainfall amounts, particularly in light of the conservative location of the gage.

- 3) On October 4, 2007, Ms. Ellie Sather handed me rainfall data from a gage in Brinnon; this data is reportedly the basis of her comment during the public meeting. The average annual precipitation measured at this gage is 69.74 inches. This is 14.30 inches greater than used in our calculations. Obviously if these weather data are true, it will provide much more water to the resort; we suspect that the data may be from a micro-climate near Brinnon, and we should not currently rely on the data. Ms. Sather also has some hand written notes on the sheet which apparently total the precipitation during certain months of the year and compare it to our data, and then used it as a basis for her statement; we cannot duplicate her calculations. But for the winter months, the data are nearly identical. A plot comparing the two data sets is provided below:



In summary, we find no basis for the claim that precipitation patterns in Brinnon are less than used in our calculations. The data provided to us indicate that rainfall in the Brinnon area is greater than used in our calculations; this demonstrates that the calculations are conservative and more water will actually be available to the resort. We note that the water balance relies on winter and fall precipitation to collect and store water for the following dry season; as such, the dry season patterns are less significant to resort operations. The data presented to us show increased precipitation patterns in the winter and fall months. In conclusion, we find no basis for the statement that improper precipitation data was used for the resort water balance calculations.

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MEMORANDUM

To: Sandy Mackie
From: Scott Bender
CC: Garth Mann
Date: October 24, 2007
RE: RESPONSE TO TERENCE M. GERMAINE OCTOBER 23, 2007 DEIS
COMMENTS

We are in receipt of comments made by Mr. Terence M. Germaine regarding the DEIS and water supply related to Pleasant Harbor. We provide the following responses:

1. Corporations are not in the habit of coming forward with expenditures unless they are absolutely required. They have only provided such an elaborate unproven water plan because they realize this limited water resource in this area.

Response to Comment 1:

The proposed resort recognizes the water resources of the area and its obligation to minimize impacts to the water resources; not only to the water supply potential of the aquifer, but also to water quality and the potential for sea water intrusion. The proposed water supply plan not only meets, but exceeds this obligation. In addition, the proposal is consistent with the low impact approach and culture of the resort.

2. I have pulled the well log for Pleasant Tides, the primary water provider on Black Point. When this well was flow tested upon completion of drilling the water level was pulled down 74 feet on a four hour flow test. Indicating a slow recovery of water volume.

Response to Comment 2:

Pleasant Tides owns two wells. The well you have referred to is the backup well, which is a rather low producer due to well construction problems. The primary well is capable of producing over 200 gallons per minute; this is an excellent well and performs consistent with other production wells in the vicinity. This and other wells, such as the well on the resort property, indicate that the sand and gravel aquifer beneath Black Point is prolific and readily recharges.

3. My property is located about 200 yards from the NE corner of the MPR where I also have a well. My well is drilled to 119 feet with the well head at about 100 feet elevation and located about 2000 feet from the east shore of Black Point

peninsula. Given these locations and distances I feel any reduction in the current water supply of ground water will make my well and most other wells on Black Point unusable for water quality and flows.

Response to Comment 3:

The DEIS indicates a very low impact to the aquifer in the first few years of resort operation, this is when the resort will use wells as one means of water supply. The impact calculations are conservative. We are predicting either no impact or an actual aquifer enhancement over the long-term operation of the resort. In addition, the water level data from Black Point wells indicate that your and most other properties on Black Point are upgradient of the resort. In the very unlikely event of an aquifer impact, this means that the resort wells would be adversely impacted far before your well would, and the resort wells would be shut off. As such, the resort operations will have no effect on the performance or quality of your well.

4. Aside from the water issue this proposed development is inconsistent with the intent of the original county zoning and way beyond the rural environment of the Brinnon area.

Response to Comment 4 will be addressed by Statesman Corporation.

From: Troy D. Vassos, Ph.D., P.Eng. [mailto:tvassos@novatec.ca]
Sent: Wednesday, November 14, 2007 3:55 PM
To: Garth Mann; mark@2020engineering.com; Wayne S. Wright; Troy Vassos; scott@benderllc.com; VJPerrone@perroneconsulting.com; Michael Read; Rentz, Karen (Perkins Coie)
Cc: Elin McLeod; Milward, Doreen (Perkins Coie); Theresa Tucci; Mackie, Sandy (Perkins Coie)
Subject: Re: FEIS Introduction and Updated Response Sections

Attached is my suggested revisions to the FEIS Introduction document.

Key suggestion is to refer to the wastewater system in terms of treatment and reuse. The plan is to treat all wastewater and reuse it for toilet flushing, storing the remainder for use in seasonal irrigation of the golf course at rates not to exceed the agronomic requirements of the turf. This will maximize the beneficial reuse potential of the recycled water, maximize the evapotranspiration, and minimize incidental infiltration to the aquifer and the potential for adverse impacts. The reuse water is not being applied for groundwater recharge purposes.

Further, the wastewater will be treated to remove nitrogen by at least 75% and disinfected to remove pathogens. Because the recycled water irrigation will not exceed the agronomic rate, it is expected that residual nitrogen and phosphorus in the recycled water will be used for plant growth and will, thereby, also reduce requirements for fertilizer application to the golf course.

Pathogen transport and potential impacts on the aquifer will not be an issue. Reclaimed water suitable for reuse requires significant treatment and disinfection that is generally over and above conventional waste treatment facilities. Disinfection practices for Class A reclaimed water are measured in total coliform, rather than fecal coliform traditionally used to measure wastewater disinfection effectiveness. Class A requires less than 2.2 total coliforms per 100 milliliters (i.e. non-detected), which is the same water quality standard used for potable drinking water.

- Troy

11/14/2007

TO: Sandy Mackie, Perkins Coie LLP
FROM: Wayne S. Wright, Principal
DATE: November 15, 2007
FILE: 12677-001-03
SUBJECT: Pleasant Harbor Marina and Golf Resort
 Response to Questions

This memorandum was prepared in response to your recent questions and comments regarding the proposed Pleasant Harbor Marina and Golf Resort.

Question 1: Wetland Habitat – you indicated in the wetland report that the kettle being filled was important habitat, but I did not hear for what purpose and whether that habitat could be restored in site. Clarification on that point would be helpful, and particularly if you can point to examples where similar habitat functions and values have been relocated when construction necessitated affecting a wetland.

By regulation, all wetland habitat is important. The kettle wetland to be filled is isolated and of limited connectivity and function to other wetlands. It is an “oasis” if you will for those species living in the kettle and therefore important to those shy species that may reside in that habitat. The steep side slopes and depth of the kettle further reduce its accessibility to many species – especially terrestrial animals with easier access to water, shelter and food without climbing down a very steep grade and expending energy. The kettle is a rare type of wetland that is not found in many locations and is not one we will likely replicate in terms of topographic condition when considering mitigation. We can however mitigate the loss of this wetland by creating wetlands in and around the golf course that are more accessible to all species of wildlife, provide a more engaged water quality and storage function, and offer aesthetic experience for humans as well by integrating a recreational element such as bird watching. Trophy Lake golf course, McCormick Woods Golf Course and almost all other residential developments in the nearby area have some type of wetland mitigation option that attempts this. The two golf courses in Kitsap County have strong success stories for wetland and wildlife integration around their developments.

Trophy Lake golf course filled a linear wetland that was a headwater “finger” to a larger wetland complex. The mitigation for that fill was to replicate headwater storage and capacity in and around the golf course that metered flow into the larger wetland complex and allowed wildlife habitat opportunities. Monitoring and observations by golfers and the golf course managers confirms our plans and success in our mitigation intent.

Question 2: Kettles – One concern about our work was addressing wetlands in detail, but not addressing the non wetland kettles except to say “they were not wet.” You observed the kettle habitat, is there any unique habitat or use of the kettles which would be irretrievably lost by the Statesman proposal? We are proposing to retain a significant treed buffer on the south bluffs, (a benefit not likely available in other proposals for the property) and to integrate a wetland enhancement program which may also provide an increase in overall habitat functionality.

Dry kettles are no more “unique” landforms than hills, valleys, or any other upland type of habitat. They offer an area of depth and more severe micro-climate (it is cooler) at the bottom of the kettle and likely a refuge in extreme heat and cold conditions. These kettles are located in an upland area surrounded by bluff along Hood Canal and bordered by the highway. They are very isolated and disconnected from larger ranges, thus their refuge value is

limited to few species and for limited times. The microclimate offered by the kettles would be lost with the proposal. However, by working with the land and Statesman, we can recover some of that function (to be determined by the wetland and golf course integration design yet to be completed) with proper wetland design and edge treatments along the golf course margins. The overall increase in human activity on the site will be the largest deterrent to wildlife use of the site. Most wildlife will avoid the overall disturbance of noise, light and human habitat (homes, structures, and infrastructure). There will be an unavoidable loss of wildlife habitat and use on the property compared to today's condition.

Question 3: The overall concern is the wildlife impact (including the grazing elk herd commented on by some authors). My understanding is that the elk do not commonly cross the road here – possibly good to confirm with a DNR wildlife specialist or WDFW to get a comment on likely use of the site by large mammals. (My understanding is that due to the road and other barriers it is very limited if at all.)

According to WDFW Regional Biologist Greg Shirato the residential elk herd in that area is not likely to cross Highway 101 in the vicinity of the project. Tracking efforts have documented elk presence north of the project area in the vicinity of the Dosewallips State Park northeast of Brinnon. However, there is no tracking data indicating the herd's presence in the Black Point area.

Most terrestrial wildlife avoid being “boxed in” on a property with little option for escape from predators. The bluff habitat along the shoreline of the Black Point property creates that “boxed-in” condition. It is likely the elk frequent a crossing closer to the river where the access to Hood Canal and fresh water is easier and more conducive to large mammal access.

Question 4: Where is the project relative to the East Jefferson County Refugia Study and Hood Canal Aquatic Rehabilitation Area?

Completed in 2003, the East Jefferson County Refugia Study was conducted to identify productive salmon spawning and rearing habitat. The study area encompasses all of WRIA 17 and that portion of WRIA 16 within Jefferson County. It identifies the lower Duckabush River as a Class B Nodal Riparian Corridor. Walker Creek, located northeast of the Pleasant Harbor Marina is identified as a Class 3 Nodal Riparian Corridor. The Black Point property does not drain to either of these river systems. It is unlikely that this study will have an effect on the proposed development.

According to RCW 90.88.010 the Hood Canal Aquatic rehabilitation zone one includes all watersheds that drain to Hood Canal south of a line drawn from Tala Point to Fairweather Bluff. This encompasses our project area. A rehabilitation program for zone one has been designed by the Puget Sound partnership and Hood Canal coordinating council. The Hood Canal coordinating council serves as the local management board for aquatic rehabilitation zone one, but has no authority over land or water.

List of Endangered and Threatened Species in the project vicinity:

- Chinook salmon (*Oncorhynchus tshawytscha*) present in the Duckabush River.
- Steelhead trout (*Oncorhynchus mykiss*) present in the Duckabush River.

Bald eagles (*Haliaeetus leucocephalus*) also occur in the area, but have recently been removed from the Endangered Species list.

<input checked="" type="checkbox"/> Phone In	<input checked="" type="checkbox"/> Current Job	ROUTING:	Job Number:
<input type="checkbox"/> Phone Out	<input type="checkbox"/> Prospective Job		12677-001-03
<input type="checkbox"/> Meeting	<input type="checkbox"/> Past Job	PHONE NUMBER: 360-490-0781	Date: 11/9/07
<input type="checkbox"/> Marketing	<input type="checkbox"/> Proposal		Time: 14:10
<input type="checkbox"/> Other	<input type="checkbox"/> Administration		Recorded By: D. Irick
File Name (Owner): Pleasant Harbor Resort EIS (Statesman Corp.)			
Person/Firm: Greg Shirato, WDFW			
SUBJECT: Elk Migration/Crossings, HWY 101			
REMARKS:			
- Resident herd is not likely to cross Hwy 101 in the project area			
- During tracking efforts the herd was found/observed north of the project area and frequents Dosewallips State Park area northwest of Brannon			
- No tracking data indicated the herd crossed/frequented Pleasant Harbor/Black Point area			
- DOT should have road kills logged and type specified. However, it is unlikely any elk have been hit/killed crossing the Hwy near the project site as they typically do not utilize the Pleasant Harbor/Black Point Area.			
CONTINUED <input type="checkbox"/>			
ACTION REQUIRED:			
IF A call to DOT might be needed if we are need to know how many elk/if any have been hit by cars in the area. However, the wildlife biologist (WDFW) did not recall any.			
ACTION TAKEN:			
ACTION BY:		DATE:	