

**WASHINGTON STATE DEPARTMENT OF ECOLOGY  
DAM SAFETY OFFICE**

**CLASS 1 & 2 PERIODIC INSPECTION FORM FOR CONCRETE DAMS**

**I. GENERAL DATA**

**A. Background Information**

1) Dam Name: \_\_\_\_\_

2) DSO/Ecology File No.: \_\_\_\_\_

3) Type of Dam: \_\_\_\_\_

4) Date of Inspection: \_\_\_\_\_ Date(s) of Construction: \_\_\_\_\_

5) Current Project Condition: \_\_\_\_\_

6) Stream Name: \_\_\_\_\_

7) Location: Sec. Sub. \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ Rge. \_\_\_\_\_

8) Weather: \_\_\_\_\_

9) Inspection Team

<u>Name</u>	<u>Affiliation</u>	<u>Aspects Covered</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

10) Owner(s) and/or Representatives Present During Inspection

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**B. Operational Status at Time of Inspection**

11) Datum Used: \_\_\_\_\_

12) Reservoir Water Surface Elevation \_\_\_\_\_ feet

13) Reservoir Storage \_\_\_\_\_ acre-feet

- 14) Current Freeboard \_\_\_\_\_ ft. Normal Freeboard \_\_\_\_\_ ft.
- 15) Reservoir Inflow \_\_\_\_\_ cfs
- 16) Reservoir Outflow - Spillway \_\_\_\_\_ cfs  
Outlet works \_\_\_\_\_ cfs  
Other \_\_\_\_\_ cfs

## II. STRUCTURAL DATA

### A. Concrete Dam/Barrier

- 1) Crest Elevation: \_\_\_\_\_
- 2) Crest Width: \_\_\_\_\_ 3) Crest Length: \_\_\_\_\_
- 4) Hydraulic Height: \_\_\_\_\_ 5) Structural Height: \_\_\_\_\_
- 6) Upstream Slope/Batter: \_\_\_\_\_ 7) Downstream Slope/Batter: \_\_\_\_\_
- 8) Foundation Material: \_\_\_\_\_
- 9) Abutment Material: \_\_\_\_\_

### B. Principal/Service Spillway

- 1) Type/Material: \_\_\_\_\_
- 2) Location: \_\_\_\_\_
- 3) Control Section Dimensions: \_\_\_\_\_
- 4) Gates/Stoplogs: \_\_\_\_\_
- 5) Channel/Conduit Length/Dimensions: \_\_\_\_\_

### C. Emergency Spillway

- 1) Type/Material: \_\_\_\_\_
- 2) Location: \_\_\_\_\_
- 3) Control Section Dimensions: \_\_\_\_\_
- 4) Gates/Stoplogs: \_\_\_\_\_
- 5) Channel/Conduit Length/Dimensions: \_\_\_\_\_

**D. Outlet Works/ Penstocks**

- 1) Type/Material: \_\_\_\_\_
- 2) Location: \_\_\_\_\_
- 3) Conduit Diameter/Size: \_\_\_\_\_
- 4) Entrance Structure Description: \_\_\_\_\_
- 5) Gate(s): (Type/Size) \_\_\_\_\_  
\_\_\_\_\_
- 6) Conduit Length: \_\_\_\_\_

**III. DOWNSTREAM HAZARD**

**A. Hazard Classification**

- 1) Estimated Dam Breach Peak Discharge (From Appendix A): \_\_\_\_\_ cfs
- 2) Estimated No. of Residences Affected by Dam Breach: \_\_\_\_\_
- 3) Other Development Affected: \_\_\_\_\_
- 4) Adequacy of Warning Time: \_\_\_\_\_
- 5) Downstream Hazard Classification: \_\_\_\_\_

**IV. CONDITION OF DAM**

**A. Concrete Dam**

1) Crest	Yes	No	Comment
Surface cracking	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Horizontal Allignment	<input type="checkbox"/>	<input type="checkbox"/>	_____
Vertical Allignment	<input type="checkbox"/>	<input type="checkbox"/>	_____

2) Upstream Face	Yes	No	Comment
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Deflection	<input type="checkbox"/>	<input type="checkbox"/>	_____
Allignment	<input type="checkbox"/>	<input type="checkbox"/>	_____
Unusual Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____

3) Downstream Face	Yes	No	Comment
Wet Areas (no flow)	<input type="checkbox"/>	<input type="checkbox"/>	_____
Seepage (note location)	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Joints	<input type="checkbox"/>	<input type="checkbox"/>	_____
Unusual Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Freeze-Thaw Damage	<input type="checkbox"/>	<input type="checkbox"/>	_____
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Exposed rebar	<input type="checkbox"/>	<input type="checkbox"/>	_____

4) Abutments and Fdn	Yes	No	Comment
Seepage	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Joints	<input type="checkbox"/>	<input type="checkbox"/>	_____
Bedding Planes	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slides	<input type="checkbox"/>	<input type="checkbox"/>	_____
Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____

5) Seepage and Drainage Summation

Location(s): \_\_\_\_\_  
\_\_\_\_\_

Estimated Flow(s): \_\_\_\_\_

Clearness of Flow: \_\_\_\_\_

	Yes	No	Comment
Color (staining)	<input type="checkbox"/>	<input type="checkbox"/>	_____
Toe Drain	<input type="checkbox"/>	<input type="checkbox"/>	_____
Presence of Fines	<input type="checkbox"/>	<input type="checkbox"/>	_____
Measuring Devices	<input type="checkbox"/>	<input type="checkbox"/>	_____

6) Piezometers

Note Location(s): \_\_\_\_\_  
\_\_\_\_\_

Readings: \_\_\_\_\_

	Good	Poor	Comment
Condition of Casing	<input type="checkbox"/>	<input type="checkbox"/>	_____
Security	<input type="checkbox"/>	<input type="checkbox"/>	_____

7) Other Instrumentation

Settlement Movement Monuments: \_\_\_\_\_

Inclinometer: \_\_\_\_\_

Other: \_\_\_\_\_

Readings: \_\_\_\_\_

**B. Principal Spillway**

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Entrance Channel	Yes	No	Comment
Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Debris	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slides	<input type="checkbox"/>	<input type="checkbox"/>	_____
Logboom	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slope Protection	<input type="checkbox"/>	<input type="checkbox"/>	_____

1) Open Channel/Drop Inlet Control Section	Yes	No	Comment
<u>Examine:</u>			
Sidewalls	<input type="checkbox"/>	<input type="checkbox"/>	_____
Channel Floor	<input type="checkbox"/>	<input type="checkbox"/>	_____
Weir Crest	<input type="checkbox"/>	<input type="checkbox"/>	_____
<u>Check For:</u>			
Allignment	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracking	<input type="checkbox"/>	<input type="checkbox"/>	_____
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slides	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slumps	<input type="checkbox"/>	<input type="checkbox"/>	_____
Scarps	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erosion	<input type="checkbox"/>	<input type="checkbox"/>	_____

Other Deficiencies: \_\_\_\_\_

<b>2) Gates or Stoplogs</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
	<input type="checkbox"/>	<input type="checkbox"/>	_____
			_____

<b>3) Gate Controls</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Check For:</u>			
Operation During Inspection	<input type="checkbox"/>	<input type="checkbox"/>	_____
Hoists	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wire Ropes	<input type="checkbox"/>	<input type="checkbox"/>	_____
Coating	<input type="checkbox"/>	<input type="checkbox"/>	_____
Power Supply	<input type="checkbox"/>	<input type="checkbox"/>	_____
Weather Protection	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>4) Open Channel Tunnel Conduit</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Examine:</u>			
Walls	<input type="checkbox"/>	<input type="checkbox"/>	_____
Floor			
Drainage Galleries	<input type="checkbox"/>	<input type="checkbox"/>	_____
Air Vents	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete	<input type="checkbox"/>	<input type="checkbox"/>	_____
Protective Coating	<input type="checkbox"/>	<input type="checkbox"/>	_____
Pipe Joints	<input type="checkbox"/>	<input type="checkbox"/>	_____
<u>Check For:</u>			
Debris	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erosion	<input type="checkbox"/>	<input type="checkbox"/>	_____

Cavitation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Drains	<input type="checkbox"/>	<input type="checkbox"/>	_____
Seepage	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>5) Stilling Basin</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Check For:</u>			
Debris	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erosion	<input type="checkbox"/>	<input type="checkbox"/>	_____
Undermining	<input type="checkbox"/>	<input type="checkbox"/>	_____
Riprap	<input type="checkbox"/>	<input type="checkbox"/>	_____

**C. Emergency Spillway (if any)**

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<b>1) Entrance Channel</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Debris	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slides	<input type="checkbox"/>	<input type="checkbox"/>	_____
Logboom	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slope Protection	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>2) Open Channel/Drop Inlet Control Section</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Examine:</u>			
Sidewalls	<input type="checkbox"/>	<input type="checkbox"/>	_____
Channel Floor	<input type="checkbox"/>	<input type="checkbox"/>	_____
Weir Crest	<input type="checkbox"/>	<input type="checkbox"/>	_____
<u>Check For:</u>			
Allignment	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracking	<input type="checkbox"/>	<input type="checkbox"/>	_____
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slides	<input type="checkbox"/>	<input type="checkbox"/>	_____
Slumps	<input type="checkbox"/>	<input type="checkbox"/>	_____
Scarps	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erosion	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other Deficiencies:	_____		

<b>3) Gates or Stoplogs</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
	<input type="checkbox"/>	<input type="checkbox"/>	_____
			_____

<b>4) Gate Controls</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Check For:</u>			
Operation During Inspection	<input type="checkbox"/>	<input type="checkbox"/>	_____
Hoists	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wire Ropes	<input type="checkbox"/>	<input type="checkbox"/>	_____
Coating	<input type="checkbox"/>	<input type="checkbox"/>	_____
Power Supply	<input type="checkbox"/>	<input type="checkbox"/>	_____
Weather Protection	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>5) Open Channel Tunnel Conduit</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Examine:</u>			
Walls	<input type="checkbox"/>	<input type="checkbox"/>	_____
Floor	<input type="checkbox"/>	<input type="checkbox"/>	_____
Drainage Galleries	<input type="checkbox"/>	<input type="checkbox"/>	_____
Air Vents	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete	<input type="checkbox"/>	<input type="checkbox"/>	_____
Protective Coating	<input type="checkbox"/>	<input type="checkbox"/>	_____
Pipe Joints	<input type="checkbox"/>	<input type="checkbox"/>	_____
<u>Check For:</u>			
Debris	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erosion	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cavitation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Drains	<input type="checkbox"/>	<input type="checkbox"/>	_____
Seepage	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>6) Stilling Basin</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Check For:</u>			
Debris	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____

Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erosion	<input type="checkbox"/>	<input type="checkbox"/>	_____
Undermining	<input type="checkbox"/>	<input type="checkbox"/>	_____
Riprap	<input type="checkbox"/>	<input type="checkbox"/>	_____

**D. Outlet Works/Penstocks**

<b>1) Intake Structure</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Check:</u>			
Trashracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____
Stoplogs	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>2) Control Gate(s) or Valves</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Check:</u>			
General Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____
Protective Coating	<input type="checkbox"/>	<input type="checkbox"/>	_____
Leakage	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cavitation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Exercising Frequency	<input type="checkbox"/>	<input type="checkbox"/>	_____
Operation During Inspection	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>3) Downstream Conduit</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<u>Check:</u>			
Metalwork	<input type="checkbox"/>	<input type="checkbox"/>	_____
General Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____
Coatings	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cavitation	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____

Joints	<input type="checkbox"/>	<input type="checkbox"/>	_____
Leakage	<input type="checkbox"/>	<input type="checkbox"/>	_____
Corrosion	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other Deficiencies: _____			

<b>4) Intake Tower Gate Shaft Riser</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Concrete Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____
Metalwork	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracking	<input type="checkbox"/>	<input type="checkbox"/>	_____
Leakage	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>5) Gate and/or Valves Controls</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Electrical	<input type="checkbox"/>	<input type="checkbox"/>	_____
Mechanical	<input type="checkbox"/>	<input type="checkbox"/>	_____
Operation During Inspection	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>6) Stilling Basin</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Debris	<input type="checkbox"/>	<input type="checkbox"/>	_____
Concrete Condition	<input type="checkbox"/>	<input type="checkbox"/>	_____
Movements	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cracks	<input type="checkbox"/>	<input type="checkbox"/>	_____
Spalling	<input type="checkbox"/>	<input type="checkbox"/>	_____
Settlement	<input type="checkbox"/>	<input type="checkbox"/>	_____
Erosion	<input type="checkbox"/>	<input type="checkbox"/>	_____
Undermining	<input type="checkbox"/>	<input type="checkbox"/>	_____
Riprap	<input type="checkbox"/>	<input type="checkbox"/>	_____

**E. Maintenance Deficiencies:** \_\_\_\_\_

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**F. Comments:** \_\_\_\_\_

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**G. Sketch of Dam:**