El Dorado Project, FERC No. 184
Monitoring Program
2008 Annual Report

July 15, 2009

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1.0 Introduction

This annual report is being submitted to the Federal Energy Regulatory Commission (FERC) by El Dorado Irrigation District (Licensee), after review by the Ecological Resources Committee (ERC), the U.S. Forest Service (FS), and the State Water Resources Control Board (SWRCB), in accordance with FS 4(e) Condition 37 of the El Dorado Hydroelectric Project License (FERC No. 184), Condition 14 of the 401 Water Quality Certification, and Section 7 of the El Dorado Relicensing Settlement Agreement (Settlement), Monitoring Program, with respect to the following paragraph:

> The licensee shall file with FERC by June 30 of each year an annual report fully describing the monitoring efforts of the previous calendar year. The FS, ERC, and SWRCB shall have at least 30 days to review the report prior to filing with FERC. The licensee shall provide copies of the annual report to the FS, ERC, and SWRCB.

2.0 ERC Meetings Major Objectives (March – December 2008)

The following meeting summaries describe the major topics and objectives discussed at ERC meetings during 2008. Complete meeting notes are available online at www.project184.org.

The Licensee, the ERC, and the resource agencies convened a number of special meetings and conference calls in 2008 in addition to the regularly scheduled ERC meetings to resolve issues related to the draw-down of Caples Lake necessary to facilitate the emergency repairs of the main dam outlet works. Significant milestones related to the emergency repairs are described in the following meeting summaries.

March 13, 2008

The ERC Annual Meeting and the annual resource agencies meeting were held on March 13, 2008. Updates discussed included a summary of current streamflow and lake-level conditions, preliminary water year determination (B-120 = 94%) and compliance status of Article 302 of the FERC license. The potential to defer non-flood control releases (e.g. .,pulse flows) was discussed due to the potential failure of Caples Lake main dam outlet works. The monitoring activities conducted in 2007 were reviewed including hardhead and foothill yellow-legged frog (FYLF) surveys, Lake Aloha trout removal, Lake Aloha mountain yellow-legged frog (MYLF) surveys, and wildlife mortality along the P-184 canal facilities. The status of monitoring plans in the approval process was reviewed including Water Temperature, Streamflow and Lake Level Information, Preferred Canal Release Points, and Geomorphology Sensitive Site Monitoring. Monitoring activities planned for 2008 were reviewed including Water Quality, Lake Aloha monitoring if a spill occurs, and South Fork American River FYLF flow fluctuation monitoring if conditions are triggered.

April 10, 2008

Updates included a summary of current streamflow and lake-level conditions, preliminary water year determination (B-120 = 76%), modification to Caples Lake pulse flows requirement and pulse flow timing determination procedure, Caples Lake inspection scheduled for June, and the

status of the Caples Lake boat launch project. Several items were discussed related to Caples Lake pulse flows including: request for modification from pulse flows for 2008 given the potential failure of the main dam gates and the FS and California Department of Fish and Game (DFG) recommendation to provide pulse flows for 2008. Swanson Hydrology provided a presentation of site characterization, feasibility assessment, and enhancement concepts for the Esmeralda Creek Restoration Plan. The Water Quality monitoring 'first storm of the season' determination procedure was also reviewed. The status of plans in the approval process was reviewed: the SWRCB has approval letters drafted for signature for the Water Temperature, Streamflow and Lake Level Information, Preferred Canal Release Points. The Geomorphology Sensitive Site Plan requires an additional extension from FERC.

May 8, 2008

Updates included a summary of current streamflow and lake-level conditions, water year determination (Final B-120 not published as of meeting), Caples Lake pulse flow follow-up, peak run-off determination procedure, Lake Aloha spill prediction, and an overview of Caples Lake activities. A flow modification necessary for the Caples Lake inspection was proposed to the ERC. A follow-up conference call was scheduled to review options for providing streamflows during the two-day inspection. Two topics related to the Caples Lake boat launch facility were discussed including the deviation from target lake levels to facilitate construction of the Caples Lake boat launch and the status of pending litigation. .

May 20, 2008

A conference call was convened to discuss the Caples Lake Main Dam outlet works inspection. Topics discussed included FERC's determination that the gates at Caples main dam are in a state of malfunction, the revised streamflow plan which addressed streamflows and monitoring during the flow deviation, the results of the pre-project survey of the 1.5 miles of Caples Creek between the main dam and the confluence with Kirkwood Creek., and the potential for using a culvert under Highway 88 to provide bypass flows during the inspection.

July 10, 2008

The July ERC meeting was held at the Kirkwood Meadows Public Utility District Community Services offices in Kirkwood. Updates included a summary of current streamflow and lake-level conditions and confirmation that Lake Aloha did not spill in 2008. Dam safety activities related to Caples Lake were reviewed including the results of the outlet works inspection, the emergency declaration by EID's Board of Directors at a July 1, 2008, special meeting, and the next steps necessary to facilitate the repairs. Two topics related to the Caples Lake boat launch facility were discussed including the status of the FS construction contract and the pending litigation. URS and Entrix provided a presentation on the Caples Lake feasibility study to evaluate whether the facilities at Caples can be modified to provide up to 600 cfs to the Caples Creek natural channel. The ERC suggested that the feasibility study should not proceed until a number of milestones were achieved including: the gates were repaired, the outlet capacity was confirmed, and the geomorphology monitoring was completed. The ERC recommended preparation of a letter outlining these precursors and requesting an extension for the development of the feasibility study. Other items discussed included the Oyster Creek Stabilization Plan, Caples Spillway Stabilization Plan, Alternative Forecasting Tool, Fish Enhancement Fund stocking program, KMPUD's power line proposal.

July 18, 2008

A special ERC meeting was convened to update the ERC and receive input on new information concerning the Caples Lake emergency repairs. Topics discussed include the proposed draw-down schedule, public outreach, impacts to reservoir fisheries, project schedule, and the plan for providing streamflows during repairs. The ERC also suggested EID consult DFG regarding potential effects to the reservoir fishery. The ERC suggested EID limit discharge during the reservoir draw-down to 150 cfs and re-evaluate outflow requirements at a subsequent meeting the following week. EID informed the ERC that several notifications related to lake-level targets and streamflow requirements were in preparation. At conclusion of the meeting there was consensus among ERC members to ramp up releases to 150 cfs until the next special ERC meeting.

July 25, 2008

A special ERC meeting was convened regarding the Caples Lake emergency repairs. Updates included operations at Caples, current plans for conducting the emergency repairs, options for providing streamflows during the repairs, and an update on communications with DFG regarding impacts to reservoir fisheries. EID provided an update regarding the potential to divert some of the water released during the draw-down to Jenkinson Lake for consumptive purposes. Updates regarding public outreach, recreation, and cultural resources were also provided. At conclusion of the meeting there was consensus to continue the draw-down at a rate of 150 cfs until the next ERC meeting.

August 7, 2008

This ERC meeting was held at the Caples Lake Resort at Caples Lake. Topics discussed included review of current operations, the Caples lake emergency repairs, FERC's letter directing EID not to deviate from minimum pool requirements in Caples Lake (10,000 AF) until additional information about the project could be provided, the Caples Lake boat launch project, the draft Caples Lake Fisheries Management Plan, and the temporary urgency change petition to the SWRCB for transfer of water from Caples Lake to Jenkinson Lake. Updates regarding public outreach, recreation, and cultural resources were also provided. At conclusion of the meeting there was consensus to ask FERC to allow the draw-down below 10,000 AF level to continue to 7,300 AF level to facilitate construction of the boat launch.

August 15, 2008

Topics discussed at this special ERC meeting included a review of the ERC roles and responsibilities and an update on the Caples Lake emergency repairs. Specifically, the ERC discussed the proposed installation of bladder dam, draw-down below the 10,000 af minimum target lake-level, and DFG's fish rescue and relocation operation. Other updates included recreation, cultural resources, and public outreach efforts. The Caples Lake Fisheries Management Plan and the temporary urgency change petition for diverting water to Jenkinson Lake were reviewed. The ERC was notified that extension requests for the Caples Feasibility Study, Oyster Stabilization Plan, Caples Spillway Channel Stabilization Plan, and the Alternative Forecasting Toll were being prepared.

August 22, 2008

Topics discussed at this special meeting included a review of the Caples Lake draw-down schedule and a proposal to increase outflow to maintain the target date for initiation of the repairs. The resource agencies caucused during the meeting to discuss the proposed increase in releases. The recommendation of the resource agencies was to maintain current releases through the weekend and ramp up to 165 cfs on the following Monday, at which time agency personnel could monitor the hydrologic and ecologic conditions of Caples Creek.. Other items discussed included the agency and ERC recommendation to FERC to allow the draw-down to continue to 7,300 af, the GEI alternative analysis memorandum , Kirkwood snowmaking, Caples Lake Fisheries Management Plan, fish rescue activities, updated bathymetry data, and repairs at Silver Lake.

September 11, 2008

Topics discussed at this ERC meeting included a review of agency communications, operations update, emergency repairs update, and review of the fish rescue. Two topics related to the Caples Lake boat launch facility were discussed including the status of the FS construction contract and the pending litigation. A proposal to install a second bladder dam to store additional water was described by Kirkwood Meadows Mountain Resort. The streamflow plan was presented, which described factors to consider in the development of streamflow recommendations during and after the emergency repairs. The FS, SWRCB, DFG and others recommended a minimum streamflow of 2 cfs during the emergency repairs. This proposal included an adaptive management component to review inflow conditions every two weeks to consider if streamflows need to be adjusted.

October 2, 2008

Topics discussed at this ERC meeting included an introduction to the modeling tool to evaluate the probability of refill under different environmental and operational scenarios, update on the Silver Lake repair project, water operations update, and an update on the Caples Lake emergency repairs. The approved streamflow plan was reviewed and concerns regarding winter operations were reviewed. The ERC and agencies recommended maintaining 2cfs as prescribed in the streamflow plan. The request to maintain use of Bulletin 120 rather than implementing an alternative forecasting tool was presented to the ERC and approval forms were provided for ERC and agency approval. Several license requirements were reviewed and rationale for extending the due dates for these items was presented. The three projects reviewed were the Caples Spillway Channel Stabilization Plan, Caples Feasibility Study, and the Oyster Creek Stabilization Plan. The ERC and agencies agreed to approve 12 month extension requests for these projects. An update was provided on the Caples Lake boat ramp and the proposed 2009 ERC meeting calendar was presented.

Bi-weekly Caples Streamflow Conference calls

On October 15, October 29, and November 4, 2009, the ERC convened to review streamflows and current conditions at Caples Lake to determine if any changes to streamflows were necessary. Additionally, updates on the emergency repairs were provided during these

conference calls. The recommendations from these meetings were to maintain the 2 cfs minimum streamflow as prescribed in the streamflow plan.

November 13, 2008
Topics discussed included review of current operations, an update on the status of the Caples Lake emergency repairs, an overview of the Caples refill model, and a review of Caples Creek streamflows. The ERC and agencies concurred that the streamflows should remain at a minimum of 2 cfs as prescribed in the streamflow plan. A presentation on the Silver Lake Outlet Tower and Gate Replacement Project was provided to the ERC. The Licensee informed the ERC that FERC had approved the extension requests that were submitted for the Caples Feasibility Study, Oyster Creek Stabilization, and the Caples Spillway Channel Stabilization. An update on the Caples Lake boat launch facility construction activities was provided.

Bi-weekly Caples Streamflow Conference calls
On November 24 and December 10, 2009, the ERC convened by conference call to review streamflows and current conditions at Caples Lake to determine if any changes to streamflows were necessary. The recommendations from these meetings were to maintain the 2 cfs minimum streamflow as prescribed in the streamflow plan.

3.0 Monitoring Program Study Plans

Section 7 (Monitoring Program) of Appendix A to the Settlement, the 401 Certification, and FS 4(e) conditions require individual study plans for monitoring of the following subjects:

- Fish Populations
- Macroinvertebrates
- Amphibians (Habitat Evaluation & Determination of Species Presence/Distribution)
- Riparian Vegetation Species Composition
- Riparian Vegetation Recruitment
- Geomorphology (Sensitive Site Investigation & Mitigation Plan Development)
- Geomorphology (Continuing Evaluation of Representative Channel Areas)
- Water Temperature
- General Water Quality
- Trout Monitoring at Lake Aloha
- South Fork American River Flow Fluctuations Monitoring
- El Dorado Canal Monitoring for Wildlife
- Heritage Resource Monitoring
- Recreation Survey
- Review of Recreation Developments
- Target Lake Levels Evaluation

The monitoring activities conducted in 2008 pursuant to these plans are described below.

3.1 Fish Populations

No activities or monitoring required in 2008. Monitoring last conducted in 2007 and is scheduled to continue at 5-year intervals if the FS, ERC, and SWRCB determine it necessary.

3.2 Macroinvertebrates

No studies are required until Year 5 of the license. Therefore, no actions were taken under this condition.

3.3 Amphibians (Habitat Evaluation & Determination of Species Presence/Distribution)

3.3.1 Foothill Yellow-legged Frog

No activities or monitoring required in 2008. Last monitoring conducted in 2007 and is scheduled to continue at 5-year intervals if the FS, ERC, and SWRCB determine it necessary.

Surveys are required June through September at any time the SFAR flow is 100 cfs or less and the reach between Kyburz Diversion Dam and Silver Creek changes 50 cfs or more in 1 day. These conditions did not occur in 2008; therefore, no monitoring was conducted.

3.3.2 Mountain Yellow-legged Frog

No activities or monitoring required in 2008. Monitoring will continue at 5-year intervals if the FS, ERC, and SWRCB determine it necessary.

Surveys of downstream ponds and habitat are required if Lake Aloha spills. The Licensee provided documentation to FERC on July 30, 2008, demonstrating Lake Aloha did not spill in 2008;; therefore, no monitoring was conducted pursuant this condition in 2008.

3.4 Riparian Vegetation Species Composition

Monitoring studies are required at the end of every five year period following issuance of the license. Therefore, no actions were taken under this condition.

3.5 Riparian Vegetation Recruitment

Monitoring studies are required at the end of every five year period following issuance of the license. Therefore, no actions were taken under this condition.

3.6 Geomorphology (Sensitive Site Investigation & Mitigation Plan Development)

The Geomorphology Sensitive Site Monitoring Plan was developed and presented to the ERC in June, 2007. The ERC approved this plan on August 9, 2007. The Licensee requested a 3-month time extension to file this plan on April 21, 2008. On June 9, 2008, FERC issued an order

approving the time extension to July 18, 2008. The FS issued an approval letter for this plan on July 18, 2008, and the SWRCB issued an approval letter on July 30, 2008. The Licensee filed this plan with FERC on August 1, 2008. FERC issued an order approving this plan on March 24, 2009.

Monitoring at Oyster Creek is being conducted in spring 2009. Monitoring at Caples Creek and the Caples Lake spillway channel is scheduled to begin in 2010, or when hydrologic conditions allow.

3.7 Geomorphology (Continuing Evaluation of Representative Channel Areas)

No studies are required until Year 5 of the license. Therefore, no actions were taken under this condition.

3.8 Water Temperature

The Water Temperature Monitoring Plan was approved by the ERC in March, 2007. The FS issued an approval letter for this plan on September 7, 2007, and the SWRCB issued an approval letter on April 17, 2008. The Licensee filed this plan with FERC on April 17, 2008. FERC issued an order approving this plan on June 6, 2008.

Temperature monitoring is being conducted pursuant to the plan in 2009. Monitoring is scheduled to repeat each consecutive year until a subsequent license is issued or until the Licensee can demonstrate cold freshwater beneficial use protection is being met and confirm that temperature issues do not exist for each relevant stream reach.

3.9 General Water Quality

The Licensee submitted the Water Quality Monitoring Plan on August 7, 2007, and supplemented the plan on April 30, 2008. FERC issued an order modifying and approving the plan on May 15, 2008.

Year 1 monitoring was conducted pursuant to the plan in 2008. The data collected for this effort were compiled and distributed electronically to the FS, SWRCB, and ERC on January 28, 2009. The Project 184 2008 Water Quality Monitoring Report was provided to the FS, SWRCB, and ERC on February 26, 2009, and reviewed during the March 12, 2009, Annual ERC meeting. Below is a summary o the findings of this monitoring effort. The Project 184 2008 Water Quality Monitoring Report is included in Appendix A.

Findings:

- Water quality in the project area met most applicable Basin Plan objectives and other criteria during the 2008 monitoring program. Monitoring parameters included: temperature, dissolved oxygen (DO), conductivity, pH, turbidity, total suspended sediments, alkalinity, hardness, nitrate, copper, aluminum, total coliform, and fecal coliform.

- Laboratory-measured analytical parameters also did not vary in the stream reaches above and below the diversion dams.

- Measurements for *in-situ* parameters did not vary above and below the diversion dams along each stream reach and provide normal distributions across the sampling locations based on stream flow elevation and time of year.

- The following summary describes the data collected for each parameter:
    - On average, the temperature difference between upper and lower reaches was 0.67 degrees Celsius, with a maximum difference of 2.36 degrees Celsius along Esmeralda Creek.
    - DO ranged from the lowest concentration of 6.71 mg/L at Echo Creek (WQ01) to the highest concentration of 17.33 mg/L below the Kyburz diversion dam along the South Fork of the American River. On average the DO levels were 11.10 mg/L.
    - The average conductivity throughout the entire project area was 60.1 µS/cm. The largest variability in conductivity observed between samples collected above and below each diversion dam was (33 µS/cm) at No Name Creek.
    - pH was below 8.5 units at all locations during all sampling events during the year. pH ranged from 3.01 at Caples Creek below Caples Lake Dam in May 2008 to 8.72 at Echo Creek below Echo Lake Dam in August 2008.
    - Turbidity ranged from 0.0 NTUs to 11 NTUs. The average turbidity levels throughout the project area was 0.88 NTUs. Caples Creek (WQ03) had a turbidity level of 11 NTUs during the November 2008 sampling session. Caples Lake storage at this time was approximately 1000 acre-feet to facilitate the emergency repairs of the outlet works at Caples Lake Main Dam. The turbidity level measured in Caples Creek in November 2008 was within the range observed in Caples Lake during the water quality monitoring effort for the emergency repairs.
    - The average TSS was 4.64 mg/L with the highest being 33 mg/L at Bridal Veil Falls (WQ20) at the end of summer.
    - Alkalinity at sampling locations along Carpenter, No Name, Mill, and Bull Creeks (WQ-07, WQ08, WQ-09, WQ10, WQ12, WQ-13, WQ14, and WQ-15) were above 20 mg/L. The lowest alkalinity was observed at Echo Creek and Silver Fork American River (WQ01 and WQ04). The average alkalinity throughout the project area was 29 mg/L.
    - Total hardness measurements were below 30 mg/L in eighty percent of the sample streams. The lowest measured hardness value was 0.7 mg/L at location Echo Creek (WQ-01). Hardness levels were similar to alkalinity with concentrations increasing at sampling locations along Carpenter, No Name, Mill, and Bull Creek's (WQ-07, WQ08, WQ-09, WQ10, WQ12, WQ-13, WQ14, and WQ-15) with No Name Creek (WQ09 and WQ10) reading a level of 82 mg/L.

- The highest nitrate value of 0.75 mg/L was from location Echo Creek (WQ-01) with most measurements throughout the project area resulting in a non-detect.
- The allowable level for the water quality constituent copper was exceeded three times: One occasion at Pyramid Creek (WQ2), which may be attributed to the yearly release that is necessary to ensure that Lake Aloha does not spill, and two occasions at Caples Creek (WQ3), which may be attributed to releases necessary for the reservoir drawdown to facilitate the emergency repairs at Caples Lake Main Dam.
- All waters were below the criteria for aluminium except for No Name Creek (WQ-10) above the diversion, which was analyzed with 800 ug/L aluminium in July 2008. The average aluminium found within the project area is 51.7 ug/L.
- Ninety-five percent of the analyzed samples for total coliform provided extremely low results. The largest geometric mean for fecal coliform was 72 MPN/100 mL taken at Pyramid Creek (WQ02) and the lowest geometric mean was 1.8 MPN/100 mL. The average geometric mean within the Project boundary is 7.8 MPN/100 mL.

Recommendations:

- The 2008 monitoring demonstrates that throughout the year several parameters were well within the acceptable range for all applicable federal, state, and Basin Plan requirements. Therefore, discontinuing future monitoring is warranted for these parameters: total suspended sediments, nitrates, aluminum, total coliform, and fecal coliform.

- Because Mill Creek (WQ13 and WQ14), and Carpenter Creek (WQ07 and WQ08), no longer divert water into the canal system and there is no potential for these tributaries to be affected by project operations, the Licensee recommends these sample sites be removed from future monitoring efforts.

- A formal request to implement these recommendations will be submitted to the ERC and agencies for review.

Future monitoring is required in year 5 with subsequent year sampling frequency to be determined by the SWRCB, FS, and ERC.

3.10 Trout Monitoring at Lake Aloha

FERC issued an order approving the Lake Aloha Downstream Ponds Trout Removal Plan on January 23, 2008.

The Licensee provided documentation to FERC on July 30, 2008, demonstrating Lake Aloha did not spill in 2008. Therefore, no monitoring was conducted pursuant to the plan in 2008.

3.11 El Dorado Canal Monitoring for Wildlife

The Licensee compiled and distributed electronically the 2008 Wildlife Mortality Report to the FS, SWRCB, and ERC on February 27, 2009, and reviewed during the March 12, 2009, Annual ERC meeting. The 2008 Wildlife Mortality Report was submitted to FERC on April 1, 2009. In summary, six deer perished in the Project 184 canal system in 2008. In each case, there were no visible signs of entry, nor were any gates left open.

The Licensee also inspected the canal fencing, crossings, and approaches in the spring and fall prior to deer migration. The spring inspection was conducted on April 16, 2008, and the fall inspection was conducted on November 18, 2008. During each inspection, the fencing and crossings were intact with minimal repairs required. In accordance with the Canal Wildlife Fencing Plan, the fencing between Flume 2 and Flume 3 (approximately 1 mile) was relocated in the summer of 2008. Additional segments of canal fencing are scheduled for upgrade or relocation in the summer of 2009.

The Project 184 2008 Wildlife Mortality Report and the Project 184 2008 spring / fall Canal Fencing Inspection reports are included in Appendix B.

3.12 Heritage Resource Monitoring

No heritage resource monitoring was completed in 2008 pursuant to the Heritage Properties Management Plan.

3.13 Recreation Survey

No studies are required until every sixth year of the license. Therefore, no actions were taken under this condition.

3.14 Review of Recreation Developments

No studies are required until every sixth year of the license. Therefore, no actions were taken under this condition.

3.15 Target Lake Levels Evaluation

No reports are required until every fifth year of the license. Therefore, no actions were taken under this condition.

4.0 Caples Lake Main Dam Emergency Repairs Monitoring Activities

While not components of the Monitoring Program, the FS has requested a summary of the monitoring activities associated with the Caples Lake emergency repair project be included in this Annual Report. These activities include: fisheries surveys in Caples Creek upstream and

downstream of the confluence of Kirkwood Creek, water quality monitoring in the reservoir and in Caples Creek, and riparian vegetation community and stream channel monitoring along Caples Creek. Final reports for these activities will be available following post-project monitoring, which is scheduled to be completed in 2009. A summary of these monitoring efforts in 2008 is provided below:

Fisheries Monitoring:

- The FS, DFG, Licensee, and volunteers conducted three pass depletion electrofishing surveys at two sites on Caples Creek on November 19, 2008. The surveyed stream reaches are located upstream and downstream of the confluence of Kirkwood Creek.
- Six species were collected at the upstream survey reach including rainbow trout (n=3), brook trout (n=99), brown trout (n=15), tui chub, Tahoe sucker, and speckled dace.
- Six species were collected at the downstream survey reach including rainbow trout (n=11), brook trout (n=88), brown trout (n=44), tui chub, Tahoe sucker, and speckled dace.
- Follow-up surveys are scheduled for November 2009. A final report will be prepared following that event that includes a discussion of how 2008-2009 data compare with 1998-2000 data.

Water Quality Monitoring:

- The Licensee monitored water quality in Caples Creek and Caples Lake for the following *in situ* parameters: water temperature, turbidity, conductivity, dissolved oxygen, and pH. Additionally, grab samples were collected to monitor for detection of petroleum hydrocarbons.
- Water temperature, conductivity, and dissolved oxygen were within specified target criteria for the duration of the monitoring.
- Turbidity levels were highly variable due to low reservoir elevations and wind/wave action.
- Depressed pH levels were observed during monitoring events.
- All water samples were non-detect for total petroleum hydrocarbons in the diesel and gasoline ranges.

Riparian Vegetation Community and Stream Channel Monitoring:

- The Licensee conducted field surveys in November 7 and 10 to collect riparian vegetation composition, stream channel and riparian vegetation recruitment, and Greenline composition and bank stability data.
- Greenline composition and bank stability data was collected at 3 transects. *Carex utriculata* was the dominant vegetation type at all three transects. Bank stability ratings were calculated for each transect: transect 1 = good, transect 2 = moderate, and transect 3 = moderate/good.

- Riparian species composition summary:

MONITORING LOCATION	GPS WAYPOINT	TOTAL NUMBER BY LIFEFORM						
		Sedge	Rush	Grass	Forb	Willow	Barren/ litter	Water
Site 1	Trans 1	56	0	22	7	1	2	12
Site 2	Trans 2	29	0	22	13	12	14	10
Site 3	Trans 3	41	2	18	6	6	11	14

- Qualitative assessments of stream channel condition and riparian vegetation recruitment were made at each site. Evidence of bank sloughing was observed at all three sites. Accurate estimates of riparian vegetation recruitment were not possible due to snow accumulation.
- The Licensee documented 14 sample site photopoints on Caples Creek and compiled a report with 2002 and 2008 photographs.

Cultural resource surveys and salvage excavations, as required by the State Historic Preservation Officer and in coordination with the FS, were also conducted during the emergency repairs.

5.0 References Cited

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APPENDIX A
2008 WATER QUALITY MONITORING REPORT

Project 184

2008 Water Quality Monitoring Report

February 26, 2009

Prepared By:
El Dorado Irrigation District

1.0 Introduction

A monitoring water quality plan (EID 2007) was developed and approved on May 15, 2007, to satisfy the water quality monitoring requirements set forth in the Project 184 Settlement Agreement (EID 2003), U.S. Forest Service 4(e) License Condition No. 37 (USFS 2003), and the California State Water Resources Control Board Section 401 Clean Water Act Water Quality Certification Condition No. 15 (SWRCB 2006). The monitoring plan was designed to provide information regarding overall water quality within the vicinity of Project 184 (Project), identify potential water quality problems related to the Project operations and where the Project can control such factors, and develop resource measures for the protection, mitigation, and enhancement of water quality.

Water quality data will be collected eight times per year during the first three monitoring years. This report summarizes the results of the 2008 water quality monitoring requirements. The data collected under this monitoring plan was compiled and distributed electronically to the FS, SWRCB, and ERC by January 31, 2009 as required by the approved plan prior to the distribution of this report. A copy of the raw data spreadsheets is included at Appendix A.

2.0 Sampling Locations

The following sampling locations are identified in the Water Quality Monitoring Plan (EID, 2007):

Echo Creek below Echo Lake Dam (WQ1)
Pyramid Creek below Lake Aloha Dam (WQ2)
Caples Creek below Caples Lake Dam (WQ3)
Silver Fork American River below Silver Lake Dam (WQ4)
South Fork American River upstream of Kyburz Diversion Dam (WQ5)
South Fork American River downstream of Kyburz Diversion Dam (WQ6)
Carpenter Creek above Carpenter Creek Diversion Dam (WQ7)
Carpenter Creek below Carpenter Creek Diversion Dam (WQ8)
No Name Creek above No Name Creek Diversion Dam (WQ9)
No Name Creek below No Name Creek Diversion Dam (WQ10)
Alder Creek above of Alder Creek Diversion Dam (WQ11)
Alder Creek below of Alder Creek Diversion Dam (WQ12)

Mill Creek above Mill Creek Diversion Dam (WQ13)
Mill Creek below Mill Creek Diversion Dam (WQ14)
Bull Creek above Bull Creek Diversion Dam (WQ15)
Bull Creek below Bull Creek Diversion Dam (WQ16)
Ogilby Creek above Ogilby Creek Diversion Dam (WQ17)
Ogilby Creek below Ogilby Creek Diversion Dam (WQ18)
Esmeralda Creek above Esmeralda Creek Diversion Dam (WQ19)
Esmeralda Creek below Esmeralda Creek Diversion Dam(WQ20)

3.0 Collection

In-situ and analytical water quality monitoring were performed in 2008, as required by the plan. Date, time, site location, weather, and in-situ water quality data were recorded on a standard form and later transcribed to electronic format in a Microsoft Excel spreadsheet. GPS coordinates and photographs were taken at each sampling site to document conditions at the time of sampling. Sampling occurred over an eight-month period during the first week of each month: March, May, June, July, August, September, first storm of the season, and December. Total and Fecal Coliform samples were collect five times per month from May through September and captured days with high recreational periods (i.e. holiday weekends).

Temperature, dissolved oxygen, conductivity, and pH were measured in the field at each location using an YSI 556: Handheld Multi-Probe Meter. The YSI meter was calibrated in a laboratory per manufacturer's instruction prior to each field visit. During each sampling period, a back-up meter was also calibrated and ready for use. Turbidity was measured with a Hach handheld turbidity meter. The meter was calibrated prior to each sampling period per manufacturer's specifications.

Water samples were collected at each location. Two 100 ml bottles were used for the total and fecal coliform tests, and 1 four-liter container was used for testing copper, aluminum, TSS, Alkalinity, Hardness, and Nitrate levels at each sampling site. Two state certified laboratories were used to analyze the water samples: El Dorado Irrigation District laboratory in El Dorado Hills, California, and California Laboratory Services (CLS) in Rancho Cordova, California. All the samples were analyzed pursuant to the United States Environmental Protection Agency (USEPA), California Department of Public Health, or Environmental Laboratory Accreditation Program (ELAP) approved methodologies and results were certified to be in compliance both technically and for completeness. All samples met the appropriate hold times.

4.0 Parameters and Results

Temperature

Water temperature is important for fish and other aquatic life to thrive. Temperature controls the rate of metabolic and reproductive activities in aquatic life. Since body temperatures are directly affected by water temperature, drastic changes can malfunction metabolic activities. Temperature can affect concentrations of dissolved oxygen (DO) in water with higher concentrations of DO occurring with colder temperatures and can inforluance the activity of bacteria in a water system. A thorough temperature evaluation at all sampling sites, as well as five additional sites, will begin in April 2009, per the approved Temperature Monitoring Plan (EID, 2007a).

Data shows an increase from spring to summer months and decreases again during the fall and winter seasons at a steady rate across the sampled streams. The difference in temperature downstream of each diversion structure did not exceed Basin Plan objectives, which states, "at no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5 degrees Fahrenheit above natural receiving water temperature" (RWQCB-5, 2005). On average, the temperature difference between upper and lower reaches was 0.67 degrees Celsius with a maximum difference of 2.36 degrees Celsius along Esmeralda Creek (WQ19 and WQ20) in June.

Dissolved Oxygen

Dissolved Oxygen is an indicator of a water body's ability to support aquatic life. DO is oxygen that diffuses from the surrounding air, aquatic plants and algae through photosynthesis, or is aerated by natural falls or rapids. The amount of DO affected by temperature and cold water generally contains higher levels of DO than warm water. Oxygen is removed from the water by respiration and decomposition of organic matter. The level of DO is water depends on several factors, including temperature (the colder the water, the more oxygen can be dissolved), the volume and velocity of water moving (i.e. velocity of flow or wave action) in the water body, and the amount of organisms using oxygen for respiration.

Basin Plan objectives states, "The DO concentrations shall not be reduced below the following minimum levels at any time...waters designated COLD 7.0 mg/L (RWQCB-5, 2005). DO ranged from the lowest concentration of 6.71 mg/L at Echo Creek (WQ01) to the highest concentration of 17.33 mg/L below the Kyburz diversion along the South Fork American River (WQ06). On average the DO levels for the project were 11.10 mg/L. DO levels remained consistent at each location throughout the sampling year.

Echo Creek (WQ01) fell below Basin Plan objectives twice during the summer months to a low of 6.71 mg/L and increased in September. All locations, except for WQ01, never fell below the COLD designated beneficial uses objective. Echo Creek's DO concentrations of less than 7.0 mg/L may be common during the summer months due to a high elevation, increase in air temperature, and a decrease of water flow, which limits the solubility of oxygen in the creek. However, Echo Creek descends in a water fall about 1,200 feet downstream of the dam, which would increase DO concentrations before it joins the Upper Truckee River and then Lake Tahoe.

Conductivity

Conductivity is a good measure of stream water quality. Each stream tends to have a relatively constant range of conductivity that, once established, can be used as a baseline for comparison with continued regular conductivity measurements. Significant variations in conductivity can be an indicator of water quality problems. Conductivity is a measure of how well water can pass an electrical current. It is an indirect measure of the presence of inorganic dissolved solids, such as chloride, nitrate, sulfate, phosphate, sodium, magnesium, calcium, and iron. These substances conduct electricity because they are positively or negatively charged when dissolved in water. The concentration of dissolved solids or the conductivity is affected by the geology in the watershed.

Currently there are no criteria or water quality objective for conductivity within the American River Watershed. Data illustrates consistent conductivity at all 20 stream sampling locations above and below each diversion dam with the largest variability of 33 uS/cm between upper and lower No Name Creek (WQ10). The overall average conductivity throughout the entire project area is 60.1 uS/cm.

pH

pH measures hydrogen concentration in water. Low pH of water has a high concentration of positive hydrogen ions (acidic) and with a high pH has a concentration of negative hydroxide ions (basic). A combination of low pH and certain chemicals or metals, can create a toxic environment of aquatic life. This is called synergy, which is a process when two, or more substances combine and produce effects greater than their sum. When pH falls to a more acidic level, the natural buffering materials found in the rocks in the water are absent. pH can change its value due to temperature changes and time of day with lower pH values observed at night and higher at midday. Photosynthesis and respiration of algae and rooted plants along the stream can also affect pH levels, as well as limestone deposits. Low pH has been known to coincide with days of high insolation (incident solar radiation) and snowmelt events.

The Basin Plan states that "pH shall not be depressed below 6.5 nor raised above 8.5 and that changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD beneficial uses" (RWQCB-5, 2005). Upper watershed locations (WQ-01, WQ-02, WQ-03, and WQ-04) revealed several sampling days with pH below the 6.5 objective in the Basin Plan. pH was below 8.5 at all locations during all sampling events throughout the year. Upper Kyburz (WQ05) fell below 6.5 units by .03 and .12 units in the winter months, but recovered to the Basin Plan objectives by lower Kyburz (WQ06), most likely due to the increase of flow from runoff and contributing tributaries.

Turbidity

Turbidity is a measure of the cloudiness in the water. Turbidity is water caused by suspended matter such as clay, silt, and organic matter and by plankton and other microscopic organisms that interfere with the passage of light through the water. Turbidity is closely related to total suspended solids (TSS), but also includes plankton and other organisms. Turbid waters become warmer as suspended particles absorb heat from sunlight, causing DO levels to fall. Turbidity may indicate the presence of microbes or by soil erosion, runoff, and high flow rates.

The Basin Plan states, "where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent" (RWQCB-5, 2005). Turbidity measurements were generally low throughout the study area. Turbidity ranged from 0.0 NTUs to 4.46 NTUs. The 4.46 was measured at No Name Creek (WQ10) where a cabin owner had placed a decorative water wheel in the middle of the creek above the designated sampling location. This caused an increase in sediment and organic matter to move downstream. The average turbidity levels throughout the study area were 0.88 NTUs.

Caples Creek (WQ03) had a turbidity level of 11 NTUs during the November 3, 2008 sampling session. Caples Lake storage at this time was approximately 1000 acre-feet to facilitate the emergency repairs of the outlet works at Caples Lake Main Dam. Water quality monitoring data collected in Caples Lake during the emergency repairs revealed that turbidity was highly variable depending on the amount of wind and wave action. The 11 NTUs is within the range observed in Caples Lake during the water quality monitoring effort for the emergency repairs. Turbidity during the December sampling event at Caples Creek was 4.8 NTUs, which is consistent with Basin Plan objectives.

Total Suspended Sediments

TSS refers to matter suspended in water and is related to both specific conductance and turbidity. TSS is solids in water that can be trapped by a filter. TSS can include a wide variety of material, such as silt, decaying plant and animal matter, and sewage. High concentrations of suspended solids can cause many problems for stream health and aquatic life.

The Basin Plan has a narrative objective that states, "Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses" (RWQCB-5, 2005). TSS measurements were extremely low throughout the project area. Most sample locations yielded a non-detect throughout the year. The average TSS was 4.64 mg/L with the highest being 33 mg/L at Bridal Veil Falls (WQ20) at the end of summer. Photo documentation shows there was a significant amount of trash, decomposing leaves and other organic matter within the water at this location.

Alkalinity

Alkalinity is a measurement of alkalinity compounds in the water and its capacity to resist changes in pH that would make water more acidic. Alkalinity of natural water is determined by the soil and bedrock through which it passes. Areas rich in granite and some conglomerate and sandstone may have low alkalinity and therefore have a poor buffering system. Conversely, areas that contain carbonate, bicarbonate, and hydroxide compounds, such as limestone are natural sources of alkalinity. High alkaline compounds are natural buffers that can remove excess hydrogen ions that have been added from sources such as acid rain or mine drainage. Alkalinity mitigates or relieves metals toxicity. Alkalinity is often related to hardness because hardness compounds contribute carbonate ions to a buffering system. Many streams are naturally low in alkalinity concentrations.

There are currently no Basin Plan objectives for alkalinity. The U.S. Environmental Protection Agency recommends ambient water quality criteria for alkalinity to protect freshwater aquatic life to be measured as a continuous concentration 4-day average expressed as a total recoverable. The aquatic life 4-day average concentration for alkalinity is 20 mg/L. The recommendation also states that "20 mg/L is a minimum concentration except where natural concentrations are less (Water Quality Goals, 2008).

The frequency of monitoring in the approved plan does not provide for a direct relationship to the recommended average concentration. Alkalinity monitoring revealed concentrations at sampling locations along Carpenter, No Name, Mill, and Bull Creeks (WQ-07, WQ08, WQ-09, WQ10, WQ12, WQ-13, WQ14, and WQ-15) were above 20 mg/L, which is attributed to calcium carbonate (CaCO3) rich soil that runs 100%

under these waters (USDA/NRCS, 2008). The sampling areas that have the lowest alkalinity are Echo Creek and Silver Fork American River (WQ01 and WQ04). The average alkalinity throughout the Project boundary is 29 mg/L.

Hardness (Calcium Carbonate)

Hardness in water can contain minerals such as magnesium and calcium that can cause the water to increase hardness. Hardness generally refers to the amount of calcium and magnesium in water. Calcium and magnesium help keep fish from absorbing metals such as lead, arsenic, and cadmium, into their bloodstream through their gills. Therefore, the harder the water, the less easy it is for toxic metals to absorb through the gills.

There is currently no Basin Plan objective for hardness. Total hardness measurements were below 30 mg/L in eighty percent of the sample streams. The lowest measured hardness value was 0.7 mg/L at location Echo Creek (WQ-01). Hardness levels were similar to alkalinity with concentrations increasing at sampling locations along Carpenter, No Name, Mill, and Bull Creek's (WQ-07, WQ08, WQ-09, WQ10, WQ12, WQ-13, WQ14, and WQ-15) with No Name Creek (WQ09 and WQ10) reading a level of 82 mg/L. Again, the geology at these locations contains large quantities of calcium carbonate that naturally leech into the streams (USDA/NRCS, 2008) producing a higher hardness concentration at these locations. The average hardness for the entire project area is 23.81 mg/L.

Nitrate (Nitrate plus Nitrite)

Excessive nitrate concentrations can be harmful to humans and wildlife. High levels can over-stimulate the growth of aquatic plants and algae, resulting in high dissolved oxygen consumption. This process is called eutrophication. Nitrates can enter waterways from animal waste, septic tanks, and car exhausts discharges.

There are currently no Basin Plan objectives for nitrate. The U.S. Environmental Protection Agency recommends ambient water quality criteria for non-cancer health effects and the California and Federal primary contaminated levels in drinking water to be 10 mg/L (Water Quality Goals, 2008). The highest nitrate value of 0.75 mg/L was from location Echo Creek (WQ-01) with most measurements resulting in a non-detect. The nitrate levels are extremely low throughout the project area.

Copper

Copper is released from natural sources, like volcanoes, windblown dusts, decaying vegetation, and forest fires. Copper is also released into the environment by mining,

farming, and manufacturing operations and through wastewater releases into rivers and lakes. Natural organic matter, such as humic and fulvic acids, are strong complexing agents that may affect the bioavailable copper concentration. Copper released into the environment usually attaches to particles made of organic matter, clay, soil, or sand. Copper does not break down in the environment; however, compounds can break down and release free copper into the air, water, and foods.

There is no specific Basin Plan objective for copper; however, the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed bays, and Estuaries of California (SIP, 2005), and the California Toxics Rule (CTR, 2000), provides a formula for deciphering a one-hour total recoverable and/or dissolved copper limit based on its hardness value. This standard has been incorporated by adoption into the Basin Plan. Therefore, the lower the hardness value, the lower the available copper is in the water (greater copper concentration can be allowed due to limited availability of copper in the water table), and the greater the hardness value, the lower the copper concentration must be (more available dissolved copper can affect aquatic life). Ninety-eight percent of the copper results meet the CTR criteria. Pyramid Creek (WQ02) exceeded the copper criteria in July 2008, and Caples Creek (WQ03) exceeded in both August and September of 2008. All other copper levels were below the SIP/CTR 1-hour average total recoverable and dissolved maximum criteria concentrations (Table 1).

Aluminum

It is shown that aluminum concentration in natural waters varies widely and substantially depends on the solubility of minerals containing aluminum and the influence of chemical composition and pH values of aquatic environment on the solubility. The hydrolysis and complexation processes play the major role in fate of aluminum in natural waters.

Aluminium forms during mineral weathering of feldspars, such as orthoclase, anorthite, albite, micas and bauxite, and subsequently ends up in clay minerals. A number of gemstones contain aluminium, such as rubies and sapphires. At pH values below 4.5 solubility rapidly increases, causing aluminium concentrations to rise above 5 ppm. This may also occur at very high pH values. Dissolved Al^{3+}-ions are toxic to plants; these affect roots and decrease phosphate intake. As mentioned above, when pH values increase aluminium dissolves. This explains the correlation between acid rains and soil aluminium concentrations. At increasing nitrate deposition, the aluminium amount increases, whereas it decreases under large heather and agricultural surfaces. In forest soils, it increases.

There are currently no Basin Plan objectives for aluminum. The U.S. Environmental

Protection Agency recommends ambient water quality criteria for freshwater aquatic life expressed at a maximum concentration 1-hour average to be 750 ug/L (Water Quality Goals, 2008). All waters were below the criteria except for No Name Creek (WQ-10) above the diversion, which was analyzed with 800 ug/L aluminium in July 2008. The average aluminium found within the project area is 51.7 ug/L.

Total Coliform

Two measurement methods were used to detect coliform bacteria in waters. Total coliform measurements targeted all coliform bacteria, regardless of origin. Bacteria are generally found in all natural water whether from surface or shallow ground sources. Most of these bacteria are essential to the breakdown of natural organic materials found in water, and are harmless to humans. However, presence of coliform bacteria (from human or animal waste) in the water supply shows possible pollution that cause human illness and disease. Since disease-causing bacteria are difficult, expensive, and time consuming to isolate and identify, microbiologists have developed the "total coliform test" to simplify sampling. Coliform bacteria can survive longer in water than most disease causing organisms, and are easier to identify. Safe water contains no total coliform bacteria. Microbiologists use one of several methods to determine the presence of coliform bacteria.

There are no total coliform criteria at this time. Ninety-five percent of the analyzed samples provided extremely low results. Fecal coliform testing was used to further identify coliform issues (see fecal coliform results).

Fecal Coliform

Fecal coliform bacteria are found in the feces and intestinal tract of humans and other warm-blooded animals, and can enter water bodies from human and animal waste. If a large number of fecal coliform bacteria are found in water, it is possible that an illness-causing organism could also be present in the water. Pathogens are typically present in such small amounts it is impractical to monitor them directly. Fecal concentrations of the bacteria in water may be caused by septic tank failure, pet or wild animal waste, upland runoff, and recreational visitors.

Basin Plan objectives for coliform state that, "waters designated for contact recreation, the fecal coliform concentration based on a minimum of not less than five samples in any 30-day period shall not exceed a geometric mean of 200 MPN/100 mL, nor shall more than ten percent of the total number of the samples taken during any 30-day period exceed 400 MPN/100 mL", (RWQCB-5, 2008). The largest geometric mean was 72 MPN/100 mL taken at Pyramid Creek (WQ02) and the lowest geometric mean was

1.8 MPN/100 mL. The average geometric mean within the Project boundary is 7.8 MPN/100 mL.

5.0 Conclusions

Water quality in the project area met most applicable Basin Plan objectives and other criteria during the 2008 monitoring program. Measurements for *in-situ* parameters did not vary above and below the diversion dams along each stream reach and provide normal distributions across the sampling locations based on stream flow elevation and time of year. Therefore, project operations do not seem to affect water quality in the stream reaches.

Background levels of the upper elevation waters show a naturally low pH. Research suggests that low pH levels at higher elevations, may reflect the influence of acidic snowmelt events due to increase in air temperature, as well as intense solar radiation causing snow melt (Howell and Springer, 1989). With the increase of air temperature, the snowpack chemistry (melt water) can change the stream's water chemistry. The melt and pre-melt conditions may be conducive to producing an acidic pulse thereby shown as a decrease in pH (Jenkins, et., al. 1993). The upper lakes held pH levels as low as 3.01 at WQ03 during an April snow-melting event. WQ02 maintained a pH value between 4.03 and 4.65 throughout the summer. Snowmelt at this location continued throughout the summer and was still visible in fall. pH levels do not seem to be influenced by project operations, but more from snowmelt events throughout the spring and summer.

Laboratory-measured analytical parameters also did not vary in the stream reaches above and below the diversion dams. Project operations did not increase or decrease water quality parameters in almost all cases. The high alkalinity levels in WQ07, WQ08, WQ09, WQ10, WQ12, WQ-13, WQ14, and WQ-15 come from the natural background chemistry of the geologic soils. The NRDS web soil survey shows a solid layer of calcium carbonate under these streams. Alkalinity is the natural buffering capacity of the water and is directly proportional to the amount of free carbonate (CO3-) and bicarbonate (HCO3-) leeched from the rocks. Project operations do not influence alkalinity levels.

The water quality constituent copper was exceeded three times during 2008 monitoring. The first occurrence was located at Pyramid Creek and may be attributed to the yearly release that is necessary to ensure that Lake Aloha does not spill. Two occasions were

located at Caples Creek (WQ03), which may be attributed to releases necessary for the reservoir drawdown to facilitate the emergency repairs at Caples Lake Main Dam.

6.0 Recommendations

Constituents to be removed

The 2008 monitoring demonstrates that throughout the year these parameters were well within the acceptable range for all applicable federal, state, and Basin Plan requirements: Total Suspended Sediments, Nitrates, Aluminum, total coliform, and fecal coliform.

Sample Sites to be removed

Both Mill Creek (WQ13 and WQ14), and Carpenter Creek (WQ07 and WQ08), no longer divert water into the canal system. The water moves unimpaired and is not influenced by project operations.

7.0 Literature Cited

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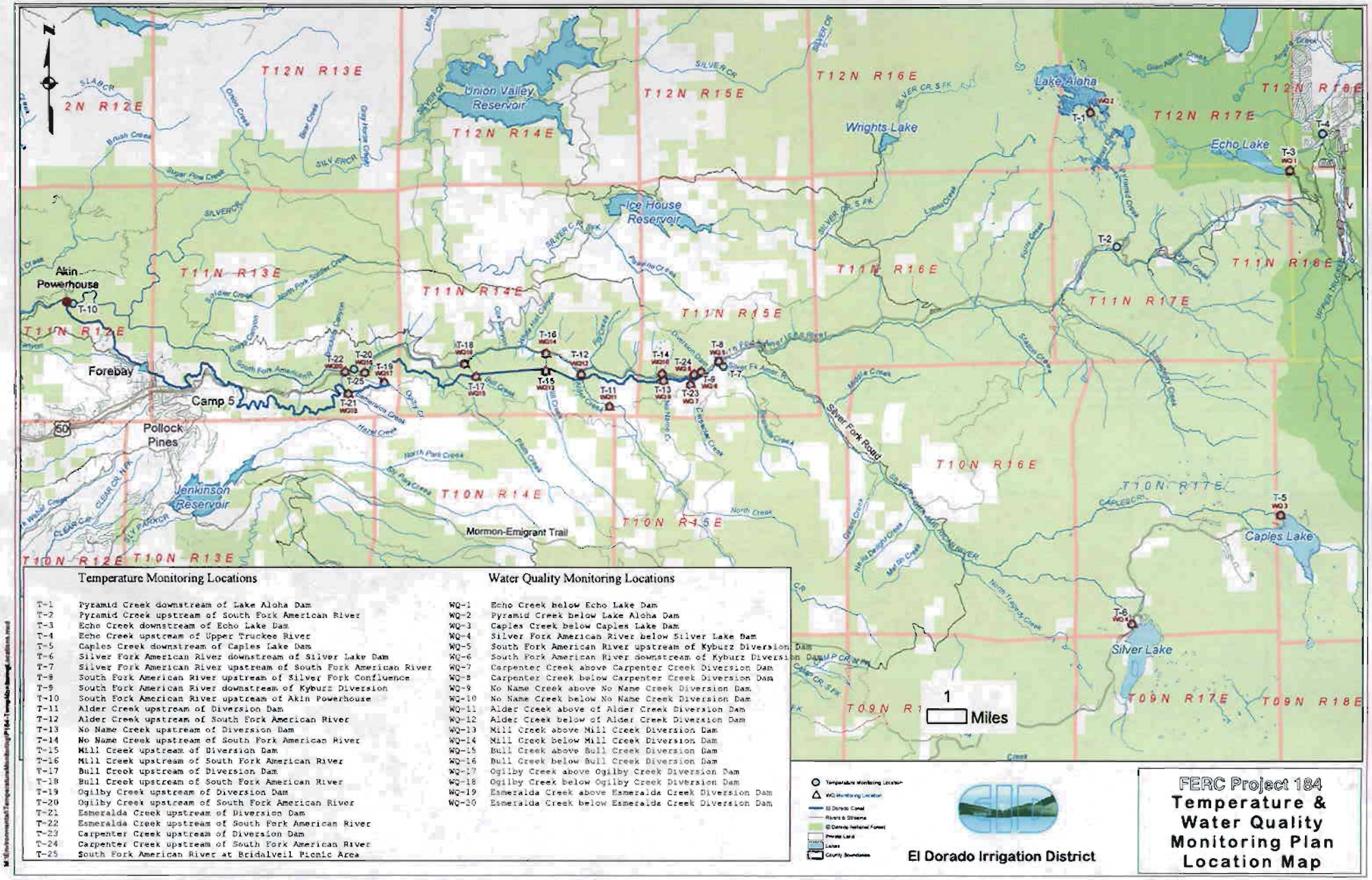


Temperature Monitoring Locations

T-1	Pyramid Creek downstream of Lake Aloha Dam
T-2	Pyramid Creek upstream of South Fork American River
T-3	Echo Creek downstream of Echo Lake Dam
T-4	Echo Creek upstream of Upper Truckee River
T-5	Caples Creek downstream of Caples Lake Dam
T-6	Silver Fork American River downstream of Silver Lake Dam
T-7	Silver Fork American River upstream of South Fork American River
T-8	South Fork American River upstream of Silver Fork Confluence
T-9	South Fork American River downstream of Kyburz Diversion
T-10	South Fork American River upstream of Akin Powerhouse
T-11	Alder Creek upstream of Diversion Dam
T-12	Alder Creek upstream of South Fork American River
T-13	No Name Creek upstream of Diversion Dam
T-14	No Name Creek upstream of South Fork American River
T-15	Mill Creek upstream of Diversion Dam
T-16	Mill Creek upstream of South Fork American River
T-17	Bull Creek upstream of Diversion Dam
T-18	Bull Creek upstream of South Fork American River
T-19	Ogilby Creek upstream of Diversion Dam
T-20	Ogilby Creek upstream of South Fork American River
T-21	Esmeralda Creek upstream of Diversion Dam
T-22	Esmeralda Creek upstream of South Fork American River
T-23	Carpenter Creek upstream of Diversion Dam
T-24	Carpenter Creek upstream of South Fork American River
T-25	South Fork American River at Bridalveil Picnic Area

Water Quality Monitoring Locations

WQ-1	Echo Creek below Echo Lake Dam
WQ-2	Pyramid Creek below Lake Aloha Dam
WQ-3	Caples Creek below Caples Lake Dam
WQ-4	Silver Fork American River below Silver Lake Dam
WQ-5	South Fork American River upstream of Kyburz Diversion Dam
WQ-6	South Fork American River downstream of Kyburz Diversion Dam
WQ-7	Carpenter Creek above Carpenter Creek Diversion Dam
WQ-8	Carpenter Creek below Carpenter Creek Diversion Dam
WQ-9	No Name Creek above No Name Creek Diversion Dam
WQ-10	No Name Creek below No Name Creek Diversion Dam
WQ-11	Alder Creek above of Alder Creek Diversion Dam
WQ-12	Alder Creek below of Alder Creek Diversion Dam
WQ-13	Mill Creek above Mill Creek Diversion Dam
WQ-14	Mill Creek below Mill Creek Diversion Dam
WQ-15	Bull Creek above Bull Creek Diversion Dam
WQ-16	Bull Creek below Bull Creek Diversion Dam
WQ-17	Ogilby Creek above Ogilby Creek Diversion Dam
WQ-18	Ogilby Creek below Ogilby Creek Diversion Dam
WQ-19	Esmeralda Creek above Esmeralda Creek Diversion Dam
WQ-20	Esmeralda Creek below Esmeralda Creek Diversion Dam

Temperature Monitoring Location
WQ Monitoring Location
El Dorado Canal
Rivers & Streams
El Dorado National Forest
Private Land
Lakes
County Boundaries

El Dorado Irrigation District

FERC Project 184
Temperature & Water Quality Monitoring Plan Location Map

Project 184 - 2008 Water Quality Report

Data Spreadsheet

Sample ID	Date	Time	Temp C°	Conduct Umhos/cm	Dissolved Oxygen mg/L	pH Units	Turbidity NTU's	Ph MV	Total Coliform MPN/100 mL	Fecal Coliform MPN/100 mL	Copper ug/L	Aluminum ug/L	TSS mg/L	Alkalinity mg CaCO3/L	Hardness mg CaCO3/L	Nitrate mg/L
WQ-01	3/5/2008	10:41	0.9	6	11.92	5.08	0	87.4	<1.8	<1.8	ND	6.7	ND	2.5	2.5	0.75
WQ-01	5/6/2008	11:40	2.04	6	12.02	5.89	0.2	56.25	<1.8	<1.8	ND	11	ND	3	2.2	ND
WQ-01	6/3/2008	10:25	8.14	7	9.7	5.68	0.44	61.4	<1.8	<1.8	0.37	22	ND	2.5	5.2	0.04
WQ-01	7/2/2008	10:05	17.58	8	6.9	7.1	2.99	-18.6	70	<1.8	0.3	39	2.4	3.6	9.9	ND
WQ-01	8/7/2008	13:25	19.74	21	6.71	8.72	1.1	-115.5	49	49	0.26	60	ND	7	6.2	ND
WQ-01	9/4/2008	11:36	19.6	22	7.48	8.06	0.4	-94.6	4.5	<1.8	ND	21	ND	ND	0.7	ND
WQ-01	11/3/2008	10:44	8.06	7	9.92	5.52	0.66	-15.6	33	<1.8	ND	23	1.8	2	2.2	ND
WQ-01	12/2/2008	9:35	4.74	7	12.65	5.91	0	49	<1.8	<1.8	ND	ND	1	2.5	2.4	ND
WQ-02	3/5/2008	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F
WQ-02	5/6/2008	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F
WQ-02	6/3/2008	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F
WQ-02	7/3/2008	11:15	17.05	2	7.65	4.65	0.24	122.7	<1.8	<1.8	1.6	21	ND	5	1.7	0.11
WQ-02	8/7/2008	11:05	16.71	2	7.66	4.03	0.2	156.9	<1.8	<1.8	ND	22	ND	10	0.75	ND
WQ-02	9/4/2008	14:40	15.13	2	8.27	4.15	0.2	140	17	11	ND	72	ND	8	9	ND
WQ-02	11/3/2008	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F
WQ-02	12/2/2008	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F	D/F
WQ-03	3/5/2008	9:34	2.44	23	12.2	6.14	0	19.7	<1.8	<1.8	ND	7.6	ND	9	8.5	0.71
WQ-03	5/6/2008	9:35	3.13	15	10.91	3.01	0.83	171	7.8	2	ND	32	ND	10	9	0.09
WQ-03	6/3/2008	9:15	6.74	18	10.41	4.67	1	116.3	2	2	0.65	32	1.3	7.5	7	ND
WQ-03	7/2/2008	9:10	10.35	18	9.28	6.27	0.96	28	<1.8	<1.8	0.29	22	1.2	6.6	11	ND
WQ-03	8/6/2008	15:30	17.45	20	7.75	6.27	1.7	24.1	23	<1.8	ND	35	ND	7.5	6	ND
WQ-03	9/3/2008	13:50	15.35	20	8.71	6.85	2.3	-28.7	79	<1.8	0.48	48	2.6	10	7.5	0.13
WQ-03	11/3/2008	9:50	3.49	31	11.04	6.78	11	5.3	350	<1.8	ND	380	17	12	13	0.53
WQ-03	12/2/2008	8:50	3.14	39	15.14	6.23	4.8	33.5	22	<1.8	ND	83	5.4	16	18	0.43
WQ-04	3/5/2008	8:50	0.75	6	19.7	7.05	0	29.9	<1.8	<1.8	ND	12	ND	3	5.3	0.62
WQ-04	5/6/2008	10:15	2.4	24	11.86	6.9	0.89	1.4	<1.8	<1.8	ND	15	ND	4.5	4.5	0.18
WQ-04	6/3/2008	8:45	10.28	12	9.43	4.44	0.58	131.4	<1.8	<1.8	ND	42	ND	4.5	3.8	ND
WQ-04	7/2/2008	8:45	17.97	13	7.07	6.64	0.67	9.1	49	7.8	0.34	32	ND	4.3	4.2	ND
WQ-04	8/6/2008	14:45	19.85	14	7.18	6.47	0.8	12.5	2300	7.8	2.2	33	ND	5	4.2	ND
WQ-04	9/3/2008	13:30	17.45	13	8.05	7.88	1	-84.4	9400	2	1.2	31	1.1	5	6	ND
WQ-04	11/3/2008	9:20	5.89	14	10.34	6.48	1.4	23.2	94	17	ND	56	2.2	5	4.4	ND
WQ-04	12/2/2008	8:30	4.43	13	12.84	5.87	0	52.9	<1.8	<1.8	ND	ND	4.3	5	4.4	ND
WQ-05	3/5/2008	12:15	3.78	65	14.79	6.63	0	-5.7	110	4.5	0.4	51	ND	22	19	0.27
WQ-05	5/6/2008	13:00	7.46	23	11.81	6.47	1.4	26	2	<1.8	ND	69	2.9	8.5	16	0.14
WQ-05	6/3/2008	11:20	9.79	26	11	6.38	0.9	22.6	79	<1.8	0.3	44	1.2	10	9	0.04
WQ-05	7/2/2008	10:53	16.07	32	8.99	7.32	1.09	-30.9	33	4.5	0.44	25	0.8	11	9.5	ND
WQ-05	8/6/2008	8:45	16.74	30	8.71	6.58	1.6	6.8	G	G	0.43	39	ND	9.5	9	ND
WQ-05	9/3/2008	9:45	13.63	29	10.72	6.61	1.2	-14	79	13	ND	26	1.9	10	10	ND
WQ-05	11/3/2008	11:25	6.9	41	11.92	6.68	1.2	10	9400	330	ND	83	1.4	10	11	0.19
WQ-05	12/2/2008	10:20	3.99	88	14.9	7.03	0.1	-11.4	4.5	<1.8	ND	ND	ND	17	18	ND

Sample ID	Date	Time	Temp C°	Conduct Umhos/cm	Dissolved Oxygen mg/L	pH Units	Turbidity NTU's	Ph MV	Total Coliform MPN/100 mL	Fecal Coliform MPN/100 mL	Copper ug/L	Aluminum ug/L	TSS mg/L	Alkalinity mg CaCO3/L	Hardness mg CaCO3/L	Nitrate mg/L
WQ-06	3/5/2008	12:45	3.19	56	14.8	6.65	0	-7.1	33	<1.8	0.32	32	ND	14	14	ND
WQ-06	5/6/2008	13:15	7.4	22	12.28	6.51	1.5	21.1	22	<1.8	0.47	82	1.4	8	9.5	0.12
WQ-06	6/3/2008	11:35	9.87	25	10.81	6.55	0.85	12.8	13	2	0.35	50	1.3	9.5	8	0.09
WQ-06	7/2/2008	11:10	16.1	31	9.12	7	0.47	-12.9	49	4.5	0.26	23	0.8	11	15	ND
WQ-06	8/6/2008	8:50	16.82	30	8.75	6.95	1.5	-14.5	220	9.2	ND	39	ND	10	12	ND
WQ-06	9/3/2008	9:55	13.7	28	10.42	6.53	1	-10.1	110	2	ND	22	1.4	9.5	9	ND
WQ-06	11/3/2008	11:40	6.76	35	11.47	6.51	1.1	19.2	2800	23	ND	80	1.4	9	10	0.17
WQ-06	12/2/2008	10:30	3.32	64	17.33	6.71	0.1	6.5	7.8	<1.8	ND	ND	ND	17	16	ND
WQ-07	3/5/2008	13:05	2.97	66	14.4	6.74	0	-11.5	7.8	2	0.3	42	ND	32	26	0.15
WQ-07	5/6/2008	13:40	10.81	73	11.3	7.71	0.27	-42.6	70	23	ND	12	ND	36	29	ND
WQ-07	6/3/2008	11:50	9.47	101	10.95	7.37	0.34	-32.9	69	<1.8	0.36	11	ND	50	42	0.27
WQ-07	7/2/2008	11:25	12.36	125	9.79	7.68	0.27	-50.6	220	4.5	0.37	300	ND	62	53	0.53
WQ-07	8/6/2008	9:10	12.07	146	9.63	7.71	3.2	-56.5	46	4	ND	9.8	ND	72	63	0.58
WQ-07	9/3/2008	10:10	10.4	150	11.2	6.69	0.3	-19.3	23	<1.8	0.39	26	7	75	66	0.44
WQ-07	11/4/2008	8:50	6.5	113	11.5	7.65	0.37	-43	220	14	ND	20	ND	51	47	ND
WQ-07	12/2/2008	10:45	5.49	133	15.2	7.49	0	-37.4	33	<1.8	ND	ND	ND	66	56	0.25
WQ-08	3/5/2008	13:20	3.03	67	14.61	6.86	0	-18	11	4.5	1	40	ND	32	26	0.22
WQ-08	5/6/2008	13:45	10.13	70	10.65	7.56	0.61	-35	49	11	ND	15	ND	34	28	0.09
WQ-08	6/3/2008	12:00	9.65	94	10.61	7.5	0.43	-40	140	13	0.35	22	ND	46	38	0.22
WQ-08	7/2/2008	11:35	12.59	125	9.43	7.83	0.45	-58.8	130	4.5	0.38	11	ND	62	52	0.53
WQ-08	8/6/2008	9:20	13.16	138	9.28	7.64	1	-53.4	94	23	0.27	14	ND	68	58	0.49
WQ-08	9/3/2008	10:15	11.21	123	10.2	6.9	0.2	-30.5	130	2	0.32	12	1.1	60	52	0.35
WQ-08	11/4/2008	8:55	6.55	114	11.34	7.61	0.28	-40.7	230	4.5	ND	ND	0.9	54	47	ND
WQ-08	12/2/2008	10:55	5.48	134	13.93	7.57	0	-41.5	4	<1.8	ND	ND	ND	67	58	0.08
WQ-09	3/5/2008	13:45	4.73	155	14.33	7.52	0	-53.1	14	<1.8	0.4	88	6.3	80	74	0.14
WQ-09	5/7/2008	8:00	8.18	118	11.28	7.69	1.6	-41.5	70	6.8	ND	18	4.3	61	54	0.8
WQ-09	6/3/2008	12:15	9.73	140	10.41	7.94	0.89	-64.8	6.1	2	ND	9	2.2	74	64	0.09
WQ-09	7/2/2008	16:10	13.18	159	9.66	7.95	1.93	-65.8	70	49	0.55	23	2.6	86	64	0.13
WQ-09	8/6/2008	9:30	12.53	170	9.76	8.02	1.6	-73.7	70	2	0.49	67	16	88	79	0.13
WQ-09	9/3/2008	10:30	10.4	166	11.4	7.15	1.3	-43.9	33	4.5	1.5	530	19	88	80	0.13
WQ-09	11/4/2008	8:25	6.72	167	11.9	8.04	1.5	-64.3	39	<1.8	ND	23	4.2	86	82	ND
WQ-09	12/2/2008	12:45	6.87	168	13.9	7.88	0	-59.9	46	<1.8	ND	36	13	88	80	0.07
WQ-10	3/5/2008	13:52	4.69	154	13.58	7.62	0	-57.7	4.5	2	0.52	85	12	80	73	0.11
WQ-10	5/7/2008	8:10	8.37	113	10.35	7.81	3.3	-47.7	170	6.1	0.42	84	5.5	60	53	ND
WQ-10	6/3/2008	12:30	10.04	133	10.26	7.88	2.2	-60.8	79	<1.8	0.38	41	3.8	69	62	0.09
WQ-10	7/2/2008	16:20	14.31	144	9.19	7.85	4.46	-60.7	110	4.5	0.63	800	7.7	75	65	0.12
WQ-10	8/6/2008	9:47	13.79	137	9.32	7.8	1.7	-61.5	110	49	ND	47	2.1	86	80	0.13
WQ-10	9/3/2008	10:45	11.95	145	10.05	7.4	1	-57	70	2	0.89	370	5.4	78	74	0.13
WQ-10	11/4/2008	8:40	7.05	162	11.23	7.79	2.5	-51.1	33	2	ND	91	7.1	84	77	ND
WQ-10	12/2/2008	13:00	6.69	165	13.64	7.79	0	-54.4	26	<1.8	ND	59	14	88	76	ND

Sample ID	Date	Time	Temp C°	Conduct Umhos/cm	Dissolved Oxygen mg/L	pH Units	Turbidity NTU's	Ph MV	Total Coliform MPN/100 mL	Fecal Coliform MPN/100 mL	Copper ug/L	Aluminum ug/L	TSS mg/L	Alkalinity mg CaCO3/L	Hardness mg CaCO3/L	Nitrate mg/L
WQ-11	3/5/2008	14:50	3.36	29	14.71	6.73	0	-10.8	17	<1.8	ND	16	ND	14	11	ND
WQ-11	5/7/2008	9:15	6.79	25	12.07	6.29	0.5	33.1	49	<1.8	ND	28	ND	13	10	ND
WQ-11	6/3/2008	13:20	11.08	31	10.26	6.81	0.33	-0.9	<1.8	<1.8	ND	17	ND	14	10	ND
WQ-11	7/3/2008	14:55	17.8	37	7.34	7.29	0.72	-29.4	23	<1.8	0.37	7.1	ND	17	11	0.16
WQ-11	8/6/2008	10:30	16.83	45	7.39	7.34	0.4	-36.7	49	49	ND	6.1	ND	22	15	0.49
WQ-11	9/3/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-11	11/3/2008	14:05	8.28	36	10.99	6.85	0.34	0.6	1700	49	ND	25	ND	14	12	ND
WQ-11	12/3/2008	10:50	4.24	34	15.07	7.21	0	-21.3	4.5	<1.8	ND	ND	ND	16	14	ND
WQ-12	3/5/2008	15:30	3.13	32	15.22	6.82	0	-15.3	11	4.5	0.27	17	ND	15	12	ND
WQ-12	5/7/2008	9:54	7.56	27	1<1.85	6.81	0.39	4.2	43	2	ND	26	ND	14	9.5	ND
WQ-12	6/3/2008	13:55	12.79	32	10.06	7.2	0.25	-21.2	11	2	ND	48	ND	12	11	ND
WQ-12	7/2/2008	15:45	19.79	40	7.75	7.61	0.41	-47.5	33	2	ND	20	ND	21	13	0.12
WQ-12	8/6/2008	11:10	17.61	51	7.95	7.44	1.2	-4<1.8	79	13	ND	5.3	ND	24	18	0.4
WQ-12	9/3/2008	11:05	B	B	B	B	B	B	330	2	B	B	B	B	B	B
WQ-12	11/3/2008	14:25	8.36	36	11.21	7.34	0.39	-25.3	430	63	ND	ND	ND	16	14	ND
WQ-12	12/3/2008	11:30	4.65	39	14.59	7.33	0	-28	26	<1.8	ND	ND	ND	20	14	ND
WQ-13	3/6/2008	8:50	1.45	38	16.94	6.69	0	-10.3	70	<1.8	ND	65	3.9	20	14	0.29
WQ-13	5/7/2008	10:45	8.88	42	11.1	7.46	0.39	29.5	350	6.8	ND	15	ND	22	14	ND
WQ-13	6/3/2008	15:15	12.8	48	9.91	7.67	0.35	-49.7	4	2	0.26	18	ND	25	18	ND
WQ-13	7/3/2008	16:15	18.05	63	7.9	7.65	0.6	-50	500	4	0.6	15	1.7	32	21	ND
WQ-13	8/6/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-13	9/3/2009	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-13	11/3/2008	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
WQ-13	12/3/2008	9:35	3.94	69	13.16	7.33	0	-28.2	110	<1.8	ND	ND	ND	34	27	ND
WQ-14	3/6/2008	9:35	<1.86	37	16.42	6.57	0	-3.8	31	2	0.37	41	ND	18	14	0.42
WQ-14	5/7/2008	11:20	10.72	37	10.41	7.4	0.38	26	40	2	ND	13	ND	22	16	ND
WQ-14	6/3/2008	15:40	14.06	48	9.61	7.28	0.21	-27.5	49	22	0.35	15	ND	26	18	0.04
WQ-14	7/3/2008	14:20	19.75	56	7.25	7.44	0.2	-37.8	49	13	ND	ND	ND	34	23	ND
WQ-14	8/6/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-14	9/3/2009	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-14	11/3/2008	13:10	9.23	65	9.55	7.24	0.21	-20.3	280	11	ND	ND	ND	30	23	ND
WQ-14	12/3/2008	10:10	3.48	54	16.03	7.4	0	-31.9	63	<1.8	ND	ND	0.8	32	24	ND
WQ-15	3/6/2008	11:23	4.18	51	14.37	7.37	0	-44.7	33	<1.8	0.35	190	0.9	26	18	0.35
WQ-15	5/7/2008	14:00	10.07	72	10.44	7.34	4	-23.2	17	4.5	0.39	52	18	36	25	ND
WQ-15	6/4/2008	8:30	9.77	59	10.21	6.27	0.82	28.9	17	<1.8	ND	38	3	38	26	ND
WQ-15	7/2/2008	13:10	14.1	76	8.66	7.45	1.02	-38	220	<1.8	A	A	A	A	A	A
WQ-15	8/6/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-15	9/3/2009	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-15	11/4/2008	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
WQ-15	12/2/2008	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

Sample ID	Date	Time	Temp C°	Conduct Umhos/cm	Dissolved Oxygen mg/L	pH Units	Turbidity NTU's	Ph MV	Total Coliform MPN/100 mL	Fecal Coliform MPN/100 mL	Copper ug/L	Aluminum ug/L	TSS mg/L	Alkalinity mg CaCO3/L	Hardness mg CaCO3/L	Nitrate mg/L
WQ-16	3/6/2008	10:02	3.2	53	14.57	7.15	0	-33.3	49	<1.8	0.48	48	2.8	29	21	0.37
WQ-16	5/6/2008	14:05	10.82	80	10.66	7.65	0.97	-39.4	33	<1.8	0.42	15	ND	40	14	0.09
WQ-16	6/3/2008	15:55	11.01	92	9.73	7.62	1.4	-46.9	11	2	0.52	100	6.7	45	34	ND
WQ-16	7/2/2008	15:05	14.6	106	8.66	7.57	0.88	-44.8	31	13	B	B	B	B	B	B
WQ-16	8/6/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-16	9/3/2009	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-16	11/4/2008	12:50	9.17	81	9.64	7.41	0.42	-29.8	2800	4.5	ND	ND	ND	35	30	0.08
WQ-16	12/2/2008	11:10	6.14	84	13.61	7.51	0	-38.1	7.8	<1.8	ND	ND	ND	40	32	ND
WQ-17	3/6/2008	13:10	4.72	41	12.96	6.91	0	-20.7	79	<1.8	0.34	170	ND	26	14	0.44
WQ-17	5/7/2008	14:55	10.65	48	9.05	6.43	0.59	25.6	170	<1.8	0.31	15	ND	24	16	ND
WQ-17	6/4/2008	9:25	9.33	51	7.23	6.15	1.9	35.7	140	<1.8	ND	23	1.9	26	16	ND
WQ-17	7/2/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-17	8/6/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-17	9/3/2009	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-17	11/4/2008	10:40	8.54	55	8.2	6.28	3.5	32.8	490	23	ND	430	<1.8	24	17	ND
WQ-17	12/3/2008	13:30	B	B	B	B	B	B	<1.8	<1.8	B	B	B	B	B	B
WQ-18	3/6/2008	14:40	4.95	49	14.49	6.96	0	-22.7	79	<1.8	0.37	57	ND	20	16	0.32
WQ-18	5/7/2008	12:45	10.42	53	11.07	6.95	0.48	-2.2	14	<1.8	ND	27	2	22	18	0.12
WQ-18	6/3/2008	16:20	11.03	53	10.68	7.31	0.33	-28.7	12	<1.8	0.28	52	1.7	22	18	0.09
WQ-18	7/2/2008	14:40	13.43	52	9.68	7.32	0.9	-31.6	170	<1.8	0.39	82	0.9	21	18	0.12
WQ-18	8/6/2008	11:35	13.26	50	9.87	7.02	2.1	-18.2	33	11	ND	24	1.4	18	16	0.13
WQ-18	9/3/2008	11:35	11.7	46	11.08	7.43	0.8	-59	140	<1.8	0.33	20	1.3	16	16	0.13
WQ-18	11/4/2008	13:05	9.06	77	11.43	7.23	0.38	-19.6	490	6.8	ND	50	ND	20	28	0.93
WQ-18	12/3/2008	8:30	5.83	65	14.19	7.13	0	-17	23	<1.8	ND	ND	ND	26	25	0.21
WQ-19	3/6/2008	13:35	4.81	41	13.28	6.66	0	-7	11	4.5	ND	250	3.6	20	12	0.34
WQ-19	5/7/2008	15:10	10.8	49	10.15	6.58	0.96	17.3	33	<1.8	ND	68	ND	25	16	ND
WQ-19	6/4/2008	9:45	9.36	28	10.22	6.44	0.73	19.5	13	7.8	ND	100	1.1	26	16	0.09
WQ-19	7/3/2008	14:10	15.11	48	9.02	7.03	0.77	-14.6	1600	140	ND	120	3.2	24	14	0.08
WQ-19	8/6/2008	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-19	9/3/2009	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
WQ-19	11/4/2008	10:55	6.71	58	10.34	6.85	3.2	0.9	110	46	ND	270	1.2	28	19	ND
WQ-19	12/2/2008	13:45	5.53	62	13.74	7.05	0	-12.2	79	17	ND	41	ND	32	20	ND
WQ-20	3/6/2008	15:45	5.05	37	14.2	6.41	0	6.4	33	<1.8	0.28	180	0.7	16	12	0.31
WQ-20	5/6/2008	14:20	11.01	37	10.58	7.01	1.7	-5.5	6.8	<1.8	0.4	38	2.6	16	31	ND
WQ-20	6/3/2008	16:35	11.72	37	10.73	7.28	1	-27.3	49	2	ND	47	2.8	16	12	ND
WQ-20	7/3/2008	14:25	14.37	25	9.64	7.29	0.91	-28.9	490	2	ND	25	1.7	16	11	ND
WQ-20	8/6/2008	11:50	14.73	32	9.37	7.38	1.4	-38.2	49	33	0.86	260	33	12	9	ND
WQ-20	9/3/2008	12:00	11.16	29	11.23	7.46	0.5	-60.4	130	<1.8	0.6	250	10	34	8.5	ND
WQ-20	11/4/2008	12:40	7.49	36	11.56	7.32	1	-25	49	33	ND	67	1	14	11	ND
WQ-20	12/2/2008	11:30	5.75	32	15	7.22	0	-21.7	49	<1.8	ND	43	12	13	9.5	ND

A = SAMPLE WAS DAMAGED AND NOT ENOUGH WATER TO TEST
B = NOT ENOUGH WATER TO COLLECT 4 LITERS, BUT TOOK FECAL SAMPLES
C = COMPLETELY DRY
D = NOT SAFE TO REACH SAMPLING SITE
E = NO SAMPLES COLLECTED DUE TO BAD AIR QUALITY DAYS AND LONG EXPOSURE
F = NO LONGER MAKE HOLD TIME DUE TO BOAT TAXI CLOSED FOR THE WINTER
G = LAB ERROR

Project 184 - 2008 Water Quality Monitoirng Repo

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-01	3/5/2008	10:41	<1.8
WQ-01	5/6/2008	11:40	<1.8
WQ-01	5/22/2008	10:05	<1.8
WQ-01	5/23/2008	9:42	<1.8
WQ-01	5/27/2008	9:50	<1.8
WQ-01	5/28/2008	9:36	<1.8
WQ-01	6/3/2008	10:25	<1.8
WQ-01	6/18/2008	9:55	<1.8
WQ-01	6/19/2008	9:47	<1.8
WQ-01	6/25/2008	10:20	2
WQ-01	6/26/2008	9:50	<1.8
WQ-01	7/2/2008	10:05	<1.8
WQ-01	7/7/2008	12:45	2
WQ-01	7/8/2008	8:58	<1.8
WQ-01	7/23/08	11:50	<1.8
WQ-01	7/24/08	11:50	2
WQ-01	8/7/08	13:25	49
WQ-01	8/20/08	12:30	7.8
WQ-01	8/21/08	12:10	140
WQ-01	8/26/08	11:39	<1.8
WQ-01	8/27/08	11:45	13
WQ-01	9/4/08	11:36	<1.8
WQ-01	9/17/08	10:20	2
WQ-01	9/18/08	9:20	7.8
WQ-01	9/24/08	9:25	<1.8
WQ-01	9/25/08	11:56	<1.8
WQ-01	11/3/08	10:44	<1.8
WQ-01	12/2/08	9:35	<1.8
WQ-02	3/5/2008	D/F	D/F
WQ-02	5/6/2008	D/F	D/F
WQ-02	5/22/2008	D/F	D/F
WQ-02	5/23/2008	D/F	D/F
WQ-02	5/27/2008	D/F	D/F
WQ-02	5/28/2008	D/F	D/F
WQ-02	6/3/2008	D/F	D/F
WQ-02	6/18/2008	D/F	D/F
WQ-02	6/19/2008	D/F	D/F
WQ-02	6/25/2008	D/F	D/F
WQ-02	6/26/2008	D/F	D/F
WQ-02	7/3/2008	11:15	<1.8
WQ-02	7/7/2008	10:35	<1.8
WQ-02	7/9/2008	9:50	<1.8
WQ-02	7/23/08	10:00	<1.8
WQ-02	7/24/08	10:00	<1.8
WQ-02	8/7/08	11:05	<1.8
WQ-02	8/20/08	10:00	<1.8
WQ-02	8/21/08	10:05	<1.8
WQ-02	8/26/08	9:47	<1.8
WQ-02	8/28/08	10:38	<1.8
WQ-02	9/4/08	14:40	72
WQ-02	9/17/08	D/F	D/F
WQ-02	9/18/08	D/F	D/F
WQ-02	9/24/08	D/F	D/F
WQ-02	9/25/08	D/F	D/F
WQ-02	11/3/08	D/F	D/F
WQ-02	12/2/08	D/F	D/F

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-03	3/5/2008	9:34	<1.8
WQ-03	5/6/2008	9:35	2
WQ-03	5/22/2008	9:34	2
WQ-03	5/23/2008	8:55	<1.8
WQ-03	5/27/2008	9:10	<1.8
WQ-03	5/28/2008	8:51	<1.8
WQ-03	6/3/2008	9:15	2
WQ-03	6/18/2008	9:15	<1.8
WQ-03	6/19/2008	8:59	<1.8
WQ-03	6/25/2008	9:25	<1.8
WQ-03	6/26/2008	9:00	49
WQ-03	7/2/2008	9:10	<1.8
WQ-03	7/7/2008	13:39	<1.8
WQ-03	7/8/2008	8:10	<1.8
WQ-03	7/23/08	11:50	<1.8
WQ-03	7/24/08	11:35	<1.8
WQ-03	8/6/08	15:30	<1.8
WQ-03	8/20/08	12:00	<1.8
WQ-03	8/21/08	10:54	<1.8
WQ-03	8/26/08	11:00	<1.8
WQ-03	8/27/08	10:59	<1.8
WQ-03	9/3/08	13:50	<1.8
WQ-03	9/17/08	9:35	<1.8
WQ-03	9/18/08	8:35	<1.8
WQ-03	9/24/08	8:47	<1.8
WQ-03	9/25/08	12:14	7.8
WQ-03	11/3/08	9:50	<1.8
WQ-03	12/2/08	8:50	<1.8
WQ-04	3/5/2008	8:50	<1.8
WQ-04	5/6/2008	10:15	<1.8
WQ-04	5/22/2008	9:00	4.5
WQ-04	5/23/2008	8:43	2
WQ-04	5/27/2008	8:45	<1.8
WQ-04	5/28/2008	8:30	<1.8
WQ-04	6/3/2008	8:45	<1.8
WQ-04	6/18/2008	8:55	13
WQ-04	6/19/2008	8:44	2
WQ-04	6/25/2008	9:10	<1.8
WQ-04	6/26/2008	8:50	<1.8
WQ-04	7/2/2008	8:45	7.8
WQ-04	7/7/2008	13:25	7.8
WQ-04	7/8/2008	7:55	2
WQ-04	7/23/08	11:35	<1.8
WQ-04	7/24/08	11:13	<1.8
WQ-04	8/6/08	14:45	7.8
WQ-04	8/21/08	10:41	<1.8
WQ-04	8/26/08	10:40	<1.8
WQ-04	8/26/08	11:35	<1.8
WQ-04	8/27/08	10:38	<1.8
WQ-04	9/3/08	13:30	2
WQ-04	9/17/08	15:04	4.5
WQ-04	9/18/08	8:25	14
WQ-04	9/24/08	8:35	<1.8
WQ-04	9/25/08	13:15	<1.8
WQ-04	11/3/08	9:20	17
WQ-04	12/2/08	8:30	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-05	3/5/2008	12:15	4.5
WQ-05	5/6/2008	13:00	<1.8
WQ-05	5/22/2008	10:32	<1.8
WQ-05	5/23/2008	7:45	6.8
WQ-05	5/27/2008	10:20	6.8
WQ-05	5/28/2008	10:09	4.5
WQ-05	6/3/2008	11:20	<1.8
WQ-05	6/18/2008	10:25	4.5
WQ-05	6/19/2008	10:23	6.8
WQ-05	6/25/2008	11:05	13
WQ-05	6/26/2008	10:25	4.5
WQ-05	7/2/2008	10:53	4.5
WQ-05	7/7/2008	8:18	11
WQ-05	7/8/2008	9:35	4
WQ-05	7/23/08	7:35	49
WQ-05	7/24/08	7:30	27
WQ-05	8/6/08	8:45	G
WQ-05	8/20/08	8:15	4.5
WQ-05	8/21/08	7:23	6.8
WQ-05	8/26/08	7:45	4.5
WQ-05	8/27/08	7:34	4.5
WQ-05	9/3/08	9:45	13
WQ-05	9/17/08	11:10	<1.8
WQ-05	9/18/08	9:58	<1.8
WQ-05	9/24/08	10:15	4.5
WQ-05	9/25/08	12:32	4.5
WQ-05	11/3/08	11:25	330
WQ-05	12/2/08	10:20	<1.8
WQ-06	3/5/08	12:45	<1.8
WQ-06	5/6/2008	13:15	<1.8
WQ-06	5/22/2008	10:45	4.5
WQ-06	5/23/2008	7:50	4.5
WQ-06	5/27/2008	10:25	2
WQ-06	5/28/2008	10:12	<1.8
WQ-06	6/3/2008	11:35	2
WQ-06	6/18/2008	10:30	<1.8
WQ-06	6/19/2008	10:26	2
WQ-06	6/25/2008	11:10	2
WQ-06	6/26/2008	10:28	<1.8
WQ-06	7/2/2008	11:10	4.5
WQ-06	7/7/2008	8:22	7.8
WQ-06	7/8/2008	9:38	13
WQ-06	7/23/08	7:40	49
WQ-06	7/24/08	7:35	22
WQ-06	8/6/08	8:50	9.2
WQ-06	8/20/08	8:20	7.8
WQ-06	8/21/08	7:27	2
WQ-06	8/26/08	7:50	13
WQ-06	8/27/08	7:37	17
WQ-06	9/3/08	9:55	2
WQ-06	9/17/08	11:12	4.5
WQ-06	9/18/08	10:00	6.8
WQ-06	9/24/08	10:17	<1.8
WQ-06	9/25/08	12:35	4
WQ-06	11/3/08	11:40	23
WQ-06	12/2/08	10:30	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-07	3/5/2008	13:05	2
WQ-07	5/6/2008	13:40	23
WQ-07	5/22/2008	10:55	2
WQ-07	5/23/2008	7:55	13
WQ-07	5/27/2008	10:30	<1.8
WQ-07	5/28/2008	10:23	9.3
WQ-07	6/3/2008	11:50	<1.8
WQ-07	6/18/2008	10:40	2
WQ-07	6/19/2008	10:33	11
WQ-07	6/25/2008	11:10	23
WQ-07	6/26/2008	10:39	70
WQ-07	7/2/2008	11:25	4.5
WQ-07	7/7/2008	8:33	13
WQ-07	7/8/2008	9:45	33
WQ-07	7/23/08	7:45	4.5
WQ-07	7/24/08	7:44	7.8
WQ-07	8/6/08	9:10	4
WQ-07	8/20/08	8:25	<1.8
WQ-07	8/21/08	7:36	4.5
WQ-07	8/26/08	7:55	2
WQ-07	8/27/08	7:45	<1.8
WQ-07	9/3/08	10:10	<1.8
WQ-07	9/17/08	11:20	49
WQ-07	9/18/08	10:04	4
WQ-07	9/24/08	10:23	2
WQ-07	9/25/08	15:59	2
WQ-07	11/4/08	8:50	14
WQ-07	12/2/08	10:45	<1.8
WQ-08	3/5/2008	13:20	4.5
WQ-08	5/6/2008	13:45	11
WQ-08	5/22/2008	11:00	6.8
WQ-08	5/23/2008	8:00	2
WQ-08	5/27/2008	10:35	7.8
WQ-08	5/28/2008	10:24	4.5
WQ-08	6/3/2008	12:00	13
WQ-08	6/18/2008	10:45	13
WQ-08	6/19/2008	10:36	13
WQ-08	6/25/2008	11:13	70
WQ-08	6/26/2008	10:41	21
WQ-08	7/2/2008	11:35	4.5
WQ-08	7/7/2008	8:36	23
WQ-08	7/8/2008	9:48	11
WQ-08	7/23/08	7:48	33
WQ-08	7/24/08	15:50	33
WQ-08	7/24/08	7:46	21
WQ-08	8/6/08	9:20	23
WQ-08	8/20/08	8:30	2
WQ-08	8/21/08	7:38	<1.8
WQ-08	8/26/08	8:00	7.8
WQ-08	8/27/08	7:47	4
WQ-08	9/3/08	10:15	2
WQ-08	9/17/08	11:23	33
WQ-08	9/18/08	10:09	4.5
WQ-08	9/24/08	10:24	4.5
WQ-08	9/25/08	12:44	13
WQ-08	11/4/08	8:55	4.5
WQ-08	12/2/08	10:55	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-09	3/5/2008	13:45	<1.8
WQ-09	5/7/2008	8:00	6.8
WQ-09	5/22/2008	8:20	2
WQ-09	5/23/2008	8:10	<1.8
WQ-09	5/27/2008	10:25	<1.8
WQ-09	5/28/2008	10:20	13
WQ-09	6/3/2008	12:15	2
WQ-09	6/18/2008	10:30	130
WQ-09	6/19/2008	10:35	70
WQ-09	6/25/2008	10:50	46
WQ-09	6/26/2008	11:01	33
WQ-09	7/2/2008	16:10	49
WQ-09	7/7/2008	8:42	11
WQ-09	7/8/2008	10:10	12
WQ-09	7/23/08	8:10	2
WQ-09	7/24/08	7:58	6.1
WQ-09	8/6/08	9:30	2
WQ-09	8/20/08	8:40	2
WQ-09	8/21/08	7:47	2
WQ-09	8/26/08	8:10	2
WQ-09	8/27/08	7:57	4
WQ-09	9/3/08	10:30	4.5
WQ-09	9/17/08	15:04	2
WQ-09	9/18/08	10:20	<1.8
WQ-09	9/24/08	13:35	<1.8
WQ-09	9/25/08	12:53	<1.8
WQ-09	11/4/08	8:25	<1.8
WQ-09	12/2/08	12:45	<1.8
WQ-10	3/5/2008	13:52	2
WQ-10	5/7/2008	8:10	6.1
WQ-10	5/22/2008	8:25	4.5
WQ-10	5/23/2008	8:20	<1.8
WQ-10	5/27/2008	10:35	4.5
WQ-10	5/28/2008	10:15	4.5
WQ-10	6/3/2008	12:30	<1.8
WQ-10	6/18/2008	10:37	14
WQ-10	6/19/2008	10:25	49
WQ-10	6/25/2008	10:56	2
WQ-10	6/26/2008	11:00	13
WQ-10	7/2/2008	16:20	4.5
WQ-10	7/7/2008	8:57	13
WQ-10	7/8/2008	9:55	13
WQ-10	7/23/08	8:05	7.8
WQ-10	7/24/08	8:02	4
WQ-10	8/6/08	9:47	49
WQ-10	8/20/08	8:45	6.8
WQ-10	8/21/08	7:54	7.8
WQ-10	8/26/08	8:05	17
WQ-10	8/27/08	8:02	23
WQ-10	9/3/08	10:45	2
WQ-10	9/17/08	11:35	7.8
WQ-10	9/18/08	10:25	4.5
WQ-10	9/24/08	10:38	2
WQ-10	9/25/08	12:57	22
WQ-10	11/4/08	8:40	2
WQ-10	12/2/08	13:00	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-11	3/5/2008	14:50	<1.8
WQ-11	5/7/2008	9:15	<1.8
WQ-11	5/22/2008	8:55	7.8
WQ-11	5/23/2008	8:35	13
WQ-11	5/27/2008	11:25	2
WQ-11	5/28/2008	11:20	4.5
WQ-11	6/3/2008	13:20	<1.8
WQ-11	6/18/2008	11:30	2
WQ-11	6/19/2008	11:30	14
WQ-11	6/25/2008	E	E
WQ-11	6/26/2008	E	E
WQ-11	7/3/2008	14:55	<1.8
WQ-11	7/7/2008	E	E
WQ-11	7/8/2008	11:50	7.8
WQ-11	7/23/2008	E	0
WQ-11	7/24/08	14:25	4.5
WQ-11	8/6/08	10:30	49
WQ-11	8/20/08	9:15	<1.8
WQ-11	8/21/08	8:27	<1.8
WQ-11	8/26/08	8:40	2
WQ-11	8/27/08	8:40	<1.8
WQ-11	9/3/08	C	C
WQ-11	9/17/08	C	C
WQ-11	9/18/08	C	C
WQ-11	9/24/08	C	C
WQ-11	9/25/08	C	C
WQ-11	11/3/08	14:05	49
WQ-11	12/3/08	10:50	<1.8
WQ-12	3/5/2008	15:30	4.5
WQ-12	5/7/2008	9:54	2
WQ-12	5/22/2008	9:15	<1.8
WQ-12	5/23/2008	8:55	13
WQ-12	5/27/2008	10:10	<1.8
WQ-12	5/28/2008	10:05	7.8
WQ-12	6/3/2008	13:20	2
WQ-12	6/18/2008	10:10	23
WQ-12	6/19/2008	10:10	33
WQ-12	6/25/2008	10:33	4.5
WQ-12	6/26/2008	10:45	2
WQ-12	7/2/2008	15:45	2
WQ-12	7/7/2008	9:02	13
WQ-12	7/8/2008	9:55	23
WQ-12	7/23/08	8:20	<1.8
WQ-12	7/24/08	8:17	<1.8
WQ-12	8/6/08	11:10	13
WQ-12	8/20/08	9:40	9.3
WQ-12	8/21/08	8:50	7.8
WQ-12	8/26/08	8:20	13
WQ-12	8/27/08	9:06	7.8
WQ-12	9/3/08	11:05	2
WQ-12	9/17/08	11:50	<1.8
WQ-12	9/18/08	10:36	<1.8
WQ-12	9/24/08	10:48	2
WQ-12	9/25/08	13:08	<1.8
WQ-12	11/3/08	14:25	63
WQ-12	12/3/08	11:30	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-13	3/6/2008	8:50	<1.8
WQ-13	5/7/2008	10:45	6.8
WQ-13	5/22/2008	9:45	4.5
WQ-13	5/23/2008	9:25	4.5
WQ-13	5/27/2008	12:05	23
WQ-13	5/28/2008	12:05	11
WQ-13	6/3/2008	15:15	2
WQ-13	6/18/2008	12:10	13
WQ-13	6/19/2008	12:10	13
WQ-13	6/25/2008	E	E
WQ-13	6/26/2008	E	E
WQ-13	7/3/2008	16:15	4
WQ-13	7/7/2008	E	E
WQ-13	7/8/2008	12:45	120
WQ-13	7/23/2008	E	0
WQ-13	7/24/2008	15:15	33
WQ-13	8/6/2008	C	C
WQ-13	8/20/2008	C	C
WQ-13	8/21/2008	C	C
WQ-13	8/26/2008	C	C
WQ-13	8/27/2008	C	C
WQ-13	9/3/2008	C	C
WQ-13	9/17/2008	C	C
WQ-13	9/18/2008	C	C
WQ-13	9/24/2008	C	C
WQ-13	9/25/08	C	C
WQ-13	11/3/08	D	D
WQ-13	12/3/08	9:35	<1.8
WQ-14	3/6/2008	9:35	2
WQ-14	5/7/2008	11:20	2
WQ-14	5/22/2008	9:25	2
WQ-14	5/23/2008	9:10	2
WQ-14	5/27/2008	10:00	33
WQ-14	5/28/2008	9:55	17
WQ-14	6/3/2008	15:40	22
WQ-14	6/18/2008	10:00	7.8
WQ-14	6/19/2008	10:00	17
WQ-14	6/25/2008	10:25	17
WQ-14	6/26/2008	10:35	13
WQ-14	7/3/2008	14:20	13
WQ-14	7/7/2008	9:18	4.5
WQ-14	7/8/2008	9:45	<1.8
WQ-14	7/23/08	8:30	41
WQ-14	7/24/08	8:25	170
WQ-14	8/6/2008	C	C
WQ-14	8/20/2008	C	C
WQ-14	8/21/2008	C	C
WQ-14	8/26/2008	C	C
WQ-14	8/27/2008	C	C
WQ-14	9/3/2008	C	C
WQ-14	9/17/2008	C	C
WQ-14	9/18/2008	C	C
WQ-14	9/24/2008	C	C
WQ-14	9/25/08	C	C
WQ-14	11/3/08	13:10	11
WQ-14	12/3/08	10:10	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-15	3/6/2008	11:23	<1.8
WQ-15	5/7/2008	14:00	4.5
WQ-15	5/22/2008	12:25	2
WQ-15	5/23/2008	11:45	<1.8
WQ-15	5/27/2008	8:38	2
WQ-15	5/28/2008	8:50	<1.8
WQ-15	6/4/2008	8:30	<1.8
WQ-15	6/18/2008	8:43	2
WQ-15	6/19/2008	8:45	<1.8
WQ-15	6/25/2008	8:46	<1.8
WQ-15	6/26/2008	9:00	<1.8
WQ-15	7/2/2008	13:10	<1.8
WQ-15	7/7/2008	10:40	2
WQ-15	7/8/2008	8:10	<1.8
WQ-15	7/23/08	9:50	13
WQ-15	7/24/08	9:25	14
WQ-15	8/6/2008	C	C
WQ-15	8/20/2008	C	C
WQ-15	8/21/2008	C	C
WQ-15	8/26/2008	C	C
WQ-15	8/27/2008	C	C
WQ-15	9/3/2008	C	C
WQ-15	9/17/2008	C	C
WQ-15	9/18/2008	C	C
WQ-15	9/24/2008	C	C
WQ-15	9/25/08	C	C
WQ-15	11/4/08	D	D
WQ-15	12/2/08	D	D
WQ-16	3/6/2008	10:02	<1.8
WQ-16	5/6/2008	14:05	<1.8
WQ-16	5/22/2008	13:15	<1.8
WQ-16	5/23/2008	7:36	2
WQ-16	5/27/2008	9:44	<1.8
WQ-16	5/28/2008	9:50	<1.8
WQ-16	6/3/2008	15:55	2
WQ-16	6/18/2008	9:50	4
WQ-16	6/19/2008	9:55	<1.8
WQ-16	6/25/2008	10:12	33
WQ-16	6/26/2008	10:25	46
WQ-16	7/2/2008	15:05	13
WQ-16	7/7/2008	9:28	2
WQ-16	7/8/2008	9:30	17
WQ-16	7/23/08	C	C
WQ-16	7/24/08	C	C
WQ-16	8/6/2008	C	C
WQ-16	8/20/2008	C	C
WQ-16	8/21/2008	C	C
WQ-16	8/26/2008	C	C
WQ-16	8/27/2008	C	C
WQ-16	9/3/2008	C	C
WQ-16	9/17/2008	C	C
WQ-16	9/18/2008	C	C
WQ-16	9/24/2008	C	C
WQ-16	9/25/08	C	C
WQ-16	11/4/08	12:50	4.5
WQ-16	12/2/08	11:10	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-17	3/6/2008	13:10	<1.8
WQ-17	5/7/2008	14:55	<1.8
WQ-17	5/22/2008	10:25	<1.8
WQ-17	5/23/2008	12:28	2
WQ-17	5/27/2008	9:15	7.8
WQ-17	5/28/2008	9:25	4.5
WQ-17	6/4/2008	9:25	<1.8
WQ-17	6/18/2008	9:21	<1.8
WQ-17	6/19/2008	9:30	<1.8
WQ-17	6/25/2008	9:20	1300
WQ-17	6/26/2008	9:35	<1.8
WQ-17	7/2/2008	C	C
WQ-17	7/7/2008	C	C
WQ-17	7/8/2008	C	C
WQ-17	7/23/08	C	C
WQ-17	7/24/08	C	C
WQ-17	8/6/2008	C	C
WQ-17	8/20/2008	C	C
WQ-17	8/21/2008	C	C
WQ-17	8/26/2008	C	C
WQ-17	8/27/2008	C	C
WQ-17	9/3/2008	C	C
WQ-17	9/17/2008	C	C
WQ-17	9/18/2008	C	C
WQ-17	9/24/2008	C	C
WQ-17	9/25/08	C	C
WQ-17	11/4/08	10:40	23
WQ-17	12/3/08	13:30	<1.8
WQ-18	3/6/2008	14:40	<1.8
WQ-18	5/7/2008	12:45	<1.8
WQ-18	5/22/2008	13:30	<1.8
WQ-18	5/23/2008	10:45	<1.8
WQ-18	5/27/2008	12:35	<1.8
WQ-18	5/28/2008	12:55	<1.8
WQ-18	6/3/2008	16:20	<1.8
WQ-18	6/18/2008	12:45	13
WQ-18	6/19/2008	12:40	7.8
WQ-18	6/25/2008	9:57	<1.8
WQ-18	6/26/2008	10:10	6.8
WQ-18	7/2/2008	14:40	<1.8
WQ-18	7/7/2008	9:42	2
WQ-18	7/8/2008	9:10	2
WQ-18	7/23/08	8:50	17
WQ-18	7/24/2008	15:50	33
WQ-18	8/6/08	11:35	11
WQ-18	8/20/08	10:10	11
WQ-18	8/21/08	9:14	11
WQ-18	8/26/08	9:30	23
WQ-18	8/27/08	9:27	7.8
WQ-18	9/3/08	11:35	<1.8
WQ-18	9/17/08	12:22	2
WQ-18	9/18/08	12:00	4.5
WQ-18	9/24/08	13:35	17
WQ-18	9/25/08	13:27	6.8
WQ-18	11/4/2008	13:05	6.8
WQ-18	12/3/2008	8:30	<1.8

Fecal Coliform Data Spreadsheet

Sample ID	Date	Time	Fecal Results
WQ-19	3/6/2008	13:35	4.5
WQ-19	5/7/2008	15:10	<1.8
WQ-19	5/22/2008	10:35	13
WQ-19	5/23/2008	12:34	<1.8
WQ-19	5/27/2008	9:25	4.5
WQ-19	5/28/2008	9:30	21
WQ-19	6/4/2008	9:45	7.8
WQ-19	6/18/2008	9:30	17
WQ-19	6/19/2008	9:35	540
WQ-19	6/25/2008	9:34	17
WQ-19	6/26/2008	9:55	2
WQ-19	7/3/2008	14:10	140
WQ-19	7/7/2008	11:22	4
WQ-19	7/8/2008	8:50	540
WQ-19	7/23/08	9:10	33
WQ-19	7/24/08	10:05	49
WQ-19	8/6/08	C	C
WQ-19	8/20/08	C	C
WQ-19	8/21/08	C	C
WQ-19	8/26/08	C	C
WQ-19	8/27/08	C	C
WQ-19	9/3/08	C	C
WQ-19	9/17/08	C	C
WQ-19	9/18/08	C	C
WQ-19	9/24/08	C	C
WQ-19	9/25/08	C	C
WQ-19	11/4/08	10:55	46
WQ-19	12/2/08	13:45	17
WQ-20	3/6/2008	15:45	<1.8
WQ-20	5/6/2008	14:20	<1.8
WQ-20	5/22/2008	10:50	<1.8
WQ-20	5/23/2008	7:25	4.5
WQ-20	5/27/2008	9:34	<1.8
WQ-20	5/28/2008	9:40	23
WQ-20	6/3/2008	16:35	2
WQ-20	6/18/2008	9:45	4.5
WQ-20	6/19/2008	9:45	2
WQ-20	6/25/2008	9:45	<1.8
WQ-20	6/26/2008	9:45	4
WQ-20	7/3/2008	14:25	2
WQ-20	7/7/2008	10:00	7.8
WQ-20	7/8/2008	9:00	23
WQ-20	7/23/08	9:05	110
WQ-20	7/24/08	8:40	49
WQ-20	8/6/08	11:50	33
WQ-20	8/20/08	10:15	<1.8
WQ-20	8/21/08	9:30	4.5
WQ-20	8/26/08	9:37	17
WQ-20	8/27/08	9:36	2
WQ-20	9/3/08	12:00	<1.8
WQ-20	9/17/08	G	0
WQ-20	9/18/08	11:08	6.8
WQ-20	9/24/08	13:35	<1.8
WQ-20	9/25/08	13:34	<1.8
WQ-20	11/4/08	12:40	33
WQ-20	12/2/08	11:30	<1.8

A = SAMPLE WAS DAMAGED AND NOT ENOUGH WATER TO TEST
B = NOT ENOUGH WATER TO COLLECT 4 LITERS, BUT TOOK FECAL SAMPLES
C = COMPLETELY DRY
D = NOT SAFE TO REACH SAMPLING SITE
E = NO SAMPLES COLLECTED DUE TO BAD AIR QUALITY DAYS AND LONG EXPOSURE
F = NO LONGER MAKE HOLD TIME DUE TO BOAT TAXI CLOSED FOR THE WINTER
G = LAB ERROR

Table 1.

Water Quality Limits for Constituents and Parameters for Copper per California Toxics Rule Criteria to protect freshwater aquatic life. Results based on the following equation:

Criteria Maximum Concentration (1-hour Average, dissolved) = (e{0.9422[ln(harness)] – 1.700})

Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-01	3/5/2008	ND	2.5	N/A
	5/6/2008	ND	2.2	N/A
	6/3/2008	0.37	5.2	0.8291
	7/2/2008	0.3	9.9	1.5208
	8/7/2008	0.26	6.2	0.9785
	9/4/2008	ND	0.7	N/A
	11/3/2008	ND	2.2	N/A
	12/2/2008	ND	2.4	N/A
WQ-03	3/5/2008	ND	8.5	N/A
	5/6/2008	ND	9	N/A
	6/3/2008	0.65	7	1.0970
	7/2/2008	0.29	11	1.6795
	8/6/2008	ND	6	N/A
	9/3/2008	0.48	7.5	1.1707
	11/3/2008	ND	13	N/A
	12/2/2008	ND	18	N/A

Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-02	3/5/2008	0	0	0.0000
	5/6/2008	0	0	0.0000
	6/3/2008	0	0	0.0000
*	7/3/2008	1.6	1.7	0.2891
	8/7/2008	ND	0.75	N/A
	9/4/2008	ND	9	N/A
	11/3/2008	0	0	0.0000
	12/2/2008	0	0	0.0000
WQ-04	3/5/2008	ND	5.3	N/A
	5/6/2008	ND	4.5	N/A
	6/3/2008	ND	3.8	N/A
	7/2/2008	0.34	4.2	0.6779
*	8/6/2008	2.2	4.2	0.6779
*	9/3/2008	1.2	6	0.9487
	11/3/2008	ND	4.4	N/A
	12/2/2008	ND	4.4	N/A

* Highlighted gray lines signify exceedence of copper criteria.

Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-05	3/5/2008	0.4	19	2.8107
	5/6/2008	ND	16	N/A
	6/3/2008	0.3	9	1.3901
	7/2/2008	0.44	9.5	1.4628
	8/6/2008	0.43	9	1.3901
	9/3/2008	ND	10	N/A
	11/3/2008	ND	11	N/A
	12/2/2008	ND	18	N/A
WQ-07	3/5/2008	0.3	26	3.7771
	5/6/2008	ND	29	N/A
	6/3/2008	0.36	42	5.9347
	7/2/2008	0.37	53	7.3890
	8/6/2008	ND	63	N/A
	9/3/2008	0.39	66	9.0854
	11/4/2008	ND	47	N/A
	12/2/2008	ND	56	N/A
WQ-09	3/5/2008	0.4	74	10.1195
	5/7/2008	ND	54	N/A
	6/3/2008	ND	64	N/A
	7/2/2008	0.55	64	8.8258
	8/6/2008	0.49	79	10.7625
	9/3/2008	1.5	80	10.8909
	11/4/2008	ND	82	N/A
	12/2/2008	ND	80	N/A

Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-06	3/5/2008	0.32	14	2.1079
	5/6/2008	0.47	9.5	1.4628
	6/3/2008	0.35	8	1.2441
	7/2/2008	0.26	15	2.2495
	8/6/2008	ND	12	N/A
	9/3/2008	ND	9	N/A
	11/3/2008	ND	10	N/A
	12/2/2008	ND	16	N/A
WQ-08	3/5/2008	1	26	3.7771
	5/6/2008	ND	28	N/A
	6/3/2008	0.35	38	5.4006
	7/2/2008	0.38	52	7.2575
	8/6/2008	0.27	58	8.0440
	9/3/2008	0.32	52	7.2575
	11/4/2008	ND	47	N/A
	12/2/2008	ND	58	N/A
WQ-10	3/5/2008	0.52	73	9.9906
	5/7/2008	0.42	53	7.3890
	6/3/2008	0.38	62	8.5657
	7/2/2008	0.63	65	8.9557
	8/6/2008	ND	80	N/A
	9/3/2008	0.89	74	10.1195
	11/4/2008	ND	77	N/A
	12/2/2008	ND	76	N/A

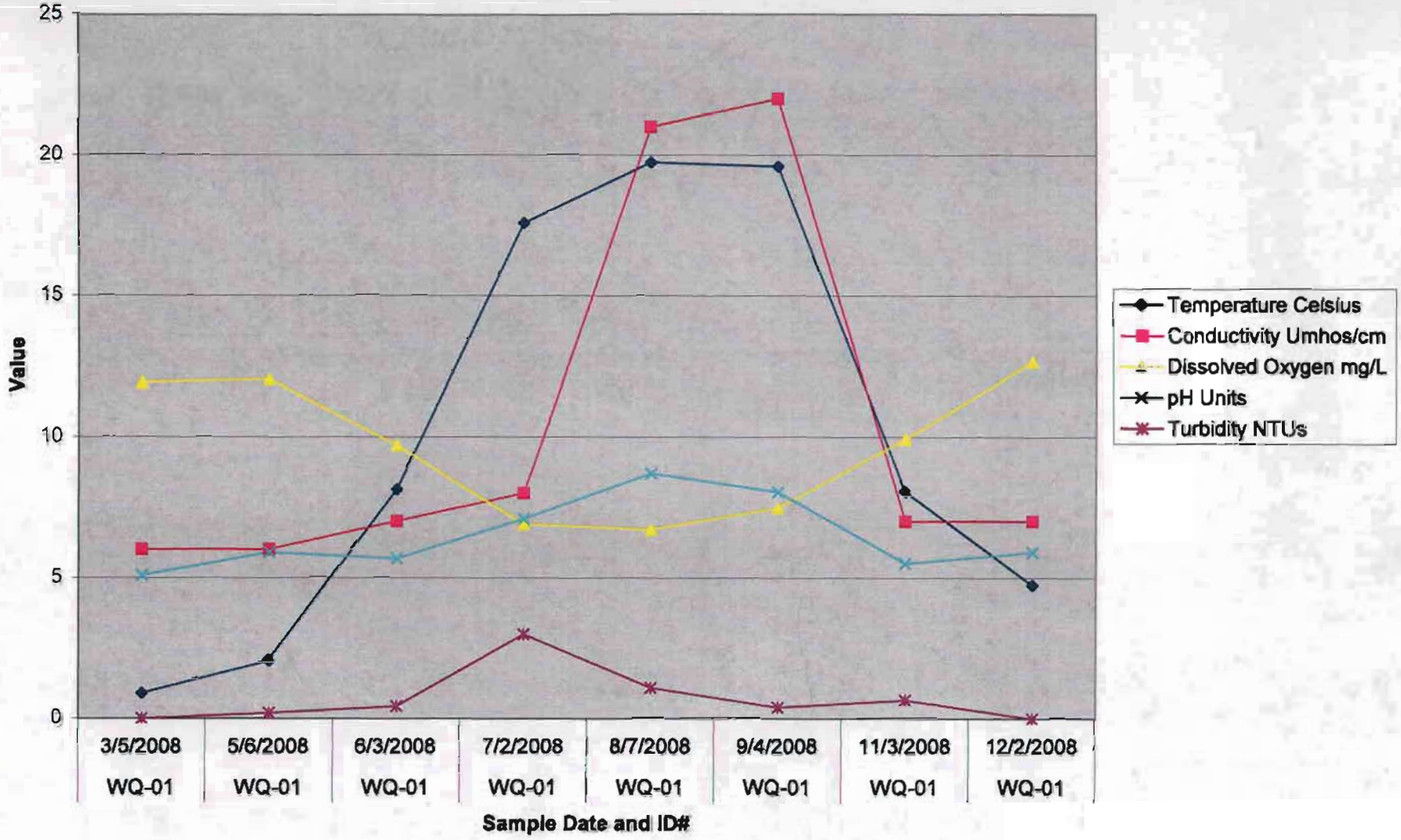
Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-11	3/5/2008	ND	11	N/A
	5/7/2008	ND	10	N/A
	6/3/2008	ND	10	N/A
	7/3/2008	0.37	11	1.6795
	8/6/2008	ND	15	N/A
	9/3/2008	0	0	0.0000
	11/3/2008	ND	12	N/A
	12/3/2008	ND	14	N/A
WQ-13	3/6/2008	ND	14	N/A
	5/7/2008	ND	14	N/A
	6/3/2008	0.26	18	2.6711
	7/3/2008	0.6	21	3.0886
	8/6/2008	0	0	0.0000
	9/3/2009	0	0	0.0000
	11/3/2008	0	0	0.0000
	12/3/2008	ND	27	N/A
WQ-15	3/6/2008	0.35	18	2.6711
	5/7/2008	0.39	25	3.6401
	6/4/2008	ND	26	N/A
	7/2/2008	0	0	0.0000
	8/6/2008	0	0	0.0000
	9/3/2009	0	0	0.0000
	11/4/2008	0	0	0.0000
	12/2/2008	0	0	0.0000
WQ-17	3/6/2008	0.34	14	2.1079
	5/7/2008	0.31	16	2.3905
	6/4/2008	ND	16	N/A
	7/2/2008	0	0	0.0000
	8/6/2008	0	0	0.0000
	9/3/2009	0	0	0.0000
	11/4/2008	ND	17	N/A
	12/3/2008	0	0	0.0000

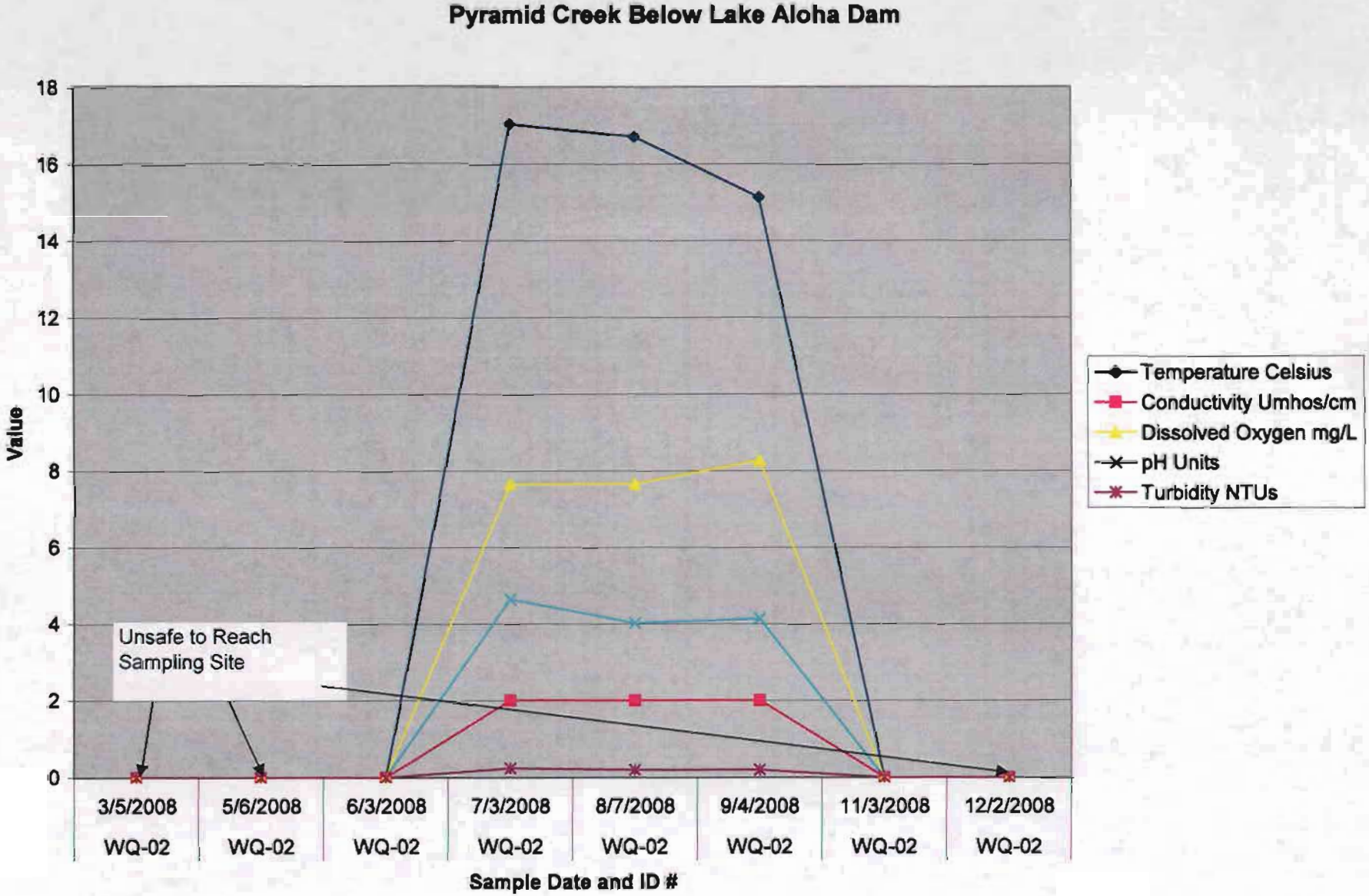
Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-12	3/5/2008	0.27	12	1.8230
	5/7/2008	ND	9.5	N/A
	6/3/2008	ND	11	N/A
	7/2/2008	ND	13	N/A
	8/6/2008	ND	18	N/A
	9/3/2008	0	0	0.0000
	11/3/2008	ND	14	N/A
	12/3/2008	ND	14	N/A
WQ-14	3/6/2008	0.37	14	2.1079
	5/7/2008	ND	16	N/A
	6/3/2008	0.35	18	2.6711
	7/3/2008	ND	23	N/A
	8/6/2008	0	0	0.0000
	9/3/2009	0	0	0.0000
	11/3/2008	ND	23	N/A
	12/3/2008	ND	24	N/A
WQ-16	3/6/2008	0.48	21	3.0886
	5/6/2008	0.42	14	2.1079
	6/3/2008	0.52	34	4.8633
	7/2/2008	0	0	0.0000
	8/6/2008	0	0	0.0000
	9/3/2009	0	0	0.0000
	11/4/2008	ND	30	N/A
	12/2/2008	ND	32	N/A
WQ-18	3/6/2008	0.37	16	2.3905
	5/7/2008	ND	18	N/A
	6/3/2008	0.28	18	2.6711
	7/2/2008	0.39	18	2.6711
	8/6/2008	ND	16	N/A
	9/3/2008	0.33	16	2.3905
	11/4/2008	ND	28	N/A
	12/3/2008	ND	25	N/A

Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-19	3/6/2008	ND	12	N/A
	5/7/2008	ND	16	N/A
	6/4/2008	ND	16	N/A
	7/3/2008	ND	14	N/A
	8/6/2008	0	0	0.0000
	9/3/2009	0	0	0.0000
	11/4/2008	ND	19	N/A
	12/2/2008	ND	20	N/A

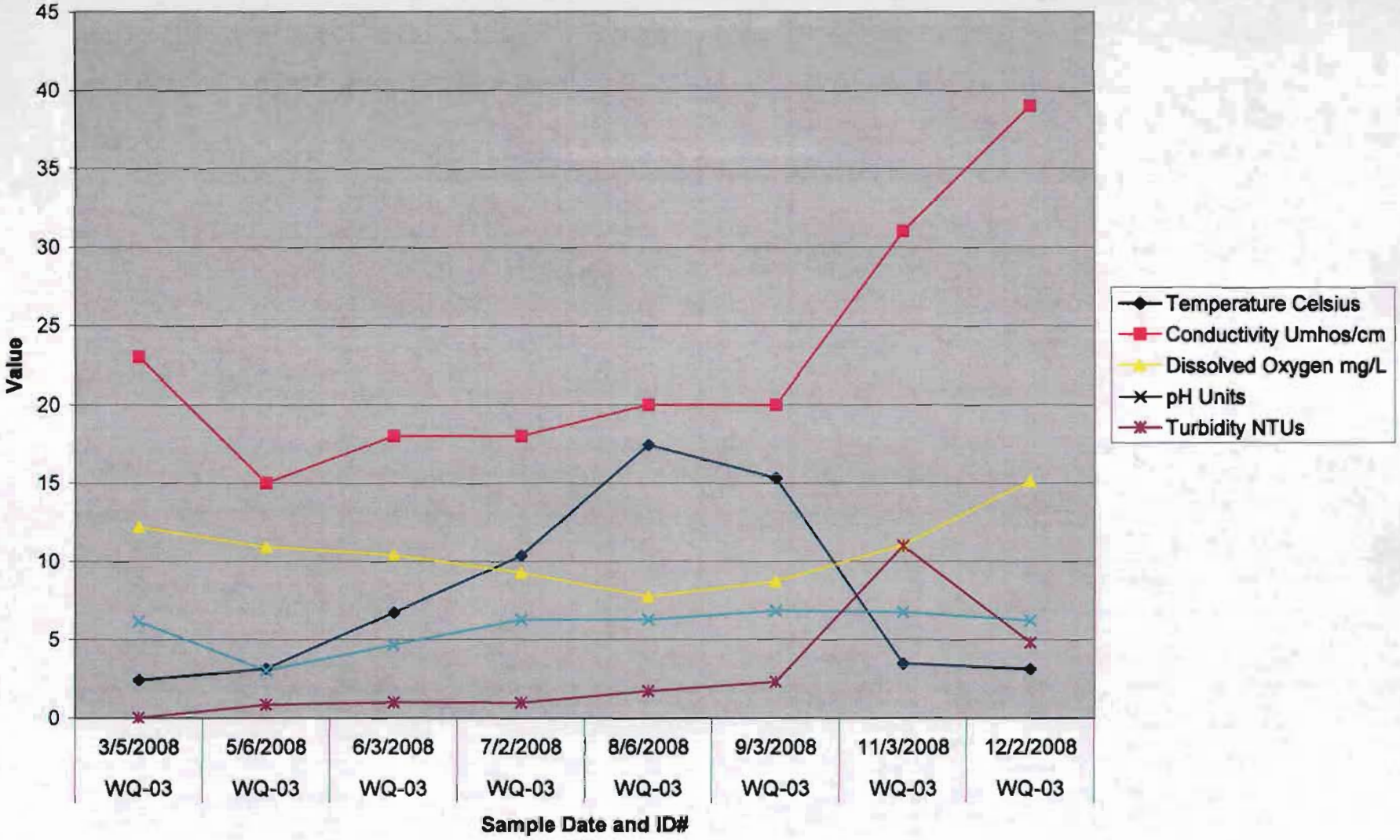
Sample ID	Date	Copper (ug/L)	Hardness (mg/L)	Dissolved Copper Concentration (ug/L)
WQ-20	3/6/2008	0.28	12	1.8230
	5/6/2008	0.4	31	4.4579
	6/3/2008	ND	12	N/A
	7/3/2008	ND	11	N/A
	8/6/2008	0.86	9	1.3901
	9/3/2008	0.6	8.5	1.3173
	11/4/2008	ND	11	N/A
	12/2/2008	ND	9.5	N/A

Echo Creek Below Echo Lake Dam

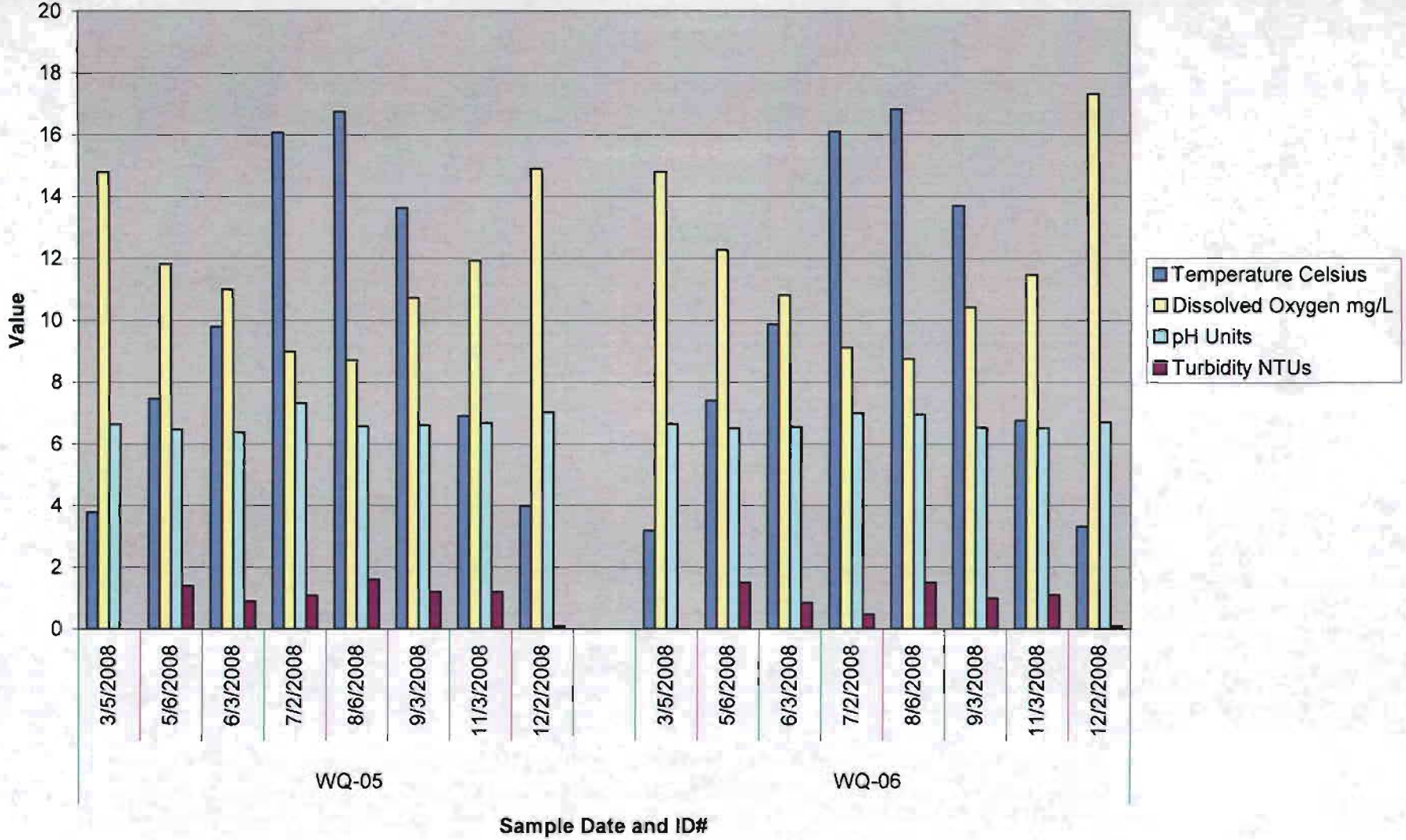



Pyramid Creek Below Lake Aloha Dam
Value
18
16
14
12
10
8
6
4
2
0
Unsafe to Reach
Sampling Site
3/5/2008
WQ-02
5/6/2008
WQ-02
6/3/2008
WQ-02
7/3/2008
WQ-02
8/7/2008
WQ-02
9/4/2008
WQ-02
11/3/2008
WQ-02
12/2/2008
WQ-02
Sample Date and ID #
Temperature Celsius
Conductivity Umhos/cm
Dissolved Oxygen mg/L
pH Units
Turbidity NTUs

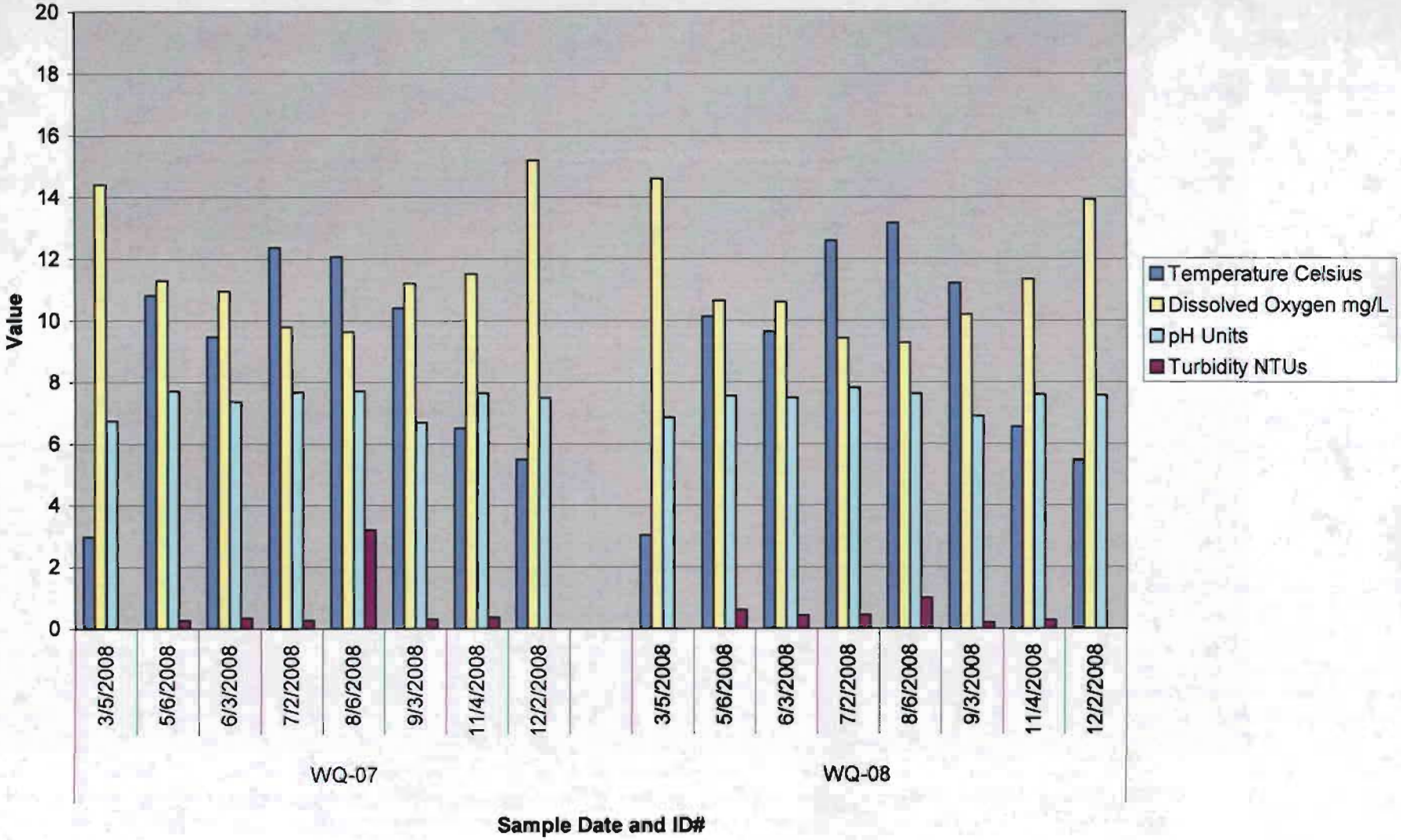
Caples Creek Below Caples Lake Dam



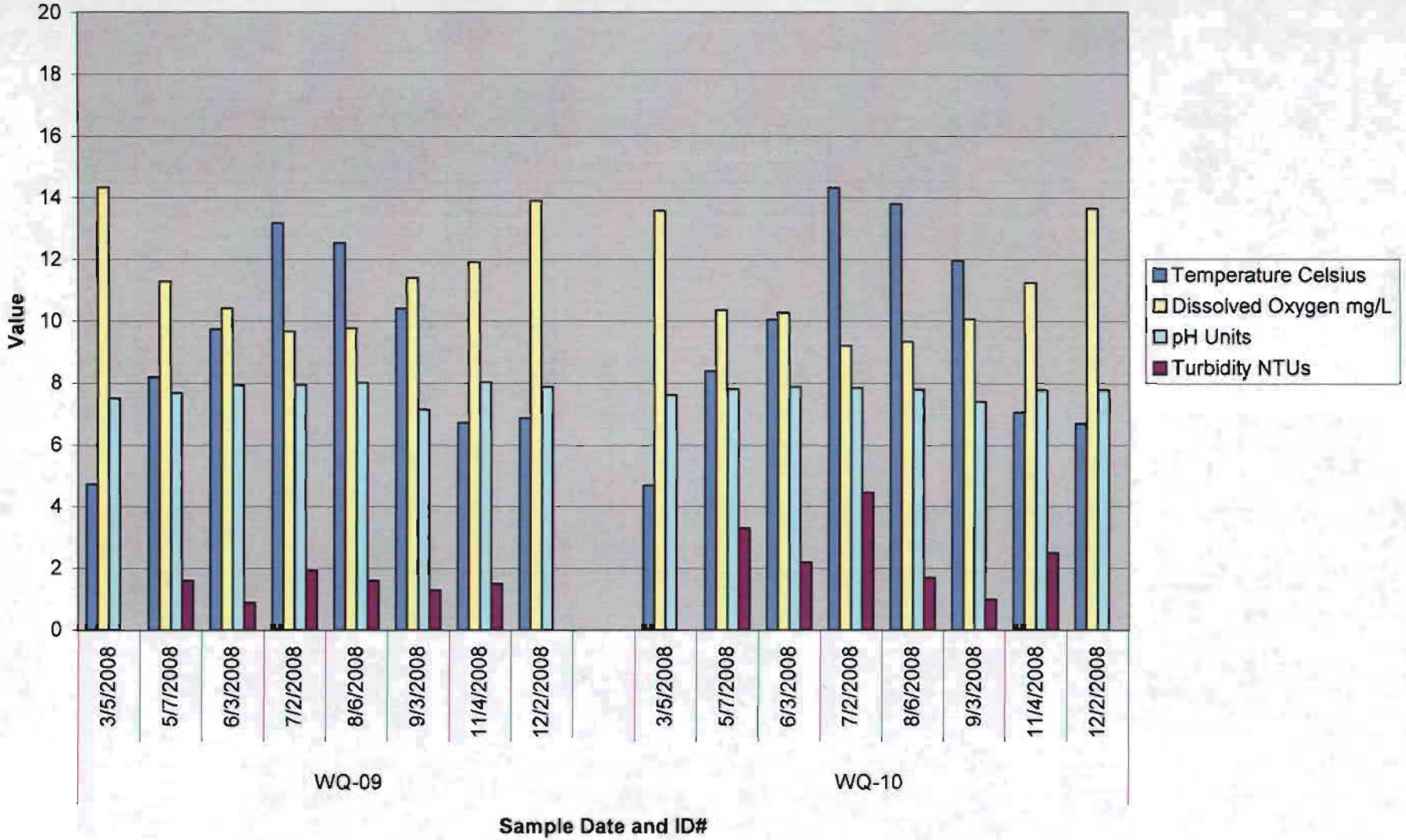
South Fork American River Upstream and Downstream of Kyburz Diversion Dam



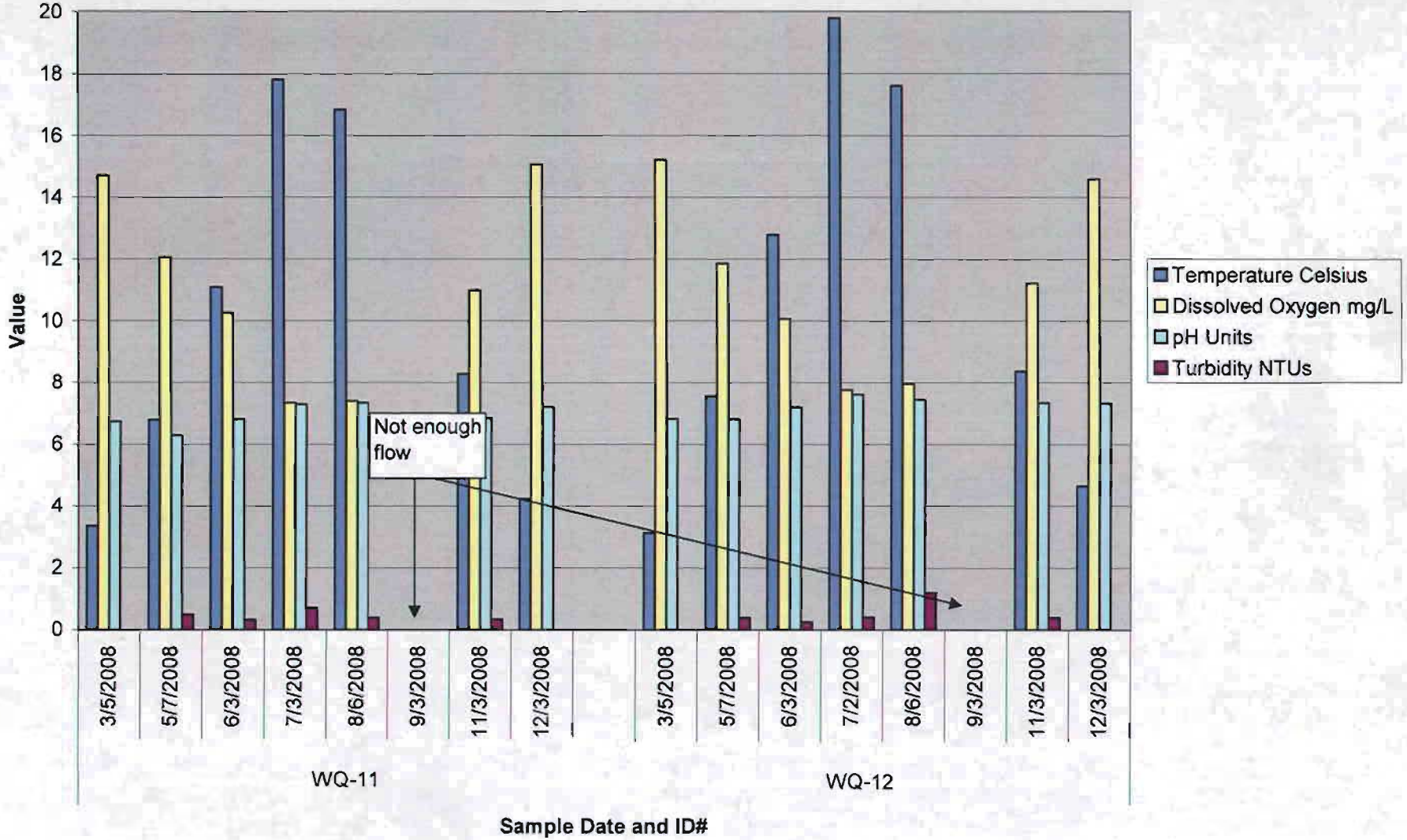
Carpenter Creek Above and Below Carpenter Creek Diversion Dam



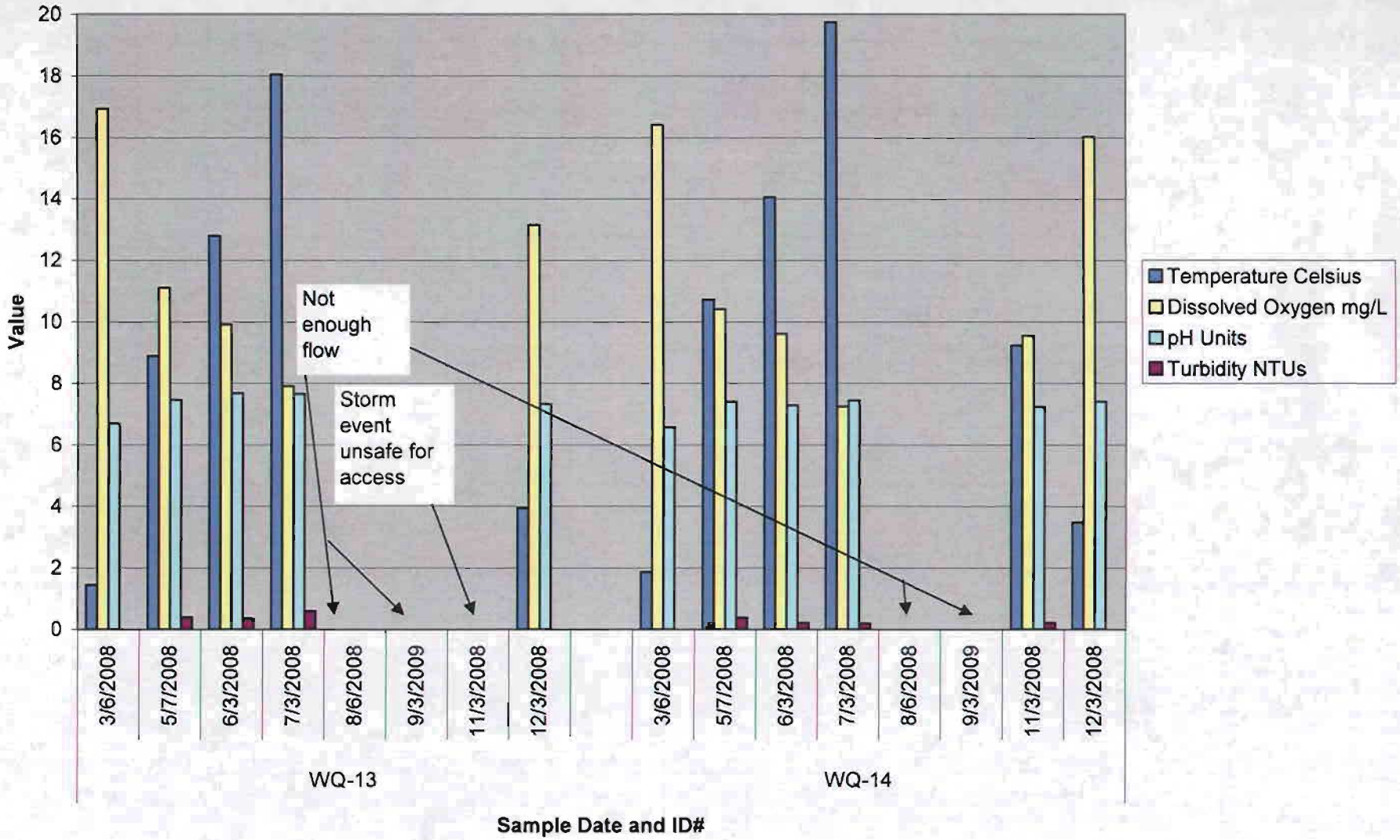
No Name Creek Above and Below No Name Creek Diversion Dam



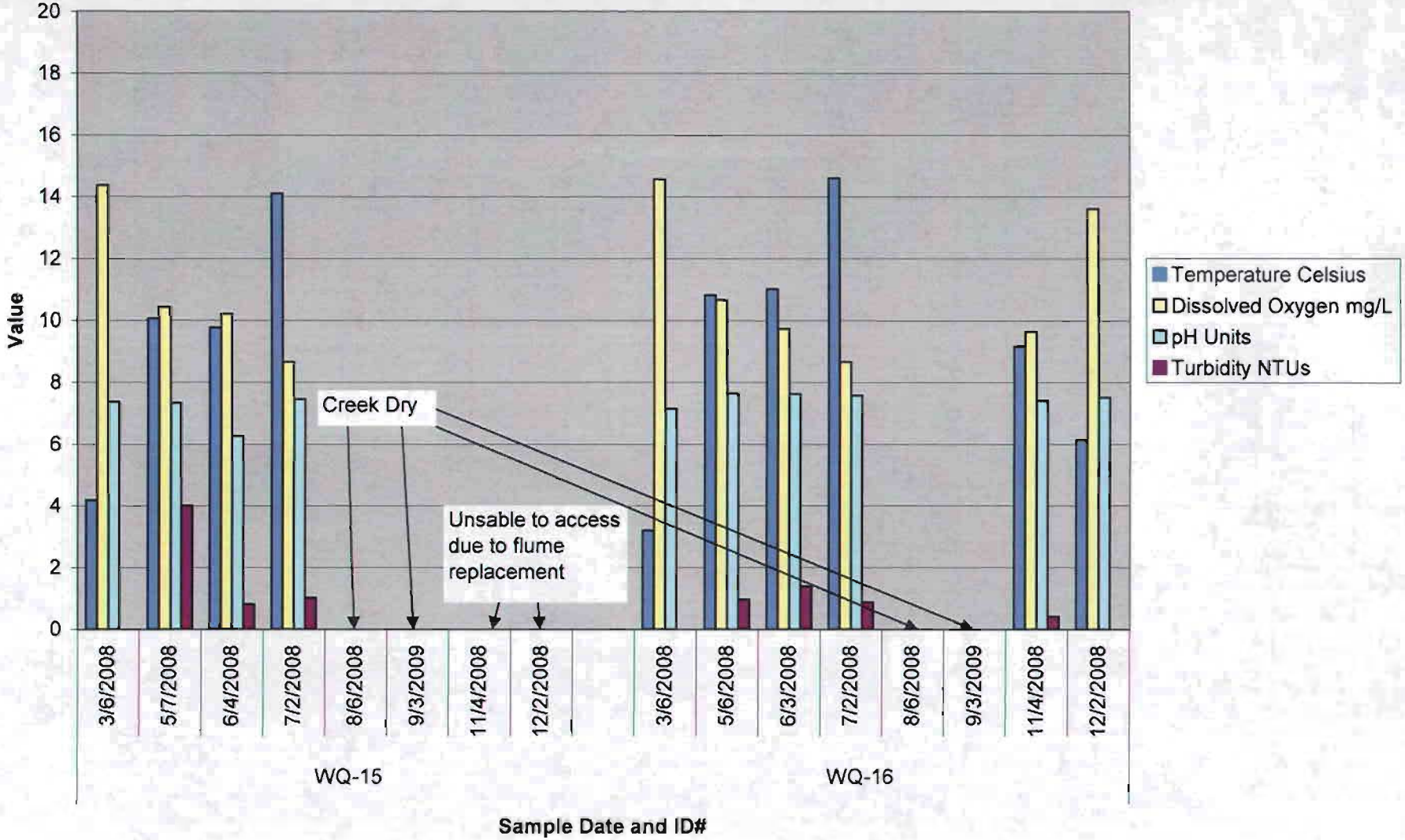
Alder Creek Comparison Above and Below Alder Creek Diversion Dam



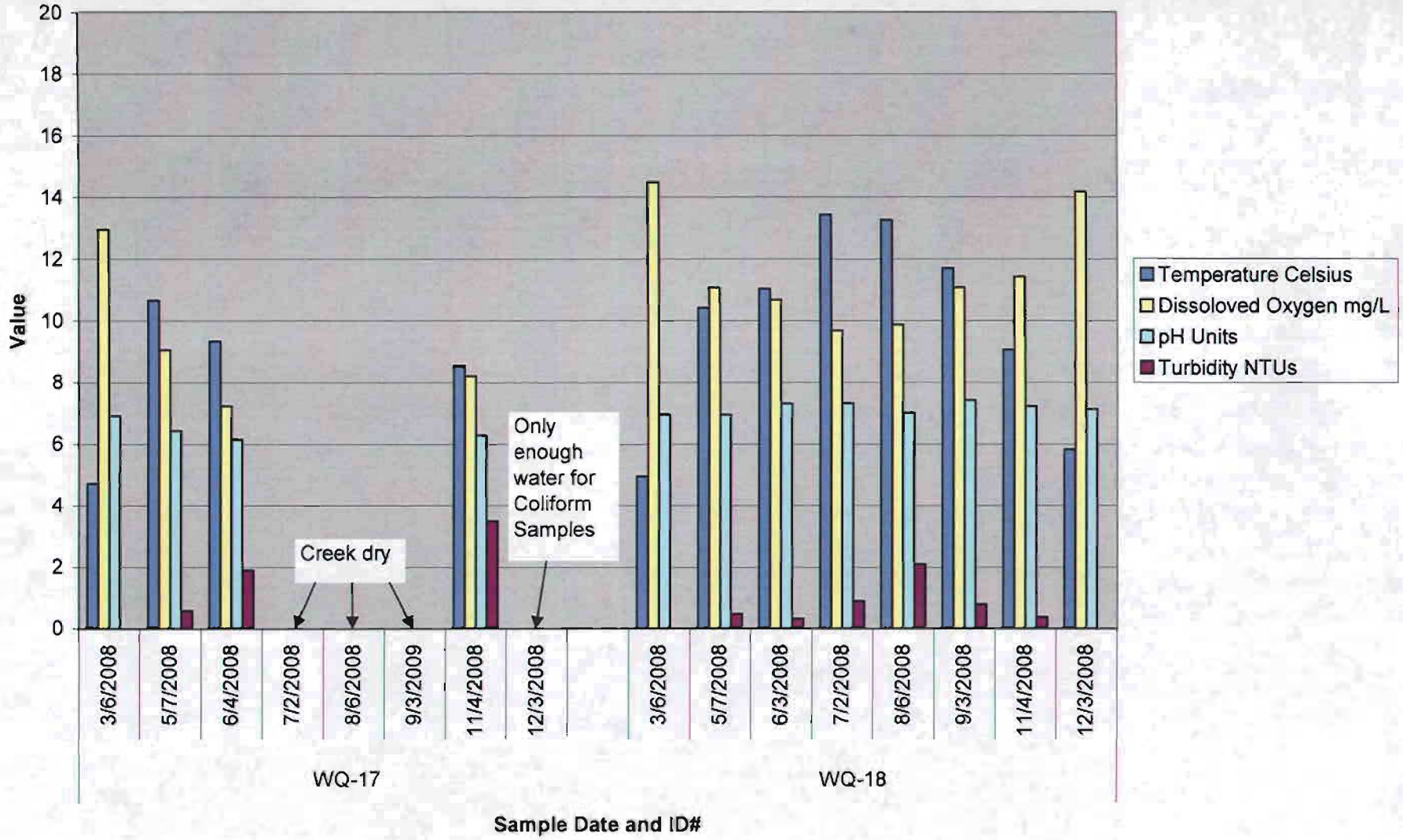
Mill Creek Comparision Above and Below Mill Creek Diversion Dam



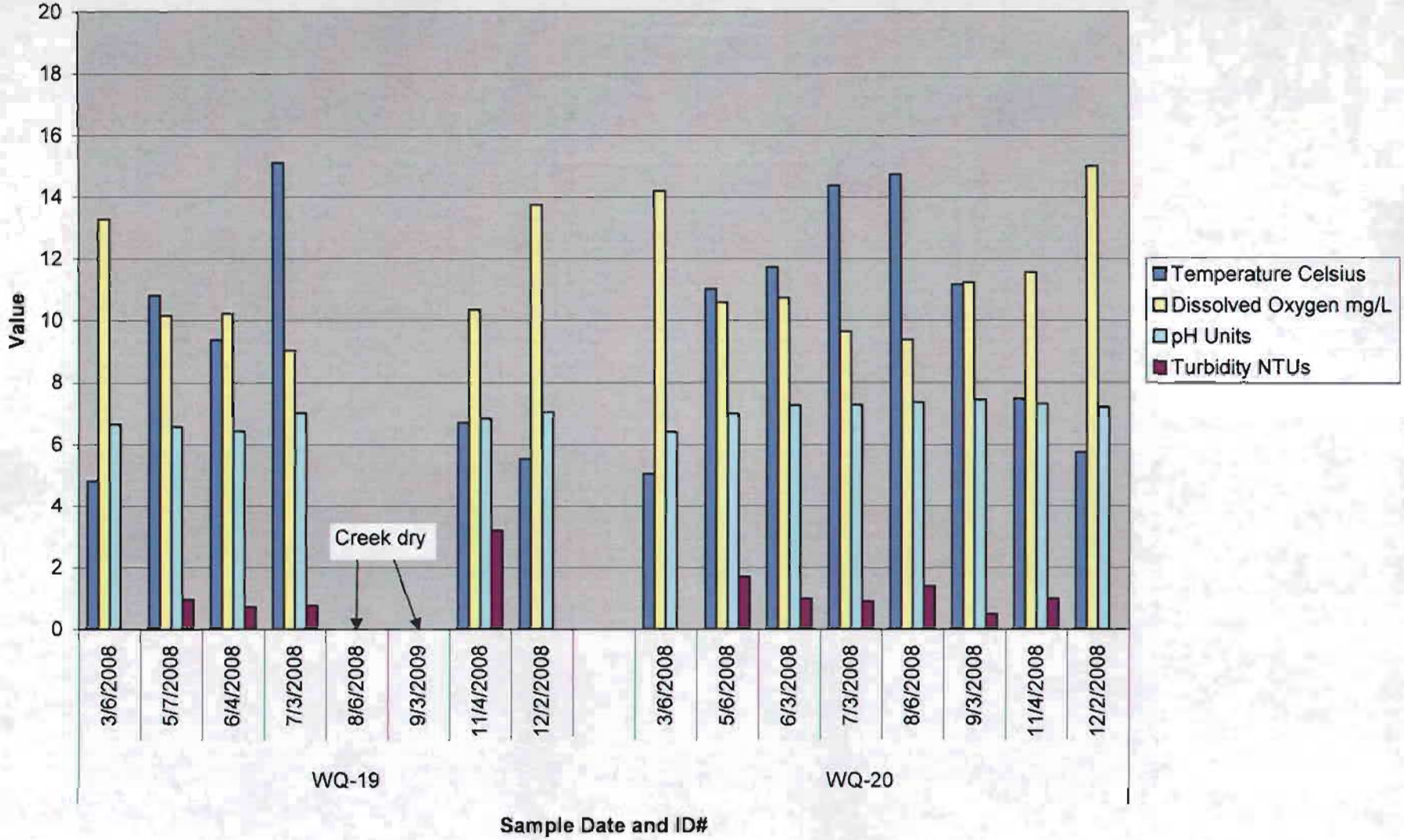
Bull Creek Comparision Above and Below Bull Creek Diversion

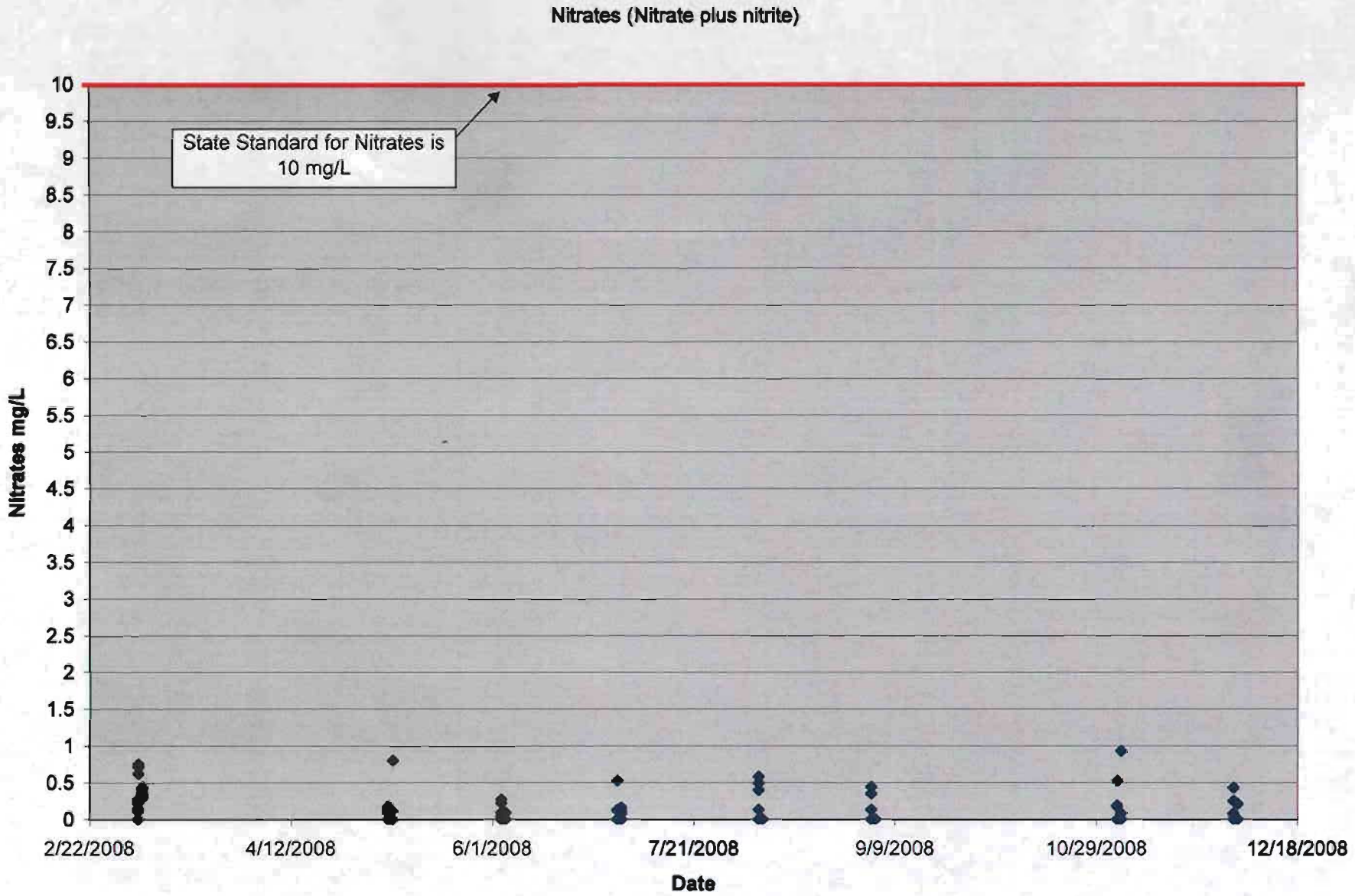


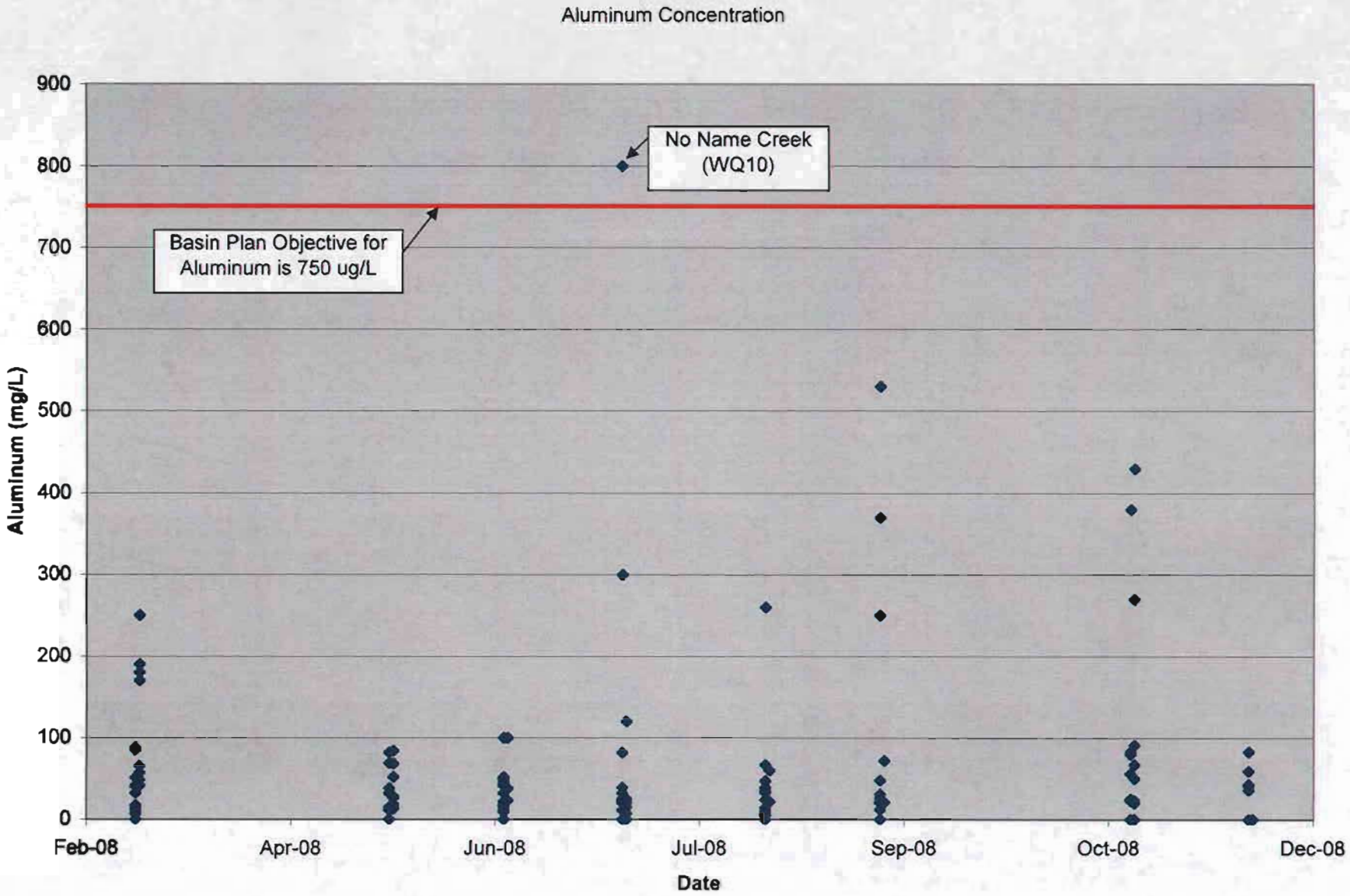
Ogilby Creek Comparision Above and Below Ogilby Diversion

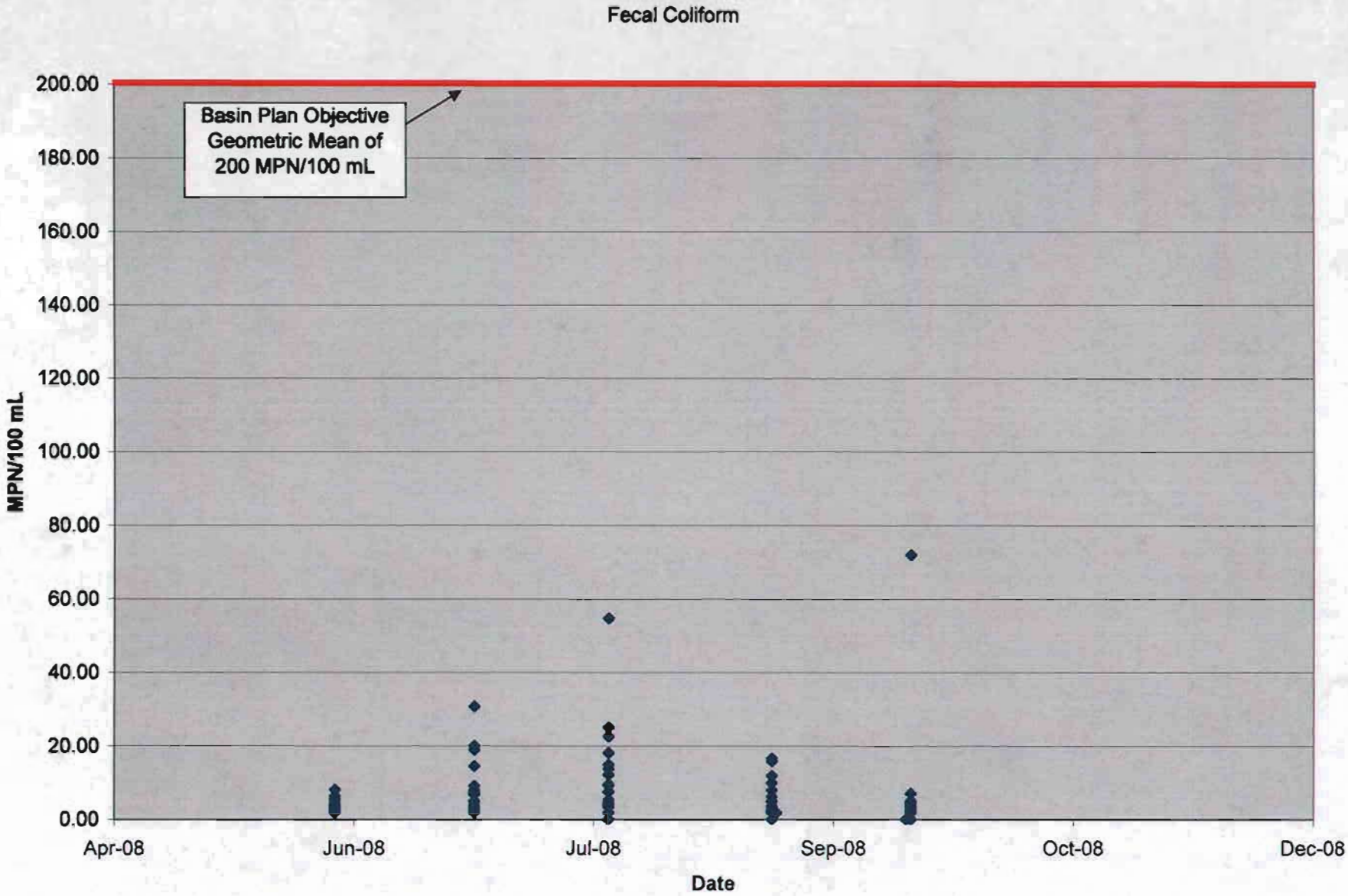


Esmeralda Creek Comparison Above and Below Emeralda Diverson




Nitrates (Nitrate plus nitrite)
State Standard for Nitrates is 10 mg/L
Nitrates mg/L
10
9.5
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
2/22/2008
4/12/2008
6/1/2008
7/21/2008
9/9/2008
10/29/2008
12/18/2008
Date


Aluminum Concentration
900
800
700
600
500
400
300
200
100
0
Aluminum (mg/L)
No Name Creek
(WQ10)
Basin Plan Objective for
Aluminum is 750 ug/L
Feb-08
Apr-08
Jun-08
Jul-08
Sep-08
Oct-08
Dec-08
Date


Fecal Coliform
Basin Plan Objective
Geometric Mean of
200 MPN/100 mL
200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
MPN/100 mL
Apr-08
Jun-08
Jul-08
Sep-08
Oct-08
Dec-08
Date

APPENDIX B
2008 WILDLIFE MORTALITY REPORT
And
CANAL WILDLIFE FENCING INSPECTION REPORTS

FERC Project 184
2008 Wildlife Mortality Report

The Federal Regulatory Energy Commission (FERC) Order Issuing New License dated October 18, 2006, includes the Project 184 Forest Service (FS) 4(e) Conditions as Appendix A. FS Condition 43 states that "The licensee shall provide the FS *and* ERC by April 1 of each year an annual report describing the date, location, and species information (deer or other wildlife) found in the El Dorado Canal."

El Dorado Irrigation District (EID) provides this report in compliance with Condition 43 – Wildlife and Sensitive Plant Protection Measures.

In 2008, six deer perished in the Project 184 canal system; details are as follows:

01/05/08
A 100 lb. buck was found at Camp 1. No gates were left open.

01/16/08
A 40 lb. buck was found at Camp 1. No gates were left open.

03/27/08
A 50 lb. buck was found at Camp 1. No gates were left open.

07/27/08
A small fawn was found at the entry to the 14-mile tunnel near Forebay. No visible sign of entry.

08/08/08
A 120 lb doe was found at the entry to the El Dorado Tunnel. No visible sign of entry.

06/24/08
A 150 lb. doe was found at Camp 1. No gates were left open.

In 2008, approximately 12,000 lineal feet of replacement wildlife fencing was installed uphill and downhill along the bench of the El Dorado Canal, between Sand Flat Campground and Flume 3. Approximately 12,000 lineal feet of the old fencing uphill and downhill was also removed. District crews stubbed off the fence near No Name Creek on either side of the natural rock barrier (~800 ft west of the existing wildlife crossing).

In 2009, additional segments of the wildlife fencing are scheduled for upgrade, relocation, and removal in accordance with the specifications outlined in the Canal Wildlife Fencing Plan (Section 4 (e) Condition 43.1.a).

Project 184
Canal Wildlife Fencing Inspection Report
April 16, 2008

An annual canal fencing inspection is required by the United States Forest Service (USFS) 4(e) Condition 43 contained in Appendix A of October 18, 2006, Federal Energy Regulatory Commission (FERC) order issuing license for Project 184. Condition 43.1.a states:

> **Condition No. 43 - Wildlife and Sensitive Plant Protection Measures**
>
> 1. To protect wildlife from the hazards of open canals and other Project facilities, the licensee for the term of a new license for the Project shall maintain and operate in working condition all devices and measures for wildlife along the El Dorado Canal that are deemed necessary by the FS *and CDFG*.
>
>   a. Ensure that all canal crossings and canal fencing on National Forest System lands and licensee adjoining property are maintained in functioning condition. The fencing, canal crossings, and approaches shall be inspected at least twice per year, in the spring and fall prior to deer migration. Fencing repairs or replacement necessary to prevent wildlife from entering the canal will be made and canal crossings will be maintained in a manner that will continually allow their use by wildlife. The licensee shall report the results of inspections and maintenance at the annual review meeting described in Condition No. 45.

In addition to the official semi-annual inspections, El Dorado Irrigation District (EID) Hydroelectric staff complete a visual inspection of the fencing during their regular patrols of the canal. However, some of the fencing in its current location is not visible from the canal bench where the patrols take place. The Canal Wildlife Fencing Plan approved by USFS, California Department of Fish and Game (CDFG) and filed with FERC in April 2007, requires the relocation of this fencing to within site distance of the canal bench over a three year period.

The spring 2008 inspection was held on April 16, 2008. Inspection attendees were Jim Murphy, EID Project Administrator and Mitch Perri, EID Hydroelectric Construction and Maintenance Worker. The fence is located in the Eldorado National Forest and parallels Hwy 50 on the south uphill side. The terrain is steep to rolling with many sections heavily forested. Most of the fencing is accessible only by foot. The canal wildlife fences, gates, and crossings were inspected.

The fencing inspection completed by walking the nearly eight miles of actual fence lines on the uphill and downhill sides of the canal. The condition of the canal fence and wildlife crossings ranged from excellent to poor. The fence was intact with

minimal repairs required. Canal gates were all found in the closed position and were in excellent to fair condition.

The fences along beats 1 and 2 are scheduled for relocation in 2008 and 2009, respectively. The relocation will include replacement of all fencing materials to meet the specifications outlined in Canal Wildlife Fencing Plan.

The specific areas of the canal fence that need repair are the following:

1. Beat 1 – on the downhill (north) side of the canal, west of the drive through gate near 30 mile tract. This section needs to be propped up and reinforced.
2. Beat 1 – on the downhill (north) side of the canal, upstream of the first trail at 30-mile tract at the bridge. The post in this area needs to be secured.
3. Beat 1 – on the uphill (south) side of the canal, approximately 10 posts need to be secured with T-bar fence posts or similar materials.
4. Beat 2 - on the uphill (south) side of the canal, approximately 5 posts need to be secured with T-bar fence posts or similar materials.

EID is committed to proactively monitoring, evaluating, and improving project operations to minimize wildlife mortalities along the Project 184 Canal System.

An annual canal fencing inspection is required by the United States Forest Service (USFS) 4(e) Condition 43 contained in Appendix A of October 18, 2006, Federal Energy Regulatory Commission (FERC) Order Issuing License for Project 184. Condition 43.1.a states:

> ***Condition No. 43 - Wildlife and Sensitive Plant Protection Measures***
>
> *1. To protect wildlife from the hazards of open canals and other Project facilities, the licensee for the term of a new license for the Project shall maintain and operate in working condition all devices and measures for wildlife along the El Dorado Canal that are deemed necessary by the FS and CDFG.*
>
> *a. Ensure that all canal crossings and canal fencing on National Forest System lands and licensee adjoining property are maintained in functioning condition. The fencing, canal crossings, and approaches shall be inspected at least twice per year, in the spring and fall prior to deer migration. Fencing repairs or replacement necessary to prevent wildlife from entering the canal will be made and canal crossings will be maintained in a manner that will continually allow their use by wildlife. The licensee shall report the results of inspections and maintenance at the annual review meeting described in Condition No. 45.*

In addition to the official semi-annual inspections, personnel from the El Dorado Irrigation District (EID) Hydroelectric/Watershed Management division complete a visual inspection of the fencing during their regular patrols of the canal. However, some of the fencing in its current location is not visible from the canal bench where the patrols take place. The Canal Wildlife Fencing Plan approved by USFS, California Department of Fish and Game (CDFG) and filed with FERC in April 2007, requires the relocation of this fencing to within site distance of the canal bench over a three year period.

The fall 2008 inspection was held on November 18, 2008. Inspection attendees were Megan Sizelove, EID Assistant Engineer, and Jim Murphy, EID Project Administrator. The fence is located in the El Dorado National Forest and parallels Hwy 50 on the south, uphill side. The terrain is steep to rolling with many sections heavily forested. Most of the fencing is accessible only by foot. The canal wildlife fences, gates, and crossings were inspected.

The inspection included the fencing along the canal from the Sand Flat Campground to the Alder Creek Siphon. In accordance with the Canal Wildlife Fencing Plan, the fencing on the upslope and downslope sides of the canal between Flume 2 and Flume 3 (approximately 1 mile) was relocated during the summer of 2008 per the approved specifications. As previously reported in the above referenced Plan, the condition of the canal fencing from Flume 3 to the inlet of the Alder Creek Siphon (remaining 3 miles along Beat One) ranged from excellent to poor. The fence was intact with minimal repairs required. Several of the canal gates were found in the open position, and were in excellent to fair condition.

The specific areas of the canal fencing along Beat One that need repair are the following:

1. The upslope crossing approximately 0.25 miles west of Flume 3 – The fence here is sliding down off the post and needs to be pulled up and secured.
2. The downslope fencing fabric west of Flume 5 is out of specification. It appears this fencing was a repair project, and the fabric does not conform to the PG&E Wildlife Fencing Specifications. When this section is replaced, this discrepancy will be resolved.
3. Many of the self-closing latches at the canal deer crossings are not operating correctly. The Water Systems Section Supervisor has been notified and will repair or replace the affected mechanisms.

In accordance with the Canal Wildlife Fencing Plan, the identified segments of canal fencing on both sides of the canal are scheduled for upgrade or relocation in the summer of 2009.

EID is committed to proactively monitoring, evaluating, and improving project operations to minimize wildlife mortalities along the Project 184 Canal System.

Relocated Fencing between Flume 2 and Flume 3

Existing Fencing between Flume 3 and Alder Creek Siphon