

Attachment E. FKC Water Quality
Guidelines Cost Allocation

DRAFT

**Special Project
Summary Sheet**
Budget Sheet

Project Title: Friant-Kern Canal Water Quality Guidelines

Job Code: 6370

Project Location: Friant-Kern Canal (entire 152 miles)

Project Description: Friant Water Authority implementation and administration of the Friant-Kern Canal (FKC) Water Quality Guidelines (Guidelines). The Guidelines include requirements of discharge of water into the FKC, monitoring and reporting requirements, management, mitigation, communications, and forecasting.

Estimated Annual Project Costs (x1000): \$189.4

Materials and Laboratory

The continuous, real-time sampling of electrical conductivity (EC) at each of the specified check structures requires FWA to install a total of fourteen (14) Seametrics CT2X conductivity meters in the canal, at each structure. Costs for purchase and installation of the real-time water quality monitoring equipment, including integration with IOS, are approximately \$60,477 (\$1,898 per unit cost and total of \$33,905 for installation). It is assumed the useful life of a Seametrics CT2X conductivity meter is about 10 years at an interest rate of 3%. Additionally, FWA staff will maintain two (2) existing handheld Hanna DIST5 conductivity meters. Real-time water quality monitoring equipment and handheld conductivity meters will be calibrated and maintained according to manufacturer recommendations. Costs for maintenance of equipment is estimated to be about 10% of the capital cost (\$6,048 annually, shown as Item 5 in Table 1 below).

Table 1 summarizes the annual materials and lab costs of each monitoring requirement. Specifically, the item numbers in Table 1 refer to the sample source/type item numbers presented in Attachment B – Monitoring Program Summary. Details regarding assumptions are outlined in the narrative following Table 1.

Table 1: Materials and laboratory costs associated with monitoring activities.

Item¹	Description	Estimated Annual Cost
5	Annual maintenance of equipment for continuous, real-time sampling of electrical conductivity at each specified check structure	\$6,048
6	Estimated exceedance testing	\$936
8	Weekly testing at FKC-CVC Intertie during pump-back operations	\$23,788
9	Testing during initiation of FKC-CVC Intertie pump-back operations	\$11,490
Materials and Lab Testing Subtotal:		\$42,262

¹ Item numbers refer to sample source/type item numbers presented in Attachment B.

Most requirements of the monitoring program (items 6 through 9 in Table 1) require FWA to collect samples and send them to labs for testing. Testing can include a full list of Title 22 constituents in Table 1 of the Guidelines, the short list of constituents in Table 4 of the Guidelines, or single constituents. Testing costs can vary significantly by lab. To be conservative, it was assumed that testing for full Title 22 constituents would be \$5,745, testing for the short list of constituents in Table 4 of the Guidelines would be \$915, and testing for single constituents would be \$59/constituent.

For a given year, it was assumed that single constituents would exceed the thresholds for two months per year and would result in 16 tests annually (4 weekly tests for each month with an exceedance, and 4 weekly tests below the threshold after the exceedance). This results in a total cost of \$936 for testing because of exceedances (item 6 in Table 1). Costs for EC testing during operations outages were not included as this will be done with the handheld units by FWA staff. It was assumed that pump-back operations would occur during 6 months of the year, which would require 26 samples of the full list of constituents in Table 4 of the Guidelines. This results in a total cost of \$23,788 for testing because of pump-back operations (item 8 in Table 1). Finally, it was assumed that full Title 22 testing due to initiation of pump-back operations or anticipated Cross Valley Canal operations that will impact water quality will occur two times per year and will cost \$11,490.

Annualized Capital Install and Replacement of Equipment Subtotal: \$7,090

Annual Materials and Lab Testing Subtotal: \$42,262

Friant Water Authority Staff

For implementation of the Guidelines, the following activities will be required of FWA staff:

- Maintain and calibrate conductivity meters on a bi-weekly basis
- Perform water quality sampling during pump-in operations
- Coordinate laboratory water quality testing
- Coordinate with Friant Division Long-Term Contractors on water quality data monitoring and analysis
- Manage water quality and operations database
- Perform weekly water quality reporting and forecasting using FKC Water Quality Model
- Perform weekly analysis to determine mitigation and distribution to respective Friant Division Long-Term Contractors using the FKC Water Quality Mitigation Ledger
- Coordinate with U.S. Department of the Interior, Bureau of Reclamation’s South-Central California Area Office on water quality reporting, mitigation, and contractual requirements
- Coordinate and facilitate FWA committee on water quality

The annual cost for FWA Executive Team and Operations staff is estimated below:

Executive Team (WRM).....	104 hrs @\$111.43/hr	\$11,589
Water Operations (Senior Engineer).....	1664 hrs @\$77.16/hr	\$128,400

Annual Staff Labor Subtotal: \$139,989

General Justification: The Board of Directors, at the request of the Water Quality Ad Hoc Committee requested that staff develop new water quality guidelines for non-Millerton water introduced into the FKC. This plan originally stemmed from the environmental compliance requirements of both the Long-Term Recapture and Recirculation Plan and the FKC Reverse Pump-back Project.

Operating Impact: This estimate assumes implementation of the Guidelines will occur. Although the costs for finalizing the Guidelines, agreements, and environmental compliance will be applied separately, the administration and water quality monitoring outlined in the Guidelines will be applied to 6370. A portion of these costs will be reimbursed through a surcharge applied to those Friant contractors that introduce water into the FKC once the Guidelines are implemented.

Cost Allocation: Costs for implementation and administration of the Policy will be paid initially by the subset of Friant Division Long-Term Contractors who pay for FKC O&M to the FWA and subsequently will be reimbursed by contractors that introduce water (Put) into the FKC (Contributor). The Contributor will pay a dollar per acre-foot (\$/acre-foot[AF]) surcharge, or ‘Guidelines Surcharge,’ that will be credited back to the Friant Division Long-Term Contractors who pay for O&M to the FWA. The Guidelines Surcharge will be calculated by dividing the total annual costs incurred for administration of the Guidelines Program by the total annual deliveries of pump-in programs into the FKC. The Guidelines Surcharge will be applied to all introduced water even if it is not required to provide mitigation as defined in the Guidelines. Surcharge estimates can be provided for budgeting purposes on an annual basis. FWA will bill contractors for reimbursement of Guidelines Program costs based on actual volumes and costs incurred.

Guidelines Surcharge Estimate: Current pump-in programs pump approximately 36.6 thousand acre-feet (TAF) per year into the FKC based on recent 5-year average (2013-2018) as shown in Table 2.

Table 2: Current Pump-In Program 5-year Average (2013-2018)

Source	Annual Average (TAF)	Annual Maximum ¹ (TAF)
Sierra Water	17.8	344
Groundwater	14.7	117
CVC	4.1	149
Total Annual Average	36.6	610

¹ Based on existing compliance and approvals and anticipated renewals.

The potential annual maximum is much greater than the annual average; however, for purposes of setting an initial Guidelines Surcharge, an estimated 40 TAF per year of pump-ins is assumed to occur. This estimate includes the recent average of existing programs and anticipated 10% initial increase due to new programs or greater use of existing programs.

Monitoring and lab costs can be allocated based on location or source of introduced water. It is assumed that all monitoring and lab costs associated with operations at the CVC Intertie will be allocated to a surcharge applied only to water being brought in from the CVC. All other monitoring and lab costs (e.g., lab costs associated with exceedances) will be allocated to other

pump-ins. Other costs (e.g., annual maintenance of equipment, staff time) would be allocated to all pump-ins via a surcharge base.

Based on this approach, the estimated **Guidelines Surcharge would average about \$10.73 per AF for CVC Water and \$3.88 per AF for other pumps ins.** Each surcharge would increase about \$0.70 per AF if the surcharge were to consider recovering CEQA compliance costs over 10 years. The surcharge applied at the end of every year will be based on actual costs and deliveries, and methods for allocation can be reassessed every year by the Water Quality Advisory Committee.

DRAFT

**Extraordinary Maintenance Projects
Cost Summary**

Project Title: Friant Kern Canal Water Quality Program

Project Location and Department: Friant-Kern Canal (entire 152 miles) / Operations Department

Estimated Total Project Cost (x1000): \$189.4

Estimated Total Material Cost (Including Fuel Costs, x1000): \$49.4

Breakdown of Estimated Costs

All costs outside of Friant staff costs for CEQA compliance are not covered as part of this program cost budget.

Materials and Laboratory

Annualized Capital Install and Replacement of Equipment	\$7,090
Annual Materials and Lab Testing	\$42,246

Subtotal: \$49,336

Regular Labor (Hours and Cost):

Executive Team (WRM)..... 104 hrs @\$111.43/hr	\$11,589
Water Operations (Senior Engineer).....1664 hrs @\$77.16/hr	\$128,400

Subtotal: \$139,989

Total: \$189,325

Guidelines Surcharge (CVC) \$10.73 per AF

Guidelines Surcharge (All other) \$4.58 per AF