

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD COLORADO RIVER BASIN REGION

Office

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ORDER R7-2021-0050



Order Information

Dischargers: Irrigated Agricultural Lands Dischargers in Imperial Valley
Coalition Group: IID-ICFB Irrigated Lands Coalition
County: Imperial County
Prior Order(s): R7-2015-0008, R7-2019-0056

I, PAULA RASMUSSEN, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on December 14, 2021.

*Original signed by Cassandra
Owens for*

PAULA RASMUSSEN
Executive Officer

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER R7-2021-0050

GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES OF WASTE FROM IRRIGATED AGRICULTURAL LANDS
FOR
DISCHARGERS THAT ARE MEMBERS OF A COALITION GROUP
IN THE IMPERIAL VALLEY
IMPERIAL COUNTY

The California Regional Water Quality Control Board, Colorado River Basin Region (Colorado River Basin Water Board) hereby makes the following Findings:

1. Discharges from irrigated agricultural lands, including leaching or runoff of irrigation water and/or stormwater, may carry wastes, including but not limited to salts, nutrients, pathogens, sediments, and pesticides that can affect the quality of waters of the state.
2. The Imperial Valley, located in Imperial County, has approximately 480,000 acres of farmable irrigated agricultural lands. Additionally, Imperial Valley contains approximately 1,300 miles of open agricultural drains. The Imperial Valley agricultural area is depicted in **Figure 1**.
3. Waters of the state are or may be affected by waste discharges from irrigated agricultural lands in the Imperial Valley including the following surface waters: the Alamo River, the New River, Imperial Valley Drains and the Salton Sea. Additionally, groundwaters are or may be affected by these waste discharges, specifically the Imperial Hydrologic Unit.
4. Water Code section 13260, subdivision (a)(1), requires that any person discharging wastes or proposing to discharge wastes (other than into a community sewer system), which could affect the quality of the waters of the state, must file a report of waste discharge (ROWD). The appropriate regional water board then prescribes requirements for the discharge or proposed discharge of wastes pursuant to Water Code section 13263. General waste discharge requirements may be prescribed for discharges produced by the same or similar operations, involving the same or similar types of wastes, and requiring the same or similar treatment standards. (Water Code, section 13263, subdivision (i).) Covered dischargers must enroll in the general waste discharge requirements in lieu of submission of an ROWD to obtain individual waste discharge requirements.

5. This Order consists of general waste discharge requirements (General WDRs) regulating discharges of wastes from commercial irrigated agricultural lands in the Imperial Valley to prevent and address water quality impacts to waters of the state. These General WDRs regulate owners/operators of irrigated agricultural lands (collectively, Dischargers) with the potential to discharge waste that may impact the quality of the waters of the state. This Order also establishes substantive and procedural requirements for third-party representatives formed to comply with this Order (Coalition Groups) and only regulates Dischargers who are also members of a Coalition Group.
6. Dischargers were previously regulated under Order R7-2015-0008, *Conditional Waiver of Waste Discharge Requirements for Agricultural Wastewater Discharges and Discharges of Wastes from Drain Operation and Maintenance Activities Within the Imperial Valley* (2015 Conditional Waiver). The 2015 Conditional Waiver was set to expire in 2020, but was renewed by Order R7-2019-0056 until January 15, 2021 and by Order R7-2020-0035 until January 15, 2022. This Order supersedes the 2015 Conditional Waiver, except for enforcement purposes.

Scope and Applicability

7. This Order regulates discharges, potential discharges, or proposed discharges of waste from "Irrigated Agricultural Lands," which means lands irrigated to produce crops or pasture for commercial purposes, and includes but is not limited to, lands planted for row, vineyard, pasture, field and tree crops, and nurseries. This includes land for which any of the following are true:
 - a. The landowner or operator holds a current Operator Identification Number/Permit Number for pesticide use reporting; or
 - b. The landowner or operator files federal taxes using federal Department of Treasury Internal Revenue Service Form 1040, Schedule F "Profit or Loss from Farming"; or
 - c. The crop is sold, including but not limited to (1) an industry cooperative, (2) harvest crew/company, or (3) a direct marketing location, such as Certified Farmers Markets.
8. This Order only regulates discharges from Irrigated Agricultural Lands in the Imperial Valley, as depicted in **Figure 1** of this Order.
9. Discharges regulated under this Order include surface water discharges (e.g., stormwater runoff, irrigation return water, tailwater) and subsurface discharges (e.g., tile water and groundwater seepage).

10. This Order only regulates landowners or operators¹ who are members of a Coalition Group. Dischargers not represented by a Coalition Group must submit an ROWD to the Colorado River Basin Water Board and obtain individual WDRs from the Colorado River Basin Water Board.
11. This Order does not apply to the following:
 - a. Discharges from Irrigated Agricultural Lands that are adequately regulated under other Colorado River Basin Water Board regulatory programs/permits, including but not limited to concentrated animal feeding operations (CAFOs), cannabis cultivation, parks, golf courses, and cemeteries.
 - b. Discharges from agricultural activities not engaged in for profit, such as hobby growing or gardening.
 - c. Discharges from Irrigated Agricultural Lands where all growing operations are conducted within buildings or in completely enclosed areas with no potential to discharge waste to waters of the state.
 - d. Discharges regulated under National Pollutant Discharge Elimination System (NPDES) permits, pursuant to Clean Water Act section 402.
 - e. Discharges of dredged or fill material regulated under Clean Water Act sections 401 and 404.

Definitions

12. "Irrigated Agricultural Lands" has the meaning set forth in Finding 7.
13. "Waste" means sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with the human habitation, or of human or animal origin, or from producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal. (Water Code, section 13050, subdivision (d).)
14. "Waters of the state" means any surface water or groundwater, including saline waters, within the boundaries of the state. (Water Code, section 13050, subdivision (d).)

¹ Because this Order regulates both landowners and operators, but does not require enrollment of both parties, the provisions of this Order require that the Coalition Group member provide notification to the non-member responsible party of enrollment under this Order.

15. “Discharger(s)” means the owner(s) or operator(s) of Irrigated Agricultural Lands who discharge, have the potential to discharge, or propose to discharge waste, which could directly or indirectly affect the quality of waters of the state.
16. “Coalition Group” means any third-party entity (e.g., group of Dischargers, nonprofit organization, government agency, etc.) that is formed to assist Dischargers to comply with this Order. Coalition Groups can be formed based on a defined geographical area, watershed, or other appropriate grouping, such as growing similar types of crops.
17. “Compliance Program” means a nonpoint source pollution control program that requires the implementation of management practices and specifies the monitoring and reporting activities that will be performed to demonstrate compliance with this Order.
18. Unless otherwise specified, all terms used in this Order shall have the same definition as those set forth in division 7 of the Water Code.

Program Background

19. On June 27, 2001, the Colorado River Basin Water Board adopted an amendment to the Water Quality Control Plan for the Colorado River Basin Region (Basin Plan) that established a Sedimentation/Siltation Total Maximum Daily Load (TMDL) for the Alamo River and the Imperial Valley Drains tributary to the Alamo River. The Alamo River is a water of the United States and the main tributary to the Salton Sea, California’s largest inland lake. The TMDL establishes silt/sediment load allocations to control agricultural wastewater discharges and discharges from drain operation and maintenance activities within the Alamo River Subwatershed. It also requires Dischargers to develop, submit, and implement water quality improvement plans to address the impairments.
20. On June 26, 2002, the Colorado River Basin Water Board adopted an amendment to the Basin Plan that established a Sedimentation/Siltation TMDL for the New River and the Imperial Valley Drains tributary to the New River. The New River is a water of the United States and the second largest tributary of the Salton Sea. The TMDL established load allocations to control agricultural wastewater discharges and discharges from drain operation and maintenance activities within the New River Subwatershed.
21. In 2001, the Imperial County Farm Bureau (ICFB) established a “TMDL Voluntary Compliance Program” to assist the Imperial Valley farming community comply with the Sedimentation/Siltation TMDLs for the Imperial Valley.
22. Water Code section 13245 of the Water Code requires that any Basin Plan or Basin Plan amendment must be approved by the State Water Resources Control Board (State Water Board) before it can become effective. Federal regulations

also require that amendments establishing TMDLs be approved by the U.S. Environmental Protection Agency (USEPA). The Alamo River Sedimentation/Siltation TMDL was approved by the State Water Board on February 19, 2002, the Office of Administrative Law (OAL) on May 3, 2002, and USEPA on June 28, 2002. The New River Sedimentation/Siltation TMDL was approved by the State Water Board on November 19, 2002, OAL on January 13, 2003, and USEPA on March 31, 2003.

23. On January 19, 2005, the Colorado River Basin Water Board approved an amendment to its Basin Plan that established a Sedimentation/Siltation TMDL for the Niland 2, P, and Pumice Drains, which discharge directly into the Salton Sea. This amendment also established a valley-wide conditional discharge prohibition to regulate the quality of agricultural wastewater discharges from irrigated agricultural lands in the Imperial Valley.
24. On January 20, 2011, the Colorado River Basin Water Board amended the Basin Plan to establish a similar conditional discharge prohibition regulating agricultural discharges in the Palo Verde Valley and Palo Verde Mesa. However, on January 10, 2012, the State Water Board disapproved the proposed Basin Plan amendment, in part because there were no fees associated with the discharge prohibition and the amendment would have resulted in a disparate fee structure for discharges from irrigated agricultural lands across the state. This action resulted in the Colorado River Basin Water Board's subsequent adoption of a waiver of waste discharge requirements for agricultural discharges in the Palo Verde Valley and Palo Verde Mesa, and directed the Board's approach to regulating the Irrigated Agricultural Lands program in the Colorado River Basin Region.
25. On January 15, 2015, the Colorado River Basin Water Board adopted the 2015 Conditional Waiver, which regulated discharges from irrigated agricultural lands in the Imperial Valley and included a requirement to pay state fees.
26. Upon adoption of the 2015 Conditional Waiver, Imperial Irrigation District (IID or District) and the ICFB agreed to organize and manage a coalition group and implement a compliance program for individual growers. The ICFB revised its "Voluntary TMDL Compliance Program" to meet the requirements of the 2015 Conditional Waiver, renamed it the "IID-ICFB Coalition," and enrolled its members into the IID-ICFB Coalition. IID agreed to manage state fee collection and payment for IID-ICFB Coalition Members. All dischargers that enrolled under the 2015 Conditional Waiver enrolled as members of the IID-ICFB Coalition.
27. To comply with the 2015 Conditional Waiver and ensure attainment of water quality objectives, the IID-ICFB Coalition developed a compliance program in which members were required to:
 - a. Complete an individual Water Quality Management Plan (Farm Plan);

- b. If applicable, complete an individual Drain Water Quality Management Plan (Drain Plan);
 - c. Install, implement, and maintain management practices that protect water quality from agricultural activities on every enrolled parcel;
 - d. Update parcel information as often as necessary (i.e., when leases or crops change, management practices are changed, etc.). At a minimum, parcel information was required to be reviewed and updated annually;
 - e. Attend outreach and education trainings organized by the IID-ICFB Coalition; and
 - f. Pay annual membership dues to the ICFB and pay state fees through an annual invoice from IID.
28. The IID-ICFB Coalition also developed a Monitoring and Reporting Program and a Quality Assurance Project Plan, both of which were approved by the Colorado River Basin Water Board's Executive Officer, and pursuant to which the IID-ICFB Coalition monitored water quality and reported on behalf of the members of the IID-ICFB Coalition.
29. On February 7, 2018, following a lengthy public hearing, the State Water Board adopted revisions to the Central Valley Regional Water Quality Control Board's (Central Valley Water Board) *Waste Discharge Requirements General Order for Growers Within the Eastern San Joaquin River Watershed that are Members of the Third-Party Group* in Order WQ 2018-0002 (Eastern San Joaquin Order). The State Water Board's order establishes a model for all regional water boards to follow in their subsequent orders to reduce pollutants from irrigated agriculture around the state. The Eastern San Joaquin Order directs all regional water boards to revise the permits in their irrigated lands regulatory programs within the next five years to be consistent with the precedential requirements in the State Water Board order. This Order complies with the State Water Board's directive.
30. On November 14, 2019, the Colorado River Basin Water Board adopted Order R7-2019-0056, *Short-term Renewal of Order R7-2015-0008*, which renewed the 2015 Conditional Waiver through January 15, 2021. No other terms of the 2015 Conditional Waiver were changed.
31. On November 12, 2020, the Colorado River Basin Water Board adopted Order R7-2020-0035, *Short-term Renewal of Order R7-2015-0008*, which renewed the 2015 Conditional Waiver through January 15, 2022. No other terms of the 2015 Conditional Waiver were changed.

32. Upon adoption of these General WDRs, the IID-ICFB Coalition has agreed to develop and implement a Compliance Program that meets the requirements of this Order.

Hydrological Setting

33. The Imperial Valley is located in the Colorado Desert region of the Sonoran Desert. The climate is characterized by hot, dry summers, occasional thunderstorms, and gusty high winds with sandstorms. It is one of the most arid areas in the United States, with an average annual rainfall of about 3 inches and temperatures in excess of 100°F for more than 100 days per year. The average January temperature is 54°F and the average July temperature is 92°F. Summer temperatures frequently exceed 115°F. Evapotranspiration rates for the Imperial Valley can exceed 6 feet per year and, in hot summer months, can be one-third inch per day.
34. The Imperial Valley is part of the Imperial Hydrologic Unit. The Basin Plan establishes municipal, agricultural, and industrial supply as the beneficial uses for groundwater in this unit.
35. The Alamo and New Rivers and the Imperial Valley Drains are within the Salton Sea Transboundary Watershed. The main feature of the watershed is the Salton Sea as California's largest inland lake.
36. The Alamo River Subwatershed encompasses approximately 340,000 acres within the Imperial Valley. Land uses within the watershed consist chiefly of irrigated farmland, with minor amounts of urban and industrial land uses, fish farms, solar installations, and confined animal feeding operations. The Alamo River has its headwaters about 0.6 river-miles south of the International Boundary. The Alamo River flows northward roughly 60 river-miles through the Imperial Valley, eventually emptying into the southeast corner of the Salton Sea, just southwest of the community of Niland. The flow at the International Boundary is less than two (2) cubic feet per second (cfs) [less than 1,460 acre-feet per year (AFY)]. The flow of the Alamo River rapidly increases as it travels through the Imperial Valley, where it is fed by over 900 miles of agricultural drains. In 2019, the mean daily flow of the Alamo River at its outlet into the Salton Sea ranged from 384 to 1070 cfs (278,188 to 775,159 AFY) and averaged 767cfs (555,683 AFY) (waterdata.usgs.gov). The Alamo River is the Salton Sea's largest tributary, contributing about 50% of the Sea's annual inflows, and therefore has a major influence on the water quality of the Sea. The Alamo River flows from an elevation of about 10 feet above mean sea level at the International Boundary to an elevation of about 231.8 feet below mean sea level at the Salton Sea (depending on the level of the Salton Sea, which fluctuates based on agricultural return flow discharges and seasonal evapotranspiration rates).

37. The Alamo River Subwatershed can be further divided into five “drainsheds,” each of which includes a major drain (Rose, Holtville, Central, South Central and Verde drains), which in turn has many small tributary drains. There are a total of 71 minor drains in the Alamo River Subwatershed.
38. The New River Watershed drains approximately 175,000 acres from Imperial Valley, and 300,000 acres from the Mexicali metropolitan area and Mexicali Valley, Mexico. Due to the 2010 Easter Earthquake, approximately 80,000 acres of farmland in the Mexicali Valley are currently out of production. The New River carries agricultural runoff, partially treated and untreated municipal and industrial wastewater, stormwater, and urban runoff from Mexicali Valley northward across the International Boundary into the United States. As the river travels through Imperial Valley, it is fed by: (a) agricultural runoff from about 400 miles of agricultural drains (accounting for about 2/3 of river flow), (b) treated municipal and industrial wastewater, and (c) stormwater and urban runoff. In 2019, the mean daily flow of the New River at the International Border with Mexico ranged from 56 to 249 cfs (40,569 to 180,388 AFY), averaged 88 cfs (63,982AFY) (waterdata.usgs.gov) and consists of urban runoff, treated municipal wastes, untreated and partially treated industrial wastes, and agricultural runoff from the Mexicali Valley. Agricultural runoff makes up approximately 50 to 55% of New River flow at the International Border. Flows in the New River at the Border with Mexico have been reduced by as much as 40% due to a number of factors, including reduction of agricultural runoff and municipal wastewater discharged into the New River and its tributaries in Mexico. In 2019, mean daily flow of the New River at its outlet to the Salton Sea ranged from 225 to 708 cfs (163,001 to 512,909 AFY) and averaged 440 cfs (319,100) (waterdata.usgs.gov).
39. The New River Subwatershed in the Imperial Valley can be divided into four “drainsheds,” each of which has a major drain (Fig, Greenson, Rice, and Rice 3 Drains) and 51 minor drains.
40. Recent surface water quality data for the Imperial Valley agricultural area is detailed in the Information Sheet - **Attachment A**.
41. All of the major soil associations within the Imperial Valley are within the “wet” series of poorly drained soils due to their low permeabilities (less than 0.5 inches per hour). The Imperial Valley is dominated by three general soil associations: Imperial (nearly level, moderately well drained silty clay), Imperial-Holtville-Glenbar (nearly level, moderately well drained and well drained silty clay, silty clay loam, and clay loam), and Meloland-Vint-Indio (nearly level, well drained fine sand, loamy very fine sand, fine sandy loam, very fine sandy loam, loam and silt loam) (Zimmerman 1981).
42. Imperial Valley Groundwater Basin is bounded on the east by the Sand Hills and on the west by the impermeable rocks of the Fish Creek and Coyote Mountains. To the north the basin is bounded by the Salton Sea, which is the discharge point

for groundwater in the basin. The physical groundwater basin extends across the border into Baja California where it underlies a contiguous part of the Mexicali Valley.

43. The basin has two major aquifers, separated at depth by a semi-permeable aquitard that averages 60 feet thick and reaches a maximum thickness of 280 feet. The aquifers consist mostly of alluvial deposits of late Tertiary and Quaternary age. Average thickness of the upper aquifer is 200 feet with a maximum thickness of 450 feet. The lower aquifer averages 380 feet thick with a maximum thickness of 1,500 feet. As much as 80 feet of fine-grained, low permeability prehistoric lake deposits have accumulated on the nearly flat valley floor and cause locally confined aquifer conditions. The San Andreas, Algodones, and Imperial faults are present within the basin, but data on whether these faults control groundwater movement is lacking. The only known barriers to groundwater flow are the lake deposits of clay that obstruct downward seepage of surface waters in the central and western part of the basin.
44. Groundwater resources in the Imperial Valley can generally be divided into three principal areas described as the Central Irrigated Area, the East Mesa, and the West Mesa. The Irrigated Agricultural Lands addressed by this Order are in the Central Irrigated Area. Groundwater data is limited in the Central Irrigated Area because the upper 300 feet, is generally believed to be of poor quality and well yields are quite low.
45. Groundwater quality data for the Imperial Valley agricultural area is described in the Information Sheet - **Attachment A**.
46. Drinking water in the Imperial Valley is imported from the Colorado River via the All American Canal and the IID canal system. For domestic users located within a municipality, Colorado River water is treated and distributed by publicly owned treatment works. Domestic users that are not able to receive treated water are required to purchase drinking water from a private provider and, upon providing proof of a reliable drinking water supply, can receive raw Colorado River water from IID for non-potable uses.

Imperial Valley Irrigation and Drainage Systems

47. Approximately 480,000 acres within the Imperial Valley are considered farmable. IID provides irrigation and drainage services to Irrigated Agricultural Lands in the Imperial Valley. The major crops in the valley, based on the amount of land in production, are alfalfa, Sudan grass, Bermuda grass, and vegetables.
48. Surface (gravity) or flood irrigation is the dominant irrigation method in the Imperial Valley. Two types of surface irrigation are practiced: furrow irrigation and border irrigation. For both furrow and border irrigation methods in the IID service area, water is delivered to an individual field's head canal through an IID turnout

control structure, which regulates the amount of water ordered by the farmer. The irrigation water is first diverted by IID at the Colorado River through the Imperial Dam. The water then flows by gravity for 80 miles through the All American Canal to the IID service area, then through one of three major IID canals (East High Line, Central Main, and Westside Main) where it is diverted to one of the numerous IID lateral canals, which total over 1,400 miles in length, and is delivered to the farmer's turnout. Each field's head canal, constructed of dirt or concrete lined, contains numerous turnouts which, when opened, conveys irrigation water via gravity onto the field. Each field is leveled precisely with a main slope and side slope to distribute the water uniformly across the field to irrigate the crops. Any excess water then flows to the field's regulated drain box where it then dumps to an IID drain ditch.

49. In furrow irrigation, plastic irrigation tubes and/or siphon tubes, 1 ½ inches to 3 inches in diameter, deliver the water to small channels called furrows from a small temporary holding basin. The furrows are spaced 20 to 60 inches apart and guide the water across the field. Furrows are necessary for crops that are planted in straight lines that require cultivating and harvesting of that crop or to keep the crop from being covered with water. The soil displaced to create the furrow creates a raised bed between each furrow. Water traveling down each furrow infiltrates the bottom and sides of the furrow plus the raised bed where the crop is planted. In many instances, irrigation water can also be delivered to the furrows through a moveable aluminum or plastic pipe, either by gravity or pressurized by a pump. These "gated" pipes contain small slide gates normally spaced 40 inches apart to fit the width of the furrows and allows the water for each furrow to be regulated more evenly.
50. Border irrigation is accomplished by running water between two raised borders, which are essentially small earthen berms. The area between the two borders is called a border strip, which normally varies from 30 to 300 feet in width and from 300 to 2,600 feet in length. In many instances, the side-fall slope is removed in the border strip through temporary land leveling with only the main-fall remaining. This allows the irrigation water to spread out evenly across the border strip. Irrigation water is delivered to each border strip through numerous turnouts in the field's head canal. Border irrigation is generally used for perennial crops such as alfalfa, grass and grain crops that can withstand temporary flooding, and tree crops.
51. IID is the designated drain operation and maintenance agency for the Valley, although there are a handful of farmers who maintain the drains riparian to their farmland.
52. Silt and many types of vegetation tend to clog the drains, increase erosion, and cause channels to meander, causing sloughing of the drain banks and thus, increased turbidity in the drains. Drains are typically cleaned by dredging with a

tracked excavator. This results in short-term extreme increases in turbidity as the drain sidewalls and drain bottom are disturbed. Mechanical removal of unwanted vegetation in the drain channel improves the flow characteristics of the drain and results in less erosion of the drain, as erosion increases turbidity. Proper drain cleaning allows the beneficial plants such as grasses and low growing perennial broadleaf plants to grow more vigorously, which holds and binds the soil on the drain banks. Total coverage of the drain banks with beneficial plants also make it more difficult for unwanted plants to become established. Selective chemical weed control of the unwanted plants is used to maintain a solid ground cover of beneficial plants. This reduces the amount of mechanical drain cleaning to maintain the drain, which can be the major cause of turbidity in the drain.

53. Following the State Water Board's adoption of Order WR-2002-0013 in October 28, 2002, which approved a long-term water transfer from IID to the San Diego County Water Authority (SDCWA), IID conducted a study to identify practices that affect selenium (Se) concentrations in agricultural drains within the southern portion of the Salton Sea watershed and published the results of its study in a report titled *Practices that Result in Selenium Discharges in the Imperial Valley of California; December 2011*, hereafter referred to as the "IID Selenium Report."
54. The IID Selenium Report found that nearly all of the selenium occurring in the Imperial Valley is imported from the upper Colorado River Basin, where water drains from selenium-rich shale. Selenium is mobilized with water from irrigation-related activities, from rainfall infiltration and runoff, or from point sources. The report also concluded that selenium imported from the Upper Colorado River Basin is not being sequestered within IID's operational facilities or soils, and IID is not generating additional selenium from sources within the District. Additional conclusions from the IID Selenium Report were:
 - a. Operational spill water dilutes in-drain selenium concentrations. Operational spill is water that is used to transport irrigation water to its destination but is not actually used for irrigation. It is fresh, unused water that is discharged into the drain system.
 - b. Crops with high evaporative concentration rates concentrate selenium in drainsheds drains.
 - c. High-efficiency irrigation practices, such as drip irrigation used in orchards, concentrate selenium in drainsheds and drains.
 - d. Drain cleaning practices may result in temporary increases or spikes of selenium in drains.
 - e. Field sumps may pump selenium-rich tilewater to drains or to the Salton Sea.

- f. Management of seasonal wetlands and ponds may liberate selenium that would otherwise be sequestered in these systems during their operational phases.
55. The IID Selenium Report further made the following recommendations to better characterize the available selenium and land uses in the Imperial Valley:
 - a. Collect additional data from selected drainsheds throughout the IID Service Area to specifically identify the temporal effect of operational spill, and to identify the amount, timing, and duration needed to provide adequate dilution to meet a desired and/or feasible in-drain selenium concentration target.
 - b. Develop a more detailed list of crops with their associated range of selenium concentrations and evaporative concentration rates. Once this data is available, more detailed monitoring programs could be developed. For example, a monitoring program could be developed to use U.S. Bureau of Reclamation Lower Colorado River Accounting System data (or a comparable data source) to identify crop and soil conditions in a drainshed that have a high potential for elevated selenium concentrations in the drains.
 - c. Sample the Q-drain more frequently to more precisely identify temporal patterns of selenium concentrations and the land use factors that influence these concentrations. At the same temporal frequency, collect additional data on soils, irrigation management, cropping patterns, and tile drainage. The resulting dataset could be used to determine the effect of orchard management on the Q-drain selenium dynamics and, perhaps, be generalized to other similar drainsheds for selenium management within the IID service area.
 - d. Maintain and compile detailed records for all drain cleaning events. Data could then be used to determine whether drain cleaning activities oxidize or mobilize soil selenium, causing temporary peak selenium concentrations within a drainshed. If data confirm that drain maintenance does affect selenium concentrations, recommendations could be made to minimize operational disturbance of drain bottom sediments during periods of the year when wildlife are using drains for critical life-history functions.
 - e. If possible, maintain records on sump pumping and conduct grower interviews on typical sump pumping practices to determine whether this activity causes elevated selenium concentrations in drainsheds. If it is determined that sump pumping activities affect drain water selenium concentrations significantly, management practices (e.g., dilution of sump water prior to discharge) to minimize this effect could be developed.

- f. To more fully understand the relationships between aquatic habitat management practices and in-drain selenium concentrations, drainsheds dominated by aquatic habitats could be monitored to quantify specific practices leading to selenium spikes. Alternative land use management techniques may be developed to accomplish both habitat production and selenium reduction goals.
56. Provisions F.1, F.2, and F.3 of the 2015 Conditional Waiver required IID to implement the recommendations contained in the IID Selenium Report. A summary of the requirements and a brief update on the current status of each requirement is listed below:
 - a. A technical report in the form of a work plan with milestones and a time schedule for implementation of the recommendations contained in the IID Selenium Report (see Finding 55). The work plan was submitted to and approved by the Colorado River Basin Water Board's Executive Officer on March 30, 2015. The workplan includes the following objective tasks:
 - i. Collect additional data from select drainsheds throughout the IID service area to identify the temporal effect of operational discharge on in-drain selenium concentrations.
 - ii. Develop a more detailed drainshed monitoring program focused on variables which may directly or indirectly influence selenium, such as soils, crop rotation, and cropping patterns using the same drains identified in the previous study.
 - iii. Sample specific drains (Q Drain, Poe Drain, Trifolium 14A and 18 Drains) extensively to identify temporal patterns and factors influencing selenium concentrations.
 - iv. Evaluate the drain maintenance impact to mobilizing or oxidizing selenium concentrations.
 - v. Evaluate sump pumps and/or tile water pipe discharges located in various common soil types and cropping patterns to determine impacts to overall in-drain selenium concentration balances.
 - vi. Evaluate existing data sets for selenium levels in permanent wildlife habitats to understand selenium concentration relationships in varying media.
 - b. A Quality Assurance Project Plan (QAPP) to implement the approved work plan. The QAPP for IID's Selenium Provisions Work Plan was submitted in August 2017 and approved by the Colorado River Basin Water Board's Executive Officer in March 2018. The QAPP describes the quality

assurance and quality control procedures associated with the Selenium Provisions Work Plan monitoring activities that will be implemented by IID to help monitor and improve the understanding of selenium and the quality of water within the Imperial Valley watersheds in an attempt to protect the beneficial uses of waterbodies that receive agricultural drainage flows.

- c. Implementation of the QAPP and submittal of the results in accordance with the approved time schedule. This is underway. An Annual Progress Report was submitted to the Colorado River Basin Water Board on January 31, 2020. The following activities are being implemented in accordance with the QAPP:
- i. A total of 16 conductivity probes have been installed in various locations the following drains around the Salton Sea including the Trifolium 23 drain, Poe Drain, Pumice Drain and Q drain.
 - ii. A Hydroprobe and Velocity Probe are being used to provide information on dilution from operational spill. Information gathered includes drain flow rates, electrical conductivity, ambient water quality parameters, and sampling for total and dissolved selenium.
 - iii. Canal water within the Trifolium Extension at Poe Road is being sampled twice a month for total and dissolved selenium and ambient water quality parameters. A conductivity probe at this location provides 15-minute conductivity readings. Canal water is assumed to contain the baseline selenium concentration in the Imperial Valley's water supply.

Section E.5.e of this Order requires the completion of the Selenium Provisions Work Plan.

Discharge Characteristics

57. Surface water discharges from irrigated lands (tailwater) served by IID are collected in surface water drains and flow by gravity into either the Alamo River or the New River, and ultimately to the Salton Sea. Water that is applied to agricultural fields and allowed to infiltrate for the purpose of leaching salts below the root zone is collected in subsurface tile drains and discharged to surface water drains.
58. Irrigated Agricultural Lands in the Imperial Valley are graded to carry irrigation water across fields and into a tailwater ditch. Although there is limited rainfall in the region, stormwater runoff from Irrigated Agricultural Lands is also discharged into surface receiving waters.

59. Discharges from Irrigated Agricultural Lands in Imperial Valley may contain high levels of salts, nutrients, pathogens, sediments, and pesticides that can adversely impact receiving water beneficial uses.

Basin Plan and Related Regulatory Requirements

60. The Basin Plan, which was adopted on November 17, 1993 and last amended on January 8, 2019, designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Pursuant to Water Code section 13263, subdivision (a), waste discharge requirements must implement the Basin Plan and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241.
61. The Basin Plan specifies the following beneficial uses for the Alamo River, New River, and Imperial Valley Drains:
- a. Water Contact Recreation (REC I),
 - b. Water Non-Contact Recreation (REC II),
 - c. Warm Freshwater Habitat (WARM),
 - d. Wildlife Habitat (WILD), and
 - e. Preservation of Rare, Threatened, or Endangered Species (RARE).
62. The Basin Plan's water quality objectives for the Alamo River, New River and Imperial Valley Drains are summarized in **Attachment A** – Information Sheet.
63. The Basin Plan specifies the following beneficial uses for the Salton Sea:
- a. Aquaculture (AQUA),
 - b. Industrial Service Supply (IND),
 - c. REC I,
 - d. REC II,
 - e. WARM,
 - f. WILD, and
 - g. RARE.

64. The Basin Plan's water quality objectives for the Salton Sea are summarized in **Attachment A** – Information Sheet.
65. Irrigated Agricultural Lands in the Imperial Valley are located in the Imperial Hydrologic Unit within the Imperial Valley Planning Area. The Basin Plan designates the following beneficial uses for groundwater in the Imperial Hydrologic Unit:
 - a. Municipal and Domestic Supply (MUN), and
 - b. IND.
66. The Basin Plan's water quality objectives for groundwater in the Imperial Valley are summarized in **Attachment A** – Information Sheet.
67. This Order establishes WDRs pursuant to division 7, chapter 4, article 4 of the Water Code for discharges that are not subject to regulation under Clean Water Act section 402 (33 U.S.C. § 1342). These General WDRs implement narrative and numeric water quality objectives for groundwater and surface waters established by the Basin Plan and other applicable state and federal laws and policies.
68. These General WDRs constitute a Nonpoint Source Implementation Program consistent with the requirements of State Water Board's *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (State NPS Policy). The State NPS Policy recognizes that nonpoint source pollution typically occurs from diffuse sources such as runoff, precipitation, atmospheric deposition, drainage, seepage, or hydrologic modification, and that prevention and minimization of pollution from these sources is the most successful form of control. The purpose of these General WDRs is to minimize or eliminate waste discharges from Irrigated Agricultural Lands to waters of the state that may be causing or contributing to exceedances of applicable federal or state water quality objectives.
69. Consistent with the State NPS Policy, Dischargers comply with these General WDRs by implementing and improving management practices and complying with the other conditions, including monitoring and reporting requirements. This Order requires Dischargers to address impacts to water quality by evaluating the effectiveness of management practices (e.g., waste discharge treatment and control measures) and take action to improve management practices to reduce discharges. However, implementation of management practices is not a substitute for meeting water quality objectives. If a Discharger fails to address impacts to water quality by taking the actions required by this Order, including evaluating the effectiveness of their management practices and improving as needed, the Discharger may then be subject to progressive enforcement and possible monetary liability. Consistent with the State NPS Policy, the Colorado

River Basin Water Board finds that there is a high likelihood that the General WDRs will attain their ultimate purpose of attaining water quality objectives and protecting beneficial uses.

70. The Colorado River Basin Water Board has considered the factors found in Water Code section 13241 in issuing these General WDRs, including:
 - a. Past, present, and probable future beneficial uses of water;
 - b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;
 - c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
 - d. Economic considerations;
 - e. The need for developing housing within the region; and
 - f. The need to develop and use recycled water.
71. The estimated annual costs to comply with this Order were considered in an economic analysis which is included in **Attachment A** – Information Sheet. One-time costs were annualized over a five-year period. All recurring annual costs were included in the annual estimate despite what year they begin occurring. The annual costs for compliance with this Order are estimated to range from \$6 to \$10 per acre per year. Significant uncertainties prevent the precise estimation of program costs, including: the total number of monitoring sites required to evaluate water quality conditions, the nature and extent of management practices required to address exceedances of water quality objectives, labor rates, contracting fees, and efficiencies as the program matures.
72. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order supports this policy by requiring Dischargers to implement management practices to meet water quality objectives and to monitor and report on the effectiveness of the management practices.
73. Water Code section 13267 authorizes the Colorado River Basin Water Board to require technical and monitoring reports. Regional Water Board staff have developed the Monitoring and Reporting Program (MRP), **Attachment B**, for the IID-ICFB Coalition and its members. The technical reports required by the MRP are necessary to evaluate compliance with the terms and conditions of this Order and to ensure protection of waters of the state. The burden, including costs, of this MRP bears a reasonable relationship to the need for that information and the benefits to be obtained from that information.

74. Pursuant to Water Code section 13263, subdivision (g), the discharge of waste is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

303(d) Listed Impairments

75. Section 303(d) of the federal Clean Water Act requires states to identify surface waterbodies that do not meet water quality objectives. Each state must submit an updated list of impaired waterbodies every two years to the USEPA (303(d) List), as well as establish priority rankings for waterbodies on the list and develop TMDLs for these waterbodies. A TMDL is a pollutant and surface waterbody specific control plan that must account for all sources of the pollutant that caused the waterbody to be listed.
76. In some cases, alternative pollution control requirements can be used to address waterbody impairments in lieu of a formal TMDL. Regional water boards have wide latitude in determining how to address impaired waterbodies, within certain legal parameters. Impaired waterbodies may be addressed through existing regulatory tools and mechanisms, known as “TMDL alternatives,” such as individual or general WDRs, enforcement actions, and interagency agreements. Federal regulations specifically recognize that “other required control measures” may obviate the need for a TMDL when such requirements are expected to result in the attainment of the applicable water quality standard in a reasonable period of time. (40 C.F.R. § 130.7, subd. (b)(1)(iii).) USEPA often refers to such a TMDL alternative as a “4b alternative.” (*USEPA Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, dated July 29, 2005, at pp. 53-56.)
77. Several waterbodies have been listed as impaired for several different pollutants pursuant to Clean Water Act section 303(d) within the Imperial Valley. These waterbodies include but are not limited to the Alamo River, New River, Imperial Valley Drains, and Salton Sea. Agriculture is identified as one of the potential sources of several of the impairments because these waterbodies are listed as impaired by nutrients, pathogens, pesticides, sediment, and toxicity.
78. A total of six TMDLs have been adopted for surface water bodies in the Imperial Valley. Four of them are for the New River to address pathogens, sedimentation/siltation, trash, and dissolved oxygen. One is for the Alamo River to address sedimentation/siltation. Another is for Imperial Valley Drains to address sedimentation/siltation.
79. Sedimentation/siltation is a potential pollutant of concern from discharges from Irrigated Agricultural Lands. The three TMDLs approved to date for sedimentation/siltation in the New River, the Alamo River, and Imperial Valley Drains were adopted in 2003, 2002, and 2005, respectively. The sedimentation/siltation TMDLs set the following load allocations:

- a. A total sediment load of 115,063.9 tons per year for discharges into the New River, which corresponds to a total suspended solids (TSS) concentration of 243 milligrams per liter (mg/L).
 - b. A total sediment load of 156, 577 tons per year for discharges into the Alamo River, which corresponds to a TSS concentration of 180 mg/L.
 - c. A total load allocation of 5,547.2 tons per year for discharges from Imperial Valley Drains into the Salton Sea, which corresponds to a TSS concentration of 200 mg/L.
80. The ICFB “Voluntary TMDL Program” was originally designed to address sediment impairments, with the added benefit of addressing the nutrients impairment of the Salton Sea. Further, the ICFB also revised its program in 2013 to explicitly address water quality impacts from the use of diazinon and chlorpyrifos, with approval from the Colorado River Basin Water Board on September 18, 2013.
81. This Order builds upon the success of the ICFB-IID Coalition’s program and IID’s efforts and recent changes to better manage its drain operation and maintenance activities. It also requires Dischargers to continue to implement management practices to address Clean Water Act section 303(d) impairments that are the result of discharges from Irrigated Agricultural Lands, including toxicity and the impacts from organochlorine pesticides. Further, it establishes comprehensive monitoring and reporting programs to ensure compliance with this Order and compliance with adopted TMDLs.

Antidegradation Analysis

82. State Water Board Resolution 68-16, entitled *Statement of Policy with Respect to Maintaining High Quality Waters in California* (Resolution 68-16), generally prohibits the Colorado River Basin Water Board from authorizing discharges that will result in the degradation of high quality waters, unless it is demonstrated that any change in water quality will (a) be consistent with maximum benefit to the people of the state, (b) not unreasonably affect beneficial uses, and (c) not result in water quality less than that prescribed in state and regional policies (e.g., the violation of one or more water quality objectives). Further, any activities that result in discharges to such high quality waters are required to use the best practicable treatment or control (BPTC) of the discharge necessary to avoid pollution or nuisance and to maintain the highest water quality consistent with the maximum benefit to the people of the state.
83. High quality waters are surface waters or areas of groundwater that have a baseline water quality better than required by water quality control plans and policies.

84. The baseline for this determination is generally 1968, the date of adoption of Resolution 68-16. In the context of a nonpoint source control program for agricultural discharges, a water body by water body and pollutant by pollutant determination of the quality as of the baseline of 1968 is impractical and not required by applicable law. “Instead, regional water boards must conduct a general assessment of the existing water quality data that is reasonably available.” (Eastern San Joaquin Order, p. 78.) The Colorado River Basin Water Board has limited historic water quality data for Imperial Valley. Additional data will become available as the monitoring and reporting requirements of these General WDRs are implemented.
85. These General WDRs include conditions and performance standards that will minimize any degradation to waters of the state. Some limited degradation to high quality waters may occur as a result of discharges from Irrigated Agricultural Lands subject to this permit. Such limited degradation is:
- a. *Consistent with maximum benefit to the people of the state.* Agriculture is a significant generator of economic activity and employment in the area and provides food for the region and beyond. (See Section III of Attachment A – Information Sheet.) Limited degradation of high quality waters to accommodate agricultural activity is therefore consistent with the maximum benefit of the people of the state. However, there are significant societal costs associated with agricultural activity where waterbodies have been allowed to degrade below water quality objectives through historic practices. These costs include the burdens associated with nitrate contamination of drinking water. Existing data on exceedances of nitrate objectives in the groundwater in the area covered by Irrigated Agricultural Lands in the Imperial Valley are inconclusive but suggest that widespread nitrate contamination of groundwater from Irrigated Agricultural Lands found in other parts of the state is not necessarily present. With regard to surface water, although the affected waterbodies in the Imperial Valley are not sources of drinking water, they have been placed on the 303(d) list for several constituents, as described in Findings 77-79. This Order addresses environmental and societal costs associated with exceedances of water quality objectives, as discussed in subsection (b) below.
 - b. *Will not unreasonably affect beneficial uses and will not result in water quality less than that prescribed in state and regional policies.* These General WDRs address the health, environmental, and social costs associated with agricultural discharges by prohibiting discharges that will cause or contribute to exceedances of water quality objectives, unreasonably affect applicable beneficial uses, or cause or contribute to a condition of pollution or nuisance. To detect exceedances and ensure that appropriate management practices are implemented to address exceedances, the General WDRs require extensive monitoring and

reporting as stated in Finding 87 below. The fact that exceedances and degradation may continue for a finite period of time consistent with a compliance schedule while Dischargers implement the requirements of the General WDRs, including the requirements of water quality restoration plans, is consistent with Water Code section 13263's allowance for a time schedule for dischargers to achieve water quality objectives and is not a violation of Resolution 68-16. The General WDRs also require sampling of on-farm drinking water wells to ensure that users of the wells are not drinking water exceeding nitrate contamination health levels.

86. The BPTC requirements of Resolution 68-16 are met through a combination of upfront planning and implementation at the farm level; regional monitoring and assessments to determine whether trends in degradation are occurring; and regional planning and on-farm implementation when trends in degradation are identified. Initially, Dischargers need to conduct an on-farm evaluation to determine whether their management practices are protective of water quality. Dischargers must also prepare and implement a farm-specific irrigation and nitrogen management plan. Through the process of learning about effective management practices, evaluating their own practices, and implementing improved practices, Dischargers are expected to achieve BPTC, where applicable. The State Water Board determined in the Eastern San Joaquin Order that the types of requirements that have been incorporated into this Order constitute BPTC.
87. This Order also requires Dischargers to implement monitoring and assessment programs for both surface water and groundwater. These monitoring and assessment programs are required to determine compliance with water quality objectives and whether any trends in water quality improvement or degradation are occurring. If trends in such degradation are identified that could result in impacts to beneficial uses, a water quality restoration plan must be prepared by the Coalition Group(s). The plan must identify management practices that will be implemented to address exceedances of water quality objectives or trends in degradation and include an evaluation of the effectiveness of those practices in addressing the degradation. Failure to implement practices or address the exceedances or degradation in accordance with the schedule proposed in the approved plan may result in further direct regulation by the Colorado River Basin Water Board, including, but not limited to, regulating the individual Discharger directly through WDRs for individual discharges or taking other progressive enforcement actions.

California Environmental Quality Act

88. Adoption of these General WDRs constitutes a "project" pursuant to the California Environmental Quality Act (CEQA), Public Resources Code, section

21000 et seq. The Colorado River Basin Water Board is the lead agency for this project under CEQA.

89. On January 15, 2015, the Colorado River Basin Water Board adopted the 2015 Conditional Waiver, waiving WDRs for discharges of waste from Irrigated Agricultural Lands in the Imperial Valley and adopted a programmatic Negative Declaration under CEQA (2015 Negative Declaration) under Resolution R7-2015-0014.
90. The 2015 Negative Declaration describes the potential environmental impacts associated with implementation of water quality management practices, construction of monitoring wells, and impacts to agricultural resources (e.g., loss of production of prime farmland). This Order is substantially similar to the 2015 Conditional Waiver and continues the program, with the only difference being the addition of new or revised monitoring and reporting requirements.
91. An addendum to the 2015 Negative Declaration (2021 Addendum) was prepared to address any potential environmental impacts that could result from the new or revised program requirements. The 2021 Addendum concluded that the new or revised requirements will neither result in any new significant environmental impacts nor substantially increase the severity of previously-disclosed impacts. Nor are there substantial changes in the surrounding circumstances which would require major revisions to the 2015 Negative Declaration or significant new information, as that term is used in CEQA. Therefore, the 2015 Negative Declaration for the 2015 Conditional Waiver constitutes the environmental analysis under CEQA for this Order and no subsequent environmental document is required pursuant to California Code of Regulations, title 14, section 15162.

Public Participation

92. On October 12, 2021, the Colorado River Basin Water Board conducted a public workshop on these General WDRs.
93. The Colorado River Basin Water Board has notified interested agencies and persons of its intent to adopt this Order and provided them with an opportunity for a public hearing and to submit comments.
94. On December 14, 2021, the Colorado River Basin Water Board, in a public meeting, heard and considered all comments pertaining to this Order.

IT IS HEREBY ORDERED, pursuant to sections 13263 and 13267 of the Water Code, that Orders R7-2015-0008, R7-2019-0056, and R7-2020-0035 are rescinded upon adoption of this Order, except for enforcement purposes, and in order to meet the provisions contained in division 7 of the Water Code and regulations adopted thereunder, Dischargers and Coalition Group(s) shall comply with the following:

A. Coverage Requirements

1. **Obtaining Coverage Under the Order.** These General WDRs apply to discharges or potential discharges of waste from Irrigated Agricultural Lands as described in Findings 7 through 11. Dischargers who are already members of a Coalition Group are automatically covered under this Order. The Coalition Group must obtain a Notice of Confirmation from its members regarding regulatory coverage under this Order within one year from the effective date of this Order, and the Coalition Group shall report receipt of the Notice of Confirmation with its first annual membership report due no later than December 31, 2022. Dischargers who are not members of a Coalition Group must submit an ROWD and apply for individual WDRs.
2. **Requirement for Coverage.** A Discharger obtains coverage under this Order as a member of an approved Coalition Group. By joining a Coalition Group, the Discharger agrees to be represented by the Coalition Group. Any Order requirements not fulfilled by the Coalition Group are the responsibility of the member.
3. **Electronic Notice of Intent.** To complete coverage under these General WDRs, an electronic Notice of Intent (eNOI) must be completed on GeoTracker. Completion of eNOIs shall occur as follows:
 - a. The Colorado River Basin Water Board, in coordination with the State Water Board's Geotracker Unit, will create eNOIs for members of the IID-ICFB Coalition from a membership list provided to the Colorado River Basin Water Board from the IID-ICFB Coalition that includes all of the necessary information.
 - b. Existing Dischargers who are not members of the IID-ICFB Coalition at the time that the IID-ICFB Coalition membership list is provided to the Colorado River Basin Water Board must complete and submit an eNOI directly to GeoTracker, or work with the Colorado River Basin Water Board and/or the IID-ICFB Coalition to complete and submit an eNOI **within 1 year** of adoption of this Order. A Notice of Confirmation must also be signed by the member and received by the IID-ICFB Coalition **within 1 year** of adoption of this Order.
 - c. New dischargers shall submit a completed eNOI within at least 30 days before the discharge is to commence, unless permission for a later date has been granted by the Colorado River Basin Water Board's Executive Officer. A Notice of Confirmation must be signed by the member and received by the Coalition Group prior to any discharge of waste.
 - d. eNOIs shall be updated at least once a year if there is a change in property ownership, grower contact information, email contact information, or if the

parcels farmed by a Coalition Group member change. The revised information shall be updated in the Member's GeoTracker account.

- 4. Notice of Confirmation.** The Coalition Group shall obtain a Notice of Confirmation from each member that has met the requirements for Coalition Group membership and coverage under this Order. The Notice of Confirmation shall include a statement certifying that the member is aware of the requirements of this Order and of the member's responsibility to comply and shall be signed by the member. The Coalition Group shall maintain a copy of each signed Notice of Confirmation and make it available to the Colorado River Basin Water Board upon request. The Coalition Group shall report whether it has received a Notice of Confirmation from each new or existing member in the annual membership report. If the Colorado River Basin Water Board determines that coverage under this Order is not appropriate for any Discharger, the Executive Officer will inform the Discharger in writing and may request that the Discharger submit an ROWD to obtain an individual permit for the discharge of waste.
- 5. Notice to Non-Member Landowner/Operator.** As part of the NOC, Members must provide certification that they have provided written notice to any responsible non-Member parties of the Member's enrollment under this Order and of the requirements of this Order (a responsible non-Member is a landowner whose parcel has been enrolled by an operator-Member under this Order or an operator who farms a parcel that has been enrolled by a landowner-Member). If the Member is a landowner that leases their land, the Member must provide the name and contact information of the lessee.
- 6. Confirmation of Membership.** For members of a Coalition Group, coverage under this Order is automatically terminated if confirmation of membership in the Coalition Group is not received from the Coalition Group during the annual membership update required by Section E.3 below.
- 7. Transferability.** Membership in the Coalition Group and coverage under this Order is not transferable to any person except after completion of the requirements set forth in Provision A.3.c above.
- 8. Termination of Coverage.** Dischargers may terminate coverage under this Order by providing a written notice to the Colorado River Basin Water Board's Executive Officer and the Coalition Group at least 30 days prior to the termination date. At a minimum, the written notice must include the reason for terminating coverage (e.g., transfer of ownership, Discharger applied for and obtained individual WDRs, discharge was discontinued, etc.) and the date discharge will be terminated. The Discharger shall continue to comply with this Order until the Colorado River Basin Water Board notifies the Discharger in writing that coverage has been terminated. All discharges of waste to surface and groundwaters shall cease before the date of termination, and any discharges on

or after this date shall be considered in violation of the Water Code, unless other WDRs or waivers of WDRs regulate the discharge.

B. Prohibitions

1. The discharge of waste to waters of the state, other than from Irrigated Agricultural Lands as defined in Findings 7 through 11 of this Order, is prohibited.
2. The discharge of hazardous waste, as defined in California Code of Regulations, title 23 section 2521, subdivision (a), is prohibited.
3. The discharge of waste (e.g., fertilizers, fumigants, pesticides) into groundwater via backflow through a water supply well is prohibited.
4. The discharge of waste (e.g., fertilizers, fumigants, pesticides) down a groundwater well casing is prohibited.

C. Receiving Water Limitations²

1. Surface Receiving Water Limitations

- a. Wastes discharged from Irrigated Agricultural Lands in Imperial Valley shall not cause or contribute to an exceedance of applicable water quality objectives for surface waters, unreasonably affect applicable beneficial uses, or cause or contribute to a condition of pollution or nuisance.

2. Groundwater Receiving Water Limitations

- a. Wastes discharged from Irrigated Agricultural Lands in the Imperial Valley shall not cause or contribute to an exceedance of applicable water quality objectives in the underlying groundwater, unreasonably affect applicable beneficial uses, or cause or contribute to a condition of pollution or nuisance.

D. Requirements – Members of a Coalition Group

This subdivision applies to Dischargers who are members of an approved Coalition Group (Members), who shall comply with the following:

1. Management Practices

² These limitations are effective immediately except where Coalition Group members are implementing an approved Water Quality Restoration Plan (WQRP) for a specified waste parameter in accordance with an approved time schedule authorized pursuant to Section E.11 of this Order.

- a. Members must (1) implement management practices that prevent or control discharges of waste that are causing or contributing to exceedances of water quality objectives; and (2) when effectiveness evaluation or reporting, monitoring data, or inspections indicate that the implemented management practices have not been effective in preventing the discharges from causing or contributing to exceedances of water quality objectives, Members must implement improved management practices. Where applicable, the implementation of such practices must be in accordance with any Water Quality Restoration Plans, and time schedules contained therein, as approved by the Colorado River Basin Water Board's Executive Officer.
- b. Pursuant to Water Code section 13360, this Order does not specify the design, location, type of construction, or particular manner of management practices compliance, and Members can use any appropriate management practice to comply with the requirements of this Order. Members are encouraged to consult the State Water Board's Nonpoint Source Management Measures Encyclopedia and the Management Practices Miner Tool for information about management practices.

2. Water Quality Management Plan (Farm Plan)

- a. Members shall develop and implement an individual Water Quality Management Plan (Farm Plan) to identify the type and location of management practices currently used on their Irrigated Agricultural Lands and additional management practices based on current conditions needed to minimize or prevent the discharge of waste to waters of the state through irrigation water runoff and infiltration, non-stormwater runoff, and stormwater runoff.
- b. Members with the potential to cause erosion and discharge sediment that may degrade surface waters shall implement sediment and erosion control practices. Members must indicate whether they are implementing sediment and erosion control practices in their Farm Plan.
- c. Members must use the Farm Plan Template approved by the Colorado River Basin Water Board's Executive Officer. At a minimum, the Farm Plan Template will include the following:
 - i. The name, business address, mailing address, email address, phone number of the farmland owner;
 - ii. The name, business address, mailing address, email address, phone number of the farm grower/operator (if different from above);
 - iii. Information regarding the location of farm, including: (1) the address, (2) the Assessor Parcel Numbers (APNs) and the county in which each parcel is located, (3) the San Bernardino Baseline

- and Meridian System coordinates, including at least township, range and section, and (4) applicable canal and gate number(s);
- iv. The number of drinking water supply wells associated with each enrolled APN;
 - v. The total acreage under cultivation;
 - vi. A list of crop(s) grown and the acres dedicated for each type of crop;
 - vii. A description of the irrigation methods used for each crop;
 - viii. A list of agricultural chemicals typically applied to crops at the operation, including but not limited to, fertilizers and organic amendments, pesticides, and fumigants;
 - ix. A list of the management practices used on each crop for the annual cycle and an indication whether sediment and erosion control practices are being implemented;
 - x. A description of any subsurface drainage collection system;
 - xi. The location of discharge point(s) and type of discharge(s) (surface and/or subsurface discharges); and
 - xii. The name of the receiving surface waters (if known) to which irrigation runoff, stormwater runoff, and non-stormwater runoff from the operation is discharged.
- d. Members shall submit the individual Farm Plan to the Coalition Group. An updated Farm Plan must be prepared and submitted to the Coalition Group by **March 1, 2023** and by **March 1** annually thereafter.
 - e. A copy of the Farm Plan shall be maintained at the Member's farming headquarters or primary place of business.
 - f. Members shall ensure that all management practices identified in the Farm Plan are properly operated and maintained. Members shall periodically evaluate the effectiveness of the management practices and shall make modifications to the Farm Plan as necessary when visual observation monitoring indicates waste discharges have not been adequately addressed in the Farm Plan.

3. Irrigation and Nitrogen Management Plan (INMP) and Summary Report

- a. Members shall implement management practices that minimize excess nitrogen application relative to crop need. Proper nutrient management will work to reduce excess plant nutrients, such as nitrogen, from reaching state waters. Nitrogen management must take site-specific conditions into consideration in identifying steps that will be taken and practices that will be implemented to minimize nitrate movement through surface runoff and leaching past the root zone.
- b. Members must prepare and implement an Irrigation and Nitrogen

Management Plan (INMP) for each field^{3,4} and submit the INMP Summary Report to the Coalition Group for the previous crop year.⁵

- c. Members must use the INMP Template approved by the Colorado River Basin Water Board's Executive Officer. The Executive Officer may approve the use of multi-year INMPs for categories of crops that have consistent irrigation and nitrogen planning from year to year. Multi-year plans cannot exceed three years in length, and if the Member decides to vary from the plan during its implementation period, a new INMP must be prepared and implemented. Members using multi-year INMPs must submit INMP Summary Reports annually.
- d. The INMP must include the information identified in the MRP, **Attachment B** for use by the Coalition Group in calculating an Applied/Removed (A/R) ratio for nitrogen, and an Applied-Removed (AR) difference for nitrogen, as defined in the equations below. The A/R ratio is the ratio of total Nitrogen Applied (from sources including, but not limited to, organic amendments, synthetic fertilizers, manure, and irrigation water) to the total Nitrogen Removed (including, but not limited to, all harvested materials and nitrogen

³ Where this Order requires reporting by field, Members may report data for a portion of a field or for multiple fields provided that the reported area has (1) the same crop type, (2) the same fertilizer inputs, (3) the same irrigation management, and (4) the same management practices. In no case should a reported area exceed a total size of 640 acres, and different crop types must always be reported separately even if they are within the same reporting area.

⁴ The Colorado River Basin Water Board's Executive Officer may also approve alternative reporting areas for Dischargers in areas with highly intensive cropping practices, including multiple rotations of different crops in the same location within a single year, unpredictable crop types and harvesting based on rapidly-shifting market demand, and variable management practices adjusting to weather and field conditions. The alternative reporting area must provide meaningful data and balance the level of detail with the reporting burden similar to the field approach. In no case should a reported area exceed a total size of 640 acres, and different crop types must always be reported separately, even if they are within the same reporting area, to allow for evaluation of the effectiveness of management practices with regard to each individual crop type grown.

⁵ Pursuant to the Eastern San Joaquin Order, this requirement does not apply to Members where applied nitrogen is not expected to seep below the root zone in amounts that could impact groundwater and is further not expected to discharge to surface water. Any category of Members (such as growers of a particular crop or growers in a particular area) must receive approval from the Executive Officer for this exception to apply.

annually sequestered in permanent wood for perennial crops). The A-R difference is the difference of total Nitrogen Applied and the total Nitrogen Removed.

$$\text{A/R Ratio} = \frac{\text{Nitrogen Applied (from any source, including fertilizers, irrigation)}}{\text{Nitrogen Removed (via harvest, etc.)}}$$
$$\text{A-R Difference} = \text{Nitrogen Applied} - \text{Nitrogen Removed}$$

Total Nitrogen Removed shall be determined, in part, by multiplying a Member's crop yield by a crop-specific nitrogen coefficient, C_N , provided by the Coalition Group, which represents the amount of nitrogen in the harvested crop. For some crops, the data needed to develop the C_N coefficient may not yet be available. The Coalition Group is directed in Section VI.D of the MRP, **Attachment B** to determine, through nitrogen removed testing and research, the most appropriate C_N coefficients for converting crop yield to nitrogen removed.

$$\text{Nitrogen Removed (lbs / acre)} = \text{Crop Yield (units / acres)} \times C_N \text{ (lbs / unit)}$$

- e. Notwithstanding the provisions above, with the approval of the Executive Officer, the following Members may initially report the A value only in the INMP:
- i. Growers that operate in areas with (1) evidence of no or very limited nitrogen impacts to surface or groundwater, (2) have minimal nitrogen inputs, and (3) have difficulty measuring yield. (E.g., irrigated pastures.)
 - ii. Diversified socially disadvantaged growers, as defined by the Farmer Equity Act of 2017⁶ with (1) a maximum total acreage of 45 acres, (2) gross annual sales of less than \$350,000, and (3) a crop diversity greater than 0.5 crops per acre (one crop for every two acres).
 - iii. Growers with (1) a maximum total acreage of 20 acres, and (2) a crop diversity greater than 0.5 crops per acre (one crop for every two acres). (E.g., small growers with multiple crops that sell at farmers' markets.)
- f. The Colorado River Basin Water Board is not requiring that each Discharger's INMP be certified at this time. However, Dischargers identified

⁶ Food & Agr. Code, § 512, subd. (b).

as outliers by the Coalition Group, as described in Section E.5.c.ii, must work with an irrigation and nitrogen management planning specialist for certification of the next INMP prepared following notification. On their next INMP summary report, these Members must also report that they were notified as outliers for reported AR data and reflect additional or improved management practices implemented to address potential over-application of nitrogen.

- g. Members shall prepare an INMP by **March 1, 2023** and by **March 1** annually thereafter, unless using a multi-year INMP. Starting on **March 1, 2024**, all Members must submit INMP Summary Reports to the Coalition Group for the prior year by **March 1** annually. As provided in the MRP, **Attachment B**, the Coalition Group will provide certain INMP Summary Report data to the Executive Officer.
- h. A copy of the INMP shall be maintained at the Member's farming operations headquarters or primary place of business.
- i. Members must use the INMP Summary Report Template approved by the Colorado River Basin Water Board's Executive Officer. At a minimum, the INMP Summary Report Template will collect the following information:
 - i. Crop Year;
 - ii. Owner/Manager name;
 - iii. Assessor Parcel Number (APN);
 - iv. Field identifier;
 - v. Acreage for each field identified;
 - vi. Crop type;
 - vii. Crop age (permanent crops);
 - viii. Irrigation method;
 - ix. Irrigation management practices implemented;
 - x. Nitrogen management practices implemented;
 - xi. Total Acreage;
 - xii. Nitrogen Applied (lbs/acre); and
 1. Irrigation Water
 2. Synthetic Fertilizers
 3. Organic Amendments
 - xiii. Crop Yield (units specified by Coalition Group).

4. Education

- a. Members shall participate in Coalition Group outreach and education events, **at least once annually**. Members shall review outreach materials to become informed of any water quality problems to address and the management practices that are available to address those problems.

- b. Members shall provide confirmation to the Coalition Group that the Member has attended and participated in an outreach and education event activity during the previous year and reviewed the applicable event materials.

5. On-Farm Drinking Water Well Testing

- a. Due to the potential severity and urgency of health issues associated with drinking groundwater with high concentrations of nitrates, Members shall conduct testing and monitoring of all drinking water supply wells present on the Members' property⁷ in accordance with the schedule in the MRP, **Attachment B**.
- b. The Coalition Group, on behalf of its Members, may conduct testing and monitoring of all drinking water supply wells present on the Members' property. If a well is identified as exceeding the MCL for nitrate, the Member must notify the Colorado River Basin Water Board and users of the well in a timely fashion in accordance with the procedures described in MRP.
- c. Members must use the Drinking Water Notification Template approved by the Colorado River Basin Water Board's Executive Officer. At a minimum, the template will contain the following:
 - i. A statement notifying users of the exceedance;
 - ii. Material regarding the potential health risks associated with consuming nitrate-contaminated drinking water and steps that should be taken for protection; and
 - iii. A signature block, to be signed by the Member or landowner, certifying that a copy of the Drinking Water Notification Template has been provided to affected users.

The template will be made available in an appropriate set of languages and designed to be understood by low-literacy populations.

6. Fees

- a. Members shall pay an annual fee to the State Water Board in compliance with the WDRs fee schedule set forth in California Code of Regulations, title 23, section 2200.6. The Coalition Group is responsible for collecting these

⁷ Where a portion of the parcel is leased to a party other than a Member and the terms of the lease give the Member no control over the drinking water supply wells on that parcel, the owner of the parcel is responsible for sampling of those drinking water supply wells.

fees from Members and submitting them to the State Water Board on behalf of Members.

E. Requirements – Coalition Groups

This subdivision applies to Coalition Groups that serve as third-party representatives of Members for purposes of this Order. In order to remain eligible to represent Members, Coalition Groups shall comply with the following:

1. Authorization

- a. The IID-ICFB Coalition is currently the only approved Coalition Group in Imperial Valley and is automatically authorized to represent Members under this Order. Other potential Coalition Groups wishing to act as third-party representatives must follow the procedures outlined below in Section E.11.
- b. A Coalition Group that is approved to represent Members under this Order is responsible for managing fee collection and payment, managing communications between Members and the Colorado River Basin Water Board, and for fulfilling monitoring and reporting requirements on behalf of its Members, including but not limited to, conducting surface water and groundwater monitoring, conducting regional monitoring, and preparing and implementing Water Quality Restoration Plans (required in Section E.6).

2. Organizational Reporting

- a. Within **90 days** of approval of this Order, the Coalition Group shall provide the Colorado River Basin Water Board documentation of its organizational or management structure. The documentation shall identify persons responsible for ensuring that program requirements are fulfilled and shall be made readily available to Members.

3. Membership Reporting

- a. By **December 31, 2022** and starting on **July 1, 2024** and by **July 1** annually thereafter, the Coalition Group shall submit to the Colorado River Basin Water Board a list of all its current Members. The list shall specifically identify any new Members or any Members terminated since the last reporting period.
- b. As part of the membership list submittal, the Coalition Group shall identify Members who have failed to fulfil the following requirements of this Order:
 - i. Submit a completed and signed Notice of Confirmation to the Coalition Group (Section A.4);

- ii. Implement water quality management practices (Section D.1);
- iii. Submit a complete Farm Plan (Section D.2);
- iv. Submit a complete annual INMP Summary Report (Section D.3);
- v. Provide confirmation of participation in at least one outreach activity (Section D.4);
- vi. Pay the required fees (Section D.6); or
- vii. Respond to an information request associated with any applicable provisions of this Order.

4. Templates for Members

- a. The Colorado River Basin Water Board intends to coordinate with the Coalition Group and agricultural groups/experts to develop templates that will be provided to all Members. Members must use the templates to comply with the requirements of this Order.
- b. The Coalition Group may work with Colorado River Basin Water Board staff in the development of the templates below, and shall make those templates available to its Members within **60 days** of receiving final approval of the templates from the Colorado River Basin Water Board's Executive Officer:
 - i. **Farm Plan Template.** Requirements for the Farm Plan Template are described above in Section D.2.
 - ii. **INMP and INMP Summary Report Templates.** Requirements for the INMP and INMP Summary Report Templates are described above in Section D.3.
 - iii. **Drinking Water Notification Template.** Requirements for the Drinking Water Notification Template are described above in Section D.5.

If desirable, differing templates may be created for different agricultural commodity groups.

5. Monitoring and Reporting Program

- a. The Coalition Group shall conduct required water quality monitoring and assessments in conformance with quality assurance/quality control requirements in this Order and the MRP, **Attachment B**, and provide timely and complete submittal of any reports required.

b. Surface and Groundwater Monitoring Program Plans

- i. Within **180 days** of adoption of this Order, the Coalition Group shall submit for review and approval to the Colorado River Basin Water Board's Executive Officer a Surface Monitoring Program Plan, as described in Section V of the MRP, **Attachment B**.
- ii. Within **one year** of adoption of this Order, the Coalition Group shall submit for review and approval to the Colorado River Basin Water Board's Executive Officer a Groundwater Trend Monitoring Program Plan. Annual groundwater monitoring at representative locations is required in the Groundwater Trend Monitoring Program Plan. The goal is to determine current water quality conditions of groundwater relevant to irrigated agriculture and develop long-term groundwater quality information that can be used to evaluate the regional effects of Irrigated Agricultural Lands practices.
- iii. Quality Assurance Project Plan (QAPP)
 1. As part of the Monitoring Program Plan, the Coalition Group shall submit a Quality Assurance Project Plan (QAPP) to the Colorado River Basin Water Board's Executive Officer for review and approval that meets the requirements in the MRP, **Attachment B**.

c. Compliance Program Reporting

- i. The Coalition Group shall submit its Members' INMP summary data and Farm Plan data anonymously to the Colorado River Basin Water Board in compliance with the schedule in Section VI.C of the MRP, **Attachment B**.
- ii. Outliers
 1. Within **three years** after the nitrogen removal coefficients C_N have been approved by the Colorado River Basin Water Board's Executive Officer, those Members who are outliers in nitrogen application shall be identified by the Coalition Group annually based on the last three years of data submitted in the INMP Summary Report.
 2. The Coalition Group shall propose an approach, to be approved by the Colorado River Basin Water Board's Executive Officer after public notice and comment, that defines a set of outlier Members with whom the Coalition Group will follow up. The Coalition Group may choose to

apply that approach annually for a period of years to determine outliers, or the Coalition Group may propose and seek approval of a different approach each year.

iii. Township-Level Nitrogen Targets

1. The Colorado River Basin Water Board will not be requiring the development of township-level targets for nitrogen loading at this time, because the Colorado River Basin Water Board does not have sufficient data and information at this time to indicate “high priority areas” where irrigated agriculture may be causing or contributing to exceedances of water quality objectives and/or trends of degradation that may threaten applicable Basin Plan beneficial uses.
2. As more data becomes available through monitoring and reporting under these General WDRs, the Colorado River Basin Water Board’s Executive Officer may later identify “high priority areas” where discharges from Irrigated Agricultural Lands may be causing or contributing to exceedances of water quality objectives, or a trend of degradation of groundwater that may threaten applicable basin plan beneficial uses.
3. The Executive Officer shall evaluate new data by **December 31, 2025** to determine if any geographic areas qualify as “high priority areas” for the development of groundwater protection formulas, values, and targets. The Executive Officer shall require development of township-level nitrogen targets for any identified “high priority areas.” The methodology for determining the targets shall be subject to public review and comment.

iv. Confidentiality

1. The Coalition Group shall develop: (1) anonymous Member identification numbers and (2) anonymous Assessor’s Parcel Number (APN) identification numbers for the reporting of Members’ data. The Coalition Group shall maintain and track the IDs from year to year.
2. The Coalition Group shall submit Farm Plan data by anonymous Member ID.

3. The Coalition Group shall submit INMP Summary Report data by anonymous Member ID, anonymous APN ID, and by township.
 4. The Colorado River Basin Water Board's Executive Officer may require that the Coalition Group directly provide data for individual Dischargers (without anonymous identifiers) in connection with the implementation of a Water Quality Restoration Plan, as described in Section E.6 below, particularly where the data suggests that the Discharger(s) are not improving their management practices.
- d. On-Farm Drinking Water Monitoring
- i. The Coalition Group, on behalf of Members, may conduct testing and monitoring of drinking water supply wells present on Members' property in compliance with the requirements in Section D.5 and the MRP, **Attachment B**.
- e. Selenium Provision Work Plan
- i. The IID/ICFB Coalition shall continue implementing the Selenium Provision Work Plan submitted in accordance with the 2015 Conditional Waiver dated March 2018 as approved by Colorado River Basin Water Board.

6. Water Quality Restoration Plan (WQRP)

- a. The Coalition Group shall provide surface water and groundwater exceedance reports if monitoring results show exceedances of applicable numeric water quality objectives or water quality benchmarks, as specified in the MRP, **Attachment B**.
- b. The Colorado River Basin Water Board shall require Coalition Groups to prepare a Water Quality Restoration Plan (WQRP) if (a) there is a water quality exceedance or (b) a trend of degradation of water quality is identified that threatens a beneficial use in receiving waters affected by its Members' activities on Irrigated Agricultural Lands. For purposes of this Order, an "exceedance" occurs when (a) a sampling result for a constituent at a single surface water monitoring location exceeds a water quality objective or benchmark limit specified in the MRP, **Attachment B** three or more times out of four consecutive sample events for the same constituent, or (b) a single groundwater sampling result exceeds a water quality objective.
- c. The WQRP shall contain the following information:

- i. For each constituent that indicates an exceedance or a trend of water quality degradation that threatens a beneficial use, the WQRP shall include a graph showing the concentrations over time (from available data) and a trend analysis for the constituent. If there is not enough data available to perform a viable trend analysis, an explanation shall be included in the WQRP.
 - ii. The WQRP shall include a description of the actual or suspected waste sources that may be causing or contributing to the exceedance or trend of water quality degradation that threatens a beneficial use(s). The WQRP shall also include a list and map location of parcels in the geographic area addressed in the WQRP.
 - iii. If the WQRP finds that the actual or suspected waste sources are from irrigated agriculture subject to this Order, the WQRP shall identify management practices currently being implemented and additional or improved management practices that will be implemented by designated Members to prevent or minimize the discharge of any waste that is causing or contributing to the exceedance or trend of water quality degradation. The WQRP shall also include a brief justification for selecting specific management practices.
 - iv. The WQRP shall include a schedule for the implementation and completion of all tasks described in the WQRP. The schedule shall reflect the shortest practicable time required to perform each task, given the type of management practices planned or program being implemented, and the experience of commercial agriculture with the time required to implement similar management practices or programs. The schedule may not be longer than that which is reasonably necessary to achieve the receiving water limitations in Section C of these General WDRs. If the schedule exceeds one year, the schedule must include quantifiable, interim milestones that demonstrate progress towards completion of the WQRP tasks and compliance with the applicable receiving water limitations of these General WDRs.
 - v. The WQRP shall include a monitoring and reporting plan to provide feedback on WQRP progress and its effectiveness in achieving compliance with the applicable receiving water limitations of these General WDRs.
- d. The WQRP must be approved by the Colorado River Basin Water Board's Executive Offer prior to implementation. The Coalition Group may propose changes and revisions to the WQRP as necessary, subject to approval by the Executive Offer prior to implementation.

- e. The Coalition Group shall work cooperatively with the Colorado River Basin Water Board to ensure all Members are taking necessary steps to address exceedances or degradation identified by the Coalition Group or the Colorado River Basin Water Board.

7. Education and Outreach

- a. The Coalition Group shall conduct education and outreach activities to inform Members of program requirements and water quality problems identified by the Coalition Group or Colorado River Basin Water Board. A record of all members who attend shall be kept and used to fulfill the reporting requirements of Section E.3.b.iv.
- b. Outreach events and materials shall include information on nitrogen application practices and the potential impact of nitrates on groundwater, including drinking water quality. Outreach events and materials shall be provided in multiple languages as appropriate depending on the anticipated Discharger audience. The Coalition Group shall:
 - i. Provide Members with information on water quality management practices that will address water quality problems and minimize the discharge of wastes from Irrigated Agricultural Lands and provide informational materials on potential environmental impacts of water quality management practices.
 - ii. Provide an **annual** summary of education and outreach activities to the Colorado River Basin Water Board. The annual summary shall include copies of the educational and management practices information provided to the growers. The annual summary must report the total number of growers who attended the outreach events and describe how growers could obtain copies of the materials presented at these events.
- c. The Coalition Group must inform Members who are outliers for reported AR data that they are potentially over-applying nitrogen to their fields and must follow up with Members and provide them training, as appropriate.

8. Notice of Violation (NOV) Reporting

- a. If the Coalition Group receives a Notice of Violation (NOV) from the Colorado River Basin Water Board, the Coalition Group must provide a copy of the NOV to Members in the area addressed by the NOV and appropriate information regarding the reason(s) for the violation. The notification must be provided **within 30 days** of receiving the NOV from the Colorado River Basin Water Board. The Coalition Group must provide confirmation to the Colorado River Basin Water Board of the notification.

- b. A summary of all notices of violation received by the Coalition Group must be provided to all Members **annually**.

9. Fees

- a. The Coalition Group shall collect the fees from Members required by the State Water Board pursuant to the fee schedule contained in California Code of Regulations, title 23, section 2200.6. The Coalition Group is responsible for submitting all fees collected directly to the State Water Board on behalf of its Members.

10. Termination of Representation

- a. If a Coalition Group wishes to terminate its role as a third-party representative, the Coalition Group shall submit a notice of termination letter to the Colorado River Basin Water Board and all of the Coalition Group's Members. Termination of the Coalition Group will occur no earlier than **30 days** from submittal of the notice of termination letter.
- b. The notice of termination shall inform Members of their obligation to find a new, approved Coalition Group representative or obtain coverage under individual WDRs for their discharges. At a minimum, the written notice must include:
 - i. The proposed termination date;
 - ii. The reason for termination (e.g. dissolution, merger, etc.);
 - iii. Evidence that written notice was provided to all Members of the Coalition Group of the proposed termination; and
 - iv. Any successor(s) and/or assign(s) seeking to assume responsibility under this Order.
- c. The Coalition Group shall continue to comply with this Order until the Colorado River Basin Water Board notifies it in writing that its representation has been terminated.

11. New Coalition Groups

- a. New Coalition Group(s) shall obtain written approval from the Colorado River Basin Water Board's Executive Officer prior to assisting Dischargers with compliance with this Order.
- b. In evaluating whether to approve a new Coalition Group, the Executive Officer will consider the following factors:

- i. The ability of the third party to carry out the identified Coalition Group responsibilities.
 - ii. Whether the third party is a legally defined entity (i.e., non-profit corporation; local or state government; Joint Powers Authority) or has a binding agreement among multiple entities that clearly describes the mechanisms in place to ensure accountability to its members.
 - iii. Whether the third party has binding agreements with any subsidiary group (e.g., subwatershed group) to ensure any third-party responsibilities carried out by the subsidiary group, including the collection of fees, are done transparently and with accountability to the third party.
 - iv. Whether the third party has a governance structure that includes a governing board of directors composed in whole or in part of Members, or otherwise provides Members with a mechanism to direct or influence the governance of the third party through appropriate by-laws.
- c. If the Executive Officer determines that the Coalition Group applicant has the capacity to satisfactorily carry out the Coalition Group responsibilities, the Colorado River Basin Water Board's Executive Officer will issue an NOA and, if appropriate, a Monitoring and Reporting Program specific to the new Coalition Group and its members. The new Coalition Group shall comply with the relevant terms and conditions of this Order and any applicable MRP upon receipt of the NOA.

F. General Provisions

1. **Noncompliance.** Dischargers shall comply with all of the conditions of this Order. Noncompliance is a violation of the Porter-Cologne Water Quality Control Act (Water Code, § 13000 et seq.) and grounds for: (1) an enforcement action; (2) termination, revocation and reissuance, or modification of these waste discharge requirements; or (3) denial of an Order renewal application, or a combination thereof. Coalition Group(s) shall also comply with all relevant conditions of this Order.
2. **Enforcement – Members.** Under these General WDRs, Coalition Group(s) are tasked with assisting Members in carrying out certain terms and conditions of this Order. However, Members, and any non-Member owner or operator, continue to bear ultimate responsibility for complying with these General WDRs. The Colorado River Basin Water Board reserves the right to take any enforcement action authorized by law. Accordingly, failure to timely comply with any provisions of this Order may subject Dischargers to enforcement action. Such actions

include, but are not limited to, the assessment of administrative civil liability pursuant to Water Code sections 13323, 13268, and 13350, a Time Schedule Order (TSO) issued pursuant to Water Code section 13308, or referral to the California Attorney General for recovery of judicial civil liability.

3. **Enforcement – Coalition Group(s).** Failure to comply with the applicable terms and conditions of this Order may result in revocation of approval to act as a Coalition Group. Affected Dischargers would be required to join an approved Coalition Group or obtain coverage under other applicable general or individual WDRs.
4. **Reporting of Noncompliance.** Dischargers shall report any noncompliance that may endanger human health or the environment. Information shall be provided orally to the Colorado River Basin Water Board office and the Office of Emergency Services within twenty-four (24) hours of when the Discharger becomes aware of the incident. If noncompliance occurs outside of business hours, the Discharger shall leave a message on the Colorado River Basin Water Board's office voicemail. A written report shall also be provided within five (5) business days of the time that the Discharger becomes aware of the incident. The written report shall contain a description of the noncompliance and its cause, the period of noncompliance, the anticipated time to achieve full compliance, and the steps taken or planned, to reduce, eliminate, and prevent recurrence of the noncompliance.
5. **Duty to Mitigate.** Dischargers shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment.
6. **Inspection and Entry.** Consistent with Water Code section 13267, subdivision (c), Dischargers and Coalition Group(s) shall allow the Colorado River Basin Water Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter the premises regulated by this Order, or the place where records are kept under the conditions of this Order;
 - b. Have access to and copy, at reasonable times, records kept under the conditions of this Order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
 - d. Sample or monitor at reasonable times, for the purpose of ensuring compliance with this Order or as otherwise authorized by the Water Code, any substances or parameters at this location.

- 7. Records Retention.** Dischargers and Coalition Group(s), as appropriate, shall retain copies of all reports required by this Order and the associated MRP. Records shall be maintained for a minimum of ten years from the date of the sample, measurement, report, or application. Records may be maintained electronically, and the Coalition Group must store back up files in a secure, offsite location managed by an independent entity. This period may be extended during the course of any unresolved litigation or when requested by the Colorado River Basin Water Board's Executive Officer.
- 8. Electronic Reporting.** Dischargers and Coalition Group(s), as appropriate, shall submit reports and information required under this Order in an electronic format specified by the Colorado River Basin Water Board's Executive Officer via email to RB7-coloradoriver@waterboards.ca.gov.
- 9. Claims for Exemption from Public Disclosure.** If the Coalition Group and/or a Discharger asserts that all or a portion of a report submitted pursuant to this Order is subject to an exemption from public disclosure (e.g., due to proprietary or trade secret information), the Coalition Group and/or Discharger must provide an explanation of how those portions of the reports are exempt from public disclosure. The Coalition Group and/or Discharger must clearly indicate on the cover of the report (typically an electronic submittal) that all or a portion of the report is exempt from public disclosure, submit a complete report with those portions that are asserted to be exempt in redacted form, submit separately (in a separate electronic file) unredacted pages (to be maintained separately by staff). Regional Water Board staff will determine whether any such report or portion of a report qualifies for an exemption from public disclosure. If staff disagrees with the asserted exemption from public disclosure, staff will notify the Discharger prior to making such report or portions of such report available for public inspection.
- 10. Signature and Certification.** All documents and reports requested herein shall be signed and dated by a duly-authorized representative and shall contain a statement by the Discharger, or as appropriate by an authorized representative of the Discharger (e.g., Coalition Group representative), certifying under penalty of perjury under the laws of the State of California, that the report is true, complete, and accurate. The document and/or report shall be submitted under the title: "General Order for Imperial Valley Ag Dischargers."
- 11. Violation of Law.** This Order does not authorize violation of any federal, state, or local laws or regulations.
- 12. Property Rights.** This Order does not convey property rights of any sort, or exclusive privileges, nor does it authorize injury to private property or invasion of personal rights.
- 13. Modification, Revocation, Termination.** This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by a Discharger for

an Order modification, rescission, or reissuance, or a Discharger's notification of planned changes or anticipated noncompliance, does not stay any Order condition. Causes for modification include, but are not limited to, the violation of any term or condition contained in this Order, a material change in the character, location, or volume of discharge, a change in land application plans, or the adoption of new regulations by the State Water Board, Colorado River Basin Water Board (including revisions to the Basin Plan), or federal government.

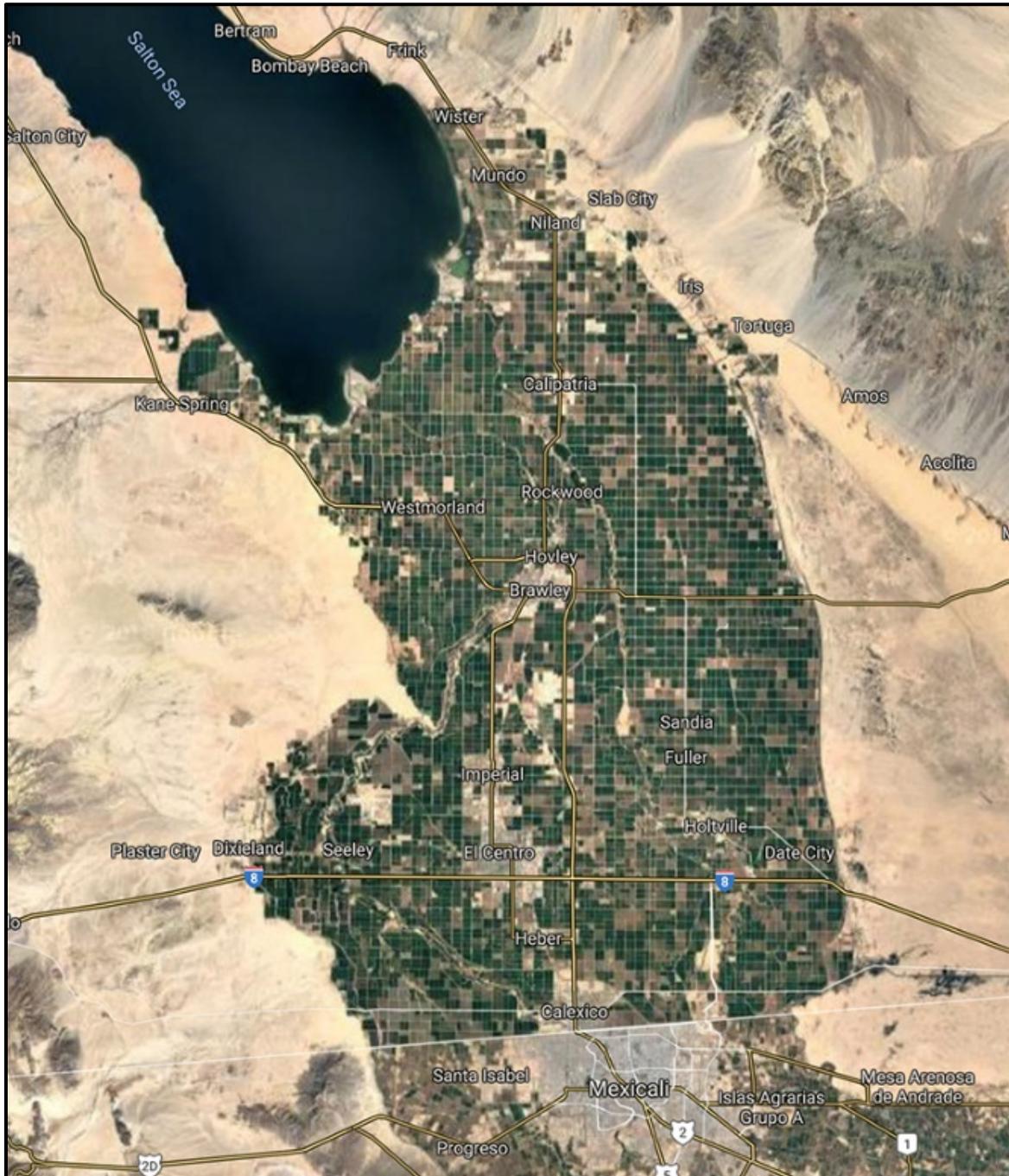
Any person aggrieved by this Colorado River Basin Water Board action may petition the State Water Board for review in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m. on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the statutes and regulations applicable to filing petitions are available on the State Water Board's website and can be provided upon request.

Order Attachments

Attachment A—Information Sheet

Attachment B—Monitoring and Reporting Program

FIGURE 1—IMPERIAL VALLEY IRRIGATED AGRICULTURAL LANDS



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ATTACHMENT A—INFORMATION SHEET
TO ORDER R7-2021-0050

GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES OF WASTE FROM IRRIGATED AGRICULTURAL LANDS
FOR DISCHARGERS THAT ARE MEMBERS OF A COALITION GROUP
IN THE IMPERIAL VALLEY
RIVERSIDE COUNTY

I. IMPERIAL VALLEY WATER QUALITY OBJECTIVES

Surface water and groundwater receiving water limitations in Section C of the Order specify that waste discharges from Irrigated Agricultural Lands may not cause or contribute to an exceedance of water quality objectives in surface water or underlying groundwater, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.

Water quality objectives that apply to surface water are described in the Water Quality Control Plan for the Colorado River Basin Region (Basin Plan), as well as in other applicable state and federal laws and policies. The Basin Plan contains numeric water quality objectives that apply to specifically identified water bodies as well as narrative objectives. Federal water quality criteria that apply to surface water are contained in federal regulations referred to as the California Toxics Rule and the National Toxics Rule. (See 40 C.F.R. §§ 131.36, 131.38.)

A. Surface Water Quality Objectives

Discharges of wastes from Irrigated Agricultural Lands to the Alamo River, New River, Imperial Valley Drains, or to the Salton Sea shall not violate the water quality objectives for surface waters summarized in the following list:

1. Result in the presence of oil, grease, floating material (liquids, solids, foam and scum) or suspended material in amounts that create a nuisance or produce objectionable color, odor, taste, or turbidity, or otherwise adversely affect beneficial uses.
2. Result in unnatural materials, which individually or in combination, produce undesirable flavors in edible portions of aquatic organisms.
3. Alter the suspended sediment load and suspended sediment discharge rate to receiving waters in a manner that causes nuisance or adversely affects beneficial uses.

4. Result in an increase of turbidity and/or total suspended solids (TSS) that adversely affects beneficial uses.
5. Result in the dissolved oxygen concentration to decrease below 5.0 mg/l at any time.
6. Result in a violation of the following:
 - a. For all waters where the salinity is equal to or less than 1 part per thousand (ppth) 95 percent or more of the time during the calendar year, the bacteria objective is a six-week rolling geometric mean of *E. coli* not to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly and a statistical threshold value (STV) of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.
 - b. For all waters where the salinity is greater than 1 ppt more than 5 percent of the time during the calendar year, the bacteria objective is a six-week rolling geometric mean of *enterococci* not to exceed 30 cfu/100 mL calculated weekly, with an STV of 110 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.
7. Result in the normal ambient pH of the receiving water to fall below 6.0 or exceed 9.0 units.
8. Result in the discharge of biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
9. Result in an increase of total dissolved solids (TDS) that adversely affects beneficial uses of any receiving water.
10. Result in an alteration in the natural receiving water temperature that adversely affects beneficial uses.
11. Result in the discharge of an individual chemical or combination of chemicals in concentrations that adversely affect beneficial uses, nor result in an increase in hazardous chemical concentrations in bottom sediments or aquatic life.
12. Result in toxic pollutants present in the water column, sediments or biota in concentrations that adversely affect beneficial uses, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective shall be determined by the use of indicator organisms, analyses of species diversity, population density, growth anomalies, or toxicity tests of

appropriate duration or other appropriate methods as specified by the Colorado River Basin Water Board.

13. Result in a violation of any applicable water quality standard for receiving waters adopted by the Colorado River Basin Water Board or the State Water Board as required by the federal Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Clean Water Act section 303 or amendments thereto, the Colorado River Basin Water Board will revise and modify this Order in accordance with the more stringent standard.

B. Groundwater Quality Objectives

Water quality objectives that apply to groundwater are also described in the Basin Plan, as well as in other applicable state laws and policies. The Basin Plan contains numeric as well as narrative water quality objectives for groundwater. The groundwater quality objectives for the Imperial Valley from the Basin Plan are listed below:

1. **Taste and Odors:** Groundwaters for use as domestic or municipal supply shall not contain taste or odor-producing substances in concentrations that adversely affect beneficial uses as a result of human activity.
2. **Bacteriological Quality:** In groundwaters designated for use as domestic or municipal supply (MUN), the concentration of coliform organisms shall not exceed the limits specified in section 64426.1 of title 22 of the California Code of Regulations.
3. **Chemical and Physical Quality:** Groundwaters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of title 22 of the California Code of Regulations, which are incorporated by reference into the Basin Plan: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), and Table 64678-A of section 64678 (Determination of Exceedances of Lead and Copper Action Levels).

To protect all beneficial uses, the Colorado River Basin Water Board may apply limits more stringent than MCLs.

4. **Brines:** Discharges of water softener regeneration brines, other mineralized wastes, and toxic wastes to disposal facilities which ultimately discharge in areas where such wastes can percolate to groundwaters usable for domestic and municipal purposes are prohibited.

- 5. Radioactivity:** Groundwaters designated for use as domestic or municipal supply (MUN) shall not contain radioactive material in excess of the maximum contaminant levels (MCLs) specified in Tables 64442 and 64443 of sections 64442 and 64443, respectively, of title 22 of the California Code of Regulations, which are incorporated by reference into the Basin Plan. This incorporation by reference is prospective, including future revisions to the incorporated provisions as the revisions take effect.

The water quality objectives for groundwater designated for municipal or domestic supply (MUN) are also informed by the State Water Resources Control Board's (State Water Board) *Policy Entitled "Sources of Drinking Water"* adopted on May 19, 1988 (Resolution No. 88-63). In relevant part, Resolution 88-63 provides that all surface waters and groundwaters of the state are considered to be suitable, or potentially suitable, for municipal or domestic water supply with the exception of where:

1. The total dissolved solids (TDS) exceed 3,000 mg/l (5,000 us/cm, electrical conductivity), and it is not reasonably expected by the Colorado River Basin Water Board to supply a public water system, or
2. There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either management practices or best economically achievable treatment practices, or
3. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

II. AVAILABLE WATER QUALITY DATA

A. Available Imperial Valley Surface Water Quality Data

The IID-ICFB Coalition has been collecting surface water data in accordance with the Monitoring and Reporting Program of the 2015 Conditional Waiver. A summary of the range and average concentrations of surface water monitoring results collected by the

IID-ICFB Coalition from several monitoring sites is shown in Table A-1. The results are from samples collected from July 2016 to December 2019.

Table A-1 Imperial Valley Surface Water Quality

Constituent	Units	Holtville Main Drain	Alamo River Drop 8	Alamo River Outlet	New River Evan Hewes	New River Outlet
Water Temperature	°C ⁸	13.3-33.5 ⁹ (22.32) ¹⁰	11.5-33.8 (22.2)	11.6-32.9 (22.1)	11.5-30.5 (21.29)	11.8-32.0 (21.80)
Dissolved Oxygen	mg/L ¹¹	6.69-13.04 (8.28)	5.13-10.73 (7.66)	3.90-10.8 (7.12)	2.22-7.77 (5.17)	3.66-10.47 (7.01)
Specific Conductivity	µS/cm ¹²	2345-4510 (3416)	2367-3947 (3029)	1920-4580 (3126)	2297-6064 (4585)	1401-5053 (3744)
pH	pH units	6.51-8.69 (7.84)	6.67-8.94 (7.72)	6.14-8.72 (7.72)	5.64-8.72 (7.48)	6.45-8.79 (7.74)
Total Hardness	mg/L	640-1100 (840)	600-1100 (781)	640-970 (774)	480-990 (857)	600-960 (775)
Calcium	mg/L	150-230 (183)	140-250 (178)	150-210 (172)	110-220 (192)	140-220 (178)
Magnesium	mg/L	63-120 (92)	60-120 (81)	67-110 (82)	48-110 (90)	60-100 (80)
Total Alkalinity	mg/L	210-280 (236)	200-280 (227)	200-260 (214)	170-290 (241)	190-270 (227)
Bicarbonate	mg/L	210-290 (247)	210-290 (237)	200-260 (224)	200-290 (250)	190-280 (236)
Chloride	mg/L	340-960 (556)	340-750 (445)	360-770 (468)	360-1200 (985)	400-1100 (740)
Sulfate	mg/L	550-1200 (846)	590-1100 (754)	590-1100 (733)	430-900 (750)	510-900 (685)
Nitrate-Nitrogen	mg/L	4.10-18.00 (9.12)	2.70-14.0 (7.01)	2.60-11.0 (5.62)	1.30-+4.10 (2.34)	2.70-8.90 (4.73)

⁸ °C = Degrees Centigrade

⁹ Range of analytical results during the period from July 2016 – Dec 2019

¹⁰ Average of analytical results from Jan 2016 – Dec 2017

¹¹ mg/L = milligrams per liter

¹² uS/cm = micro siemens per centimeter

Constituent	Units	Holtville Main Drain	Alamo River Drop 8	Alamo River Outlet	New River Evan Hewes	New River Outlet
Total Dissolved Solids	mg/L	1600-3200 (2379)	1600-3100 (2050)	1700-3000 (2029)	1400-3700 (2955)	1700-3400 (2431)
Total Suspended Solids	mg/L	86.0-530 (197.9)	58.0-380.0 (187.8)	96.0-320.0 (218.6)	201.-210.0 (125.7)	120.0- 500.0 (210.3)
Biochemical Oxygen Demand	mg/L	4.0-6.0 (4.4)	4.0-14.0 (5.3)	4.0-6.0 (4.4)	4.0-21.0 (9.9)	4.0-13.0 (5.1)
Nitrite-Nitrogen	mg/L	0.042-0.29 (0.082)	0.04-0.73 (0.31)	0.75-0.04 (0.25)	0.04-1.60 (0.63)	0.04-0.83 (0.278)
Ammonia-Nitrogen	mg/L	0.12-1.70 (0.476)	0.31-2.30 (0.92)	0.14-1.90 (0.62)	0.26-8.20 (3.121)	0.15-2.20 (0.642)
Kjeldahl-Nitrogen	mg/L	0.25-4.60 (1.68)	0.67-4.10 (2.30)	0.88-5.30 (2.24)	1.20-11.0 (5.57)	0.97-4.70 (2.39)
Total Nitrogen	mg/L	6.0-18.0 (10.93)	5.10-17.0 (9.63)	4.40-13.0 (8.11)	2.90-13.0 (8.67)	4.70-12.00 (7.40)
Total Phosphorus	mg/L	0.30-1.30 (0.61)	0.26-1.10 (0.67)	0.37-1.70 (0.77)	0.41-1.50 (1.09)	0.48-1.60 (0.93)
Selenium	µg/L	1.4-10.0 (3.6)	1.4-11.0 (4.1)	1.4-9.0 (4.0)	1.4-7.1 (3.2)	1.4-6.8 (2.7)
E. Coli	MPN ¹³ /100 ml	200-2419 (1005)	200-6131 (1074)	93-2419 (640)	128-4198 (830)	78-4884 (796.4)

B. Available Imperial Valley Groundwater Quality Data

The United States Geological Study (USGS) conducted a study in the Imperial Valley in 1975 and published the results in a document entitled, *Geohydrologic Reconnaissance of the Imperial Valley, California*.¹⁴ The most recent data used in the study is from

¹³ MPN/100ml = most probable number per 100 milliliters

¹⁴ Loeltz, O.J. and others. 1975. *Geohydrologic Reconnaissance of the Imperial Valley, California*. U.S. Geological Survey Professional paper 486-K.

samples collected in 1963, with some data dating as far back as 1917, and are too old to have any significance for the purposes of this Order. The California Department of Water Resources uses the results of the 1975 study in Groundwater Bulletin 118 to characterize groundwater quality in the Imperial Valley as varying extensively throughout the Imperial Valley Groundwater Basin with TDS ranging from 498 to 7,280 milligrams per liter. TDS values typically exceeding 2,000 mg/L are reported from a limited number of test wells drilled in the western part of the basin. Groundwater in areas of the basin also has higher than recommended levels of fluoride and boron.

III. ECONOMIC CONSIDERATIONS

Under Water Code sections 13263 and 13241, “economic considerations” is one of the factors a regional water board must take into account in issuing waste discharge requirements.

The Imperial Valley’s farmland is among the largest crop-growing regions in the state, renowned for its fodder and forage crops, carrots, onions, broccoli and spinach. It is estimated that Imperial Valley’s agricultural industry annually generates over one billion dollars in personal income for California families and over five billion in total economic impact throughout California. Approximately two-thirds of the vegetables consumed in the United States during the winter months are grown in the Imperial Valley.¹⁵

The following section explores the potential costs associated with complying with the Order and identifies potential sources of financial assistance for Dischargers.

Significant uncertainties in several key areas of the program prevent the precise estimation of program costs, including: the number of Discharger groups formed, the total number of monitoring sites required to evaluate exceedances of water quality objectives, the nature and extent of management practices required to address those exceedances, and the availability of federal, state, and local funding to offset monitoring and management practices implementation costs.

One-time costs will be estimated separately from the recurring annual costs of the Order. For the purposes of this cost analysis, the one-time costs of compliance are expected to occur within and throughout a five-year implementation period. All one-time compliance costs, despite what year they will be expended, will be totaled and annualized over the first five years of compliance into an annual per acre per year cost.

¹⁵ Imperial County Farm Bureau, available at <icfb.net/i-v-agriculture> as of August 31, 2021

Costs will be assessed on a per acre, per member, or per farm basis. All costs will be converted into per acre costs using the descriptions provided below:

Costs Per Farm – IID reports that there are 5,066 irrigation water deliveries within the area covered by this Order. Not all fields that are able to receive irrigation water are used for commercial agricultural production, but using the total amount will result in a higher cost estimate and is therefore, more conservative. For the purposes of this economic analysis, the number of District water deliveries, or 5,066, will be used to estimate the costs that are associated with each farm.

Costs Per Member – There are currently 393 IID-ICFB Coalition Members. This cost analysis considers that membership could increase as much as 25 percent under full compliance with the Order. For the purposes of the economic analysis, the total number of possible member entities will be 125 percent of the current membership. The number of members that will be used to determine costs that are associated with each member will be 491.

Costs Per Acre – The District reports that there are about 445,000 acres of irrigable land in the Imperial Valley. The total estimated number of irrigable acres will be used to determine costs that are associated with every acre and to develop an overall per-acre cost associated with the Order.

A. Cost Estimates for Members of a Coalition Group

Members of a Coalition Group are required to perform the following activities to comply with the Order. A discussion of the expected effort and the costs associated with each required activity are discussed below.

1. Submit Electronic Notice of Intent (one-time cost)

The information required by Electronic Notice of Intent (eNOI) could be compiled by anyone with knowledge of farm characteristics and operations ranging from administrative to professional level employees or Members themselves. Compiling the eNOI information, submitting it to the Coalition, creating a GeoTracker account, and verifying the eNOI contents is expected to take from two (2) to three (3) hours per member. Cost estimates for labor to complete the eNOI range from \$60 to \$120 per hour. The cost estimate for submitting a completed eNOI are estimated to range from \$120 to \$360 per member. The estimated total cost for completing 491 member eNOIs ranges from 58,920 to \$176,760 or, as a one-time cost annualized over the first five years, from **\$11,780 to \$35,350 per year**.

2. Implement Management Practices

Implementing management practices that prevent typical agricultural pollutants from entering groundwater and surface waters is the main requirement of the Order. Because of ongoing conservation efforts by IID and sediment reduction programs implemented by the ICFB, management practices for optimizing the uptake of irrigation water by crops, and the nutrients and pesticides that are applied with it, are already being used in the Imperial Valley. The costs of these management practices can be offset by increased crop yields and reduced water and chemical costs. The cost of implementing additional management practices could be a component of the overall costs of complying with the Order but is not considered in the scope of this Cost Analysis.

3. Prepare and submit annual Farm Plans

The information required by the Farm Plan Template could be compiled by anyone with knowledge of farm characteristics and operations ranging from administrative to professional level employees or Members themselves. Completing and submitting the template is expected to take from one (1) to two (2) hours per parcel per year. Cost estimates for labor to complete the Farm Plan range from \$60 to \$120 per hour. The cost estimate for submitting a completed Farm Plan are estimated to range from \$60 to \$240 per farm per year or for 5066 farms, **\$303,960 to \$1,215,840 per year.**

4. Prepare Annual INMP and Submit INMP Summary Report

The information required by the INMP and INMP Summary will require decisions from Members themselves or professional-level employees or consultants. Completing and submitting the INMP and INMP Summary template is expected to take from two (2) to three (3) hours per parcel per year. Cost estimates for owner/operators range from \$100 to \$120 per hour. The cost estimate for submitting a completed INMP and INMP Summary are estimated to range from \$200 to \$360 per parcel per year or for 5066 farms, **\$1,013,200 to \$1,823,760 per year.**

Certification of the INMP is required for farms determined to be A/R outliers. The criteria for identifying outliers is not yet known but, for the purpose of this cost analysis, it is estimated that 3.0 percent of farms (152 farms per year) will be A/R outliers. Certification of an INMP is estimated to require 4 hours of professional level employee or consultant time ranging from \$100 to \$120 per hour. Annual costs for certifying outlier farms are estimated to range from **\$60,800 to \$72,960 per year.**

5. Education and Outreach

Each Member of a Coalition Group is required to attend at least one education and outreach activity per year. It is estimated that Member will spend eight (8)

hours (including planning and travel time) attending each activity. The cost estimate for Members is \$120 per hour. The cost estimate for education and outreach is \$920 per Member per year or, for 491 members, **\$471,360 per year**.

6. Drinking Water Well Monitoring

Groundwater in the Imperial Valley is not typically used for drinking water. There is a small amount of acreage adjacent to an IID supply canal that has access to seepage water from the canal that could be used for drinking water. It is not expected that many farms in the Imperial Valley will report having on-farm wells that are used for drinking water. When on-farm well monitoring is required, it is expected to require one (1) hour of professional time and one (1) lab analysis per well. Cost estimates for professional time ranges from \$100 to \$120 per hour. The cost estimate for lab analysis for Nitrates is estimated to range from \$60 to \$80. The cost for drinking well monitoring is estimated to range from \$160 to \$200 per well per year.

For the purposes of this economic analysis it is estimated that less than one percent (1%) of farms that are eligible for coverage under the Order will require drinking water well monitoring. The cost for on-farm well monitoring throughout the Imperial a Valley is estimated to range from **\$8,110 to \$10,130 per year**.

7. Payment of State Irrigated Agricultural Discharge Fees

The state fees for Irrigated Agricultural Lands that are enrolled in a Coalition Group that collects fees for fiscal year 2020/2021 is either \$0.90 or \$1.12 per acre per year. The cost for state fees for 445,000 acres is estimated to range from **\$400,500 to \$498,400 per year**.

B. Cost Estimates for Coalition Groups, Including the IID-ICFB Coalition

The Coalition Group(s) are required to perform the following activities to comply with the Order. A discussion of the expected effort and the costs associated with each required activity are discussed below.

1. Record Keeping and Reporting

General record keeping and administration – Colorado River Basin Water Board staff estimates that general administration of the compliance program will require 1000 person-hours per year at \$100 per hour for a cost of \$100,000 per year.

Farm Plans– Colorado River Basin Water Board staff estimates that to review, compile, and submit the Farm Plan data from Dischargers, the Coalition Group will require 100 person-hours at \$100 per hour for a cost of \$10,000 per year.

Irrigation and Nitrogen Management Plan (INMP) and Summary Report – Regional Water Board staff estimates that to review, compile, and submit the INMP Summary Report data from Agricultural Dischargers, the Coalition Group will require 300 person-hours at \$100 per hour for \$30,000 per year.

Annual (AMR) and Quarterly Monitoring Reports – Regional Water Board staff estimates that the AMR and monthly surface water reports will require 400 person-hours at \$100 per hour. The Coalition Group is required to submit one AMR and four quarterly surface water reports per year. The total cost is an estimated \$40,000 per year.

The total annual cost for record keeping and reporting is estimated to be **\$180,000 per year**.

2. Information Technology and Data Management

One-time costs for information technology (IT) include creating a method of making templates available to Members, developing a system of assigning anonymous identifiers for Members and parcels, developing a database that can harvest and store template data, assign anonymous identifiers, and be queried to create reports, and updating or developing a website for interaction with Members. It is estimated that 160 professional hours at \$120 per hour will be required for a total of \$19,200 or, as a one-time cost annualized over the first five years, \$3,840 per year.

Ongoing annual costs for IT include maintaining the template information system, maintaining a Coalition Group off-site data repository, and maintaining a website with current content. It is estimated that 100 professional hours at \$120 will be required for a total of \$12,000 per year.

Website hosting and data repository fees are estimated to be \$600 per year.

The total cost for IT is estimated to be **\$16,440 per year**.

3. Surface Water Monitoring

Revise the surface monitoring plan and QAPP (one-time cost) – Cost estimates include 100 professional hours at \$120 per hour or \$12,000 total or, as a one-time cost annualized over the first five years, \$2,400 per year.

Sample collection – The MRP requires the sampling of seventeen surface water sites four times a year. The All American Canal Source Water sample is routinely collected by IID and will not require additional resources to collect. The other 16 samples are all located in or near the Alamo or New Rivers. It is expected that all sites on each river can be collected in one 8-hour day resulting in two sampling

days for a total of 16 hours. Cost estimates for technical staff range from \$60 to \$80 per hour. The cost estimate for two people to perform four sampling events per year ranges from \$7,680 to \$10,240 per year.

Lab analysis – The MRP requires monitoring parameters that are estimated to cost \$1,493 per site per sampling event. The estimated annual costs for analyzing samples from 17 sites four times a year (a total of 68 analyses), is \$101,520 per year.

Toxicity Testing– Laboratory costs for the annual toxicity testing is estimated to be \$400 per species per sample. Toxicity testing is performed once per year on three species at four sites. The estimated amount for toxicity is estimated to be **\$4800 per year**.

Miscellaneous sampling/analytical costs – Sampling supplies, shipping costs, vehicle mileage, and other incidental costs associated with surface water monitoring is estimated to be \$4,500 per year.

The total annual cost for surface water sampling to comply with the requirements of the Order are estimated to range from **\$120,900 to \$123,460 per year**.

4. Groundwater Trend Monitoring

Groundwater trend monitoring workplan (one-time cost)– Cost estimates include 160 professional hours at \$120 per hour or \$ \$19,200 total or, as a one-time cost annualized over the first five years, \$3,840 per year.

Groundwater monitoring wells – It is not expected that additional groundwater monitoring wells will be needed since there are many existing monitoring wells in the area.

Sample collection – Trend monitoring wells will be sampled once per year. It is estimated that all trend monitoring sites can be collected in two 8-hour days. Cost estimates for technical staff range from \$60 to \$80 per hour. The cost estimate for two people to perform one sampling event per year ranges from \$1920 to \$2560 per year.

Lab analysis – The MRP requires trend groundwater monitoring wells to be analyzed for laboratory constituents annually. The laboratory constituents required annually are estimated to cost \$400 per site per year. For the purposes of this estimate, the costs for sampling 8 to 12 groundwater sites will be calculated. The estimated cost for trend groundwater analysis is estimated to range from \$3200 to \$4800 per year.

The total annual cost for groundwater trend monitoring to comply with the requirements of the Order is estimated to range from **\$8,960 to 11,200 per year**.

5. **Fish Tissue Monitoring**

Sample collection – Fish tissue sampling events are estimated to cost \$4,900 including personnel and mileage (Moss Landing Marine Laboratories estimate (2018)) The cost of two sampling events per year is estimated to be \$9,800 per year.

Lab analysis – The cost of analyzing one fish tissue sample is estimated to be \$5,343. The cost of two fish tissue analysis per year is estimated to be \$10,686 per year.

The total annual cost for fish tissue monitoring to comply with the requirements of the Order is estimated to be **\$20,486 per year**.

6. Education and Outreach

Each Coalition Group is required to provide at least one education and outreach activity to each of its Members. It is estimated that planning, developing, and scheduling one annual activity would require 60 to 80 hours of professional level staff at \$100 to \$120 per hour (6,000 to \$9,600 per year).

If 12 to 15 Members attend each scheduled activity, 33 to 41 activities would have to be scheduled for each year. It is estimated that 6 hours of professional level staff would be required for each activity for a total 196 to 246 hours at \$100 to \$120 per hour or, for 190 members, \$19,600 to \$29,500 per year.

Providing education and outreach materials during activities and making them available to Members upon request is estimated to cost \$5 per member for 491 members is \$2,460 per year.

Providing follow-up education for Members who are identified as outliers could result in 3 or 4 additional educational activities per year requiring 18 to 24 hours of professional staff at \$100 to \$120 per hour, or \$1,800 to \$2880 per year.

Complying with the education and outreach requirements of the Order is estimated to range in cost from **\$29,860 to \$44,440 per year**.

7. Fee Collection

The Coalition Group will be required to collect fees from Members and pay one annual invoice to the state. The cost of invoicing, collecting, and tracking the submittal of fees by members is estimated to range from \$15 to \$25 per year per

member. The cost of collecting state fees from 491 members is estimated to range from **\$7,370 to \$12,280 per year**.

C. Summary of Annual Costs Per Acre

Table A-3. Range of Cost Estimates Averaged Over First Five Years

Order Requirement	Low Annual Estimate (\$)	High Annual Estimate (\$)
eNOIs	11,780	35,350
Farm Evaluations	303,960	1,215,840
INMP and Summaries	1,013,200	1,823,760
INMP Certification for Outliers	60,800	72,960
Attend Education and Outreach	471,360	471,360
Drinking Well Monitoring	8,110	10,130
State Fee	400,500	498,400
Record Keeping and Reporting	180,000	180,000
IT and Data Management	16,440	16,440
Surface Water Monitoring	120,900	123,460
Groundwater Trend Monitoring	8,960	11,200
Fish Tissue Monitoring	20,486	20,486
Provide Education and Outreach	29,860	44,440
Collect Fees	7,370	12,280
Total Estimated Annual Costs	\$2,653,720	4,536,104
Estimated Annual Cost per Irrigated Acre	\$6	\$10

D. State Annual Fees for WDRs for Irrigated Agricultural Lands

The General WDRs require each Discharger who participates in a Coalition Group or the Coalition Group itself on behalf of its participants, to pay an annual fee to the State Water Board in accordance with the fee schedule specified in California Code of Regulations, title 23, section 2200.6. The acreage on which the fee is based refers to the area that has been irrigated by the farmer or discharger at any time in the previous five years. As of the date that this Order is adopted, the above-mentioned fees are as follows:

If a Discharger is a member of a group that has been approved by the Regional Water Board or Regional Water Board’s Executive Officer to manage fee collection and payment, then the annual fee is based on agricultural activity according to the following fee schedule:

Agricultural Activity Tier for Group Enrollment	Per Acre Fee
Tier A – All agricultural activity except those identified in Tier B.	\$1.12
Tier B – Discharger or group of dischargers whose agricultural activities are managed wetlands, irrigated pastures with no external nitrogen input, those belonging to the California Rice Commission third party group, or are determined by the Regional Water Board or the Executive Officer to be exempt from the precedential requirement to develop an Irrigation and Nitrogen Management Plan.	\$0.90

If a Discharger is not a member of a group that has been approved by the Regional Water Board or Regional Water Board’s Executive Officer to manage fee collection and payment, then the annual fee shall be based on agricultural activity according to the following fee schedule:

Agricultural Activity Tier for Individual Enrollment	Per Acre Fee
Tier A – All agricultural activity except those identified in Tier B	\$28.00 per acre up to 300 acres Plus \$14.00 per acre over 300 acres with a minimum fee of \$550
Tier B – Discharger or group of dischargers whose agricultural activities are managed wetlands, irrigated pastures with no external nitrogen input, those belonging to the California Rice Commission third party group, or are determined by the Regional Water Board or the Executive Officer to be exempt from the	\$22.40 per acre up to 300 acres Plus \$11.20 per acre over 300 acres with a minimum fee of \$550

Agricultural Activity Tier for Individual Enrollment	Per Acre Fee
precedential requirement to develop an Irrigation and Nitrogen Management Plan.	

E. Sources of Financial Assistance

1. Federal

U.S. Department of Agriculture’s Natural Resources Programs

The U.S. Department of Agriculture’s (USDA) Natural Resources Conservation Service (NRCS) offers landowners financial, technical, and educational assistance to implement conservation practices on privately-owned land. These programs include the following:

- *Environmental Quality Incentives Program (EQIP)* offers financial, educational, and technical help to install or implement best management practices such as manure management systems, pest management, and erosion control, to improve the health of the environment. Cost-sharing may pay up to 50% of the costs of certain conservation practices. Additional information can be found at the [EQIP Program webpage](#).
- *National Conservation Buffer Initiative* was created to help landowners establish conservation buffers, which can include riparian areas along rivers, streams, and wetlands. NRCS is the lead agency in cooperation with other agencies. The NRCS Imperial Service Center, which provides service to the Imperial Valley, is located at 2407 Marshall Avenue, Suite E, Imperial, California 92251. The telephone number is (760) 355-2208.

Clean Water Act Section 319(h)

Federal nonpoint source water quality implementation grants are offered each year on a competitive basis. These grants can range from \$250,000 to \$800,000 and must include a funding match, unless a waiver of match is approved. The grants are administered through the Colorado River Basin Water Board in the Colorado River Basin Region. Additional information can be found at the [319\(h\) Grant Program webpage](#).

2. State

The Clean Water State Revolving Fund (CWSRF) program offers low-cost financing for a wide variety of water quality projects. The program has significant

financial assets and is capable of financing projects from <\$1 million to >\$100 million. Additional information can be found at the [CWSRF Program webpage](#).

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ATTACHMENT B – MONITORING AND REPORTING PROGRAM
TO ORDER R7-2021-0050

GENERAL WASTE DISCHARGE REQUIREMENTS

FOR

DISCHARGES OF WASTE FROM IRRIGATED AGRICULTURAL LANDS
FOR DISCHARGERS THAT ARE MEMBERS OF A COALITION GROUP IN THE
IMPERIAL VALLEY
IMPERIAL COUNTY

I. INTRODUCTION

This Monitoring and Reporting Program (MRP) is required pursuant to Water Code section 13267, which authorizes the California Regional Water Quality Control Board, Colorado River Basin Region (Colorado River Basin Water Board) to require preparation and submittal of technical and monitoring reports. This MRP includes requirements for the Imperial Irrigation District-Imperial County Farm Bureau Coalition (IID-ICFB Coalition), a third-party representative entity assisting individual Irrigated Agricultural Lands operators and owners that are members of the Coalition Group and enrolled under the *General Waste Discharge Requirements for Discharges of Waste from Irrigated Agricultural Lands for Dischargers that Are Members of a Coalition Group in the Imperial Valley*, Order R7-2021-0050 (Order). It also contains monitoring and reporting requirements for Members with respect to on-farm drinking water well testing. The requirements of this MRP are necessary to monitor Member compliance with the provisions of the Order and determine whether state waters receiving discharges from Members are meeting water quality objectives.

This MRP establishes specific surface water and groundwater monitoring, reporting, and electronic data deliverable requirements for the IID-ICFB Coalition. Due to the variable nature of Irrigated Agricultural Lands operations, monitoring requirements for surface waters and groundwaters will be periodically reassessed to determine if changes should be made to better represent Irrigated Agricultural Lands discharges to state waters. The monitoring schedule will also be periodically reassessed so that constituents are monitored during application and/or release timeframes, when constituents of concern are most likely to affect water quality. The IID-ICFB Coalition must not implement any changes to this MRP unless the Colorado River Basin Water Board or its Executive Officer issues a revised MRP.

This MRP conforms to the goals of the Nonpoint Source (NPS) Program as outlined in the *Plan for California's nonpoint source pollution control program* by:

1. tracking, monitoring, assessing, and reporting program activities;

2. ensuring consistent and accurate reporting of monitoring activities;
3. targeting NPS Program activities at the watershed level;
4. coordinating with public and private partners; and
5. tracking implementation of management practices to improve water quality and protect existing beneficial uses.

Surface water and groundwater monitoring must provide sufficient data to describe Irrigated Agricultural Lands' impacts on surface water and groundwater quality and to determine whether existing or newly implemented management practices comply with the receiving water limitations of the Order. Surface water and groundwater monitoring shall include a comprehensive suite of constituents (also referred to as "parameters") monitored periodically in a manner that allows for an evaluation of the condition of a water body and determination of whether Irrigated Agricultural Lands operations in the Imperial Valley watersheds are causing or contributing to any surface water or groundwater quality problems.

II. GENERAL MONITORING REQUIREMENTS

1. Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the discharge or receiving water sampled and shall be collected at monitoring points approved by the Colorado River Basin Water Board's Executive Officer.
2. All monitoring instruments and devices shall be properly maintained and calibrated as necessary to ensure their continued accuracy. Any flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
3. Analysis of pollutants specified in this MRP shall be performed using analytical methods approved under title 40 of the Code of Federal Regulations (40 C.F.R) part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act*, as amended, unless another method is specified in the MRP.
4. If analytical methods are not identified in 40 C.F.R. part 136 or specifically identified in this MRP, then the Colorado River Basin Water Board may approve the use of alternative analytical methods for compliance purposes. These alternative analytical methods shall be validated methods published by consensus standards bodies (USEPA, Standard Methods for the Examination of Water and Wastewater [Standard Methods], American Society of Testing Materials [ASTM], or Association of Official Analytical Chemists [AOAC]) or a performance-based method that is validated based upon the protocols described in USEPA's *Guide to Methods Flexibility and Approval of EPA Water Methods*

(USEPA, 1996). Performance-based method validation packages shall be approved by the Colorado River Basin Water Board or State Water Board's Quality Assurance Officer.

5. Laboratory data must quantify each constituent down to the approved reporting levels for specific constituents. All analytical data shall be reported with method detection limits (MDLs) and with either the reporting level or limits of quantitation (LOQs) according to 40 Code of Federal Regulations part 136, Appendix B.
6. All analyses shall be conducted by a laboratory certified to perform such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water's Environmental Laboratory Accreditation Program (ELAP). Certified laboratories can be found at the web link: www.waterboards.ca.gov/elap.
7. Monitoring data collected to meet the requirements of the Order must be collected and analyzed in a manner that ensures the quality of the data. The IID-ICFB Coalition must follow sampling and analytical procedures as specified in the approved MRP Quality Assurance Project Plan (QAPP).
8. The IID-ICFB Coalition shall retain any reports or records required by the Order for a period of **at least 10 years**. Records maintained by the IID-ICFB include reports and plans submitted by Members to the Coalition Group for purposes of complying with the Order. Individual Member information used by the Coalition Group to prepare required reports must be maintained electronically and associated with the Member submitting the information. The maintained reports or records, including electronic information, shall be made available to the Colorado River Basin Water Board upon request of the Executive Officer. This includes all monitoring information, calibration and maintenance records of sampling equipment, copies of reports required by this Order, and records of all data used to complete the reports. Records shall be maintained for a minimum of ten years from the date of sample, measurement, report, or application. Records may be maintained electronically, and back up files must be stored in a secure, offsite location managed by an independent entity that specializes in the protection of data.
9. To the extent feasible, all technical reports, information, and data required by this MRP must be submitted electronically in a format specified by the Colorado River Basin Water Board's Executive Officer.
10. This MRP requires the IID-ICFB Coalition to collect information from its Members and allows the IID-ICFB Coalition to report the information to the Colorado River Basin Water Board in a summary format. The IID-ICFB Coalition must submit specific Member information collected as part of the Order and this MRP when requested by the Executive Officer or as specified in the Order.

11. This MRP becomes effective upon adoption of Order R7-2021-0050. The Executive Officer may revise this MRP as necessary. Upon the effective date of this MRP, the IID-ICFB Coalition, on behalf of the individual Members, shall implement the monitoring and reporting below.

III. SURFACE WATER QUALITY MONITORING REQUIREMENTS

A. Surface Water Monitoring Sites

Surface water monitoring shall be performed at sites which are representative of the greater watershed for Imperial Valley.

As specified in Section V, the IID-ICFB Coalition shall submit an updated Surface Water Monitoring Program Plan that, among other things, evaluates and updates as necessary existing surface monitoring sites. Until the approval of the plan, this MRP designates the following surface water sampling locations. These monitoring sites are not an exclusive list; the Executive Officer may require additional monitoring sites as necessary to meet the requirements of the Order.

Source Water

<u>Site Name</u>	<u>Discharge Point</u>
All-American Canal Drop 4	Irrigated Lands

Major Drains

<u>Site Name</u>	<u>Discharge Point</u>
Verde Drain	Alamo River
South Central Drain	Alamo River
Central Drain	Alamo River
Holtville Main Drain	Alamo River
Rose Drain	Alamo River
Greeson Drain	New River
Rice 3 Drain	New River

Rivers

<u>Site Name</u>	<u>River</u>
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Evan Hewes Highway	New River
Drop 2	New River
Outlet to Salton Sea	New River
Drop 10	Alamo River
Drop 8	Alamo River
Drop 6A	Alamo River
Drop 6	Alamo River
Drop 3	Alamo River
Outlet to Salton Sea	Alamo River

Samples are to be taken within the actual flow area of the water. Sampling should be avoided from ponded, sluggish, or stagnant water. Note that samples taken downstream of a bridge could be contaminated from the bridge structure or runoff from the road surface, so samples should be taken upstream when possible.

Drain water samples will be collected from the last accessible drain weir before the drain outfalls to a river or directly to the Salton Sea. River water samples will be collected at locations upstream of a disturbance (upstream of drop structures, bridges or culverts). Source water samples will be collected from the cat-walk located immediately upstream of the All-American Canal Drop 4 generation plant inlet.

Semi-annual (pesticides) and annual (toxicity) monitoring shall be performed at the following sites:

Semiannual (Pesticides) / Annual (Toxicity) Monitoring Sites

<u>Site Name</u>	<u>River</u>
Evan Hewes Highway	New River
Outlet to Salton Sea	New River
Drop 10	Alamo River
Outlet to Salton Sea	Alamo River

B. Monitoring Schedule, Frequency, and Parameters

Monitoring must be conducted when the pollutant is most likely to be present. If there is an intermittent beneficial use of the water body, monitoring must also be conducted

when intermittent beneficial use impacts could occur. The frequency of data collection must be sufficient to allow determination of compliance with the relevant numeric water quality objective(s) or water quality guideline triggers.

The major pollutants of concern within the Imperial Valley from Irrigated Agricultural Lands discharges include nutrients, pesticides, salts, and sediments. Water quality monitoring shall be used to assess the wastes discharged from Irrigated Agricultural Lands to state waters and to evaluate the effectiveness of management practices implementation. Surface water quality shall be evaluated with the field and laboratory parameters and frequency listed in Table B-1.

As specified in Section V, the IID-ICFB Coalition shall submit an updated Surface Water Monitoring Program Plan that, among other things, evaluates and updates as necessary the list of monitoring constituents and frequencies. Until the approval of the plan, this MRP designates the following minimum surface water sampling constituents and frequencies.

Table B-1: Surface Water Monitoring Parameters, Frequency, and Aquatic Life and Consumption Numeric Water Quality Objectives or Criteria¹⁶

Parameter	Field or Laboratory Analysis	Frequency	Numeric Water Quality Objective or Benchmark	Objective or Benchmark Source (if applicable)
Phosphorus	Laboratory	Quarterly		
Total Nitrogen	Laboratory (calculated)	Quarterly		
Ammonia (nitrogen)	Laboratory	Quarterly		
Nitrate + Nitrite as Nitrogen	Laboratory	Quarterly		
Selenium	Laboratory	Quarterly	5.0 µg/L ¹⁷	California MCL ¹⁸

¹⁶ Laboratory analyses should have the detection limit and reportable detection limit lower than corresponding numeric water quality objectives or water quality guidelines. Change of laboratory method with approval of Colorado River Basin Water Board may be required to meet the reporting limits requirement.

¹⁷ µg/L = micrograms per liter

¹⁸ MCL = Maximum Contaminant Level

Parameter	Field or Laboratory Analysis	Frequency	Numeric Water Quality Objective or Benchmark	Objective or Benchmark Source (if applicable)
Total Suspended Solids (TSS)	Laboratory	Quarterly	200 mg/L ¹⁹ annual average	Basin Plan ²⁰
<i>E. coli</i> / Enterococcus ²¹	Laboratory	Quarterly	Rolling mean ^{22 23}	Basin Plan
Biological Oxygen Demand (BOD)	Laboratory	Quarterly		
Total Dissolved Solids (TDS)	Laboratory	Quarterly	4000 mg/L annual average 4500 mg/L annual maximum	Basin Plan
Hardness (CaCO ₃)	Laboratory	Quarterly		
Alkalinity	Laboratory	Quarterly		
Chloride	Laboratory	Quarterly		
Sulfate	Laboratory	Quarterly		
pH	Field	Quarterly	6.0 to 9.0	Basin Plan
Temperature	Field	Quarterly		

¹⁹ mg/L = milligrams per liter

²⁰ Basin Plan = Water Quality Control Plan for the Colorado River Basin Region, January 8, 2019

²¹ The salinity of the sampled waterbody will dictate what pathogen indicator should be analyzed according to the surface water quality objectives listed in Attachment A, Section I.A.6.a-b. Because the salinity of surface waters in Imperial Valley are consistently over one part per thousand, it is expected that the appropriate pathogen indicator will always be enterococci.

²² For enterococci, a six-week rolling geometric mean not to exceed 30 colony forming units (cfu)/100 milliliters (mL) calculated weekly, with a statistical threshold value of 110 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

²³ For *E. coli*, a six-week rolling geometric mean not to exceed 100 colony forming units (cfu) per 100 milliliters (mL), calculated weekly and a statistical threshold value (STV) of 320 cfu/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

Parameter	Field or Laboratory Analysis	Frequency	Numeric Water Quality Objective or Benchmark	Objective or Benchmark Source (if applicable)
Dissolved Oxygen (DO)	Field	Quarterly	5.0 mg/L	Basin Plan
Flow (cfs) ²⁴	Field	Quarterly		
Chlorpyrifos	Laboratory	Semi-annual (Spring and Fall)	20 ng/l ²⁵ 1-hour average 14 ng/l 4-day average	CDFW aquatic life criteria ²⁶
Diazinon	Laboratory	Semi-annual (Spring and Fall)	160 ng/L 1-hour average 100 ng/L 4-day average	CDFW aquatic life criteria
Malathion	Laboratory	Semi-annual (Spring and Fall)	170 ng/l 1-hour average 280 ng/l 4-day average	UC Davis organophosphate criteria ²⁷
Bifenthrin	Laboratory	Semi-annual (Spring and Fall)	4 ng/L 1-h average 0.6 ng/L 4-day average	UC Davis pyrethroid criteria ²⁸
Cyfluthrin	Laboratory	Semi-annual (Spring and Fall)	0.3 ng/L 1-hour average 0.05 4-day average	UC Davis pyrethroid criteria
Cypermethrin	Laboratory	Semi-annual (Spring and Fall)	1 ng/L 1-hr average 0.2 ng/L 4-day average	UC Davis pyrethroid criteria

²⁴ cfs = cubic feet per second

²⁵ ng/L = nanograms per liter

²⁶ California Department of Fish and Wildlife Water Quality Criteria for Diazinon and Chlorpyrifos, Siepmann and Findlayson 2000

²⁷ Aquatic Life Water Quality Criteria Derived via the UC Davis Method: I. Organophosphate Insecticides, A.J. Palumbo et al.

²⁸ Aquatic Life Water Quality Criteria Derived via the UC Davis Method: II. Pyrethroid Insecticides, T.L Fojut et al.

Annual (once yearly) toxicity sampling will be conducted in late October/early November. The following toxicity tests that are to be completed on samples collected from selected sample sites on an annual basis:

Table B-2: Toxicity Sampling Species and Methods

Test	Species	End Points	Duration	Method
Chronic	Fathead minnow (<i>Pimephales promelas</i>)	Larval survival and growth	7 days	USEPA 821-R-02-013 (Chronic)
Chronic	Water flea (<i>Ceriodaphnia dubia</i>)	Survival and reproduction	6-8 days	USEPA 821-R-02-013 (Chronic)
Chronic	Green algae (<i>Raphidoceliss ubcapitata</i>)	Growth	4 days	USEPA 821-R-02-013 (Chronic)

Impacts to water quality shall also be evaluated using fish tissue laboratory analytical testing. Fish tissue sampling will be conducted annually at two sites in late October/early November. One sample shall be collected from the Alamo River and one from the New River outlets to the Salton Sea. Table B-3 below lists the constituents that are to be analyzed on trophic level 4 fish tissue samples which have been collected from the selected sampling sites.

Table B-3: Fish Tissue Monitoring Parameters, Frequency, and Objectives

Fish Tissue Measured Parameters	Field or Laboratory Analysis	Frequency	OEHHA ²⁹ Numeric Fish Tissue Criteria
DDT	Laboratory	Annual	15 µg/kg
Dieldrin	Laboratory	Annual	0.32 µg/kg
Toxaphene	Laboratory	Annual	4.3 µg/kg
PCBs	Laboratory	Annual	2.6 µg/kg

C. Surface Water Data Management Requirements

²⁹ California Office of Environmental Health Hazard Assessment

Data should be provided in a format that is compatible with the California Environmental Data Exchange Network (CEDEN). The results of monitoring are to be included in the quarterly and annual monitoring reports described below, and shall include a map of the sampled locations, tabulation of the analytical data, and time concentration charts.

IV. GROUNDWATER QUALITY MONITORING REQUIREMENTS

The IID-ICFB Coalition must collect sufficient data to describe Irrigated Agricultural Lands impacts on groundwater quality and to determine whether existing or newly-implemented management practices comply with the groundwater receiving water limitations of the Order. The evaluation of groundwater quality required by this MRP focuses on two primary areas: (1) groundwater trend monitoring and (2) drinking water supply well monitoring.

The purpose of the groundwater quality trend monitoring program is to determine current water quality conditions of groundwater relevant to Irrigated Agricultural Lands and develop long-term groundwater quality information that can be used to evaluate the regional effects of Irrigated Agricultural Lands practices. The purpose of the drinking water supply well program is to identify drinking water wells that have nitrate concentrations that threaten to exceed the maximum contaminant level (MCL) of 10 mg/L of nitrate + nitrite as N and notify any well users of the potential for human health impacts.

A. Groundwater Quality Trend Monitoring

The IID-ICFB Coalition shall develop a groundwater monitoring network of wells that will (1) be representative of the Coalition's geographic area and (2) employ shallow wells (though not necessarily wells completed in the uppermost zone of first encountered groundwater). The Coalition shall propose the locations of the sampling wells in its Groundwater Monitoring Program Plan, subject to approval of the Executive Officer.

The rationale for the distribution of trend monitoring wells shall be included in a workplan, and should consider the following:

- a. The variety of agricultural commodities produced within the Coalition Group's boundaries (particularly those commodities comprising the most irrigated agricultural acreage), and
- b. The areas contributing significant recharge to urban and rural communities where groundwater serves as a significant source of supply.

Details for wells proposed for groundwater monitoring shall include:

1. GPS coordinates;
2. Physical address of the property on which the well is situated (If available);

3. California state well number (if known);
4. Well depth;
5. Top and bottom perforation depths;
6. A copy of the water well drillers log, if available;
7. Depth of standing water (static water level), if available (this may be obtained after implementing the program);and
8. Well seal information (type of material, length of seal).

Monitoring wells shall be sampled, at a minimum, annually at the same time of the year and analyzed at least for the indicator parameters identified in Table B-4 below:

Table B-4: Groundwater Trend Monitoring Constituents and Minimum Frequency

Trend Monitoring Constituents	Units	Analysis Type	Frequency
Dissolved Oxygen (DO)	mg/L	Field	Annually
pH	pH Units	Field	Annually
Conductivity (at 25° C)	µmhos/cm	Field	Annually
Temperature	°C	Field	Annually
Nitrate as Nitrogen	mg/L	Laboratory	Annually
Total Dissolved Solids (TDS)	mg/L	Laboratory	Annually
General Minerals: Anions (carbonate, bicarbonate, chloride, and sulfate) Cations (boron, calcium, sodium, magnesium, and potassium)	mg/L	Laboratory	Initially and every five years

Once the trend monitoring has been approved and is being implemented, the results of trend monitoring shall be included in the IID-ICFB Coalition’s annual monitoring reports and shall include a map of the sampled wells, tabulation of the analytical data, and time concentration charts. Groundwater monitoring data is to be submitted electronically to the State Water Board’s GeoTracker database and to the Colorado River Basin Water Board.

B. Drinking Water Supply Well Monitoring

Members must initiate sampling of drinking water supply wells located on their property as described below. The initial sampling event must be completed in time to allow for the results to be submitted electronically to the State Water Board’s GeoTracker database by **March 1, 2024**.

1. **Initial Testing.** Initially, Members must conduct annual drinking water supply well sampling for nitrates for three years. In lieu of one or more of these three annual tests, Members may submit one or more annual drinking water supply well sampling results from one or more of the five prior years, provided sampling and testing for nitrates was completed using USEPA-approved methods and by an ELAP-certified laboratory.
2. **Continued Testing.** Members must continue conducting annual drinking water supply well sampling for nitrates, unless the nitrate concentration is below 8 mg/L nitrate+nitrite as N in three consecutive annual samples, in which case Members may conduct sampling every five years going forward. An alternative sampling schedule based on trending data for the well may be required by the Executive Officer at any time.
3. **Ceasing Sampling.** Sampling may cease if a drinking water well is taken out of service or no longer provides drinking water, including where the well is taken out of service because sufficient replacement water is being supplied. Members must keep any records (e.g. photos, bottled water receipts) establishing that the well is not used for drinking water.
4. **Exceedances.** If groundwater monitoring determines that water in any well that is used for drinking water exceeds 10 mg/L of nitrate+nitrite as N, the Member must provide notice to the users within 10 days of learning of the exceedance and send a copy of the notice to the Colorado River Basin Water Board. If the Member is not the owner of the Irrigated Agricultural Lands, the Member may provide notice instead to the owner within 24 hours of learning of the exceedance, and the owner must provide notice to the users within nine days and send a copy of the notice to the Colorado River Basin Water Board.
5. **Form of Notice.** At a minimum, notice shall be given to users by providing them a copy of a Drinking Water Notification Template approved by the Executive Officer. The template shall be signed by the Member (or landowner if the Member is not the owner) certifying notice has been provided to the users. A copy of the signed template shall be sent to the Colorado River Basin Water Board and retained by the Member or non-Member owner.

Groundwater samples must be collected using proper sampling methods, chain-of-custody, and quality assurance/quality control protocols. Groundwater samples must be collected at or near the well head before the pressure tank and prior to any well head treatment. In cases where this is not possible, the water sample must be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.

All drinking water supply well monitoring data, including any existing data, is to be submitted electronically to the State Water Board's GeoTracker database by the testing

laboratory. The data submitted shall include the Assessor's Parcel Number (APN) where the drinking water supply well is located.

V. SURFACE AND GROUNDWATER MONITORING PROGRAM PLANS

The IID-ICFB Coalition shall prepare and submit a detailed Surface Water Monitoring Program Plan and a Groundwater Trend Monitoring Program Plan to implement the surface water and groundwater monitoring requirements specified in this MRP. The Monitoring Program Plans are required under Section E.5.b of the General WDRs and shall be submitted for approval by the Executive Officer in accordance with the schedule set forth in that section.

At a minimum, the Monitoring Program Plans shall contain the following:

- 1. Monitoring Event Preparation and Protocols** - The Monitoring Program Plans shall include a description of monitoring event preparation and field protocols for sample collection and sample handling (including chain of custody requirements). The Monitoring Program Plans shall also describe protocols for ensuring that all monitoring instruments and devices used by the Coalition for the prescribed monitoring and sample collection are properly maintained and calibrated to ensure proper working condition and continued accuracy.
- 2. Quality Assurance Project Plan (QAPP)** - The Monitoring Program Plans shall include a QAPP describing the objectives and organization of the proposed surface water and groundwater monitoring, and quality assurance/quality control to be conducted. The purpose of the QAPP is to ensure that the data collection and analysis is consistent with the type and quality of data needed to meet the Colorado River Basin Water Board's monitoring goals and objectives. The QAPP shall meet the State Water Board's SWAMP requirements and shall include at least the following four sections: (1) Project Management, (2) Data Generation and Acquisition, (3) Assessment and Oversight, and (4) Data Validation and Usability. Laboratory analytical methods shall be included as an appendix of the QAPP. The Executive Officer must approve the QAPP prior to implementation. A QAPP template is available at the [SWAMP website](#).
- 3. Monitoring Locations** - The Monitoring Program Plans shall include a list of the monitoring locations. The monitoring locations shall meet the monitoring location requirements listed in Sections III.A and IV.A of this MRP. The Monitoring Program Plans shall describe the characteristics of each sampling site, including nearby crop type and cultivation practices, and shall provide an appropriately scaled map of the monitoring locations and GPS coordinates for each monitoring location. The Monitoring Program Plans shall also provide the supporting scientific rationale for the selection of each monitoring location including a demonstration that the proposed locations are appropriate for evaluating the effects of irrigation runoff, stormwater, and non-stormwater discharges from

Irrigated Agricultural Lands, and for evaluating the success of management practices.

4. **Monitoring Constituents** - The Monitoring Program Plans shall include a list of the constituents to be monitored at each monitoring location. The list shall include, but need not be limited to, the parameters listed in Tables 2, and 3 and Sections III.B, IV.A, and IV.B of this MRP.
5. **Monitoring Frequency** - The Monitoring Program Plans shall include the frequency and approximate dates of monitoring. Surface water monitoring shall be conducted during the dry season and wet season and at the frequency specified in Tables 2, and 3 and Section III.B. Groundwater monitoring shall be conducted at the frequency specified in Sections IV.A, and IV.B of this MRP.
6. **Monitoring Team** - The Monitoring Program Plans shall include a description of the monitoring team and analytical laboratories, including names, titles, qualifications, and contact information of key personnel. Changes to the monitoring team should be included in the Annual Monitoring Report (Section VI.E of this MRP).

VI. REPORTING REQUIREMENTS

Reports and notices shall be submitted in accordance with Section F of the Order, General Provisions.

A. Submittal of Surface Water Monitoring Results

The IID-ICFB Coalition shall submit surface water field measurements and laboratory analysis results as they are available in an electronic format. The surface water monitoring data results shall include the following for the required reporting period:

1. An Excel workbook containing all data records (surface water data). The workbook shall contain, at a minimum, those items detailed in the most recent version of the Coalition's approved Monitoring Program Plan and QAPP.
2. Electronic copies of all field sheets.
3. If photos are obtained at surface water monitoring sites to document sampling conditions or activities, electronic copies of the photos, clearly labeled with station code and date.
4. Electronic copies of all applicable laboratory analytical reports shall be submitted once per year with the Annual Monitoring Report.
5. For chemistry data, analytical reports must include, at a minimum, the following:
 - a. A lab narrative describing quality control failures;

- b. Analytical problems and anomalous occurrence;
- c. Chain of custody and sample receipt documentation;
- d. All sample results for contract and subcontract laboratories with units, Reporting Limits and Method Detection Limits;
- e. Sample preparation, extraction, and analysis dates; and
- f. Results for all quality control samples including all field and laboratory blanks, lab control spikes, matrix spikes, field and laboratory duplicates, and surrogate recoveries (if applicable).
- g. If any data is missing from a report, the submittal must include a description of what data is missing and when it will be submitted to the Colorado River Basin Water Board.

B. Annual Submittal of Groundwater Monitoring Results

Each year, following the approval and implementation of the Groundwater Trend Monitoring Program Plan, IID-ICFB Coalition shall submit groundwater field measurements and laboratory analysis results as they are available in an electronic format. The annual groundwater monitoring data results shall include the following for the required reporting period:

1. An Excel workbook containing all data records (groundwater data). The workbook shall contain, at a minimum, those items detailed in the most recent version of the Coalition's approved Monitoring Program Plan and QAPP.
2. Electronic copies of all field sheets.
3. If photos are obtained at groundwater monitoring sites to document sampling conditions or activities, electronic copies of the photos, clearly labeled with station code and date.
4. Electronic copies of all applicable laboratory analytical reports.
5. For chemistry data, analytical reports must include, at a minimum, the following:
 - a. A lab narrative describing quality control failures;
 - b. Analytical problems and anomalous occurrence;
 - c. Chain of custody and sample receipt documentation;
 - d. All sample results for contract and subcontract laboratories with units, Reporting Limits and Method Detection Limits;
 - e. Sample preparation, extraction and analysis dates; and
 - f. Results for all quality control samples including all field and laboratory

blanks, lab control spikes, matrix spikes, field and laboratory duplicates, and surrogate recoveries (if applicable).

- g. If any data is missing from the annual data report, the submittal must include a description of the missing data and the date it will be submitted to the Colorado River Basin Water Board.

C. Annual Submittal of Management Practice (Farm Plan) Data

By **July 1, 2023**, and **annually** thereafter, the Coalition shall submit to the Colorado River Basin Water Board management practice implementation data from the most recently submitted Farm Plans.

The following data shall be reported to the Colorado River Basin Water Board for each field:

1. Anonymous Member ID
2. Crop: If the Member has more than one field of a given crop, these may be identified by crop plus a number (e.g., tomato₁, tomato₂)
3. Irrigation method
4. Irrigation practices
5. Pest management practices
6. Sediment and erosion management practices
7. Whether there are irrigation wells
8. Whether there are abandoned wells

D. Annual Submittal of Irrigation and Nitrogen Management Summary Data

The Coalition shall submit certain data from the prior year's Irrigation and Nitrogen Management Plan (INMP) Summary Reports and certain additional calculations in three tables in Excel workbook format.

The Coalition shall submit the Individual Field Applied (A) and Removed (R) Data by Anonymous Member ID Table beginning **July 1, 2024** and **annually** thereafter. The Coalition shall submit Individual Field AR Data by Anonymous APN ID Table beginning **July 1, 2024** and **annually** thereafter. The Coalition shall submit Township AR Data Table information beginning **July 1, 2024** and **annually** thereafter.

The Coalition shall calculate the following values and convert them to per acre values as indicated:

Total Nitrogen Removed

The Total Nitrogen Removed shall be calculated from the total amount of material removed (harvested/sequestered) and multiplied by a crop-specific coefficient, C_N . The Coalition shall determine, through literature review, nitrogen removed testing, and research, the most appropriate C_N coefficients for converting crop yield to Nitrogen Removed. The Coalition shall publish C_N coefficients for crops that cover 95% of acreage within the Coalition's boundaries in time to calculate Total Nitrogen Removed values based on yield values reported in the INMP Summary Reports due **March 1, 2024**. By **March 1, 2025**, the Coalition shall publish C_N coefficients for crops that cover 99% of acreage within the Coalition's boundaries. For the crops that cover the remaining 1% of acreage within the Coalition's boundaries, it is acceptable to use estimated C_N coefficients based on similar crop types. The methods used to establish C_N coefficients must be approved by the Executive Officer. Until C_N coefficients have been established for a particular crop, the Member will only report the crop yield in the INMP. Nitrogen Removed includes nitrogen removal via harvest and nitrogen sequestered in permanent wood of perennial crops.

Nitrogen Applied/Nitrogen Removed Ratio (A/R Ratio)

The A/R ratio shall be reported as the ratio of Total Nitrogen Applied to Total Nitrogen Removed.

Multi-Year Applied/Nitrogen Removed Ratio (A/R Ratio)

For each field for which three consecutive years of A/R ratio is available, the multi-year A/R ratio shall be reported as the ratio of Total Nitrogen Applied to Total Nitrogen Removed for the three prior consecutive years.

Nitrogen Applied – Nitrogen Removed Difference (A-R Difference)

The A-R difference shall be reported as the numerical difference between Total Nitrogen Applied and Total Nitrogen Removed. The Coalition shall review each Member's INMP Summary Reports and independently calculate and report both the A/R ratio and the A-R difference for the current reporting cycle (A/R1 year and A-R1 year). Beginning the third year of reporting, for those locations with data available for three years, the Coalition shall calculate and report a three-year running total for both the A/R ratio and the A-R difference (A/R3 year and A-R3 year). The formulas for the A/R ratios and A-R differences are shown in the equations below.

$$\text{A/R Ratio} = \frac{\text{Nitrogen Applied (from any source, including fertilizers, irrigation)}}{\text{Nitrogen Removed (via harvest, etc.)}}$$

$$\text{A-R Difference} = \text{Nitrogen Applied} - \text{Nitrogen Removed}$$

The following data shall be reported to the Colorado River Basin Water Board in three tables:

Table 1: Individual Field-Level AR Data by Anonymous Member ID Table: One entry is made for each field or management unit reported.

1. Anonymous Member ID: Each Anonymous Member ID may be associated with more than one field;
2. Crop: If the Member has more than one field of a given crop, these may be identified by crop plus a number (e.g. tomato₁, tomato₂).³⁰
3. Nitrogen applied via fertilizers (lbs/acre);
4. Nitrogen applied via organics and compost (lbs/acre);
5. Nitrogen applied via irrigation water (lbs/acre);
6. Total Nitrogen applied (lbs/acre) [sum of nitrogen from fertilizer, organics/compost, and irrigation water];
7. Nitrogen removed per acre (lbs/acre);
8. A/R ratio;
9. A-R difference (lbs/acre); and
10. 3-year A/R ratio, if available.

Table 2: Individual Field-Level AR Data by Anonymous APN ID Table: An entry for a field or management unit may be repeated if there is more than one Anonymous APN ID associated with the field or management unit.

1. Anonymous APN ID: List on a separate line each Anonymous APN ID assigned to parcels the field overlays completely or partially;
2. Associated groundwater basin or subbasin;
3. Crop: If there is more than one field of a given crop in the APN, these may be identified by crop plus a number (e.g. tomato₁, tomato₂);
4. Nitrogen applied via fertilizers (lbs/acre);
5. Nitrogen applied via organics and compost (lbs/acre);

³⁰The Regional Water Board recognizes that, if multiple crop types are grown in the same field over the course of a year or over several years, variations on field nomenclature and crop reporting will be necessary. For example, the field could be identified as the same field in an extra column and an extra row could be added for each crop. In addition, the three-year A/R target range would likely need to be expressed as a weighted average of the crops grown during the three years.

6. Nitrogen applied via irrigation water (lbs/acre);
7. Total Nitrogen applied (lbs/acre) [sum of nitrogen from fertilizer, organics/compost, and irrigation water];
8. Nitrogen removed per acre (lbs/acre);
9. A/R ratio;
10. A-R difference (lbs/acre); and
11. 3-year A/R ratio, if available.

Table 3: Township-Level Aggregated AR Data Table:

1. Township and range;
2. Crop;
3. Total acreage: sum for all the acreage for each unique crop within the township (acres);
4. Total nitrogen applied via fertilizer: sum for all acreage for each unique crop (total lbs);
5. Total nitrogen applied via organics and compost: sum for compost for each unique crop (total lbs);
6. Total nitrogen applied via irrigation water: sum for all acreage for each unique crop (total lbs);
7. Total nitrogen applied for each unique crop (total lbs) [sum of nitrogen from fertilizer, organics/compost, and irrigation water];
8. Total nitrogen removed for each unique crop (total lbs);
9. A/R ratio for each unique crop; and
10. A-R difference for each unique crop (total lbs).

Outliers – The IID-ICFB Coalition shall identify the entries in the Table 1 above that the Coalition Group considers to be outliers for the AR data and which are subject to follow up actions. The methodology used to make the outlier determination must be approved by the Colorado River Basin Water Board’s Executive Officer.

E. Annual Monitoring Report (AMR)

The Annual Monitoring Report (AMR) shall be submitted by **July 1** every year. The AMR shall cover the monitoring periods from the previous calendar year. The AMR shall include the following components:

1. Signed transmittal letter;
2. Title page;
3. Table of contents;
4. Executive summary;
5. Description of the Coalition's covered geographical area;
6. Monitoring objectives and design;
7. Sampling site/monitoring well descriptions and rainfall records for the time period covered under the AMR;
8. Location map(s) of sampling sites/monitoring wells, crops, and land uses;
9. Results of all surface water and groundwater analyses arranged in tabular form so that the required information is readily discernible;
10. Discussion of data relative to water quality objectives, and where applicable, Water Quality Restoration Plan milestones;
11. Sampling and analytical methods used;
12. Summary of Quality Assurance Evaluation results (as identified in the most recent version of the Coalition's approved QAPP);
13. Specification of the method(s) used to obtain estimated flow at each surface water monitoring site during each monitoring event.
14. Summary of exceedances of water quality objectives/trigger limits occurring during the reporting period and for surface water-related pesticide use information;
15. Actions taken to address water quality exceedances that have occurred, including but not limited to, revised or additional management practices implemented;
16. Evaluation of monitoring data to identify spatial trends and patterns;
17. Summary of management practice information collected as part of the Farm Plans;
18. Summary of INMP Summary Report data;
19. Summary of education and outreach activities; and
20. Conclusions and recommendations.

Additional clarifications necessary for some of the above report components are described below:

Report Component (1) —Signed Transmittal Letter

A transmittal letter shall accompany each report. The transmittal letter shall be submitted and signed in accordance with the requirements of Section F of the Order, General Provisions.

Report Component (8) — Location Maps

Location map(s) showing the sampling sites/monitoring wells, crops, and land uses within the Coalition's geographic area must be included in the AMR. An accompanying GIS shapefile or geodatabase of monitoring site and monitoring well information must include site code and name (surface water only) and Global Positioning System (GPS) coordinates (surface water sites and wells used for monitoring). The map(s) must contain a level of detail that ensures they are informative and useful. GPS coordinates must be provided as latitude and longitude in the decimal degree coordinate system (at a minimum of five decimal places). The datum must be either WGS 1984 or NAD83, and clearly identified on the map. The source and date of all data layers must be identified on the map(s). All data layers/shapefiles/geodatabases included in the map shall be submitted with the AMR.

Report Component (9) – Tabulated Results

In reporting monitoring data, the Coalition shall arrange the data in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the data collection requirements of the MRP.

Report Component (10) — Data Discussion to Illustrate Compliance

The report shall include a discussion of the Coalition's compliance with the data collection requirements of the MRP. If a required component was not met, an explanation for the missing data must be included. Results must also be compared to water quality objectives and trigger limits.

Report Component (12) — Quality Assurance Evaluation (Precision, Accuracy and Completeness)

A summary of precision and accuracy results (both laboratory and field) is required in the report. Acceptance criteria for all measurements of precision and accuracy must be identified. The Coalition must review all quality assurance/quality control (QA/QC) results to verify that protocols were followed and identify any results that did not meet acceptance criteria. A summary table or narrative description of all QA/QC results that did not meet water quality objectives must be included. Additionally, the report must include a discussion of how the failed QA/QC results affect the validity of the reported data and the corrective actions to be implemented.

In addition to precision and accuracy, the Coalition must also calculate and report completeness. Completeness includes the percentage of all quality control results that meet acceptance criteria, as well as a determination of project completeness. The Coalition may ask the laboratory to provide assistance with evaluation of their QA/QC data, provided that the Coalition prepares the summary table or narrative description of the results for the AMR.

Report Component (14) — Summary of Exceedances

A summary of the exceedances of water quality objectives or triggers that have occurred during the monitoring period is required in the AMR. In the event of exceedances for pesticides or in surface water, local pesticide use data must be included in the AMR. Pesticide use information may be acquired from the agricultural commissioner. This requirement is described further in Section F below on Surface and Groundwater Exceedance Reports.

Report Component (16) — Evaluation of Monitoring Data

The Coalition must evaluate its monitoring data in the AMR in order to identify potential trends and patterns in surface water and groundwater quality that may be associated with waste discharge from Irrigated Agricultural Lands. As part of this evaluation, the Coalition must analyze all readily available monitoring data that meet program quality assurance requirements to determine deficiencies in monitoring for discharges from Irrigated Agricultural Lands and whether additional sampling locations are needed. If deficiencies are identified, the Coalition must propose a schedule for additional monitoring or source studies. Upon notification from the Executive Officer, the Coalition must monitor any parameter in a watershed that lacks sufficient monitoring data (i.e., a data gap should be filled to assess the effects of discharges from Irrigated Agricultural Lands on water quality).

The Coalition should incorporate pesticide use information, as needed, to assist in its data evaluation. Wherever possible, the Coalition should utilize tables or graphs that illustrate and summarize the data evaluation.

Report Component (17) – Summary of Management Practice Information

The Coalition will aggregate and summarize information collected from management practices implementation. The summary of management practice data must include a quality assessment of the collected information by township (e.g. missing data, potentially incorrect/inaccurate reporting), and a description of corrective actions to be taken regarding any deficiencies in the quality of data submitted, if such deficiencies were identified.

Report Component (18) – INMP Summary Report Evaluation

In addition to submitting the INMP Summary Report data, the Coalition shall submit an evaluation comparing individual field data collected from the Members'

INMP Summary Reports. These comparisons shall include the ratio of Nitrogen Applied³¹ to Nitrogen Removed and the difference between Nitrogen Applied and Nitrogen Removed for crops in the watershed. Nitrogen Applied includes nitrogen from any sources, including, but not limited to, organic amendments, synthetic fertilizers, and irrigation water.

The Coalition's evaluation of both the $A/R_{1\text{ year}}$ and $A/R_{3\text{ year}}$ ratios must include, at a minimum, a comparison of A/R ratios by crop type. As directed by the Executive Officer, initial further evaluations within each crop type comparing the irrigation method, the soil conditions, and the farming operation size shall be developed. The Coalition shall evaluate the corresponding $A-R_{1\text{ year}}$ and $A-R_{3\text{ year}}$ differences by crop type. The Coalition shall also evaluate any other A/R ratio or A-R difference comparisons as directed by the Executive Officer. For each comparison, the Coalition must identify the mean and the standard deviation as well as develop a histogram plot of the data. A box and whisker plot comparing the A/R ratio and A-R difference for each comparison, or equivalent tabular or graphical presentation of the data approved by the Executive Officer, may also be used. The summary of nitrogen management data must include a quality assessment of the collected information (e.g. missing data, potentially incorrect/inaccurate reporting). Spreadsheets showing the calculations used for data evaluation must also be submitted to the Executive Officer. The Coalition may include any recommendations regarding future A/R ratio target values.

F. Surface and Groundwater Exceedance Reports

The Coalition shall provide surface and groundwater exceedance reports if monitoring results show exceedances of applicable numeric water quality objectives and/or water quality benchmarks. For each surface or groundwater quality objective exceeded at a monitoring location, the Coalition shall submit an Exceedance Report to the Colorado River Basin Water Board. The Coalition shall evaluate all of its monitoring data and determine exceedances **no later than 14 business days** after receiving the final laboratory analytical reports for the event that triggered the exceedance. Upon determining an exceedance, the Coalition shall send the Exceedance Report by email to the Coalition's designated Colorado River Basin Water Board staff contact **by the next business day**.

³¹ For some crops, the information needed to determine nitrogen removed may not be readily available. This will be determined through N removed research and crop yield will serve as a placeholder until nitrogen removed data is made available.

Appendix A

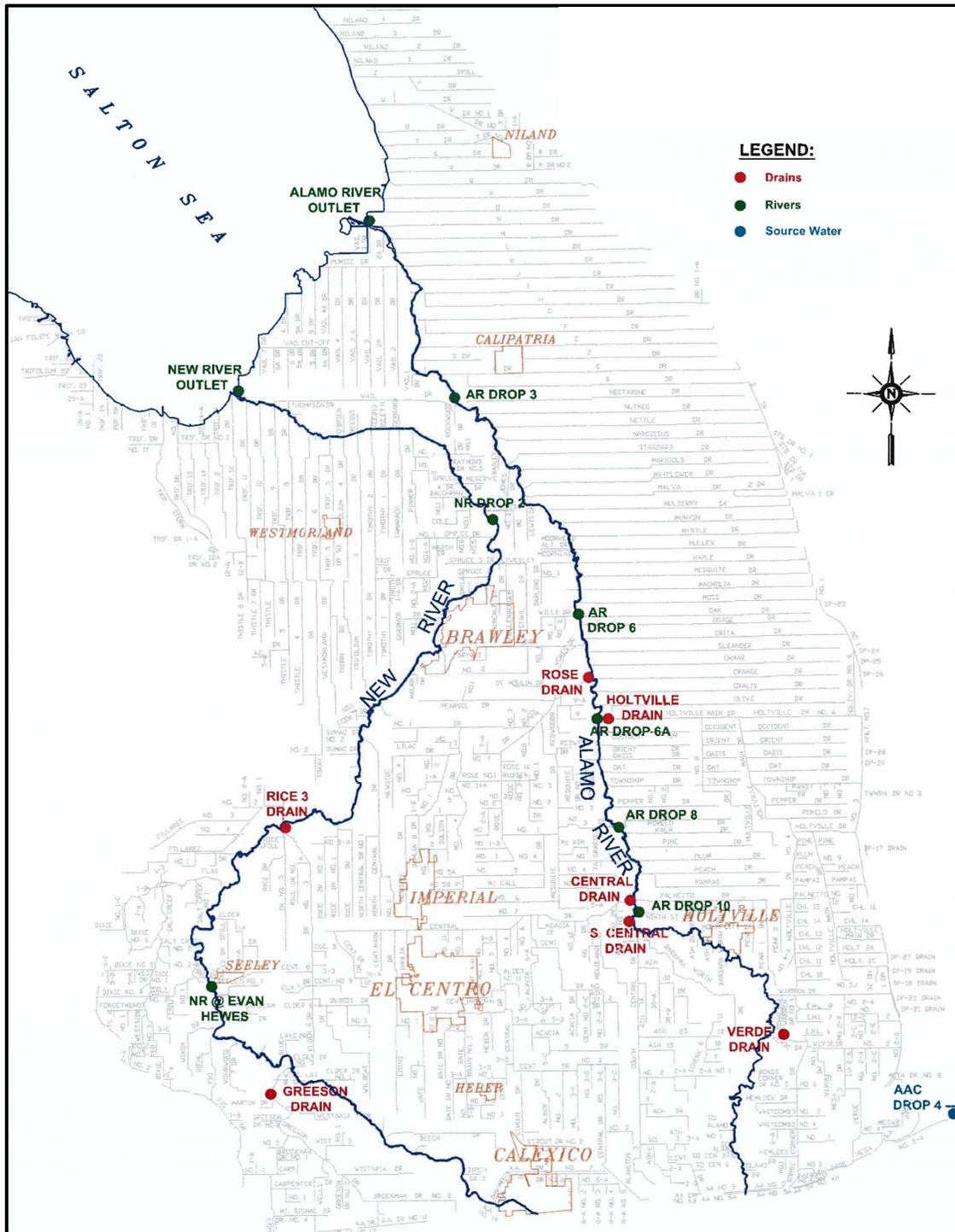


Diagram showing the sampling locations that are representative of discharges from Irrigated Agricultural Lands in Imperial Valley.