



DEPARTMENT OF
ECOLOGY
State of Washington

**Addendum to
Quality Assurance Project Plan**

**South Fork Palouse River
Fecal Coliform Bacteria
Total Maximum Daily Load Study**

January 2010

Publication No. 06-03-105-Addendum1

Publication Information

Addendum

This addendum is available on the Department of Ecology's website at www.ecy.wa.gov/biblio/0603105Addendum1.html.

Ecology's Activity Tracker Code for this study is 10-168.

Original Publication

Quality Assurance Project Plan: South Fork Palouse River Fecal Coliform Bacteria Total Maximum Daily Load Study

Publication No. 06-03-105

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DEPARTMENT OF ECOLOGY
Environmental Assessment Program

January 19, 2010

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SUBJECT: Addendum to Quality Assurance Project Plan for South Fork Palouse River
Fecal Coliform Bacteria Total Maximum Daily Load Study
Project Code: 10-168
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Data collected to develop the South Fork Palouse River Fecal Coliform TMDL indicate a large and unexplained load in the floodworks within the Colfax city limits, between sample locations Y and Z in Figure 1 below (RM 0.1 – RM 1.2). The load was consistent between the wet and dry seasons. Load reductions necessary to meet state WQ standards are 96% in the dry season and 83% in the wet season (Table 1). Isolating and eliminating this load is the highest priority in implementing the TMDL.

The City of Colfax has expressed a desire to start working on this issue as soon as possible. On May 27, 2009, Elaine Snouwaert and Tighe Stuart of Ecology and Matt Hammer of the City of Colfax did a reconnaissance of the floodworks. Several discharges were located and plans were made to proceed with sampling and load analysis.

Table 1. Summary of load reductions in Colfax floodworks.

Station ID	Number of Samples	Geomean	% Samples > 200 cfu/100 mL	Target % Reduction
Dry Season				
34SFPR01.2	12	26	8	0
34SFPR00.1	11	630	82	96
Wet Season				
34SFPR01.2	12	18	0	0
34SFPR00.1	12	80	25	83

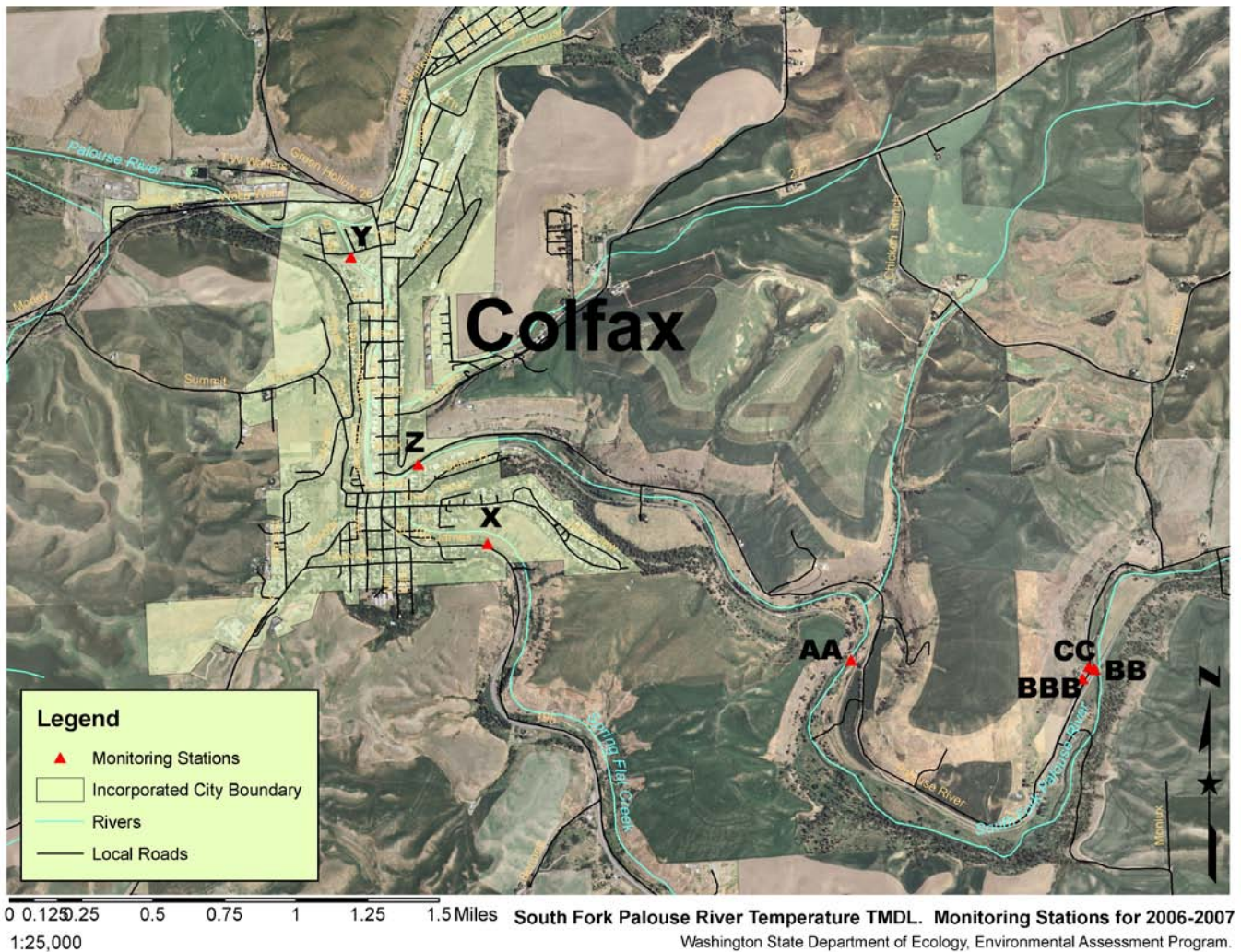


Figure 1. Map of sample area.

Sampling and Measurement Procedures

In one day, Ecology's Environmental Assessment and Water Quality programs will use two teams to sample the entire reach of the floodworks through the City of Colfax. Discharges will be located and sampled for fecal coliform bacteria.

Field sampling and measurement protocols will follow Standard Operating Procedures (SOP) developed by the Environmental Assessment Program for TMDL development. Grab samples will be collected directly into pre-cleaned containers supplied by MEL and described in the MEL User's Manual (2005). Sample parameters, containers, volumes, preservation requirements, and holding times are listed in Table 2. Bacteria samples for laboratory analysis will be stored on ice and delivered to MEL within 24 hours of collection via Horizon Air and Ecology courier.

Grab samples will be collected using the SOPs for bacteria (Mathieu, 2006) and grab sampling (Joy, 2006).

Table 2. Containers, preservation requirements and holding times for samples collected (MEL, 2005).

Parameter	Sample Matrix	Container	Preservative	Holding Time
Fecal coliform	Surface water, WWTP effluent, & runoff	250 or 500 mL glass/poly autoclaved	Cool to 4°C	24 hours

Figure 2 illustrates a typical sampling outfall. Direct introduction of samples into containers will not be possible in most cases. If discharge depth is sufficient, a sterile syringe will be used to collect samples; otherwise, a funnel or other suitable device will be used to divert the flow into the container.

Due to the potential hazardous nature of the outfalls (raw sewage), a Tyvek hazmat suit will be provided for all crew members. Gloves and goggles will also be provided.

All samples will be stored on ice until processed through the City of Colfax Wastewater Treatment Facility. A minimum of twenty percent of the samples will be duplicated in the field to assess variability. Field measurements will be taken whenever possible and will include conductivity, temperature, pH, dissolved oxygen, and flow.



Figure 2: Typical outfalls in floodworks.

Probable Sampling Sites:

- SFPR1.2 (map location Z)
- Spri00.5 (Map location X)
- Spring mouth (pictures 14 & 15)
- US of Courtyard Apts. (picture 13)
- Alмотa Street pipe (pictures 16 & 17)
- Mill Street pipe (picture 18)
- Post Office sump pump (picture 9)
- SFPR upstream of Hwy272 outfall
- Hwy 272 pipe outfall (picture 7)
- Wall St pipe (picture 6)
- SFPR upstream of sump pump
- Courthouse/Jail sump pump (intermittent) (picture 4 & street level)
- Rosausers' area outfall (picture 2)
- SFPR00.1 (map location Y)
- Add other small continuously flowing outfalls and main channel samples as necessary

Picture numbers refer to pictures located at <X:\Palouse Watershed TMDL\Photos\Colfax Stormwater FC Recon> (accessible to Ecology employees only).

Flows will be taken with buckets or flowmeters at all sampling locations. For bucket flows, a graduated bucket will be placed under the outfall and the discharge will be collected for a known

time period. Triplicate measurements will be averaged for the flow. If necessary, the diversion device used for collecting fecal coliform samples will be used to direct the flow into the bucket.

Schedule

Samples will be collected two or three times during low-flow conditions (August-September). Tentative 2009 dates in are: August 11, September 1, and September 29.

Environmental Information System (EIM) database		
EIM user study ID	jross007	
Product	Due date	Lead staff
EIM data loaded	January 31, 2010	Jim Ross
EIM QA	February 28, 2010	Dan Sherratt
EIM complete	March 31, 2010	Jim Ross
Final report: South Fork Palouse FC Supplemental Monitoring		
Author lead	Jim Ross	
Schedule		
Draft due to supervisor, client, and peer reviewer	February 28, 2010	
Final technical memo (not posted on web)	April 30, 2010	

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References

Joy, Joe, 2006. Standard Operating Procedure for Manually Obtaining Surface Water Samples. Washington State Department of Ecology, Olympia, WA.
<http://www.ecy.wa.gov/programs/eap/quality.html>

Mathieu, Nuri, 2006. Standard Operating Procedure for Sampling Bacteria in Water. Washington State Department of Ecology, Olympia, WA.
<http://www.ecy.wa.gov/programs/eap/quality.html>