

**Livestock and Water Quality Site Visit**

<b>Site Visit Information</b>		<input checked="" type="checkbox"/> First Visit	<input type="checkbox"/> Follow-up Visit
Prepared by: Jessica Kirkpatrick	Arrival Time: 1:30 p.m.	Departure Time: 2:30 p.m.	
Date: 4/11/2014	Current Weather Conditions: Sunny		

<b>Owner/Operator Information</b>	
Name: Jim Epoch	Street: 2180 Hampton Road
City: Everson	Zip Code: 98247
Phone: 360-815-4393	Email: snowyota@gmail.com

<b>Site Information</b>	
County: Whatcom	Watershed: Lower Nooksack (Kamm Creek)
<p>General site description: Mr. Epoch owns a acre residential property in the Kamm Creek watershed where he keeps three horses in a confinement area of just under an acre. An unnamed tributary to Kamm Creek runs through the north end of the property, and a confinement area of less than half an acre is on the north side of this stream.</p> <p>Mr. Epoch met with Chris Luerkens and Jessica Kirkpatrick today for this inspection. Several conditions were identified as causing discharges of water polluted with manure into the stream on the north side of the property. Mr. Epoch was cooperative and agreed to take some immediate steps to stop the pollution and implement permanent solutions to the violations noted in today's report.</p>	

**Site Evaluation**

<b>Stream Corridor and Areas Near Surface Water</b>	<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 checked="" type="checkbox"/> Slumping stream banks and erosion <input checked="" type="checkbox"/> Overgrazing of grasses	<input checked="" type="checkbox"/> Absence of woody vegetation <input checked="" type="checkbox"/> Manure accumulations <input checked="" type="checkbox"/> Animal access to surface water <input checked="" type="checkbox"/> Livestock paths and trails along riparian areas	
<p>Comments: A tributary to Kamm Creek runs through the north part of the property. Water polluted with manure was discharging from the heavily manured confinement area into the stream during the inspection. The horses have access to the stream and, as a result, the banks of the stream are eroded and slumping. An electric fence was lying on the ground near the stream. Mr. Epoch said that deer consistently trample the fence and falling branches also make it difficult to keep the fence up. The area on the south bank of the stream is severely overgrazed, with large patches of bare soils. Manure accumulations were observed within a few feet of the stream.</p>		

<b>Confinement Areas</b>	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated

<input checked="" type="checkbox"/> Distance to surface water (0 ft)	<input checked="" type="checkbox"/> Polluted run-off reaching surface water
<input checked="" type="checkbox"/> Presence of mud and manure	<input checked="" type="checkbox"/> Roof runoff water flows to confinement areas
<input checked="" type="checkbox"/> Signs of previous runoff reaching surface water	<input checked="" type="checkbox"/> Adjacent land slopes toward surface water

Comments: The confinement area between the barn and the stream is 9/10ths of an acre. Vegetation is extremely sparse, and there are large bare patches throughout. Accumulations of manure were observed over the entire confinement area including within a few feet of the stream. Near the barn the manure and mud was 2 feet deep. The soils are clay-like and do not infiltrate well according to Mr. Epoch. This entire confinement area was saturated at the time of the inspection and groundwater was actively discharging down the slope, through piles of manure, and into the stream.

Concentrated flow on the west side near the fence has scoured a clear conveyance to the creek. This may be due to a drain tile system that collects water from around the barn and discharges just below the heavily manured area that has been built up with hog fuel around the barn. No management practices were in place to prevent manure-contaminated runoff from discharging into the stream.

<b>Stock Water</b>	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
<input checked="" type="checkbox"/> Distance to surface water (500 ft)	<input checked="" type="checkbox"/> Mud and standing water at tanks	
<input type="checkbox"/> Overflow from tanks on to the ground	<input checked="" type="checkbox"/> Animals accesses stream for stock water	

Comments: A stock water tank is located near the barn, over 300 feet from the stream. Mud and standing water were observed around the tank, but this is probably more to do with the condition of the confinement area than any overflow from the tank. Horses are also free to access the stream for water.

<b>Upland Pasture Areas</b>	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
<input type="checkbox"/> Animal access to stream corridors	<input type="checkbox"/> Signs of overgrazing and erosion	
<input type="checkbox"/> Distance to surface water (>500 ft)	<input type="checkbox"/> Manure accumulations and bare ground	

Comments: There are no areas large enough to function as pasture areas on this property. Mr. Epoch states that he feeds the horses hay year-round because the property does not produce enough grass to feed the number of horses he has.

<b>Manure Management</b>	<input checked="" type="checkbox"/> Evaluated	<input type="checkbox"/> Not Evaluated
Current manure management plan? no	Manure stored on covered, impervious surface? no	
Manure collected and stored? no	Applied during growing season? Sometimes.	
Manure storage properly sized? no	Manure applied during non-growing season?	
Manure storage covered? no	Vegetated buffer when manure is applied? unknown	
Manure being collected often? no	Manure applied or stored off site? sometimes	

9. If areas of the property outside of the future confinement area are going to be used for grazing, ensure that a vigorous growth of grass is maintained on these areas year-round by removing the horses when grass is grazed to within 3 inches of the ground. This may mean that horses can be allowed to graze only for shorter periods during the dry summer months.

Photos Taken:  Yes  No      Sample Taken:  Yes  No

**Additional Comments**

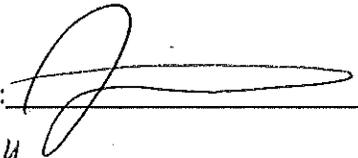
Comments:

I strongly recommend that you contact a qualified technical service provider to assist you in further assessing conditions on your property and developing a plan to ensure it is managed in a way that prevents future discharges to state waters. The Whatcom Conservation District at 6975 Hannegan Road in Lynden 360-354-2015 is one such provider and their services are free to the public.

You may also want to take advantage of a cost-share program that has been set up to assist livestock owners with the cost of installing practices to protect water quality by contacting Dave Timmer of A Rocha at 360-961-4061 or [dave.timmer@arocha.org](mailto:dave.timmer@arocha.org).

**Ecology Contact Information**

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Inspector Signature:   
Date: 4/16/2014

Comments: Manure is collected from inside the barn and piled outside on the ground in a pile approximately 4-5 feet high. No management practices are in place to prevent manure-contaminated runoff from discharging from this pile either to the north into the confinement area where groundwater was actively discharging to the stream, or southward towards the Hampton Road roadside ditch. Manure is not collected from the confinement area between the stream and the barn and as a result there are heavy accumulations of manure near the barn and spread out over the area from the barn to the stream.

#### Other Areas of Concern

Comments:

#### Corrective Actions

##### Immediately upon receipt of this inspection report:

1. Install and maintain a temporary fence to keep animals at least 50 ft from the top of the stream bank and to exclude them from all other areas where groundwater is surfacing.
2. Begin establishing a vigorous growth of vegetation as soon as possible between the temporary fence and the stream and in all areas where groundwater surfaces in the confinement area by reseeding it as soon as possible.
3. Cover the manure pile near the barns with a temporary rain cover such as a weighted tarp.

##### Within 90 days of the receipt of this inspection report:

4. Install a wet-season confinement area sited and designed to prevent manure-contaminated runoff for the horses that includes heavy use area protection. This should be a smaller area (to make manure collection easier) improved with a durable, well draining substrate that manure can be picked up from. Confine horses to this area throughout the winter rainy months.
5. Install a dry, covered manure storage structure with an impermeable deck or floor at least 75 feet away from surface waters and designed to store all manure that the horses generate for at least 7 months of the year. Collect manure frequently from the confinement area and store it in this structure.
6. Apply manure during the growing season at proper rates and times (minimum of 100ft setback from surface water, or the use of a 50ft vegetative buffer). If there is not enough area on the property at least 50 feet away from surface water, make arrangements to spread or dispose of manure elsewhere.
7. Install permanent fencing a minimum of 35 feet from the top of the bank of the stream. The conditions on your farm (slope, soil type, animal density) may require a wider buffer to prevent discharges. If a qualified technical service provider determines a wider buffer is necessary to prevent discharges, I strongly recommend that you take that advice and implement the wider buffer.
8. If areas of the property outside of the future confinement area are used for grazing or exercise, use a moveable temporary fence (such as an electric fence) to keep animals out of areas where groundwater is surfacing.