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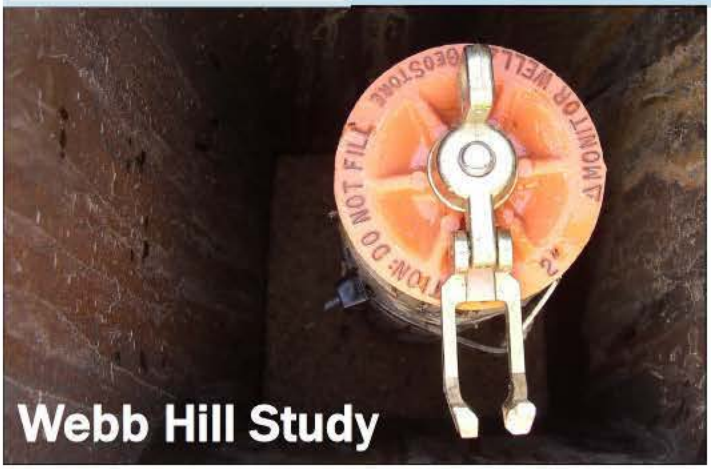
WATERSHED RESOURCE INVENTORY AREA 16

Rivers for Life

A Newsletter of the WRIA 16 Planning Unit



Webb Hill Study

Monitoring Wells Installed
Water Quality Investigation Underway

by Pam Bennet-Cumming

Bio Recycling Corporation recycles biosolids from wastewater treatment facilities and septic tanks by treating and applying them to lands on Webb Hill in Mason County. The company has operated their facility for more than 15 years and, in 2006, treated more than 34 million gallons of material. In the past Bio Recycling operated with a county-issued permit. Today the operation is permitted by the Washington Department of Ecology (Chapter 173-308 WAC).

Concerns have been raised by residents and elected officials of Mason County that the land ap-

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Annas Bay

Shellfish Protection District Progress Report

by Seth Book

In August of 2005, the Washington State Department of Health's designation for 300 acres of shellfish on the east side of the Annas Bay was downgraded from Approved to Prohibited. The area was downgraded because of high fecal coliform bacteria levels in marine water samples. When a shellfish growing area is downgraded, Washington State Law (RCW Chapter 90.72.045) requires the county to create a shellfish protection district and establish a shellfish protection program to address the cause(s) of the pollution. In February of 2006 the Mason County Commissioners formed the Annas Bay Shellfish Protection District (SPD). The Annas Bay SPD encompasses approximately 190 developed parcels with 30 of those along shorelines.

Mason County Public Health (MCPH) is conducting site visits within the Annas Bay SPD and discussing pollution issues with nearshore residents. In addition, MCPH is intensively sampling water flowing from upland and shoreline parcels to Annas Bay along SR 106 from the Skokomish River to Union. Due to the large

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Webb Hill is located south of Hood Canal. The Olympic Mountains are in the background.

Installing a well at Webb Hill.

Webb Hill *Continued from page 1*

plication of biosolids at Webb Hill could be impacting groundwater and also perhaps the Skokomish River and Hood Canal. To address these concerns, the WRIA 16 Planning Unit applied for and received a grant to evaluate environmental monitoring at the Webb Hill facility. Bio Recycling operates its facility consistent with environmental regulations and the company is committed to working with agencies and consultants to evaluate potential water quality issues.

Where do biosolids come from?
Biosolids come from sewage treatment plants and septic tanks.

Under its permit, Bio Recycling is required to destroy potentially harmful pathogens prior to applying biosolids to the ground as a fertilizer. Unless previously treated to the same standard, material that arrives at the facility is pumped into one of two 8,000 gallon underground tanks and treated with quick lime (calcium oxide) to kill all the pathogens (disease-causing germs). Fields ranging from 35 to 160 acres in size are spray irrigated with the treated biosolids using large bore spray guns. These guns are like the large spray irrigators sometimes seen in agricultural areas. Each of the six fields is sprayed three to four times each year on a rotational basis. Cattle are permitted to graze the fields during drier months following a 30-day rest period after application.


Examining core samples from a monitoring well.

Facility operators monitor soil nutrient levels to ensure that the treated biosolids, and the nitrate they contain, are fully utilized by the range grass planted at the site. Samples are sent to a certified lab to be tested for specific contaminants. The lab results are compiled by the facility, Mason County, and Ecology. Bio Recycling has consistently followed rules and regulations and, with the exception of slightly elevated nitrates in an existing well centrally located on the property, water and soil samples have been in compliance.

With this grant money, and additional funding from Puget Sound Action Team, the WRIA 16 Planning Unit hired hydrogeologists at Aspect Consulting to locate and oversee the drilling of four groundwater monitoring wells at the Bio Recycling property, conduct water sampling of the wells, and create a final report of their findings and recommendations. A technique called sonic drilling was used to provide the intact core samples needed to understand the subsurface geology. The study's report proposed sampling well water at the regional aquifer level and surveys to determine regional aquifer flow direction.


Water being drawn from a monitoring well.

Test results indicate that nitrate is present in the groundwater beneath the Bio Recycling facility on Webb Hill. Nitrate is a water soluble molecule

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made up of nitrogen and oxygen. It is found in fertilizer, manure, and liquid waste discharged from septic tanks and is essential to plant growth.

Nitrate (NO3) is a compound of nitrogen and oxygen found in many food items including spinach, lettuce, beets and carrots. Drinking water normally contributes only a small percentage of the total nitrate intake. Nitrate is also found in most fertilizers, manure and liquid waste discharged from septic tanks. Nitrate levels above the federal drinking water standard can reduce the ability of red blood cells to carry oxygen. Infants who drink water with high levels of nitrate (or eat foods made with nitrate-contaminated water) may develop methemoglobinemia, a serious health condition commonly called "blue baby syndrome."

Of the samples taken from the four monitoring wells at Webb Hill, two had nitrate levels at or above federal drinking water standards (10 parts per million or 10 milligrams per liter – mg/L) and the other two were below. Monitoring well MW-1 recorded the highest level of nitrate (13.3 mg/L) near the center of the 344-acre Bio Recycling facility.

Because the facility has operated in compliance with environmental regulations for the land application of biosolids, the results were unexpected. The owner-operator, agency regulators, and the Planning Unit all want to determine if any groundwater containing nitrate is leaving the land application site. Consequently, the Planning Unit and the owner-operator plan to install additional groundwater monitoring wells. Bio Recycling is making adjustments this winter to reduce the application of biosolids and treated liquid and solids from septic tanks (septage) at Webb Hill by 50 percent. Ecology may modify the Webb Hill permit to correct any possibility of over application of biosolids.

Based on recommendations in the Webb Hill study report, Mason County Public Health has already started contacting residents who live within 3000 feet down-gradient – i.e. southwest of Bio Recycling's perimeter — and assist them with well testing for nitrate. The measurements will provide a "baseline" from which future changes in water quality can be assessed. If the results are over 5 mg/L (5 ppm), Mason County Public Health will work directly with affected property owner on next steps including future water testing.

So far, there is no known impact on water quality beyond the Bio Recycling facility. Although the groundwater beneath the facility is flowing slowly to the southwest, the direction of flow beyond the facility may be different. Mason County Public Health, Ecology and Bio Recycling are in agreement that more investigation is warranted. Read the complete study at:
www.ecy.wa.gov/apps/watersheds/planning/docs/webhill biosolids.pdf
and on the Mason County website. More information on nitrates in drinking water can be found at: www.doh.wa.gov/ehp/dw/Programs/nitrate.htm.

Has Your Well Water Been Tested Lately?

If you own a private well and are unsure about your water quality, you should test for coliform bacteria and nitrate. Mason County Public Health (360/427-9670 extension 580) can suggest where to get your water tested and may have specific recommendations for testing. If you live in Jefferson County. contact the Jefferson County Health Department at 360/385-9444 for water testing information. Many certified labs in Washington charge $20 to $40 per test. Group and community wells are required to undergo testing on a specific schedule based on the number of users. The results are provided to the community well users.

If your nitrate test results are over 8 mg/L, the state Dept. of Health recommends testing your private well each year. If results are less than 8 mg/L, the state recommends testing every three years. Also see Important Information for Private Well Owners, published by state Department of Health (Publication Number 331-349), available at http://www.doh.wa.gov/ehp/dw/Publications/331-349_1-13-07.pdf.

Annas Bay *Continued from page 1*

amount of shoreline groundwater discharge, over 280 individual sites have been sampled for fecal coliform along SR 106 on Annas Bay. Over 500 fecal coliform samples have been collected since October 2005. Sites with more than 50 fecal coliform per 100 ml of water were investigated with a focus placed on shorelines with human development.

The results from water quality testing are used to indicate where "sanitary surveys" are needed. Sanitary surveys may include dye tests of septic systems. Dye tests involve flushing highly visible fluorescent tracer dyes into septic systems in order to assess whether or not there is a hydraulic connection between the septic drainfield and the groundwater that may flow into Hood Canal. If a septic system is not functioning properly, dye and elevated fecal coliform concentrations can be found in the receiving waters. Seth Book of the MCPH's Water Quality Program, has dye-tested five of the thirty shoreline septic systems that were selected based on results from water quality monitoring. Of the five dye-tested systems, three were found to be failing. Dye was observed in the receiving waters and high fecal coliform concentrations weralso identified in samples taken at the sites. Further intensive study of the eastern shoreline of Annas Bay during wet and dry months will provide data to see if there is a relationship between fecal coliform pollution and nutrient pollution.

Mason Conservation District staff measure stream flow.

To date seven septic systems have been repaired, five septic systems have been replaced, and one community system has been installed in the SPD. State, Tribal and local agencies continue to work closely with each other to clean up Annas Bay. The Skokomish Tribe has repaired and replaced septic systems on the Skokomish Reservation, and the Mason Conservation District has contacted homeowners to develop farm plans for parcels with livestock.

For more information on the Shellfish Closure Response Strategy, contact Seth Book at 360/427-9670 extension 546 or sethb@co.mason.wa.us.

Skokomish Watershed

Approaches Water Quality Standards for Bacteria

by Christine Hempleman

Recent water quality data by the Department of Ecology and Mason Conservation District shows most areas in the Skokomish River watershed upstream of the Highway 106 Bridge meeting established bacteria reduction goals. Weaver Creek, while showing significant improvement, still needs a 22% reduction of fecal coliform. The water quality goals assure that fresh water is safe for recreational users and protect shellfish harvest in downstream Annas Bay and Hood Canal.

It's not easy to reduce pollution. Landowners and local organizations deserve credit for achieving these reductions using all available tools and techniques. Over the years landowners, often working with Mason Conserva-

tion District, have established practices to control polluted runoff, keep animals out of waterways, and protect stream banks. Mason County purchased 19 frequently-flooded properties and decommissioned the septic systems. The Skokomish Tribe evaluated and repaired septic systems, and is developing long-range solutions for waste management. Taylor Shellfish, Green Diamond Resources, and the Puget Sound Action Team contributed funding for signage to reduce illegal recreation use, and the US Forest Service added signs to keep campers moving into the national forest. The Washington Department of Fish and Wildlife inspected and repaired the septic systems at their hatchery facilities; flyers distributed to fishermen encouraged sanitary practices, and port-a-potties are now available during fishing season at Hunters' Store.

The recent water quality study also shows Ten Acre and Purdy Creeks, as well as the mainstem at Highway 106 Bridge, meeting water quality goals. Additional work is in progress along Weaver Creek. Ecology will monitor again when the work is done and in about five years to make sure that goals are successfully met and sustained.

Planning Unit Field Trips:
Skokomish River Delta
Proposed Black Point Resort

by Tami Pokorny

In October, the Planning Unit spent time outside visiting two important watershed locales. The first field trip was led by Jack Turner, hydrogeologist for the Skokomish Tribe. The group visited the former Nalley Ranch on the Skokomish flats as the new elevated walkway neared completion. Dramatic changes have occurred since dikes were breached in September and levies removed as the result of a partnership between the Skokomish Tribe, the city of Tacoma, the Mason Conservation District, and others. Marine water is reclaiming the lower delta into a prolific habitat for salmon, waterfowl and other native species. The reinvigorated estuary will provide additional ecosystem functions that help support water quality in lower Hood Canal.

An overhead diagram of the proposed golf course resort and marina near Brinnon, WA.

The second field trip occurred at Black Point, a peninsula two miles south of Brinnon. The Statesman Group of Companies LTD, headquartered in Calgary, Alberta, is proposing a master planned resort of 256 acres here. The resort would include an 890-unit condo/hotel and villas, an 18-hole golf course, a maritime village, and enhancements to the Pleasant Harbor Marina. Garth Mann, president of Statesman, and Scott Bender of Subsurface Group LLC, answered the Planning Unit's questions on the draft environmental impact statement (DEIS) for the resort.

Publication of the final environmental impact statement is anticipated in late November. A public hearing on the Master Planned Resort will likely be held by the Jefferson County Commissioners on December 3 with a final decision as early as December 10. Visit www.co.jefferson.wa.us/commdevelopment/Brinnon_MPR.htm for more information and to view the DEIS.

You're invited to participate

The Planning Unit generally meets on the first and third Thursday of each month. Please call to confirm dates, times and locations.

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The WRIA 16 Planning Unit traverses the new walkway (still under construction) during a visit to the Skokomish River delta.

Marine waters find new ground as the result of a complex restoration project involving levy and dike removal.

RIVERS FOR LIFE
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