

## 1 Identification

page \_\_\_\_ of \_\_\_\_

Assessed by \_\_\_\_\_ Date   /   /      
 District \_\_\_\_\_ Opening ID \_\_\_\_\_ Road ID \_\_\_\_\_  
 Watershed/Stream \_\_\_\_\_

## 2 Description

Is the watershed being used for drinking water?  Yes  No  NA

Where is (are) the intake(s)? (Locate on map if known)

What is the distance and what is the connectivity  
between intake and cutblock \_\_\_\_\_ km

Comments: \_\_\_\_\_  Direct via stream  
 \_\_\_\_\_  Indirect (lake, wetland)  
 \_\_\_\_\_

Are there other special resource values associated  
with watershed?  Yes  No  NA

If yes, explain: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Within the probable sampling areas, what are the approximate length, age and status  
of the access roads?

Type	Status <sup>1</sup>	Approximate Length (km)	Age of Road (years)
Main line			
Branch line			
Spur			
Winter use roads			

<sup>1</sup> active, inactive, temporarily or permanently deactivated

Areas of sensitive soils and unstable terrain  
associated with cutblock and access road?  Yes  No  NA

### 3 Reported Disturbance

page \_\_\_\_ of \_\_\_\_

Type of Disturbance	Year of Occurrence	Type of Disturbance	Year of Occurrence
<input type="checkbox"/> Landslide		<input type="checkbox"/> Road slump	
<input type="checkbox"/> Debris torrent		<input type="checkbox"/> Heavy gulying	

### 4 Report Use Of

	On Road right of way	Within Block
Fertilizer	<input type="checkbox"/>	<input type="checkbox"/>
Herbicide	<input type="checkbox"/>	<input type="checkbox"/>
Pesticide	<input type="checkbox"/>	<input type="checkbox"/>

### 5 Locate on 1:20,000 Map Showing Cutblocks, Roads and Streams

- Approximate Extent of Sample Area (randomly selected cutblock or as-built road and access)
- Sample Sites associated with forestry activities requiring field checking including: (check applicable)

- Stream crossings (bridges, culverts)
- Roads running parallel to stream (within 20 m)
- Potential unstable slopes along, in or down slope from road or cutblock
- Potential sensitive soils
- Harvesting adjacent to stream
- Potential livestock concerns
- Other \_\_\_\_\_

Travel mode:

- Truck
- Quad
- Helicopter
- Other

Time(hrs) to complete evaluation of area:

\_\_\_\_\_ travel time (hrs)  
 + \_\_\_\_\_ field time (hrs)  
 x \_\_\_\_\_ crew size \_\_\_\_\_  
 \_\_\_\_\_ total time (hrs)

### 6 Comments

---



---



---

### 1 Checklist of Range Indicators Potentially Affecting Water Quality

Opening ID \_\_\_\_\_ Road ID \_\_\_\_\_ Sample Site ID \_\_\_\_\_

Observations of Livestock Disturbed Component of Sample Site with Demonstrated Connectivity of Receiving Waters

(refer to *Range Resource Assessment Procedures, 2006*)

**Yes / No**

**Condition of Plant Community**

- |   |  |
|---|--|
| <input type="checkbox"/> <input type="checkbox"/> | 1. Riparian vegetation absent or highly modified by grazing or trampling     |
| <input type="checkbox"/> <input type="checkbox"/> | 2. Herbaceous stubble height < 10 cm noted (from 10 samples over 100 meters) |
| <input type="checkbox"/> <input type="checkbox"/> | 3. Browsing of > 70% of leaders noted (from 10 samples over 100 meters)      |

**Yes / No**

**Condition of Ground Surface**

- |   |  |
|---|--|
| <input type="checkbox"/> <input type="checkbox"/> | 4. Bare soil and compaction common (10% of component by area)                |
| <input type="checkbox"/> <input type="checkbox"/> | 5. Recent pugging and unvegetated hummocks common (10% of component by area) |

**Yes / No**

**Condition of Stream Bank and Channel**

- |   |  |
|---|--|
| <input type="checkbox"/> <input type="checkbox"/> | 6. Bank erosion/collapse apparent resulting from heavy livestock use |
| <input type="checkbox"/> <input type="checkbox"/> | 7. Evidence of livestock standing in stream bed                      |
| <input type="checkbox"/> <input type="checkbox"/> | 8. Macro-invertebrates indicate degraded water quality               |
| <input type="checkbox"/> <input type="checkbox"/> | 9. Algal mats occur in receiving waters                              |
| <input type="checkbox"/> <input type="checkbox"/> | 10. Water run-off along livestock trails                             |

**Yes / No**

**Presence of Livestock Dung**

- |   |   |
|---|---|
| <input type="checkbox"/> <input type="checkbox"/> | 11. Livestock feces noted within 3 m of water's edge, or on trails, ditch lines or other surface drainage features leading to water |
|---|---|

**Yes / No**

**Specific Range Management Practices**

- |   |   |
|---|---|
| <input type="checkbox"/> <input type="checkbox"/> | 12. Livestock drink directly from water source                                  |
| <input type="checkbox"/> <input type="checkbox"/> | 13. Absence of livestock control structures limiting access to water source     |
| <input type="checkbox"/> <input type="checkbox"/> | 14. Observed presence of calves (< 4 months old) in or adjacent to water source |
| <input type="checkbox"/> <input type="checkbox"/> | 15. Salt, minerals, oilers within 100 m of water body                           |

### 1 Checklist continued

If at least three of the five preceding indicator classes receive at least one yes response, the possibility exists that livestock presence may be compromising water quality. The assessment of these 15 indicators provides a record of possible range management issues that may require further evaluation by the Range Division.

Are range conditions suggesting livestock is compromising water quality?

Yes  No

*(risk will be proportional to distance downstream to water intake)*





# Forest and Range Evaluation Program

# Water Quality Resource Stewardship Monitoring Mass Wasting Contributions – Form 2 Side 2

Sample Site ID: \_\_\_\_\_

Opening ID: \_\_\_\_\_

Mass Wasting Contributions (> 1/2m <sup>2</sup> )					
Column 1	Column 3	Column 4	Column 5	Column 6	Column 7
Identify individual components of site	Estimate portion of fine sediment in eroded/ erodible material	Estimate volume of material removed by mass wasting and gulying processes	Estimate volume of failed material still on site	Calculate total volume of sediment reaching stream	Calculate volume of fine sediment from mass wasting/ gullys reaching stream
Fill slumps (F) Gullys (rills) (G) Landslides (L)	Choose from none (0) little (.2) half (0.5) a lot (0.8) all (1)  (Active road surfaces usually 0.2)	L x W x D of failure(s) gully(s)  m <sup>3</sup>	L x W x D of failure(s) gully(s)  m <sup>3</sup>	C4-C5  m <sup>3</sup>	C6 x C3  m <sup>3</sup>

a. Total fine sediment generation from mass wasting at site	
b. Total fine sediment generation from surface erosion at site (from Side 1)	
Grand Total Fine Sediment for Site (a.+ b.)	

Site Diagram: Sketch of site components, drainage pathways and connectivity

Required Rating for FREP Evaluations (CIRCLE)

Grand Total Fine Sediment	Rating
<0.2	Very Low
0.2-1	Low
1-5	Moderate
5-20	High
>20	Very High

(From Table 8)

Possible means to reduce stream sedimentation from this sample site (required if site rated moderate, high or very high (see Table 11))

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**Optional**  
Rating of Water Quality Impact for fish bearing stream immediately downstream of site From Table 9

**Optional**  
Rating of Water Quality Impact for domestic intake immediately downstream of site From Table 10

Comments on site



District ID: _____		Year: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		Total # of Sample Sites Evaluated: _____								
Sediment Generation Potential Rating		VERY LOW		LOW		MODERATE		HIGH		VERY HIGH		
		# of sites	% of total	# of sites	% of total	# of sites	% of total	# of sites	% of total	# of sites	% of total	
Number of sample sites with assigned fine sediment generation potential class.												
		1.										
		2.										
		3.										
		4.										
Leading management opportunities to reduce negative water quality impact of forestry operations (with moderate or higher impact rating)		5.										
Total number of range sample sites evaluated:												
Number of sample sites showing range characteristics compromising water quality:												
% of range sites showing compromised water quantity:												
Indicators observed that suggest water quality has been compromised		1.										
		2.										
		3.										
		4.										
		5.										