



YOUR WATER. YOUR FUTURE.

**SCIF Stakeholder Meeting #2:
Water Quality**
January 29, 2026

Agenda

- Welcome
- SRP Water Quality Review and Water Quality Introduction at SCIF
 - Q&A
- CAWCD System-Wide Water Quality Model and SCIF Simulations
 - Q&A
- Closing

Stakeholder Meeting Series

Connecting CAP & SRP Systems: SRP-CAP Interconnect Facility (SCIF) Water Quality Analysis

1. January 14, 2026, 1-3pm: Stakeholder Briefing
 - Background on the CAP Wheeling Process and the SCIF
2. January 29, 2026, 9-11am: Stakeholder Briefing
 - Initial SCIF Water Quality Modeling Results
3. February 11, 2026, 9-11am: Stakeholder Roundtable
 - Feedback on SCIF and Water Quality Modeling
4. TBD: Stakeholder Briefing
 - SCIF Water Quality – Response and Next Steps



CAP Headquarters



Livestreamed

questions@cap-az.com

An aerial photograph of a large dam and reservoir situated in a deep, rugged canyon. The canyon walls are composed of layered, reddish-brown rock. The reservoir is a deep blue color, and the dam is a long, low structure across the river. The sky is a clear, pale blue.

SRP - CAP Interconnection Facility (SCIF)

**Meeting #2 – SRP Water Quality Review and
Water Quality Introduction at SCIF**

Salt River Project

A blue geometric graphic element consisting of two overlapping triangles, one pointing right and one pointing left, creating a larger triangular shape.

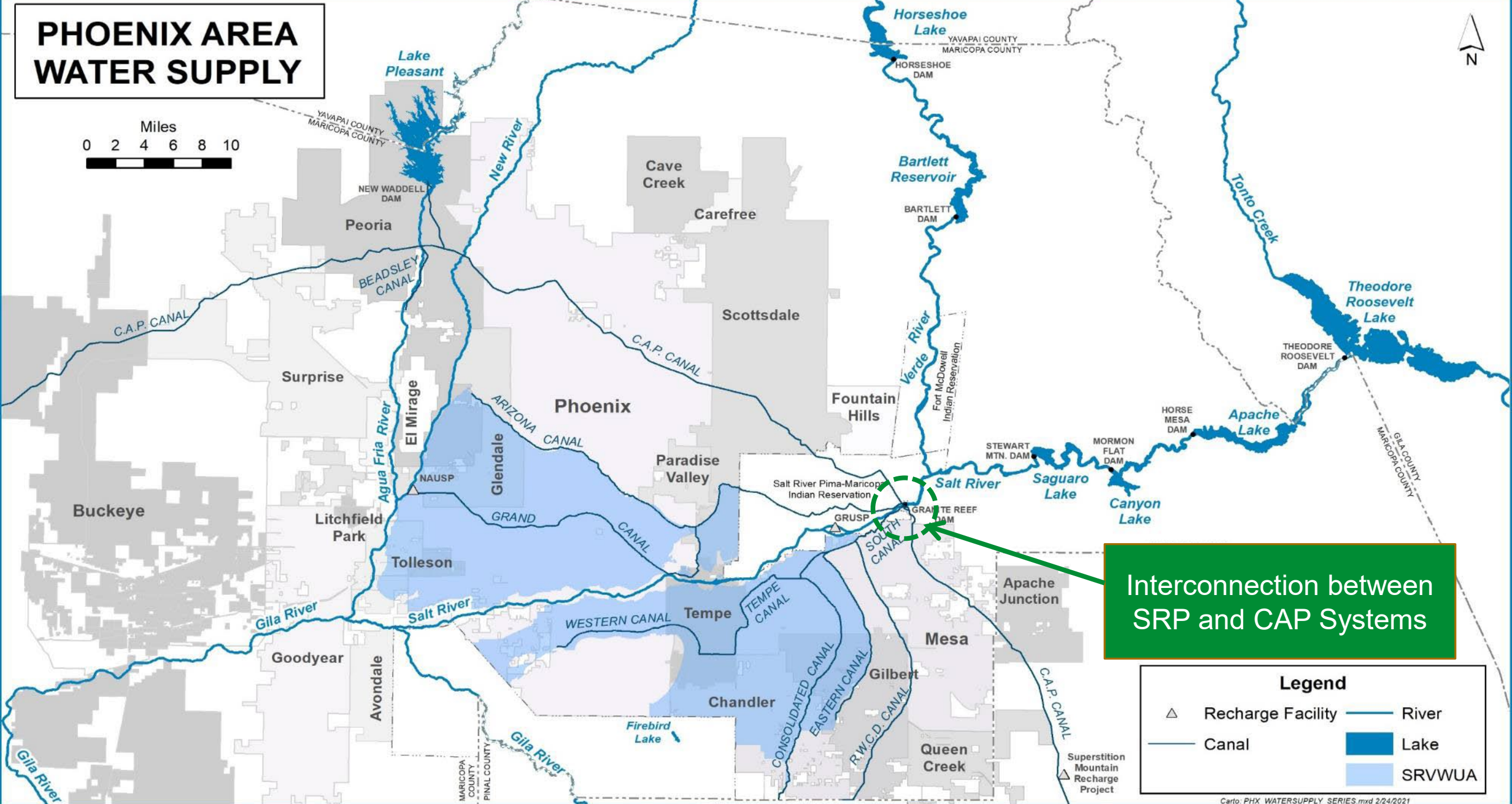
Overview

- Water Supply Management
 - Salt and Verde River Systems
- SRP Water Quality Review
- Water Quality Modeling
 - “Bookend Approach”
 - SCIF Conveyance
 - ❖ Low Volume Scenario
 - ❖ High Volume Scenario



Water Supply Management

PHOENIX AREA WATER SUPPLY



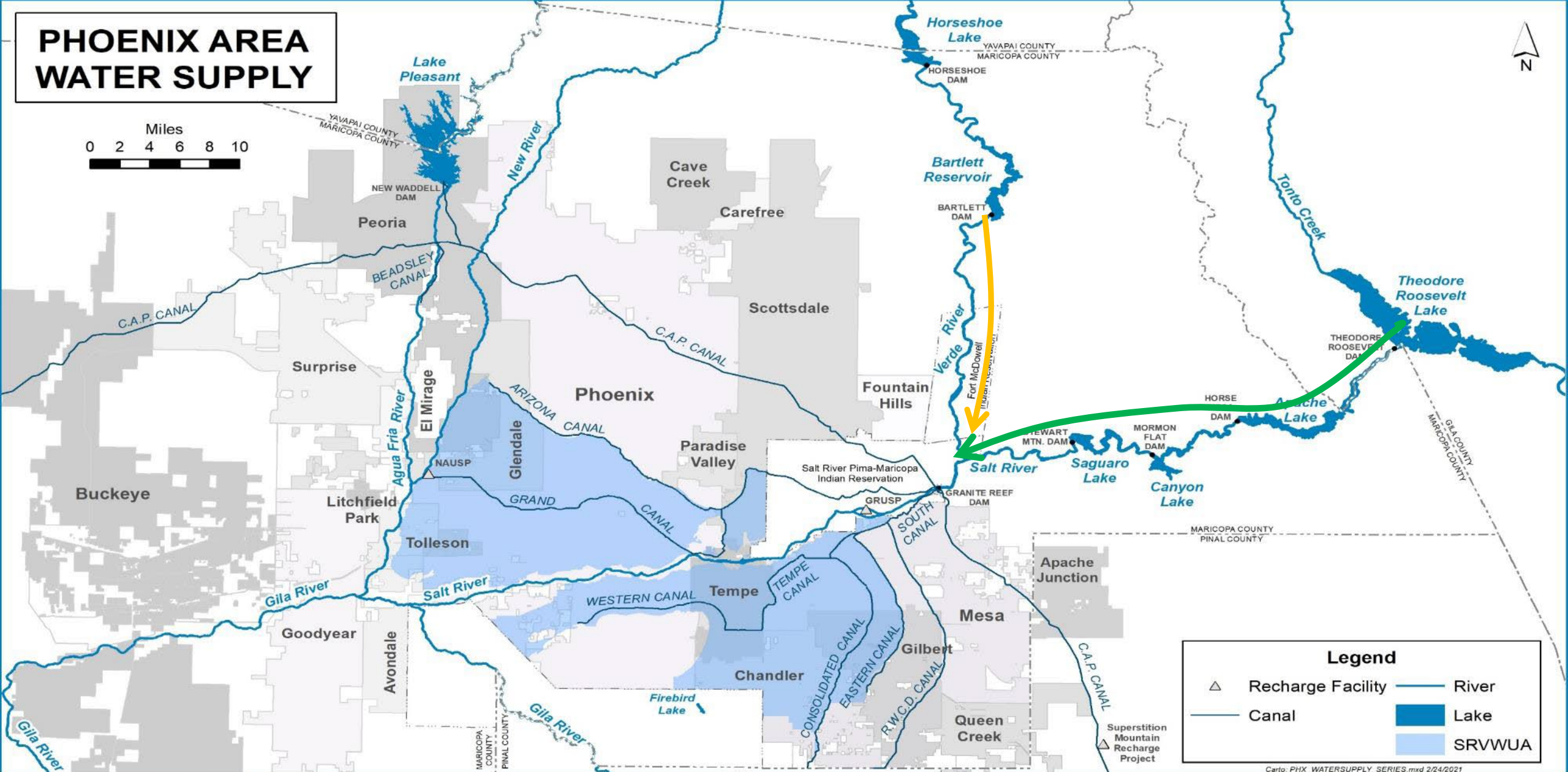
Interconnection between
SRP and CAP Systems

Legend

- △ Recharge Facility
- Canal
- River
- Lake
- SRVWUA

PHOENIX AREA WATER SUPPLY

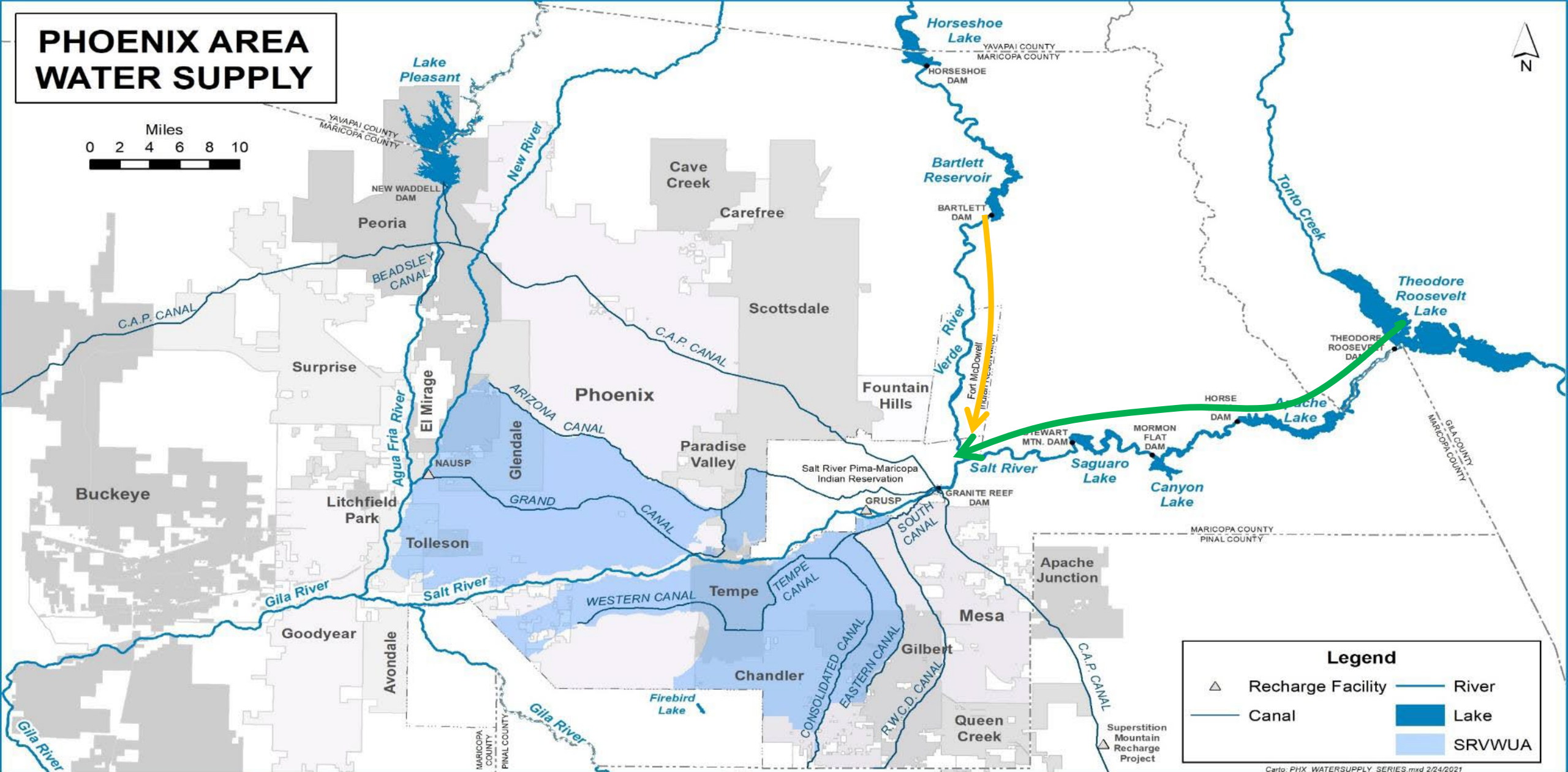
Miles
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Salt System: Long-term operations planning April-October

PHOENIX AREA WATER SUPPLY

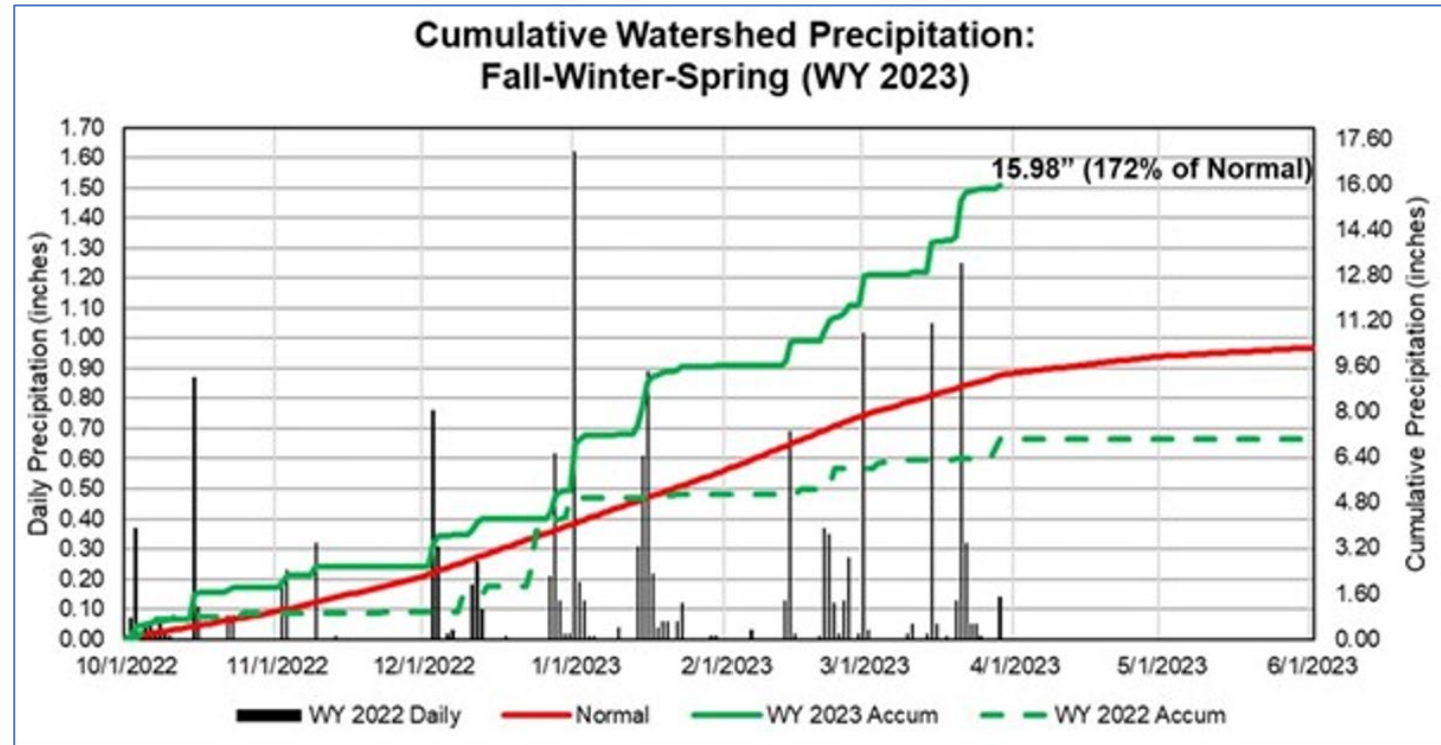
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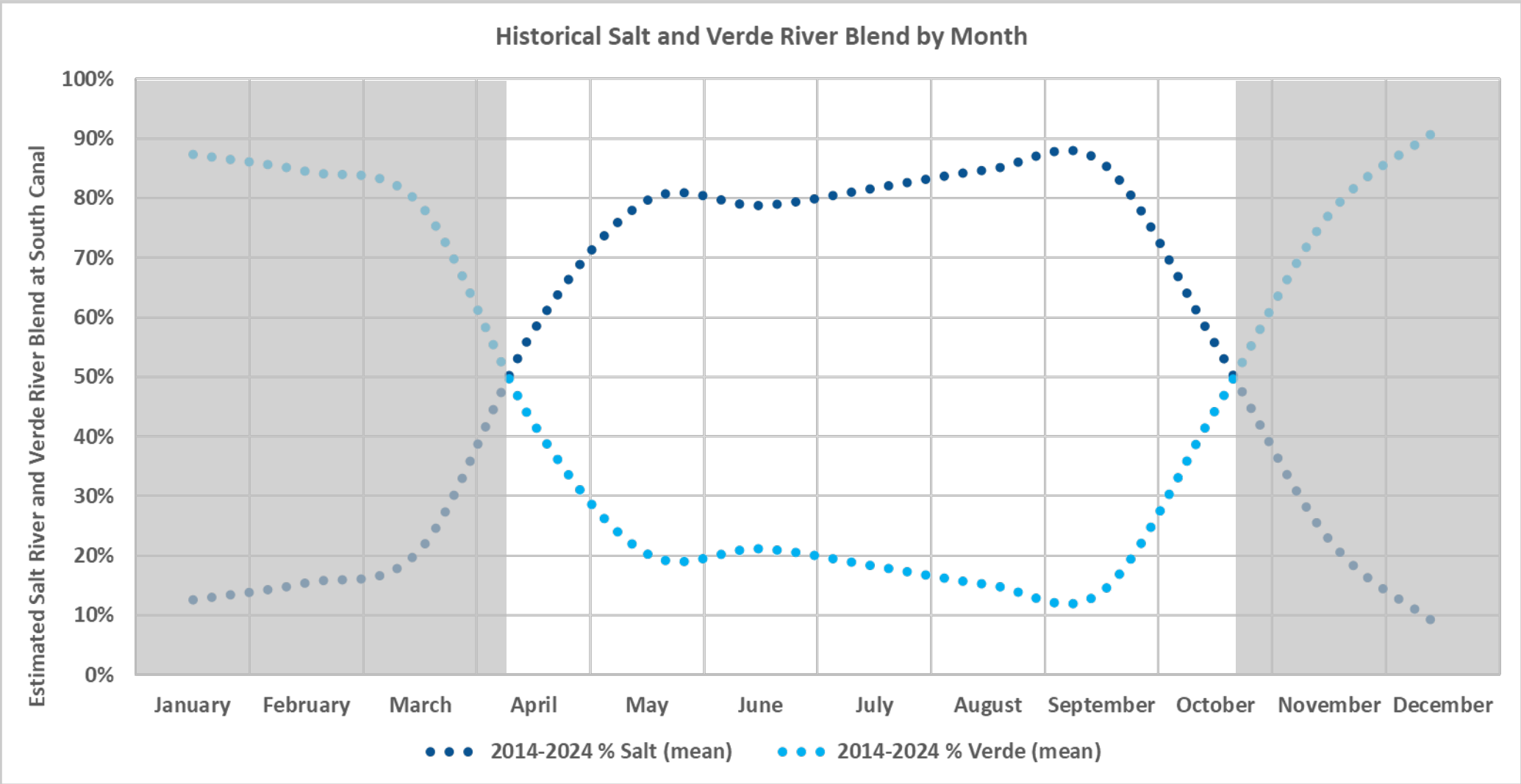
Verde System: Long-term operations planning October-April

Drivers of SRP Water Supply Mix

- SRP's goal is to deliver water to shareholders efficiently, on-time, and cost-effectively.
- Reservoir releases vary annually based on hydrologic conditions, maintenance needs, and storm events.
- Reservoir releases are planned in advance, but remain subject to system variability.



Drivers of SRP Water Supply Mix



SRP Water Quality Review



Introduction Standards (Table A-1)

Constituent*	Units	Reporting Limit	Introduction Standard
Dissolved Oxygen	mg/L		Narrative
pH	Units	2	6.5 - 9.5
Temperature	°F		Narrative
Alkalinity (CaCO3 Units)	mg/L	20	250
Alpha, Gross	pCi/L	3	15
Aluminum, Dissolved	µg/L	50	50
Aluminum, Total	µg/L	50	200
Ammonia Nitrogen	mg/L	0.5	0.5
Antimony	µg/L	1	6
Arsenic	µg/L	2.5	10
Barium, Total	µg/L	2.5	2000
Beryllium	µg/L	1	4
Beta, Gross	pCi/L	4	50
Boron	mg/L	0.2	1
Bromide	µg/L	50	650
Cadmium	µg/L	1	5
Calcium, Total	mg/L	2	200
Chloride	mg/L	10	450
Chromium	µg/L	3	100
Cobalt, Total	µg/L	2	2
Copper, Dissolved	µg/L	10	64
Fluoride	mg/L	0.5	4
Hexavalent Chromium	µg/L	0.05	16

Constituent*	Units	Reporting Limit	Introduction Standard
Iron, Dissolved	mg/L	0.02	1
Lead	µg/L	2.5	15
Manganese, Total	µg/L	20	250
Mercury	µg/L	0.2	2
Molybdenum	µg/L	4	40
Nickel	µg/L	5	5
Nitrate	mg/L	1	10
Nitrite	mg/L	0.5	1
Perchlorate	µg/L	4	15
Phosphorus, Total-P	mg/L	0.02	0.1
Potassium, Total	mg/L	5	10
Radium 226/228	pCi/L	2	2
Selenium	µg/L	20	50
Silver, Total	µg/L	1	100
Sodium, Total	mg/L	5	350
Strontium	mg/L	0.1	2
Sulfate	mg/L	15	400
Thallium	µg/L	1	1
Total Dissolved Solids (TDS)	mg/L	30	1150
Total Organic Carbon	mg/L	1	6
Turbidity	NTU	1	9
Uranium	µg/L	1	30
Vanadium	µg/L	3	98
Zinc	µg/L	20	1000

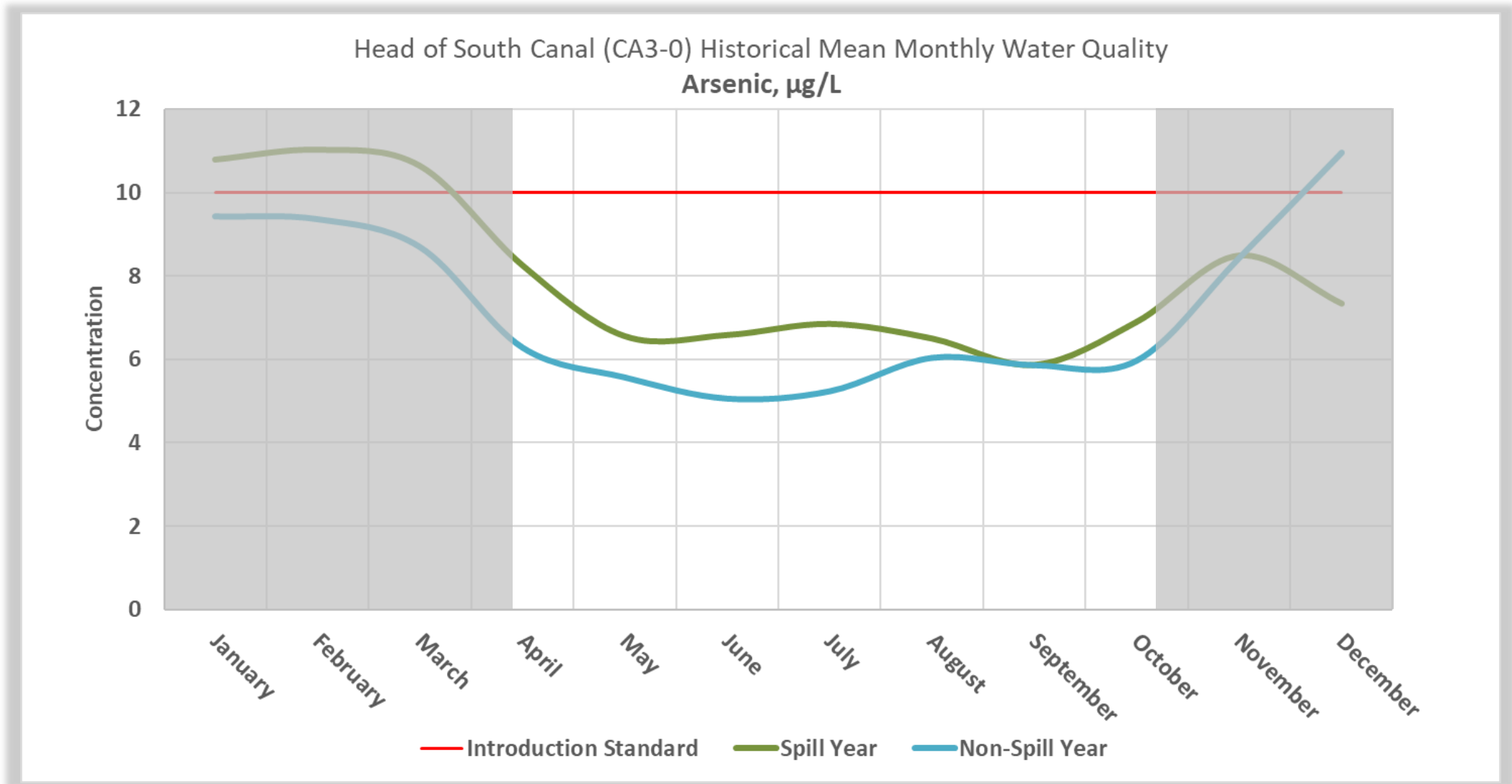
*General Constituents and CAP Priority Constituents identified in Table A-1 of the Water Quality Guidance Document. Highlighted constituents represent CAP Introduction Standards that SRP water sources may periodically exceed.

Introduction Standards (Table A-1)

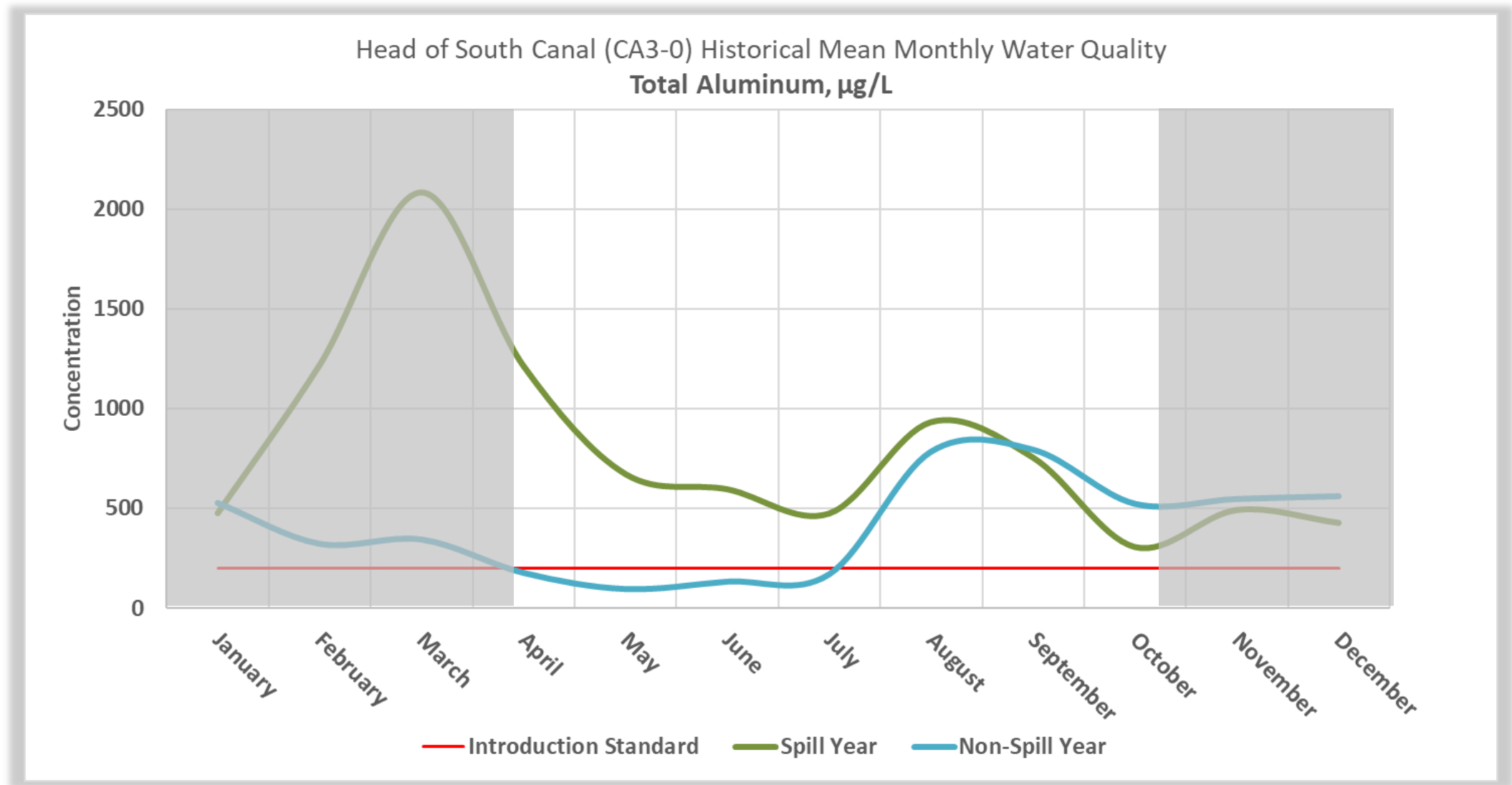
Constituent*	CAP Introduction Standard	Verde River Introduction Standard Exceedance	Salt River Introduction Standard Exceedance	Remarks
Arsenic, µg/L	10	Frequent	Rare	Naturally occurring in Verde River watershed
Turbidity, NTU (daily average)	9	Frequent	Occasional	Verde River typically high in turbidity, Salt River may experience elevated turbidity levels from localized runoff during storm events
Total Aluminum, µg/L	200	Frequent	Occasional	Naturally occurring in Verde River watershed; Salt River may experience elevated Total Aluminum levels from localized runoff during storm events

*General Constituents and CAP Priority Constituents identified in Table A-1 of the Water Quality Guidance Document.

Arsenic

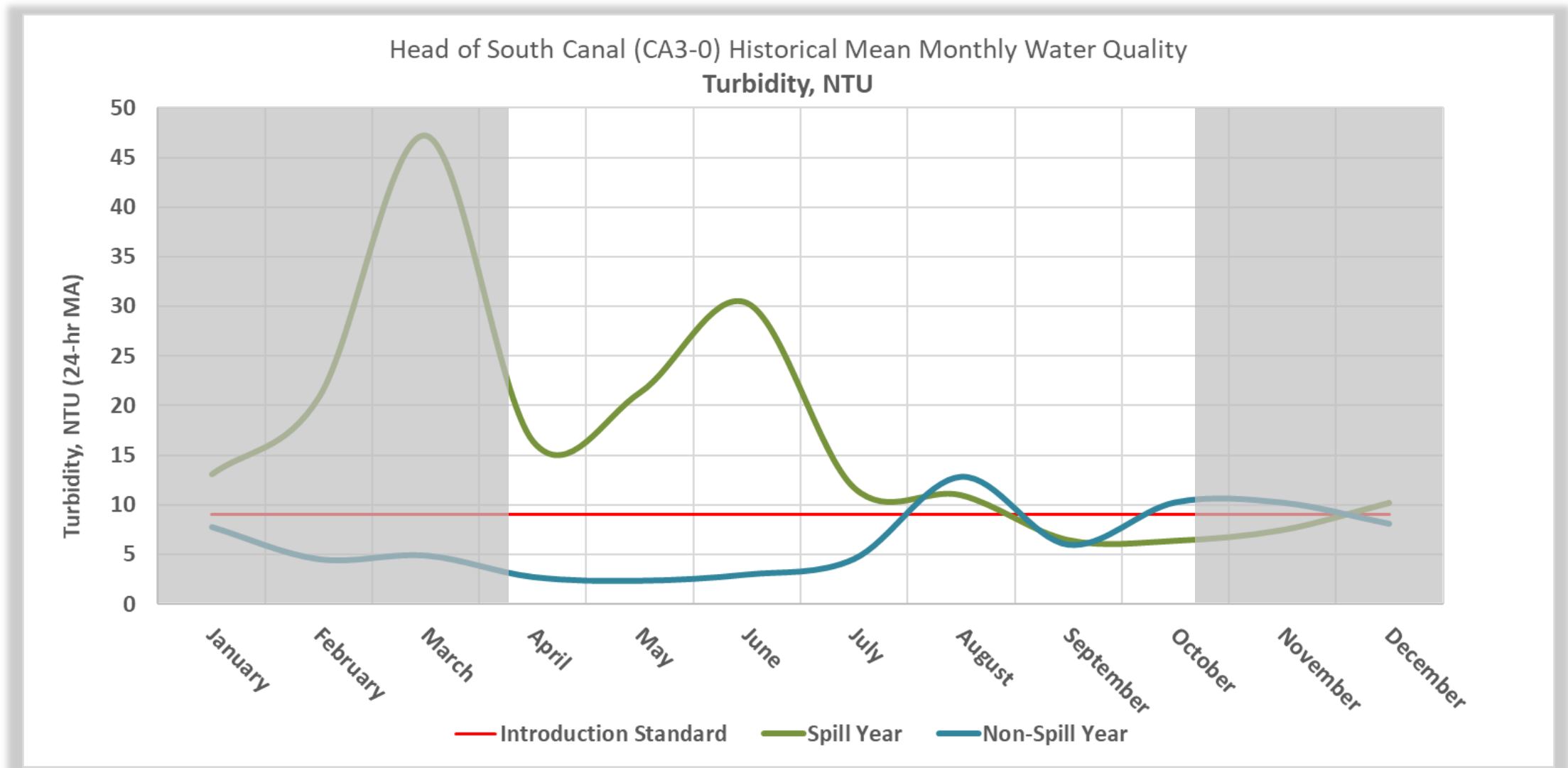


Total Aluminum



(2014-2024)

Turbidity



(2014-2024)

Introduction Standards (Table A-2)

Constituent *	Units	Reporting Limit	Introduction Standard	Delivery Standard
Dieldrin	µg/L	0.1	ND	ND
Di-isopropyl ether	µg/L	3	ND	ND
Equilin	µg/L	0.004	ND	ND
Estradiol (17-beta estradiol)	µg/L	0.0004	ND	ND
Estrilol	µg/L	0.0009	ND	ND
Estrone	µg/L	0.002	ND	ND
Ethinyl estradiol (17-alpha ethynyl estradiol)	µg/L	0.0009	ND	ND
Ethylene glycol	mg/L	5	ND	ND
Formaldehyde	µg/L	5	ND	ND
Gamma-Chlordane	µg/L	0.1	ND	ND
Hexachlorobutadiene	µg/L	0.8	ND	ND
Hexane	µg/L	2	ND	ND
Isopropylbenzene	µg/L	0.5	ND	ND
M/P-Xylenes	µg/L	1	ND	ND
Methanol	µg/L	0.5	ND	ND
Methiocarb	µg/L	1	ND	ND
Methomyl	µg/L	0.5	ND	ND
Methyl Tert-butyl ether (MTBE)	µg/L	0.5	ND	ND
Metolachlor ethanesulfonic acid (ESA)	µg/L	0.1	ND	ND
Metolachlor oxanilic acid (OA)	µg/L	0.1	ND	ND
Molinate	µg/L	0.1	ND	ND
Naphthalene	µg/L	0.5	ND	ND
N-Butylbenzene	µg/L	0.5	ND	ND
N-nitrosodiethylamine (NDEA)	ng/L	10	ND	ND
N-nitrosodimethylamine (NDMA)	ng/L	10	ND	ND
N-nitroso-di-n-propylamine (NDPA)	ng/L	10	ND	ND
N-nitrosopyrrolidine (NPYR)	ng/L	10	ND	ND
NETFOSAA	ng/L	2	ND	ND
NMeFOSAA	ng/L	2	ND	ND
N-Propylbenzene	µg/L	0.5	ND	ND
o-Chlorotoluene	µg/L	0.5	ND	ND
o-Xylene	µg/L	0.5	ND	ND
Paraquat	µg/L	2	ND	ND
p-Chlorotoluene	µg/L	0.5	ND	ND
Perfluorobutanesulfonic acid (PFBS)	ng/L	2	ND	ND
Perfluorodecanoic acid (PFDA)	ng/L	2	ND	ND
Perfluorododecanoic acid (PFDoA)	ng/L	2	ND	ND
Perfluoroheptanoic acid (PFHpA)	ng/L	2	ND	ND
Perfluorohexanesulfonic acid (PFHxS)	ng/L	2	ND	ND
Perfluorohexanoic acid (PFHxA)	ng/L	2	ND	ND
Perfluorononanoic acid (PFNA)	ng/L	2	ND	ND
Perfluorooctanesulfonic acid (PFOS)	ng/L	2	ND	ND
Perfluorooctanoic acid (PFOA)	ng/L	2	ND	ND
Perfluorotetradecanoic acid (PFTA)	ng/L	2	ND	ND
Perfluorotridecanoic acid (PFTTrDA)	ng/L	2	ND	ND
Perfluoroundecanoic acid (PFUnA)	ng/L	2	ND	ND
p-Isopropyltoluene	µg/L	0.5	ND	ND
sec-Butylbenzene	µg/L	0.5	ND	ND
Tert-Butylbenzene	µg/L	0.5	ND	ND
Thiobencarb	µg/L	0.2	ND	ND
Total DCPA Mono- and Di-acid Degradate	µg/L	0.5	ND	ND
Total Kjeldahl Nitrogen	mg/L	0.5	ND	ND
trans-1,3-Dichloropropene	µg/L	0.5	ND	ND
trans-Nonachlor	µg/L	0.1	ND	ND
Trichlorofluoromethane-Freon11	µg/L	1	ND	ND
EPA Disinfection Byproducts				
Bromochloroacetic Acid	µg/L	1	ND	ND
Bromodichloroacetic Acid	µg/L	1	ND	ND
Chlorodibromoacetic Acid	µg/L	2	ND	ND
Dibromoacetic Acid	µg/L	1	ND	ND
Dichloroacetic Acid	µg/L	1	ND	ND

- Table A-2 includes regulated and unregulated EPA constituents, disinfectant byproducts, and microbiology constituents.
- Out of a total of 118 constituents identified in Table A-2, PFBS is identified at very low levels in SRP's surface water.
- The current standard for all Table A-2 constituents is Non-Detect.

*Excerpt of Table A-2 list of constituents which includes primary and secondary EPA regulated constituents, EPA unregulated constituents, and EPA disinfection byproducts that are recognized as constituents of concern and are prohibited from introduction into the CAP System. Highlighted constituent represents a constituent that is regularly detected in SRP's surface water.

Introduction Standards (Table A-2)

Constituent*	CAP Introduction Standard	Verde River Introduction Standard Exceedance	Salt River Introduction Standard Exceedance	Remarks
Perfluorobutanesulfonic acid (PFBS)	ND	Frequent	Frequent	Consistently detected in SRP's sampling locations in Salt and Verde Rivers at concentration levels well within the EPA's Health Advisory standard

*General Constituents and CAP Priority Constituents identified in Table A-2 of the Water Quality Guidance Document.

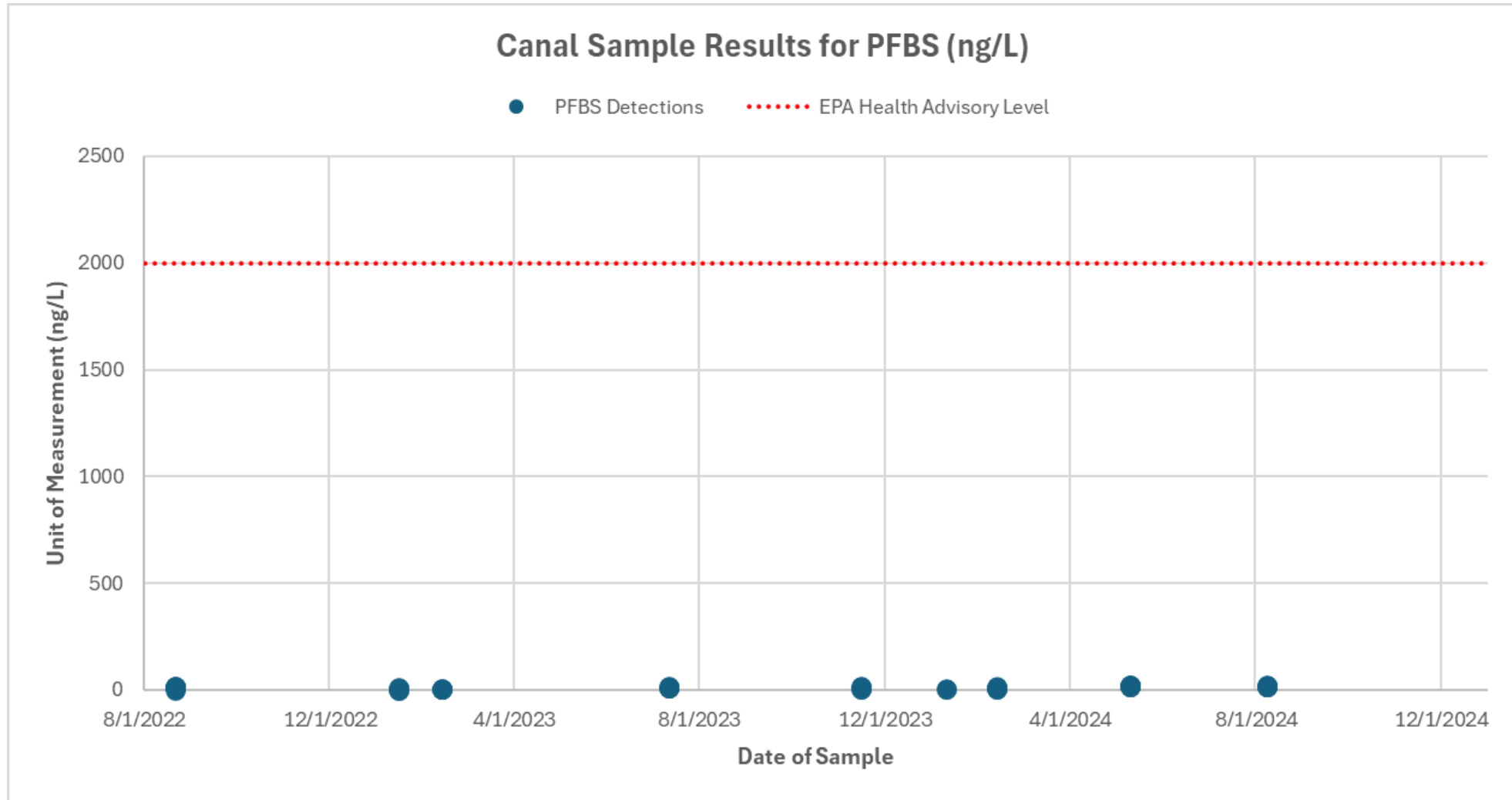
Perfluorobutane Sulfonic Acid (PFBS)

- PFBS has been detected in SRP water supplies (Salt and Verde Rivers) at low levels
- EPA Health Advisory Level set at 2,000 parts per trillion (ppt) in June 2022
 - PFBS detections have ranged from 2.6 ppt – 26 ppt in Salt and Verde Rivers
- PFBS regulations are evolving

Chemical	Maximum Contaminant Level (MCL)
PFOA	4.0 ppt
PFOS	4.0 ppt
PFHxS	10 ppt
HFPO-DA (GenX chemicals)	10 ppt
PFNA	10 ppt
Mixture of two or more: PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index of 1 (unitless)

$$\text{Hazard Index (1 unitless)} = \left(\frac{[\text{HFPO - DA}_{\text{ppt}}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFBS}_{\text{ppt}}]}{[2000 \text{ ppt}]} \right) + \left(\frac{[\text{PFNA}_{\text{ppt}}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFHxS}_{\text{ppt}}]}{[10 \text{ ppt}]} \right)$$

(Table A-2) - Perfluorobutane Sulfonic Acid (PFBS)

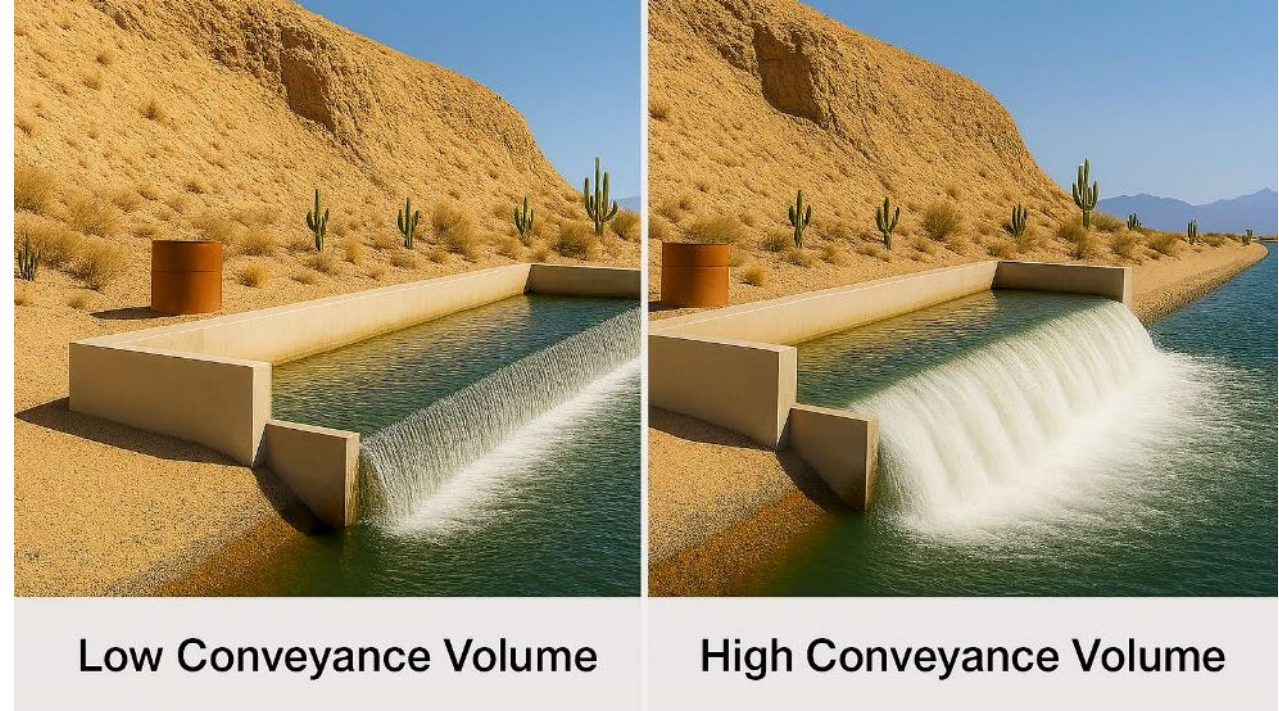


***CAP PFBS Introduction Standard:** Non-Detect (2 ng/L reporting limit)
PFBS detections have ranged from **2.6 ppt – 26 ppt** in Salt and Verde Rivers

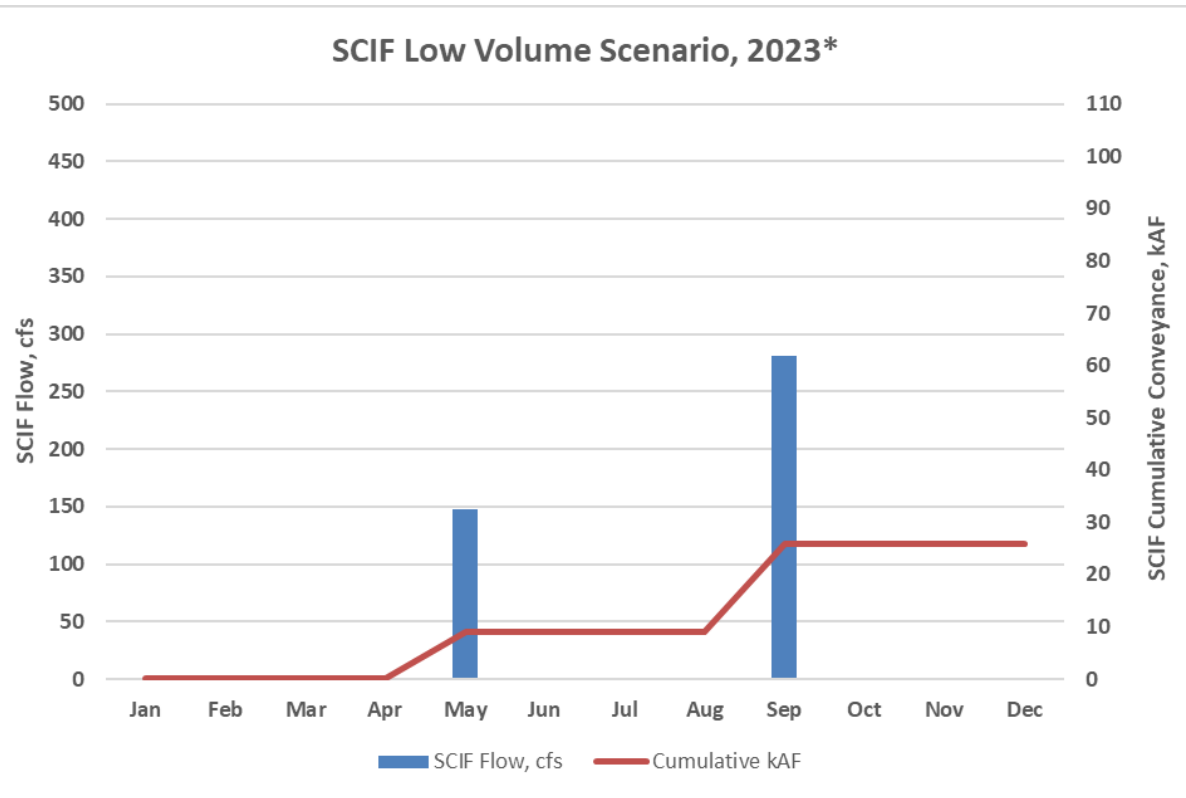
Water Quality Modeling

Water Quality Modeling - SCIF Conveyance Scenarios

- A “Bookend Approach” was used to select input years for CAP’s System-Wide Water Quality Model
- Two calendar years were chosen to represent high and low SCIF conveyance volumes entering the CAP system
- Designed to capture a range of scenarios at 1 million acre-feet of deliveries, comparing high and low SRP water volumes wheeled through CAP system



Water Quality Modeling – SCIF “Low Volume” Scenario



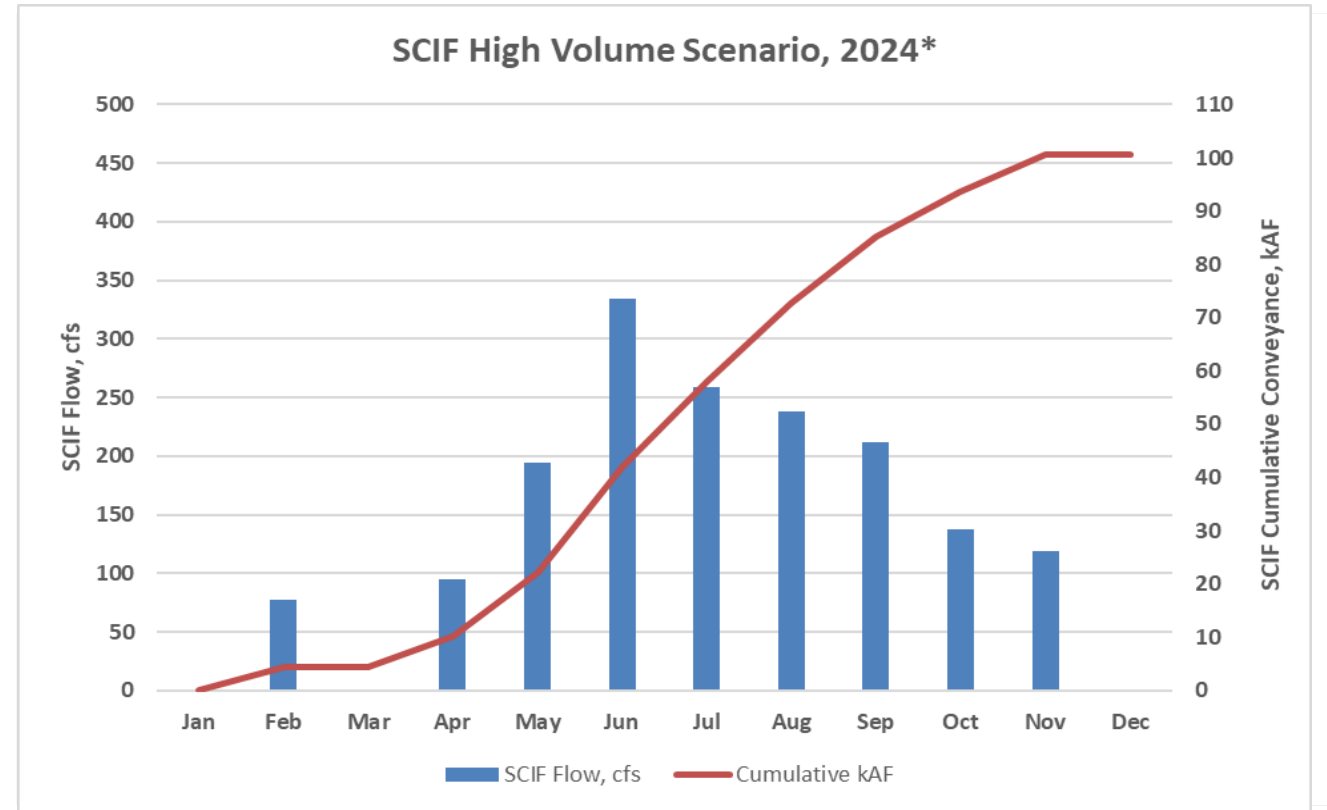
***SCIF flows were estimated using monthly water quality sampling data from head of the South Canal and CAP Canal to meet introduction and delivery standards identified in Table A-1 during 1 million acre-feet of annual CAP deliveries.**

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- 2023 represents a low volume year for introducing water via SCIF and wheeling through the CAP system due to water quality constraints.
- Despite low SCIF conveyance, runoff production in the Salt and Verde watersheds was exceptionally high.
- SCIF conveyance would have been limited by its ability to meet CAP water quality standards identified in Table A-1.
- Only a small volume of SRP surface water (26,000 acre-feet) could have been conveyed through CAP under a 1 million acre-feet delivery scenario.

Water Quality Modeling – SCIF “High Volume” Scenario

- 2024 represents a high volume year for conveying water through SCIF where water quality can consistently meet CAP’s introduction and delivery standards identified in Table A-1.
- This scenario represents a typical water year in SRP’s system compared to conditions in 2023.
- In 2024, approximately 100,000 acre-feet could have been conveyed through CAP under a 1 million acre-feet delivery scenario.



***SCIF flows were estimated using monthly water quality sampling data from head of the South Canal and CAP Canal to meet Introduction and Delivery Standards identified in Table A-1 during 1 million acre-feet of annual CAP deliveries.**



THANK YOU



CAP System-Wide Water Quality Model

January 2026

YOUR WATER. YOUR FUTURE.

Overview

- Model Development
- Model Calibration
- Baseline Simulations
- SCIF Simulations
- Key Takeaways

Model Development



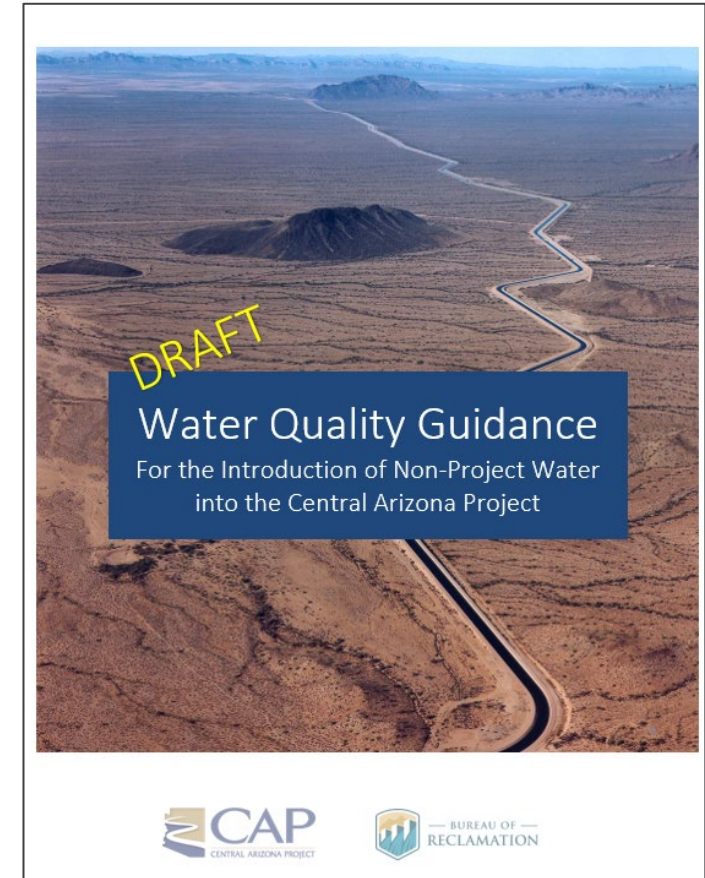
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Why a System-wide Model?

The 2017 SUA, which allows for wheeling of non-project water, directed Reclamation and CAWCD to establish uniform water quality standards for introduction of non-project water into the CAP System

- June 2018 - Task Force formed to fully develop numeric criteria for water quality parameters identified in consensus proposal
- October 2020 - CAP Water Transmission and RPA developed Water Quality Guidance Document
- March 2021 – Draft WQGD approved by CAP Board
- September 2025 – Changes by the United States approved by CAWCD Board

In the process of developing standards for the Guidance Document, it was determined that best approach to evaluating the impacts of blending non-project water in the CAP and comparing against the established Delivery Standards would be through a system-wide hydrodynamic and water quality model.



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System-Wide Water Quality Model

Model Uses

- *Wheeling Project Feasibility* – Explore operational scenarios to determine the potential water quality impacts and recommend adjustments
- *Initial Analysis* - Simulate the water quality effects of introducing non-project water supplies (wheeling) into the CAP System based on a 1MAF shortage condition
 - Compare model results to CAP baseline conditions and established Delivery Standards
 - Provide results to stakeholders and Reclamation
- *NEPA Support* - Evaluate the water quality effects of wheeling under a variety of supply conditions including 1.5, 1.25, 0.75 MAF and minimal CAP supplies.
 - Model results are provided in NEPA documentation

Model Selection: Requirements

- CAP geometry and features of canal, including Lake Pleasant
- Incorporate local attributes (meteorological, flow, and water quality data)
- Simulate various water supply conditions and wheeling introductions
- Include all CAP Table A-1 (Guidance Document) water quality constituents

CAP contracted with Black & Veatch (BV) to choose an appropriate model; then to populate and calibrate the model with CAP specific data



Model Selection: CE-QUAL-W2

BV selected CE-QUAL-W2

- CE: Corps of Engineers; QUAL: Water Quality; W2: Width averaged 2D
- 2D Model - best suited for relatively long and narrow waterbodies
- EPA recognized water quality model
- All available versions of W2 are non-proprietary and open source; over 2100 applications in 115 countries
- Developed in 1970s and is continually updated
- CAP has an ongoing contract with the model developer, Dr. Scott Wells (Portland State University), to assist in refining and improving the model

Model Calibration



Model Calibration

Calibration – Adjusting model computational values to improve accuracy and reliability, and ultimately its ability to reproduce “reality”

- Output is compared against measured data within same time frame – “paired data”
- CAP model is calibrated over a 10-year period (2015-2024)
- Model is validated and re-calibrated each year with new data to continually improve the accuracy of the model

Components of CE-QUAL-W2

- Over 930 lines (cards) of data that define how the model runs
 - Time steps
 - Heat Exchange/Evaporation
 - Friction Factors
 - Atmospheric Deposition
 - Light Extinction
 - Wind Sheltering
 - Algal and phytoplankton rates
 - Nutrient interactions
 - Sediment release rates

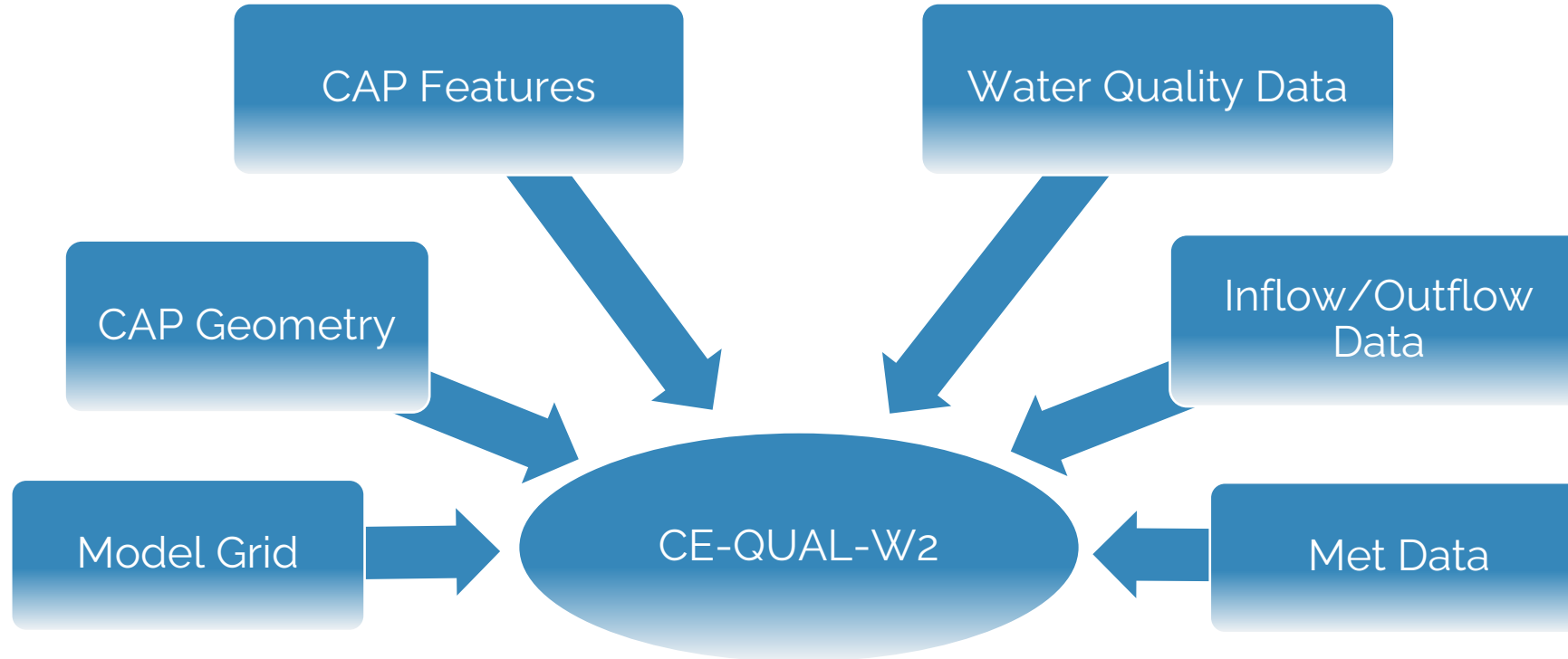
WZ - CSV file format		RC3				
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		"Cells to change based on simulation in red"				
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		"Dark blue indicates labels that are not read by model"				

GRID/NPROC/CLOSE DIALOG BOX		NwB	NBR	IMX	KMX	NPROC
		8	8	131	7	
IN/OUTFLOW		NTR	NST	Nlw	NwD	NGT
		0	0	0	0	
CONSTITUENTS		NGC	NSS	NAL	NEP	NBOD
		36	1	1	1	
MISCELLANEOUS		NDAY	SELECTC	HABTATC	ENVIRPC	AERATEC
		100	OFF	OFF	OFF	OFF
TIME CON		TMSTRT	TMEND	YEAR		
These are computed from formula in Column A-->		1.00	3653	2015		
diagnosis						
DLT CON		NDLT	DLTMIN	DLTINTER		
Time step control parameters		1	0.1	OFF		
DLT DATE		DLTD	DLTD	DLTD	DLTD	DLTD
Date of time step change in JDAY		1				
DLT MAX		DLTMAX	DLTMAX	DLTMAX	DLTMAX	DLTMAX
Maximum time step in seconds		60				
DLT FRN		DLTF	DLTF	DLTF	DLTF	DLTF
Fraction of maximum theoretical time step		0.9				
DLT LIMIT		P26	P27	P28	P29	P30
		wB1	wB2	wB3	wB4	wB5
VISC - Viscosity time step limitation ON or OFF		ON	ON	ON	ON	ON
CELC - Wave celerity time step limitation ON or OFF		ON	ON	ON	ON	ON
DLTADD - additional stability check to lower time step ON or OFF		ON	ON	ON	ON	ON
BRANCH GRID		BR1	BR2	BR3	BR4	BR5
US - upstream segment number of branch		2	24	46	63	
DS - downstream segment number of branch		21	43	60	74	
UHS - upstream boundary condition		0	0	0	0	
DHS - downstream boundary condition		0	0	0	0	
NLMIN # of layers		1	1	1	1	
SLOPE - actual slope		7.99E-05	8.43E-05	6.05E-05	7.85E-05	
SLOPEC - hydraulic equivalent slope (less than or equal to SLOPE)		7.99E-05	8.43E-05	6.05E-05	7.85E-05	

Components of CE-QUAL-W2



Model Grid

Water Bodies and Segments

- 13 Separate Models (Water Body)
 - Defined by canal reaches (pumping plant to pumping plant)
 - Lake Pleasant
- Model Segments
 - Allows us to define exact locations for hydrologic features
 - ~1,000 m in length



Flow Inputs

Calibration

- CAP Supply = Deliveries
- Flow for each of the 13 individual models is calculated using actual delivery data during each year of the 10-year calibration period
 - Model inflow = sum of all downstream outflows
 - Ensures enough water for that model segment and all downstream segments, while preserving the total CAP supply



Water Quality Data

Calibration

Colorado River

- Monthly historical measured water quality at Havasu intakes (MWP) for each year of the 10-year calibration period
 - Table A-1 parameters
 - Unverified statistical outliers removed
 - Missing data is replaced by interpolation or “like months”
- Daily water temperature from real-time sensors

Lake Pleasant/Agua Fria River

- Lake Pleasant receives canal water quality, which is then affected by lake processes and inputs (Agua Fria River), and is then discharged into the canal



Meteorological Data

Calibration

6 Parameters

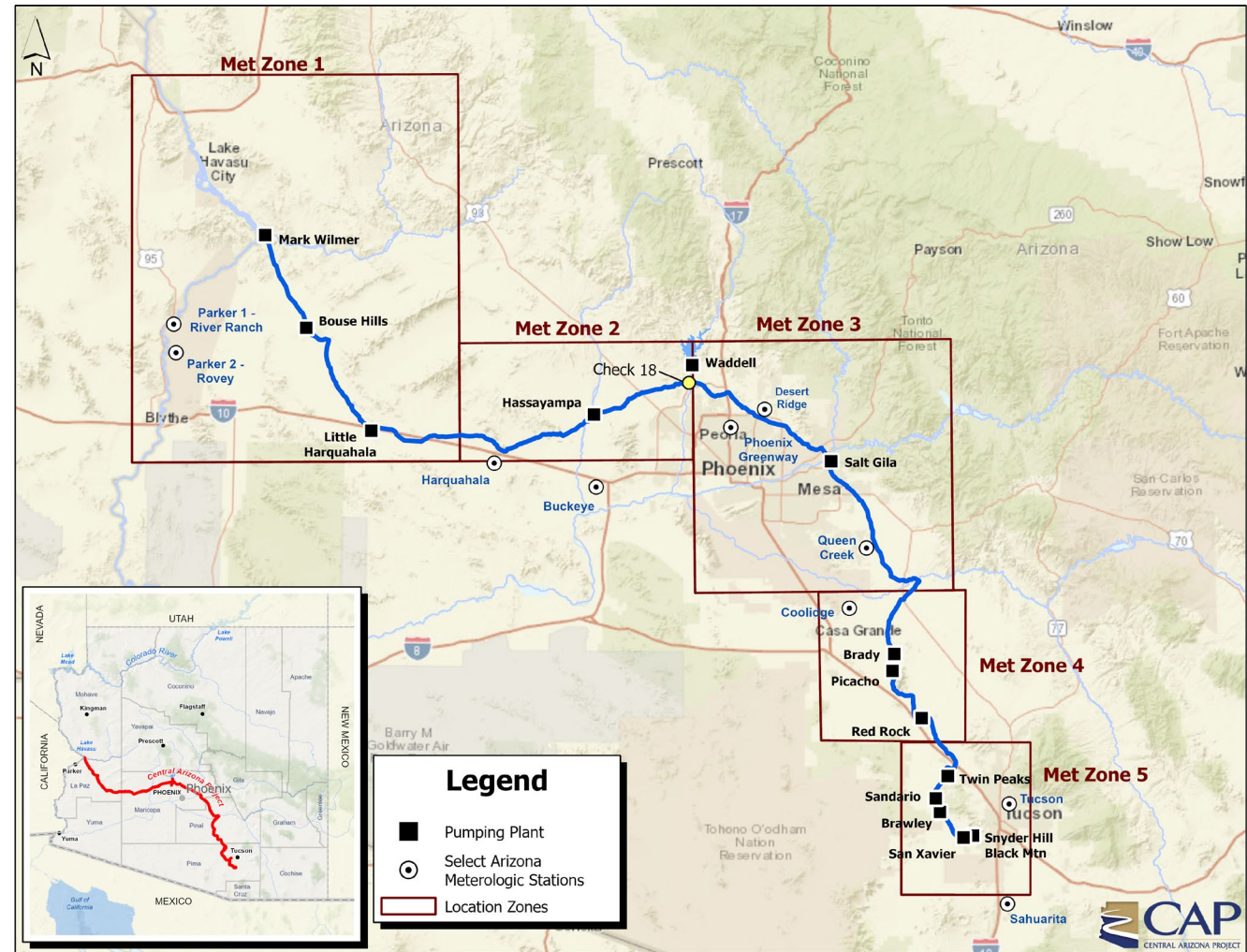
- Air Temperature
- Dew point
- Wind Speed
- Wind Direction
- Cloud Cover
- Solar Radiation

5 Canal Zones

- Data from two weather stations/zone
- Hourly data

2 Lake Pleasant Zones

- 15-minute data



Model Simulations



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Model Simulations

Simulation – Using the calibrated model to evaluate a specific operational or hydrologic condition and estimate the resulting water quality response.

- **CAP Baseline Simulations** - 10-year simulation that incorporates the annual historical meteorologic and water quality variability to estimate how we might expect water quality to respond to the specified Colorado River supply.
 - Isolates flow effects on water quality
- **Wheeling simulations** introduce additional flow and associated constituent loads to evaluate the resulting water quality response within the CAP system.



CAP Supply Scenarios

- 1,000,000 Acre-Foot Supply (668,000 acre-feet through SGL)
- 750,000 Acre-Foot Supply (500,000 acre-feet through SGL)
- "Minimal Supply" (350,000 acre-feet through SGL)



CAP Supply Scenario Assumptions

Assumptions

- The available CAP Supply is distributed to water users according to availability by contract priority.
- Exchange and conservation agreements are not considered.
- Spatial distribution across CAP turnouts is based on historical water user delivery locations.
- Temporal distribution is based on the use types: Water Treatment Plant, Other Direct Uses, On-Reservation Direct Use, USF, GSF, and Agricultural.
- Water users' available supplies were distributed based on priority of type of use.
- Lake Pleasant operations are adjusted to ensure adequate flow for downstream demand and maintain lake levels.
- Model inputs are mean monthly flow values

Baseline Model Simulations

Goal

- For a given flow (supply) scenario, the model is used to estimate spatial and temporal water quality responses throughout the CAP system

Approach

- The model incorporates observed CAP water quality and meteorological data from the past 10 years to capture a range of environmental variability
- Flows corresponding to the specified CAP supply scenario are applied
 - Monthly flow values are repeated annually for each year of the 10-year simulation period to isolate the influence of flow while preserving historical variability in water quality and meteorology



Results





- Flow and water quality are input as monthly values, so results are evaluated on a monthly basis.
- 10 years of simulation results provides 10 values for each month, which allows us to calculate monthly medians and percentile statistics


Baseline Model Simulation Results


[SCIF- Power BI](#)


aquaportal.cap-az.com





 Scott Bryan


 Dashboards


 Map

 List

 Location

 Data Set

 Chart

 Export

Water Quality Model Results – SCIF

SCIF PRELIMINARY MODEL SIMULATIONS

As part of the evaluation to determine the feasibility of introducing (wheeling) Salt/Verde water into the CAP through the SRP-CAP Interconnect Facility (SCIF), various scenarios were simulated with the CAP System-wide Water Quality Model.

CAP utilizes the 2D hydrodynamic model known as CE-QUAL-W2 (Portland State University), which has been populated with CAP geometry and features, and calibrated with historic CAP water quality, flow, and meteorological data. Baseline simulations are run at specified Colorado River supplies, then wheeled water is added to determine water quality responses.

The following pages show results of the preliminary model simulations. **It is important to note that these are feasibility simulations and they do not represent the Initial Analysis as detailed in the Water Quality Guidance Document (WQGD), and these results are not meant to imply approval of the SCIF Project.**

REPORT GUIDE

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SCIF Simulations



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Feasibility ≠ Initial Analysis

- These simulations **do not** represent the Initial Analysis and the results **do not** imply approval of the SCIF project
- Data provided by SRP for the SCIF project introduces two potential inflow scenarios based on measured water quality below Granite Reef Dam
- Goal of this feasibility modeling effort is to determine if scenarios provided by SRP could meet the Delivery Standards
- Detailed operational approaches will continue to be developed with SRP, CAP, Reclamation, and Stakeholders during this phase and in the NEPA process



Modeling Scenarios for SCIF

- It was recognized early that SCIF would not meet the Delivery Standards if modeled at full SCIF capacity (500 cfs), so operational restrictions were needed on SCIF flow introduced into the CAP
- SRP provided two scenarios that "bookend" historical water quality over the past 10 years
 - "Good" water quality year (2024) allows for a relatively high-volume introduction
 - "Fair/Poor" water quality year (2023) restricts introduction to a lower volume
- Monthly SCIF inflow is adjusted to meet Delivery Standards

SCIF Wheeling Assumptions

- Wheeling volumes are additive to the CAP available supply for each scenario
 - SCIF Operating Scenario 1 (~100,000 acre-feet annually)
 - SCIF Operating Scenario 2 (~26,000 acre-feet annually)
- SCIF Deliveries
 - No storage; Inflow = Delivery (each month)
 - 32% of SCIF volume delivered at participant turnouts upstream of SCIF
 - 68% of SCIF volume delivered at participant turnouts downstream of SCIF
- No adjustments to Lake Pleasant operations

SCIF Simulations

Scenarios

- SCIF Operating Scenario 1 (~100,000 acre-feet annually)
- SCIF Operating Scenario 2 (~26,000 acre-feet annually)

Approach

- Start with the baseline model for each individual CAP supply scenario
- Water quality and inflow/outflow from the selected SCIF scenario is added
 - Water quality and flow are replicated each simulation year, which isolates the effects of SCIF



Results


- 10 data points for every month from which statistics can be applied
- Compare against Delivery Standards
- Compare against CAP Baseline conditions


SCIF Model Simulation Results


aquaportal.cap-az.com


SCIF- Power BI





**Dashboards**


**Map**





**List**


**Location**

**Data Set**

**Chart**

**Export**

 Scott Bryan



Water Quality Model Results – SCIF

SCIF PRELIMINARY MODEL SIMULATIONS

As part of the evaluation to determine the feasibility of introducing (wheeling) Salt/Verde water into the CAP through the SRP-CAP Interconnect Facility (SCIF), various scenarios were simulated with the CAP System-wide Water Quality Model.

CAP utilizes the 2D hydrodynamic model known as CE-QUAL-W2 (Portland State University), which has been populated with CAP geometry and features, and calibrated with historic CAP water quality, flow, and meteorological data. Baseline simulations are run at specified Colorado River supplies, then wheeled water is added to determine water quality responses.

The following pages show results of the preliminary model simulations. **It is important to note that these are feasibility simulations and they do not represent the Initial Analysis as detailed in the Water Quality Guidance Document (WQGD), and these results are not meant to imply approval of the SCIF Project.**

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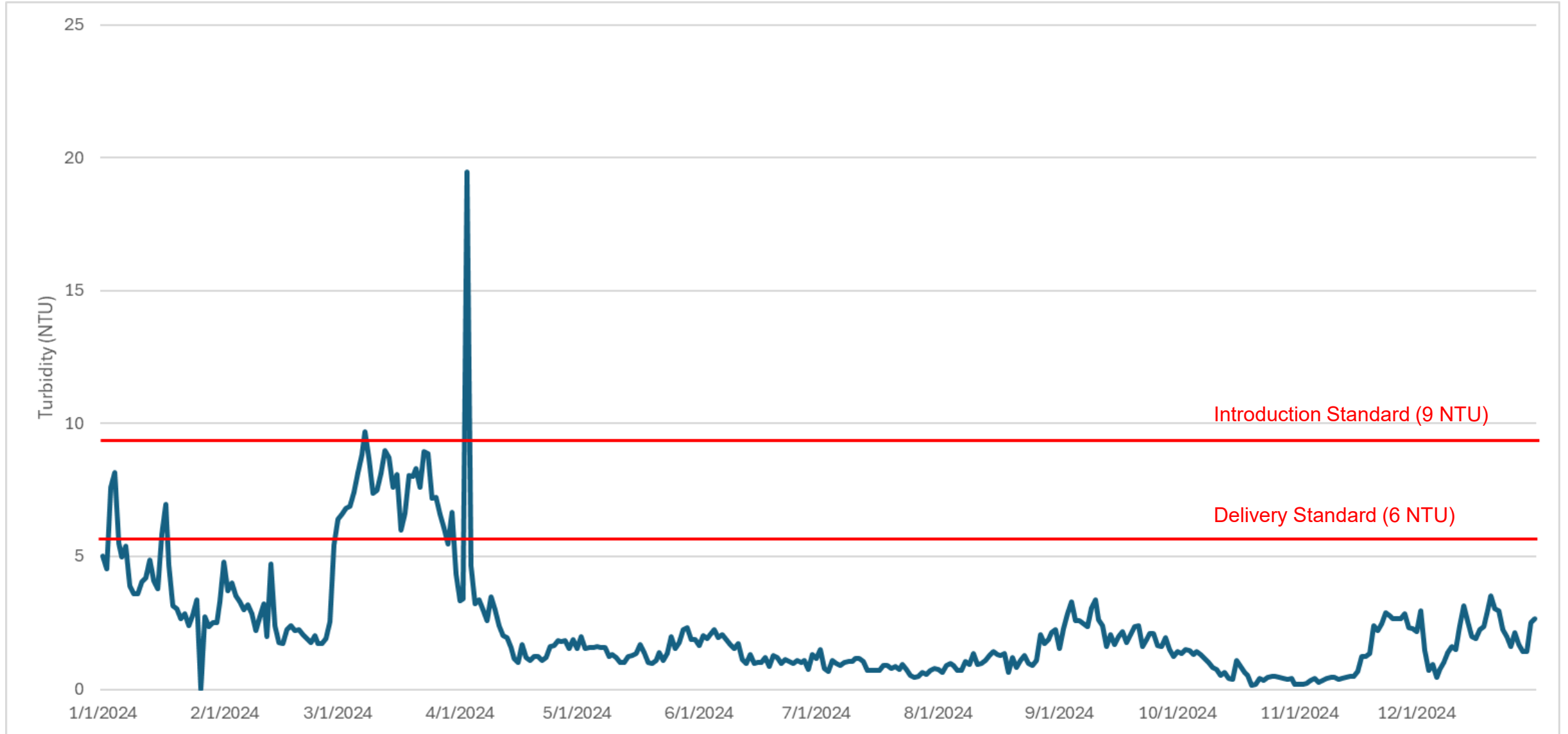
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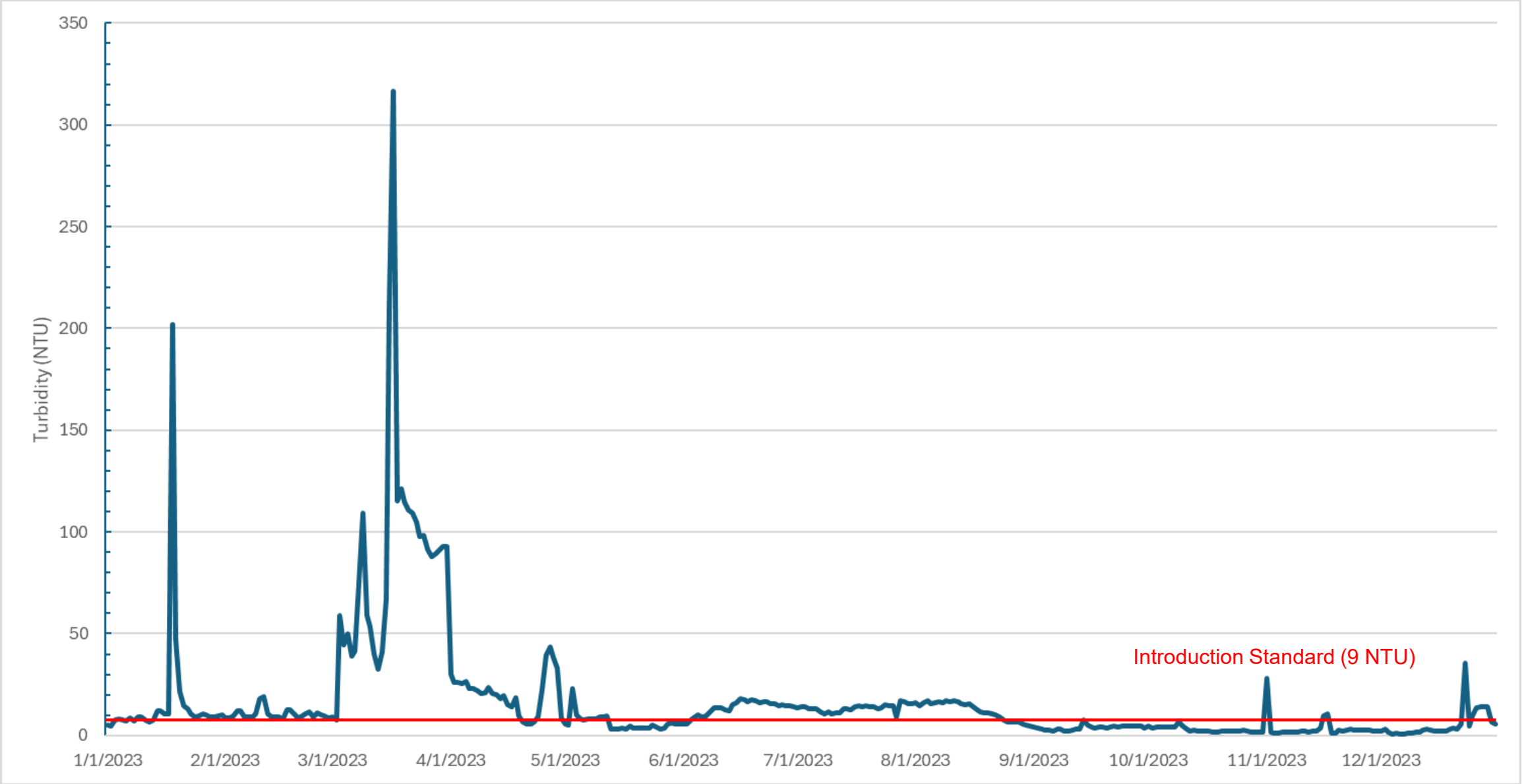
Turbidity

- Turbidity is not an input, it is calculated (derived constituent) in the System-Wide model
- Because turbidity is highly variable and typically event driven, it is difficult to accurately simulate
 - Currently working with Dr. Wells to better estimate turbidity
- For evaluating surface water sources, like the SCIF, turbidity will be monitored in real-time, prior to introduction, and averaged over a 24-hour period.
 - When values exceed the Introduction Standard in a 24-hour period, wheeling will not be allowed

SCIF Unblended Turbidity - Scenario 1 (2024)



SCIF Unblended Turbidity - Scenario 2 (2023)





Key Takeaways:

Meeting #1

1. The SCIF Project is complex and requires dialogue regarding the tools designed to implement wheeling projects.
2. Key logistical and operational parameters will continue to be developed throughout the NEPA and Wheeling Contract processes.
3. This series of meetings seeks to establish a common knowledge base to enable productive conversations regarding SCIF Water Quality impacts.
4. Additional forums for stakeholder input will be available throughout the development and environmental approval processes.

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Key Takeaways:

Meeting #2

1. The SCIF Project is complex and requires dialogue regarding the tools designed to implement wheeling projects.
2. Key logistical and operational parameters will continue to be developed throughout the NEPA and Wheeling Contract processes.
 - **SRP's proposal largely complies with Water Quality Standards through variable operations.**
 - **SCIF operations would not comply with the current Introduction Standard for PFBS.**
3. This series of meetings seeks to establish a common knowledge base to enable productive conversations regarding SCIF Water Quality impacts.
 - **Blended Water Quality Modeling results have been made available through AquaPortal.**
 - **Meeting #3 will be a discussion of potential methods to address consistency with water quality requirements.**
4. Additional forums for stakeholder input will be available throughout the development and environmental approval processes.

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Questions?

Virtual attendees may submit
questions to questions@cap-az.com

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Next Meeting: Roundtable

Hybrid | February 11, 2026 | 9am – 11am

Central Arizona Project, Lake Mead Conference Room

Additional questions/comments can be sent
to questions@cap-az.com.

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