

Susitna-Watana Hydroelectric Project Document

ARLIS Uniform Cover Page

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PART A - FIGURES

Susitna-Watana Hydroelectric Project (FERC No. 14241)

Baseline Water Quality Study (5.5)

Part A - Figures

Initial Study Report

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

URS Corporation/Tetra Tech, Inc.

June 2014

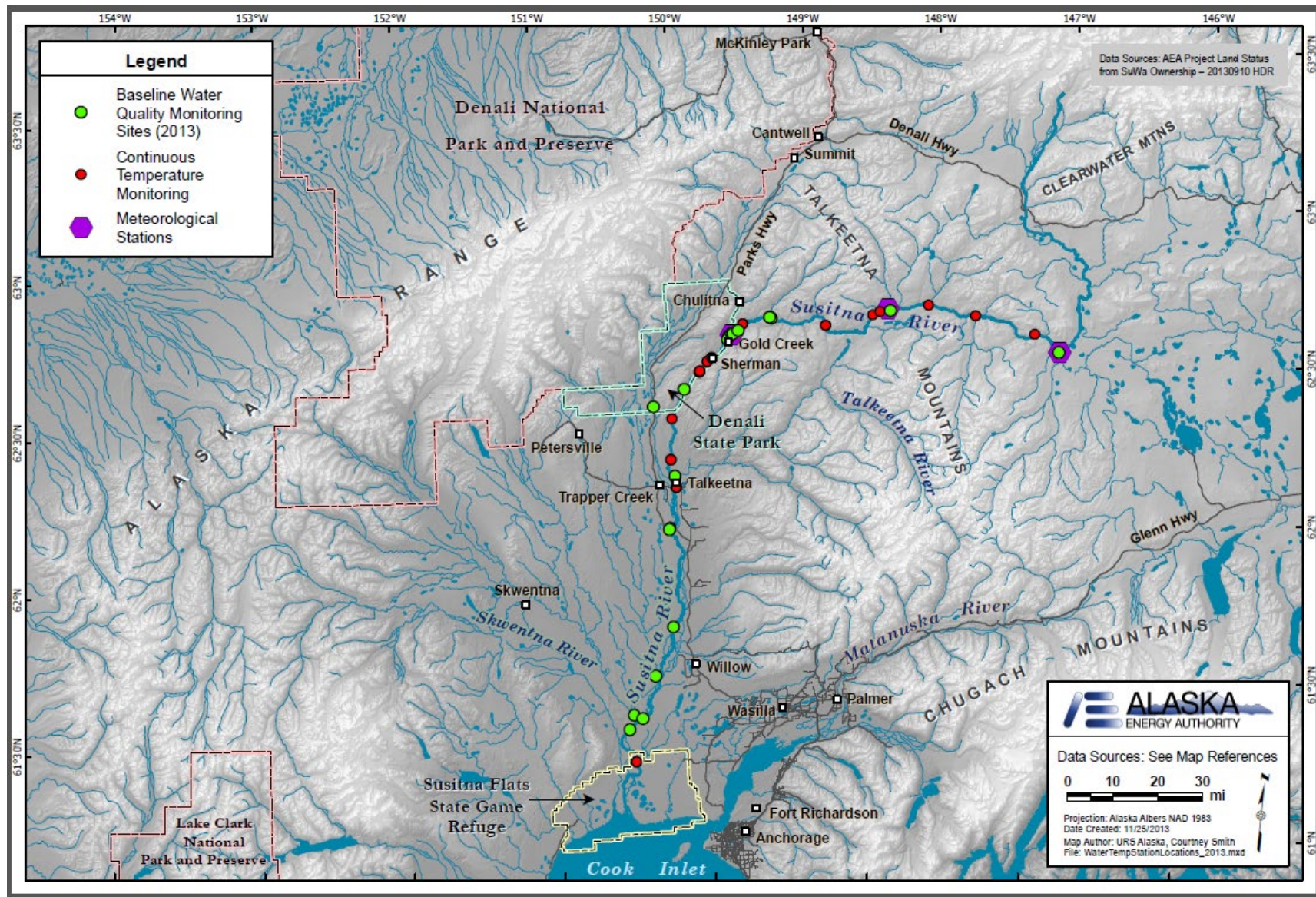


Figure 4.1-1. Water Temperature Sites for the Susitna-Watana Hydroelectric Project

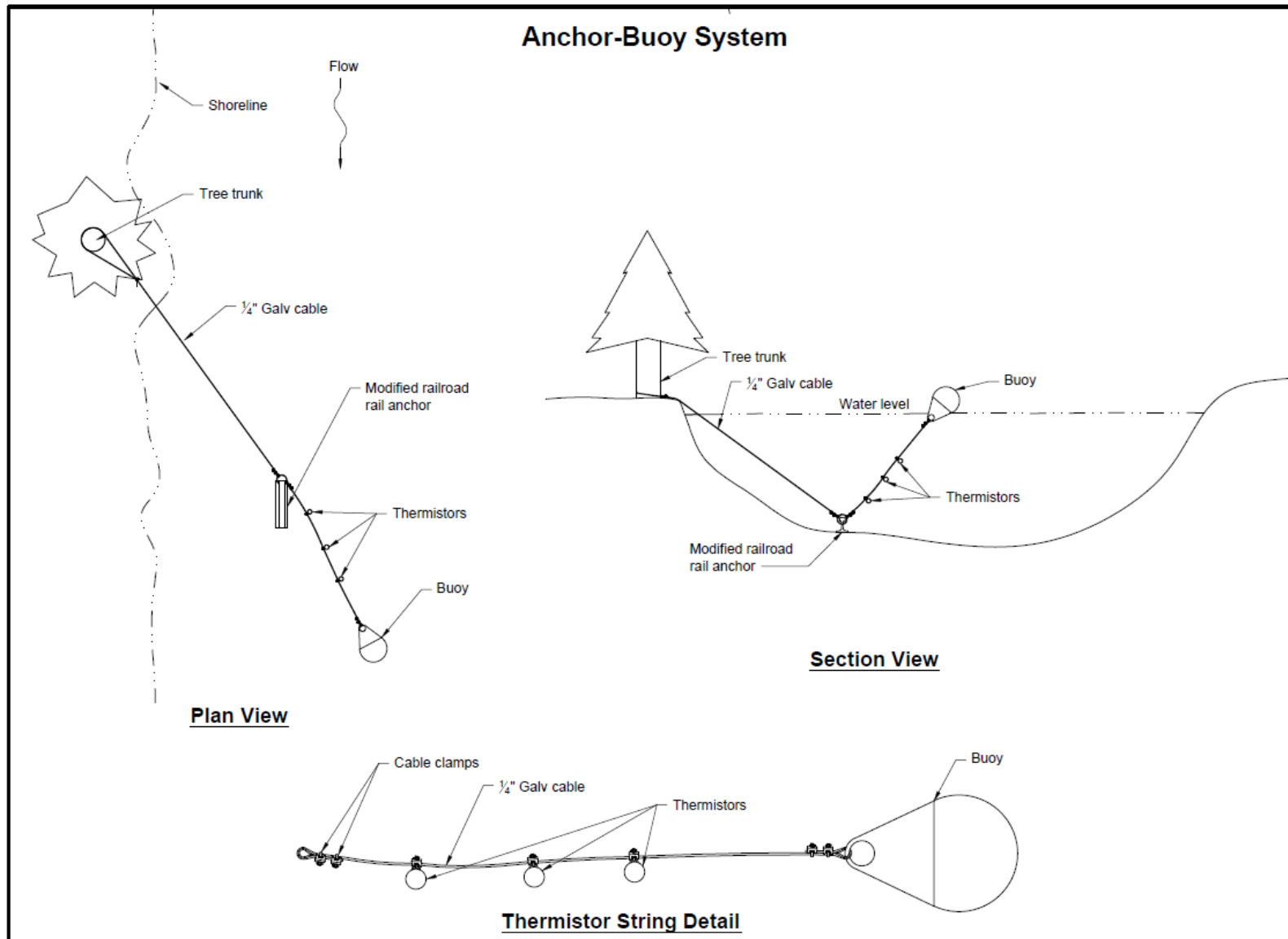


Figure 4.1-2. Anchor-Buoy Thermistor System

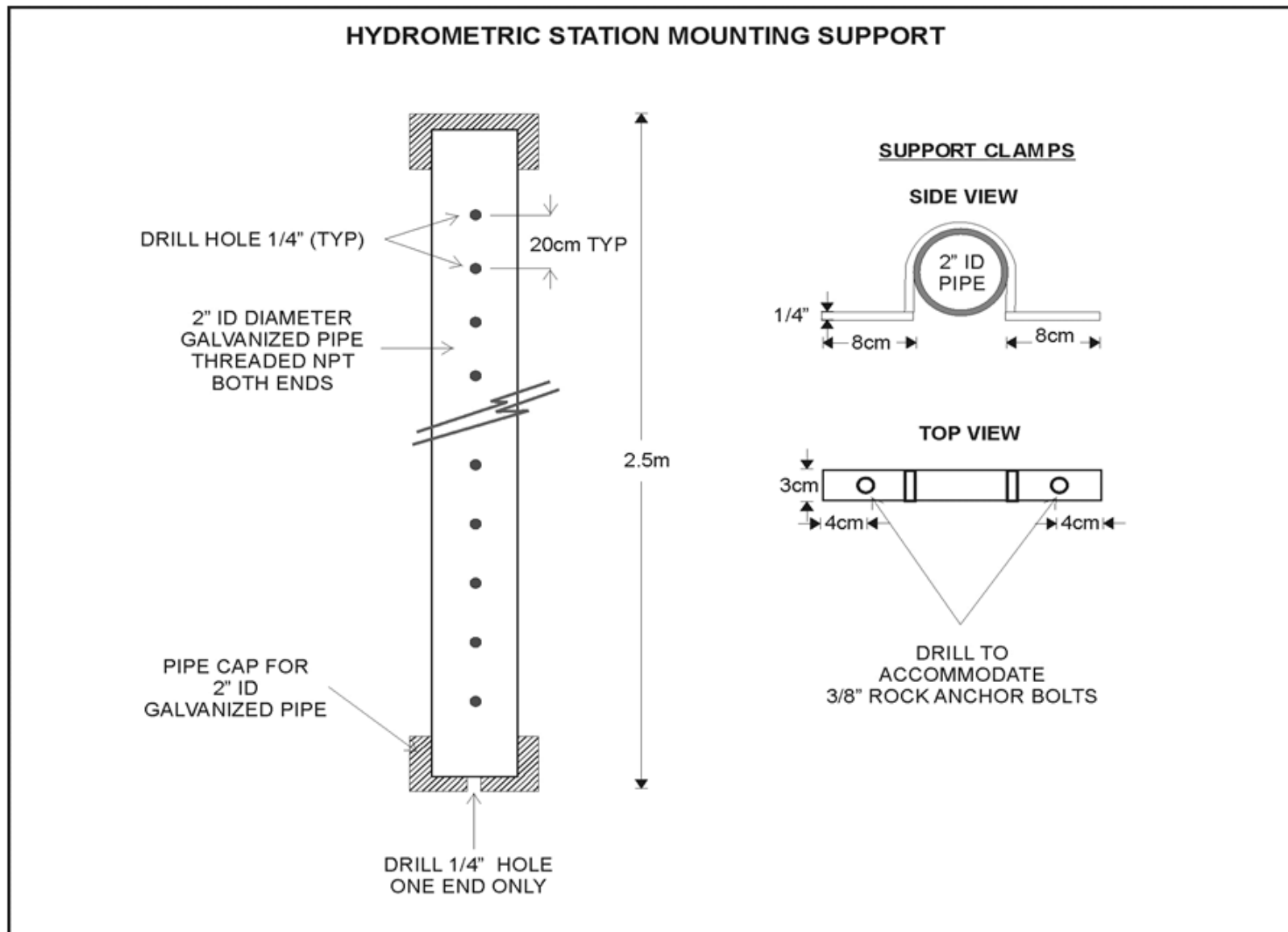


Figure 4.1-3. Bank-Mounted Thermistor System

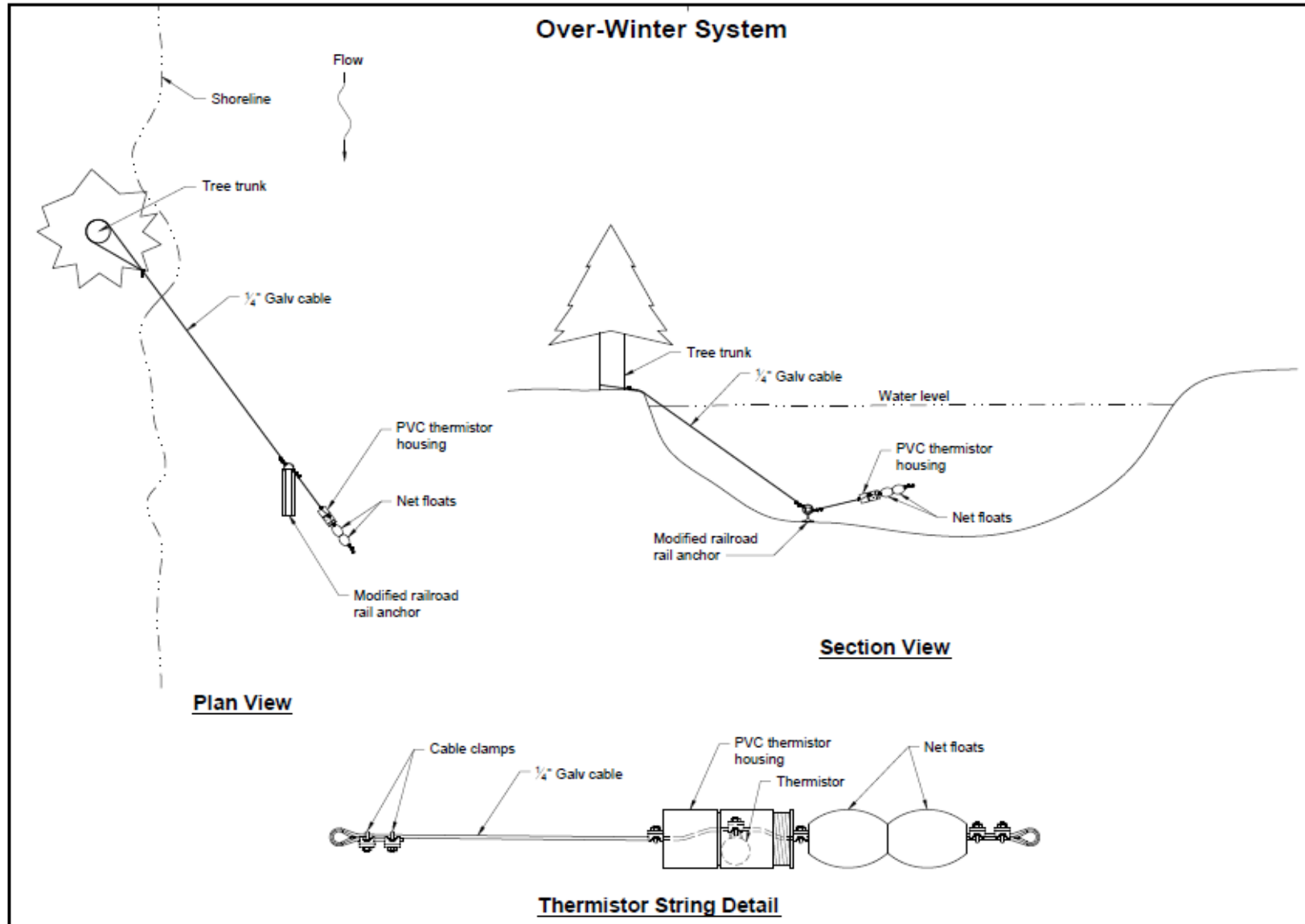


Figure 4.1-4. Over-Winter Thermistor System

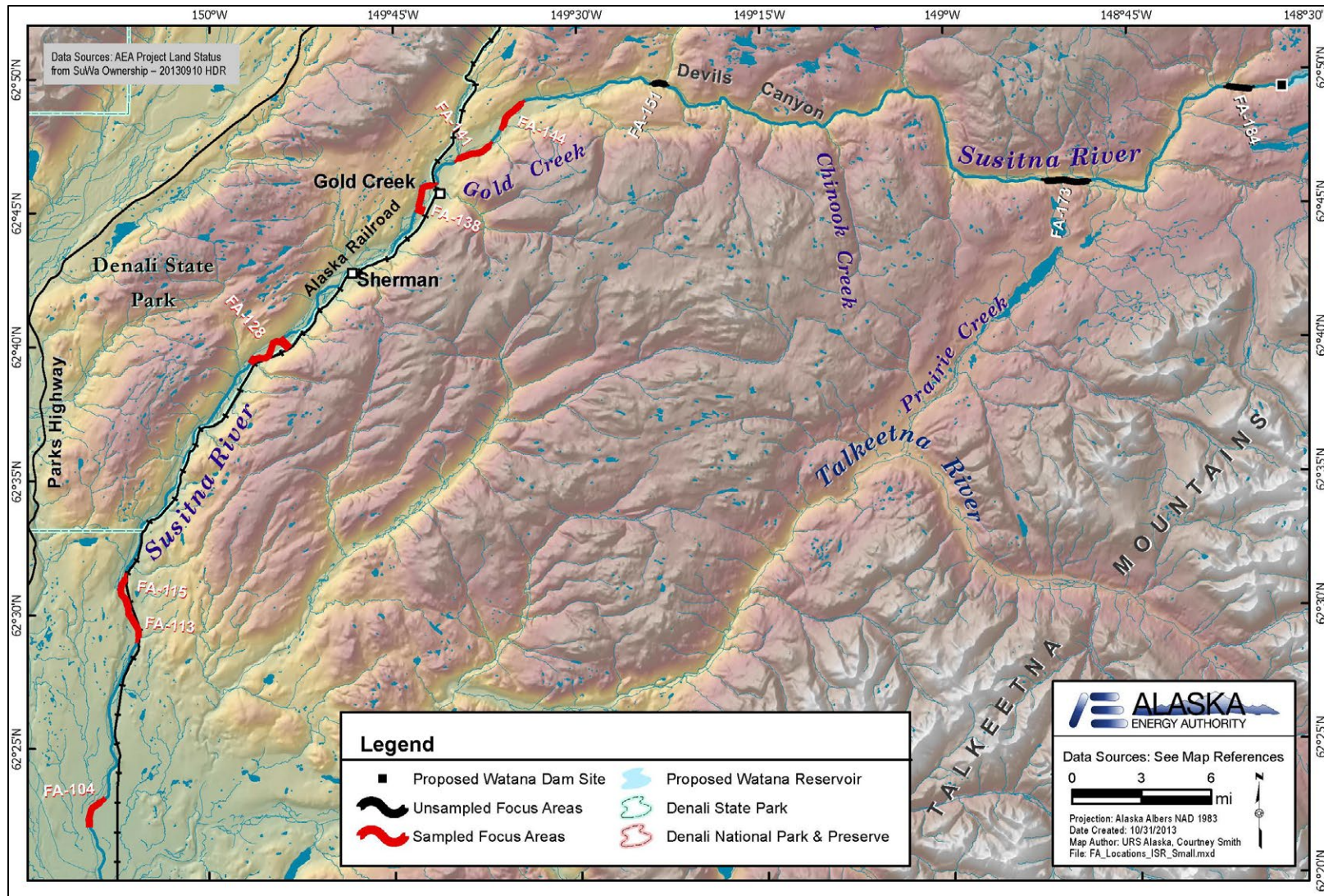


Figure 4.4-1. Focus Area Location Overview

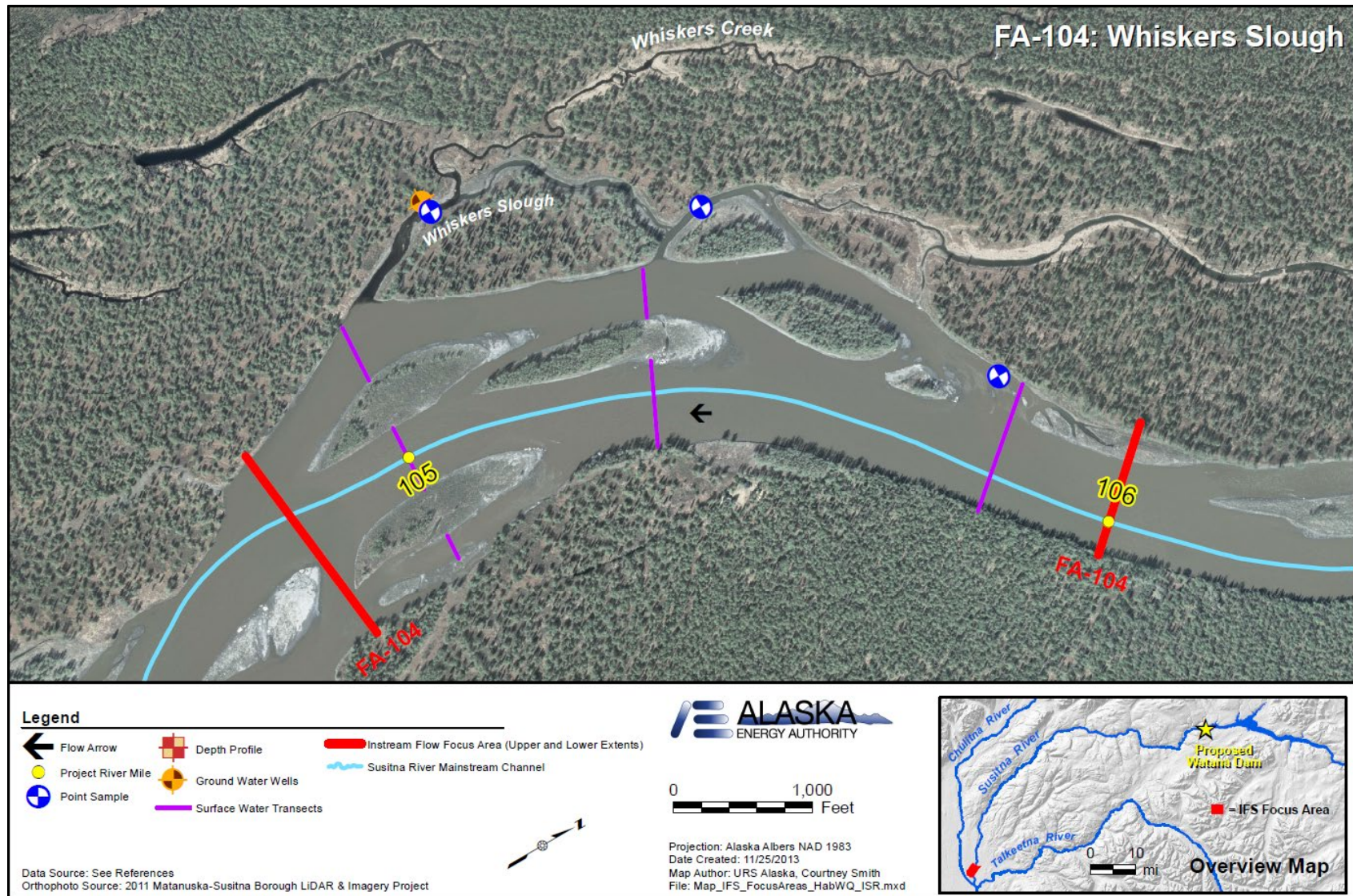


Figure 4.4-2. Example Detail of Focus Area 104: Whiskers Slough

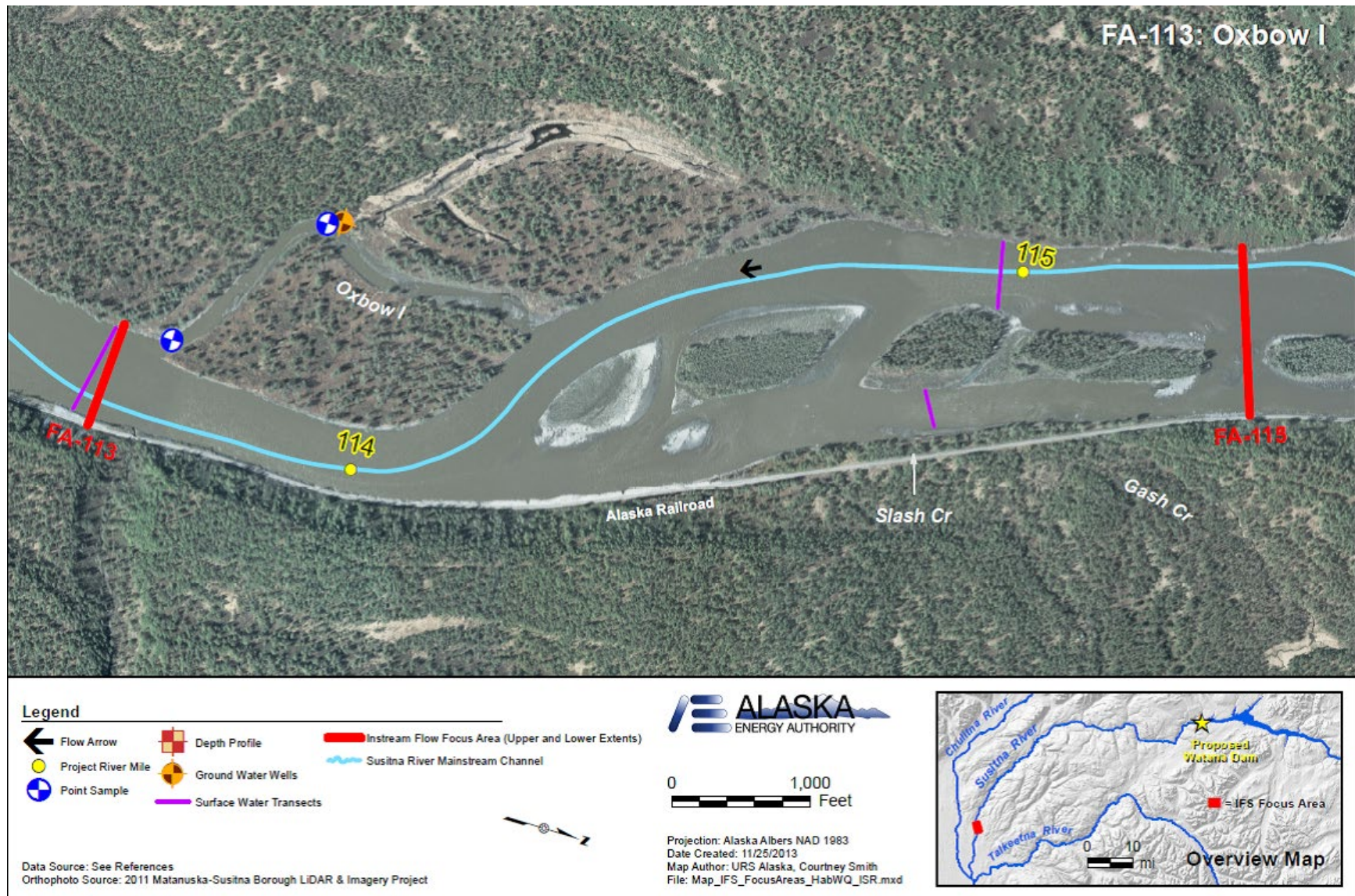


Figure 4.4-3. Detail of Focus Area 113: Oxbow I.

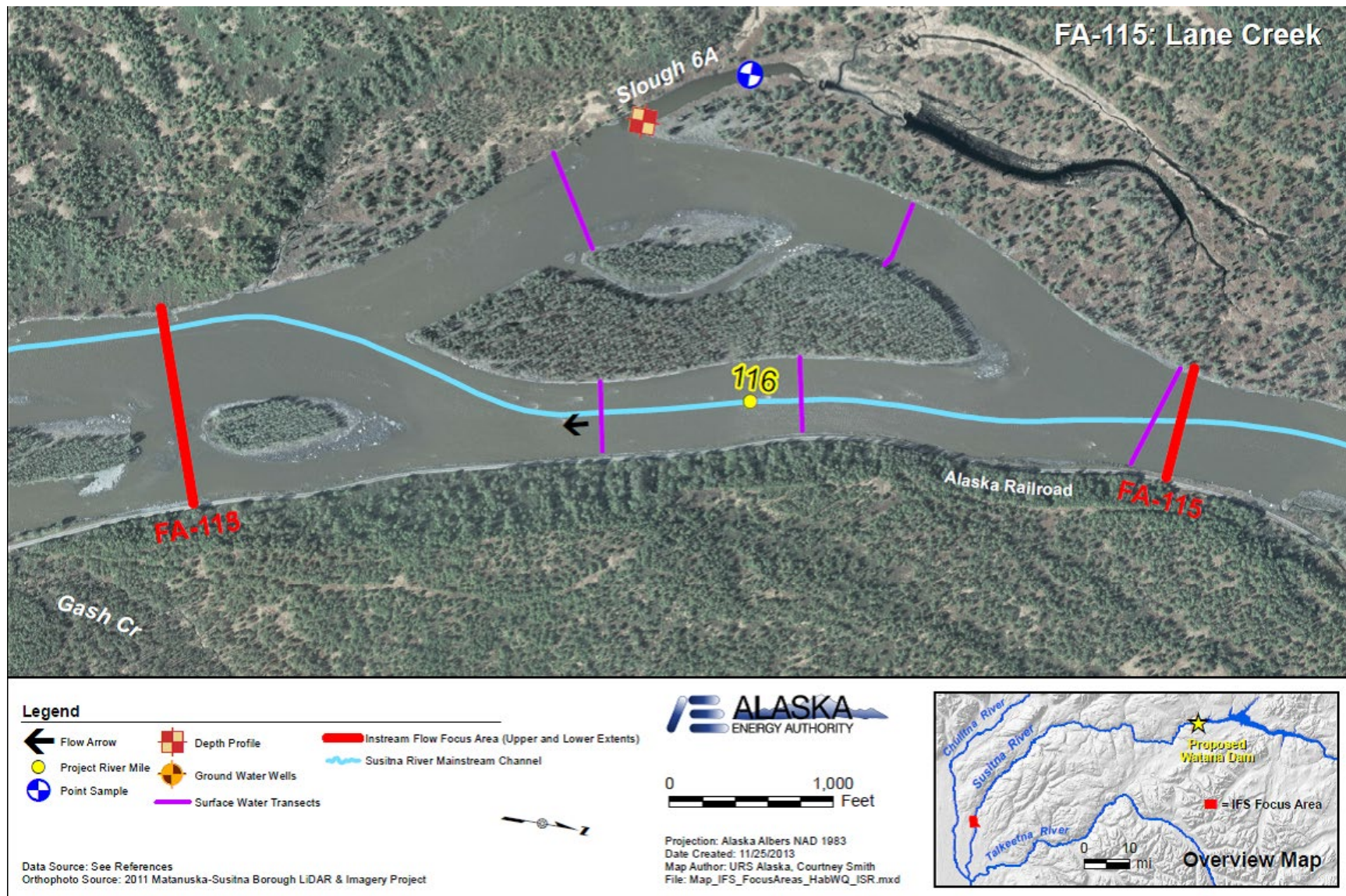


Figure 4.4-4. Detail of Focus Area 115: Slough 6A.

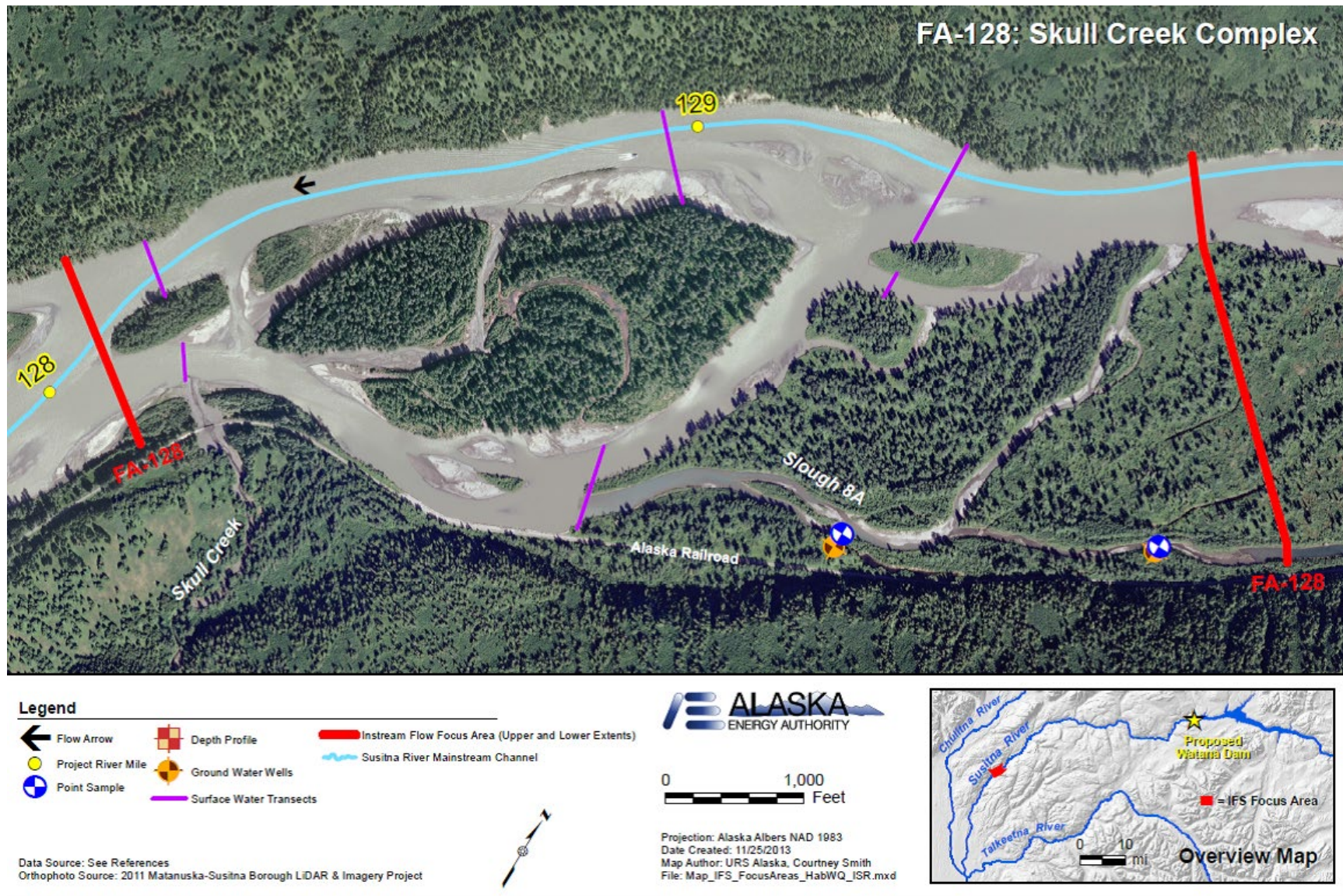


Figure 4.4-5. Detail of Focus Area 128: Slough 8A.

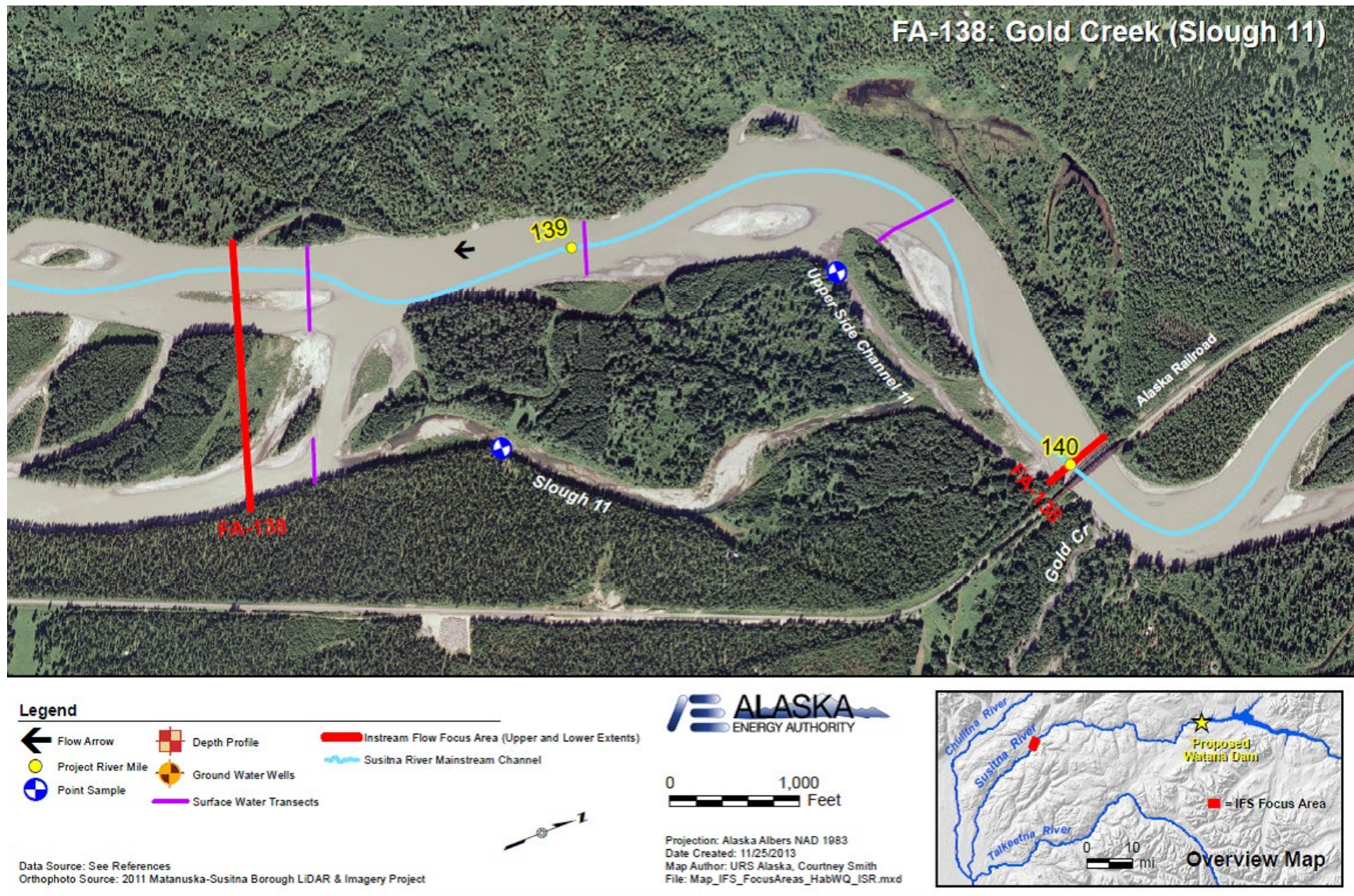


Figure 4.4-6. Detail of Focus Area 138: Gold Creek.

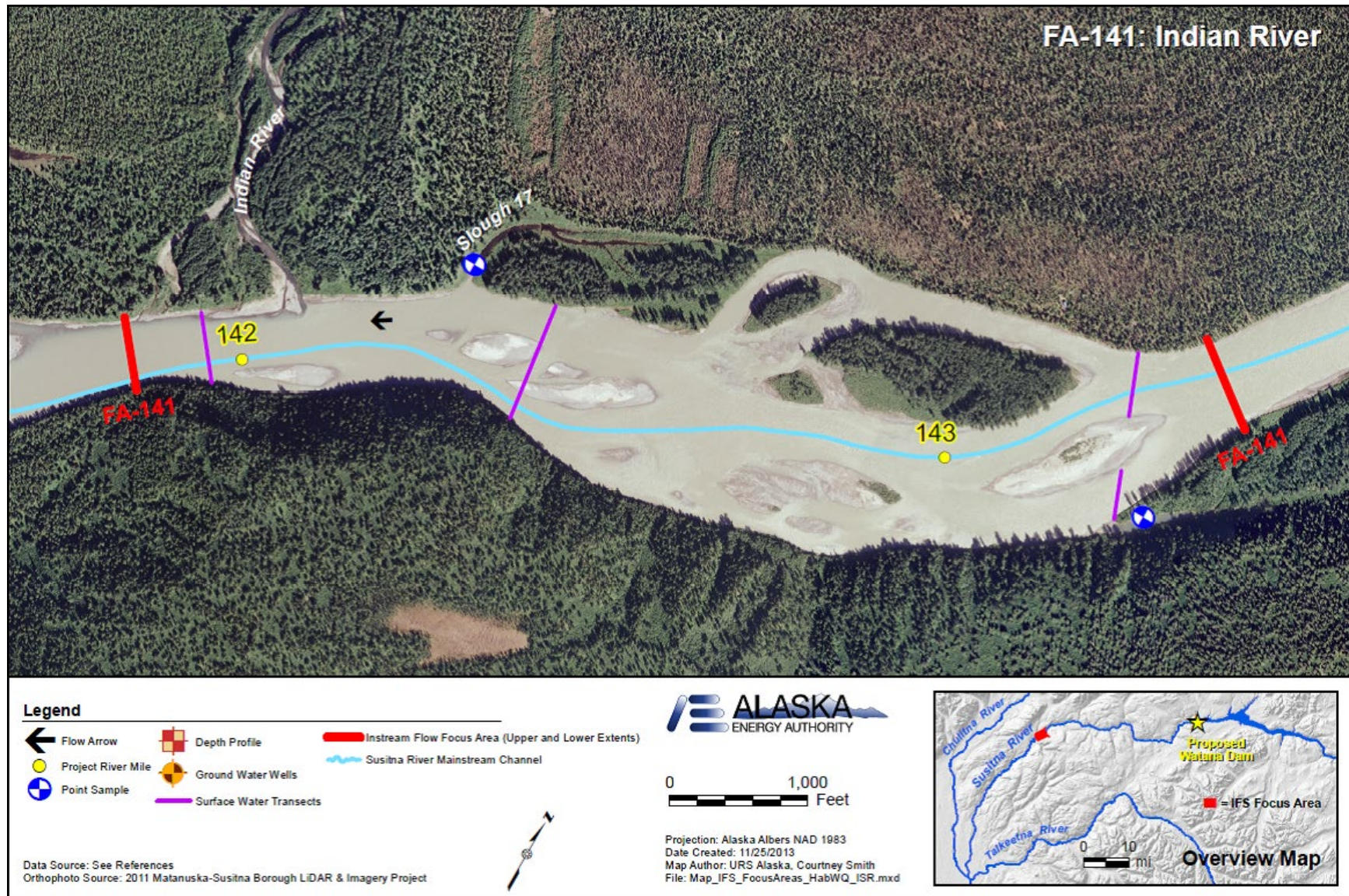


Figure 4.4-7. Detail of Focus Area 141: Indian River.

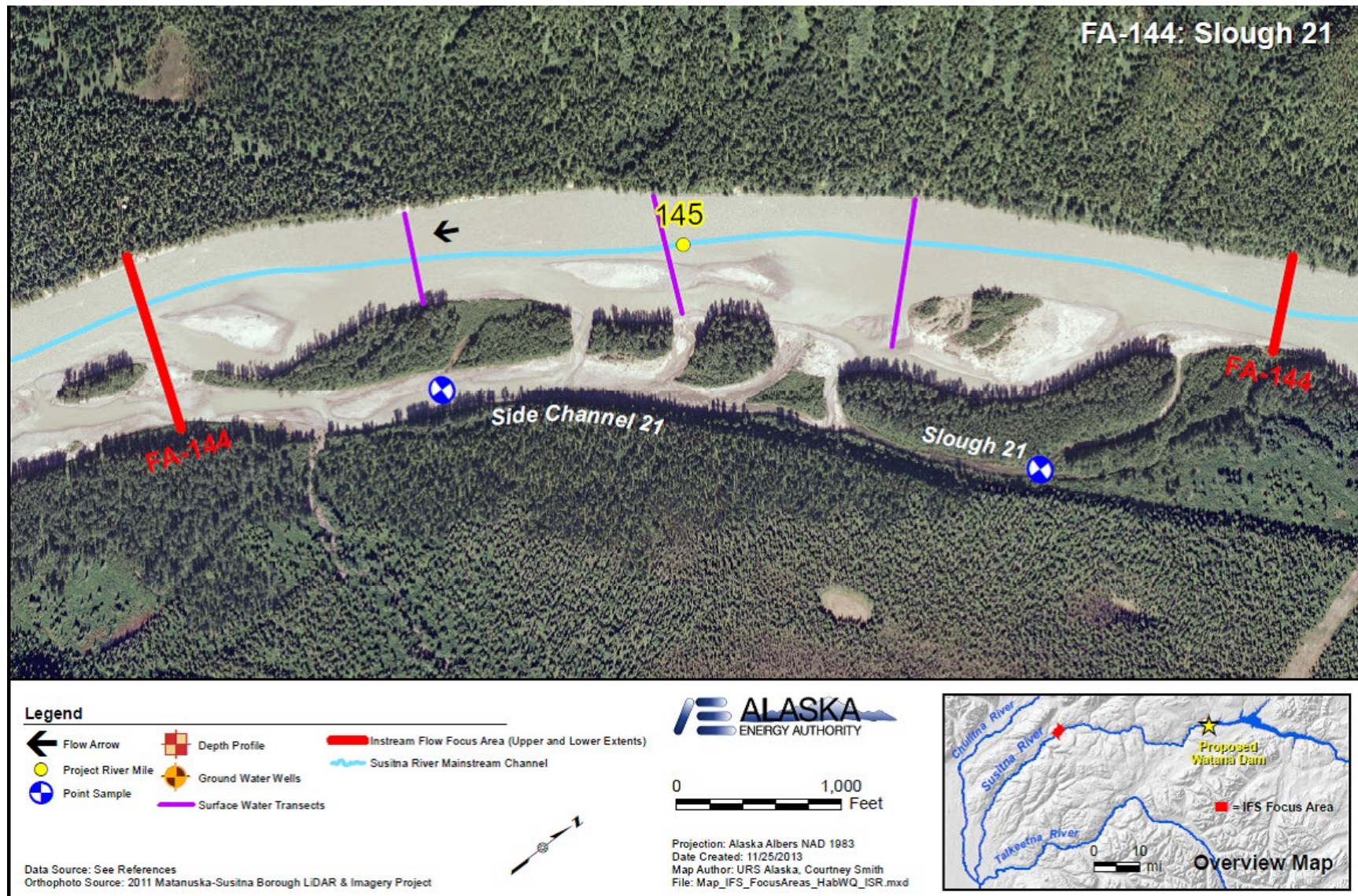


Figure 4.4-8. Detail of Focus Area 144: Slough 21.

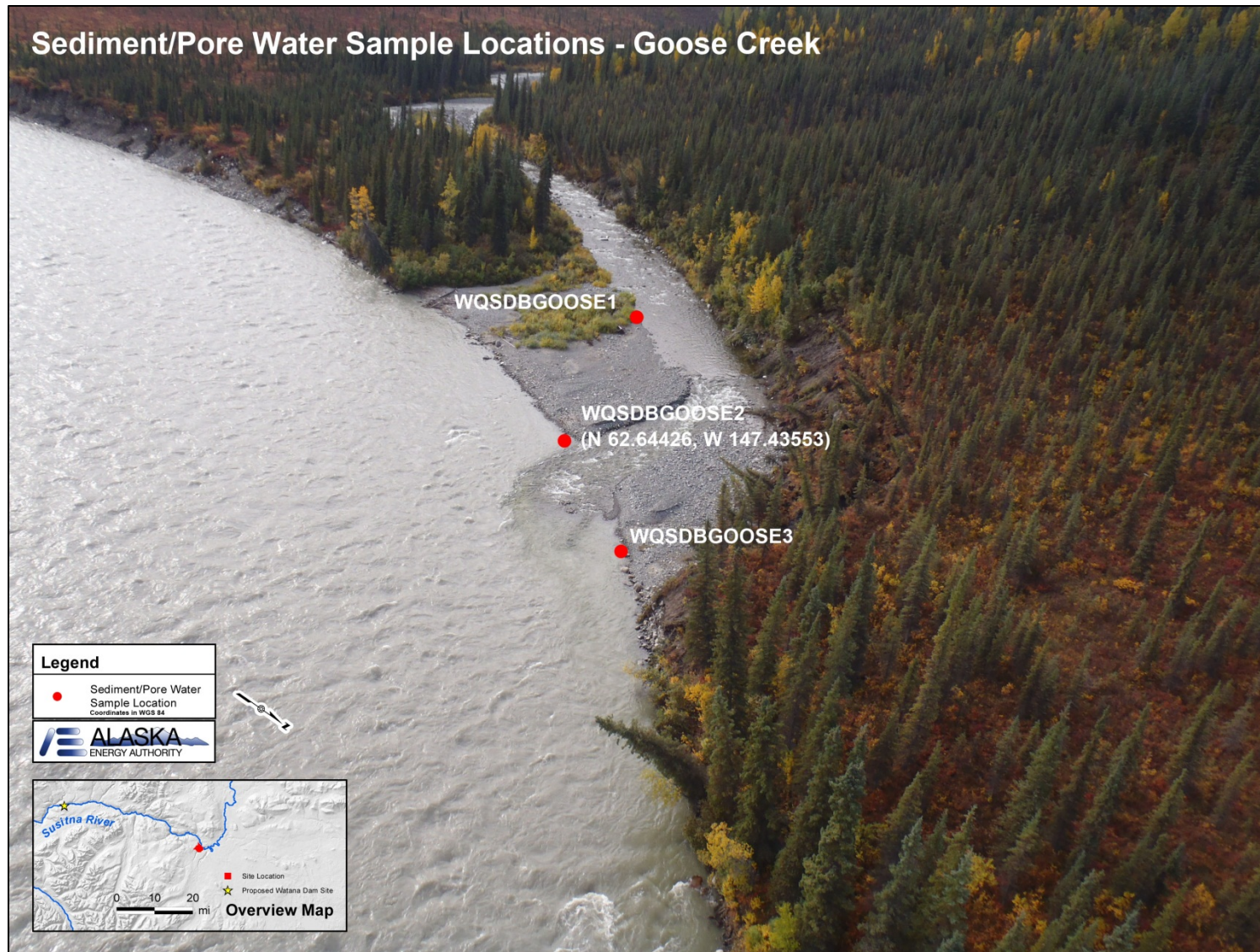


Figure 4.5-1. Sediment/Porewater Sample Location: Goose Creek

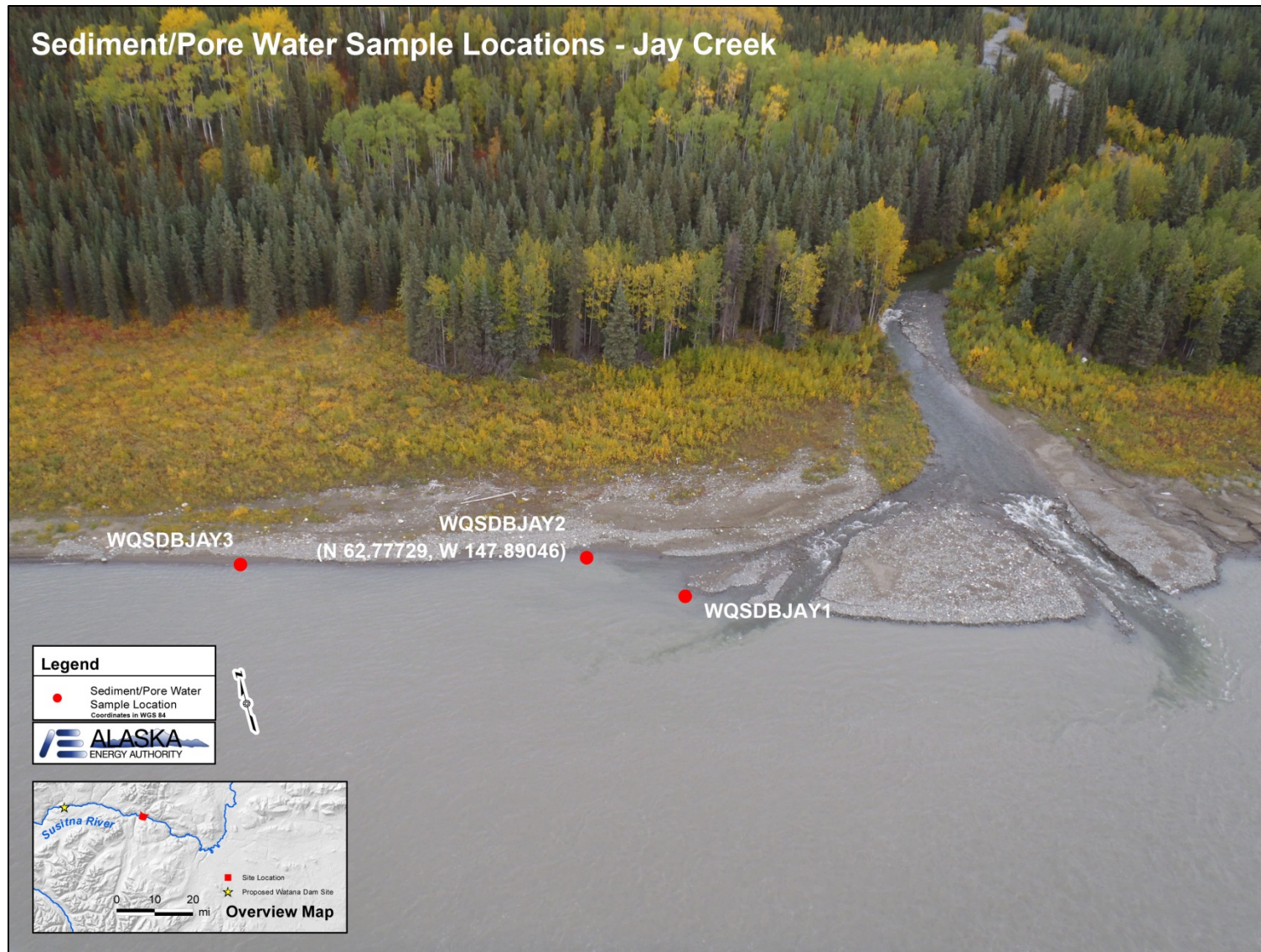


Figure 4.5-2. Sediment/Porewater Sample Location: Jay Creek

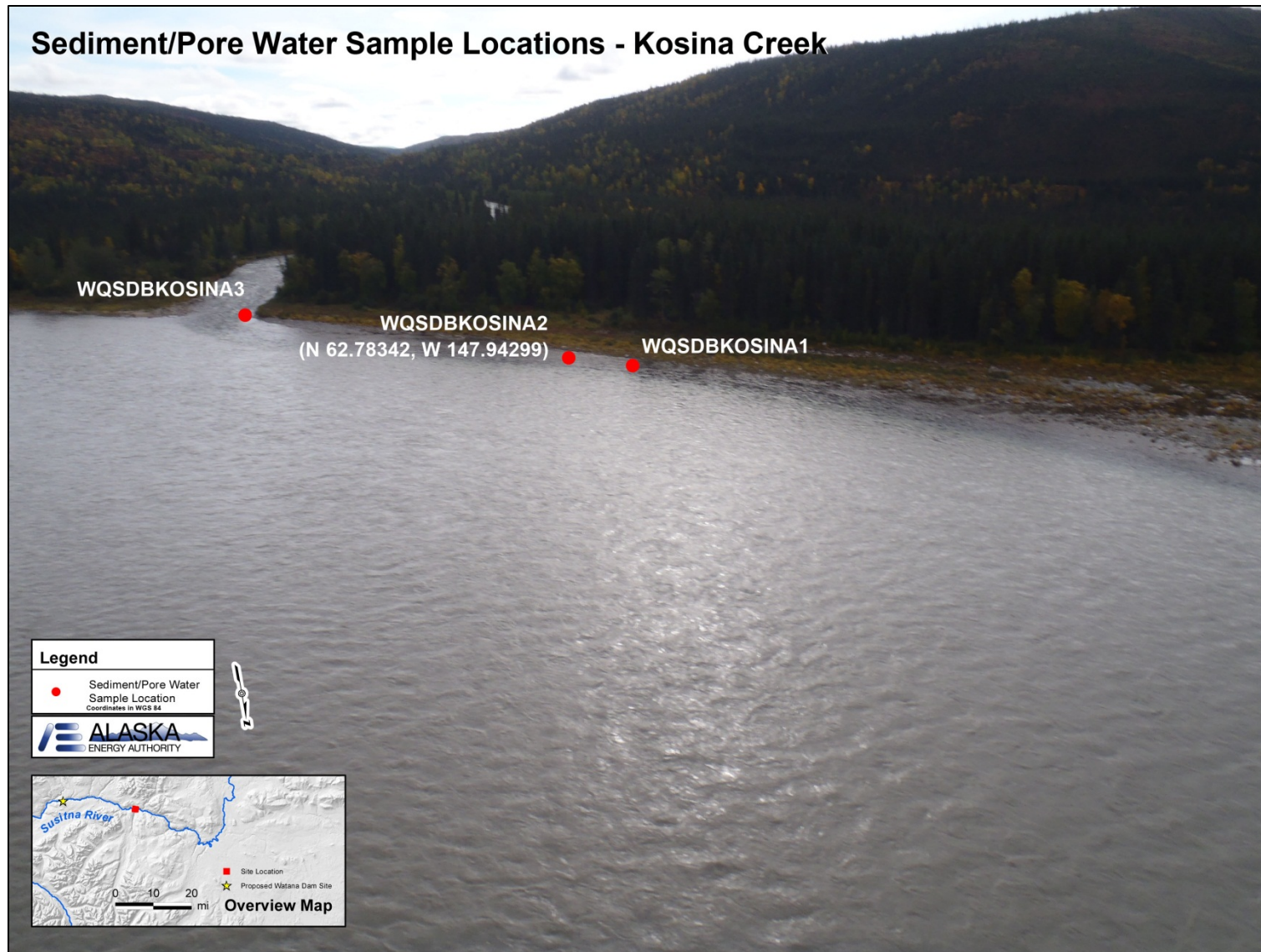


Figure 4.5-3. Sediment/Porewater Sample Location: Kosina Creek

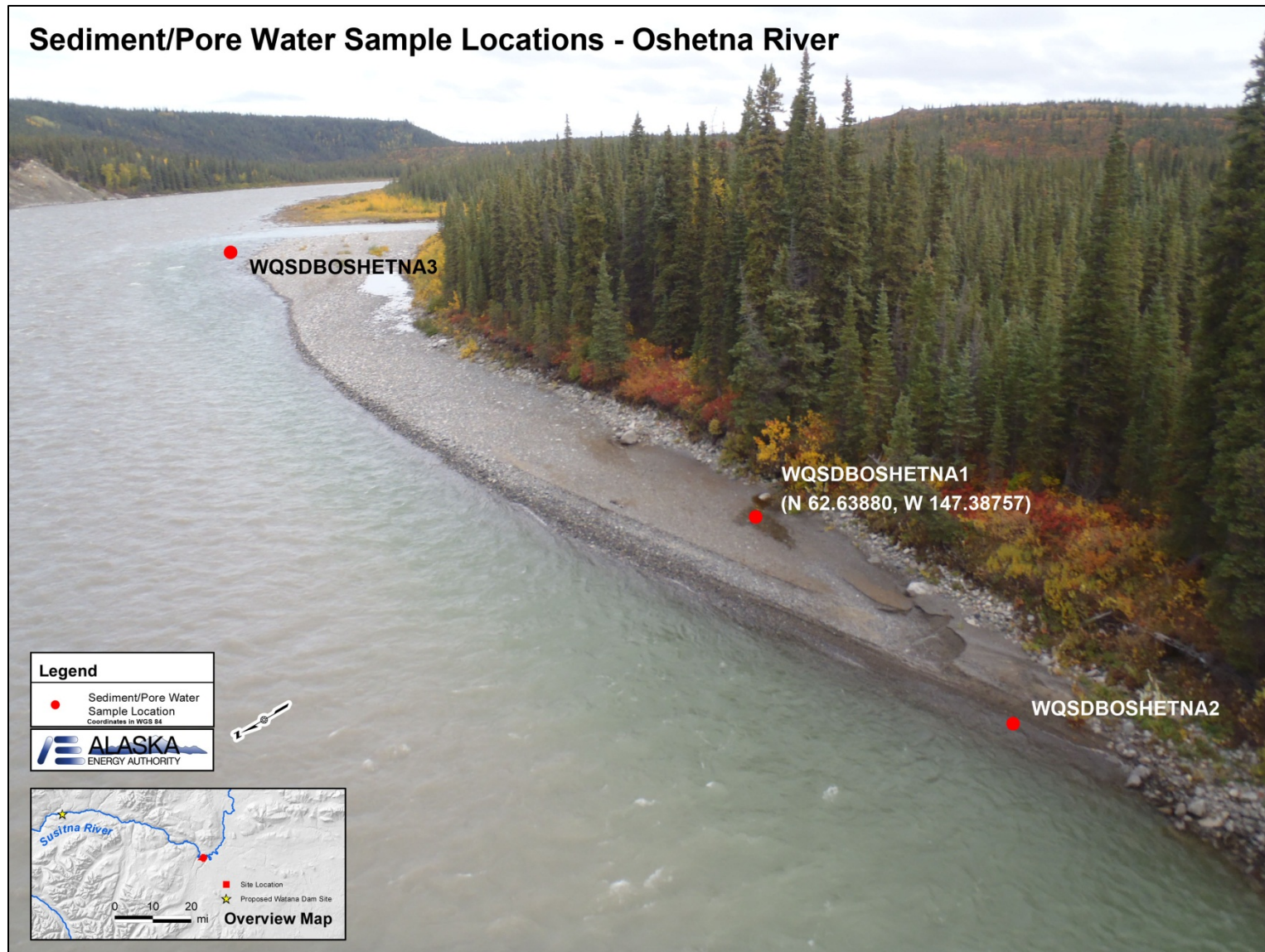
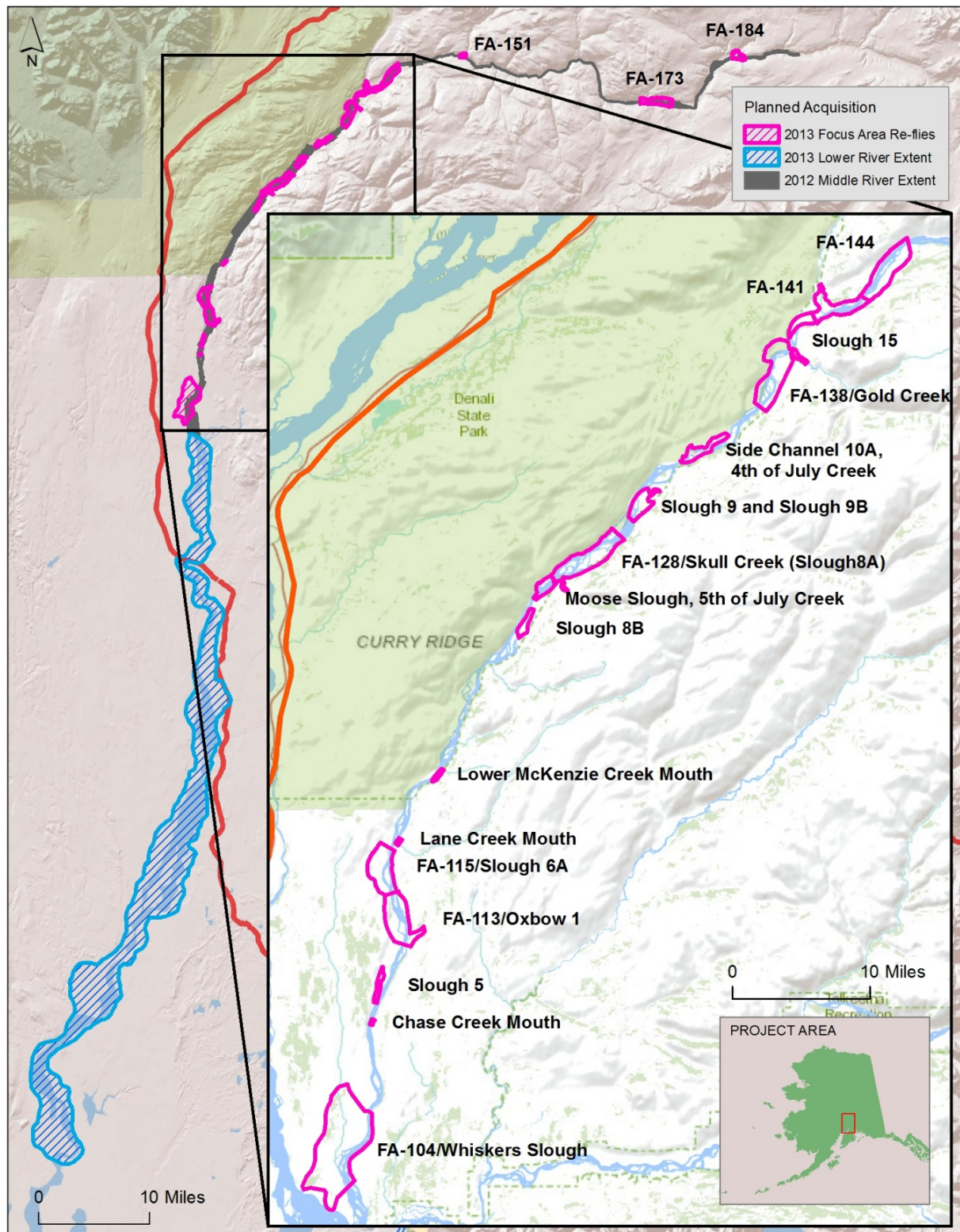
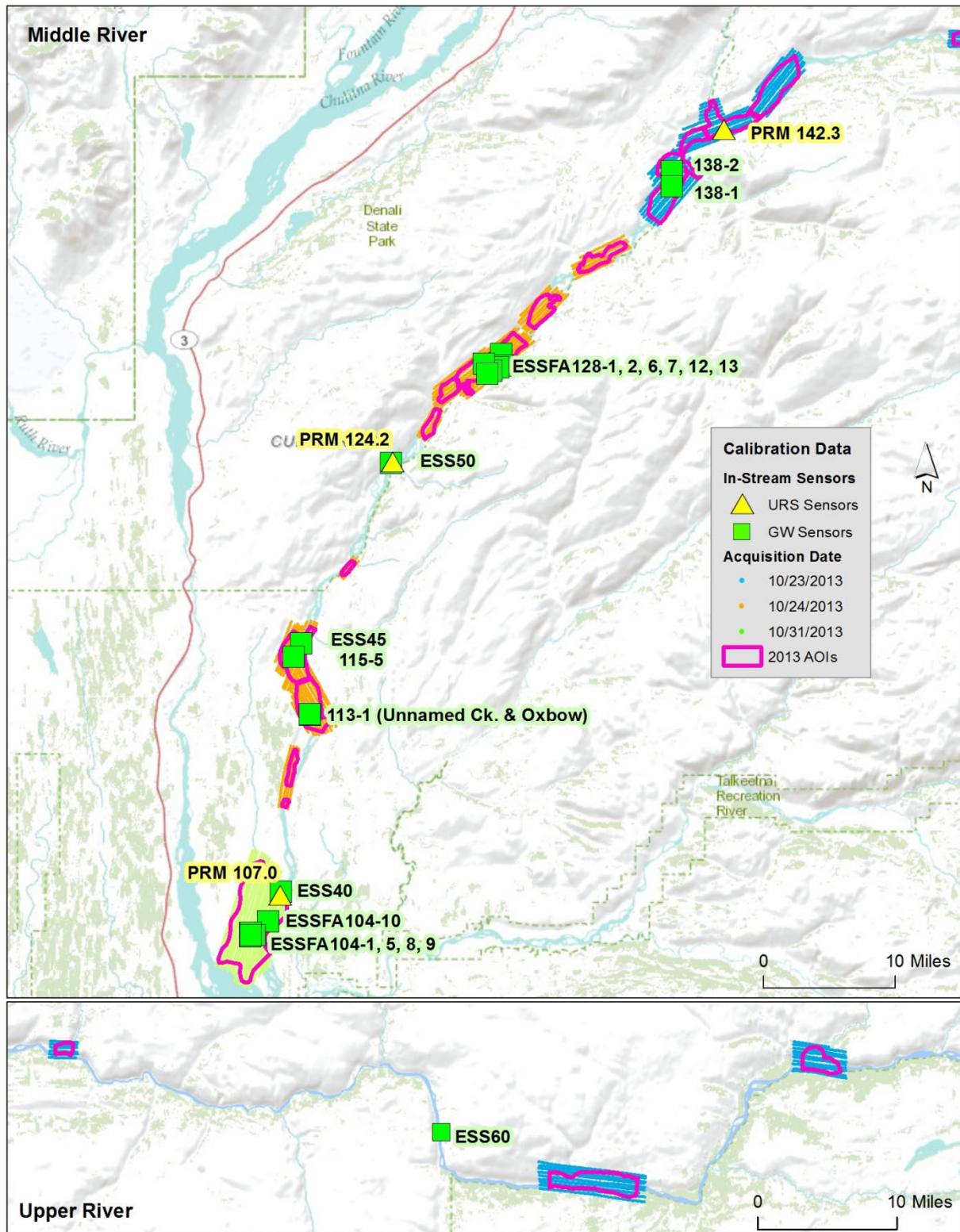


Figure 4.5-4. Sediment/Porewater Sample Location: Oshetna River



Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

Figure 4.7-1. Middle Susitna 2013 TIR Study



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Figure 4.7-2. Locations of Sensors Used for Calibration of TIR Data

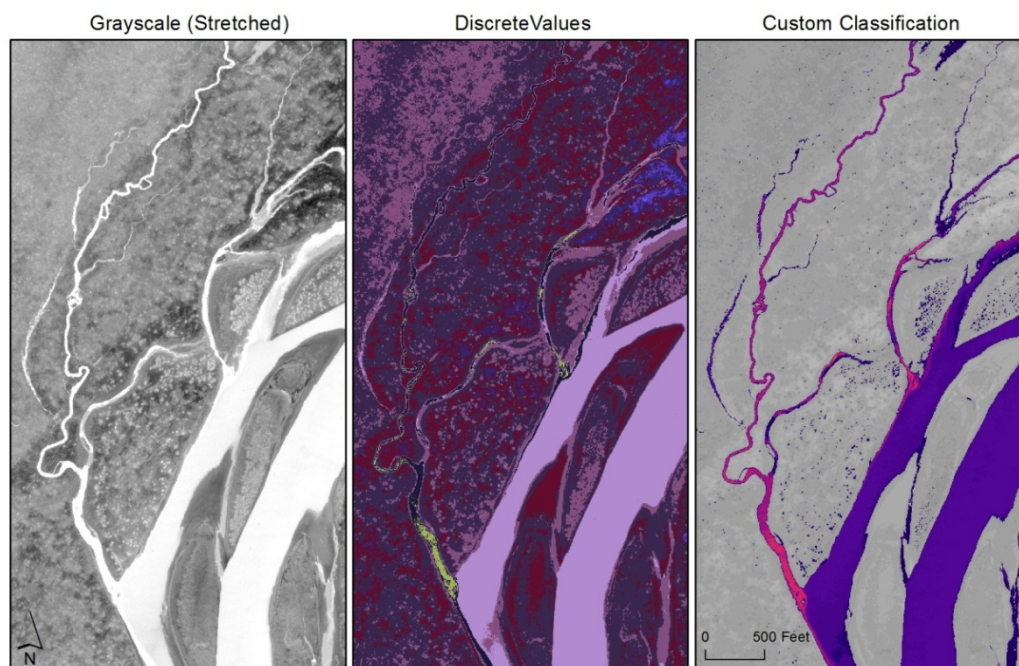


Figure 4.7-3. Examples of Different Data Processing of the Same TIR Image

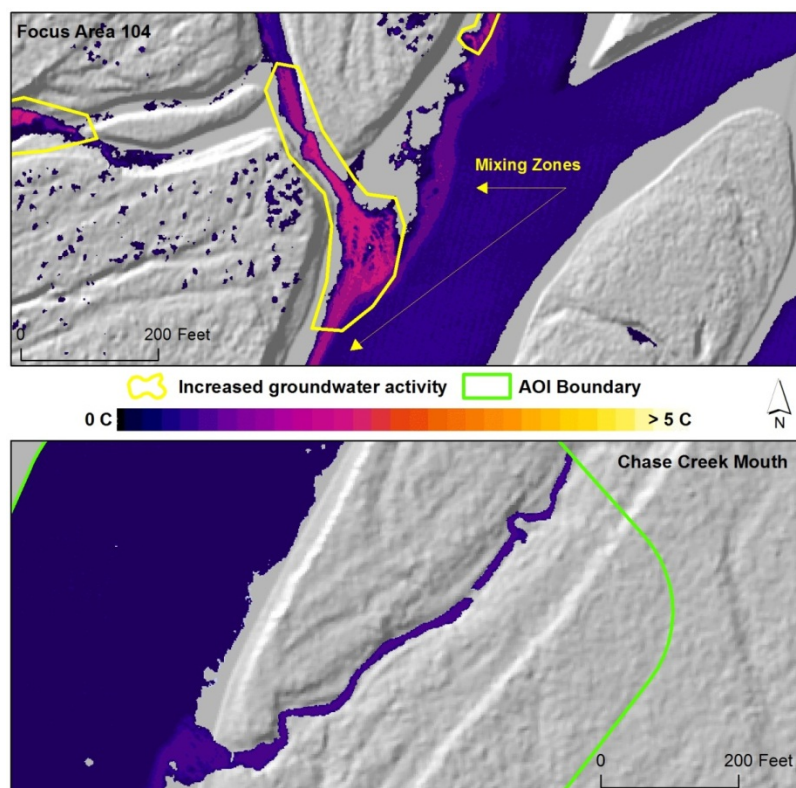


Figure 4.7-4. Examples: Groundwater Activity (top) and Little Groundwater Activity (bottom)

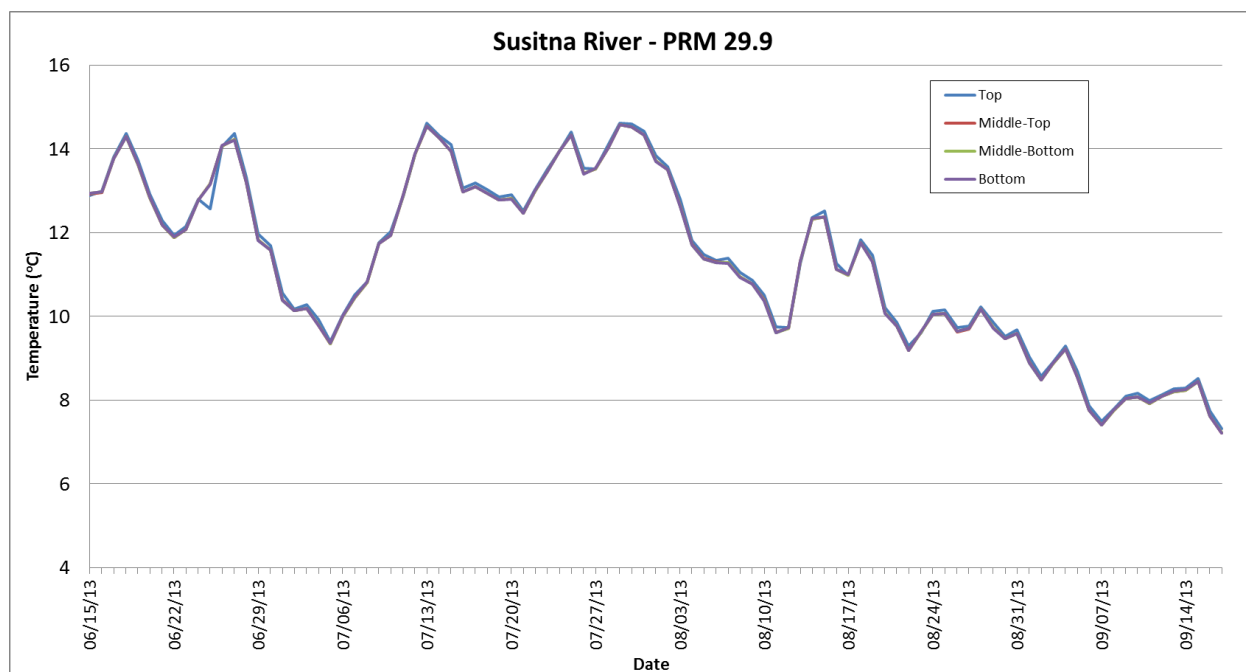


Figure 5.1-1. Continuous Temperature Data at PRM 29.9 (Susitna River) during 2013

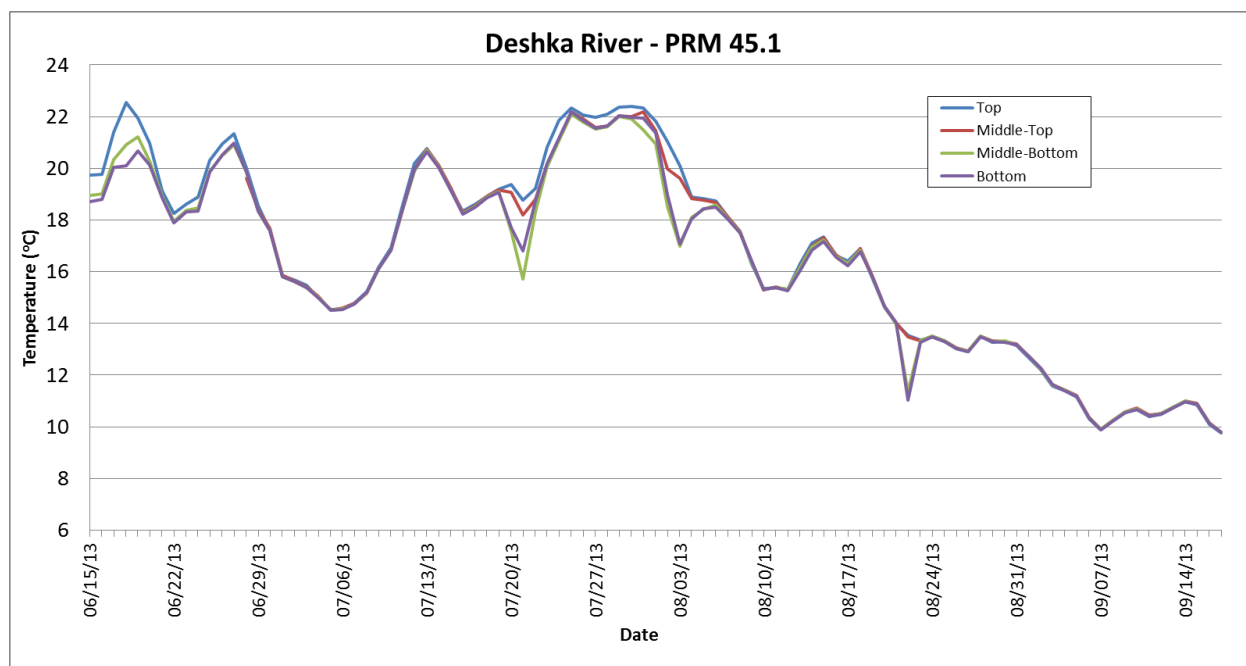


Figure 5.1-2. Continuous Temperature Data at PRM 45.1 (Deshka River) during 2013

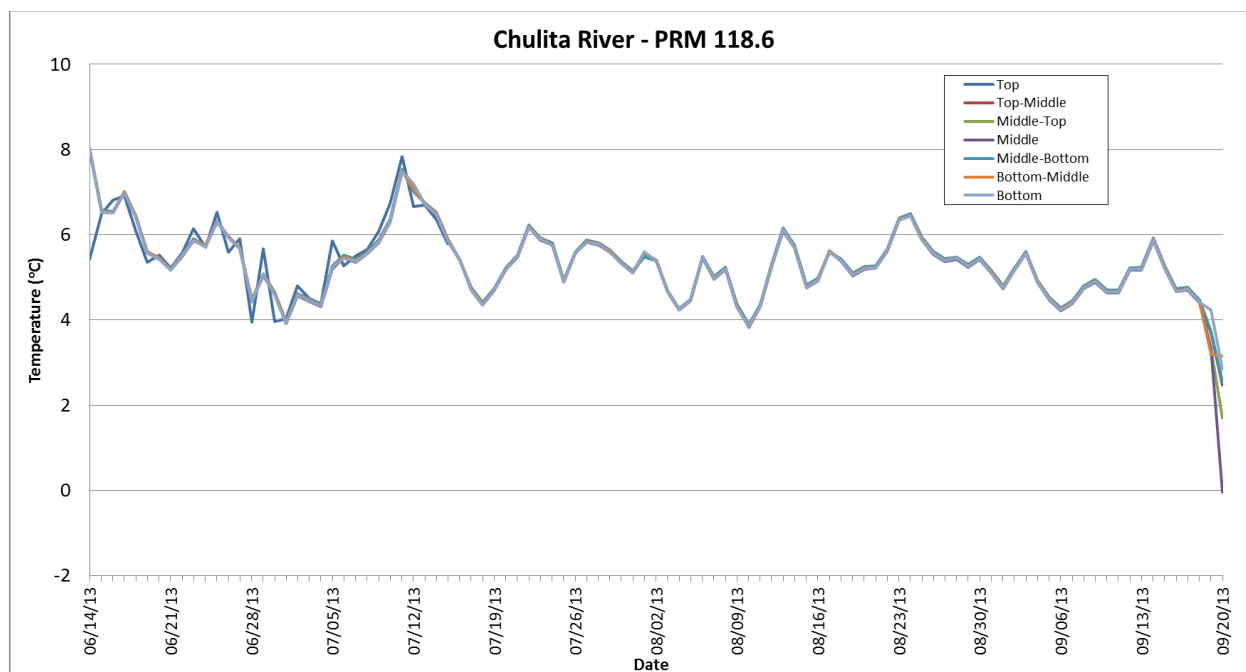


Figure 5.1-3. Continuous Temperature Data at PRM 118.6 (Chulitna River) during 2013

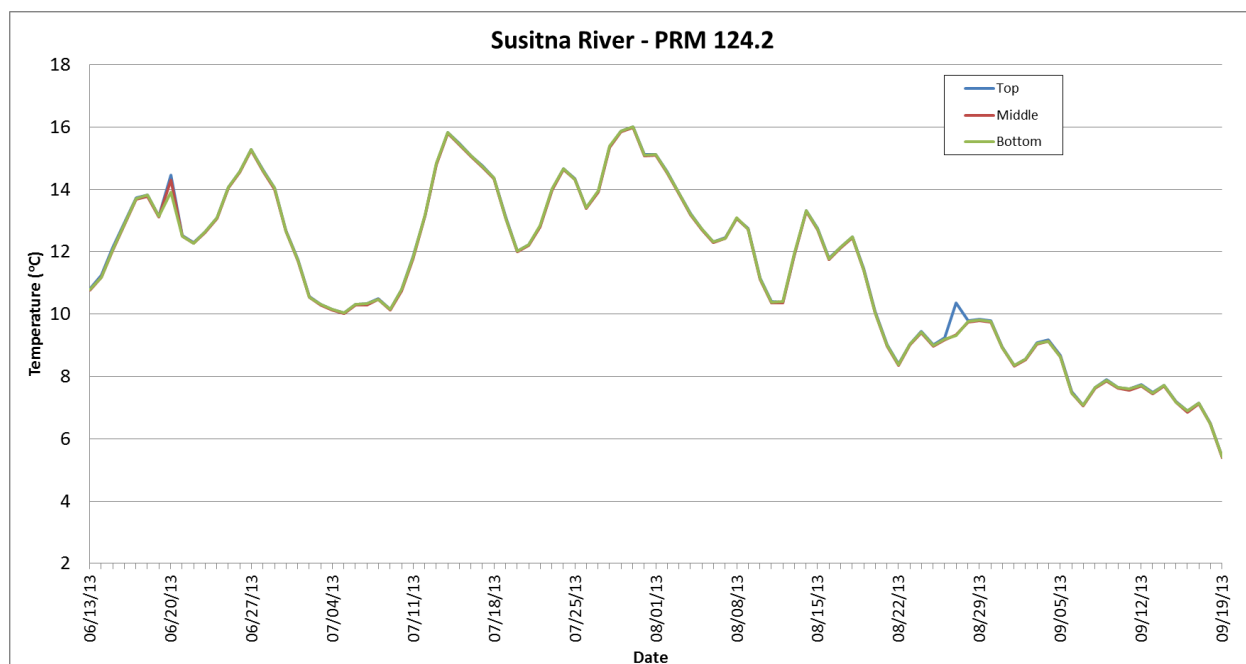


Figure 5.1-4. Continuous Temperature Data at PRM 124.2 (Susitna River) during 2013

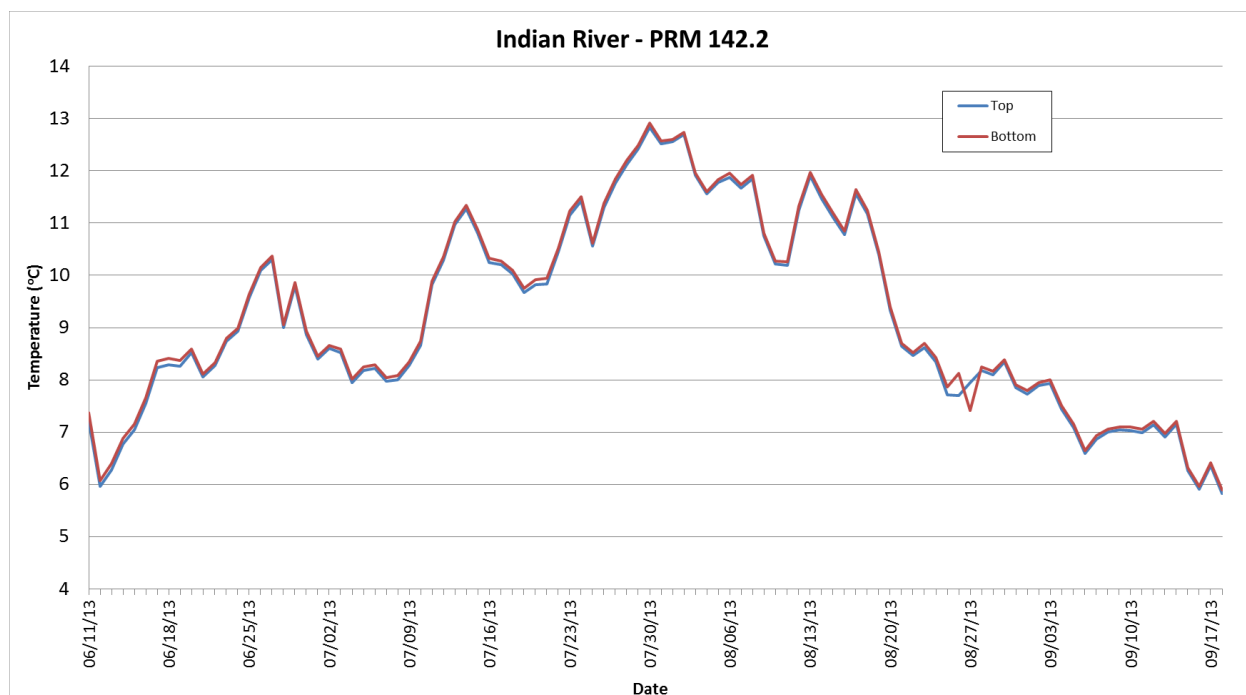


Figure 5.1-5. Continuous Temperature Data at PRM 142.2 (Indian River) during 2013

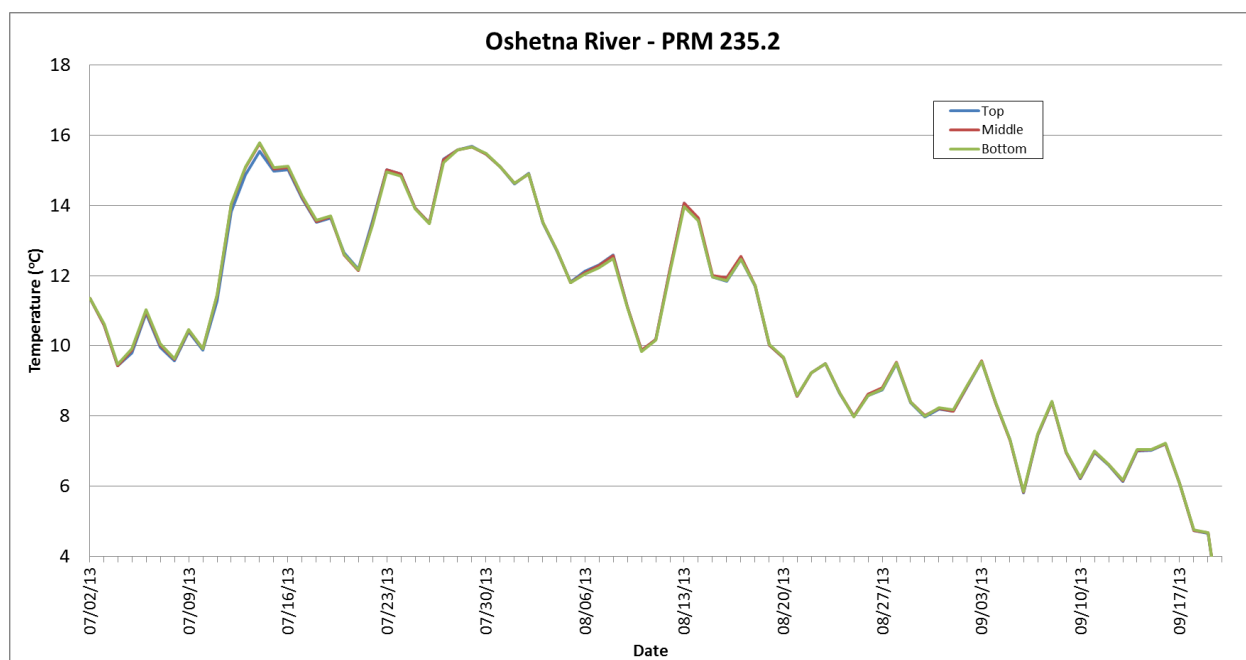
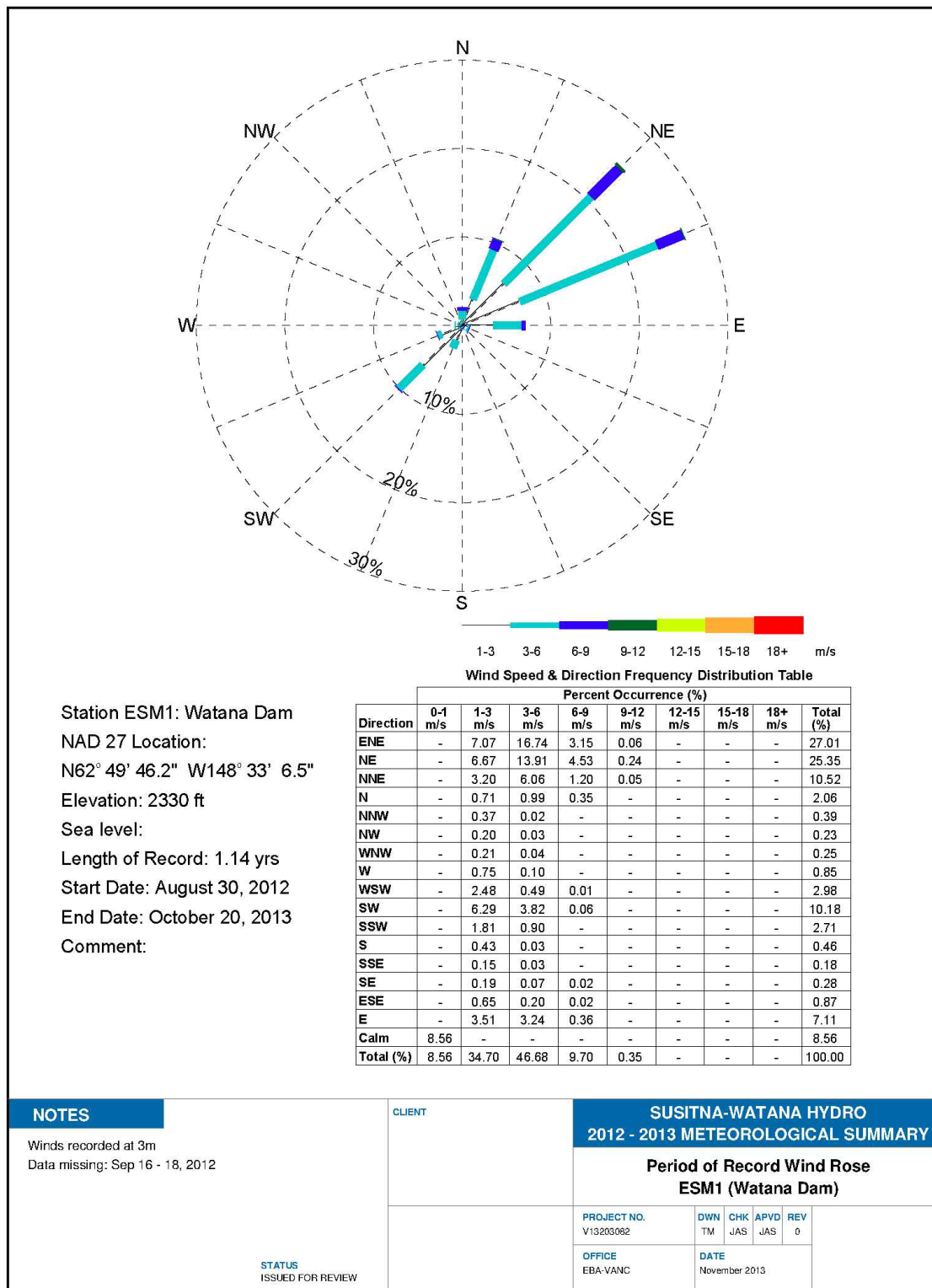
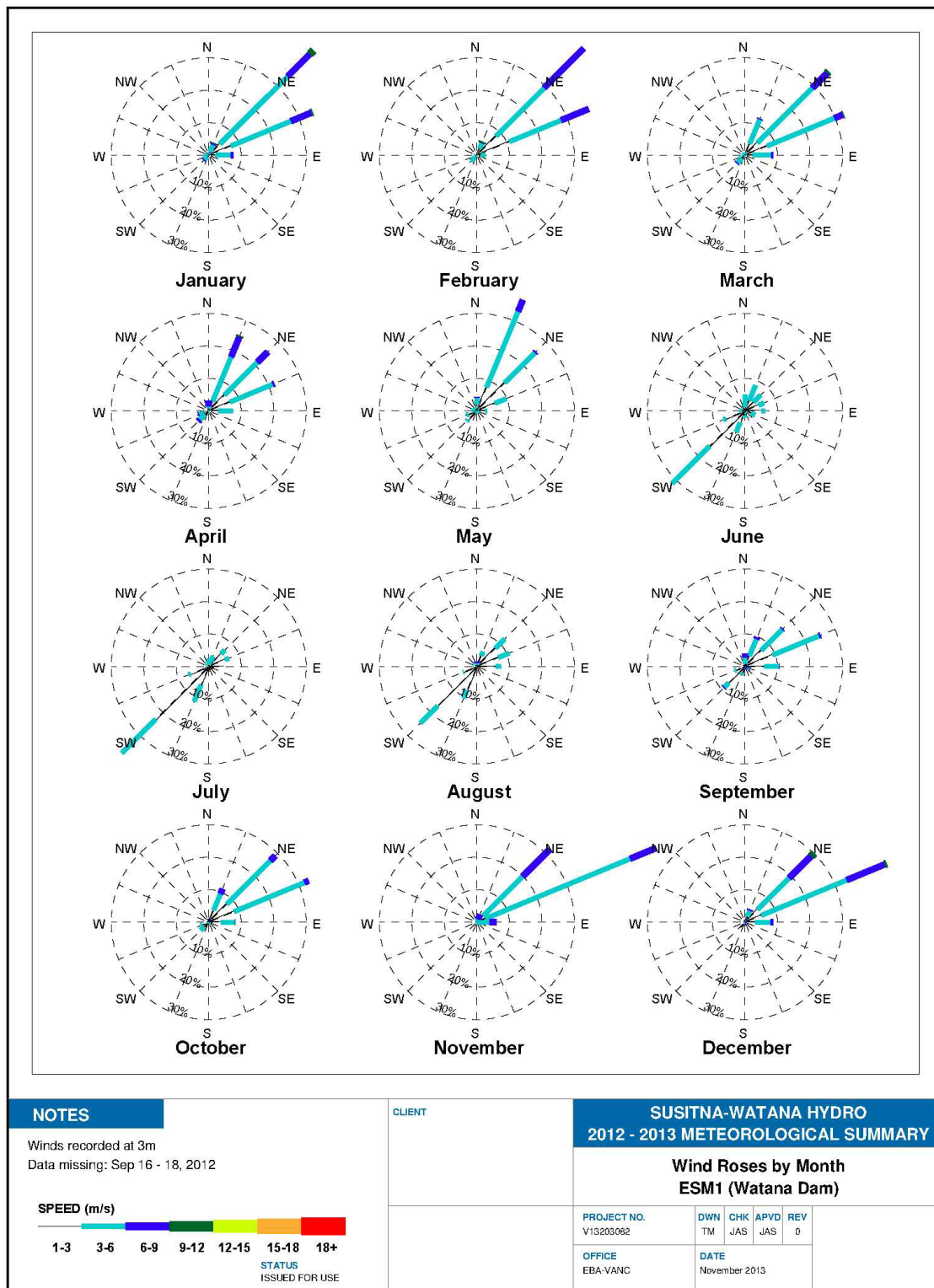


Figure 5.1-6. Continuous Temperature data at PRM 235.2 (Oshetna River) during 2013



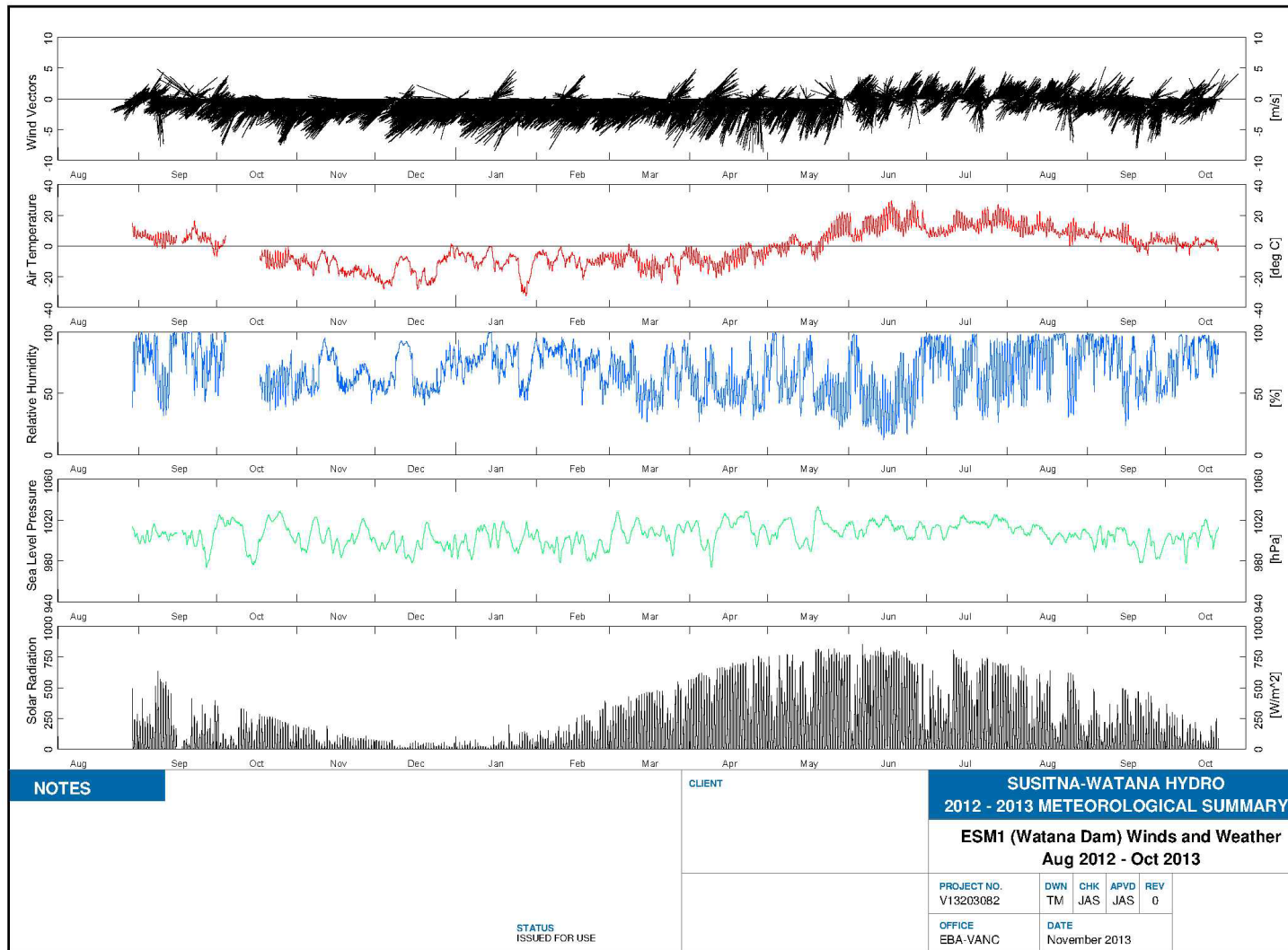
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Figure 5.2-1. Wind Rose ESM1: Watana Dam Station



Thu Oct 31 13:15:30 2013:Q:\Vancouver\Engineering\V132\Projects\V13203082 Susitna-Watana Dam - fm V13201483 and V13203026\2013 Study - V13203086\Meteorolo

Figure 5.2-2. Monthly Wind Rose ESM1: Watana Dam Station



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Figure 5.2-3. Winds and Weather: ESM1: Watana Dam Station

Susitna-Watana Hydroelectric Project
 FERC Project No. 14241

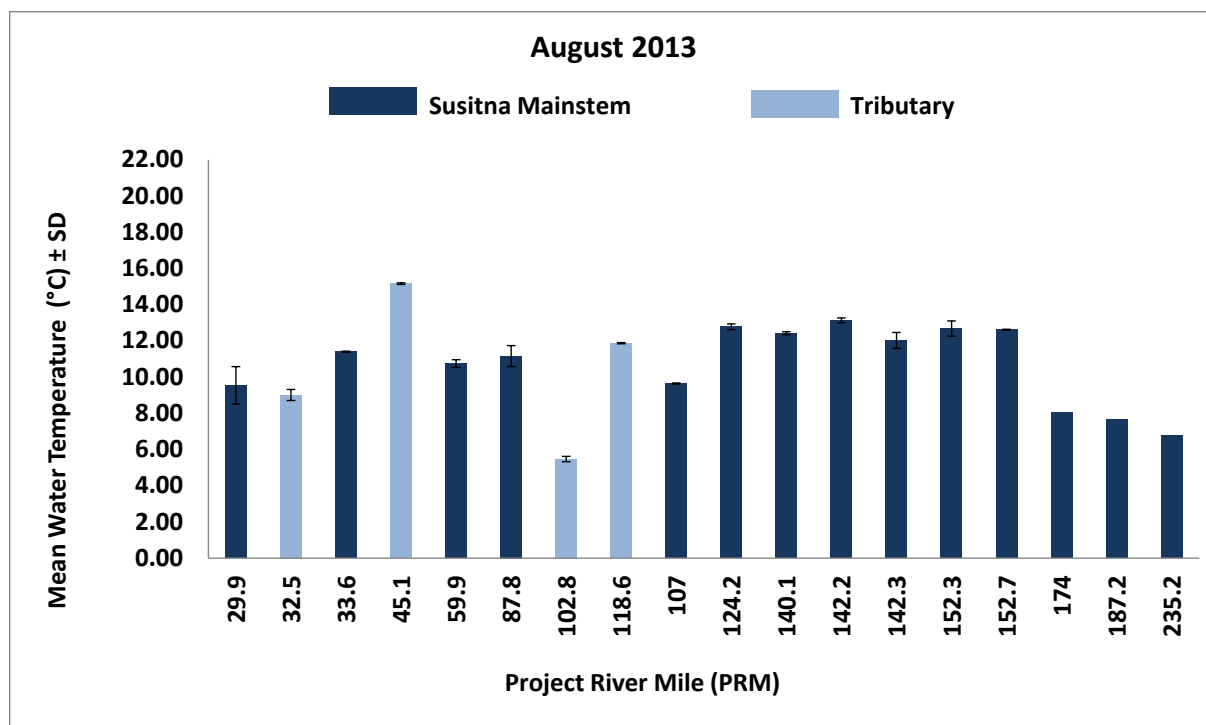


Figure 5.3-1. Mean Water Temperature in the Study Area, 2013

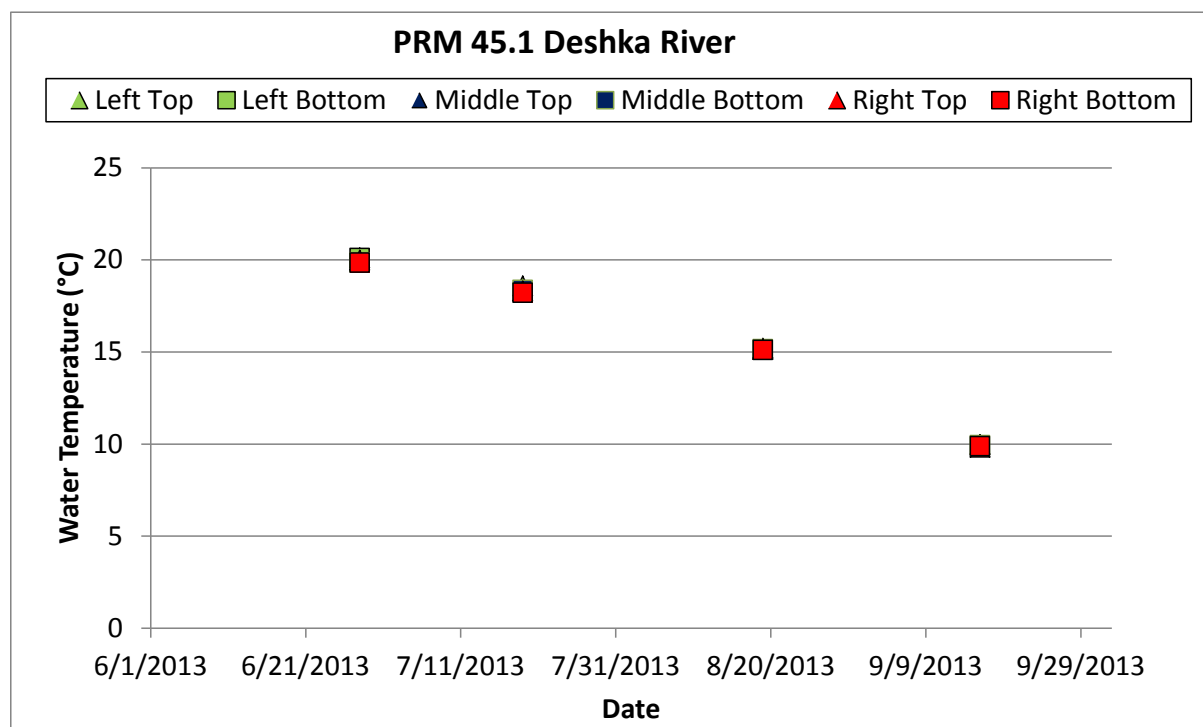


Figure 5.3-2. Water Temperature Data for PRM 45.1 (Deshka River), 2013

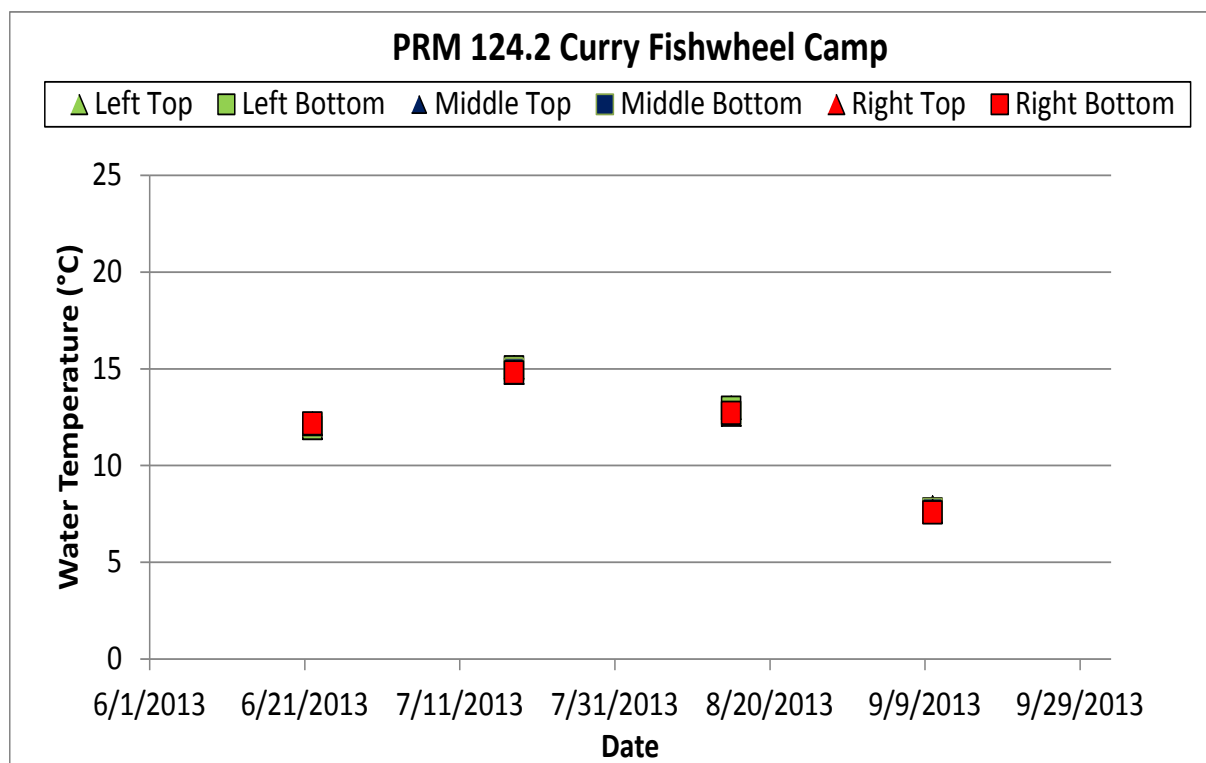


Figure 5.3-3. Water Temperature for PRM 124.2 (Curry Fishwheel Camp), 2013

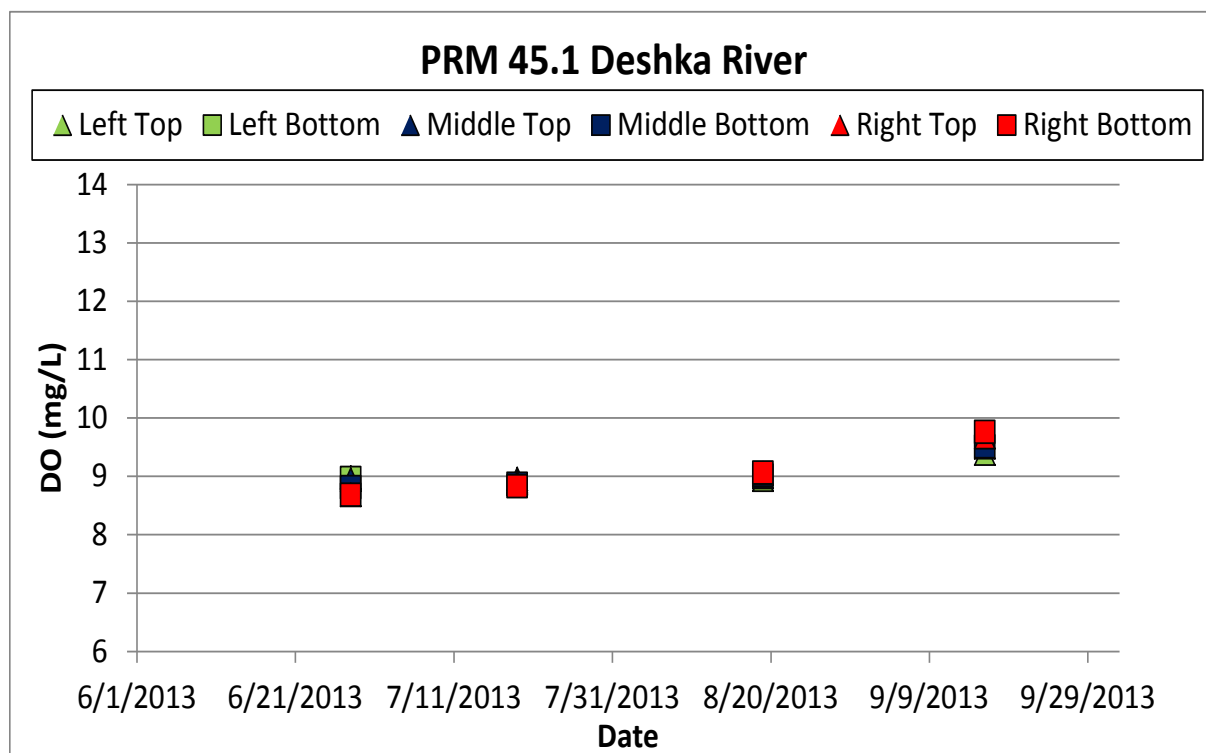


Figure 5.3-4. Dissolved Oxygen for PRM 45.1 (Deshka River), 2013

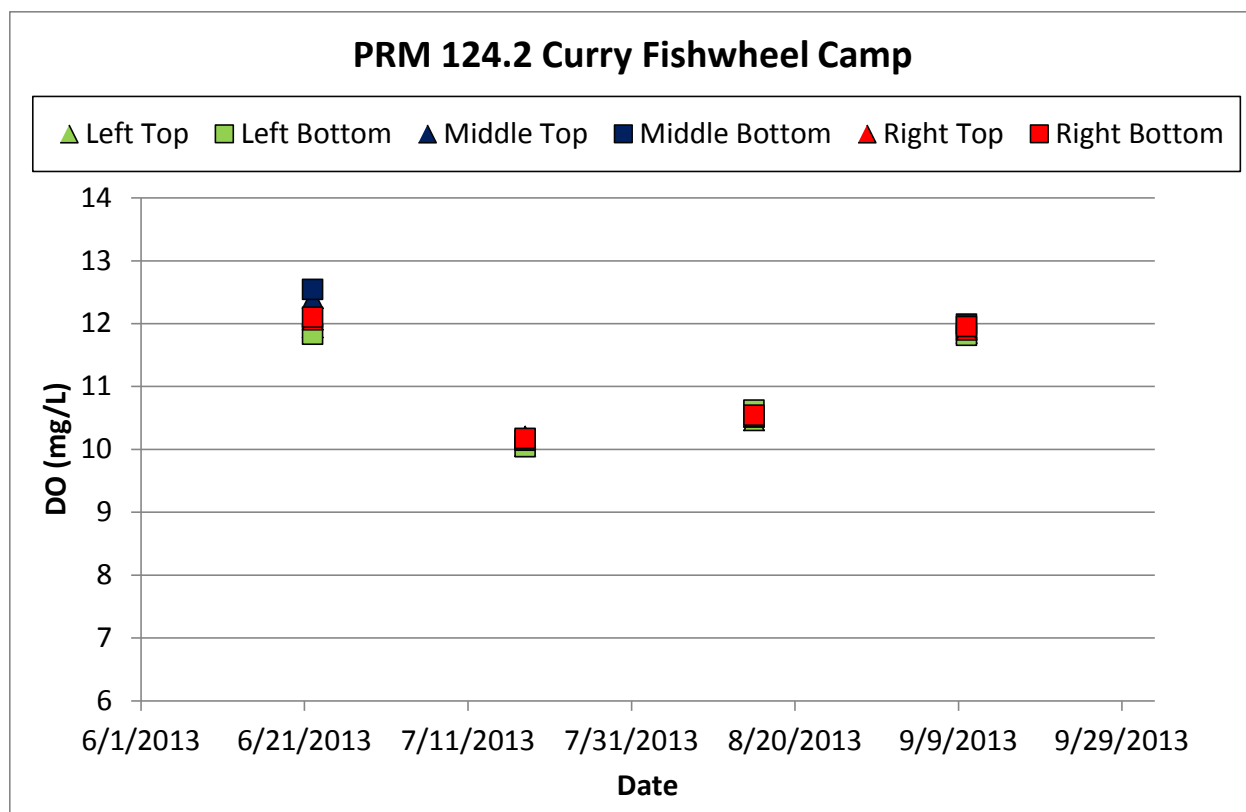


Figure 5.3-5. Dissolved Oxygen for PRM 124.2 (Curry Fishwheel Camp), 2013

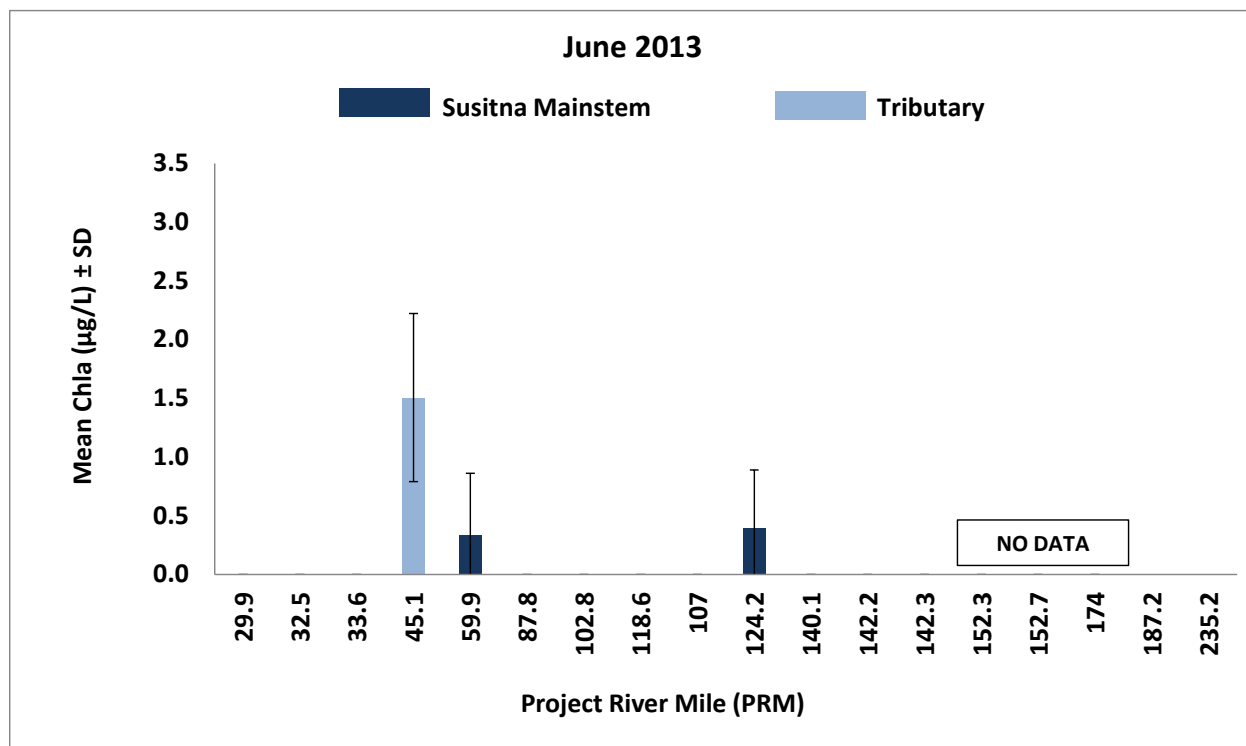


Figure 5.3-6. Mean Chlorophyll a Concentrations in the Study Area, June 2013

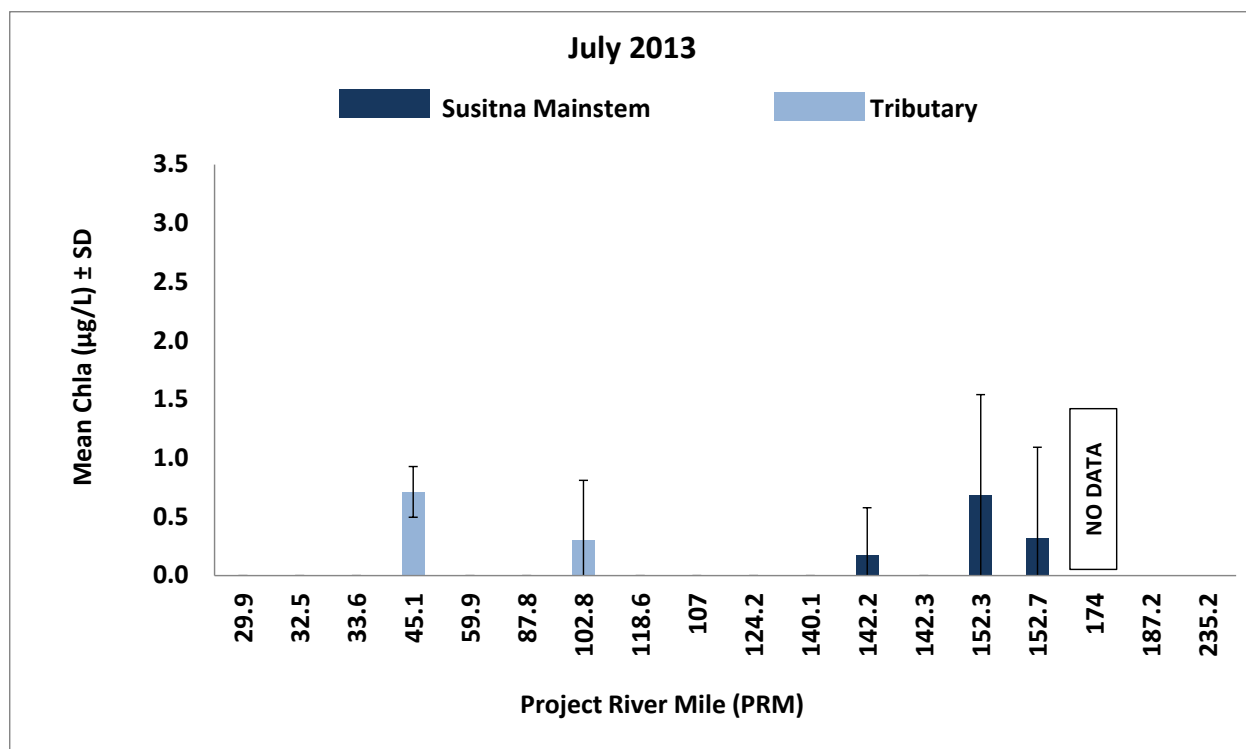


Figure 5.3-7. Mean Chlorophyll a Concentrations in the Study Area, July 2013

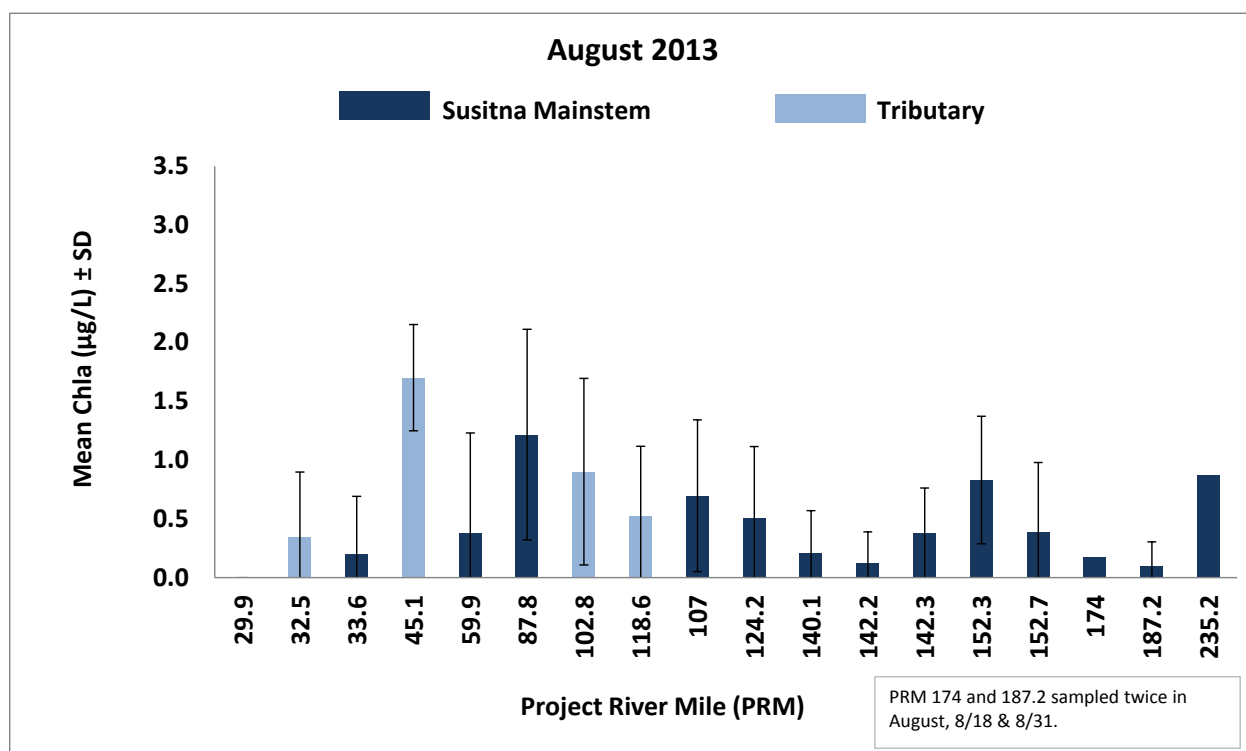


Figure 5.3-8. Mean Chlorophyll a Concentrations in the Study Area, August 2013

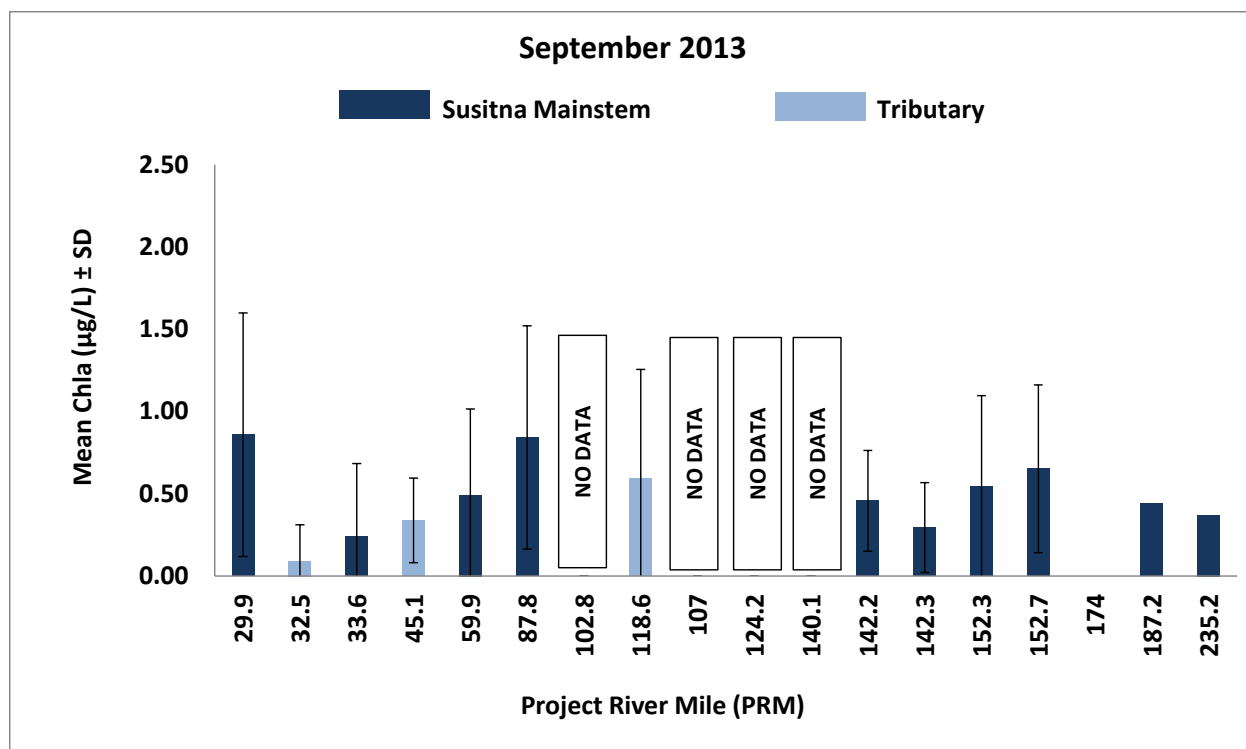


Figure 5.3-9. Mean Chlorophyll a Concentrations in the Project area, September 2013

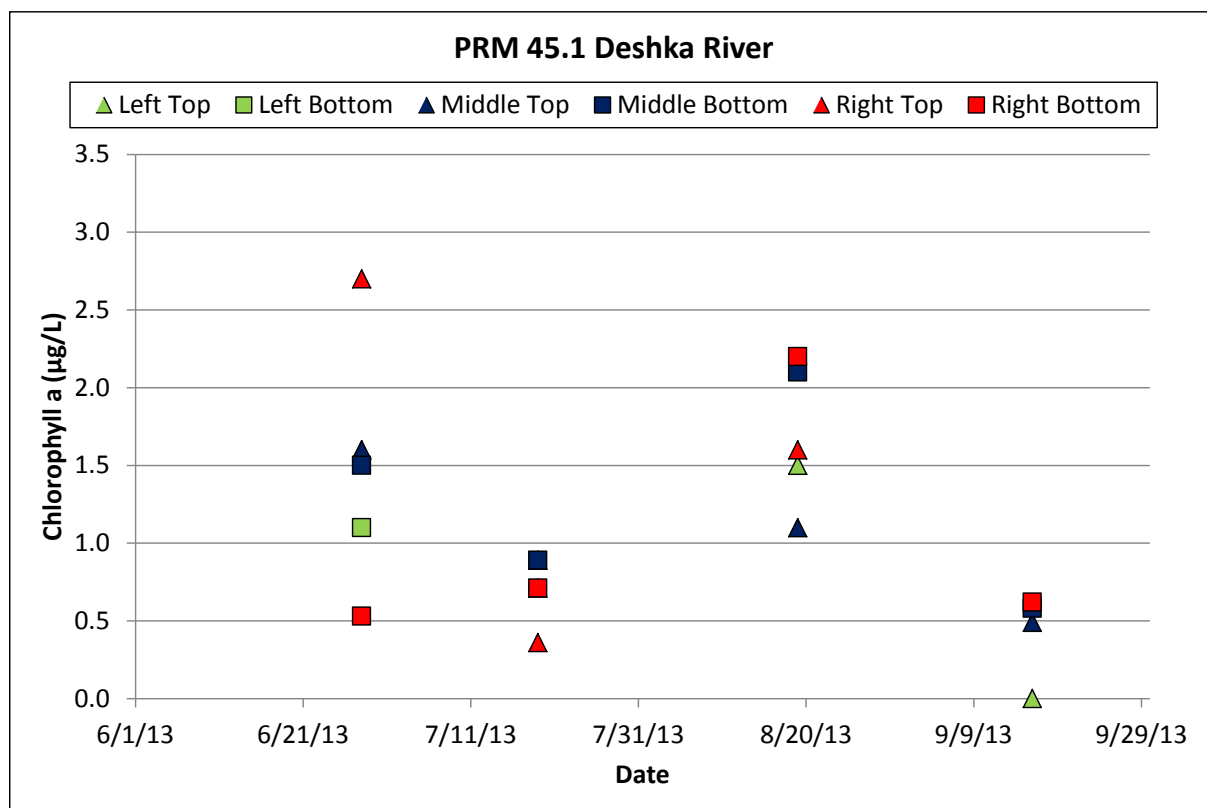


Figure 5.3-10. Chlorophyll a Concentrations at PRM 45.1 (Deshka River), 2013

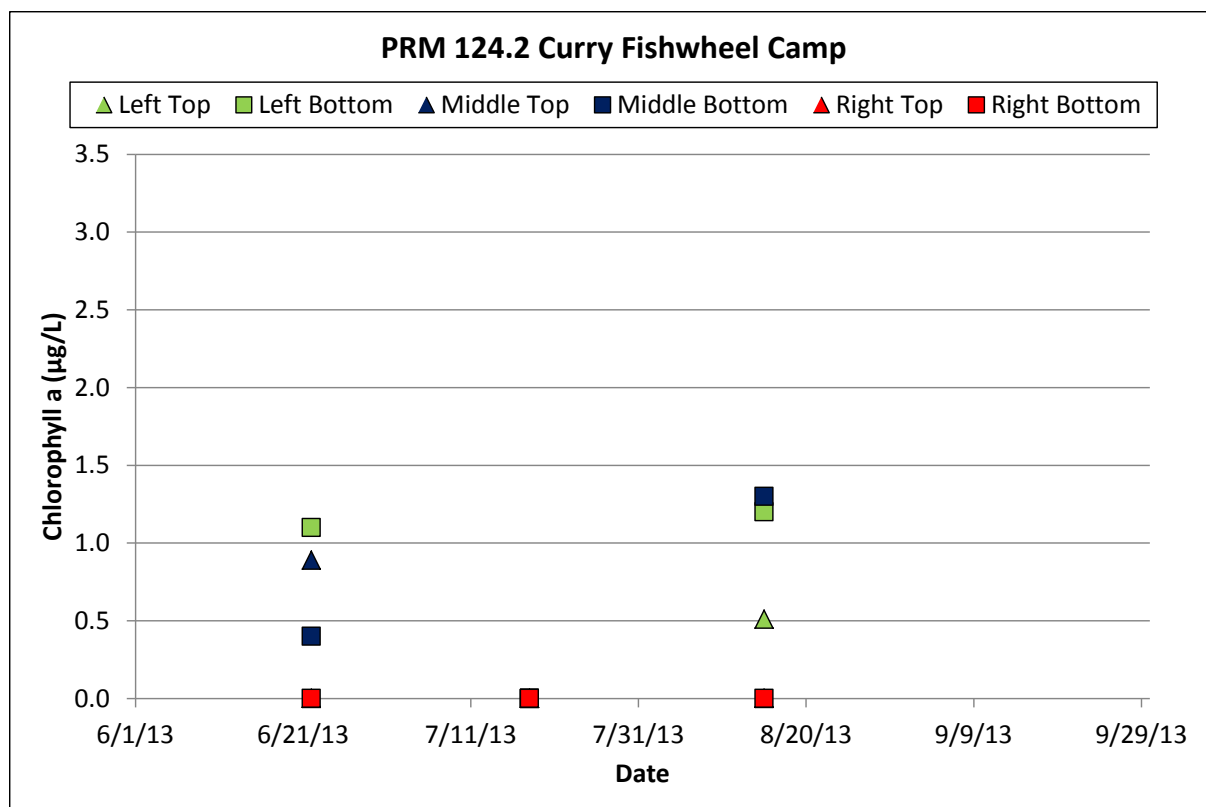


Figure 5.3-11. Chlorophyll a Concentrations at PRM 124.2 (Curry Fishwheel Camp), 2013

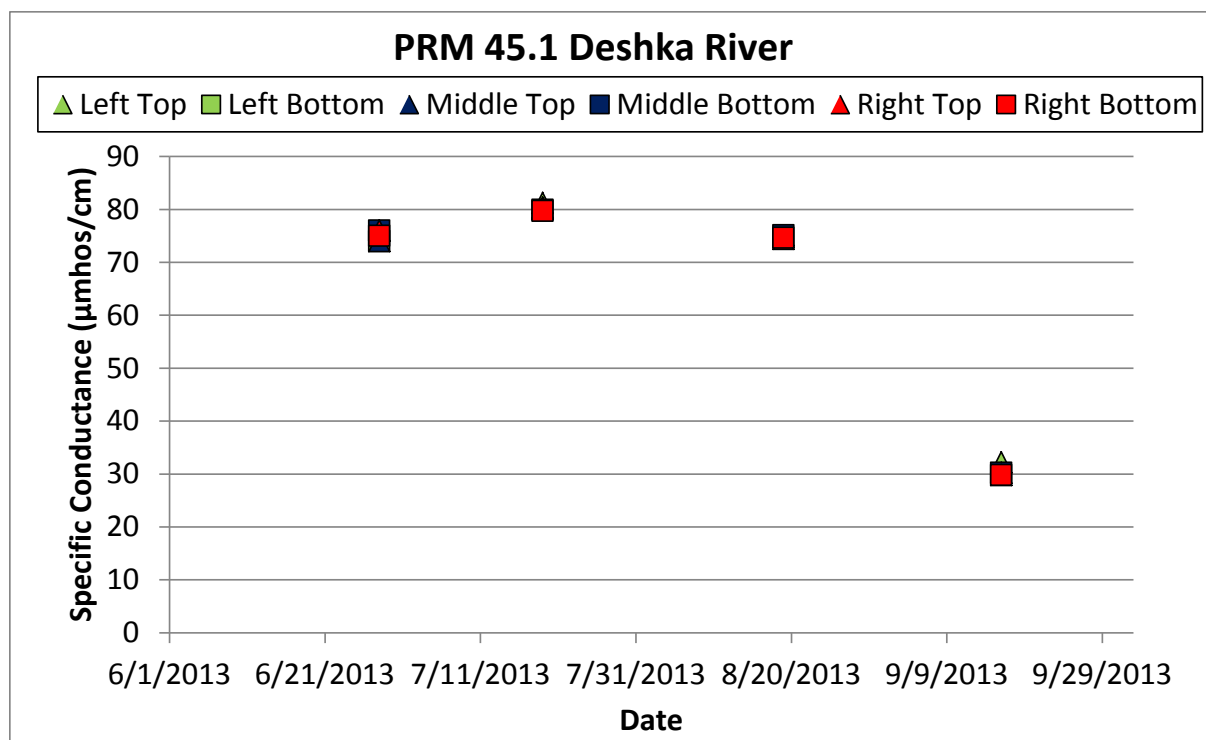


Figure 5.3-12. Specific Conductance at PRM 45.1 (Deshka River), 2013

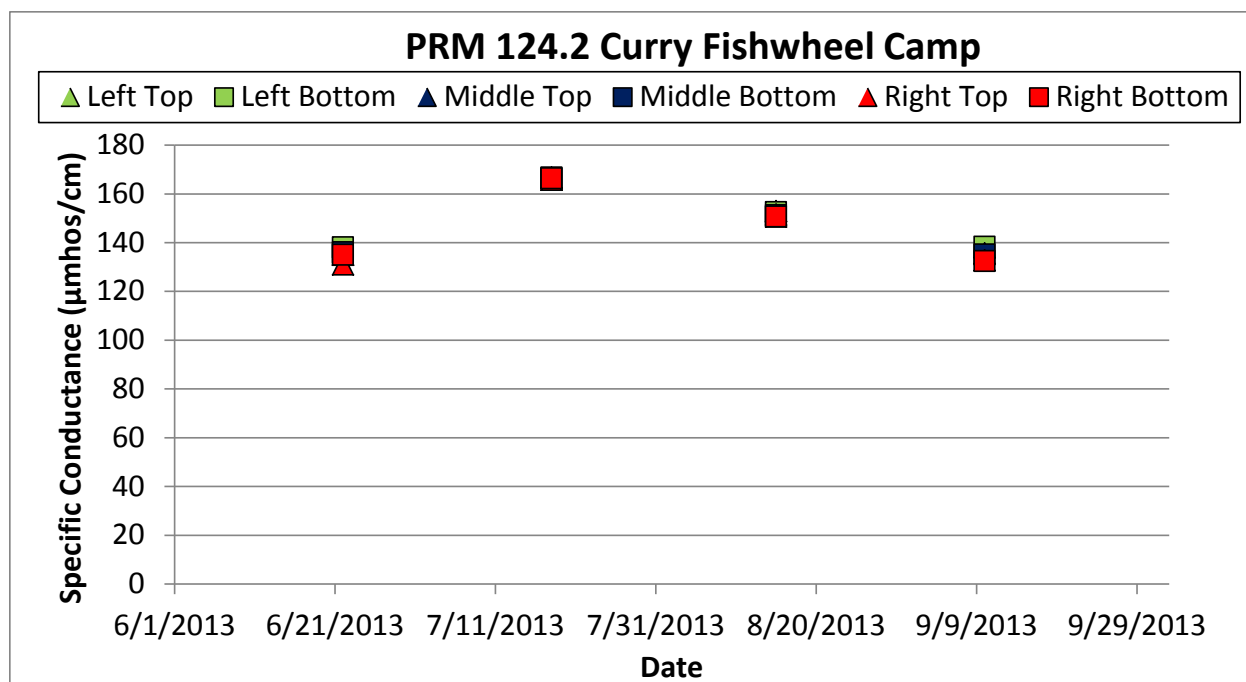


Figure 5.3-13. Specific Conductance at PRM 124.2 (Curry Fishwheel Camp), 2013

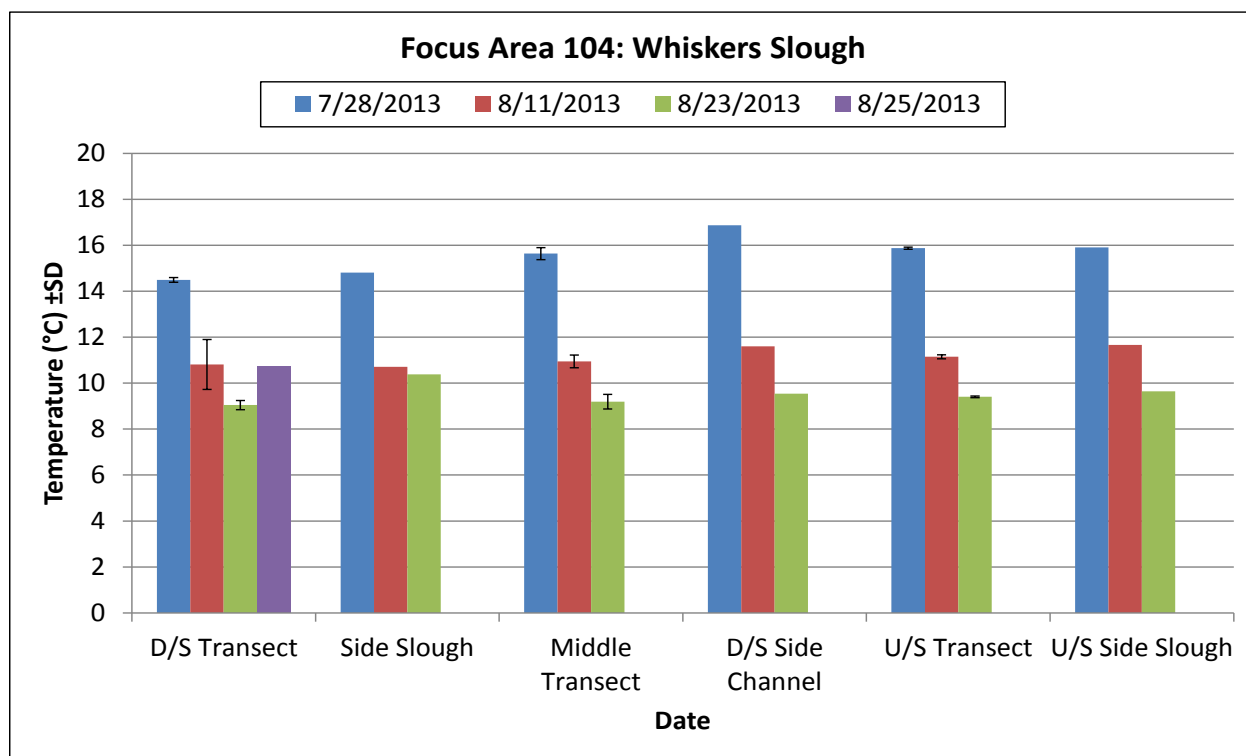


Figure 5.4-1. Temperature for Focus Area 104: Whiskers Slough, 2013

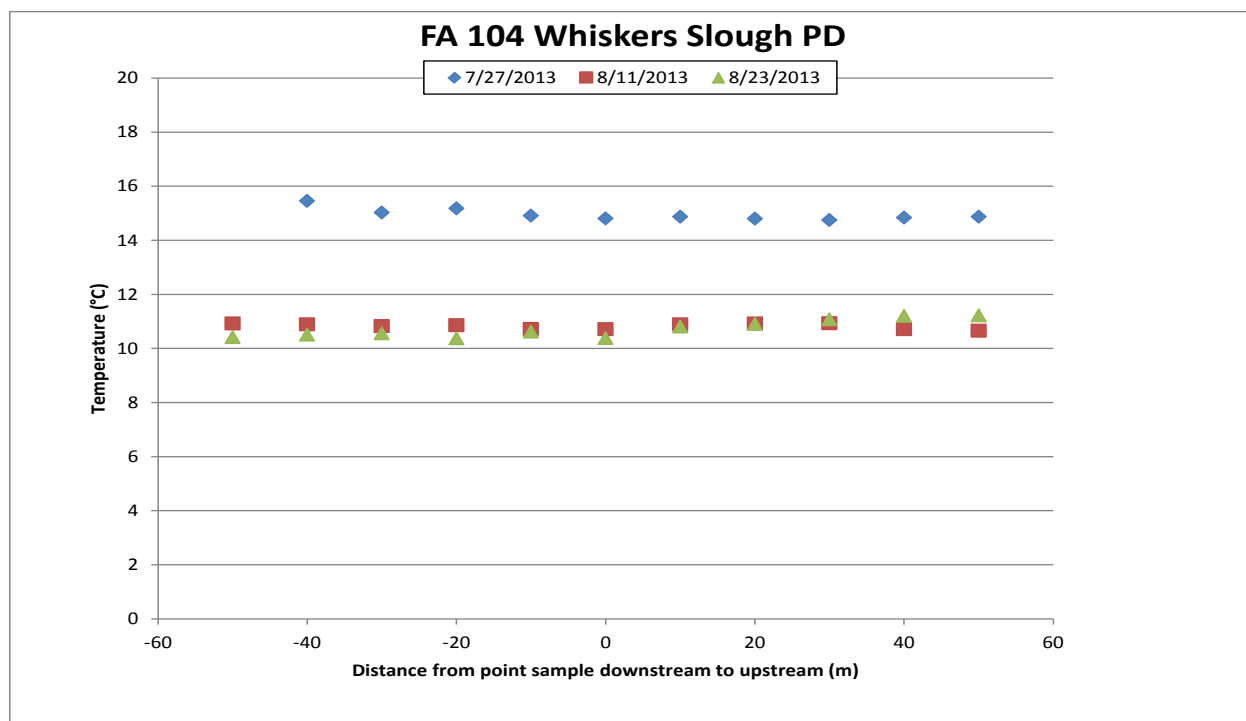


Figure 5.4-2. Temperature for Focus Area 104: Whiskers Slough, Point Sample Downstream, 2013

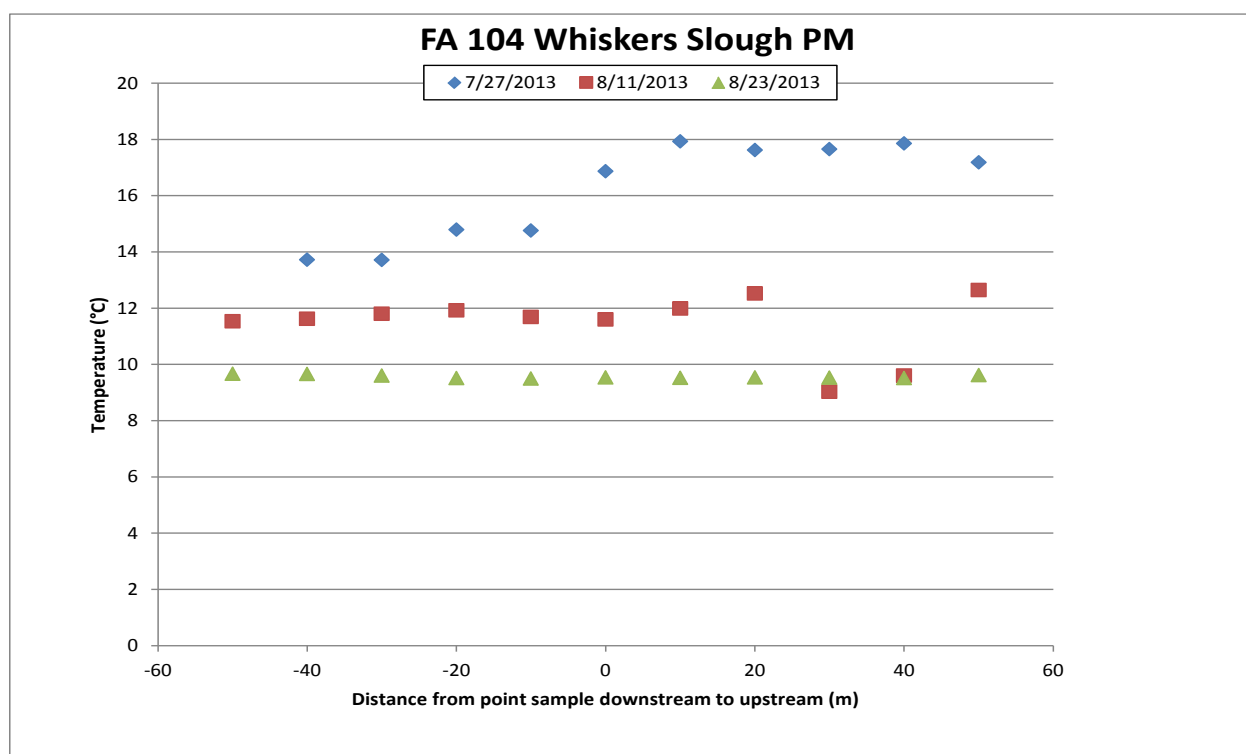


Figure 5.4-3. Temperature for Focus Area 104: Whiskers Slough, Middle Point Sample, 2013

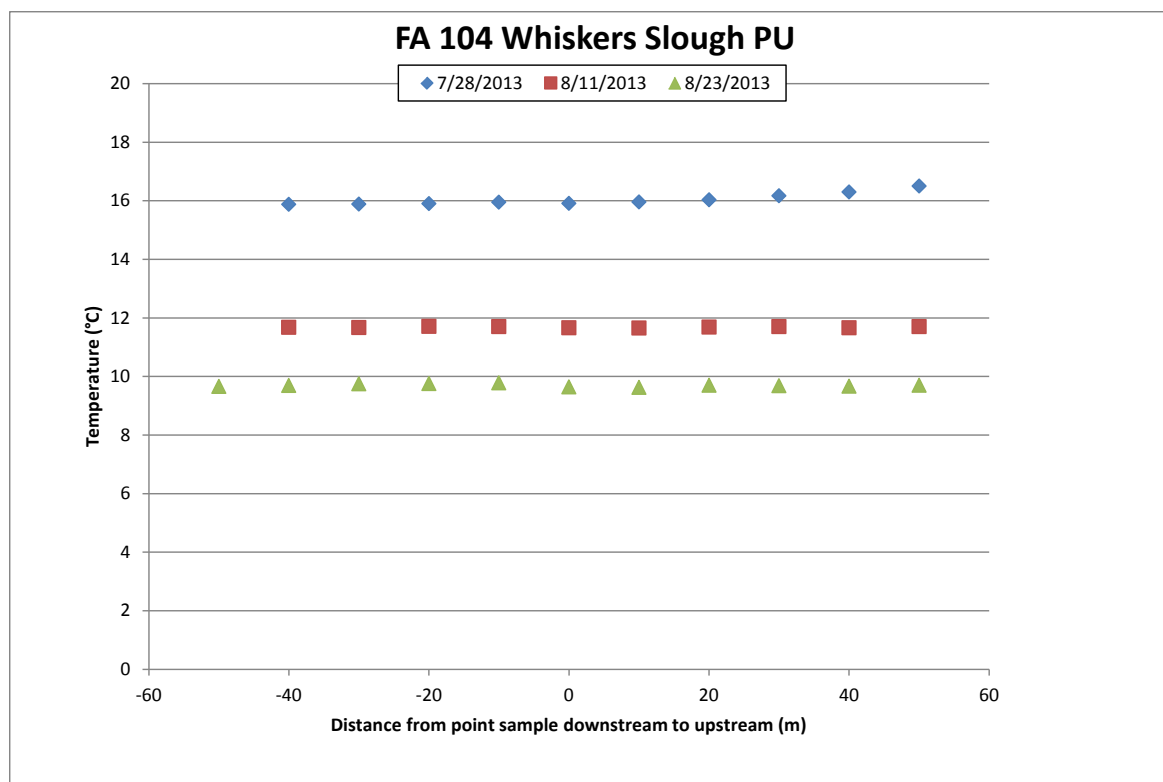


Figure 5.4-4. Temperature for Focus Area 104: Whiskers Slough, Point Sample Upstream, 2013

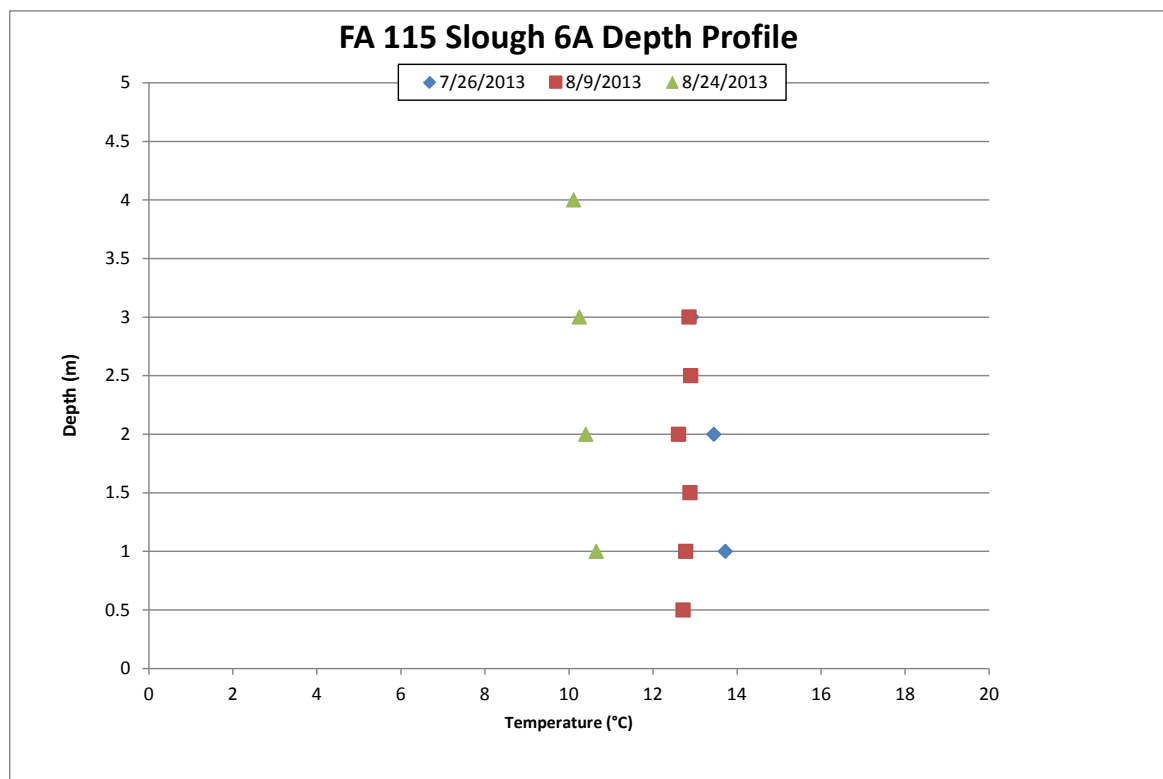


Figure 5.4-5. Temperature Depth Profile at Focus Area 115: Slough 6A, 2013

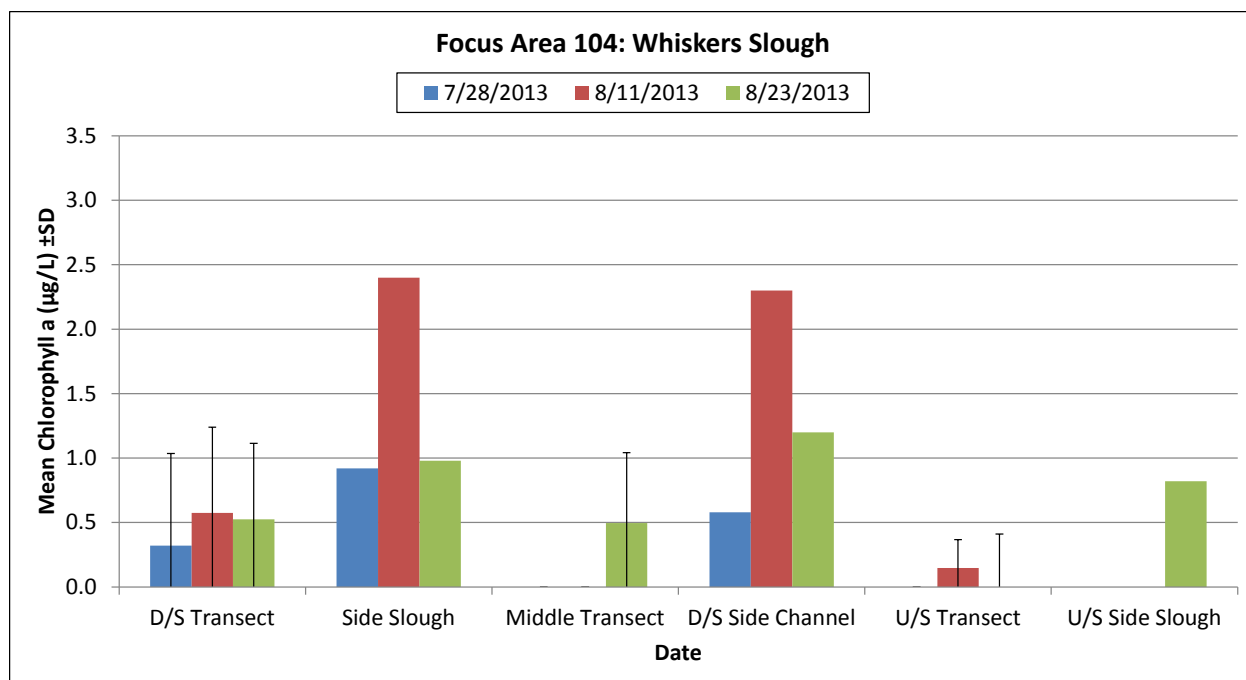


Figure 5.4-6. Mean Chlorophyll a Concentrations in Focus Area 104: Whiskers Slough, 2013