# LAS VIRGENES - TRIUNFO
# JOINT POWERS AUTHORITY
# AGENDA

**4232 Las Virgenes Road, Calabasas, CA 91302**

**Members of the public wishing to address the Las Virgenes-Triunfo Joint Powers Authority (JPA) Board of Directors are advised that a statement of Public Comment Protocols is available from the Clerk of the Board. Prior to speaking, each speaker is asked to review these protocols, complete a speakers' card, and hand it to the Clerk of the Board. Speakers will be recognized in the order the cards are received.**

**The Public Comments agenda item is presented to allow the public to address the Board on matters not on the agenda. The public may also present comments on matters on the agenda; speakers for agendized items will be recognized at the time the item is called up for discussion.**

**Materials prepared by the JPA in connection with the subject matter on the agenda are available for public inspection at 4232 Las Virgenes Road, Calabasas, CA 91302. Materials prepared by the JPA and distributed to the Board during this meeting are available for public inspection at the meeting or as soon thereafter as possible. Materials presented to the Board by the public will be maintained as part of the records of these proceedings and are available upon request to the Clerk of the Board.**

---

5:00 PM February 4, 2019

PLEDGE OF ALLEGIANCE

**1 CALL TO ORDER AND ROLL CALL**

**2 APPROVAL OF AGENDA**

**3 PUBLIC COMMENTS**

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

**4 CONSENT CALENDAR**

Matters listed under the Consent Calendar are considered to be routine, non-controversial and normally approved with one motion. If discussion is requested by a member of the Board on any Consent Calendar item, or if a member of the public wishes to comment on

an item, that item will be removed from the Consent Calendar for separate action.

**A Minutes: Regular Meeting of January 7, 2019 (Pg. 4)**

Approve.

## 5 ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

**A Pure Water Project Las Virgenes-Triunfo: Update**

**B Financial Review: Second Quarter of Fiscal Year 2018-19 (Pg. 10)**

Receive and file the financial review for the second quarter of Fiscal Year 2018-19.

## 6 ACTION ITEMS

**A Rancho Solar Generation Project Phase II: Additional Reimbursable Payment to SCE for Interconnection Facility (Pg. 19)**

Authorize the Administering Agent/General Manager to increase the reimbursable payment amount to Southern California Edison by $189,998.90, from $208,557.38 to $398,556.28, and appropriate the additional amount for the interconnection facility costs associated with the Rancho Solar Generation Project Phase II.

**B Tapia Process Air Improvements Project: Construction Award (Pg. 21)**

Award a construction contract to Cushman Contracting Corporation, in the amount of $3,267,000, and reject all remaining bids; authorize the Administering Agent/General Manager to approve a change of scope to Pacific Advanced Civil Engineering, in the amount of $122,720, for support services during construction, and to MSO Technologies, in the amount of $53,200, for SCADA integration services; and appropriate an additional $2,436,293 for the Tapia Process Air Improvements Project.

## 7 BOARD COMMENTS

## 8 ADMINISTERING AGENT/GENERAL MANAGER REPORT

## 9 FUTURE AGENDA ITEMS

## 10 INFORMATION ITEMS

**A State and Federal Legislative Update (Pg. 36)**

**B Pure Water Project Las Virgenes-Triunfo: Regulatory Pathway for Surface Water Augmentation (Pg. 45)**

**C Woolsey Fire Response and Recovery Effort: End of Emergency (Pg. 95)**

## 11 PUBLIC COMMENTS

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

## 12 CLOSED SESSION

**A Conference with Legal Counsel – Existing Litigation (Government Code**

**Section 54956.9(a)):**

Zusser Company, Inc. v. Las Virgenes Municipal Water District

## 13 ADJOURNMENT

Pursuant to Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and applicable federal rules and regulations, requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Executive Assistant/Clerk of the Board in advance of the meeting to ensure availability of the requested service or accommodation. Notices, agendas, and public documents related to the Board meetings can be made available in appropriate alternative format upon request.

# LAS VIRGENES – TRIUNFO
# JOINT POWERS AUTHORITY
# MINUTES
## REGULAR MEETING

5:00 PM January 7, 2019

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance to the Flag was led by Janna Orkney.

## 1. CALL TO ORDER AND ROLL CALL

The meeting was called to order at **5:00 p.m.** by Chair Lewitt in the Board Room at Las Virgenes Municipal Water District headquarters at 4232 Las Virgenes Road in Calabasas, California. Josie Guzman, Clerk of the Board, conducted the roll call.

Present: Directors Caspary, Lewitt, Lo-Hill, Orkney, Pan, Polan, Renger, Shapiro, Tjulander, and Wall.
Absent: None.

## 2. CHAIR/VICE CHAIR

### A Annual Transition of JPA Chair and Vice Chair

**Recognize Triunfo Sanitation District Director Janna Orkney as Chair, and Las Virgenes Municipal Water District Director Jay Lewitt as Vice Chair of the Las Virgenes – Triunfo Joint Powers Authority for calendar year 2019.**

The JPA Board transitioned its officers with Triunfo Sanitation District Director Janna Orkney as Chair and Las Virgenes Municipal Water District Director Jay Lewitt as Vice Chair for calendar year 2019.

## 3. APPROVAL OF AGENDA

Administering Agent/General Manager David Pedersen noted that there was no update for Closed Session Item No. 13A, and he requested that this item be removed from the agenda.

Director Tjulander moved to approve the agenda as amended with the removal of Item 13A. Motion seconded by Director Renger. Motion carried unanimously.

## 4. PUBLIC COMMENTS

None.

## 5. CONSENT CALENDAR

### A Minutes: Regular Meeting of December 3, 2018

Director Caspary moved to approve the Consent Calendar. Motion seconded by Director Tjulander. Motion carried unanimously.

## 6. ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

### A Pure Water Project Las Virgenes-Triunfo: Update

Administering Agent/General Manager David Pedersen provided an update regarding the Pure Water Demonstration Project design. He noted that a meeting would be held with the design team to discuss the building elements, visitor experience, landscaping, and demonstration garden based on the Board's feedback. He reported that staff met with representatives from Calleguas Municipal Water District (Calleguas), Camrosa Water District (Camrosa), and the City of Thousand Oaks to discuss brine disposal. He noted that Camrosa expressed interest in brine disposal stemming from agriculture and due to high salinity levels that affect avocado production. He also noted that there was discussion regarding potentially working together on a joint technical study and a brine disposal pipeline using the existing sewer collection system that is tributary to the Hill Canyon Treatment Plant, and partnering on a de-salter at this plant to treat the water before it is discharged to Conejo Creek and/or conveyed to Camrosa. He responded to questions posed by the Board regarding the cost of the proposed study, which would be shared by the four agencies, and the six-month potential timeline for completion.

### B Woolsey Fire Response and Recovery

Administration Agent/General Manager David Pedersen reported that the JPA-owned facilities were fully operational. He noted that staff has been working with the California Office of Emergency Services (OES), the Federal Emergency Management Agency (FEMA), and the JPA's insurance carrier regarding recovery from fire damages. He also noted that a Request for Proposals would be prepared for design and restoration services for damages sustained at the Rancho Las Virgenes Composting Facility and other fire-damaged facilities.

Chair Orkney welcomed Director Lynda Lo-Hill to the JPA Board. Director Lo-Hill stated that she was very proud to serve on the JPA Board.

## 7. ACTION ITEMS

### A Rancho Digester No. 2 Cleaning: Construction Award

**Award a construction contract to MP Environmental Services, Inc., in the amount of $351,327.40, for the Rancho Digester No. 2 Cleaning Project; appropriate an additional $308,694 to provide sufficient project funding; and reject all remaining bids.**

Administering Agent/General Manager David Pedersen presented the report.

Director Caspary moved to approve Item 7A. Motion seconded by Director Polan.

Brett Dingman, Water Reclamation Manager, responded to questions related to efficiency improvements to offset the cost by having a skilled contractor perform the Digester No. 2 cleaning, sending the centrate to the Tapia Water Reclamation Facility, and disposing the solid materials at a landfill.

Administering Agent/General Manager David Pedersen responded to a question regarding the 20 percent General & Administrative (G & A) cost and stated these are overhead costs that cover all non-direct costs of the project. He noted that the G & A cost that is applied to the project is stipulated in the JPA Agreement and is allocated based on the number of labor hours allocated to the project.

Chair Orkney requested a future discussion on the methodology of allocating G & A costs.

Motion carried unanimously.

## 7. 8OARD COMMENTS

None.

## 9. ADMINISTERING AGENT/GENERAL MANAGER REPORT

Administering Agent/General Manager David Pedersen reported that 1.6 inches of rain was measured at the Tapia Water Reclamation Facility. He noted that no operational issues were experienced, and no excessive erosion occurred in the burned areas.

## 10. FUTURE AGENDA ITEMS

None.

## 11. INFORMATION ITEMS

### A State and Federal Legislative Update

### B Las Virgenes – Triunfo Joint Powers Authority Energy Efficiency Project Status

Director Tjulander inquired whether the potential four megawatt solar array was the solar array being donated by the Hilton Foundation. Administering Agent/General Manager David Pedersen responded that this would be a separate project to expand the existing one megawatt facility in the North Canyon. He noted that initially the Hilton Foundation had proposed to gift their solar array and landscaping due to the expansion of their complex; however, the Hilton Foundation purchased and relocated to the old Dole Headquarters in Westlake Village and would not be proceeding with the expansion of their current complex nor gifting their solar array. He noted that the Hilton Foundation continues to be interested in the supporting the Pure Water Project Las Virgenes-Triunfo and the demonstration garden proposed with the demonstration project.

### C Rancho Las Virgenes Farm Sprayfields Operation and Maintenance: Renewal of Agreement

Director Lo-Hill inquired regarding the amount of runoff experienced and captured in the catch basins at the farm sprayfields. David Lippman, Director of Facilities and Operations, responded that any runoff from the Rancho Las Virgenes Farm Sprayfields that receive sludge or recycled water must be contained in the catch basins and not allowed to flow to the creek.

Dave Roberts, Resource Conservation Manager, noted that the contributing watersheds to the sprayfields are small, there is not a significant amount of runoff, and the sprayfields are used for disposal of recycled water.

## 12. PUBLIC COMMENTS

None.

## 13. CLOSED SESSION - (This item was removed from the agenda.)

### A Conference with Legal Counsel – Existing Litigation (Government Code Section 54956.9(a)):

**Zusser Company, Inc. v. Las Virgenes Municipal Water District**

## 14. ADJOURNMENT

Seeing no further business to come before the Board, the meeting was duly adjourned at **5:45 p.m**.

Janna Orkney, Chair

ATTEST:

Jay Lewitt, Vice Chair

ITEM 5B

February 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Finance & Administration

**Subject : Financial Review: Second Quarter of Fiscal Year 2018-19**

## SUMMARY:

The second quarter financial review presents data as of December 31, 2018. It is important to note that due to the timing of various projects and payments, the second quarter report should primarily be used to identify areas where an emerging trend may affect the JPA's position at fiscal year-end.

## RECOMMENDATION(S):

Receive and file the financial review for the second quarter of Fiscal Year 2018-19.

## FISCAL IMPACT:

No

## ITEM BUDGETED:

No

## FINANCIAL IMPACT:

There is no financial impact associated with this action.

## DISCUSSION:

The JPA's second quarter net uses of funds in Fiscal Year 2018-19 totaled $8.98 million, compared to $7.27 million for the same period in Fiscal Year 2017-18. There was a year-over-year decrease in operating revenues of 5.6%. Operating expenditures increased by 13.4%. The decrease in revenues was primarily due to lower recycled water sales. The increase in operating expenditures was primarily due to higher labor costs associated with response to the Woolsey Fire. Capital project expenditures were approximately $626,000 more than the prior year.

When comparing actuals to budget estimates for Fiscal Year 2018-19 through the second quarter, operating expenditures were approximately $214,000 (2.4%) above budget estimates, primarily due to increased labor costs associated with response to the Woolsey Fire. Capital project expenditures were approximately $45,000 (2.8%) below budget estimates, primarily

due to the timing of expenditures for planned projects.

Prepared by: Angela Saccareccia, Finance Manager

**ATTACHMENTS:**

Attachment A
Attachment B

## Joint Powers Authority Operations

### Quarterly Update - Comparison to Budget & Prior Year at December 31, 2018

| | FY 17-18 Actual YTD | FY 18-19 Budget YTD | FY 18-19 Actual YTD |
|---|---|---|---|
| Total Operating Revenues | $ 1,319,532 | $ 1,538,345 | $ 1,244,983 |
| RW Pump Station | 654,670 | 821,129 | 595,508 |
| RW Tanks & Reservoirs | 34,389 | 67,625 | 44,514 |
| RW System Operations | 12,809 | 23,255 | 14,126 |
| RW Distribution | 68,201 | 49,682 | 21,179 |
| Sewer | 43,545 | 72,606 | 81,112 |
| Waste Water Treatment | 3,862,351 | 4,368,000 | 4,049,344 |
| Composting | 2,239,180 | 2,677,277 | 2,909,019 |
| Centrate Treatment | 179,928 | 162,933 | 197,103 |
| Adminstration | 438,336 | 510,953 | 627,458 |
| Total Operating Expenses | 7,533,409 | 8,753,460 | 8,539,363 |
| Net Operating (Expenses) | $ (6,213,877) | $ (7,215,115) | $ (7,294,380) |

# Joint Powers Authority Operations

## Quarterly Update - Comparison to Budget & Prior Year at December 31, 2018

| | FY 17-18 Actual YTD | FY 18-19 Budget YTD | FY 18-19 Actual YTD |
|---|---|---|---|
| **Las Virgenes Share:** | | | |
| **Total Revenues** | | | |
| Operating Revenues | $ 931,590 | $ 1,086,072 | $ 878,958 |
| Total Revenues | 931,590 | 1,086,072 | 878,958 |
| **Total Expenses** | | | |
| Operating Expenses | $ 5,190,519 | $ 5,863,175 | $ 5,883,621 |
| Capital Project Expenses | 747,929 | 1,157,762 | 1,190,195 |
| Total Expenses | 5,938,448 | 7,020,937 | 7,073,816 |
| **Net (Uses) of Funds - LV** | $ (5,006,859) | $ (5,934,865) | $ (6,194,858) |
| **Triunfo Share:** | | | |
| **Total Revenues** | | | |
| Operating Revenues | $ 387,942 | $ 452,273 | $ 366,025 |
| Total Revenues | 387,942 | 452,273 | 366,025 |
| **Total Expenses** | | | |
| Operating Expenses | $ 2,342,890 | $ 2,890,285 | $ 2,655,742 |
| Capital Project Expenses | 311,461 | 482,127 | 495,634 |
| Total Expenses | 2,654,351 | 3,372,412 | 3,151,376 |
| **Net (Uses) of Funds - TSD** | $ (2,266,408) | $ (2,920,139) | $ (2,785,351) |
| **Total JPA Net (Uses) of Funds** | $ (7,273,267) | $ (8,855,004) | $ (8,980,209) |

# Joint Powers Authority Operations

## Quarterly Update - Comparison to Budget & Prior Year at December 31, 2018

| | FY 17-18 Actual YTD | FY 18-19 Budget YTD | FY 18-19 Actual YTD |
|---|---|---|---|
| **Total Revenues** | | | |
| Operating Revenues | $ 1,319,532 | $ 1,538,345 | $ 1,244,983 |
| Total Revenues | 1,319,532 | 1,538,345 | 1,244,983 |
| **Total Expenses** | | | |
| Operating Expenses | $ 7,533,409 | $ 8,753,460 | $ 8,539,363 |
| Capital Project Expenses | 1,059,390 | 1,639,889 | 1,685,829 |
| Other | - | - | - |
| Total Expenses | 8,592,799 | 10,393,349 | 10,225,192 |
| **Net (Uses) of Funds** | $ (7,273,267) | $ (8,855,004) | $ (8,980,209) |
| **Las Virgenes Share** | (5,134,927) | (5,934,865) | (8,102,634) |
| **Triunfo Share** | (2,138,340) | (2,920,139) | (877,575) |

# *Las Virgenes - Triunfo Joint Powers Authority*
# *Capital Improvement Project Status*
# *December 31, 2018*

| *Job # - Description* | *LV %* | *TSD %* | *Total Project Appropriations* | *Prior Year Expenditures* | *Current Year Expenditures* | *Total Project Expenditures* | *Project Balance* | *LV Balance* | *TSD Balance* |
|---|---|---|---|---|---|---|---|---|---|
| ***Completed Projects*** | | | | | | | | | |
| **10565 - Rancho LV:Digester Cleang/Rpr** | **70.6%** | **29.4%** | **$1,866,751** | **$1,499,493** | **$404,813** | **$1,904,306** | **($37,555)** | **($26,514)** | **($11,041)** |
| Clean out and evaluate the condition of digesters that have been in service for more than 20 years. | | | | | | | | | |
| Additional appropriation $77,257 approved by LVMWD Board 8/28/2018, Item 7B | | | | | | | | | |
| ***Total Completed Projects*** | | | ***$1,866,751*** | ***$1,499,493*** | ***$404,813*** | ***$1,904,306*** | ***($37,555)*** | ***($26,514)*** | ***($11,041)*** |
| ***Projects to complete by June 30, 2019*** | | | | | | | | | |
| **10589 - WIMS Software Implementation** | **70.6%** | **29.4%** | **$32,350** | **$59,965** | **$34,225** | **$94,190** | **($61,840)** | **($43,659)** | **($18,181)** |
| Purchase and installation of water information management solution (WIMS). | | | | | | | | | |
| **10656 - Rancho Reliability Imprv 18-19** | **70.6%** | **29.4%** | **$100,000** | **$0** | **$0** | **$0** | **$100,000** | **$70,600** | **$29,400** |
| Replace or rehabilitate facilities and equipment at the Rancho facility based on failure, exceedance of useful life, or obsolescence. Specific projects are identified for each fiscal year. | | | | | | | | | |
| **10657 - Tapia WRF Relib Imprv FY18-19** | **70.6%** | **29.4%** | **$100,000** | **$0** | **$72,216** | **$72,216** | **$27,784** | **$19,616** | **$8,168** |
| Based on analysis of break history, facility age, pipe material, location and other distribution system indicators, this project will fund specific repair and/or replacement projects. | | | | | | | | | |
| **10687 - Rancho Lighting EfficiencyUpgd** | **70.6%** | **29.4%** | **$362,968** | **$0** | **$9,394** | **$9,394** | **$353,574** | **$249,623** | **$103,951** |
| Rancho Lighting Efficiency Upgrade | | | | | | | | | |
| Appropriation $362,968 approved by JPA Board 9/5/2018, Item 6B | | | | | | | | | |
| **10688 - Rancho Solar Gen.-Ph II** | **70.6%** | **29.4%** | **$208,557** | **$0** | **$0** | **$0** | **$208,557** | **$147,241** | **$61,316** |
| Rancho Solar Generation Project Phase II: Service Agreement for Wholesale Distribution Service and Rule 21 Generator Interconnection Agreement | | | | | | | | | |
| Appropriation $208,557 approved by JPA Board 12/3/2018, Item 6A | | | | | | | | | |
| Reimbursable expense of an interconnection facility. | | | | | | | | | |
| ***Total Projects to complete by June 30, 2019*** | | | ***$803,875*** | ***$59,965*** | ***$115,835*** | ***$175,800*** | ***$628,075*** | ***$443,421*** | ***$184,654*** |
| ***Multi-Year Projects*** | | | | | | | | | |
| **10564 - Centrate Equalization Tank** | **70.6%** | **29.4%** | **$2,343,008** | **$2,056,871** | **$10,717** | **$2,067,588** | **$275,420** | **$194,447** | **$80,973** |
| Construct a centrate equalization tank at the centrate treatment facility at Rancho. | | | | | | | | | |

| Job # - Description | LV % | TSD % | Total Project Appropriations | Prior Year Expenditures | Current Year Expenditures | Total Project Expenditures | Project Balance | LV Balance | TSD Balance |
|---|---|---|---|---|---|---|---|---|---|
| ***Multi-Year Projects*** | | | | | | | | | |
| **10608 - Rancho Amndmnt Bin&Convync Mod** | **70.6%** | **29.4%** | **$1,688,650** | **$176,175** | **$76,346** | **$252,521** | **$1,436,129** | **$1,013,907** | **$422,222** |
| The project consists of installing a new smaller amendment bin and modification to the conveyor system to simplify the amendment conveyance process. | | | | | | | | | |
| **10611 - Tapia Duct Bank Infrstrc Upgrd** | **70.6%** | **29.4%** | **$160,000** | **$0** | **$0** | **$0** | **$160,000** | **$112,960** | **$47,040** |
| Add new duct bank from the front gate to the chemical building with several intercept points along the way. | | | | | | | | | |
| **10619 - Summer Season 2013 TMDL Compln** | **70.6%** | **29.4%** | **$640,000** | **$60,806** | **$72,059** | **$132,865** | **$507,135** | **$358,037** | **$149,098** |
| Construction of a 1MGD "side stream" treatment facility at Tapia to treat stream flow augmentation discharges to the 2013 TMDL limits of 1 mg/L total nitrogen and 0.1 mg/L total phosphorous. The cost estimate is based on membrane technology. | | | | | | | | | |
| **10626 - Process Air Improvements** | **70.6%** | **29.4%** | **$3,740,584** | **$345,623** | **$215,859** | **$561,482** | **$3,179,102** | **$2,244,446** | **$934,656** |
| The first phase is to replace the existing Roots blowers with new, high effiency, single stage blowers. To replace the air diffusers in the aeration basins with new full floor mounted fine bubble diffusers. | | | | | | | | | |
| **10629 - Cny Oaks Prk RW Main Extension** | **70.6%** | **29.4%** | **$399,780** | **$6,649** | **$0** | **$6,649** | **$393,131** | **$277,550** | **$115,581** |
| This extension will serve the City of Westlake Village's Oak Canyon Park and eliminate a long private service line to Yerba Buena School.<br>Funding from Prop 84 IRWM 2015 | | | | | | | | | |
| **10635 - PURE WATER PROJECT** | **70.6%** | **29.4%** | **$3,667,427** | **$94,033** | **$35,623** | **$129,656** | **$3,537,771** | **$2,497,666** | **$1,040,105** |
| This project funds preliminary studies, outreach, CEQA analysis, preliminary design and final design.<br>Project 10637 Facility Siting Study was completed in prior year for $180,777.<br>Project 10650 Land Acquisition was completed in prior year for $2,109,359 | | | | | | | | | |
| **10636 - Mixing & Dilution Study** | **70.6%** | **29.4%** | **$389,186** | **$259,078** | **$57,451** | **$316,529** | **$72,657** | **$51,296** | **$21,361** |
| sub project of 10635 Pure Water Project | | | | | | | | | |
| **10638 - Demonstration Project** | **70.6%** | **29.4%** | **$1,512,610** | **$215,863** | **$162,551** | **$378,414** | **$1,134,196** | **$800,742** | **$333,454** |
| sub project of 10635 Pure Water Project | | | | | | | | | |
| **10653 - Tapia Rehab FY17-18** | **70.6%** | **29.4%** | **$2,105,700** | **$146,285** | **$434,043** | **$580,328** | **$1,525,372** | **$1,076,913** | **$448,459** |
| Combine projects 10647, 10648, 10649 for ease of administration of the projects.<br>Concrete repair and installation of protective coatings<br>Replace ten RAS gates<br>Replace grit piping and grit valves as well as primary skimming pipe | | | | | | | | | |
| **10654 - Hilton Fnd Solar Carport Systm** | **70.6%** | **29.4%** | **$300,000** | **$1,184** | **$0** | **$1,184** | **$298,816** | **$210,964** | **$87,852** |
| Relocation and installation of Solar Carport System donation from Conrad N. Hilton Foundation | | | | | | | | | |
| **10658 - Tapia Sluice Gate&Drv Rpl18-19** | **70.6%** | **29.4%** | **$556,600** | **$0** | **$0** | **$0** | **$556,600** | **$392,960** | **$163,640** |
| Replace existing gates in the tanks and channels at Tapia as well as drive mechanisms for flights and chains.Replace ten RAS gates in FY18-19. | | | | | | | | | |

| Job # - Description | LV % | TSD % | Total Project Appropriations | Prior Year Expenditures | Current Year Expenditures | Total Project Expenditures | Project Balance | LV Balance | TSD Balance |
|---|---|---|---|---|---|---|---|---|---|
| ***Multi-Year Projects*** | | | | | | | | | |
| **10661 - A/B Bus Electrical Modificatn** | **70.6%** | **29.4%** | **$100,000** | **$0** | **$0** | **$0** | **$100,000** | **$70,600** | **$29,400** |
| Study the feasibility of reconfiguring the Tapia electrical switch gear and then hire electrical team to make the modifications. | | | | | | | | | |
| **10665 - Cordillera Tank Rehab** | **70.6%** | **29.4%** | **$1,201,267** | **$0** | **$36,584** | **$36,584** | **$1,164,683** | **$822,266** | **$342,417** |
| Rehabilitation including interior and exterior coating, valve and appurtenance upgrades and replacements, restoration of deteriorated asphalt, and work to ensure up-to-date compliance for safety and water quality equipment. | | | | | | | | | |
| **10666 - Calabasas Prk RW Main Extensn** | **70.6%** | **29.4%** | **$320,000** | **$0** | **$0** | **$0** | **$320,000** | **$225,920** | **$94,080** |
| Install approximately 1,200 LF of 6-8 inch pipeline to loop the existing recycled water system. | | | | | | | | | |
| **10667 - Tapia Headworks White Room** | **70.6%** | **29.4%** | **$55,000** | **$0** | **$22,194** | **$22,194** | **$32,806** | **$23,161** | **$9,645** |
| Modification or replacement is needed for the floor plates and steel framing floor plate supports in the white room located at Tapia's headworks building. | | | | | | | | | |
| **10668 - RLV Storm Wtr Divsn Strctr Rpl** | **70.6%** | **29.4%** | **$30,000** | **$0** | **$0** | **$0** | **$30,000** | **$21,180** | **$8,820** |
| Replacement of the two storm water diversion structures at the Rancho Las Virgenes Composting Facility. Increase the size and length of the farm field discharge pipeline. | | | | | | | | | |
| **10669 - Dev Tour Seating Area @ Tapia** | **70.6%** | **29.4%** | **$25,000** | **$0** | **$0** | **$0** | **$25,000** | **$17,650** | **$7,350** |
| Develop tour seating area at Tapia adjacent to the control building | | | | | | | | | |
| **10670 - Centrate 20" Valve Repair** | **70.6%** | **29.4%** | **$150,000** | **$0** | **$0** | **$0** | **$150,000** | **$105,900** | **$44,100** |
| Repair buried 20-inch Miliken valve at the centrate facility. | | | | | | | | | |
| **10680 - RLV Digester Cleaning & Repair** | **70.6%** | **29.4%** | **$225,000** | **$0** | **$41,754** | **$41,754** | **$183,246** | **$129,372** | **$53,874** |
| Clean out and make all necessary repairs to digesters #2. the scope of repairs is based on the recently completed rehabilitation of digester # 1. | | | | | | | | | |
| **10682 - RLV: FOG Receiving Fac FY18-19** | **70.6%** | **29.4%** | **$30,000** | **$0** | **$0** | **$0** | **$30,000** | **$21,180** | **$8,820** |
| To conduct a study to determine the market for local high strength wastes (food waste, fats, oils, and grease (FOG)) that can be fed into the third digester. After completion of the study, the installation of facilities for receiving and conveying fats, o | | | | | | | | | |
| ***Total Multi-Year Projects*** | | | ***$19,639,812*** | ***$3,362,567*** | ***$1,165,181*** | ***$4,527,748*** | ***$15,112,064*** | ***$10,669,117*** | ***$4,442,947*** |
| ***Projects on Hold*** | | | | | | | | | |
| **10520 - SCADA System Communictn Upgrd** | **70.6%** | **29.4%** | **$93,100** | **$32,447** | **$0** | **$32,447** | **$60,653** | **$42,821** | **$17,832** |
| Upgrade the JPA owned portion of the supervisory control and data acquisition system (SCADA) system to an Ethernet based radio network and provide additional data paths for system redundancy. | | | | | | | | | |
| **10567 - Progmble Logic Contrlr Upgrd** | **70.6%** | **29.4%** | **$332,850** | **$0** | **$0** | **$0** | **$332,850** | **$234,992** | **$97,858** |
| Replace obsolete programmable logic controllers and upgrade other electrical equipment at Tapia. | | | | | | | | | |

| Job # - Description | LV % | TSD % | Total Project Appropriations | Prior Year Expenditures | Current Year Expenditures | Total Project Expenditures | Project Balance | LV Balance | TSD Balance |
|---|---|---|---|---|---|---|---|---|---|
| *Projects on Hold* | | | | | | | | | |
| *Total Projects on Hold* | | | *$425,950* | *$32,447* | *$0* | *$32,447* | *$393,503* | *$277,813* | *$115,690* |
| **Totals** | | | $22,736,388 | $4,954,472 | $1,685,829 | $6,640,301 | $16,096,087 | $11,363,837 | $4,732,250 |
| **Totals: Las Virgenes MWD** | | | $16,051,890 | $3,497,857 | $1,190,195 | $4,688,053 | $11,363,837 | | |
| **Totals: Triunfo Sanitation District** | | | $6,684,498 | $1,456,615 | $495,634 | $1,952,248 | $4,732,250 | | |

ITEM 6A

February 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

**Subject : Rancho Solar Generation Project Phase II: Additional Reimbursable Payment to SCE for Interconnection Facility**

## SUMMARY:

On December 3, 2018, the JPA Board authorized the General Manager to execute a Service Agreement for Wholesale Distribution Service and Rule 21 Generator Interconnection Agreement with Southern California Edison (SCE), and appropriated $208,557.38 for the reimbursable expense of an interconnection facility for the Rancho Solar Generation Project Phase II. When finalizing the agreements, staff learned of an option to pre-pay SCE's 20-year operation and maintenance cost, in the amount of $147,062, for the interconnection facility, rather than amortizing the cost over the term of the proposed Power Purchase Agreement (PPA). Also, staff was informed of the need to pay an "Income Tax Component Contribution", in the amount of $42,916.90.

Both additional components of the interconnection cost would be 100% reimbursable to the JPA by the PPA provider within 45 days of executing the PPA. Reimbursements made by the PPA provider are qualified projects costs for additional federal tax credits that will lower the overall cost of the project by up to $57,000. As a result, staff recommends that the Board authorize the payment of an additional $189,998.90 in interconnection facility costs, increasing the total reimbursable amount from $208,557.38 to $398,556.28.

## RECOMMENDATION(S):

Authorize the Administering Agent/General Manager to increase the reimbursable payment amount to Southern California Edison by $189,998.90, from $208,557.38 to $398,556.28, and appropriate the additional amount for the interconnection facility costs associated with the Rancho Solar Generation Project Phase II.

## FISCAL IMPACT:

Yes

## ITEM BUDGETED:

Yes

## FINANCIAL IMPACT:

Payment of the additional reimbursable costs is estimated to result in a project cost-savings of up to $57,000 through federal tax credits. Based on the terms of the proposed PPA, the interconnection facility cost paid to SCE, in the amount of $398,556.28, will be reimbursed no more than 45 days after award of the PPA to a solar provider. Staff is completing final negotiations and expects to recommend award of a PPA to the JPA Board on March 4, 2019. An additional appropriation of $189,998.90 is required for the additional reimbursable payment to SCE for the interconnection facility.

**DISCUSSION:**

When completing discussions with SCE on the proposed Service Agreement for Wholesale Distribution Service and Rule 21 Generator Interconnection Agreement, staff learned of an option to pre-pay SCE's 20-year operation and maintenance cost, in the amount of $147,062, for the interconnection facility, rather than amortizing the cost over the term of the proposed Power Purchase Agreement (PPA). Also, staff was informed of the need to pay an "Income Tax Component Contribution (ITCC)", in the amount of $42,916.90. Based on California Public Utilities Commission (CPUC) rules, the ITCC associated with facilities dedicated to SCE must be paid by the project owner (i.e. JPA), rather than passed on to SCE ratepayers.

Based on the interconnection rules and schedule approved by the CPUC, the interconnection facility costs must be paid by February 28, 2019. Staff expects to recommend award of a PPA to the JPA Board on March 4, 2019, following evaluation of eight competitive proposals received. As such, the interconnection facility costs that would be incurred by the JPA could be reimbursed by the PPA provider as early as April 18, 2019, which is 45 days after award of the PPA. The reimbursement to the JPA for the additional interconnection facility cost would qualify the PPA provider for a 30% federal tax credit on the amount, resulting in a project cost-savings of up to $57,000.

In the event that the JPA Board does not approve the award of a PPA, the interconnection facility cost paid to SCE would be refunded, less actual costs incurred by SCE through the date of the refund request. Staff does not expect large expenditures to be incurred by SCE within the first month given the various CPUC rules for planning, design and contract award that must be followed by SCE.

Based on the PPA proposals received by the JPA, Terra Verde recalculated its pro forma for the project and estimates the total cost-savings to the JPA would be $10.3 million over 25 years, as compared to the previous estimate of $6.6 million over the same period. The pro forma is based on a PPA rate of 5.57 cents/kWh, as compared to the SCE electrical generation rate of 8.57 cents/kwh. The total cost-savings will also include a one-time bill credit of approximately $931,789 to compensate the JPA for savings lost from the solar project upon implementation of the CPUC-approved peak hour shift from 12 noon to 6:00 p.m., to 4:00 p.m. to 9:00 p.m.

Prepared by: John Zhao, P.E., Principal Engineer

February 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

**Subject : Tapia Process Air Improvements Project: Construction Award**

## SUMMARY:

On October 1, 2018, the JPA Board rejected all bids for the Tapia Process Air Improvements Project because the bids significantly exceeded both the Engineer's Estimate and adopted budget for the project. Subsequently, the bid documents were revised to clarify the scope of work for the project and reduce uncertainty that may have affected the bids. In addition, the Board authorized the pre-purchase of the blower and diffuser equipment, in the amount of $1,174,061.50, to avoid the potential impact of long lead times for procurement on the overall project schedule. The project must be completed by March 24, 2020 to take advantage of a Southern California Edison (SCE) rebate, in the amount of $155,350.39.

On November 5, 2018, the Board authorized a new Call for Bids for the Tapia Process Air Improvements Project. A mandatory pre-bid job walk was held on January 3, 2019. Eight bids were received and publically opened on January 22, 2019. Staff evaluated the bids and determined that the lowest responsive bid was submitted by Cushman Contracting Corporation, in the amount of $3,267,000, which is approximately 0.4% below the Engineer's Estimate of $3,279,131. Staff recommends awarding a construction contract to Cushman Contracting Corporation for the project.

## RECOMMENDATION(S):

Award a construction contract to Cushman Contracting Corporation, in the amount of $3,267,000, and reject all remaining bids; authorize the Administering Agent/General Manager to approve a change of scope to Pacific Advanced Civil Engineering, in the amount of $122,720, for support services during construction, and to MSO Technologies, in the amount of $53,200, for SCADA integration services; and appropriate an additional $2,436,293 for the Tapia Process Air Improvements Project.

## FISCAL IMPACT:

Yes

## ITEM BUDGETED:

Yes

## FINANCIAL IMPACT:

The adopted Fiscal Year 2018-19 JPA Budget provided partial funding for the project, in the amount of $3,293,418. An additional appropriation, in the amount of $2,436,293, is required to award the construction contract, allow for a 10% contingency to cover change orders during construction, and cover the estimated administrative costs of the project, which are based on guidelines from the Infrastructure Investment Plan. The need for an additional appropriation was anticipated and previously reported to the Board.

## DISCUSSION:

The scope of work consists of replacing the existing blowers and aeration basin air diffusers, which have

reached the end of their useful life. In addition to addressing the replacement need, the new equipment will provide a substantial cost-savings to the JPA through improved energy efficiency. Process air is used at the Tapia Water Reclamation Facility to support the treatment processes, which requires air for mixing, oxygen transfer for biological treatment and filter backwashing.

Following the rejection of all bids by the Board on October 1, 2018, staff and Pacific Advanced Civil Engineering (PACE) representatives collaboratively implemented the following next steps and strategies intended to reduce the overall project cost.

- Clarifying the electrical scope of work to reconcile the large difference in cost between the Engineer's Estimate and bids received for the electrical portion of the work.
- Promoting a competitive bidding among electrical contractors recognizing that only two electrical sub-contractors were utilized by six general contractors in their bids. Pre-purchasing the blower and diffusers.
- Performing SCADA programming and integration through the use of a local, experienced consultant who is familiar with the JPA's facilities and requirements.

By proceeding with the project, the JPA will achieve an estimated annual energy cost-savings of $156,124 through the use of the new high-efficiency blowers and diffusers. In addition, the JPA will received a Southern California Edison (SCE) rebate, in the amount of $155,350.39, if construction of the project is completed by March 24, 2020.

The revised Engineer's Estimate for the project was $3,279,131. Following is a summary of the bid results, which reflect a very competitive bidding environment and close alignment with the Engineer's Estimate for the project.

| Bidder | Bid Total | Percentage Above/Below Estimate |
|---|---|---|
| Cushman Contracting | $3,267,000 | -0.4% |
| PLC Construction | $3,286,239 | 0.2% |
| GSE Construction | $3,396,500 | 3.6% |
| Pacific Hydrotech | $3,437,900 | 4.8% |
| Mehta Mechanical Co (dba MMC, Inc) | $3,442,000 | 5.0% |
| Environmental Construction, Inc. | $3,693,127 | 12.6% |
| Myers & Sons | $4,009,000 | 22.3% |
| Green Building Corporation | $4,670,000 | 42.4% |

Cushman Contracting Corporation is reputable construction company with the resources and capability to successfully complete the project.

Following is a summary of the estimated total project costs and requested appropriation.

| Description | Cost |
|---|---|
| Professional Services: | |
| Design & Bidding - PACE, Inc. | $215,216 |
| Scope Change No. 1 | $47,718 |
| Scope Change No. 2 | $24,640 |
| Scope Change No. 3 (Proposed - design services during construction) | $122,720 |
| SCADA/PLC Design - MSO Technologies | $13,880 |
| Scope Change No. 1 (Proposed -SCADA/PLC Programming) | $53,200 |
| Construction: | |
| Air Pipe Repairs - Miller Pipeline, LLC | $125,205 |
| Equipment Pre-Purchased (Blowers/Diffusers) | $1,174,061 |
| Construction Award | $3,267,000 |

| | |
|---|---|
| Construction Contingency (10%) | $326,700 |
| Administrative | |
| District Labor (4%) | $130,680 |
| G&A (7%) | $228,690 |
| **Total Project Cost** | **$5,729,710** |
| Existing Appropriation | $3,293,418 |
| Additional Appropriation (Proposed) | *$2,436,293* |

The alternative of not proceeding with the project would present challenges and additional cost to the JPA due to the age of the existing blowers and diffusers, as well as their inefficiencies. A significant investment would be required to rehabilitate and maintain the existing equipment, which would include work on both the electrical and mechanical components. Many of the parts for the existing Roots blowers are no longer available and require custom fabrication that is costly and challenging. In addition, by not proceeding with the project, the JPA would forgo an annual energy cost-savings of $156,124 and a SCE rebate of $155,350.39.

Prepared by: Eric Schlageter, P.E., Senior Engineer

**ATTACHMENTS:**

PACE Scope Change #3 Design Services During Construction
MSO Scope Change #1 SCADA/PLC Programming

PACE
Advanced Water Engineering

**AUTHORIZATION FOR CHANGE ORDER**

| | | | |
|---|---|---|---|
| **TO:** | Mr. Eric Schlageter | **ATTN:** | |
| | Las Virgenes Municipal Water District & The Triunfo Sanitation District Joint Power Authority | **DATE:** | July 5, 2018 |
| | 4232 Las Virgenes Road | **PROJECT:** | Tapia Process Air – B058 |
| | Calabasas, CA 91302 | **C.O. AUTHORIZATION #:** | CO #2 |

The following was not included in the original contract. We are requesting authorization for additional budget.

**Objective of Change Order:**

PACE will provide Services During Construction as outlined in the Description of Services below.

**Description of Services:**

***SERVICE DURING CONSTRUCTION (SDC) PHASE***

**Task 5.2 – Project Management and Monthly Construction Progress Meetings**
Consultant's Project Manager, Duong Do, PE, will allocate the Consultant's resources, establish all internal staff responsibilities, and manage all external and internal communication for the project design team. Invoices shall be prepared and submitted to cover the previous months' work.

Consultant's Project Manager and/or Project Engineer will attend monthly site meeting during the construction of the Tapia WRF Process Air Improvements. PACE will record meeting minutes for each meeting. This is based on a 12-month construction schedule.

Consultant shall provide the 4 site visits for field services, which includes 2 field construction visits, one final construction inspection and one substantial completion visit. When possible, the site visits will be coordinated to coincide with monthly progress meeting to minimize travel cost. During construction site visits, Consultant shall provide onsite inspection of each work area in accordance with the plans and specifications. The inspection shall be summarized in an observation report detailing the percentage of work completed and any discrepancies or deficiency observed.

**Task 5.3 – Shop Drawing Submittal Review/ RFI Responses/ ESI**

1. Consultant will review project submittals as defined in the plans & specifications for intent and compliance with the project plans & specifications.
2. Consultant shall respond in writing to contractor's Request for Information (RFI) or design clarifications.
3. Consultant shall provide Engineering Supplemental Information (ESI) to provide additional design details as needed for proper construction.
4. Consultant shall provide office and field services that are intended to assist the contractor and District with design verification. This task shall include office and some field support but is not intended to provide the level of field services that would be performed by an onsite resident engineer. As part of this task, the Consultant shall provide the following services.

    a. Maintain shop drawings and RFI logs, ensure the correct sequence of review, and ensure the prompt response/ review of each item.

b. Coordinate with contractor regarding clarifications and interpretations of plans and specifications, conflicts and any proposal field modifications and/or revisions.
c. Consultant shall perform a final inspection of the construction of the project. Consultant shall review testing, inspection, and equipment startup documentation from the contractor. This shall include factory testing of the PLC's and field checks. Consultant shall provide a final punch list, which requires the contractor to complete any unfinished work prior to clean water testing, seeding and substantial completion of the project. This task will include three (3) days onsite.

**Task 5.4 – Start-up Services**
Consultant will provide start up assistance to the Client and Contractor during the substantial completion phase of the project. This phase includes clean water testing and seeding of the facility. Startup assistance shall include onsite technical assistance in regards to clean water testing and re-seeding of the basins. Consultant shall provide three (3) working days of onsite start up assistance. Consultant shall also complete a substantial completion binder to be submitted to the Client.

**Task 5.5 – Preparation of Record Drawings**
Consultant shall prepare Record Drawings from the "As-Built Drawings" provided by the contractor. Consultant shall review the As-Built Drawings with the contractor in the field for accuracy and completeness. This review is not a guarantee of accuracy but a check on what has been documented to determine if logical. The contractor is responsible for the As-Built completeness and accuracy.

**Task 00 – Reimbursables/Expenses**
(To include all printing, shipping, travel, reproduction, fees and other miscellaneous direct project expenses. Reimbursables are invoiced at cost plus 10%.)

**Amount of Compensation:**

PACE will complete the work outlined herein and invoice Client monthly on a time and expense amount of **$122,720** in accordance with the task fees listed below and in the attached Engineering Fee Proposal.

| **Task** | | **Professional Fee** |
|---|---|---|
| 5.2 | Project Management and Meeting for SDC | $ 34,880 |
| 5.3 | Shop Drawing Review/ RFI Response/ ESI | $ 58,320 |
| 5.4 | Start-up Services | $ 14,720 |
| 5.5 | Preparation of Record Drawings | $ 8,800 |
| 00 | Reimbursable Expenses | $ 6,000 |

**This Request - Change Order # 2:** **$122,720**

Estimated By: _____ July 5, 2018
Duong Do, PE - PACE Date

**AGREED TO AND ACCEPTED BY:**

By_____ _____
LVMWD & TSD Joint Power Authority Date

PACE

**ASSUMPTIONS AND EXCLUSIONS:**

1. The Client's responsibilities shall include providing PACE with project information in a timely manner, coordination and management of other team consultants to assure that the project schedule can be met, and prompt payment of invoices in accordance with the terms and conditions included herein. The specific items that are to be provided by the Client or other consultants include the following:

    a. Client input pertaining to project design or construction issues that may impact PACE's ability to perform the work.
    b. Safe access to the site
    c. Power and utilities required for the validation testing

2. Any proposed project changes which affect work in progress or previously completed will be justification for additional compensation.

3. No environmental documentation or support, including no environmental permitting.

4. Local government approval meetings, hearings, etc., and preparation of presentation graphics will be under separate work authorization, if required.

5. The fees proposed herein shall apply until one year from date of proposal. Due to ever-changing costs, Consultant will increase those portions of the contract fee for which work must still be completed after one year from date of proposal, as negotiated with the Client up to a maximum of ten-percent (10%).

**ENGINEERING FEE PROPOSAL**
**PROJECT WORKSHEET**

| Project Data |
|---|
| **Project Name:** Tapia Process Air Services During Construction |
| **Client:** LVMWD & TSD Joint Powers Authority |
| **PACE Job Number:** B058 |
| **Estimate Date:** July 5, 2018 |

**Total Fee Amount:** **$122,720**

| Item No. | Work Item Description | PACE | | | | | | | | | Man-Power Subtotal | Reimburs. Expenses | Total Task Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Principal | Sr. Project Manager/Sr. Consulting Engr. | Resident Construction Manager /Design Engr. II | Instrumentation Specialist | Design Engineer | Sr. CAD Designer /Sr. GIS Analyst | CAD Designer /GIS Analyst | Graphic Designer | Proj. Coord/Admin Support | | | |
| | | 240 | 210 | 140 | 150 | 120 | 120 | 95 | 95 | 80 | | | |
| **5** | **Bid Services and Services During Construction[1]** | **182** | **0** | **0** | **0** | **478** | **80** | **0** | **0** | **76** | **$116,720** | **$0** | **$116,720** |
| 5.2 | Project Management and Meetings for SDC[2] | 96 | | | | 64 | | | | 52 | $34,880 | | |
| 5.3 | Shop Drawing Submittal Reviews/ RFI/ ESI/ Office & Field Services | 52 | | | | 342 | 40 | | | | $58,320 | | |
| 5.4 | Start-up Assistance | 32 | | | | 48 | | | | 16 | $14,720 | | |
| 5.5 | Record Drawings | 2 | | | | 24 | 40 | | | 8 | $8,800 | | |
| | | | | | | | | | | | | | |
| 0 | Reimbursable Expenses (cost +10%) | | | | | | | | | | | $6,000 | |
| | **TOTALS** | 182 | 0 | 0 | 0 | 478 | 80 | 0 | 0 | 76 | **$116,720** | $6,000 | **$122,720** |

[1] Assumes 12 month Construction Period
[2] Assumes 1 meeting per month for duration of the construction period

# CONSULTANT AGREEMENT

As of 10/30/2018, Las Virgenes Municipal Water District, hereinafter called "Agency," and MSO Technologies, Inc., hereinafter called "Consultant," agree as follows:

**1. Purpose.**

Under this Agreement, Consultant shall provide Task 1 only for the Tapia WRF Process Air Improvements PLC Design and Programming.

**2. Services.**

The Consultant shall, in good workmanlike and professional manner, furnish the services as set forth in Exhibit "A" of this Agreement.

**3. Consideration.**

(a) The Agency shall compensate Consultant on a time-and-material basis, contingent on satisfactory performance of the work. The aggregate payments under this Agreement shall not exceed $13,880, as more fully described on Exhibit "A."

(b) The Consultant shall complete and submit invoices showing the dates of work, description of work performed, and amount of the invoice together with any supporting documentation. The Agency shall pay the Consultant within thirty (30) days of the receipt of an invoice.

**4. Term.**

(a) This Agreement shall commence on the date above written, and shall continue until completion of the services described above. The Agency may terminate or cancel this Agreement without liability to the Agency, if Consultant fails to perform or commits a substantial breach of the terms hereof.

(b) Either party may terminate this agreement on thirty (30) days written notice for any reason. If this contract is terminated by Agency without cause, Agency shall pay Consultant for work performed prior to the date the notice of termination is received by contractor. If the contract is terminated by Consultant without cause, Consultant shall reimburse Agency for additional costs to be incurred by Agency in obtaining the work from another consultant.

**5. Ownership of Data, Reports, and Documents.**

The Consultant shall deliver to Agency on demand or completion of the project, notes of surveys made, reports of tests made, studies, reports, plans, and other materials and documents which shall be the property of the Agency. If the Agency uses any of the data, reports, and documents furnished or prepared by the Consultant for projects other than the project shown on Exhibit "A," the Consultant shall be released from responsibility to third parties concerning the use of the data, reports, and documents. The Consultant may retain copies of the materials. The Agency may use or reuse the materials prepared by Consultant without additional compensation to Consultant.

**6. Subcontracts and Assignments.**

The Consultant shall not subcontract or assign responsibility for performance of any portion of this Agreement without the prior written consent of the Agency. Except as otherwise specifically approved by Agency, Consultant shall include appropriate provisions of this Agreement in subcontracts so rights conferred to Agency by this Agreement shall not be affected or diminished by subcontract. There shall be no contractual relationship intended, implied, or created between Agency and any subcontractor with respect to services under this Agreement.

Neither party hereto shall assign, sublet, or transfer interests hereunder without first obtaining written consent from the other party.

**7. Independent Contractor.**

The Consultant is an independent contractor and not an employee of Agency. Except as Agency may specify in writing, Consultant shall have no authority, expressed or implied, to act on behalf of Agency in any capacity whatsoever as an agent. Consultant shall have no authority, expressed or implied, pursuant to this Agreement to bind Agency to any obligation whatsoever.

**8. Licensing.** Consultant represents and declares to Agency that it has all licenses, permits, qualifications, and approvals of whatever nature that is legally required to practice its profession. Consultant represents and warrants to Agency that Consultant shall, at its sole cost and expense, keep in effect at all times during the term of this Agreement, any license, permit, or approval, which is legally required for Consultant to practice its profession.

**9. Indemnification.**

Consultant shall defend, indemnify, and hold harmless Agency, its officers, employees and agents, from and against loss, injury, liability, or damages arising from any act or omission to act, including any negligent act or omission to act by Consultant or Consultant's officers, employees, or agents in rendering services under this Agreement. Consultant's duty to indemnify and defend does not extend to the damages or liability caused by the agency's sole negligence, active negligence, or willful misconduct.

**10. Compliance with Applicable Law.**

(a) Consultant agrees to comply with all federal, state, county, and local laws, ordinances, and regulations applicable to the work under this Agreement.

(b) Consultant shall pay prevailing wages to the extent required by law, including Labor Code Section 1720.

(1) A determination of the general prevailing rates of per diem wages and holiday and overtime work where the work is to be performed is on file at the Agency's offices. Should the prevailing wage rules apply to any of the work described in Exhibit A, Consultant shall post one copy of the prevailing rates of wages at the job site, and Consultant shall forfeit, as penalty to the Agency, a sum of not more than $200.00 for each calendar day, or portion thereof, for each worker paid less than

the prevailing rates. This penalty shall be in addition to any shortfall in wages paid.

**11. Insurance.**

(a) Consultant shall procure and maintain, for the duration of this Agreement, insurance against claims for injuries to persons or damages to property arising from, or in connection with, the performance of the work hereunder by the Consultant, officers, agents, employees, or volunteers.

(b) Consultant shall provide the following coverages:

(1) Commercial general liability insurance written on an occurrence basis, in the amount of $1,000,000 combined single limit per occurrence for bodily injury, personal injury, and property damage. The insurance policy shall be amended to provide that the general aggregate limit applies separately to the work under this Agreement, or the general aggregate limit shall be twice the required per occurrence limit.

(2) Business automobile liability insurance shall be provided for all owned, non-owned, and hired automobiles, in the amount of $1,000,000 combined single limit per accident for bodily injury and property damage.

(3) Workers' Compensation insurance as required by the Labor Code of the State of California with the statutory limits required by the Labor Code and Employers Liability for $1,000,000 per accident for bodily injury or disease. Consultant and subcontractors shall cover or insure their employees working on or about the site, regardless of whether such coverage or insurance is mandatory or merely elective under the law.

(4) Professional liability insurance covering loss resulting from errors or omissions of Consultant with a liability limit of at least $1,000,000 per occurrence.

(c) The insurance policies required above shall contain or be endorsed to contain all of the following specific provisions:

(1) Commercial general liability and automobile liability:

(i) Agency and its Board members, officers, employees, agents and volunteers shall be added as additional insureds.

(ii) Consultant's insurance shall be primary insurance as respects the Agency, its Board members, officers, employees, agents, and volunteers and any insurance or self-insurance maintained by Agency shall be in excess of Consultant's insurance and shall not contribute to it.

(iii) Any failure to comply with the claim reporting provisions of the policies or any breach of a policy warranty shall not affect coverage under the policy provided to Agency, its Board members, officers, employees, agents and volunteers.

(iv) The policies shall contain a waiver of transfer rights of recovery ("waiver of subrogation") against Agency, its Board members, officers, employees, agents, and volunteers, for any claims arising out of the work of Consultant.

(v) The policies may provide coverage that contains deductible or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to Agency under such policies. Consultant shall be solely responsible for deductible and/or self-insured

retention and Agency, at its option, may require Consultant to secure the payment of such deductible or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit. The insurance policies that contain deductibles or self-insured retentions in excess of $25,000 per occurrence shall not be acceptable without the prior approval of Agency.

(vi) Prior to start of work under this Agreement, Consultant shall file with Agency evidence of insurance as required above from an insurer or insurers certifying to the required coverage. The coverage shall be evidenced on a certificate of insurance signed by an authorized representative of the insurer(s). Should the required coverage be furnished under more than one policy of insurance, Consultant may submit as many certificates of insurance as needed to provide the required amounts.

(2) Each policy required by this section shall contain a policy cancellation clause that provides the policy shall not be cancelled or otherwise terminated by the insurer or the Consultant, or reduced in coverage or in limits, except after thirty (30) days written notice by certified mail, return receipt requested, has been given to the Agency, Attention: Director of Finance & Administration.

(d) Insurance required by this Agreement shall be placed with insurers licensed by the State of California to transact insurance business of the types required herein. Each insurer shall have a current Best Insurance Guide rating of not less than A: VII unless prior approval is secured from the Agency as to the use of such insurer.

(e) Consultant shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein. Consultant shall maintain evidence of compliance with the insurance requirements by the subcontractors at the job site and make them available for review by Agency.

## 12. Notices.

Notices shall be deemed received when deposited in the U. S. Mail with postage prepaid and registered or certified addressed as follows, unless advising in writing to the contrary:

Las Virgenes Municipal Water District
ATTN: General Manager
4232 Las Virgenes Road
Calabasas, CA 91302

MSO Technologies, Inc.
ATTN: David Patrick
2985 East Hillcret Drive, #101
Thousand Oaks, CA 91362

## 13. Invalidity of Part Shall Not Invalidate the Whole.

The invalidity or partial invalidity of any portion of this Agreement will not affect the validity of any other provision. In the event that any provision of this Agreement is held to be invalid, the remaining provisions shall be deemed to be in full force and effect as if they had been executed by both Parties subsequent to the expungement or judicial modification of the invalid provision.

**14. Attorneys' Fees.**

If an action at law or in equity is brought to enforce any provision of this Agreement, the prevailing party shall be entitled, in addition to such other relief as may be granted to an award in the same or a subsequent proceeding, to reasonable attorneys' fees and costs.

**15. Integration.**

This Agreement represents the entire understanding of Agency and Consultant as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may not be modified or altered, except in writing, signed by both parties.

**16. Arbitration and Waiver of Jury Trial.**

Consultant and Agency further agree as follows: In the event any dispute shall arise between the Parties to this Agreement, the same shall be resolved by arbitration conducted by the American Arbitration Association in accordance with the Commercial Arbitration Rules of the American Arbitration Association, as then in effect. Such arbitration shall be conducted at a location within Los Angeles County, California agreeable to both Parties before three (3) arbitrators who shall be selected by mutual agreement of the Parties; if agreement is not reached on the selection of arbitrators within fifteen (15) days, then each of the Parties shall select an arbitrator and the two (2) arbitrators so selected shall select a third. The provisions of the Commercial Arbitration Rules of the American Arbitration Association shall apply and govern such arbitration except that the prevailing party shall be entitled to recover from the other party its attorney's fees and costs actually incurred in such amount as may be determined by the arbitrators.

**17. Governing Law.**

This Agreement shall be interpreted and construed under, and the rights of the parties will be governed by, the laws of the State of California.

**IN WITNESS WHEREOF,** the parties hereby have caused this Agreement to be executed the date first above written.

| | |
|---|---|
| APPROVED: | APPROVED: |
| **Las Virgenes Municipal Water District** | **MSO Technologies, Inc.** |
| By:_____ | By:_____ |
| Name:_____ | Name:_____ |
| Its:_____ | Its:_____ |

# EXHIBIT “A”

MSO Technologies, Inc.

2985 East Hillcrest Drive, Suite 101
Thousand Oaks, CA 91362

Voice (805) 379-8668
Fax (805) 379-8677

October 23, 2018

Eric Schlageter, P.E.
Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302-1994

**REF: Tapia WRF Process Air Improvements Project PLC Design and Programming**

Dear Eric:

Thank you for the opportunity to propose on the instrumentation and controls component of the Tapia Water Reclamation Facility Process Air Improvements Project. MSO has successfully completed several blower projects for the City of Simi Valley WQCP and are currently working with the City of Ventura on their blower improvement project. We offer an in-depth development and installation knowledgebase of new and existing equipment. We will work with the project engineers and District team to deliver a quality finished product.

MSO will develop detailed control panel drawings that will be added to the project bid package so the contractors will have a uniform panel design. MSO will modify the current specifications to match the detailed design drawings. The contractors will fabricate the control panel in their facility and MSO will perform a factory acceptance test at their factory to ensure proper fabrication of the design. The contractors will install the control panel and terminate the control wiring to the panel according to the bid package drawings.

MSO will develop the Aeration PLC program to coordinate operation of the new blowers and new aeration equipment. The Aeration PLC program will communicate to the blower master PLC and initiate increase/decrease air flow from the blowers depending on the aeration basin operating mode and filter operations. The Aeration PLC program will control the six aeration valves in the aeration basins and the two aeration valves in the RAS basins according to the operating philosophy noted in the specifications and conversations with Pace Water Engineering group. In addition to the PLC program, MSO will develop the local operator interface application noted in the specifications. As part of the PLC programming task, MSO will perform the commissioning of the Aeration PLC and associated equipment. This will include testing instrument and equipment operations, tuning the control algorithms, and providing training for the operations and maintenance staff.

MSO can also prepare Aeration PLC and Master Blower PLC SCADA screens for inclusion in Tapia's central SCADA system. Typically, MSO develops engineering screens that allow for the configuration, simulation, and testing of the control system which can be imported into the existing plants SCADA system. We have done this on numerous projects in the past for the District.

Eric Schlageter, PE
Las Virgenes Municipal Water District
Tapia WRF Process Air Improvements Project PLC Design and Programming

Our cost estimate by project phase is shown below. Proposal is not to exceed, i.e. only hours logged to the project will be billed. This is an engineering services only proposal, no hardware is included. Proposal is valid for sixty days from date shown above. If you have any questions, please contact David Patrick or me at (805) 379 8668 ext. 1001 and 1002.

| Tapia Blower Replacement/Aeration Project | | | | |
|---|---|---|---|---|
| **1** | **Design Phase** | | | |
| 1.1 | Prepare detailed control panel drawings for Aeration PLC | 60 | $150 | $9,000 |
| 1.2 | Modify existing specifications for control panel equipment | 20 | $150 | $3,000 |
| 1.3 | Review with PACE Water/LVMWD | 4 | $150 | $600 |
| 1.4 | Construction support, RFI responses, Factory acceptance test | 8 | $150 | $1,200 |
| 1.5 | Reimbursable expenses - mileage | 1 | $80 | $80 |
| | | | **Task Total** | **$13,880** |
| **2** | **PLC Programming** | | | |
| 2.1 | PLC Program Development<br>Interface with Master Blower PLC<br>Aeration Basin Control Schemes, Full Valve, DO, Flow<br>RAS Basins Control Scheme | 80 | $150 | $12,000 |
| 2.2 | Local Panel Interface Development | 40 | $150 | $6,000 |
| 2.3 | System start up and testing | 80 | $150 | $12,000 |
| 2.4 | Reimbursable expenses – mileage | 1 | $200 | $200 |
| | | | **Task Total** | **$30,200** |
| **3** | **SCADA Screens Development** | | | |
| 3.1 | Master Blower PLC Screens | 20 | $150 | $3,000 |
| 3.2 | Aeration Basins Screens | 60 | $150 | $9,000 |
| 3.3 | RAS Basins Control Screens | 40 | $150 | $6,000 |
| 3.4 | Alarm/PLC IO Screens | 20 | $150 | $3,000 |
| 3.5 | Program/Screen Review meetings (3) | 12 | $150 | $1,800 |
| 3.6 | Reimbursable expenses – mileage | 1 | $200 | $200 |
| | | | **Task Total** | **$23,000** |
| | | | | |
| | | | **Project Total** | **$67,080** |

Sincerely,

MSO *Technologies*

Lloyd Trick, P.E.

BEST BEST & KRIEGER LLP
ATTORNEYS AT LAW

# Memorandum

To: JPA Board of Directors
From: Syrus Devers, Best Best & Krieger
Date: January 18, 2019
Re: Monthly State Political Report

## Legislative Report

*In General*

The pending PG&E bankruptcy is hanging over the Capitol like a cloud. Although PG&E is the largest public utility in the west, and bankruptcy would have fiscal implication for years to come for the state and rate payers, the fact of the matter is that 60% of Californians are *not* served by PG&E and that majority sees no reason why they should go out of their way for an unpopular public utility.

The 2019 session opened with the usual flourish on January 7th, but the bill introductions are only trickling in at this point. The first day of session last December 3rd saw a higher than usual number of bill introductions with just under 200 bills (AB's and SB's, not counting resolutions) getting put across the desk, but as of January 15th there were only 343 introduced bills. Procedurally, bills cannot be heard or amended for 30 days after introduction.

*The Budget*

Governor Newsom's budget was released on schedule January 10th and is being praised by the nonpartisan Legislative Analyst's Office (LAO) as fiscally prudent. Revenues continue to grow and costs, mainly health care, were slightly lower than anticipated, which left Newsom with about $20 billion in discretionary funds. His budget proposes to spend nearly half that amount on debt retirement, including $5.3 billion on unfunded pension liability—a cause near and dear to Sen. John Moorlach. Continuing on the path of his predecessor in office, Newsom's second highest priority is one-time programmatic spending, albeit at a higher level than Governor Brown. Overall the proposed budget grew by 7.5%, but spending remained flat due to the significant amount attributed to debt retirement and the smaller amounts held back in reserves.

The Governor's budget also revealed some of his priorities relating to water policy. Water industry lobbyists were hopeful that life under the Newsom administration would be calmer than under Jerry Brown's intense focus on water; none of Newsom's statements leading up to the release of the budget said anything about water, and nothing in the budget summaries mentioned water, but buried down in the details, and then mentioned during Q&A at the budget press conference, the tax on water is written into the budget. That was followed the next day by the announcement that the CEO of the Water Education Foundation, Wade Crowfoot, would be the Natural Resources Secretary. The good news is that it's going to be business as usual: the bad news is that business has been pretty rough, and it looks like there's no end to it in sight.

*Tax on Water*

In addition to the budget language, Assembly Member Bloom introduced AB 134, and Assembly Member Eduardo Garcia introduced AB 217, as a place holders for the water tax. This is double threat since advocates will have to fight the issue in both budget and policy committees, and Bloom chairs the budget subcommittee on natural resources that will hear the budget proposal. ACWA has already began organizing the lobbyists to oppose the tax, as well as drafting a counterproposal.

## Administrative Report

On January 3rd the SWRCB released its report on options for implementing the Low-Income Water Rate Assistance Program (LIRA), which was due on February 1, *2018* (oops), and is taking comments until February 1st…of this year.

# Proposed State Measures - 2019

Prepared by Best Best & Krieger
January 17, 2019

## A. Priority Support/Oppose

| Measure | Author | Topic | Status | Brief Summary | Position | Priority | Notes 1 |
|---|---|---|---|---|---|---|---|
| AB 134 | Bloom D | Safe, clean, affordable, and accessible drinking water. | 1/7/2019-Read first time. | Would state findings and declarations relating to the intent of the Legislature to adopt policies to ensure that every Californian has the right to safe, clean, affordable, and accessible drinking water. | Out for Analysis | A. High Priority Support/Oppose | Spot bill for now. |
| AB 217 | Garcia, E. | Safe, clean, affordable, and accessible drinking water. | 1/16/2019-Read first time. | This bill would establish the Safe and Affordable Drinking Water Fund in the State Treasury and would provide that moneys in the fund are available, upon appropriation by the Legislature, to the board to provide a stable source of funding to secure access to safe drinking water for all Californians, while also ensuring the long-term sustainability of drinking water service and infrastructure. | Out for Analysis | A. High Priority Support/Oppose | Spot bill for now. |

## B. Watch

| Measure | Author | Topic | Status | Brief Summary | Position | Priority | Notes 1 |
|---|---|---|---|---|---|---|---|
| AB 129 | Bloom D | Waste management: plastic microfiber. | 1/7/2019-Read first time. | Would declare the intent of the Legislature to, among other things, enact legislation to recognize the emerging threat that microfibers pose to the environment and water quality and would make related findings and declarations. | Out for Analysis | B. Watch | Spot bill. |

| *Measure* | *Author* | *Topic* | *Status* | *Brief Summary* | *Position* | *Priority* | *Notes 1* |
|---|---|---|---|---|---|---|---|
| SB 1 | Atkins D | California Environmental, Public Health, and Workers Defense Act of 2019. | 12/4/2018 -From printer. May be acted upon on or after January 3. | Current state law regulates the discharge of air pollutants into the atmosphere. The Porter-Cologne Water Quality Control Act regulates the discharge of pollutants into the waters of the state. The California Safe Drinking Water Act establishes standards for drinking water and regulates drinking water systems. The California Endangered Species Act requires the Fish and Game Commission to establish a list of endangered species and a list of threatened species, and generally prohibits the taking of those species. This bill would require specified agencies to take prescribed actions regarding certain federal requirements and standards pertaining to air, water, and protected species, as specified. | Out for Analysis | B. Watch | |
| SB 19 | Dodd D | Water resources: stream gages. | 12/4/2018 -From printer. May be acted upon on or after January 3. | Would require the Department of Water Resources and the State Water Resources Control Board, upon an appropriation of funds by the Legislature, to develop a plan to deploy a network of stream gages that includes a determination of funding needs and opportunities for modernizing and reactivating existing gages and deploying new gages, as specified. The bill would require the department and the board, in consultation with the Department of Fish and Wildlife, the Department of Conservation, the Central Valley Flood Protection Board, interested stakeholders, and, to the extent they wish to consult, local agencies, to develop the plan to address significant gaps in information necessary for water management and the conservation of freshwater species. | Out for Analysis | B. Watch | |

| Measure | Author | Topic | Status | Brief Summary | Position | Priority | Notes 1 |
|---|---|---|---|---|---|---|---|
| SB 45 | Allen D | Wildfire, Drought, and Flood Protection Bond Act of 2020. | 12/4/2018 -From printer. May be acted upon on or after January 3. | Would enact the Wildfire, Drought, and Flood Protection Bond Act of 2020, which, if approved by the voters, would authorize the issuance of bonds in an unspecified amount pursuant to the State General Obligation Bond Law to finance projects to restore fire damaged areas, reduce wildfire risk, create healthy forest and watersheds, reduce climate impacts on urban areas and vulnerable populations, protect water supply and water quality, protect rivers, lakes, and streams, reduce flood risk, protect fish and wildlife from climate impacts, improve climate resilience of agricultural lands, and protect coastal lands and resources. | Out for Analysis | B. Watch | |

***Total Measures: 6***

***Total Tracking Forms: 6***

BEST BEST & KRIEGER LLP
ATTORNEYS AT LAW

**To:** Las Virgenes – Triunfo JPA Board of Directors
**From:** John Freshman and Ana Schwab
**Date:** January 27, 2019
**RE:** Federal Report

**Government Shutdown and Operations**

The Federal Government is now reopened, after being partially shut down for over a month. The White House and Congress were at an impasse over funding for the border wall that President Trump desires to build. However, last week air travel began to be impacted – when LaGuardia Airport in New York briefly closed due to a shortage of Air Traffic Controllers.

The agreement reached reopens the government through February 15th. Giving the White House and Congress time to negotiate border security legislation. The President has said that if the negotiations do not lead to a border wall, then he will either let the government shutdown again or declare a national emergency.

**Disaster Aid Package, H.R. 268**

H.R. 268 was introduced by House Democrats to provide aid those affected by the approximately 60 major disaster declarations in 2018, including the Woosley Fire. The total package would provide about $12.1 billion. The funding could be used to repair damaged facilities and support emergency operations. Additionally, within the funding it provides for $1.16 billion for the Housing and Urban Development Department's Community Development Fund – for disaster relief, long-term recovery, infrastructure restoration, housing, and economic revitalization in the most distressed areas affected by a major disaster declared in 2018. Further, $849.4 million to the Environmental Protection Agency for capitalization grants to state revolving loan funds supporting water infrastructure projects and $600 million for Economic Development Administration assistance programs related to disaster relief, long-term recovery, and infrastructure restoration.
Please let BB&K know if you would like this bill added to your legislative matrix.

***Due to the government shutdown the Environmental Protection Agency and the Bureau of Reclamation were not running. The next report will provide a thorough report of their work.*

**LAS VIRGENES-TRIUNFO - HIGH PRIORITY LEGISLATION IN THE 116TH CONGRESS**
**THROUGH JANUARY 27, 2019**

| Legislation | Summary | Status | Position |
|---|---|---|---|
| **H.R. 34** Energy and Water Research Integration Act of 2019 | To ensure consideration of water intensity in the Department of Energy's energy research, development, and demonstration programs to help guarantee efficient, reliable, and sustainable delivery of energy and clean water resources. | Introduced by Rep Eddie Bernice Johnson (D-TX) – January 3, 2019 | |
| **S. 40** Bureau of Reclamation Transparency Act | To require the Secretary of the Interior to submit to Congress a report on the efforts of the Bureau of Reclamation to manage its infrastructure assets. | Introduced by Sen. John Barrasso (R-WY) – January8, 2019 | |
| **S. 47** Natural Resources Management Act | This bill sets forth provisions regarding various programs, projects, activities, and studies for the management and conservation of natural resources on federal lands. Specifically, the bill addresses, among other matters<br>• land conveyances, exchanges, acquisitions, withdrawals, and transfers;<br>• national parks, monuments, memorials, wilderness areas, wild and scenic rivers, historic and heritage sites, and other conservation and recreation areas;<br>• wildlife conservation;<br>• helium extraction;<br>• small miner waivers of claim maintenance fees;<br>• wildland fire operations;<br>• the release of certain federal reversionary land interests;<br>• boundary adjustments;<br>• the Denali National Park and Preserve natural gas pipeline;<br>• fees for medical services in units of the National Park System;<br>• funding for the Land and Water Conservation Fund;<br>• recreational activities on federal or nonfederal lands;<br>• a national volcano early warning and monitoring system;<br>• federal reclamation projects; and<br>• search-and recovery-missions.<br>In addition, the bill reauthorizes the National Cooperative Geologic Mapping Program | Introduced by Sen. Lisa Murkowski (R-AK) – January 8, 2019 | |

| Legislation | Summary | Status | Position |
|---|---|---|---|
| **H.R. 357** Sacramento-San Joaquin Delta National Heritage Area Act | To establish the Sacramento-San Joaquin Delta National Heritage Area. The boundaries of the Heritage Area shall be in the counties of Contra Costa, Sacramento, San Joaquin, Solano, and Yolo in the State of California, as generally depicted on the map entitled "Sacramento-San Joaquin Delta National Heritage Area Proposed Boundary", numbered T27/105,030, and dated October 2012. | Introduced by Rep. John Garamendi (D-CA) – January 9, 2019 | |
| **H.R. 579** To prohibit the conditioning of any permit, lease, or other use agreement on the transfer of any water right to the United States by the Secretaries of the Interior and Agriculture, and for other purposes. | To prohibit the conditioning of any permit, lease, or other use agreement on the transfer of any water right to the United States by the Secretaries of the Interior and Agriculture, and for other purposes. | Introduced by Rep. Scott Tipton (R-CO) – January 15, 2019 | |
| **H.R. 664** To protect the right of individuals to bear arms at water resources development projects administered by the Secretary of the Army, and for other purposes | To protect the right of individuals to bear arms at water resources development projects administered by the Secretary of the Army, and for other purposes | Introduced by Rep. Bob Gibbs (D-OH) – January 17, 2019 | |

| Legislation | Summary | Status | Position |
|---|---|---|---|
| **H.R. 667**<br>To repeal the Waters of the United States rule and amend the Federal Water Pollution Control Act definition of navigable waters, and for other purposes. | To repeal the Waters of the United States rule and amend the Federal Water Pollution Control Act | Introduced by Rep. Jamie Herrera Beutler (R-WA) – January 17, 2019 | |

ITEM 10B

**INFORMATION ONLY**

February 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

---

**Subject : Pure Water Project Las Virgenes-Triunfo: Regulatory Pathway for Surface Water Augmentation**

---

## SUMMARY:

The JPA hired Trussell Technologies to develop the attached *Regulatory Pathway for Surface Water Augmentation* for the Pure Water Project Las Virgenes-Triunfo. The pathway summarizes *recommended* as well as *required* actions to successfully permit the Pure Water Project Las Virgenes-Triunfo, recognizing that it will be among the first surface water augmentation projects in California. The pathway will serve as a tool for discussion and interaction with the State Water Resources Control Board, Division of Drinking Water (DDW) and Los Angeles Regional Water Quality Control Board (RWQCB) throughout the permitting process.

## FISCAL IMPACT:

No

## ITEM BUDGETED:

Yes

## FINANCIAL IMPACT:

There is no financial impact associated with this item.

## DISCUSSION:

In 2010, California Senate Bill No. 918 was chaptered, mandating the State Water Resources Control Board (SWRCB) to adopt uniform water recycling criteria for Surface Water Augmentation (SWA) by December 31, 2016, if an Expert Panel first made a finding that the criteria adequately protected public health. On October 31, 2016, the Expert Panel made a finding that the State's proposed criteria for SWA was protective of public health. Following an external scientific peer review of the basis of the scientific portions of the regulations and a series of public hearings and SWRCB deliberations, water recycling criteria and regulations for SWA became effective on October 1, 2018.

Although the regulations were adopted in 2018, no project has gone through the full permitting process. Including the Pure Water Project Las Virgenes-Triunfo, there are currently only three SWA projects being considered in California. The regulations are necessarily complex and require approvals from both the SWRCB, Division of Drinking Water (DDW) and the Los Angeles Regional Water Quality Control Board (RWQCB). The regulations set requirements that are applicable during the planning, design, start-up and operation of a proposed SWA project.

Due to the recent development of the regulations and overall complexity, staff hired Trussell Technologies to develop the attached Regulatory Pathway for Surface Water Augmentation. The pathway includes recommended as well as required actions to successfully permit the Pure Water Project Las Virgenes-Triunfo. The pathway will serve as a tool for discussion and interaction with DDW and the RWQCB throughout the permitting process, recognizing that the JPA, DDW and RWQCB will be implementing the regulations for the first time.

The pathway is organized around nine tasks, each with required and recommended actions. The inter-relationship and timing of each task and action is also identified in the pathway.

Following is a summary of the nine tasks that are described more fully in the report:

1. Demonstration testing (recommended)
2. Tracer studies and reservoir modeling and monitoring
3. Design
4. Engineering Report and required Public Hearings
5. Monitoring and Reporting Plan (recommended)
6. Environmental Compliance and Permitting
7. Operation Plan
8. Construction and Start-up/Commissioning
9. Operations and Monitoring

Prepared by: David R. Lippman, P.E., Director of Facilities and Operations

**ATTACHMENTS:**

Regulatory Pathway for Surface Water Augmentation

# Technical Memorandum

## Las Virgenes-Triunfo Pure Water Project
## Regulatory Pathway for Surface Water Augmentation

**Final Date:** December 20, 2018
**Draft Date:** November 2, 2018

**Authors:** Emily Owens-Bennett, P.E.
Mayara Arnold
Anya Kaufmann, P.E.

**Reviewers:** C. Bryan Trussell, P.E., BCEE
R. Rhodes Trussell, Ph.D., P.E., BCEE

**Subject:** **Regulatory Pathway for Surface Water Augmentation**

---

## Table of Contents

## List of Abbreviations

| | |
|---|---|
| °C | Celsius |
| ACU | apparent color units |
| AOP | advanced oxidation process |
| AWPF | advanced water purification facility |
| Basin Plan | Water Quality Control Plan for Malibu Creek Watershed |
| BNR | biological nutrient removal |
| CA | California |
| CCR | California Code of Regulations |
| CECs | contaminants of emerging concern |
| CFR | Code of Federal Regulations |
| CTR | California Toxics Rule |
| DDW | Division of Drinking Water |
| DO | dissolved oxygen |
| DW | drinking water |
| DWSAP | Drinking Water Source Assessment Program |
| EPA | Environmental Protection Agency |
| FAT | full advanced treatment |
| FP | filtration plant |
| IAP | Independent Advisory Panel |
| JPA | Las Virgenes–Triunfo Joint Powers Authority |
| LRV | log-reduction values |
| LVR | Las Virgenes Reservoir |
| LVMWD | Las Virgenes Municipal Water District |
| MCL | maximum contaminant level |
| mg/L | milligrams per liter |
| µg/L | micrograms per liter |
| mL | mililiters |
| MPN | most probable number |
| ng/L | nanograms per liter |
| NDBA | N-nitrosodi-n-butylamine |
| NDMA | N-nitrosodimethylamine |
| NDPA | N-nitrodiphenylamine |
| NL | notification level |
| NMEA | N-nitrosomethylethylamine |
| NMOR | N- nitrosomorpholine |
| NPDES | National Pollutant Discharge Elimination System |
| NPYR | N-nitrosopyrollidine |
| NWRI | National Water Research Institute |
| Plan | Operations and Management Plan |
| PWS | public water system |
| RO | reverse osmosis |
| RWQCB | Regional Water Quality Control Board |
| State Board | State Water Resources Control Board |
| SWA | surface water augmentation |
| SWSAP | surface water source augmentation project |
| SWTR | Surface Water Treatment Rule |
| TDS | total dissolved solids |
| TM | technical memorandum |
| TOC | total organic carbon |
| TRT | theoretical retention time |
| TSD | Triunfo Sanitation District |
| TTHM | total trihalomethanes |
| TTO | total toxic organics |
| UCMR | Unregulated Contaminant Monitoring Rule |
| US | United States |
| WRA | Water recycling agency |
| WRF | water reclamation facility |
| WSS | Watershed Sanitary Survey |

# 1. Introduction

The Las Virgenes–Triunfo Joint Powers Authority (JPA) was formed by the Las Virgenes Municipal Water District (LVMWD) and the Triunfo Sanitation District (TSD) to construct, operate, and maintain a joint wastewater treatment system for their service areas, primarily within the Malibu Creek Watershed. The Tapia Water Reclamation Facility (WRF) treats a portion of the wastewater from the JPA service areas and produces Title 22 disinfected tertiary recycled water. The recycled water production is generally constant throughout the year, however the demand for this water fluctuates, with peaks during summer and minimal use during winter seasons. Depending on the demand, the recycled wastewater is designated for irrigation of golf courses, green belts, parks, and schools, with excess flow currently being discharged to (1) Malibu Creek (November 16-April 14), (2) the Los Angeles River, and/or (3) used to spray irrigation fields owned by JPA.

The JPA is pursuing indirect potable reuse (Pure Water) through a surface water source augmentation project (SWSAP) that involves advanced treatment of excess recycled water from the Tapia WRF used to increase the water supply within the Las Virgenes Reservoir (LVR). Title 22 disinfected tertiary recycled water from the Tapia WRF will be conveyed to a new advanced water purification facility (AWPF) where it will be treated using full advanced treatment (FAT), including reverse osmosis (RO) and advanced oxidation processes (AOP) prior to discharge to the LVR. Once discharged and diluted at the LVR, the water will then be blended with other sources and treated at the Westlake Filtration Plant (FP), which provides supplemental treated drinking water to the LVMWD. The implementation of the Pure Water would cease discharge to Malibu Creek and provide a new source of local, reliable, and drought-proof water supply for the region. Figure 1 represents a schematic of the Pure Water Project.

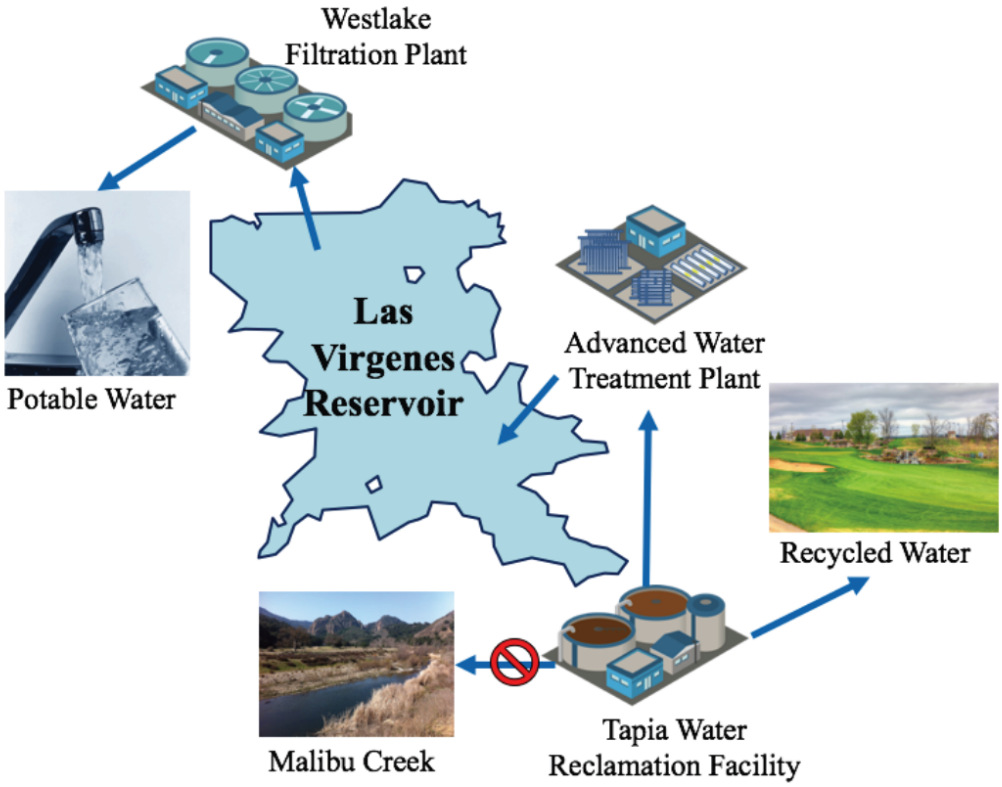


**Figure 1 - Schematic of the Las Virgenes Reservoir Pure Water Project**

The California State Water Resources Control Board (State Board) recently published amended regulations related to recycled water to adopt regulations specific to surface water augmentation (DDW, 2018). Per Title 22 of the Code of Regulations (CCR), a SWSAP involves the planned placement of recycled water into a reservoir used as a source of drinking water supply. As the JPA considers the development of SWSAP to augment the LVR, approval from the State Board's Division of Drinking Water (DDW) and the Los Angeles Regional Water Quality Control Board (RWQCB) will be required.

The purpose of this technical memorandum (TM) is to establish a step-by-step framework for the JPA to obtain approval from DDW and the RWQCB for the Pure Water Project. This TM will also include several recommendations as part of the pathway, which while not explicitly required in the regulations, will help to facilitate approval from DDW. The distinction between recommended actions and required actions will be clearly defined and presented.

## 2. Action Plan – Required and Recommended Steps

While regulations specific to surface water augmentation (SWA) were recently adopted by the State Board as part of the Regulations Related to Recycled Water, to-date no SWSAP has been through the full permitting process. A discussion of relevant regulations and requirements for achieving indirect potable reuse via SWSAP is provided in Appendix A. This section builds upon the identified regulations and requirements for a SWSAP and draws upon experience from similar projects to propose a step-by-step pathway for the JPA in pursuit of permitting approval from DDW and the RWQCB for

the Pure Water Project. The pathway is defined through a series of nine tasks encompassing different aspects of the Pure Water Project, including required and recommended actions. These tasks are identified in the flowchart provided in Figure 2, with arrows indicating the proposed sequencing and interconnections. As noted, some of the actions described in this section have already been initiated or completed by the JPA. In addition, this pathway may be subject to change as the process is further developed, and it will be important to maintain communication with regulators throughout the process. The LVMWD and TSD have the advantage of being aligned as an established JPA for coordinating the recommended pathway.

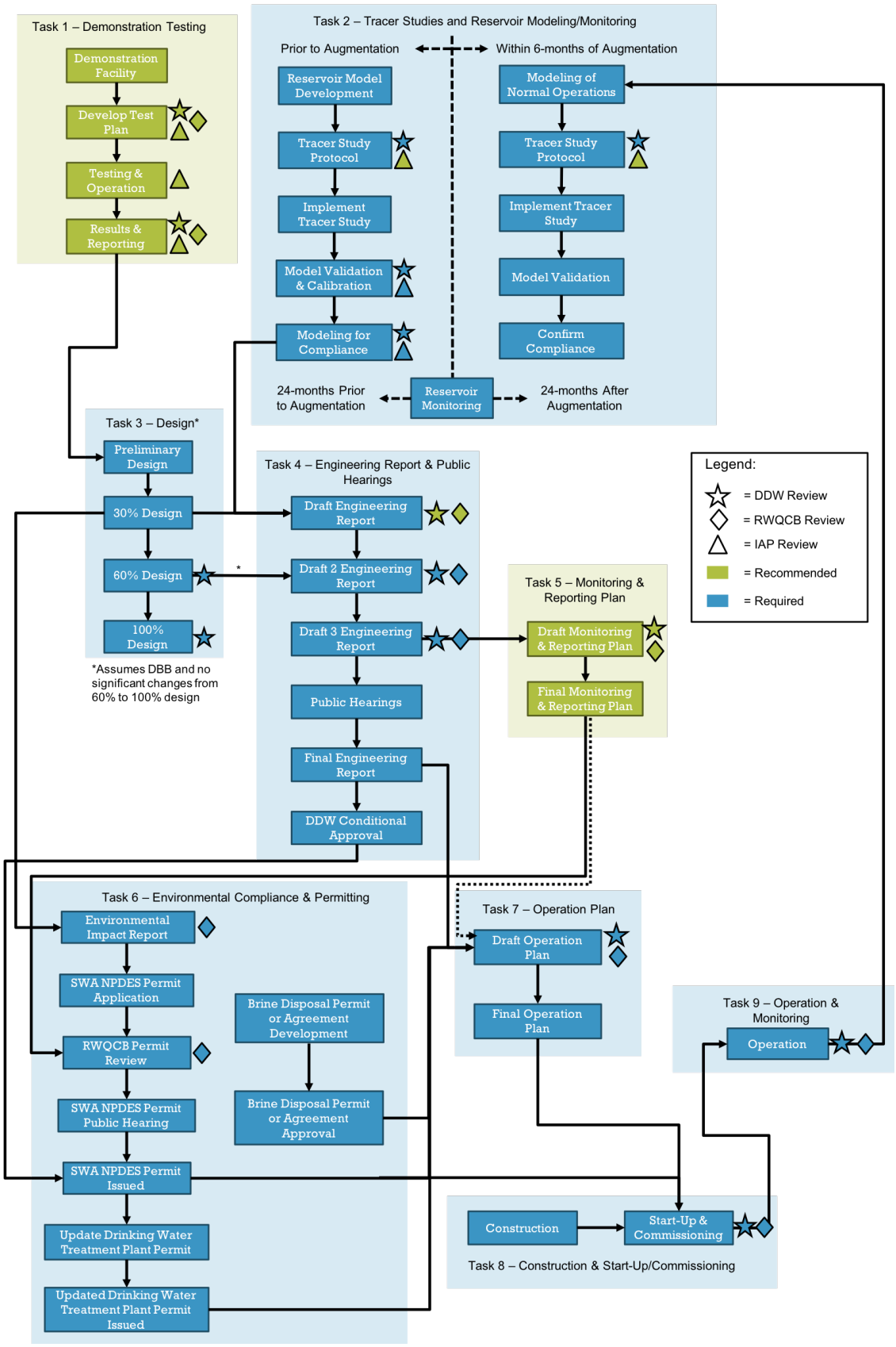


**Figure 2 - Pathway of the Pure Water Action Plan**

### *Task 1 – Demonstration Testing*

While not specifically required per SWA regulations, demonstration testing is recommended based on experience from prior projects to facilitate approval of the Pure Water Project by the DDW and RWQCB. The development, installation, and operation of a demonstration-scale facility can be used to bolster the Pure Water Project in a number of areas, including:

- Providing evidence of adequate financial, managerial, and technical capability to assure regulatory compliance to the DDW and RWQCB (specification per SWA regulations, Title 22 Article 5.3, §60320.301);
- Supporting the development of the AWPF design;
- Validating regulatory compliance associated with treatment; and
- Providing valuable advanced treatment operational experience for staff, prior to initiating full-scale treatment.

As depicted in Figure 3, demonstration testing can be achieved through establishment of a demonstration facility (demo), development of a test plan, completion of testing and operation, and reporting of these results. The demo should be a simulation, in small-scale (e.g., 0.5-1 mgd), of a treatment process that will satisfy all treatment requirements established in the SWA regulations for SWSAP (Appendix A.1.3) with continuous full advanced treatment. A summary of recommended actions pertinent to the Pure Water Project is provided below.

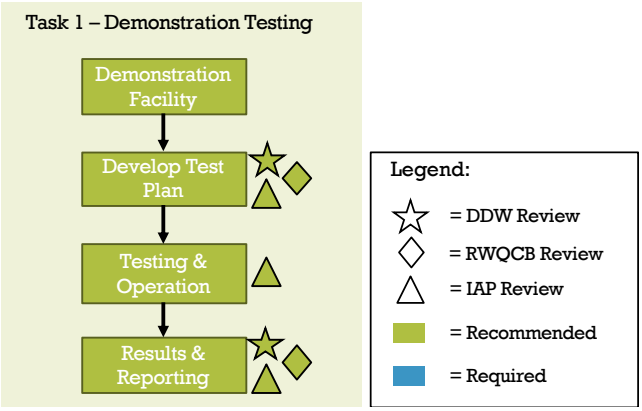


**Figure 3 – Summary of Task 1 milestones**

*Recommended actions*

- ***Demonstration facility***
  - Build a demonstration-scale AWPF to simulate a treatment process that satisfies all treatment requirements from SWA regulations (Appendix A.1.3) with continuous full advanced treatment.
  - Demonstrate that the proposed treatment can satisfy Basin Plan for Malibu Creek (Basin Plan) and regulatory requirements.
  - Develop water quality data for the Title 22 Engineering Report
  - Determine optimum design and operating criteria for a full-scale AWT facility.
  - Provide a mechanism for public outreach and acceptance.
- ***Develop test plan***

  - Integrate testing associated with each treatment process to validate regulatory compliance (e.g., RO rejection of surrogate(s), log-reduction of 1,4-dioxane through AOP).
  - Establish a detailed water quality monitoring program to understand occurrence and removal of key parameters through treatment [e.g., pathogen challenge testing, maximum contaminant levels and notification levels (MCLs and NLs)].
  - Incorporate monitoring of recommended contaminants of emerging concern (CEC) constituents listed in Appendix C (e.g., CECs, Nitrosamines).
  - Submit test plan for review by the IAP and DDW prior to implementation.
- ***Testing and operation***
  - Use the experience from operation of and performance by the demo to establish and assess design criteria for future full-scale AWPF.
  - Operate the demonstration-scale facility to provide valuable operational experience for staff, prior to initiating full-scale treatment.
  - Facilitate public tours of the demonstration facility to garner support for Pure Water Program.
  - Conduct IAP meetings in concurrence with operation to present updates on the continuous performance of the demo and allow for tour.
- ***Results and reporting***
  - Develop a final report detailing all results from the test plan.
  - Present results and conclusions to the Independent Advisory Panel (IAP) and DDW for review.

### *Task 2 – Tracer Studies and Reservoir Modeling*

Hydrodynamic reservoir modeling is required by the DDW in two phases, with an initial round prior to reservoir augmentation and follow-up within six months of augmentation. Modeling efforts should be coupled with tracer studies to validate the modeling and verify dilution and total retention time (TRT). Reservoir monitoring is required for a 24-month period prior to augmentation and for an additional 24 months after augmentation. Detailed information of all steps regarding Task 2 is shown in Figure 4. A summary of required and recommended actions pertinent to the Pure Water Project is provided below.

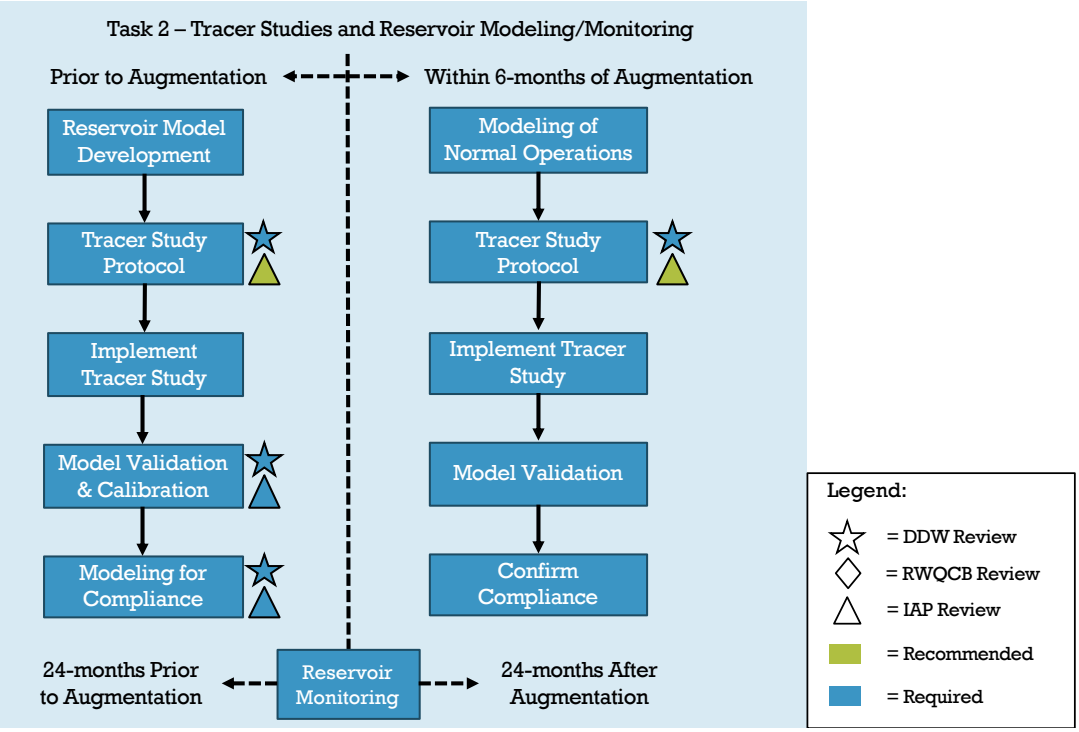


**Figure 4 – Summary of Task 2 milestones**

*Required actions*

***Prior to Reservoir Augmentation***

- ***Reservoir model development***
  - Establish a hydrodynamic model for the LVR. *A hydrodynamic model was established for the LVR by Flow Science in 2017 and calibration was completed in 2018.*
  - Convene an IAP to evaluate modeled conditions and results. *An IAP was convened in March 2018 with attendance from DDW.*
- ***Tracer study protocol***
  - Develop a protocol for a tracer study of LVR.
  - Submit protocol to the DDW for written approval.
- ***Implement tracer study***
  - Follow approved protocol to complete tracer study of LVR.
- ***Model validation and calibration***
  - Using tracer study results, calibrate and validate the existing hydrodynamic model. Engage the IAP and DDW for review of this effort.
- ***Modeling for compliance***
  - Run calibrated hydrodynamic model to assess compliance with dilution and TRT requirements.
- ***Reservoir monitoring***
  - Monitoring locations at the LVR must be identified for water quality monitoring requirements (defined in Appendix A.1.5) and submitted to DDW for review and approval.
  - Monthly monitoring of the approved LVR monitoring locations should be completed for at least 24 months prior to operation, to establish baseline

water quality these locations. The monthly samples must be analyzed for the contaminants listed in Tables A2 and A3. Other DDW-specified chemicals and contaminants may also be required upon review of the Engineering Report.
After initial monitoring of reservoir, the JPA must submit a report to the DDW and RWQCB summarizing monitoring results (water quality data and TRT calculations).

***Following Augmentation***

- ***Modeling of normal operations***
  - Within 6 months of full-scale operation of the AWPF, run the hydrodynamic reservoir model to reflect conditions under normal operations.
- ***Tracer study protocol***
  - Similar to the tracer study conducted prior to augmentation, develop a tracer study protocol and submit to DDW for approval.
- ***Implement tracer study***
  - Follow approved protocol to complete tracer study of LVR under hydraulic conditions associated with normal operation.
- ***Model validation***
  - Using tracer study results, validate the hydrodynamic model.
- ***Confirm compliance***
  - Using the results from LVR modeling and tracer studies, confirm that compliance all times under all operating conditions.
- ***Reservoir monitoring***
  - Monthly monitoring of the previously-approved LVR monitoring locations should be completed for at least 24 consecutive months following the start of full-time operation of the AWPF.
  - After completion of the 24-month monitoring program, the JPA can apply to DDW to reduce the monitoring frequency to yearly.

*Recommended actions*

- Convene a subcommittee of the IAP to review each tracer study protocol.
- Develop a reservoir operation strategy for review by DDW and IAP to maintain maximum flexibility of reservoir operations while meeting regulatory requirements (dilution and TRT).
- Confirm applicability of National Pollutant Discharge Elimination System (NPDES) permit.

### *Task 3 – Design*

The design phase should be initiated after results from the demonstration testing are available. All significant findings gleaned from operation of the demo should be incorporated into the design of the AWPF. The design should also incorporate all of the compliance requirements established by DDW and RWQCB. As indicated in Figure 5, the pathway defined for Task 3 assumes adoption of the design-bid-build (DBB) procurement strategy, in which a single design team will be responsible for development of the design through completion (100% Design) with no significant changes occurring

from the 30% through 100% design stages. Alternative procurement strategies may impact the timing of developing the project Engineering Report (Task 4). A summary of required and recommended actions pertinent to the Pure Water Project is provided below.

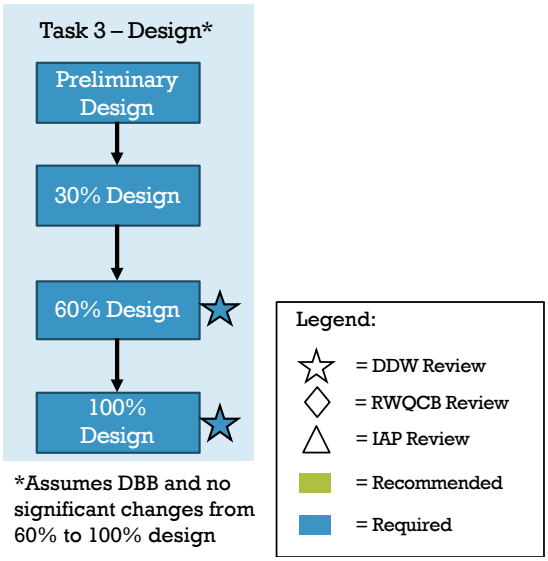


**Figure 5 - Summary of Task 3 milestones**

*Required actions*

- ***Preliminary Design***
  - Initiate the preliminary design effort following the conclusion of demonstration testing, to incorporate findings from the demo.
  - Build upon design criteria established during demonstration testing to develop a preliminary design.
  - Review the preliminary design documents to ensure regulatory compliance.
- ***30% Design***
  - The 30% level design effort should be carried forward (assuming DBB procurement approach) as the basis for the first draft of the Engineering Report described in Task 4 as well as for the Environmental Impact Report described in Task 6.
- ***60% Design***
  - Continue to develop the design and prepare a 60% design level report.
  - Submit the 60% design report to DDW for review and input.
- ***100% Design***
  - Complete a final design report.
  - Submit the final design report and drawings and specifications to DDW for review and input.

*Recommended actions*

- Maintain communication with DDW to keep the regulators informed of design parameters and changes throughout the design process to facilitate SWSAP approval.

### *Task 4 – Engineering Report & Public Hearings*

The regulations require that an engineering report be prepared and submitted to the DDW for approval prior to implementation of the project. The report will describe the overall project including source control, the Tapia WRF, the AWPF, the LVR, the Westlake FP, and distribution. The DDW's conditional approval of the Engineering Report is required before the project can be permitted.

The engineering report will be key to meeting and demonstrating many of the requirements in the SWA Regulations, including but not limited to:

1) a contingency plan to assure no untreated or poorly treated water will be discharged to the LVR;

2) a description of the joint plan for the Pure Water Project developed by the JPA (encompassing Tapia WRF and Westlake FP) that includes corrective actions in the event of failure to meet water quality requirements as well as operational changes that may adversely impact the quality of the recycled water to be used in reservoir augmentation;

3) a description of the potential impacts resulting from the introduction of the purified water as a source water for the Westlake FP, as well as into the drinking water distribution system; and

4) a description of the technical, managerial, and financial capacity of the JPA to assure compliance with the regulations.

If the project is procured using a traditional DBB method, the Engineering Report can be drafted after 30% design. If the project is procured in a design-build or progressive design-build method, it may be necessary to wait until the 60% design to begin to draft the Engineering Report. This is due to the potential changes in design that may occur between 30% and 100% design with the different project delivery methods. Alternatively, the Engineering Report can be prepared during early stages of design and can be modified at a later time. Regardless, the Final Engineering Report will need to reflect the 100% design.

The progression of steps included in Task 4 is indicated in Figure 6. A summary of required and recommended actions pertinent to the Pure Water Project is provided below.

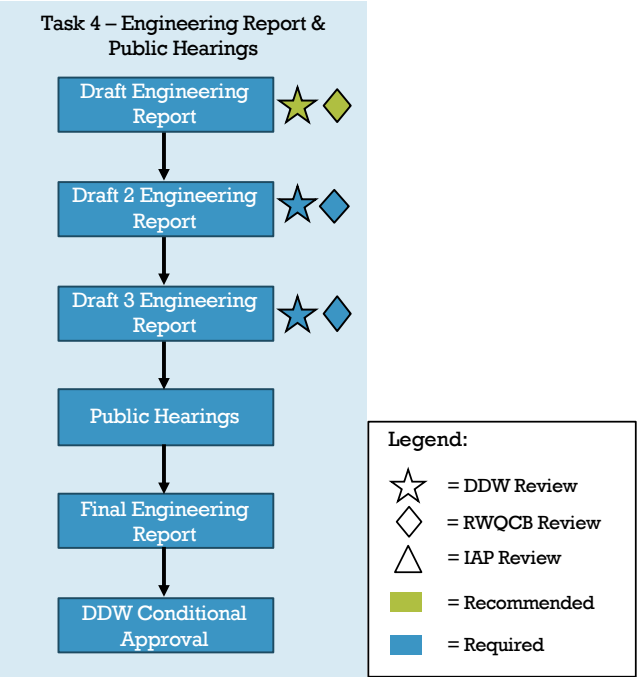


**Figure 6 – Summary of Task 4 milestones**

*Required actions*

- ***Draft Engineering Report***
  - Develop an internal draft of the engineering report and ensure review of all sections by relevant stakeholders.
- ***Draft 2 Engineering Report***
  - Develop a draft of the Engineering Report that will be submitted to DDW.
  - Submit draft 2 to DDW for review.
- ***Draft 3 Engineering Report***
  - Revise engineering report according to DDW comments and develop a new draft of the Engineering Report that will be submitted to DDW.
  - Submit draft 3 to DDW for review.
- ***Public Hearings***
  - Facilitate at least three public hearings held by DDW and provide, in conjunction with the JPA, information preapproved by DDW (i.e., draft 3 of the engineering report) to be presented to the public at the hearing and available on the JPA's website. The information must be available 30 days prior to each public hearing for public access and evaluation.
- ***Final Engineering Report***
  - If necessary, revise the engineering report based on comments made at the public hearing.
- ***DDW Conditional Approval***
  - Once the engineering report is finalized, DDW will issue a conditional approval letter for the project. Ultimately, the conditional approval informs the NPDES permit issued for the discharge to the LVR.

*Recommended actions*

- While developing the initial draft of the engineering report, it is recommended to meet regularly with DDW to review and discuss any challenging aspects of design and meeting regulatory requirements. This may include topics such as pathogen removal crediting, removal of chemical contaminants, reliability, monitoring, reservoir modeling, source control, and others. By engaging DDW early in this process, the development of the engineering report will be informed by DDW's concerns, and the JPA will begin to build trust with the regulators.

### *Task 5 – Monitoring and Reporting Plan*

Considering the many monitoring and reporting requirements – and overlap between DDW and RWQCB requirements in some instances – associated with a SWSAP, it is recommended to develop a Pure Water Monitoring and Reporting Plan for communicating regulatory compliance. This plan will build upon the Draft 3 Engineering Report to document the specific monitoring locations, water quality parameters, and frequency of monitoring and reporting for the Pure Water Program. The goal of this plan is to assist the RWQCB and DDW in developing the permit that will enforce all requirements for a SWSAP. The monitoring and reporting requirements for DDW and RWQCB are shown in Table 1. The steps included in Task 5 are indicated in Figure 7. The final Monitoring and Reporting Plan will provide a good starting point for the operations plan further described in Task 7. A summary of recommended Task 5 actions pertinent to the Pure Water Project is provided below.

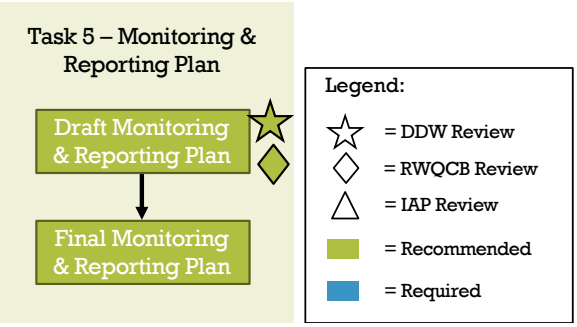


**Figure 7 - Summary of Task 5 milestones**

**Table 1 – State and Regional Monitoring and Reporting Requirements**

| Monitoring Category | Monitoring Required by SWA Regulations | Monitoring to Assess Compliance with RWQCB Standards |
|---|---|---|
| **Pathogen Control (log removal)** | X | NA |
| **Advanced Treatment Criteria** | X | NA |
| **pMCLs** | X | X |
| **Primary Action Levels (lead/copper)** | X | X |
| **sMCLs** | X | X |
| **Notification Levels** | X | X |
| **Toxic Priority Pollutants** | X | X |
| **DDW-Specified chemicals** | X | NA |
| **DDW/RWQCB-Specified indicator compounds** | X | X |
| **Basin Plan objective not regulated by DDW as an MCL, Action Level, or Notification Level** | NA | X |
| **California Toxics Rule (CTR) constituents not regulated by DDW as an MCL** | NA | X |
| **Nitrogen and Phosphorus** | NA | X |
| **Chlorine Residual** | NA | X |

*Recommended actions*

- ***Draft Monitoring and Reporting Plan***
  - Define AWPF effluent water quality and reservoir monitoring goals including the distinction between monitoring required by DDW and RWQCB (Table 6) as well as proposed reporting.
  - Include proposed product water monitoring, including sample locations and frequency.
  - Include the proposed reporting schedule.
  - Complete after the third draft of engineering report is finished.
  - Submit to DDW and RWQCB for review.

- ***Final Monitoring and Reporting Plan***
  - Incorporate comments from RWQCB and DDW.
  - Submit to RWQCB for review before NPDES permit is issued.
  - Use as the starting point for the Operations Plan (Task 7).

### *Task 6 – Environmental Compliance & Permitting*

A successful SWSAP requires multiple permits from multiple agencies due to the complex interaction between wastewater, drinking water, and environmental discharges. There are four major milestones for permitting: (1) Environmental Impact Report (EIR), (2) Surface Water Augmentation National Pollutant Discharge Elimination System (SWA NPDES) Permit, (3) Updated Drinking Water Treatment Plant Permit, and (4) Brine

Disposal Permit or Agreement. Detailed information of all steps regarding Task 6 is shown in Figure 8. A summary of required actions pertinent to the Pure Water Project is provided below.

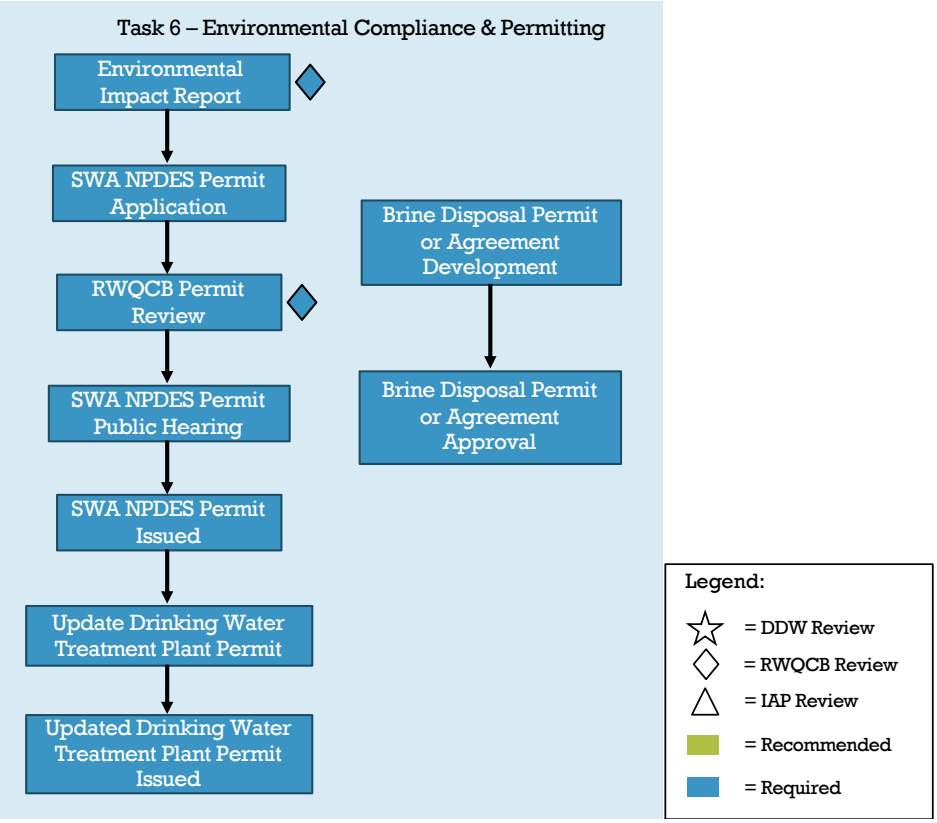


**Figure 8 – Summary of Task 6 milestones**

*Required actions*

- ***Environmental Impact Report***
  - If the project is determined to have no significant effect on the environment, an EIR may not be required. However, with new pipelines, an AWPF site, and discharge of water and residuals, an EIR will most likely be required. The EIR is required as part of compliance with CEQA. It is suggested that the EIR be developed around the same time as the 30% design of the AWPF in order to adequately describe the project's impact on the environment and measures for mitigation and prevention. The RWQCB will not issue an NPDES permit until the EIR process has been completed.
- ***SWA NPDES Permit Application***
  - Once the Engineering Report (from Task 4) has been finalized, the JPA will need to develop an NPDES permit application for the project. The SWA NPDES permit will be used to enforce many of the requirements for the AWPF effluent from the SWA regulations.
- ***RWQCB Permit Review***
  - The RWQCB will review the NPDES permit application and begin to draft the NPDES permit.

- ***SWA NPDES Permit Public Hearing***
  - The RWQCB will issue a draft of the NDPES permit and hold a public comment period as well as a public hearing.
- ***SWA NPDES Permit Issued***
  - Following the public hearing, the RWQCB will issue the NPDES permit.
- ***Update Drinking Water Treatment Plant Permit***
  - When the NPDES permit is issued, the JPA should work with DDW to update the drinking water treatment plant permit with information about the new source water.
- ***Updated Drinking Water Treatment Plant Permit Issued***
  - When the project is ready for start-up, DDW will update and issue the revised drinking water treatment plant permit.
- ***Brine Disposal Permit or Agreement Development***
  - The AWPF will create a brine stream that will need to be discharged. The JPA will either need a permit to discharge the brine or will need to develop an agreement with another agency for brine disposal.
- ***Brine Disposal Permit or Agreement Approval***
  - Prior to project start-up, the JPA will need to have an approved brine disposal permit or agreement.

### *Task 7 – Operation Plan*

The operation plan is a vital document for a successful SWSAP. The operation plan is required by the regulations and will include details about the start-up, operation, and maintenance of the SWSAP. If a Monitoring and Reporting Plan has been developed (Task 5), it can provide a solid foundation for development of the Operation Plan. The Task 7 steps are shown in Figure 9, along with the expected progression. A summary of required actions pertinent to the Pure Water Project is provided below.

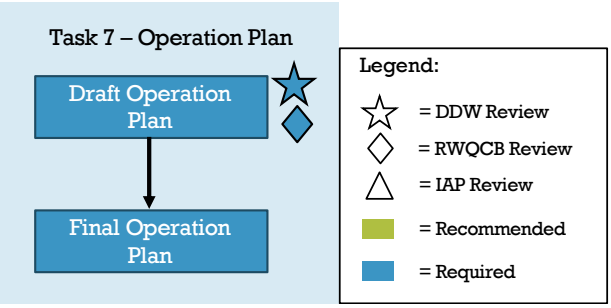


**Figure 9 - Summary of Task 7 milestones**

*Required actions*

- ***Draft Operation Plan***
  - The JPA will need to develop an operation plan. This plan will build off the Engineering Report (Task 4), Monitoring and Reporting Plan (Task 5), and any requirements from the permits issued for the project (Task 6).
  - The plan will identify and describe the operations, maintenance, analytical methods, and monitoring necessary to meet the requirements of the regulations. This includes a description of setpoints for each unit process at the AWPF, actions for alarms, monitoring of critical control points, and other important aspects of operation.

- The plan must also include an on-going training program for the operators of the SWSAP.
- The plan must be submitted to DDW and the RWQCB for review.

- ***Final Operation Plan***
  - Revise the operation plan based on DDW and RWQCB comments.

*Recommended actions*

The required actions defined above are expected to be sufficient for this task.

### *Task 8 – Construction, Start-Up and Commissioning*

When the AWPF is constructed and ready to begin start-up and commissioning, there are several key requirements that must be met before water can be discharged to the LVR. All of the permits discussed in Task 6 must be issued, and the JPA must show that the advanced treatment processes achieve the required pathogen and chemical reductions. The Task 7 steps are shown in Figure 10, and a summary of required and recommended actions is provided below.

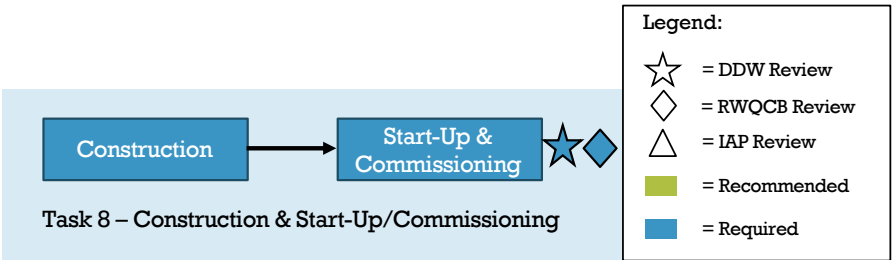


**Figure 10 - Summary of Task 8 milestones**

*Required actions*

- The JPA must conduct demonstration testing (i.e., challenge and/or spiking tests) at the AWPF to validate the treatment processes and confirm achievement of the required pathogen log-reductions and at least 0.5 log-reduction of 1,4-dioxane. A testing protocol and subsequent results must be submitted to the DDW for written approval and should also include a valid surrogate or operational parameter to be used for continuous monitoring.
- For the RO process, the JPA must propose on-going performance monitoring with at least one approved constituent that can indicate when the integrity of the membrane has been compromised.

*Recommended actions*

- Prior to operation, it is recommended that the AWPF undergo commissioning and testing to demonstrate the performance of each unit process.
- The project should have a phased start-up plan. The phasing plan will include ramping up the flow rate and demonstrating compliance with each new phase.

### *Task 9 - Operation and Monitoring*

Following the start-up and commissioning of the AWPF, the operation and monitoring phase will commence. This task will consist of the execution of all the operations and monitoring detailed and agreed in the operation plan (Task 7). The Task 9 milestones are

indicated in Figure 11. A summary of required actions pertinent to the Pure Water Project is provided below.

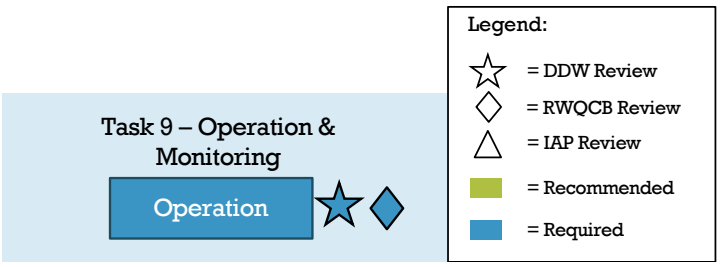


**Figure 11 - Summary of Task 9 milestones**

*Required actions*

- ***Operation***
  - Follow the AWPF operations plan reviewed and approved by DDW.
  - Within 6 months of operation, the hydrodynamic model of the reservoir must be confirmed through a second tracer study, as detailed in Task 2.
  - Proceed with monthly monitoring of LVR for no less than 24 consecutive months at the sample locations initially established and approved by DDW, as detailed in Task 2. After completion of the 24 consecutive months of reservoir monitoring during operation, the JPA may apply to the DDW for reduced monitoring. Reduced monitoring may be no less than yearly.
  - Within 60 days of completing the first 12 months of full-scale operational monitoring of the full advanced treatment, the JPA must submit a report to the DDW and RWQCB including results from (1) the surrogate and/or operational parameter monitoring, (2) description of efficacy of the surrogate to reflect the reduction criterion on 1,4-dioxane and RO membrane integrity, and (3) actions taken if failure has occurred.
  - Conduct monthly sampling of AWPF effluent under normal operations and submit it for analysis of chemicals and contaminants with MCLs and NLs described in Tables A1 and A4. Reduction of monitoring frequency (no less than quarterly) can be requested if for the first 12 consecutive months no MCL or NL was exceeded.
    - If a result exceeds a contaminant's MCL or action level, the SWSAP water recycling agency (WRA) must collect another sample within 72 hours of notification of the result and have it analyzed for the contaminant as confirmation. If exceedance is confirmed, JPA must notify the DDW and RWQCB within 24 hours and initiate weekly monitoring until four consecutive weekly results are below the contaminant's MCL or action level.
    - Notify the DDW, if the applicable pathogen reduction is not met based on the on-going monitoring required within 24 hours of its knowledge of an occurrence. JPA must investigate the cause and initiate corrective actions.
    - Notify the DDW, RWQCB, and Westlake FP if there is a failure to meet the pathogen reduction criteria longer than 4 consecutive hours or more than a total of 8 hours during any 7-day period.

        - Failures of shorter duration must be reported to the RWQCB no later than 10 days after the month in which the failure occurred.
    - By July 1st of each year, JPA must submit a report to the DDW and RWQCB including: (1) the compliance status with the monitoring requirements, (2) any violations (date, duration and nature) and actions taken (correction or suspension of delivery), (3) any changes in operations of any unit processes, during previous calendar year, and (4) description of anticipated changes (impact of alteration).

***Recommended actions***

The required actions defined above are expected to be sufficient for this task.

## 3. Conclusions

The pathway shown in Figure 2 should assist the JPA in taking the appropriate steps to gain regulatory approval for Pure Water as a SWSAP. A checklist covering the items discussed in Section 2, along with the relevant regulatory reference and suggested timing is provided in Table 2. As noted previously, no surface water augmentation project has been permitted yet, so this process is subject to some variability as the regulators determine how to best enforce the requirements in the regulations. It is recommended that the JPA closely monitor the progress of other surface water augmentation projects in the state to continue to learn from their permitting process and understand how to successfully interact with regulators throughout the Pure Water project.

## Table 2 – Checklist for the Pure Water Action Plan

| Action | | Reference | Timing |
|---|---|---|---|
| Reservoir Modeling and Model Validation | Establish hydrodynamic model for LVR. | Title 22 CCR Article 9 §64668.30 (c) | Prior to augmentation of LVR |
| | Convene IAP to evaluate modeling. | Title 22 CCR Article 9 §64668.30(f) | After hydrodynamic model is established. |
| | Develop Tracer Study Protocol #1. Present protocol to IAP, DDW, RWQCB for review. | | Prior to Tracer Study #1. |
| | Perform Tracer Study #1 | Title 22 CCR Article 9 §64668.30 (c) | After Tracer Study Protocol #1 review. |
| | Calibrate and validate model using results from Tracer Study #1. Engage IAP and DDW for review. | Title 22 CCR Article 9 §64668.30 (c) | After Tracer Study #1. |
| | Run calibrated model to assess compliance with dilution and TRT requirements. | Title 22 CCR Article 9 §64668.30 (c) | After Tracer Study #1 and model validation. Compliance requirements will be used in Engineering Report and AWPF design. |
| | Develop Tracer Study Protocol #2 and submit to DDW for written approval | Title 22 CCR Article 9 §64668.30 (d) | Within 6 months of AWPF start-up. |
| | Perform Tracer Study #2 under normal operations, post-augmentation. | Title 22 CCR Article 9 §64668.30 (d) | Within 6 months of AWPF start-up, after Tracer Study Protocol #2 review. |
| | Validate model using Tracer Study #2 results. | Title 22 CCR Article 9 §64668.30 (d) | Following completion of Tracer Study #2. |
| Reservoir Monitoring | Identify monitoring locations and submit to DDW for approval. | Title 22 CCR Article 5.3 §60320.326 (a) | Include monitoring location information in Engineering Report |
| | Complete monthly monitoring #1 (prior to LVR augmentation) from DDW-approved locations. | Title 22 CCR Article 5.3 §60320.326 (a) | After DDW approves monitoring locations and prior to augmentation of LVR, for at least 24 consecutive months. |
| | Complete monthly monitoring #2 (following LVR augmentation) from DDW-approved locations. | Title 22 CCR Article 5.3 §60320.326 (c) | Initiate with start of full-time operation of AWPF, for at least 24 consecutive months. |
| | Submit application to DDW to reduce frequency of LVR monitoring, based on results from initial 24-month monitoring effort post-augmentation. | Title 22 CCR Article 5.3 §60320.326 (d) | After completion of 24-month monitoring program #2, post-augmentation. |
| | Build demonstration-scale AWPF. | | Prior to design of the full-scale AWPF |

| Action | | Reference | Timing |
|---|---|---|---|
| Demonstration Study (recommended to facilitate approval process with DDW and RWQCB) | Develop test plan for demonstration testing and submit to DDW and RWQCB. | This is one option for demonstrating technical, managerial, and financial capability required per Title 22 CCR Article 5.3 §60320.301 (b). | Prior to design of the full-scale AWPF |
| | Operate facility and complete demonstration testing. | | After test plan is approval by DDW and RWQCB. |
| | Develop final report with operations and testing results. Submit to DDW, RWQCB, and IAP for review. | | After demo-scale demonstration testing. |
| AWPF Design | Preliminary Design (recommended to engage DDW throughout design process) | | Initiated upon conclusion of demonstration testing, with results and findings incorporated. |
| | 30% Design | | After preliminary design. This will be used as basis for initial draft of Engineering Report and Environmental Impact Report (assumes DBB procurement). |
| | 60% Design (submit to DDW for review) | | After 30% design. |
| | 100% Design | | After 60% design. |
| Engineering Report | Develop ER draft #1 (regular communication with DDW recommended). Share draft with all relevant stakeholders. | Title 22 CCR Article 7 §60323 | After development of 30% design (assumes DBB procurement). |
| | Develop ER draft #2 and submit to DDW for review. | | After ER draft #1. |
| | Submit Joint Plan to DDW and RWQCB. | Title 22 CCR Article 5.3 §60320.301 | After ER draft #1. |
| | Develop ER draft #3, incorporating comments from draft #2. Submit to DDW for review. | | After ER draft #2. |
| | Facilitate at least 3 public hearings with DDW participation. Prepare hearing information and submit to DDW for approval. | Title 22 CCR Article 9 §64668.20 | After DDW approval of engineering report (draft #3). Prior to hearings, DDW-preapproved hearing information must be posted on JPA website for ≥30 days. |

| Action | | Reference | Timing |
|---|---|---|---|
| | Complete Final ER, incorporating any comments from public hearings. | | After 3 public hearings. This document will be basis for DDW to issue conditional approval letter for project. |
| Monitoring and Reporting Plan (recommended for communicating compliance with DDW and RWQCB) | Develop draft Monitoring and Reporting Plan. Submit to DDW and RWQBC for review. | | After ER draft #3. |
| | Complete Final Monitoring and Reporting Plan, incorporating comments from DDW and RWQCB. | | After Draft Monitoring and Reporting Plan. This will provide starting point for the Operations Plan. |
| Environmental Compliance and Permitting | Establish and administer industrial pretreatment and pollutant source control program. | Title 22 CCR Article 5.3 §60320.306 | Upon establishing SWSAP |
| | Develop Environmental Impact Report and submit to RWQCB. | Title 14 CCR, Division 6, Chapter 3 | Initiate concurrently with 30% Design. |
| | Develop SWA NPDES permit application. | | After Engineering Report and Environmental Impact Report have been finalized. |
| | Submit SWA NPDES permit application to RWQCB. | | After SWA NPDES permit application is complete. |
| | Conduct public hearing with RWQCB and address comments related to draft NPDES permit. | | After RWQCB review of NPDES permit application. |
| | Develop brine discharge permit or disposal agreement. | | Prior to startup and commissioning. |
| | Update Westlake Domestic Water Supply Permit with DDW. | Title 22 CCR Article 9 §64668.20 | After NPDES permit is issued |
| Operation Plan | Develop Draft Operation Plan and submit to DDW and RWQCB. | Title 22 CCR Article 5.3 §60320.322 | After Final Monitoring and Reporting Plan. |
| | Complete Final Operation Plan, incorporating comments from DDW and RWQCB. | | After Draft Monitoring and Reporting Plan. Prior to start-up of AWPF. |
| | Begin construction of full-scale AWPF. | | After 100% design. |

| Action | | Reference | Timing |
|---|---|---|---|
| Construction, Start-Up, and Commissioning of Full-Scale AWPF | Develop protocol for demonstration testing to validate treatment processes and demonstrate performance (recommended). Submit to DDW for approval. | Title 22 CCR Article 5.3 §60320.308 (b) | Before start-up and commissioning of AWPF |
| | Conduct demonstration testing per DDW-approved protocol and confirm required pathogen log-reductions. Submit results to DDW and RWQCB. | | After demonstration testing protocol approved by DDW. Prior to start-up of AWPF. |
| Full-Scale AWPF Operation, Monitoring, and Reporting | Follow approved Final Operation Plan. | | After Final Operation Plan is approved and following start-up of AWPF. |
| | Follow Final Monitoring and Reporting Plan. | | After Final Monitoring and Reporting Plan is approved and following start-up of AWPF. |
| | Submit report to DDW and RWQCB with results of surrogate and/or operational parameter monitoring, including reduction of 1,4-dioxane and RO membrane integrity. | Title 22 CCR Article 5.3 §60320.302(c) | Within 60 days of completion of initial 12 months full-scale AWPF operational monitoring. |
| | Prepare annual report with compliance status, violations and actions taken, operational changes, and anticipated changes. Submit to DDW and RWQCB. | Title 22 CCR Article 5.3 §60320.328 | Annually after start-up of AWPF. Submit report by July 1st of each year. |

# 4. References

Anderson, P., Denslow, N., Drewes, J.E., Olivieri, A., Schlenk, D., Snyder, S. (2010). Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water: Final Report, Sacramento, CA.

CCR. 2018. California Regulations Related to Drinking Water, 2016. Titles 16 and 22. Retrieved from https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/lawbook/DW-regulations-2018-10-01.pdf (October 23, 2018).

CDPH. 2000. Drinking Water Source Assessment and Protection (DWSAP) Program. California Department of Public Health.

Crook, J., Bull, R., Collins, H., Cotruvo, J., & Jakubowski, W. (2013). Examining the criteria for direct potable reuse: recommendations of an NWRI Independent Advisory Panel, under WateReuse Research Foundation Project No. 11-02. No. NRWI-2013-01. Fountain Valley, CA: National Water Research Institute.

U.S. EPA (2000). California Toxics Rule. Title 40, Section 131.38, Code of Federal Regulations (40 CFR 138.38).

U.S. EPA (2012). Fourth Unregulated Contaminant Monitoring Rule. Federal Register Volume 77, Issue 85, Environmental Protection Agency.

U.S. EPA (2014). National Recommended Water Quality Criteria. Located online at the EPA website at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm. Updated 2014.

U.S. EPA (2018). "NPDES Permit Basics." Retrieved from https://www.epa.gov/npdes/npdes-permit-basics (October 28, 2018).

U.S. EPA (2002). Safety of Public Water Systems (Safe Drinking Water Act).

State Water Resources Control Board DDW (2018). Indirect Potable Reuse: Surface Water Augmentation, Title 22, Division 4, Chapter 17, Article 9, Chapter 3, Article 5.3, California Code of Regulations.

# Appendix A – Regulatory Background

Using advanced treated wastewater to supplement surface water that serves as the supply for a drinking water plant is considered indirect potable reuse, as the reservoir provides an environmental buffer. Regulations specific to surface water augmentation were recently published by the State Board, effective as of October 1, 2018, under Chapter 3 Article 5.3 and Chapter 17 Article 9 of the Title 22 CCR (2018); however, achieving indirect potable reuse via SWSAP implicates a number of relevant regulations and associated requirements beyond those specifically identified – encompassing both public health and environmental discharge criteria.

For the JPA, these regulations will be applicable as the disinfected tertiary wastewater from Tapia WRF transitions to surface water and then to drinking water. Relevant regulations include statewide surface water quality standards established by the Environmental Protection Agency (EPA) within the California Toxics Rule, surface water standards established by the RWQCB within the Water Quality Control Plan for Los Angeles County, and Title 22 regulated drinking water constituents with primary and secondary maximum contaminant levels (MCLs and sMCLs) and notification levels (NLs). These regulations are highlighted in the following subsections and summarized in Table A1, along with the implications specific to the Pure Water project. The proposed regulatory pathway for the Pure Water Project is defined in Section 2.

**Table A1 - Summary of Regulatory Criteria and Requirements for SWA Applications**

| | Public Health Criteria | Environmental Discharge |
|---|---|---|
| **Regulations** | CCR Title 22, Division 4, Chapter 3 | Malibu Creek Watershed Basin Plans |
| | CCR Title 22, Division 4, Chapter 17 | California Toxics Rule |
| **Requirements** | Approved Title 22 Engineering Report (DDW) | |
| | Water Recycling Requirements (RWQCB) | |
| | NPDES Permit containing Waste Discharge Requirements (RWQCB) | |

## *A.1 Surface Water Augmentation Regulations*

The key requirements for defining a SWSAP are based on dilution, theoretical retention time, treatment, source control, and monitoring for water quality targets, as described in the Chapter 3 Article 5.3 and Chapter 17 Article 9 of the Title 22 CCR and summarized in the following subsections.

### A.1.1 Dilution Criteria

The LVR will serve as the environmental buffer for Pure Water and will provide the required dilution. Dilution mitigates contamination by reducing the concentration of compounds present in the recycled water. Two dilution thresholds are established as part of the SWA regulations: the volume of water withdrawn from the reservoir can be no

more than 1% (100:1 dilution) or 10% (10:1 dilution) of recycled municipal wastewater that was delivered during any 24-hour period (Table A2). To evaluate the dilution factor (100:1 or 10:1) achieved in LVR through the addition of recycled water, the JPA must conduct hydraulic modeling and tracer studies under normal hydraulic conditions, prior to operation. Hydrodynamic modeling of LVR was completed by Flow Science and identified that under worst-case conditions a minimum level of 10:1 dilution is expected to be maintained. An Independent Advisory Panel (IAP) was convened to review these results and recommended use of a probabilistic analysis to project dilution scenarios and an assessment of the AWTF outlet into the reservoir (currently being performed). Based on the Title 22 SWA regulations, this model must next be validated through two tracer studies – (1) prior to augmentation and (2) within 6 months of operating the SWSAP. The JPA must develop a tracer study protocol and submit it to DDW for written approval prior conducting the tracer studies. A regulatory pathway is further delineated in Section 3.

### A.1.2 Theoretical Retention Time (TRT) Criteria

The TRT is calculated by dividing the volume of water in the LVR at the end of each month by the total outflow during the corresponding month. The total outflow must include, but not be limited to, all outflows and withdrawals from LVR. The SWA regulations state that the initial approved minimum TRT may be no less than 180 days. Based on the hydrodynamic modeling performed for the LVR, all operational scenarios developed were in compliance with regulatory limits. Routine and boundary year scenarios were found to be in compliance with a 6-month retention time, whereas the emergency scenario modeled met a minimum of 2-month retention time.

If desired, the JPA may establish and apply for approval of an alternative TRT of no less than 60 days. In order to achieve approval for TRT of less than 120 days, the JPA must demonstrate equivalent or better public health protection provided through Pure Water (as compared with the current status), possibly including evaluation by a state-board pre-approved independent advisory panel (IAP), and increased log removal, as shown in Table A2.

### A.1.3 Treatment Criteria

The regulations specify advanced treatment criteria for a SWSAP. Treatment should be continuous, with full advanced treatment including RO and AOP. The RO permeate must achieve a total organic carbon (TOC) limit of 0.5 mg/L. The AOP effluent must provide no less than 0.5-log reduction of 1,4-dioxane.

The regulations also specify pathogen log reduction requirements prior to discharge to the reservoir that are summarized in Table A2. The Tapia WRF treatment process includes bar-screens, grit removal, primary sedimentation, anoxic/aerobic biological treatment in biological nutrient removal basins (BNR), secondary clarification, tertiary filtration, chlorine disinfection and dechlorination. Additional treatment from the proposed AWPF (FAT process) is required prior to discharge into the LVR to achieve pathogen log reduction requirements.

The combined treatment processes from Tapia WRF, the proposed AWPF, and the Westlake FP must achieve total minimum pathogen removals of 12-log virus, 10-log *Giardia*, and 10-log *Cryptosporidium* prior to distribution, depending on the dilution and theoretical retention time (TRT). As the Westlake FP achieves a minimum log-reduction credit of 4 for virus, 3 for *Giardia*, and 2 for *Cryptosporidium* (4/3/2), the remaining log-removal credits should be achieved at Tapia WRF and at the AWPF. If 100:1 dilution is achieved in LVR, the combined treatment between Tapia WRF and the AWPF will be required to achieve log-reductions of 8/7/8, for a total of 12/10/10, as shown in Table A2. For a 10:1 dilution in LVR, the combined treatment will be required to achieve a log-reduction of 9/8/9, for a total of 13/11/11, assuming TRT of 180 days in both cases. In the case where TRT is less than 180 days, but still greater than or equal to 120 days, no additional treatment is required, but the SWSAP must get DDW approval to operate with the lower TRT. If the TRT is less than 120 days, the SWSAP must receive DDW approval and provide at least an additional log reduction of each pathogen.

**Table A3 - Pathogens log-reduction requirements for SWSAP**

| Dilution | TRT (days) | Log Removal Credit (V/G/*C*) | | Treatment Processes | Additional Information |
|---|---|---|---|---|---|
| | | WRF/ AWPF | Total (including DWTP) | | |
| **For 1% by volume of recycled water delivered to the surface water reservoir during any 24-hour period (100:1)** | ≥180 | 8/7/8 | 12/10/10 | Treatment must be provided by at least **two** separate treatment processes, each achieving ≥ 1-log reduction, with ≤ 6-log credit for any process. | -- |
| | <180, >120 | 8/7/8 | 12/10/10 | | DDW Approval |
| | <120, ≥60 | ≥9/7/8 | ≥13/11/11 | | DDW Approval |
| **For 10% by volume of recycled water delivered to the surface water reservoir during any 24-hour period (10:1)** | ≥180 | 9/8/7 | 13/11/11 | Treatment must be provided by at least **three** separate treatment processes, each achieving ≥ 1-log reduction, with ≤ 6-log credit for any process. | -- |
| | <180, >120 | 9/8/7 | 13/11/11 | | DDW Approval |
| | <120, ≥60 | ≥10/9/10 | ≥14/12/12 | | DDW Approval |

### A.1.4 Source control

To establish a SWSAP, the JPA must administer an industrial pretreatment and pollutant source control program. In addition, the JPA must implement and maintain a source control program that includes: (1) an assessment of the fate of DDW-specified and RWQCB-specified chemicals and contaminants through the wastewater and recycled

water systems, (2) chemical and contaminant source investigations and monitoring (specified by DDW and RWQCB), (3) an outreach program to industrial, commercial, and residential communities within the Tapia WRF service area for the purpose of managing and minimizing the discharge of chemicals at the source, and (4) a current inventory of chemicals and contaminants that may be discharged into the wastewater collection system.

### A.1.5 Reservoir and Water Quality Monitoring

Monitoring and reporting are an important aspect of the regulatory process for SWSAPs. The SWA regulations stipulate that a baseline record of the surface water reservoir's water quality and treated drinking water quality must be established prior to augmentation from the AWPF. The surface water reservoir must have been operating as an approved surface water source for at least five years prior to receiving recycled municipal wastewater from a SWSAP unless approved by DDW in writing, but, in no case, less than two years. In the case of Pure Water, LVR has been in operation and used as a drinking water source for the Westlake FP since 1990. Reservoir monitoring is required on a monthly basis for 24 months prior to augmentation. The water quality monitoring locations in the reservoir must first be reviewed and approved by DDW. Monitoring locations must be selected that are representative of the (1) horizontal extent of the reservoir, (2) water level corresponding to the depth of each intake to the Westlake FP, and (3) epilimnion and hypolimnion. Monthly monitoring of the LVR must continue for 24 months after augmentation has begun, as well. After completion of the 24-month monitoring program following augmentation, the JPA can submit an application to DDW to reduce the reservoir monitoring frequency to yearly.

In addition to reservoir monitoring, the JPA will also have to conduct water quality monitoring of the purified water entering the reservoir. A summary of organic and inorganic water quality requirements specific to Pure Water is presented in Table A3. Monitoring frequency for DDW chemical parameters can be seen in Table A4.

**Table A4 - Product Water Quality Goals for SWSAP**

| Parameter | Units | Requirement | Basis |
|---|---|---|---|
| **Primary Drinking Water Standards** | -- | <MCL | Title 22 DW CCR* |
| **Secondary Drinking Water Standards** | -- | <sMCL | |
| **NL contaminants** | -- | <NL | |
| **Total Organic Carbon** | mg/L | <0.5 | Title 22 CCR Article 5.3 |
| **1,4 Dioxane** | Log Treatment with AOP | >0.5 | Title 22 CCR Article 5.3 |

| | | | |
|---|---|---|---|
| **NDMA** | ng/L | 0.69 | California Toxics Rule |
| **Nitrogen, total**** | mg/L | <10.0 | Malibu Creek Watershed Water Quality Objectives |
| **Total Dissolved Solids** | mg/L | <2000 | |
| **Sulfate** | mg/L | <500 | |
| **Chloride** | mg/L | <500 | |
| **Boron** | mg/L | <2 | |
| **Chlorine Residual** | mg/L | <0.1 | |

*Drinking water regulations (§64431, §64442, §64443, §64444, §64449, §64533, §64674)

**Nitrate plus nitrite (as nitrogen).

### Table A5 - DDW Compliance Monitoring

| DDW Compliance Monitoring Category | Monitoring Frequency |
|---|---|
| **Primary Maximum Contaminant Levels (pMCLs) and Actions Levels** | Monthly |
| **Secondary Maximum Contaminant Levels (sMCLs)** | Annual |
| **Notification Levels** | Monthly |
| **Priority Toxic Pollutants** | Quarterly |
| **DDW-Specified Chemicals** | Quarterly |
| **DDW and RWQCB-Specified Indicator Compounds** | Annual |

### A.1.6 General Requirements

The new regulations also provide general requirements for SWSAPs. Each project must submit a joint plan between the relevant Water Recycling Agencies (WRAs) and Public Water Systems (PWSs) to the DDW and RWQCB to be reviewed prior to written approval for the project. The joint plan submitted by JPA should define corrective actions in the event of failure to meet water quality requirements, as well as operational changes that may adversely impact the quality of the recycled water produced by Tapia WRF to be used in augmentation of LVR. Prior to design and operation of the SWSAP, the JPA should also demonstrate adequate financial, managerial, and technical capability to assure regulatory compliance. The latter can be accomplished through the development and operation of a demonstration-scale AWPF further described in Section 2.

## *A.2 Surface Water Quality Standards*

### A.2.1 California Toxic Rule and Priority Toxic Pollutants

The California Toxics Rule (CTR) – promulgated by the EPA in 2000 – establishes water quality criteria for toxic pollutants and other water quality standards for inland surface waters and enclosed bays and estuaries in California (40 Code of Federal Regulations [CFR] 131.38). The CTR is intended for protection of aquatic life and public health. Title 22 (§60320.320) requires that the recycled municipal water delivered to an augmented reservoir be analyzed quarterly for the priority toxic pollutants. For freshwater applications, the CTR delimits several chemicals with maximum and continuous concentration criteria, as well as limits for consumption for those affecting human health ($10^{-6}$ risk for carcinogens). The CTR standards are presented in Appendix C, Table C1.

### A.2.2 National Pollutant Discharge Elimination System (NPDES) Permit

The NPDES permit program was created in 1972 by the Clean Water Act, and its primary goal is to help mitigate water pollution by regulating point sources that discharge into waters of the United States. The release of purified water into United States surface waters is regulated in California by the RWQCBs through an NPDES permit. Discharging facilities must prepare an application for review by the RWQCB prior to obtaining an NPDES permit. The permit has requirements and water quality standards that implement (1) Basin Plan policies and objectives, as described in Table A3; (2) water quality standards established within CTR (40 CFR 131.38); and (3) applicable state and federal water quality plans and policies (e.g., chlorine residual, Title 22 MCLs). NPDES permit holders may be required to monitor and report the type and volume of pollutants that are discharged to the surface water. Such required monitoring results are published in mandatory discharge monitoring reports (DMRs).

Currently, the JPA maintains an NPDES permit for discharging recycled water to Malibu Creek and the Los Angeles River. However, it is possible that JPA may be exempt from NPDES permitting under the Pure Water Project as the LVR may not be considered "water of the United States". The meaning of this is delimited in the Clean Water Act (EPA, 2018) as: "navigable waters, tributaries to navigable waters, interstate waters, the oceans out to 200 miles, and intrastate waters which are used: by interstate travelers for recreation or other purposes, as a source of fish or shellfish sold in interstate commerce, or for industrial purposes by industries engaged in interstate commerce." Further assessment may be needed to determine whether or not discharge of recycled water to LVR would require an NPDES permit.

## *A.3 Source Water Regulations*

### A.3.1 Watershed Sanitary Survey

The Watershed Sanitary Survey (WSS) is mandated within the California Surface Water Treatment Rule (SWTR) in the California CCR Title 22, Division 4, Chapter 17, Article 7, Section 64665 and consists of a review of the PWS to assess their ability to supply safe drinking water to the service area. The regulations specify that a WSS must be conducted minimally every five years (CCR, 2016). The Las Virgenes Reservoir WSS is performed by LVMWD.

### A.3.2 Drinking Water Source Assessment and Protection

The implementation of a Source Water Assessment Program is mandated for the development of a drinking water source by the federal Safe Drinking Water Act (SDWA), Section 1453 (United States Environmental Protection Agency, 2002). California maintains the Drinking Water Source Assessment Program (DWSAP), which requires PWS to inventory possible contaminating activities (PCAs) that can contribute to the possible release of microbiological or chemical contaminants within the delineated area of the drinking water source. The source water assessment study must also include the determination of the PCAs to which the drinking water source would be the most vulnerable. Updates are required when any changes have occurred or are expected to occur that would impact the source water, however DDW typically allows public water suppliers to meet DWSAP requirements through the submittal of a WSS Report because the WSS Report is, for the most part, more comprehensive than the information necessary to satisfy the DWSAP Program (California Department of Public Health, 2000).

## *A.4 Drinking Water Regulations*

The regulatory framework for safeguarding drinking water supplies is established in the United States Environmental Protection Agency (EPA) Surface Water Treatment Rule (SWTR) based on low tolerable risk, defined as one in 10,000 ($10^{-4}$) annual risk from pathogenic microorganisms. In addition, the drinking water standards apply, including the maximum contaminant levels (MCLs) and notification levels. Unregulated chemicals are addressed by EPA's Unregulated Contaminant Monitoring Rule (UCMR), with the development of lists of contaminants that have been found in drinking water but do not have health-based standards. The UCMR contaminant lists are monitored by public water systems (PWSs) to collect data for consideration in future regulations.

The constituents with corresponding primary and secondary MCLs for drinking water are specified in the following sections of Title 22 of the CCR and detailed in Appendix B (Table B1).

- §64431 – Maximum Contaminant Levels—Inorganic Chemicals
- §64442 – MCLs and Monitoring – Gross Alpha Particle Activity, Radium 226, Radium-228, and Uranium
- §64443 – MCLs and Monitoring – Beta particle and Photon Radioactivity
- §64444 – Maximum Contaminant Levels – Organic Chemicals
- §64449 – Secondary Maximum Contaminant Levels and Compliance
- §64533 – Maximum Contaminant Levels for Disinfection Byproducts
- §64674 – Lead and Copper Rule – Large Water System Requirements

## *A.5 Environmental Permitting*

### A.5.1 California Environmental Quality Act (CEQA)

Beyond compliance with the SWA regulations, the Pure Water Project will be subject to any applicable environmental requirements. Typically, project funding using grants or loans from the State Board (e.g., State Revolving Fund Loan Program, Proposition 1

funds, U.S. Bureau of Reclamation Title XVI) may require environmental compliance per the National Environmental Policy Act (NEPA) and the CEQA.

The CEQA requires State and local agencies to inform decision-makers and the public about the potential for environmental impacts caused by the implementation of a project. Projects that require physical development or discharge of wastewater or residuals (such as brine), require compliance with CEQA. The potential environmental impacts and the measures for mitigation and prevention should be detailed in an Environmental Impact Report (EIR). If the project does not envision environmental impacts upon implementation, a negative declaration should be submitted instead of the EIR.

The CEQA permit process can take a considerable amount of time, thus it is crucial to initiate the process as soon as the elements of the Pure Water Project are defined. Procedures for the application of the CEQA process are included in CCR, Title 14, Section 3. The application process and interaction between permit responsible agency and project lead agency are summarized in Table A5. The guidelines are developed by the Governor's Office of Planning and Research (OPR) and the Natural Resources Agency. The OPR is responsible for coordinating and reviewing CEQA documents as well as providing technical assistance to state and local agencies.

**Table A6 - Summary of the Process to Obtain CEQA Permit**

| Responsible Agency | Lead Agency |
|---|---|
| 1. Respond to consultation | 1. -Prepares initial study<br>-Decides if EIR or negative declaration is needed |
| 2. Respond to notice of preparation as to contents of draft EIR | 2. -Sends notice of preparation to the responsible agency<br>-Prepares draft EIR |
| 3. Comments on the adequacy of draft EIR or negative declaration | 3. -Files notice of completion and gives public notice of availability of draft EIR<br>-Prepares final EIR including responses to comments on draft EIR |
| 4. Decision-making body considers final EIR or negative declaration | |
| 5. Findings on the feasibility of reducing or avoiding significant environmental effects | |
| 6. Decision on project. Gives the decision on the permit (file notice of determination with OPR (state) and with the County Clerk (local) | |

# Appendix B – Summary of Water Quality Regulations Implicated by a SWSAP

## Table B1 – Title 22 Drinking Water Maximum Contaminant Levels

| Constituent | Unit | Title CCR MCL* |
|---|---|---|
| **Inorganic Chemicals** | | |
| Aluminum | mg/L | 1.0 |
| Antimony | mg/L | 0.006 |
| Arsenic | mg/L | 0.010 |
| Asbestos | MFL[1] | 7 |
| Barium | mg/L | 1.0 |
| Beryllium | mg/L | 0.004 |
| Cadmium | mg/L | 0.005 |
| Chromium | mg/L | 0.05 |
| Cyanide | mg/L | 0.15 |
| Fluoride | mg/L | 2.0 |
| Hexavalent chromium | mg/L | 0.010 |
| Mercury | mg/L | 0.002 |
| Nickel | mg/L | 0.1 |
| Nitrate (as N) | mg/L | 10 |
| Nitrate + Nitrite (as N) | mg/L | 10 |
| Nitrite (as N) | mg/L | 1 |
| Perchlorate | mg/L | 0.006 |
| Selenium | mg/L | 0.05 |
| Thallium | mg/L | 0.002 |
| **Radionuclides** | | |
| Radium-226, Radium-228 (combined) | pCi/L | 5 |
| Gross Alpha | pCi/L | 15 |
| Uranium | pCi/L | 20 |
| Gross Beta | pCi/L | 50 |
| Strontium-90 | pCi/L | 8 |
| Tritium | pCi/L | 20,000 |
| **Volatile Organic Chemicals** | | |

| Constituent | Unit | Title CCR MCL* |
|---|---|---|
| Benzene | mg/L | 0.001 |
| Carbon Tetrachloride | mg/L | 0.0005 |
| 1,2-Dichlorobenzene | mg/L | 0.6 |
| 1,4-Dichlorobenzene | mg/L | 0.005 |
| 1,1-Dichloroethane | mg/L | 0.005 |
| 1,2-Dichloroethane | mg/L | 0.0005 |
| 1,1-Dichloroethylene | mg/L | 0.006 |
| cis-1,2-Dichloroethylene | mg/L | 0.006 |
| trans-1,2-Dichloroethylene | mg/L | 0.01 |
| Dichloromethane | mg/L | 0.005 |
| 1,2-Dichloropropane | mg/L | 0.005 |
| 1,3-Dichloropropene | mg/L | 0.0005 |
| Ethylbenzene | mg/L | 0.3 |
| Methyl-tert-butyl ether | mg/L | 0.013 |
| Monochlorobenzene | mg/L | 0.07 |
| Styrene | mg/L | 0.1 |
| 1,1,2,2-Tetrachloroethane | mg/L | 0.001 |
| Tetrachloroethylene | mg/L | 0.005 |
| Toluene | mg/L | 0.15 |
| 1,2,4-Trichlorobenzene | mg/L | 0.005 |
| 1,1,1-Trichloroethane | mg/L | 0.2 |
| 1,1,2-Trichloroethane | mg/L | 0.005 |
| Trichloroethylene | mg/L | 0.005 |
| Trichlorofluoromethane | mg/L | 0.15 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | mg/L | 1.2 |
| Vinyl Chloride | mg/L | 0.0005 |
| Xylenes | mg/L | 1.75 |
| **Non-volatile Synthetic Organic Chemicals (SOCs)** | | |
| Alachlor | mg/L | 0.002 |
| Atrazine | mg/L | 0.001 |
| Bentazon | mg/L | 0.018 |
| Benzo(a)pyrene | mg/L | 0.0002 |
| Carbofuran | mg/L | 0.018 |
| Chlordane | mg/L | 0.0001 |

| Constituent | Unit | Title CCR MCL* |
|---|---|---|
| 2,4-D | mg/L | 0.07 |
| Dalapon | mg/L | 0.2 |
| Dibromochloropropane | mg/L | 0.0002 |
| Di(2-ethylhexyl)adipate | mg/L | 0.4 |
| Di(2-ethylhexyl)phthalate | mg/L | 0.004 |
| Dinoseb | mg/L | 0.007 |
| Diquat | mg/L | 0.02 |
| Endothall | mg/L | 0.1 |
| Endrin | mg/L | 0.002 |
| Ethylene Dibromide | mg/L | 0.00005 |
| Glyphosate | mg/L | 0.7 |
| Heptachlor | mg/L | 0.00001 |
| Heptachlor Epoxide | mg/L | 0.00001 |
| Hexachlorobenzene | mg/L | 0.001 |
| Hexachlorocyclopentadiene | mg/L | 0.05 |
| Lindane | mg/L | 0.0002 |
| Methoxychlor | mg/L | 0.03 |
| Molinate | mg/L | 0.02 |
| Oxamyl | mg/L | 0.05 |
| Pentachlorophenol | mg/L | 0.001 |
| Picloram | mg/L | 0.5 |
| Polychlorinated Biphenyls | mg/L | 0.0005 |
| Simazine | mg/L | 0.004 |
| Thiobencarb | mg/L | 0.07 |
| Toxaphene | mg/L | 0.003 |
| 2,3,7,8-TCDD (Dioxin) | mg/L | $3 \times 10^{-8}$ |
| 2,4,5-TP (Silvex) | mg/L | 0.05 |
| **Disinfection Byproducts** | | |
| Total Trihalomethanes (TTHM) | mg/L | 0.080 |
| Haloacetic Acids (HAAs) | mg/L | 0.060 |
| Bromate | mg/L | 0.010 |
| Chlorite | mg/L | 1.0 |

*Adapted from Title 22 California Code of Regulations (CCR) Tables 64431-A, 64444-A, 64449-B, and 64533-A.
[1]MFL = million fibers per liter; MCL for fibers exceeding 10 μm in length.

### Table B2 - Secondary Title 22 Drinking Water MCLs

| Chemical | Units | Secondary MCLs * |
|---|---|---|
| Aluminum | mg/L | 0.2 |
| Color | ACU | 15 |
| Copper | mg/L | 1 |
| Foaming Agents (MBAS) | mg/L | 0.5 |
| Iron | mg/L | 0.3 |
| Manganese | mg/L | 0.05 |
| Methyl-*tert*-butyl ether (MTBE) | mg/L | 0.005 |
| Odor – Threshold | -- | 3 |
| Silver | mg/L | 0.1 |
| Thiocarb | mg/L | 0.001 |
| Turbidity | NTU | 5 |
| Zinc | mg/L | 5 |
| Total Dissolved Solids** | mg/L | 500/1,000/1,500 |
| Specific Conductance** | µm/cm | 900/1,600/2,200 |
| Chloride** | mg/L | 250/500/600 |
| Sulfate | mg/L | 250/500/600 |

*Adapted from Title 22 California Code of Regulations (CCR) Table 64449-A, 64449-B

**recommended/upper/short-term

### Table B3 - General water quality parameters for augmented reservoir monitoring

| Parameter | Unit |
|---|---|
| Total Organic Carbon | mg/L |
| Total Nitrogen | mg/L |
| Total Coliform Bacteria | MPN/100 mL |
| Total Phosphorus | mg/L |
| Dissolved Phosphorus | mg/L |
| E. Coli | MPN/100 mL |
| Temperature | °C |
| Dissolved Oxygen (DO) | mg/L |
| Chlororphyll a | |

### Table B4 - California Code of Regulations Notification Levels

| Chemical | Notification Level (mg/L) |
|---|---|
| Boron | 1 |
| n-Butylbenzene | 0.26 |
| sec-Butylbenzene | 0.26 |
| tert-Butylbenzene | 0.26 |

| Chemical | Notification Level (mg/L) |
|---|---|
| Carbon disulfide | 0.16 |
| Chlorate | 0.8 |
| 2-Chlorotoluene | 0.14 |
| 4-Chlorotoluene | 0.14 |
| Diazinon | 0.0012 |
| Dichlorodifluoromethane (Freon 12) | 1 |
| 1,4-Dioxane | 0.001 |
| Ethylene glycol | 14 |
| Formaldehyde | 0.1 |
| HMX | 0.35 |
| Isopropylbenzene | 0.77 |
| Manganese | 0.5 |
| Methyl isobutyl ketone | 0.12 |
| Napthalene | 0.017 |
| NDEA | 0.00001 |
| NDMA | 0.00001 |
| N-Nitrosodi-n-propylamine (NDPA) | 0.00001 |
| Propachlor | 0.09 |
| n-Propylbenzene | 0.26 |
| RDX | 0.0003 |
| Tertiary butyl alcohol | 0.012 |
| 1,2,3,-Trichloropropane | 0.000005 |
| 1,2,4-Trimethylbenzene | 0.33 |
| 1,3,5-Trimethylbenzene | 0.33 |
| 2,4,6-Trinitrotoluene | 0.001 |
| Vanadium | 0.05 |

# Appendix C – California Toxic Rule – Priority Toxic Pollutants (40 CFR 131.38)

## Table C1 - CTR Standards for Purified Water Discharged in Surface Waters

| Constituent | Criteria for the Protection of Aquatic Habitat (Freshwater)[1] | | Criteria for the Protection of Human Health ($10^{-6}$ risk Carcinogens) | Units |
|---|---|---|---|---|
| | Criteria Maximum Concentration[2] | Criteria Continuous Concentration[3] | Consumption Water & Organisms[1] | |
| Antimony | - | - | 14 | µg/L |
| Arsenic | 340 | 150 | - | µg/L |
| Beryllium | - | - | a | µg/L |
| Cadmium | 4.3 | 2.2 | a | µg/L |
| Chromium (III) | 550 | 180 | a | µg/L |
| Chromium (IV) | 16 | 11 | a | µg/L |
| Copper | 13 | 9 | 1300 | µg/L |
| Lead | 65 | 2.5 | a | µg/L |
| Mercury | Reserved | Reserved | 0.05 | µg/L |
| Nickel | 13 | 9 | 1300 | µg/L |
| Selenium | Reserved | 5 | a | µg/L |
| Silver | 3.4 | - | - | µg/L |
| Thallium | - | - | 1.7 | µg/L |
| Zinc | 120 | 120 | a | µg/L |
| Cyanide | 22 | 5.2 | 700 | µg/L |
| Asbestos | - | - | 7,000,000 | Fibers/L |
| 2,3,7,8-TCDD (Dioxin) | | | 0.000000013 | µg/L |
| Acrolein | - | - | 320 | µg/L |
| Acrylonitrile | - | - | 0.059 | µg/L |
| Benzene | - | - | 1.2 | µg/L |
| Bromoform | - | - | 4.3 | µg/L |
| Carbon Tetrachloride | - | - | 0.25 | µg/L |
| Chlorobenzene | - | - | 680 | µg/L |
| Dibromochloromethane | - | - | 0.401 | µg/L |
| Chloroethane | - | - | - | µg/L |
| 2-Chloroethylvinyl Ether | - | - | - | µg/L |
| Chloroform | - | - | Reserved | µg/L |
| Dichlorobromomethane | - | - | 0.56 | µg/L |

| Constituent | Criteria for the Protection of Aquatic Habitat (Freshwater)[1] | | Criteria for the Protection of Human Health ($10^{-6}$ risk Carcinogens) | Units |
|---|---|---|---|---|
| | Criteria Maximum Concentration[2] | Criteria Continuous Concentration[3] | Consumption Water & Organisms[1] | |
| 1,1-Dichloroethane | - | - | - | µg/L |
| 1,2-Dichloroethane | - | - | 0.38 | µg/L |
| 1,1-Dichloroethylene | - | - | 0.057 | µg/L |
| 1,2-Dichloropropane | - | - | 0.52 | µg/L |
| 1,3-Dichloropropylenes, Sum | - | - | 10 | µg/L |
| Ethylbenzene | - | - | 3100 | µg/L |
| Bromomethane | - | - | 48 | µg/L |
| Methyl Chloride | - | - | a | µg/L |
| Methylene Chloride | - | - | 4.7 | µg/L |
| 1,1,2,2-Tetrachloroethene | - | - | 0.17 | µg/L |
| Tetrachloroethene | - | - | 0.8 | µg/L |
| Toluene | - | - | 6800 | µg/L |
| trans-1,2-Dichloroethane | - | - | 700 | µg/L |
| 1,1,1-Trichloroethane | - | - | a | µg/L |
| 1,1,2-Trichloroethane | - | - | 0.6 | µg/L |
| Trichloroethene | - | - | 2.7 | µg/L |
| Vinyl Chloride | - | - | 2 | µg/L |
| 2-chlorophenol | - | - | 120 | µg/L |
| 2,4-Dichlorophenol | - | - | 93 | µg/L |
| 2,4-Dimethylphenol | - | - | 540 | µg/L |
| 4,6-Dinitro-2-methylphenol | - | - | 13.4 | µg/L |
| 2,4-Dinitrophenol | - | - | 70 | µg/L |
| 2-Nitrophenol | - | - | - | µg/L |
| 4-Nitrophenol | - | - | - | µg/L |
| 4-Chloro-3-methylphenol | - | - | - | µg/L |
| Pentachlorophenol | 19 | 15 | 0.28 | µg/L |
| Phenol, Single Compound | - | - | 21000 | µg/L |
| 2,4,6-Trichlorophenol | - | - | 2.1 | µg/L |

| Constituent | Criteria for the Protection of Aquatic Habitat (Freshwater)[1] | | Criteria for the Protection of Human Health ($10^{-6}$ risk Carcinogens) | Units |
|---|---|---|---|---|
| | Criteria Maximum Concentration[2] | Criteria Continuous Concentration[3] | Consumption Water & Organisms[1] | |
| Acenaphthene | - | - | 1200 | µg/L |
| Acenaphthylene | - | - | - | µg/L |
| Anthracene | - | - | 9600 | µg/L |
| Benzidine | - | - | 0.00012 | µg/L |
| Benzo(a)anthracene | - | - | 0.0044 | µg/L |
| Benzo(a)pyrene | - | - | 0.0044 | µg/L |
| Benzo(b)fluoranthene | - | - | 0.0044 | µg/L |
| Benzo(ghi)perylene | - | - | - | µg/L |
| Benzo(k)fluoranthene | - | - | 0.0044 | µg/L |
| Bis (2-Chloroethoxy) Methane | - | - | - | µg/L |
| Bis (2-Chloroethyl) Ether | - | - | 0.031 | µg/L |
| Bis (2-Chloroisopropyl) Ether | - | - | 1400 | µg/L |
| Bis (2-Ethylhexyl) Phthalate | - | - | 1.8 | µg/L |
| 4-Bromophenyl Phenyl Ether | - | - | - | µg/L |
| Butylbenzyl Phthalate | - | - | 3000 | µg/L |
| 2-Chloronaphthalene | - | - | 1700 | µg/L |
| 4-Chlorophenyl Phenyl Ether | - | - | - | µg/L |
| Chrysene | - | - | 0.0044 | µg/L |
| Dibenzo(a,h)anthracene | - | - | 0.0044 | µg/L |
| 1,2-Dichlorobenzene | - | - | 2700 | µg/L |
| 1,3-Dichlorobenzene | - | - | 400 | µg/L |
| 1,4-Dichlorobenzene | - | - | 400 | µg/L |
| 3,3-Dichlorobenzidine | - | - | 0.04 | µg/L |
| Diethyl Phthalate | - | - | 23000 | µg/L |
| Dimethyl Phthalate | - | - | 313000 | µg/L |
| Di-n-butyl Phthalate | - | - | 2700 | µg/L |
| 2,4-Dinitrotoluene | - | - | 0.11 | µg/L |
| 2,6-Dinitrotoluene | - | - | - | µg/L |
| Di-n-octyl Phthalate | - | - | - | µg/L |

| Constituent | Criteria for the Protection of Aquatic Habitat (Freshwater)[1] | | Criteria for the Protection of Human Health ($10^{-6}$ risk Carcinogens) | Units |
|---|---|---|---|---|
| | Criteria Maximum Concentration[2] | Criteria Continuous Concentration[3] | Consumption Water & Organisms[1] | |
| 1,2-Diphenylhydrazine | - | - | 0.04 | µg/L |
| Fluoranthene | - | - | 300 | µg/L |
| Fluorene | - | - | 1300 | µg/L |
| Hexachlorobenzene | - | - | 0.00075 | µg/L |
| Hexachlorobutadiene | - | - | 0.44 | µg/L |
| Hexachlorocyclopentadiene | - | - | 240 | µg/L |
| Hexachloroethane | - | - | 1.9 | µg/L |
| Indeno (1,2,3-cd) Pyrene | - | - | 0.0044 | µg/L |
| Isophorone | - | - | 8.4 | µg/L |
| Naphthalene | - | - | - | µg/L |
| Nitrobenzene | - | - | 17 | µg/L |
| NDMA | - | - | 0.00069 | µg/L |
| NDPA | - | - | 0.005 | µg/L |
| N-Nitrosodiphenylamine | - | - | 5 | µg/L |
| Phenanthrene | - | - | - | µg/L |
| Pyrene | - | - | 960 | µg/L |
| 1,2,4-Trichlorobenzene | - | - | - | µg/L |
| Aldrin | 3 | | 0.00013 | µg/L |
| alpha-BHC | - | - | 0.0039 | µg/L |
| beta-BHC | - | - | 0.014 | µg/L |
| gamma-BHC | 0.95 | - | 0.019 | µg/L |
| delta-BHC | - | - | - | µg/L |
| Chlordane | 2.4 | 0.0043 | 0.00057 | µg/L |
| 4,4-DDT | 1.1 | 0.001 | 0.00059 | µg/L |
| 4,4-DDE | - | - | 0.00059 | µg/L |
| 4,4-DDD | - | - | 0.00083 | µg/L |
| Diledrin | 0.24 | 0.056 | 0.00014 | µg/L |
| Endosulfan I | 0.22 | 0.056 | 110 | µg/L |
| Endosulfan II | 0.22 | 0.056 | 110 | µg/L |
| Endosulfan Sulfate | - | - | 110 | µg/L |
| Endrin | 0.086 | 0.036 | 0.76 | µg/L |

| Constituent | Criteria for the Protection of Aquatic Habitat (Freshwater)[1] | | Criteria for the Protection of Human Health ($10^{-6}$ risk Carcinogens) | Units |
|---|---|---|---|---|
| | Criteria Maximum Concentration[2] | Criteria Continuous Concentration[3] | Consumption Water & Organisms[1] | |
| Endrin Aldehyde | - | - | 0.76 | µg/L |
| Heptachlor | 0.52 | 0.0038 | 0.00021 | µg/L |
| Heptachlor Epoxide | 0.52 | 0.0038 | 0.0001 | µg/L |
| Polychlorinated Bisphenyls | - | 0.014 | 0.00017 | µg/L |
| Toxaphene | 0.73 | 0.002 | 0.00073 | µg/L |

[1] CTR numeric criteria for protection of human health are for consumption of water plus organisms.

[2] Criteria maximum concentration is the highest concentration to which aquatic life can be exposed for a short period of time without deleterious effect.

[3] Criteria continuous concentration is the highest concentration to which aquatic life can be exposed for four days without deleterious effect.

[a] EPA is not promulgating human health criteria for these contaminants; however, permit authorities should address these contaminants in NPDES permit actions using the state's existing narrative criteria for toxics.

# Appendix D – Recommended CEC Monitoring

Recommended CEC compounds for monitoring are listed in this section are based on:

- "Monitoring Strategies for Chemicals of Emerging Concern in Recycled Water" published by the State Water Resources Control Board (Anderson et al., 2010)
- The Fourth Unregulated Contaminant Monitoring Rule (US EPA, 2012)
- "Examining the Criteria for Direct Potable Reuse" by the National Water Research Institute as part of Water Reuse Research Foundation's 11-02 project (NWRI Panel) (Crook et al., 2013)
- Additional CECs present in wastewater that may be difficult for advanced treatment to remove (e.g., Acetone, Benzotriazole, Diphenhydramine, Ibuprofen, Perchlorate, PFAS, etc.)
- CECs tested during similar advanced treatment studies and further recommendations from peers with experience in the field of study.
- While N-nitrosodimethylamine (NDMA) and N-nitrosodiethylamine (NDEA) are the primary nitrosamines of interest due to high carcinogenicity, it is recommended to including all the nitrosamine chemicals listed in Table D1.

### Table D1 – Nitrosamines recommended for monitoring

| Nitrosamine | Analytical Method | Reporting Limit (ng/L) |
|---|---|---|
| NDMA | EPA 521 | 1.6 |
| NDEA | EPA 521 | 2.1 |
| NDPA | EPA 521 | 1.2 |
| N-nitrosodi-n-butylamine (NDBA) | EPA 521 | 1.4 |
| N-nitrosomethylethylamine (NMEA) | EPA 521 | 1.5 |
| N-nitrosopyrollidine (NPYR) | EPA 521 | 1.4 |
| N- nitrosomorpholine (NMOR) | EPA 521[1] | 2.4 |

[1] EPA 521 is modified according to Teng and Mitch (2016)

## Table D2 - Unregulated Contaminant Monitoring Rule (UCMR4) for PWS

| Parameter | Units |
|---|---|
| total microcystin | ug/L |
| microcystin-LA | ug/L |
| microcystin-LF | ug/L |
| microcystin-LR | ug/L |
| microcystin-LY | ug/L |
| microcystin-RR | ug/L |
| microcystin-YR | ug/L |
| nodularin | ug/L |
| anatoxin-a | ug/L |
| cylindrospermopsin | ug/L |
| germanium | ug/L |
| manganese | ug/L |
| alpha-hexachlorocyclohexane | ug/L |
| chlorpyrifos | ug/L |
| dimethipin | ug/L |
| ethoprop | ug/L |
| oxyfluorfen | ug/L |
| profenofos | ug/L |
| tebuconazole | ug/L |
| total permethrin (cis- & trans-) | ug/L |
| tribufos | ug/L |
| HAA5 | ug/L |
| HAA6Br | ug/L |
| HAA9 | ug/L |
| 1-butanol | ug/L |
| 2-methoxyethanol | ug/L |
| 2-propen-1-ol | ug/L |
| butylated hydroxyanisole | ug/L |
| o-toluidine | ug/L |
| quinoline | ug/L |
| Organic Carbon, Total (TOC) | mg/L |
| Bromide | ug/L |

## Table D3 – Recommended CEC for monitoring

| Chemical Name | Analytical Method | Reporting Limit | Units |
|---|---|---|---|
| 17α-Ethynyl Estradiol | EPA 539 | 0.5 | ng/L |
| 17β-Estradiol | EPA 539 | 0.5 | ng/L |
| Acesulfame | EPA 1694 ESI+ | 4 | ng/L |
| Atenolol | EPA 1694 ESI+ | 10 | ng/L |
| Benzotriazole | EPA 1694 ESI+ | 10.8 | ng/L |
| Bisphenol A | EPA 1694 ESI- | 10 | ng/L |
| Caffeine | EPA 1694 ESI+ | 50 | ng/L |
| Carbamazepine | EPA 1694 ESI+ | 5 | ng/L |
| Cotinine | EPA 1694 ESI+ | 5 | ng/L |
| DEET | EPA 525.3 | 1 | ng/L |
| Diclofenac | EPA 542 | 5 | ng/L |
| Dilantin (Phenyltoin) | EPA 1694 ESI+ | 1 | ng/L |
| Diphenhydramine | EPA 1694 ESI+ | 2 | ng/L |
| Equilin | EPA 539 | 5 | ng/L |
| Estriol | EPA 539 | 5 | ng/L |
| Estrone | EPA 539 | 0.5 | ng/L |
| Fluoxetine | EPA 1694 ESI+ | 10 | ng/L |
| Gemfibrozil | EPA 1694 ESI- | 5 | ng/L |
| Ibuprofen | EPA 1694 ESI- | 50 | ng/L |
| Iopromide | EPA 1694 ESI- | 10 | ng/L |
| Meprobamate | EPA 1694 ESI+ | 1 | ng/L |
| Naproxen | EPA 1694 ESI- | 10 | ng/L |
| Perchlorate | EPA 314.0 | 2 | µg/L |
| Perfluorooctanic Acid | EPA 537 rev 1.1 | 10 | ng/L |
| Perfluorooctanic Sulfonate | EPA 537 rev 1.1 | 10 | ng/L |
| Primidone | EPA 1694 ESI+ | 5 | ng/L |
| Sucralose | EPA 1694 ESI+ | 100 | ng/L |
| Sulfamethoxazole | EPA 1694 ESI+ | 2 | ng/L |
| TCEP | EPA 1694 ESI+ | 5 | ng/L |
| TCPP | EPA 1694 ESI+ | 5 | ng/L |
| Triclosan | EPA 1694 ESI- | 200 | ng/L |
| Trimethoprim | EPA 1694 ESI+ | 5 | ng/L |
| Iohexol | LC-MS-MS - SPE | 10 | ng/L |

# Appendix E – LVMWD Sewer Collection Source Control Program

## Table E1 – LVMWD Sewer Collection Source Control Program

| Constituents | Local Effluent Limits (mg/L) |
|---|---|
| Arsenic (Total) | 0.05 |
| Beryllium | 0.005 |
| Boron | 1.5 |
| Cadmium (Total) | 0.02 |
| Chloride | 175 |
| Chromium (Total) | 0.07 |
| Copper (Total) | 0.30 |
| Cyanide (Total) | 0.02 |
| Cyanide (Amenable) | -- |
| Dissolved Sulfide | 0.10 |
| Fluoride | 1.20 |
| Lead (Total) | 0.20 |
| Mercury | 0.002 |
| Nickel (Total) | 0.50 |
| Oil & Greese | 100 |
| pH Range | 6-10 |
| Selenium | 0.02 |
| Silver (Total) | 0.08 |
| Sulfate | 325 |
| Temperature | 140 °F |
| Total Dissolved solids (TDS) | 1,000 |
| Total Toxic Organics (TTO) | -- |
| Zinc (Total) | 0.50 |

ITEM 10C

**INFORMATION ONLY**

February 4, 2019 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

---

**Subject : Woolsey Fire Response and Recovery Effort: End of Emergency**

---

On January 29, 2019, the LVMWD Board, acting in part as the Administering Agent of the Las Virgenes-Triunfo Joint Powers Authority, ended the Declaration of Emergency due to the Woolsey Fire. The action included a summary of all expenses incurred for the immediate and emergency actions for the Woolsey Fire, which totaled $321,921. The JPA share of the costs was $27,268.

**SUMMARY:**

On November 12, 2018, the Board declared a state of emergency due to the Woolsey Fire that broke out on the afternoon of Thursday, November 8, 2018 in Ventura County near the Santa Susana Field Laboratory. The fire quickly spread into the District's service area due to low relative humidity and strong Santa Ana winds. District facilities experienced significant damage that required immediate action without delay to restore normal water and wastewater services.

The necessary immediate and emergency actions have been completed, so it is now appropriate for the Board to end the Declaration of Emergency for the District. It is important to note that the Woolsey Fire recovery efforts will remain a top priority for the District; however, staff proposes to adhere to all non-emergency District policies for those on-going efforts. Attached for reference is a summary of all expenses incurred for the District's immediate and emergency actions for the Woolsey Fire, which total $321,921.

**FISCAL IMPACT:**

No

**ITEM BUDGETED:**

No

**FINANCIAL IMPACT:**

There is no financial impact associated with ending the emergency declaration. However, it is

appropriate to report on the cost of the District's immediate and emergency actions at this time, which totaled $321,921 ($294,653 for LVMWD-only facilities and $27,268 for JPA facilities). Staff continues to coordinate with the District's insurance carrier, FEMA and CalOES representatives to seek reimbursement for the immediate and emergency actions, together with planned recovery work.

## DISCUSSION:

On November 12, 2018, the Board declared a state of emergency due to the Woolsey Fire that broke out on the afternoon of Thursday, November 8, 2018 in Ventura County near the Santa Susana Field Laboratory. The fire quickly spread into the District's service area due to low relative humidity and strong Santa Ana winds. The fire burned almost 97,000 acres in Los Angeles and Ventura counties, destroyed 1,500 structures, and damaged 340 structures. Over 350 structures were destroyed in the District's service area.

District facilities experienced significant damage that required immediate action without delay to restore normal water and wastewater services and to ensure safe working conditions for staff. These facilities included the Westlake Filtration Plant, Rancho Las Virgenes Composting Facility, the potable water distribution system, the headquarters site and several tank sites. The necessary immediate and emergency actions have now been completed, so it is appropriate for the Board to end the Declaration of emergency for the District. It is important to note that the Woolsey Fire recovery efforts will remain a top priority for the District; however, staff proposes to adhere to all non-emergency District policies for those on-going efforts.

With respect to the immediate and emergency actions, 91 staff members logged over 6,000 hours responding to the fire. The cost for the immediate and emergency actions was $321,921, including $294,653 for LVMWD-only facilities and $27,268 for JPA facilities. Attached for reference is a summary of all the associated expenses incurred for the District's response.

With completion of the immediate and emergency needs, staff has directed its focus on recovery and restoration of the damaged facilities. Several Requests for Proposals (RFPs) were issued and identify the required restoration and enhancements to fire harden the damaged facilities. The scope of work consists of developing plans and specifications for the restoration work. The RFP responses are due on February 20, 2019, and a recommendation for award will be made to the JPA Board on March 4, 2019 (JPA facilities) and to the LVWMD Board on March 12, 2019 (LVMWD-only facilities).

Prepared by: David R. Lippman, P.E., Director of Facilities and Operations

**ATTACHMENTS:**

Summary of Woolsey Fire Expenses for Immediate and Emergency Actions

| Las Virgenes - Triunfo Joint Powers Authority | | |
|---|---|---|
| | | |
| **RW Tanks, Reservoirs and Wells** | | |
| W.Litten (erosion control) | $ | 6,094 |
| Rentals (pipe & clamps) | $ | 2,871 |
| **Treatment/Centrate Treatment** | | |
| Diesel fuel | $ | 876 |
| **Treatment/Composting** | | |
| Electrical supplies | $ | 2,775 |
| W.Litten (erosion control) | $ | 5,580 |
| Safety glasses, respirators, traffic cones | $ | 1,529 |
| Restoration services ($5.2K) HVAC services ($1.3K) | $ | 6,510 |
| **Treatment/Reclamation** | | |
| HVAC | $ | 1,033 |
| | | |
| ***Subtotal JPA:*** | ***$*** | ***27,268*** |
| | | |
| **Las Virgenes Municipal Water District** | | |
| | | |
| **Administration** | | |
| Food and Supplies for EOC | $ | 3,249 |
| **Building 8 Maintenance** | | |
| Piping supplies/parts | $ | 4,011 |
| HVAC services ($3K); facility restoration ($61K) | $ | 63,515 |
| **Building 7 and Yard Maintenance** | | |
| HVAC services | $ | 1,373 |
| **Customer Service** | | |
| Bankcard Center (Bulk Calls) | $ | 2,919 |
| **Distribution** | | |
| Piping parts/supplies | $ | 11,703 |
| Mulholland & Troutdale valve installation | $ | 34,036 |
| 33239 Mulholland Hwy main break repair | $ | 66,400 |
| | | |
| **Meter Service** | | |
| Misc. supplies | $ | 381 |
| **Pump Stations** | | |
| Gas, diesel, misc. supplies | $ | 23,352 |
| Generator rental ($35.5K); replace analog card ($2.5K) | $ | 38,106 |
| Replacement PLC Panel | $ | 10,416 |
| **Tanks and Reservoirs** | | |
| Solar charging kit | $ | 569 |
| W.Litten (erosion control) | $ | 1,064 |
| **Treatment** | | |
| Facility restoration | $ | 5,521 |
| Fence/gate repair | $ | 171 |
| Pumps ($24K); misc. supplies ($1.5K) | $ | 25,465 |
| Chemical pump | $ | 2,400 |
| | | |
| ***Subtotal LVMWD:*** | ***$*** | ***294,653*** |
| | | |
| **Total Both Agencies:** | **$** | **321,921** |