Expert Report of Paul Fujitani
Central Valley Project Operations

1. Introduction and Summary of Opinions

I have been identified as an expert by the U.S. Department of Justice to provide testimony in *NRDC v. Rodgers*. I have been asked to express my opinion on the effects to Central Valley Project (CVP) operations if the Friant Division of the CVP were to be operated or managed in the manner proposed by NRDC experts to restore the San Joaquin River.

NRDC has proposed that Friant Dam be reoperated and releases be made from Millerton Lake to assist with the restoration of the San Joaquin River. It is my conclusion that very little of the incremental increase in flow down the San Joaquin River would make it past Mendota Dam to the confluence of the Merced River and even less as far downstream as Vernalis. CVP water users on the west side of the San Joaquin Valley and those served by New Melones Reservoir could potentially see water supply benefits as a result of additional flow in the San Joaquin River. However, due to current physical and institutional constraints it is unlikely that users in the Friant Division could fully recover the water supply impacts.

2. Professional Qualifications

I have been employed by the Bureau of Reclamation for approximately 22 years and have served as the Chief of the Water Operations Division in the Central Valley Operations Office since July 2000. As Chief of the Water Operations Division I am responsible for directing the flood control operations, water operations forecasts, water supply allocations, and the daily water operations of the CVP. The Water Operations Division operates the CVP to meet multipurpose project objectives while ensuring compliance with the contractual agreements, laws and regulations, water rights, and environmental obligations. Operations are coordinated with other agencies in California to meet the common goals of improving water supply reliability, improving water quality, and protecting and enhancing the environment. My duties include participating in the CALFED Operations Group and the Water Operations Management Team.

I began my career with Reclamation in 1979 with a Bachelor of Science degree in Civil Engineering from the University of California at Davis. I worked in the Division of Design and Construction and in the Division of Water and Power Resources Management before leaving the government in 1986. I worked for the engineering consulting firm of Brown and Caldwell managing various water projects and performing hydraulic analyses. In 1988, I returned to government service and joined the Corps of Engineers. While with the Corps of Engineers, I served as the Project Manager for the construction of a major water storage project in Utah. In November of 1989, I returned to Reclamation joining the Central Valley Operations Office as a hydraulic engineer.

I am a registered Professional Civil Engineer in the state of California, license number C34667.

I am serving as a rule 30(b)(6) witness on behalf of the United States for the case Stockton East Water District vs. United States currently in the United States Court of Federal Claims, and have submitted depositions in this case (Case 04-541L).

3. Data and Other Information Considered by the Witness in Forming Opinions

In forming the opinions set forth herein and in preparing this expert report, I relied on my 22 years of experience working for Reclamation, 16 of those years operating and supervising the water operations of the CVP. This includes coordinating operations with the State Water Project (SWP) and numerous local water projects that are related to our CVP operation. I also reviewed the following materials:

1. Bureau of Reclamation (June 30, 2004) Long-Term Central Valley Project Operations Criteria and Plan, CVP-OCAP
2. California State Water Rights Control Board Revised Water Rights Decision 1641 (D-1641) (March 15, 2000)
3. Agreement Between the United States of America and the State of California for the Coordinated Operation of the Central Valley Project and the State Water Project (also known as the COA) (1986)
4. Bureau of Reclamation, New Melones Reservoir Interim Plan of Operations (May 1997)
5. Public Law 102-575, Title 34 Central Valley Project Improvement Act (1992)
6. Department of Interior, Decision on Implementation of Section 3406(b)(2) of the Central Valley Improvement Act (May 9, 2003)

4. Discussion

This section will provide a brief description of the CVP features and operations. To the extent possible, I will then discuss how additional flow in the San Joaquin River from Millerton Lake as described by the NRDC experts could affect the operations of the CVP.

Description of the CVP

The CVP encompasses a vast area and stretches from Trinity Lake in northern California to Bakersfield in the southern San Joaquin Valley. The CVP is made up of several smaller project areas known by division or unit. The Divisions/Units include the Trinity River Division, Shasta Division, Sacramento River Division, American River Division, Delta Division, West San Joaquin Division, San Luis Unit, San Felipe Division, East Side Division, and the Friant Division.

The CVP is composed of some 20 reservoirs with a combined storage capacity of more than 11 million acre-feet, 11 powerplants, and more than 500 miles of major canals and aqueducts. Major facilities include Trinity Dam and Lake, Whiskeytown Dam and Lake, Shasta Dam and Lake, Folsom Dam and Lake, New Melones Dam and Reservoir, Contra Costa Pumping Plant and Canal, Friant Dam, Millerton Lake, San Luis Dam and Reservoir, Tehama-Colusa Canal, Tracy Pumping Plant, Delta-Mendota Canal (DMC), O'Neill Forebay, Pacheco Pumping Plant, and the San Luis Canal (Figure 1).

Authorized CVP purposes include flood control; river navigation; water supply for irrigation and municipal and industrial uses; fish and wildlife protection, restoration, and enhancement; and power generation.

The Central Valley Operations Office (CVOO) has the responsibility to perform the necessary duties to direct operations of most of the CVP. One exception is the Friant Division. The South Central California Area Office of the Mid Pacific Region located in Fresno operates the Friant Division facilities of the CVP, which include Friant Dam, Millerton Lake, the Friant Kern Canal, and Madera Canal.

CVOO operates the CVP to meet authorized purposes, consistent with facilities identified in the COA for water management and accounting purposes to meet the project demands within the Sacramento Valley Basin and the Sacramento-San Joaquin River Delta demands. The CVP operations are also coordinated with the operations of the SWP (The SWP is owned and operated by the Department of Water Resources). The CVP facilities at New Melones and Friant are operated independently to serve their respective divisions of the CVP and are not identified in the COA for water management or accounting purposes.

The CVP and SWP share the responsibility of meeting Sacramento Valley in-basin demands, including the Delta water quality objectives contained in D-1641. The COA is used to determine each project's share of responsibility for meeting the daily in-basin demands. If the releases from the CVP and SWP reservoirs and unregulated flow in the Delta approximately equal the water supply needed to meet Sacramento Valley in-basin uses, plus exports, the Delta is considered to be in "balanced" conditions as addressed in the COA. If releases from the projects' reservoirs and unregulated flow exceed the Sacramento Valley uses, plus exports, then the Delta is considered to be in "out of balance" or "excess" conditions. Typically, the Delta is in excess condition from about December through May, and balanced condition from June through November. This timing varies depending on the particular hydrologic conditions that exist at a given time.

An incremental change in the release from Millerton Lake to the San Joaquin River could directly affect CVP operations in the Friant Division area, and could affect operations in the Delta at Tracy pumping plant, operations of the DMC and the Mendota Pool (operations coordinated with Central California Irrigation District), or operations at New Melones Reservoir. To the extent that the proposed incremental release is not diverted at Mendota Pool or "absorbed" through operations of New Melones Reservoir, there is also the potential for some incremental impact to the northern storage reservoirs of the CVP if

the Delta is under balanced conditions; this would be a potential incremental increase in storage and later release to meet Delta or in-basin demands.

Delta Operations

The COA accounting currently does not recognize or credit releases from either New Melones Reservoir or Millerton Lake as CVP releases, and therefore both the CVP and SWP share any water from these CVP facilities that reach the Delta. The CVP's ability to capture and utilize available flow from the San Joaquin River (including any release from New Melones Reservoir or Millerton Lake) may also be limited by D-1641 objectives controlling operations at the time and Tracy pumping plant capacity. Under excess Delta conditions, any additional water released from Millerton Lake that makes it to the Delta would only add to Delta outflow. Under balanced conditions any incremental increase in release from Millerton Lake that makes it to the Delta could be pumped by the SWP or CVP, or backed into reservoir storage.

Delta-Mendota Canal and Mendota Pool Operations

CVP water is conveyed from Tracy pumping plant to the O'Neill Forebay and Mendota Pool via the Delta-Mendota Canal (Figure 2). The San Luis Delta Mendota Water Authority (SLDMWA) operates the Delta-Mendota Canal under Reclamation's direction. Mendota Dam, which impounds water to form Mendota Pool, is owned and operated by Central California Irrigation District (CCID). CVP water is released from the DMC into Mendota Pool for delivery to CVP water service contractors and San Joaquin River Water Rights Exchange Contractors (Exchange Contractors). During high flow years, Mendota Pool also receives water from the San Joaquin River and Fresno Slough. The SLDMWA receives water delivery schedules and Mendota Pool operational data from CCID and delivers CVP water from the DMC to meet Mendota Pool demands that are not met by other flow entering the pool. CCID manages the water elevation of Mendota Pool by balancing demands with the inflow from the Delta Mendota Canal, Fresno Slough, and San Joaquin River. As currently operated, additional San Joaquin River flow entering Mendota Pool for NRDC's proposed restoration purposes would most likely result in assisting to meet Mendota Pool demands and less CVP water would be released from the DMC to the pool, absent an agreement between Reclamation and the Exchange Contractors to coordinate operations such that the objective flow would pass Mendota Dam.

There would be no net change in the release from Mendota Pool to the San Joaquin River unless the inflow from the San Joaquin River exceeds Mendota Pool demands. The CVP water remaining in the DMC as a result of an increased San Joaquin River flow could end up as additional water supply for delivery to CVP contractors on the west side of the San Joaquin Valley if conveyance capacity, storage, and demand are adequate.

Typically, CVP contractor demands in the San Joaquin Valley begin to increase substantially in April and continue at a high level through the middle of August.

Water entering Mendota Pool is a combination of flow from the San Joaquin River, flow from Fresno Slough, irrigation return flow, and water pumped from the Delta and

delivered via the DMC. In addition to water pumped from the Delta, the DMC receives water released from San Luis Reservoir and O'Neill Forebay. Water pumped from the Delta is a mix of Sacramento River water, water from Cosumnes River, Mokelumne River, Calaveras River, San Joaquin River, and runoff from other small streams.

New Melones Reservoir Operations

New Melones Reservoir is operated to meet flood control requirements and the demands of prior water rights holders in the Stanislaus River basin, Stanislaus River instream fishery flow, Vernalis water quality objectives, Vernalis flow objectives, Ripon dissolved oxygen objectives, and deliveries to east side CVP contractors. Reclamation operates New Melones Reservoir to meet a Vernalis water quality electrical conductivity objective on the San Joaquin River of 0.7 mmhos/cm from April through August and 1.0 mmhos/cm from September through March. We also operate for the San Joaquin River minimum flow objective at Vernalis from February through June. Depending on the time of the year and hydrologic conditions, the minimum release from New Melones Reservoir to the Stanislaus River may be constrained by the Vernalis water quality objective, Vernalis flow objective, Ripon dissolved oxygen objective, or the required instream fishery flow.

If the New Melones Reservoir release to the Stanislaus River is controlled by the need to meet either the Vernalis water quality or flow objective, changes in San Joaquin River flow can potentially affect the reservoir release and storage in New Melones Reservoir. If the incremental release from Millerton Lake to the San Joaquin River results an incremental increase in San Joaquin River flow between the confluence of the Stanislaus River and Vernalis, Reclamation could reduce the release from New Melones Reservoir and still meet the Vernalis water quality or flow objectives. Conserved water in New Melones could be used to increase the operational flexibility in New Melones Reservoir and add to the available water supply from the reservoir. If New Melones Reservoir is operated in this manner, only a portion of the incremental Millerton Lake release would make it to the Delta. At times in the past under extremely dry conditions, Reclamation has been unable to meet either the Vernalis flow or Vernalis water quality objective. Under these conditions, Millerton Lake releases could assist in meeting the Vernalis objectives and no changes in New Melones Reservoir operations would occur.

It is possible that the additional release from Millerton Lake necessary to restore the San Joaquin River as proposed by NRDC could delay or reduce the amount of release from Millerton Lake previously made for flood control purposes. Additional modeling studies of Millerton Lake operations would be necessary to determine potential impacts of NRDC's proposal to flood releases. A reduction or delay in release from Millerton Lake for flood control purposes could have the effect of a loss of available water to downstream users such as in Mendota Pool and could also increase the demand on New Melones Reservoir. If a reoperation would result in less release from Millerton Lake at a time when there is a need for New Melones Reservoir releases to meet the Vernalis flow objective, additional releases from New Melones could be needed to compensate for the loss of flow.

Conclusions

Water released from Millerton Lake that might make it to Mendota Pool as proposed by NRDC would in most instances and in all likelihood be utilized by Exchange Contractors and would not make it past Mendota Dam, and therefore would fall short of satisfying the full restoration objective of connecting to the confluence of the Merced River.

Additional restoration flow in the San Joaquin River that makes it to the confluence with the Stanislaus River could benefit or adversely impact water supply in New Melones Reservoir. Additional modeling studies could assist in determining potential impacts to New Melones Reservoir water supply.

Additional restoration flow that makes it to the Delta could either benefit the water supply of the SWP and the CVP, or could flow out through the Delta to San Francisco Bay. This is dependent on the timing and quantity of flow reaching the Delta.

Under some adverse hydrological years, Reclamation may not have to ability to fully meet either the Vernalis water quality or flow objectives. If additional releases from Millerton Lake as proposed by NRDC flow past Mendota Dam, past the confluence with the Stanislaus River as far as Vernalis, the incremental increase in flow could assist in attaining the Vernalis objectives.

Under current operational practices, a release from Millerton Lake to the San Joaquin River may increase the available water supply to CVP users on the west side of the valley, SWP users, and contractors utilizing New Melones Reservoir.

It is my opinion that with the current and existing physical facilities and under current institutional constraints, the affected Friant users would not fully recover the lost water supply.

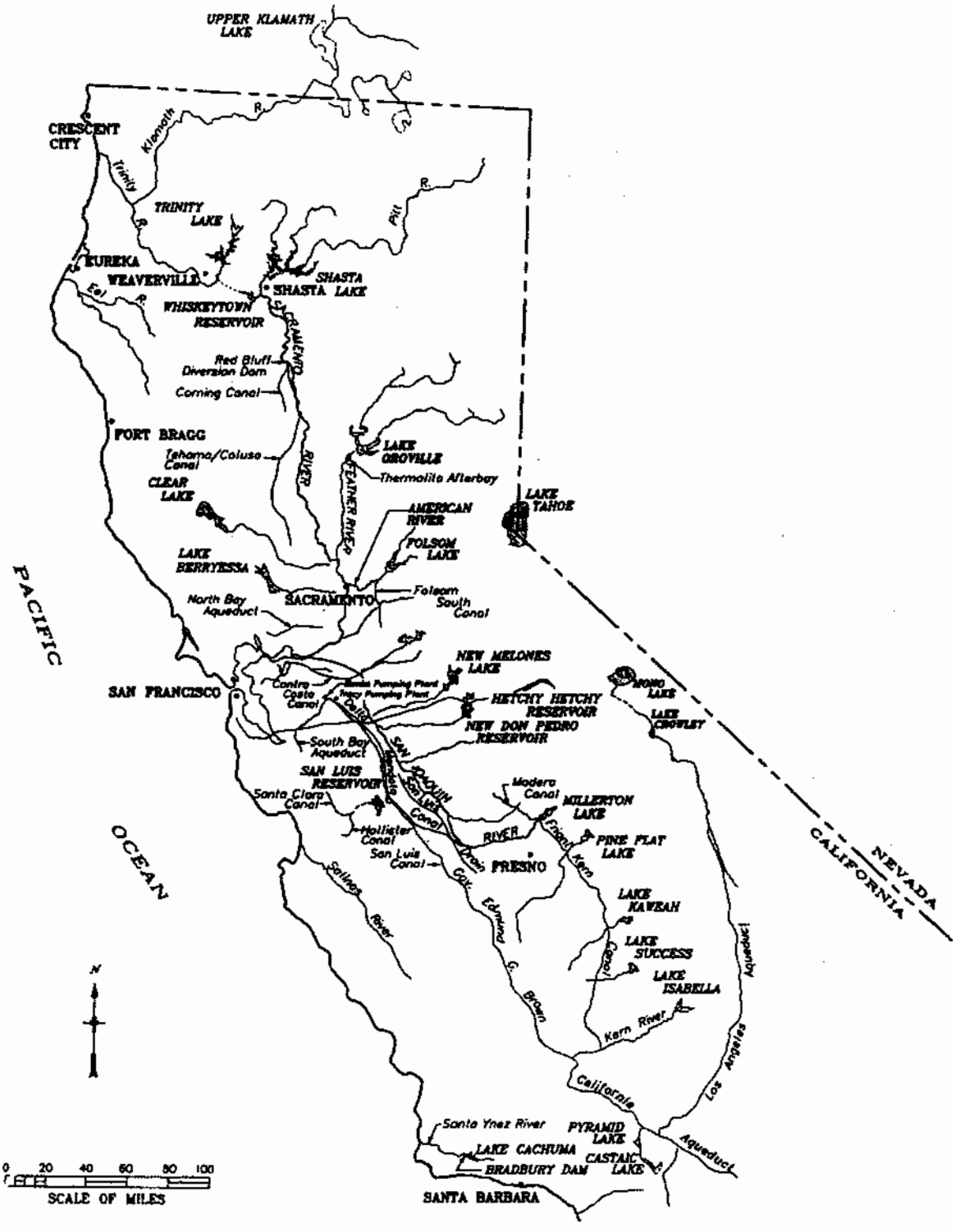

Figure 1 Major Components of the CVP including State Water Project

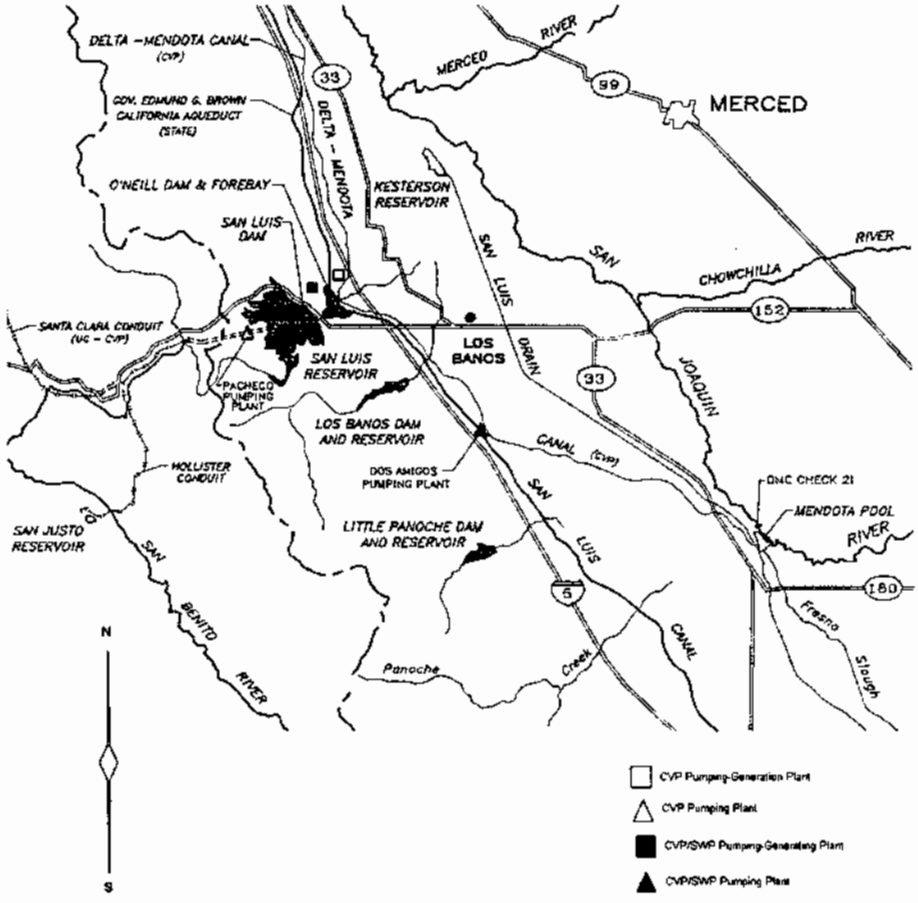

Figure 2. West San Joaquin Division and San Felipe Division

Dated: September 19, 2005

Paul Fujitani

Appendix A

Paul Fujitani

Current Position

Chief Water Operations Division, Central Valley Operations Office, Mid- Pacific Region, Bureau of Reclamation

Academic Background

University of California at Davis
Davis, California
Bachelor of Science, Civil Engineering
Graduated: June 1979, Honors

Professional Registration and Memberships

Registered Professional Civil Engineer, Number C34667, California Board of Professional Engineers

Member of Tau Beta Pi, Engineering honor society

Work History

2000 to Present - Chief of the Water Operations Division, Central Valley Operations Office, Bureau of Reclamation, Sacramento – Responsible for responsible for directing the flood control operations, water operations forecasts, water supply allocations, and the daily water operations of the CVP.

1989 to 2000- Hydraulic Engineer, Bureau of Reclamation, Sacramento - Responsibilities include directing and monitoring the water control activities to provide for the management of the water resources of the Central Valley Project; a system of dams, powerplants, canals, and pumping plants in California. Performing operational studies and analyses necessary for the coordination and operation of the Central Valley Project.

1988 to 1989 - Civil Engineer, Army Corps of Engineers, Sacramento - Project Manager responsible for the overall management of the Little Dell Lake flood control project in Utah, including developing and implementing project design schedules and budgets, coordination of work, and serving as the point of contact with the local sponsors.

1986 to 1988 - Civil Engineer, Brown and Caldwell, Sacramento - Project Manager and Engineer responsible for various civil works projects, including Napa River flood evaluation, waste water treatment facility design, water treatment facility design, and storm drainage system design and construction management.

1979 to 1986 - Civil Engineer, Bureau of Reclamation, Sacramento - Civil Engineer in the Design Branch and Water Operations and Maintenance Branch. Responsibilities included performing operations and maintenance reviews of major water storage and conveyance facilities, administering the Regional Oil Spill and Hazardous Substance Spill and Countermeasure Program, designing various water conveyance facilities, and preparing plans, specifications, and cost estimates for construction of water conveyance facilities.