

Livestock and Water Quality Site Visit

Site Visit Information	<input checked="" type="checkbox"/> First Visit	<input type="checkbox"/> Follow-up Visit
Prepared by: Jessica Kirkpatrick	Arrival Time: 11:45 AM	Departure Time: 2:20 PM
Date: April 23, 2013	Current Weather Conditions: Dry and sunny.	

Owner/Operator Information	
Name: Richard Devries	Street: 626 H Street
City: Lynden	Zip Code: 98264
Phone: 354-4592	Email:

Site Information	
County: Whatcom	Watershed: Bertrand
<p>General site description (include information about nearby waterbodies and description of farm conditions): Mr. Devries raises approximately 25 cow-calf beef cattle pairs on this 70 acre farm. Mr. Devries harvests grass hay from some of the pastures. The cattle are kept in confinement during the winter and manure is stored in a lagoon. Bertrand Creek runs through the middle of the property, and Mr. Devries accesses pastures on either side of the creek via a bridge. At the beginning of our discussion, Mr. Devries stated that his property was for sale and that he was retiring from raising cattle as soon as possible. He has been farming here for more than 70 years. Mr. Devries has already taken some steps to prevent water pollution from his operations, and agreed to improve practices to eliminate the potential for polluted discharges from his farm.</p>	

Site Evaluation

Stream Corridor and Areas Near Surface Water	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
<input checked="" type="checkbox"/> Bare, exposed, eroding soils <input checked="" type="checkbox"/> Contaminated run-off (active or potential) <input type="checkbox"/> Slumping stream banks and erosion <input type="checkbox"/> Overgrazing of grasses	<input type="checkbox"/> Absence of woody vegetation <input type="checkbox"/> Manure accumulations <input type="checkbox"/> Animal access to surface water <input checked="" type="checkbox"/> Livestock paths and trails along riparian areas	
<p>Comments: 1) Bertrand Creek: Cattle are fenced well back from Bertrand Creek. The riparian area has been replanted with native vegetation and is in good condition.</p> <p>2) Gravel pit pond and overflow in the north pasture: An artificial pond in the north pasture overflows during the winter and spring. The runoff flows down slope through the pasture, saturating the soils and causing water to stand in depressions, and into a ditch which discharges into Bertrand Creek. Mr. Devries stated that the cattle were pastured here until just after the last rain event. Cattle tracks and manure were visible in the wet area leading to the ditch (labeled "2" on the image). See photos 1, 2, 3, and 4.</p> <p>3) All field drainage ditches in the north and south pastures: Multiple field drainage ditches in the north and south pastures have been fenced to exclude cattle, however, these fences are almost all located less than 2 feet away from the top of the banks. See photos 5 and 6.</p> <p>a. Cattle have access to a saturated area in the south pasture upslope of the field drainage ditch that discharges into Bertrand Creek. Manure was observed in the water standing in this area (labeled "3a" on the image).</p> <p>b. Just west of the confinement area, cattle have trampled and denuded a small area directly upslope of the</p>		

field drainage ditch that discharges under the confinement area, across the driveway, and off of the property through a CREP project on the neighboring property (labeled "3b" on the image). See photo 7.

4) Bridge crossing of Bertrand Creek: Mr. Devries drives his cattle across a bridge over Bertrand Creek when moving them between the north and south halves of his property. Mr. Devries explained that he does not let the cattle linger on or around the bridge and removes any manure that is deposited after he moves them across. This is an adequate best management practice to prevent manure-contaminated discharges into Bertrand Creek.

Confinement Areas	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
<input checked="" type="checkbox"/> Distance to surface water (35 ft) <input type="checkbox"/> Presence of mud and manure <input checked="" type="checkbox"/> Signs of previous runoff reaching surface water	<input type="checkbox"/> Polluted run-off reaching surface water <input type="checkbox"/> Roof runoff water flows to confinement areas <input checked="" type="checkbox"/> Adjacent land slopes toward surface water	
<p>Comments: The confinement area is used in the rainy season. The area has a concrete footing with curbing to retain manure. Manure from the concrete slab drains to the lagoon.</p> <p>4) Vehicles driving from the confinement area to the access road on the east side of the property have tracked manure out onto the road. The road slopes towards the ditch that discharges to the southeast through the neighboring property. The receiving ditch is approximately 20 feet downslope from the area that manure is tracked on to. During rain events, this likely causes water contaminated with manure to discharge towards that ditch. See photos 8, 9, 10, and 11 and "4" on the aerial photo.</p>		

Stock Water	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
<input checked="" type="checkbox"/> Distance to surface water (25 ft) <input checked="" type="checkbox"/> Overflow from tanks on to the ground	<input checked="" type="checkbox"/> Mud and standing water at tanks <input type="checkbox"/> Animals accesses stream for stock water	
<p>Comments:</p> <p>5) In the north pasture, cattle access both artificial ponds for stock water. The smaller pond does not discharge. The larger pond discharges when water levels are up in the fall and throughout the winter. This pond discharges east through the field, creating the wet area labeled "2" on the aerial photo, and through a field drainage ditch that empties into Bertrand Creek. Manure deposited in and around this larger pond causes pollution or creates the potential to pollute any time this pond discharges water to the receiving ditch along the eastern property line. See photos 1, 2, 3, and 4.</p> <p>6) In the south pasture, cattle access water pumped to an off stream watering trough along the western side of the manure lagoon. This trough is approximately 25 feet from the ditch that discharges to the east, the manure and mud generated at the tanks slopes towards the ditch and likely discharges pollution during rain events.</p>		

Upland Pasture Areas	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
<input type="checkbox"/> Animal access to stream corridors <input checked="" type="checkbox"/> Distance to surface water (5 ft)	<input type="checkbox"/> Signs of overgrazing and erosion <input type="checkbox"/> Manure accumulations and bare ground	
<p>Comments: 7) The upland pasture areas in both the north and south pasture generally have a healthy, vigorous</p>		

growth of grass three or more inches in height. Two small areas of these pastures (areas denoted by 3a and 2 on the image and in this report) are saturated and have either standing water or water flowing towards field drainage ditches. Mr. Devries stated that he removes the cattle from the pastures and harrows in the manure before the winter rainy season.

Manure Management	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
Current manure management plan? Yes, but very old	Manure stored on covered, impervious surface? Impervious, not covered.	
Manure collected and stored? yes	Applied during growing season? yes	
Manure storage properly sized? unknown	Manure applied during non-growing season? no	
Manure storage covered? no	Vegetated buffer when manure is applied? yes	
Manure being collected often? unknown	Manure applied or stored off site? no	
<p>Comments: 8) Manure collected from the winter confinement area is scraped into the lagoon. Mr. Devries stated that he applies the liquids from this farm to his fields with a sprinkler during the summer. He stated that he implements a buffer of 30 feet from all surface water when applying this liquid manure. The solids are collected and eventually stacked around a pole in the middle of the south pasture. Mr. Devries stated that the Whatcom Conservation District developed a farm plan in the past, but that he is no longer familiar with it and that his operations have probably changed since it was written. See photo 12.</p>		

Other Areas of Concern

Comments:

Corrective Actions

- Install livestock exclusion fencing to keep animals at least 35 ft from surface waters (35ft minimum) Permanent buffers function most effectively to protect water quality and prevent invasion by weeds when planted and maintained with native shrubs and trees suited to the soils and hydrology of the site.
- Install off-stream stock water watering facilities and locate them at least 75 ft from surface to prevent risk of water quality impacts (minimum of 75ft)
- Collect manure frequently and store it in a dry, covered area with an impervious floor or deck
- Apply manure during the growing season at proper rates and times (minimum of 100ft setback from surface water, or the use of a 35ft vegetative buffer)
- Site and design confinement and manure storage areas to prevent pollution of surface and ground water
- Provide heavy use protection in confinement areas and at stock tanks to prevent run-off

Construct stream-crossings and emergency water locations in ways that protect the stream

Other Actions:

1. Saturated areas in north & south pastures: Install a fence that will exclude cattle from the saturated area in the north pasture (labeled "2" on the aerial photo) **before** cattle are returned to this pasture. Maintain the fence in place until this area is completely dry later in the summer. Harrow this area to breakup manure after cattle are removed from this pasture and before the area becomes saturated again. This must be done 6 weeks before water is discharged from the gravel pit pond, through this area, and off the property. This was discussed at the time of the inspection and Mr. Devries agreed that it was an acceptable solution and that he would install this fence before putting cattle back into the pasture. Additionally, install a fence to exclude cattle from the wet area in the south pasture discharging into the ditch (labeled "3a" on the aerial photo). This should be done by May 31, 2013. Maintain this fence in place until the area is completely dry and no longer discharging water towards the ditch.

2. Stock Water south pasture: Move the existing water trough for the south pasture to the northwest corner of the fence around the manure lagoon, or another location that is greater than 75 feet from surface water. Mr. Devries agreed to do this at the time of the inspection. This is labeled "3b" on the aerial photo. This should be done by May 31, 2013.

3. Stock water north pasture: Exclude cattle from the gravel pit pond (either by removing them from the pasture or installing a fence around the pond) and harrow manure that has accumulated upslope of the pond at least 6 weeks before discharging water from that pond. Water from this pond could be provided to cattle by pumping it to a trough (off stream watering system) located 75 feet or more away from the pond and the wet area that the pond discharges through.

4. Winter confinement area: Install an impervious berm or other structure to prevent manure-contaminated water from discharging off of the property from the area where vehicles track manure from the confinement area behind the barn before September 15, 2013 if any livestock will be confined here during the winter. This is labeled "4" on the aerial photo.

5. All field drainage ditches: Install fences to keep animals 35 feet away from all surface waters. This should be done by July 31, 2013.

6. Denuded area upslope of ditch near confinement area: Install a fence to exclude cattle from the muddy, manure contaminated area labeled "3b" on the aerial image where cattle move from the pasture into the confinement area. This area is on a steep slope directly above a field drainage ditch that discharges east off the site and into Bertrand Creek. This should be done by May 31.

Photos Taken: Yes No

Sample Taken: Yes No

Additional Comments

During the inspection, Mr. Devries was notified that Ecology cannot presume that he is complying with water quality regulations unless cattle are fenced a minimum of 35 feet back from all surface water on his property, including the multiple field drainage ditches. He was notified that if he moved the fences back to 35 feet, Ecology would presume that he was in compliance, but that if he elected to keep the existing fences in place, or

to install any buffer smaller than 35 feet, Ecology would need to return to his property to verify that these smaller buffers are effectively preventing pollution of state waters. Mr. Devries agreed to allow Ecology back onto the property to collect water quality samples during a rain event to verify their effectiveness.

Ecology Contact Information

Name: Jessica Kirkpatrick

Regional Office: Bellingham Field Office

Phone: 360-715-5217

Email: Jessica.Kirkpatrick@ecy.wa.gov

Physical Address: 1440 10th St. Suite 102
Bellingham, WA 98225-7028

Mailing Address: 1440 10th St., Suite 102
Bellingham, WA 98225-7028

Inspector Signature:



Date: May 16, 2013