

TASR In-Field Water Analysis Plan

Description:

Start to finish description of what is done at each water sampling location for the TASR project's Surveillance Network Program.

Previous Steps:

- Sample Bottle Prep
- Calibrate YSI
- Calibrate Turbidity Meter
- Field Prep

Safety Considerations:

- Driving to site (if applicable)
- Working around helicopters (if applicable)
- Quad safety (if applicable) → wear a helmet
- Wearing proper construction safety gear → hard hat, safety vest, steel toed boots, safety glasses
- Working near water → wear proper waterproof gear (ex. waders, raincoat etc.)
- Bear awareness

Procedure:

1. Measure out 3 sites from center of the water crossing if they have not already been measured:
 - 100 m downstream (d/s), 50 m d/s and 50 m upstream (u/s)
 - Stake out each site, and then mark the stake with pink flagging tape
 - Write station number on stake and/or flagging tape
2. Start sampling at 100 m d/s site and work your way u/s.
3. Once at site, record start time.
4. Put on nitrile gloves.
5. Take off the two YSI probe caps and turn on.
6. While waiting for air temperature to stabilize, fill out part of field data sheet:
 - Site
 - Date
 - Sampler
 - Weather
 - Site description
 - Site Map
7. Take air temperature measurement once measurements have stabilized.

8. Put YSI probe in water where samples were collected. YSI probe is inserted perpendicular to flow direction.
9. Once stabilized, record:
 - Water temperature
 - Electrical Conductivity
 - ORP
 - DO
 - pH
10. Put two YSI probe caps back on and turn off YSI.
11. Rinse turbidity sample vial three times and then collect sample.
12. Dry off turbidity meter with lint free cloth.
13. Put vial in turbidity meter making sure the lines meet up.
14. Press Scan Sample and record turbidity value.
15. Empty sample vial.
16. Take and record GPS coordinates (in UTM and longitude/latitude units) in description section of data sheet.
17. Write out site name on whiteboard and take photos of site:
 - Photo of sampling site, u/s of site, d/s of site (in this order)
 - Ensure that GPS and compass are turned on camera
18. Check off on data sheet that photos were taken.
19. Double check data sheet ensuring that everything was filled out.
20. Record end time.
21. Repeat steps 3 to 20 for 50 m d/s and 50 m u/s sites
22. Take photos of each side of the water crossing (east and west).
23. If the d/s samples are 8 NTU or more higher than the u/s samples, then the DoT – Environmental Affairs Division will be immediately contacted for discussion and direction on further action.
24. Put all equipment away in the truck/helicopter/quad and proceed to next water crossing.

Additional Notes:

- If can't follow stream 100 m d/s due to it connecting with a lake, sample where the stream meets the lake.
- If you can't sample one side of the water crossing, because it is frozen or not running, still sample the other side.
- If you can't sample either side of water crossing, because no flowing water, take photos of each side of water crossing, and record date, time, couldn't sample, GPS coordinates on data sheet.

Next Steps:

This plan will be updated to include an appendix with the locations of the watercourse crossings and associated station numbers, to be set up at the commencement of construction.

The sampling regime for water crossings shall be as follows:

- Daily during construction around immediate water crossings
- Weekly for four consecutive weeks after construction to ensure banks have stabilize
- Once monthly during periods of open water for the remainder of construction

DRAFT

TASR Watercourse Crossing Field Observations Form

Station Number:	Date:	Start Time:	Sampled by:
Watercourse/Borrow Source ID:		Finish Time:	

GENERAL OBSERVATIONS

Snow Cover (%)	Weather:	Air T (°C):
Photos taken?	Photo IDs:	

<p>SITE SKETCH: (Show stake location, other features, previous pools, distances and directions to sampled pools)</p>	<p>COMMENTS:</p>
---	-------------------------

FIELD MEASUREMENTS

pH	EC(μS/cm)	ORP (mV)	Water T (°C)	DO (mg/L)	Water Colour	Turbidity (NTU)
Precipitates/Stains		Maximum Pool Depth (cm)			Odours	