Kern Fan Groundwater Storage Project

RESPONSE TO DEC REVIEW FINDINGS

Exhibit A: Strand Ranch Pump in Plan and Blending Model

July 1, 2020

Irvine Ranch WATER DISTRICT

Rosedale-Rio Bravo WATER STORAGE DISTRICT

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY
EDMUND G. BROWN JR., Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

December 14, 2016

Zach Smith
Operations Manager
Rosedale-Rio Bravo Water Storage District
P.O. Box 20820
Bakersfield, CA 93390

Re: Approval of the Strand Ranch Integrated Banking Project Pump-in Proposal Update

Dear Mr. Smith,

The Department of Water Resources (DWR), through its Environmental Assessment Branch (EAB), has received a request for approval from Rosedale-Rio Bravo Water Storage District (RRB). This request refers to an updated Pump-in Proposal (PIP) for future operations from the Strand Ranch Integrated Banking Project (SRIBP) consisting of wells SREX-1, SREX-2, SREX-3, SREX-4, SREX-5, SREX-7. The following information pertains to the approval of this PIP.

Staff at the EAB have reviewed the provided water quality data and project description and find that the proposed plan is in accordance with overall goals and requirements, provided in the Department of Water Resources Water Quality Policy and Implementation Process for Acceptance of Non-Project Water into the State Water Project (October 2012) (Pump-In Policy). This proposal updates the previous SRIBP PIP submitted in 2012 and includes additional wells submitted since 2012. Both the previous PIP and the additional wells were submitted to the Facilitation Group, as established in the Pump-in Policy, for comments. All subsequent comments were addressed and these prior submissions were approved by DWR. Since this updated PIP does not include substantive changes beyond what was provided in the previously approved submissions, no further comments have been solicited from the Facilitation Group.

Staff at the EAB find no issues with the implementation of this plan and grant approval for RRB to begin operations of the SRIBP pump-in project wells, pursuant to the stipulations provided within the proposal.

Sincerely,

Leah McNearney
Chief, Water Quality Section

ROSEDALE - RIO BRAVO
WATER STORAGE DISTRICT
849 Allen Road • P.O. Box 20820 • Bakersfield, California 93390-0820 • (661) 589-6045 • FAX (661) 589-1867

October 20, 2016

Leah McNearny, California Department of
Water Resources Chief, Water Quality Section
Division of Operations and Maintenance
Environmental Assessment Branch
P.O. Box 942836
Sacramento, CA 94236-0001

RE: Updated Pump-In Program Project Descriptions –
Rosedale Integrated Banking Project
Strand Ranch Integrated Banking Project

Dear Leah,

Rosedale-Rio Bravo Water Storage District (Rosedale) delivers local non-project water to the California Aqueduct (Aqueduct) from the Rosedale Integrated Banking Project and Strand Ranch Integrated Banking Project (Projects). Rosedale has collected and prepared the enclosed information for submittal to the California Department of Water Resources (DWR), as required to keep our Pump-In Programs (PIPs) up to date. The Project descriptions and proposed water quality monitoring plans have not changed since the programs were approved by the Facilitation Group (FG).

The Rosedale Integrated Banking Project first received FG approval in 2013 and included three (3) wells: Enns-01, Enns-02, & Enns-03. An additional four (4) wells received FG approval in 2014 (Farm North, Farm South, Stockdale East, & Stockdale West). In 2016, FG approval was received for five (5) additional wells (WB-1, WB-2, WB-3, Red E, & Farm Mid).

The Strand Ranch Integrated Banking Program received FG approval in 2013 and included seven (7) wells: SREX-1, SREX-2, SREX-3, SREX-4, SREX-5, ~~SREX-6~~, and SREX-7. No additional wells have been added to the Project since 2013.

Recovery Facilities Locations and State Water Project Inlet Location

All pumped water will be delivered to the Aqueduct in Pool 28 through the Cross Valley Canal (CVC). The water pumped into the Aqueduct will be conveyed to fulfill obligations to Rosedale's banking and sale partners from projects previously reviewed by the Kern County Water Agency (Agency). Rosedale's banking partners include: Arvin-Edison Water Storage District, Buena Vista Water Storage District, Castaic Lake Water Agency, Delano-Earlimart Irrigation District, Irvine Ranch Water District, and Kern-Tulare Water District. Rosedale's sale partner includes Coachella Valley Water District.

Operations

In any given month as many as nineteen wells, between the Projects, could be operational at a combined rate of approximately 65-70 cubic feet per second (cfs) with a maximum monthly recovery capacity of about 3,800-4,200 acre-feet (af). When operations commence, Rosedale will provide daily flow data and necessary water quality information to the Agency for inclusion their report to DWR and the FG. Scheduled changes in operations will be provided to the Agency three days in advance.

Pump-In Facilities

The Project will deliver water to the CVC through the Rosedale Inlet, constructed by Rosedale and operated and metered by the Agency. The CVC turn-in to the Aqueduct is operated and metered by DWR. Attachment A shows the locations of all Project wells that may be pumped as part of the Projects and the locations of the turn-ins to the CVC and Aqueduct.

Water Quality Data and Monitoring

Rosedale has and will continue to test the wells for constituents in compliance with required procedures. The well water quality monitoring plan is enclosed as Attachment B and has remained unchanged since FG approval. Testing for Constituents of Concern (COC) (As, Br, Cl, Conductivity, Cr, Cr6, NO3, SO4, DOC, TDS, U) will be performed at start up and weekly at the point of input to the CVC and in the CVC prior to entry into the Aqueduct until it is demonstrated that the water is of consistent, predictable and reliable quality by reporting four consecutive weekly test results that meet COC standards as described in Attachment B. COC testing will then continue on a quarterly basis. Testing may also be conducted in the Aqueduct upstream of the delivery point to better document background conditions. Rosedale will provide the analytical results to the Agency for submission to DWR and the FG.

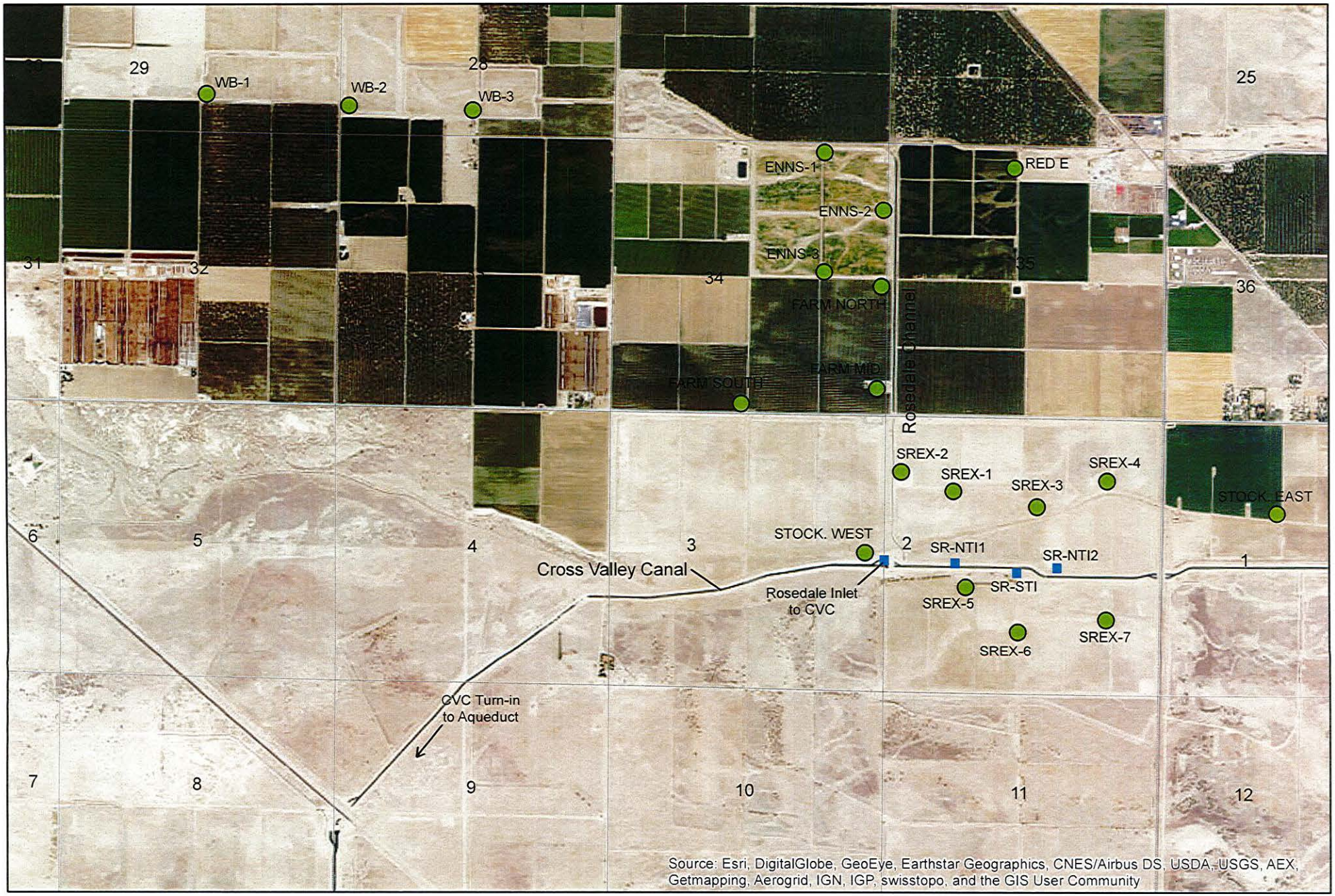
Environmental Issues

The Project has been covered in numerous environmental documents, including Rosedale's Master Environmental Impact Report (MEIR) and the Rosedale-Rio Bravo/Buena Vista Project Final Environmental Impact Report (FEIR). The report(s) find that "No Impact" will occur to endangered, threatened, or candidate species as a result of Project operations. In addition, the report(s) show that neither overdraft nor subsidence will occur as a result of the Project recharge activities and/or recovery operations.

Thank you in advance for attention to this critical water supply program. If you have any questions or concerns, please contact me at your earliest convenience.

Sincerely,

Zach Smith, Operations Manager



N
W E
S

Approved Pump-In Wells

Points of Delivery (Turn-ins)

Rosedale-Rio Bravo Water Storage District
Integrated Banking Projects

ATTACHMENT A

Water Quality Monitoring Plan
For the Projects Operated by Rosedale-Rio Bravo Water Storage District

This Water Quality Monitoring Plan (Plan) presents a schedule for water quality sampling at the Rosedale Integrated Banking Project (RBP) and the Strand Ranch Integrated Banking Project (SRBP) to meet the requirements of the Department of Water Resources Water Quality Policy and Implementation Process for Acceptance of Non-project Water into the State Water Project (October 2012; **Appendix A**) and the Implementation Procedures for the Review of Water Quality from Non-Project Water Introduced into the State Water Project (March 14, 2001; **Appendix B**). The RBP is a project of Rosedale-Rio Bravo Water Storage District (Rosedale). The SRBP is a project owned by Irvine Ranch Water District and operated by Rosedale. This Plan is modeled after the monitoring plan currently in use by the Kern Water Bank Authority.

Project Setting:

The RBP & SRBP includes 19 extraction wells located west of Bakersfield. The wells recover water from the Kern Fan aquifer of the Kern County sub-basin of the San Joaquin Valley Groundwater Basin. The wells are located as shown on **Figure 1**. Each extraction well is given a unique identifier. Rosedale has constructed one Cross Valley Canal (CVC) turn-in from the RBP. Three CVC turn-ins are provided for the SRBP wells. The discharge points (four total) for all of the wells are also shown on **Figure 1**.

The Kern Fan aquifer is made up of sediments deposited by the ancestral Kern River into an alluvial fan or fan delta. The sediments consist of varying amounts of sand, silt, gravel, and clay. Sand count data indicate the upper 300 feet of the aquifer consists of about 70% sand whereas below this depth it consists of about 50% sand. The balance of the sediments consists of silt and lesser amounts of gravel and clay. Unlike some other parts of the groundwater basin, no laterally extensive clay deposits (e.g. the Corcoran Clay) are present under the RBP or SRBP. This stratigraphy has resulted in a leaky aquifer, as evidenced by hydraulic head data from monitoring wells located throughout the Kern Fan area. Recharge events initially result in shallow depths having a larger head than deeper levels. With time, however, pressure equalization occurs as water migrates down and re-pressurizes the lower parts of the aquifer. This is an example of a leaky aquifer, where there are no distinct, laterally extensive aquitards preventing this re-pressurization.

Monitoring Plan:

Rosedale intends to pump water from the RBP and SRBP into the CVC for delivery to the California Aqueduct. The implementation procedures identified in **Appendix B** provide several options for water quality monitoring program sampling. Rosedale proposes that the RBP and SRBP be operated under Option 1, which includes Title 22 tests of record for all wells and periodic tests for Constituents of Concern upon startup and quarterly for each discharge point. According to Title 22, Chapter 15, Article 2, §64416(3): "Sampling of certain wells on a rotating basis may be included in the plan if the water supplier is able to demonstrate with

analytical, hydrological and geological data that those wells are producing similar quality water from the same aquifer." As described above, geologically and hydrologically, the RBP and SRBP wells recover water from the same aquifer. The analytical data indicate the aquifer contains essentially no organic constituents, so there is no variability in organic constituent concentrations in the aquifer. Rosedale therefore proposes to sample for organic constituents on a modified schedule of 1/3 of all wells every 3 years wherein all wells are sampled every 9 years. The inorganic and radiologic constituents will be sampled every 3 years in all wells. In addition, if the quarterly discharge-point sampling indicates any significant unexpected increases in constituent concentrations, that constituent will be sampled more frequently in either the discharge points or in the wells.

Well Startup and Operations:

Testing for Constituents of Concern (As, Br, Cl, Conductivity, Cr, Cr6, NO3, SO4, DOC, TDS, U) will be performed at start up and weekly at the point of input to the CVC and in the CVC prior to entry into the Aqueduct until it is demonstrated that the water is of consistent, predictable and reliable quality by reporting four consecutive weekly test results that meet COC standards as described below. Sampling will then continue quarterly thereafter for the duration of the program. The inflow water must meet the following COC standards for acceptance into the California Aqueduct:

Arsenic (As)	10 ug/L
Chloride (Cl)	250 mg/L
Chromium (Cr)	50 ug/L
Nitrate (NO_3)	45 mg/L
Sulfate (SO_4)	250 mg/L
Conductivity	900 mS/cm
TDS	500 mg/L
Uranium (U)	20 pCi/L

Testing may also be conducted in the Aqueduct upstream of the delivery point to better document background conditions.

Six of the wells in the RBP (Enns-1, Enns-2, Enns-3, WB-1, WB-2, and WB-3) have been constructed with variable frequency drives (VFDs). The VFDs allow for adjustments in flow rates from each of the wells. If necessary, flow rates can be decreased in wells showing any increases in constituent concentrations.

Appendix A. Department of Water Resources Water Quality Policy and Implementation Process for Acceptance of Non-Project Water into the State Water Project (October 2012)

It is the Department of Water Resources (DWR) policy to assist with the conveyance of water to provide water supply, and to protect the State Water Project (SWP) water quality within the California Aqueduct. To facilitate this policy DWR provides the following implementation process for accepting non-project water into the SWP (Policy). For purposes of this document, SWP and California Aqueduct are interchangeable and the same.

POLICY PROVISIONS

DWR shall consider and evaluate all requests for Non-Project (NP) water input directly into the SWP conveyance facilities based upon the criteria established in this document. NP water shall be considered to be any water input into the SWP for conveyance by the SWP that is not directly diverted from the Sacramento-San Joaquin Delta or natural inflow into SWP reservoirs.

The proponent of any NP water input proposal shall demonstrate that the water is of consistent, predictable, and acceptable quality.

DWR will consult with State Water Project (Contractors), existing NP participants and the Department of Public Health (DPH) on drinking water quality issues relating to NP water as needed to assure the protection of SWP water quality.

Nothing in this document shall be construed as authorizing the objectives of Article 19 of the SWP water supply contracts or DPH drinking water maximum contaminant levels to be exceeded.

This Policy shall not constrain the ability of DWR to operate the SWP for its intended purposes and shall not adversely impact SWP water deliveries, operation or facilities.

EVALUATING NP WATER PROPOSALS

DWR shall use a two-tiered approach for evaluating NP water for input into the California Aqueduct.

NP Tier 1

Tier 1 NP pump-in proposals (PIP) shall exhibit water quality that is essentially the same, or better, than what occurs in the California Aqueduct. PIP's considered to be tier 1 shall be approved by DWR (see baseline water quality tables 1 through 4).

NP Tier 2

Tier 2 PIP's are those that exhibit water quality that is different and possibly worse than in the California Aqueduct and/or have the potential to cause adverse impacts to the Contractors. Tier 2 PIP's shall be referred to a NP Facilitation Group (FG), which would review the project and if needed make recommendations to DWR in consideration of the PIP.

SWC Facilitation Group

This advisory group consists of representatives from each Contractor that chooses to participate and DWR. The group shall review tier 2 PIP's based on the merits, impacts, mitigation, water quality monitoring, cost/benefits or other issues of each PIP and provide recommendations to DWR. Upon initial review of tier 2 PIP by DWR, it shall then be submitted to the FG for review. A consensus recommendation from the FG would be sought regarding approval of the PIP. DWR shall base its decision on the merits of the PIP, recommendations of the FG and the PIP's ability to provide overall benefits to the SWP and the State of California.

Blending Water Sources

Blending of multiple water sources prior to inflow into the SWP is acceptable and may be preferred depending upon water quality of the PIP. Blending of water in this manner may be used to quality a project as NP Tier 1.

Mixing (blending) within the California aqueduct can be considered but shall not be adjacent to municipal and industrial (M&I) delivery locations. PIP's that are coordinating water discharged to maintain or improve SWP water quality are an example of the mixing approach. The PIP shall demonstrate by model or an approach acceptable to DWR and the FG that the water is adequately mixed before reaching the first M&I customer. Generally NP PIP's that involve mixing with SWP water shall be considered NP Tier 2.

Baseline Water Quality

To aid in developing and evaluating PIP's both historical and current SWP water quality levels shall be considered. A representative baseline water quality summary is shown in Tables 1 through 4, using historical SWP water quality records at O'Neill Forebay.

NP IMPLEMENTATION PROCESS

Project Proposals

The NP project proponent requesting to introduce water into the SWP shall submit a detailed PIP to DWR. The proponent shall demonstrate that the NP water is of consistent,
predictable and reliable quality, and is responsible for preparing and complying with any and all contracts, environmental documents, permits or licenses that are necessary consistent with applicable laws, regulations, agreements, procedures, or policies.

Project Description

The proponent will submit to DWR a PIP describing the proposed program, identifying the water source(s), planned operation, characterizing the inflow water quality and any anticipated impacts to SWP water quality and/or operations. The PIP should be submitted at least one month prior to proposed start up to allow for DWR and FG review. The PIP shall include:

- Project proponent names, locations, addresses, and contact person(s).
- Maps identifying all sources of water, point of inflow to the SWP and ultimate fate of the introduced water.
- Terms and conditions of inflow, timing, rates and volumes of inflow, pumping, conveyance and storage requirements.
- Construction details of any facilities located adjacent to the SWP including valves, meters, and pump and piping size.
- All potential impacts and/or benefits to downstream SWP water contractors.
- Detailed water quality data for all sources of water and any blend of sources that will be introduced into the SWP.
- Identify anticipated water quality changes within the SWP.
- Identify other relevant environmental issues such as subsidence, ground water overdraft or, presents of endangered species.
- Provide performance measures and remedial actions that will be taken in the event projected SWP water quality levels are not met.
- Reference an existing contract or indicate that one is in process with DWR to conduct a PIP.

Water Quality Monitoring

In order to demonstrate that the water source(s) are of consistent, predictable, and acceptable quality the NP proponent shall monitor water quality. The proponent shall, for the duration of the program, regularly report on operations as they affect water quality, monitoring data and water quality changes. Both DPH title 22 and a short list of Constituents of Concern (COC) shall be monitored for based upon one of the following water quality monitoring options.

Constituents of Concern Current COC are Arsenic, Bromide, Chloride, Nitrate, Sulfate, Organic Carbon, and Total Dissolved Solids. These COC's may be changed as needed.

Water Quality Monitoring Options NP proponents shall select one of the testing options below and perform all water quality testing and provide analytical results in a timely manner as described herein. Monitoring shall be conducted for initial well start-up, periodic well re-testing and on-going testing during operation. Well data should be no more than three years old. Title 22 results should be provided to DWR and the FG within two weeks of testing and COC results within one week of testing, unless other schedules are agreed upon by DWR and the FG.

Option 1 - Baseline tests for Individual Wells

Well Start-up: Title 22 tests are required for all wells participating in the program prior to start-up. An existing title 22 test that is no more than three years old may be used. A Title 22 test may be substituted for any well near a similar well with a Title 22 test of record.

Well Re-testing: Title 22 test for all wells participating every three years.

Ongoing Monitoring: COC tests are required for all discharge locations to the SWP at start up and quarterly thereafter for new programs and resumption of established programs. New programs or those with constituents that may potentially degrade the SWP shall conduct at least weekly COC sampling of all discharge locations until the proponent demonstrates that the NP water is of consistent, predictable and reliable quality. Once the nature of the discharge has been clearly established, the COC tests are required quarterly for each discharge point.

Option 2 - Baseline tests for Representative Wells

Well Start-up: COC tests of record are required for all wells participating in the program and Title 22 tests of record are required for representative wells comprising a subset of all wells. This would typically be a group of wells that are manifold together and discharge to one pipe. Representative wells shall be identified on a case-by-case basis to be representative of the manifold area, well proximity, and water levels.

Well Re-testing: Same as required in Option 1.

On-going Monitoring: COC tests are required for all discharge locations to the SWP at start up and monthly thereafter for the duration of the program and annually at each well. New programs or those with constituents that may potentially degrade the SWP shall conduct weekly COC sampling of all discharge locations until the proponent demonstrates that the NP water is of consistent, predictable and reliable quality.

Option 3 – Self Directed

A PIP may propose a water quality monitoring program for approval by DWR and the FG that is different from options 1 or 2. It must include COC and title 22 testing that will

fully characterize water pumped into the SWP and be at an interval to show a consistent, predictable and reliable quality.

Analytical Methods

Analytical laboratories used by project proponents shall be DPH certified by the Environmental Laboratory Accreditation Program (ELAP) and use EPA prescribed and ELAP accredited methods for drinking water analysis. Minimum Reporting Levels must be at least as low as the DPH required detection limits for purposes of reporting (DLR). The current DLRs are listed on the DPH website at Http://www.cdph.ca.gov/certlic/drinkingwater/Pages/MCLsandPHGs. DWR shall continue to use Bryte Chemical Laboratory as it's analytical and reference lab.

Flow Measurements

The project proponent shall maintain current, accurate records of water production rate and volume from each source, as well as, each point of discharge into the SWP. All flow measurements shall be submitted to regularly to DWR.

RECONSIDERATION

If an NP proponent disagrees with the FG or DWR decision or feels that there is an overriding benefit of the proposal, the proponent may request reconsideration from DWR on the basis of overriding public benefit or water supply deficiency. DWR shall consider these requests on a case-by-case basis.

ONGOING PROGRAM

Any NP Proponent who has successfully established a NP water inflow program (Including existing Kern Fan Banking Projects, Kern Water Bank, Pioneer and Berrenda Mesa Projects, Semitropic Water Storage District Wheeler Ridge Mariposa Water Storage District and Arvin Edison Water Storage District) may reinitiate the program by notifying DWR at least ten days before inflow is scheduled to begin and provide the following information:

- Updated water quality data and/or updated modeling that adequately reflects the quality of water to be introduced into the SWP.
- Turn-in location.
- Expected rate and duration of inflow. DWR shall notify the FG of this reinitiating of inflow.
- Water quality monitoring schedule that meets the objective of this policy.

FUTURE NP PROGRAMS

Future NP projects should be planned and designed considering the following items:

- Projects involving water quality exceeding primary drinking water standards shall show that the water shall be treated or blended before it enters the SWP to prevent water quality impacts.
- The project proponent of a Tier 2 proposal should clearly identify and establish that water inflow shall be managed and operated such that poor quality water will be blended with better quality water so that SWP water quality will not be degraded upon acceptable levels as determined by the FG and DWR.
- If a significant water supply deficiency exists and it is recommended by the FG that raw water quality criteria be set aside to ensure adequate supply, such action shall be subject to approval by the DPH.
- The project proponent of a NP inflow program which degrades SWP water quality shall identify mitigation to downstream water contractors for water quality impacts associated with increased water supply or treatment costs.

DWR ROLE

DWR shall seek, as needed, DPH or SWC recommendations on changes or additions to this document governing the NP water quality projects. The FG shall review proposed changes or additions prior to implementation by DWR, as needed.

DWR and or the United States Bureau of Reclamation (for San Luis Canal inflow) shall have ultimate responsibility for approving the water quality of all NP inflow, as well as, the oversight of monitoring and tracking the water quality of operating programs. DWR shall also ensure that the proponents of the NP inflow program perform according to their proposals, and will take appropriate action in the event of non-conformance.

Project Proposal Review Process

Upon receipt of a proposal for PIP, DWR shall review it for adequacy. DWR shall consider all PIPs based upon these guidelines. Review shall take no more than one month after receiving a complete program proposal. If necessary, DWR will convene timely meetings with the FG during the review. At a minimum the review will include

- Examination of all documents and data for completeness of the PIP.
- Notification of the affected Field Divisions, and the FG has been received by DWR.
- Consideration by DWR of comments from all parties before the final decision.
- Upon completion of the review DWR will notify the proponent and FG of the acceptance of the PIP or explain the reason(s) for rejecting it.
- DWR may reconsider a decision on a PIP based upon a recommendation from the FG. Reconsideration by DWR will be on a case-by-case basis.

Periodic Review

DWR may schedule periodic reviews of each operating NP inflow with input from the FG. As part of the review, program proponents shall provide the following information:

- Summary of deliveries to the Aqueduct.
- Water quality monitoring results.
- Proposed changes in the program operation.

The review may result in changes in monitoring and testing required of the program proponent as a result of;

- New constituents being added to the EPA /DPH list of drinking water standards.
- Changes in the maximum contaminant levels for the EPA/DPH list of drinking water standards.
- Identification of new constituents of concern.
- Changes in the water quality provided by the program.
- Changes in constituent background levels in the California Aqueduct.

This procedure shall recognize emerging contaminants and/or those detrimental to agricultural viability as they are identified by the regulatory agencies and shall set appropriate standards for water introduction based upon ambient levels in the California Aqueduct or State Notification Levels. Emerging contaminants are those that may pose significant risk to public health, but as yet do not have an MCL. Currently the Office of Environmental Health Hazard Assessment and the DPH establish Public Health Goals and Notification Levels, respectively. These levels, though not regulated, do provide health-based guidance to water utilities and can require public notification if exceeded.

Water Quality Review

DWR shall track and periodically report to the FG on water quality monitoring results on the SWP from NP water inflow and make all water quality data available to the public upon request.

- DWR shall review analyze and maintain all records of water quality testing conducted by the proponent of the well(s), source(s) and discharge(s) into the SWP.
- DWR shall determine what additional water quality monitoring, if any, is necessary within the SWP to ensure adequate protection of SWP water quality. DWR shall conduct all water quality monitoring within the SWP.
- DWR may prepare periodic reports of NP projects.

On-site Surveillance

The appropriate Field Division within DWR will be responsible for review and approval of all construction activities within the SWP right-of-way. Plans showing the discharge system piping, valves, sampling point, meters and locations must be submitted and approved prior to any construction. In addition, the appropriate Field Division will be responsible for confirmation of all meter readings and water quality monitoring conducted by the proponent.

- Field division staff may visit, inspect, and calibrate meters and measure flow conditions at each source or point of inflow into the SWP.
- Flow meters, sampling ports and anti-siphon valves must be conveniently located near the SWP right-of-way.
- Field division staff may collect water samples at each source or point of discharge into the SWP.
- The appropriate Field Division shall conduct additional water quality monitoring within the SWP, if deemed necessary, to assure compliance with the NP Inflow Criteria.
- DWR shall monitor aqueduct water quality and analyze several "split samples" of the water at the point of introduction into the aqueduct to ensure consistent analytical results.

Table A1 HISTORICAL WATER QUALITY CONDITIONS 1988 TO 2011 AT O'NEILL FOREBAY OUTLET (mg/L)

Parameter	Mean	Min.	Max.	Std. Dev.
Aluminum	0.03	0.01	0.527	0.05
Antimony	0.002	0.001*	0.005	0.002
Arsenic	0.002	0.001	0.004	0.001
Barium	0.05	0.05	0.068	0.002
Beryllium	0.001*	0.001*	0.001*	0.000
Bromide	0.22	0.04	0.54	0.16
Cadmium	0.003	0.001	0.005	0.002
Chromium	0.004	0.001	0.011	0.002
Copper	0.004	0.001	0.028	0.003
Fluoride	0.1	0.1	0.5	0.1
Iron	0.037	0.005	0.416	0.050
Manganese	0.009	0.005	0.06	0.007
Mercury	0.001	0.0002	0.001	0.0004
Nickel	0.001	0.001	0.004	0.0005
Nitrate	2.9	0.2	8.1	1.6
Selenium	0.001	0.001	0.002	0.0001
Silver	0.003	0.001	0.005	0.002
Sulfate	42	14	99	15
Total Organic Carbon	4.0	0.8	12.6	1.6
Zinc	0.007	0.005	0.21	0.01

*These values represent reporting limits. Actual values would be lower

Table A2 O'Neill Forebay Outlet Total Dissolved Solids Criteria by Water Year Classification, 1988-2011 (mg/L)

Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Wet	227.2	262.5	295.4	228.9	213.8	231.2	184.4	226.5	181.5	171.4	195.7	157.3
Near Normal	317.9	324.7	351.7	295.4	268.1	302.7	270.0	285.1	230.1	211.9	170.9	202.6
Dry	286.4	319.6	370.0	362.0	344.2	305.2	240.4	278.2	307.3	234.8	269.0	336.6
Critical	256.6	312.9	372.9	367.0	361.0	335.0	307.1	291.8	335.1	325.7	339.4	328.8

* Year type is based on water year classification. Below normal and above normal year types have been combined into one designation called "near normal."

Table A3 O'Neill Forebay Outlet Bromide Criteria by Water Year Classification, 1988-2011 (mg/L)

Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Wet	0.19	0.24	0.28	0.13	0.10	0.12	0.12	0.17	0.12	0.12	0.13	0.10
Near Normal	0.31	0.31	0.34	0.21	0.15	0.15	0.18	0.22	0.15	0.15	0.14	0.19
Dry	0.25	0.29	0.35	0.35	0.24	0.20	0.17	0.24	0.27	0.13	0.29	0.41
Critical	0.26	0.28	0.32	0.37	0.33	0.27	0.22	0.22	0.28	0.28	0.32	0.37

* Year type is based on water year classification. Below normal and above normal year types have been combined into one designation called "near normal."

Table A4 O'Neill Forebay Outlet Total Organic Carbon Criteria by Water Year Classification, 1988-2011 (mg/L)

Year Type*	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Wet	2.8	2.9	3.9	5.2	4.8	3.8	3.9	3.4	3.1	3.2	3.1	2.7
Near Normal	3.7	4.1	4.0	7.0	6.3	5.6	4.7	4.4	4.0	3.3	3.3	3.4
Dry	3.0	3.0	4.0	5.7	4.8	5.7	4.5	3.6	3.7	2.9	2.9	2.7
Critical	2.8	3.1	3.3	4.9	6.0	5.7	4.7	4.0	3.8	3.9	4.0	3.5

* Year type is based on water year classification. Below normal and above normal year types have been combined into one designation called "near normal."

Implementation Procedures for the Review of Water Quality from Non-Project Water Introduced into the State Water Project March 14, 2001

This document describes the approval and implementation procedures, as well as, responsibilities of the various parties involved in the introduction of Non-Project water into the State Water Project under the ***Department of water Resources Water Quality Criteria for Acceptance of Non-Project Water into the State Water Project.***

This document does not in anyway affect, modify or have any bearing upon any provisions of law, contract, policy or procedure governing water resources or the State Water Project other than stated above. Non-project inflow shall not constrain the ability of DWR to operate the SWP for its intended purposes or to protect the SWP integrity during emergencies and it shall not adversely impact SWP operations, deliveries, existing contracts or any other agreements.

DWR shall consider all non-project water input proposals based upon the approved water quality ***Criteria*** and the procedures established in this document. This document describes the procedures and responsibilities of the Project Proponent, Department of Water Resources, and the Facilitation Group as identified in the ***Criteria***.

Project Proponent

The proponent of a program that will introduce Non-Project water into the SWP will submit a complete detailed proposal to the Department of Water Resources for purposes of evaluating the water quality impacts .The proponent shall demonstrate that the non-project water is of consistent, predictable and reliable quality.

The Proponent is responsible for preparation of and compliance with any and all contracts, environmental documents, permits or licenses that are necessary consistent with applicable laws, regulations, agreements, procedures, or policies external to this document.

Project Description

The proponent will submit to DWR a document describing the proposed program, identifying the water source(s), planned operation, characterizing the inflow water quality and any anticipated impacts to SWP water quality and/or operations. The proposal will at a minimum include:

- Identify names, locations, addresses, and contact person(s) for all participants.
- Detailed information including maps identifying all sources of water, point of inflow to the SWP and ultimate fate of the introduced water.
- All terms and conditions of inflow, timing, rates and volumes of inflow, pumping, conveyance and storage requirements will be described.
- All construction details adjacent to SWP facilities will be described including valves, meters, pumps and piping size, location, etc.
- All potential impacts and/or benefits to downstream users will be identified
- Detailed water quality data will be provided for all sources of water and any blend of sources that will be introduced into the SWP.
- Describe anticipated water quality changes within the SWP.
- Identify other relevant environmental issues such as subsidence, ground water overdraft or, presence of endangered species.

Water Quality Monitoring

In order to demonstrate that the source(s) of water are of consistent, predictable, and acceptable quality the Proponent will monitor water quality. The proponent is responsible for all costs associated with characterizing and monitoring water quality up to and including the point of discharge into the SWP for the duration of the program. The proponent will, for the duration of the program, regularly report on operations as they affect water quality, monitoring data and water quality changes. One of three water quality monitoring schedules will be used and all information will be submitted to DWR on a regular basis (within 30 days of sampling).

Projects proponents shall select one of the testing options below and perform and provide all water quality testing described therein.

Option 1 - *Baseline tests*: Title 22 tests of record are required for all wells (sources), but a post inflow Title 22 test is allowed for any well near a similar well with a Title 22 test of record. *Periodic tests*: Constituents of Concern tests are required upon startup and quarterly for each discharge point.

Option 2 - *Baseline tests*: Constituents of Concern tests of record are required for all wells (sources) and Title 22 tests of record are required for representative wells comprising a subset of all wells. Representative wells shall be identified on a case-by-case basis to be representative of the manifold area; proximity, water levels, and agricultural water tests are significant for this purpose. The proponent shall identify representative wells subject to approval. *Start up tests in any year*: Title 22 tests are required for all discharge points upon startup. Constituents of Concern tests are required for all wells within two weeks of inflow startup. *Periodic tests*: Constituents of Concern tests are required monthly for each discharge point.

Option 3 – A project proponent may propose a monitoring schedule that is fully protective of water quality and consistent with the *Criteria*. The proposed monitoring schedule will be submitted to the Facilitation Group for review and approval.

Under any of the three testing options all Title 22 tests will be repeated every three years or as otherwise acceptable to the Department of Health Services to be compliant with Title 22. Sampling for pathogens (including giardia and cryptosporidium) may be required for any waters under the influence of surface water at the discretion of DWR and/or the Facilitation Group

Flow Measurements
The proponent will provide flow measurements and analytical data for all sources and discharges into the SWP to demonstrate compliance with the *Criteria*.

- The proponent will maintain current, accurate records of production rate and volume from each source, as well as, each point of discharge into the SWP.
- Meters will be properly calibrated and maintained.
- All flow measurements will be regularly submitted to DWR.

Reconsideration
If a proponent disagrees with the DWR decision of compliance with the Non-Project inflow *criteria* or feels that there is overriding benefit of the proposal, the proponent may seek review from the Facilitation Group.

- The SWC Facilitation Group may recommend to DWR that a proposal has some overriding benefit(s) and DWR may reconsider the proposal.
- Reconsideration by DWR will be on a case-by-case basis and DWR may waive or modify the inflow *criteria* for specific proposals if conditions warrant.

DWR

DWR, in consultation with the State Water Contractors, DHS, and other appropriate parties, will develop the ***Department of water Resources Water Quality Criteria for Acceptance of Non-Project Water into the State Water Project*** *and* ***Implementation Procedures for the Review of Water Quality from Non-Project Water Introduced into the State Water Project***. The *criteria* and *procedures* will be reviewed annually and revised as needed to protect SWP water quality.

DWR will seek, as needed DHS or State Water Contractor recommendations on changes or additions to the *criteria* and *procedures* documents governing Non-Project water inflow proposals. The Facilitation Group will review proposed changes or additions prior to implementation by DWR.

DWR will have ultimate responsibility for approving the water quality of all non-project inflow, as well as, the oversight of monitoring and tracking the water quality of operating programs.

Project Proposal
Upon receipt of a proposal for Non-Project water inflow DWR will review the proposal for adequacy. DWR shall consider all non-project water inflow proposals based upon the approved *Criteria*. If necessary, DWR will convene timely meetings with the Facilitation Group during the review of a proposal. At the minimum the review will include

- Examination of all documents and data for completeness of the submittal.
- Affected Field Divisions, the Facilitation group and all affected downstream users will be immediately notified of the submittal.
- Comments from all parties may be considered by DWR before the final decision.
- Upon completion of the review, DWR will notify the proponent and downstream users of the acceptance of the proposal, the need for modification of a proposal, or explain the reason(s) for rejecting the proposal.
- DWR may reconsider a decision on a proposal based upon a recommendation from the Facilitation Group. Reconsideration by DWR will be on a case-by-case basis and DWR may waive or modify the *Criteria* for specific proposals if conditions warrant

Annual Review
Once a program for delivery of non-Project water to the Aqueduct has been approved, an annual review of the program will occur with input from the Facilitation Group. As part of the review, program proponents will provide the following information:

- Summary of deliveries to the Aqueduct.
- Water quality monitoring results.
- Proposed changes in the program operation.

The review may result in changes in program operations, monitoring and testing required of the program proponent as a result of;

- New constituents being added to the EPA /DHS list of primary drinking water standards.
- Changes in the maximum contaminant levels for the EPA/DHS list of primary drinking water standards.
- Identification of new constituents of concern
- Changes in the water quality provided by the program.
- Changes in concentrations in the California Aqueduct.

This procedure shall recognize emerging contaminants as they are identified by the regulatory agencies and shall set appropriate standards for introduction based upon ambient levels in the California Aqueduct or State Action Levels, which ever is lower. Emerging contaminants are those that may pose significant risk to public health, but as yet do not have an MCL. Currently the Office of Environmental Health Hazard Assessment and the Department of Health Services establish Public Health Goals and Action Levels, respectively. These levels, though not regulated, do provide health-based guidance to water utilities and can require public notification if exceeded.

Water Quality Review
For operating projects DWR will track and annually report on water quality impacts to the SWP from Non-Project water inflow.

- DWR will review analyze and maintain records of water quality testing conducted by the proponent of the well(s), source(s) and discharge(s) into the SWP.
- DWR will determine what additional water quality monitoring, if any, is necessary within the SWP to assure compliance with the Criteria. DWR will conduct all water quality monitoring within the SWP
- DWR will prepare an annual report of water quality impacts in the SWP from Non-Project water and make all water quality data available to interested parties.

On-site Surveillance
The appropriate Field Division within DWR will be responsible for review and approval of all construction activities within the SWP right-of-way. Plans showing the discharge system piping, valves, sampling point, meters and locations must be submitted and approved prior to any construction. In addition, the appropriate Field Division will be responsible for confirmation of all meter readings and water quality monitoring conducted by the proponent.

- Field division staff may visit, inspect, calibrate meters and measure flow conditions at each source or point of discharge into the SWP.
- Flow meters, sampling ports and anti-siphon valves must be conveniently located near the SWP right-of-way.
- Field division staff may collect water samples at each source or point of discharge into the SWP.
- The appropriate Field Division will conduct additional water quality monitoring within the SWP, if deemed necessary, to assure compliance with the Non-Project Inflow Criteria.

SWC Facilitation Group

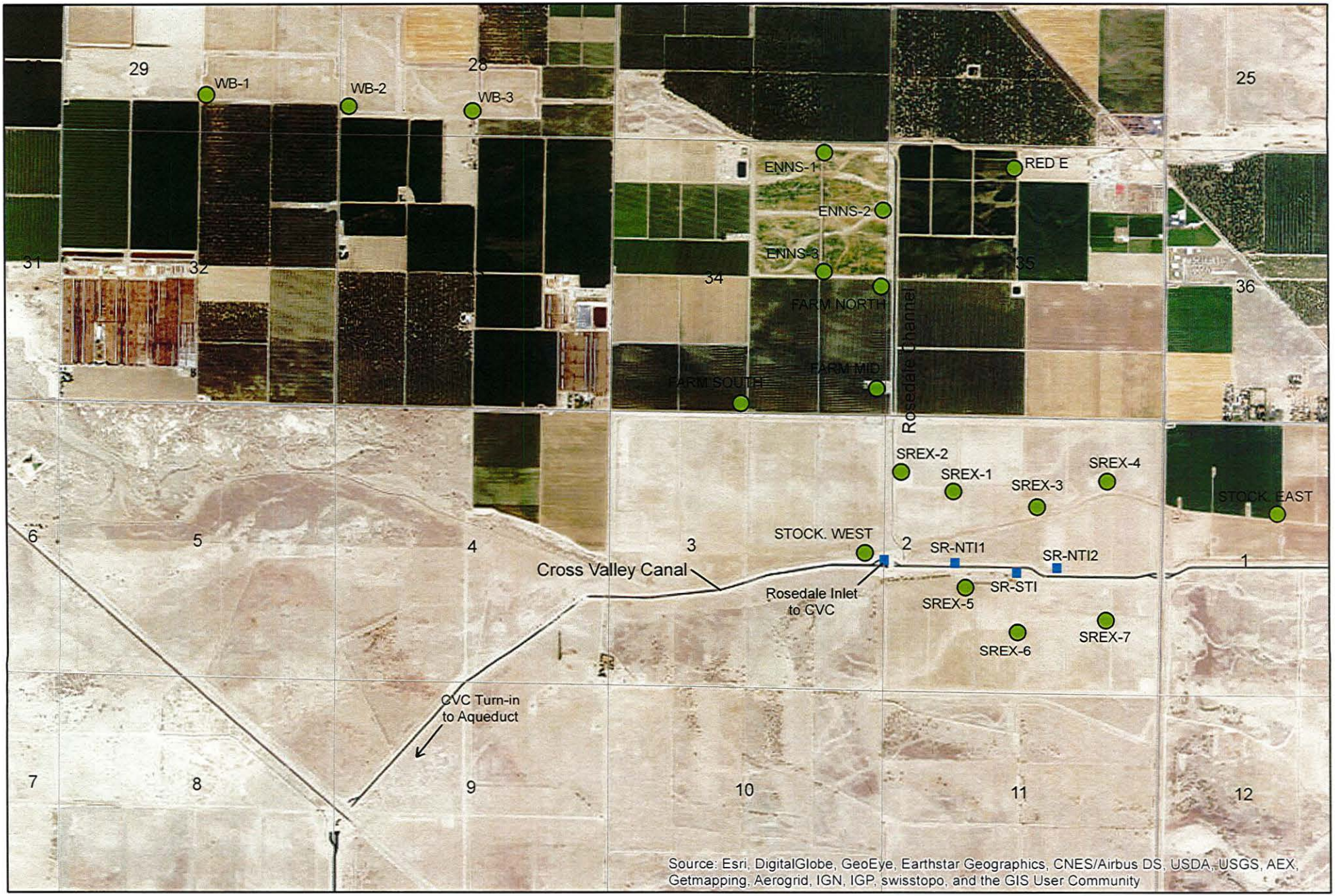
Upon initial review of a Non-project water inflow proposal, DWR shall notify the State Water Contractors of its receipt, its contents, and the possible need for a Facilitation Group. The State Water Contractors may form a Facilitation Group to advise DWR on any or all proposals for introduction of Non-Project water into the SWP.

- It is the responsibility of the State Water Contractors to form and coordinate the activities of the Facilitation Group. DWR will assist in coordination of Facilitation Group activities as requested.
- The SWC Facilitation Group can consult with State Water Contractors, DWR, the project proponent, other state or federal agencies, private consultants or other interested parties as needed to fully evaluate a Non-project Inflow Proposal.

The Facilitation Group is an advisory body that will review the *criteria* and *Procedures* for approval of water quality for Non-project inflow. The Facilitation Group will review and recommend action on Proposals that could degrade SWP water quality. Also, if a proponent proposes a monitoring Schedule under Option 3, above, the Facilitation Group will review the proposal and make appropriate monitoring recommendations.

Recommendations of the Facilitation Group
The Facilitation Group will consider the merits, impacts, mitigation, cost/benefits or other issues, in addition water quality, in an effort to develop a consensus recommendation for action on Non- Project Inflow Proposals.

- State Water Contractors will make all decisions on the direction and actions of Facilitation Group activities or development of a recommendation on any proposal.
- The facilitation group may provide comment or recommendations to DWR at any time, on any aspect, of any proposal. The facilitation group can also provide comment or recommendations to DWR on the *Criteria* or *Procedures* at any time.
- The Facilitation Group will provide DWR recommendations for formal approval, disapproval or modification of each individual Non-Project Inflow Project submitted for consideration. The recommendation shall include an explanation of the reasons for the recommendation.
- If consensus among State Water Contractors is not possible the Facilitation Group may submit both majority and minority opinions and recommendations.



N
W E
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Approved Pump-In Wells

Points of Delivery (Turn-ins)

Rosedale-Rio Bravo Water Storage District
Integrated Banking Projects

FIGURE 1